CITY OF EL PASO, TEXAS
AGENDA ITEM DEPARTMENT HEAD'S SUMMARY FORM

DEPARTMENT: **International Bridges Department**

AGENDA DATE: **November 10, 2015**

CONTACT PERSON/PHONE: **Mathew McElroy, (915) 533-7428, McElroyMX@elpasotexas.gov**

DISTRICT(S) AFFECTED: **All Districts**

SUBJECT:
Review and discussion on the quarterly report for the reimbursable services agreement authorized under Section 560 which allows the City to pay for Customs and Border Protection overtime in an effort to reduce wait times at City owned ports of entry and staff all lanes during peak hours.

BACKGROUND/DISCUSSION:
City Council, on December 3, 2013, authorized the Section 560 "P3" reimbursable fee agreement and annex allowing the City to reimburse the U.S. Customs and Border Protection (CBP) for overtime provided by CBP officers to reduce wait times at the Paso Del Norte (Santa Fe) and Ysleta (Zaragoza) Bridges during peak times and holidays. This report will provide the City Council with an update on the progress, current impacts, and future application of the P3 program.

PRIOR COUNCIL ACTION:
December 3, 2013 – City Council approval of the Section 560 "P3" reimbursable fee agreement with CBP
September 23, 2014 – City Council approval of the first extension
September 22, 2015 – City Council approval of the second extension

AMOUNT AND SOURCE OF FUNDING:
N/A

**********REQUIRED AUTHORIZATION**********

LEGAL: (if required) **FINANCE:** (if required)

DEPARTMENT HEAD: Mathew S. McElroy
International Bridges Department Director

_____

APPROVED FOR AGENDA:

CITY MANAGER: _____ **DATE:** _____

THE CITY OF EL PASO INTERNATIONAL BRIDGES

Progress Report of the Section 560 Annex (P3 Program) between the City of El Paso and U.S. Customs and Border Protection

Strategic Goal # 7- Enhance and Sustain El Paso's Infrastructure Network

7.3. Enhance Regional Comprehensive Transportation System

Presentation Outline

- Introduction and P3 program background
- Overview of wait times
- Trends in wait times, crossings and retail sales
- Importance of wait times
- Predictors and models of crossings / wait times
- Moving forward – data and analysis
- Lean Six Sigma projects

P3 Program Background

- El Paso chosen as one of five cities to participate in a five-year pilot Public-Private-Partnership (P3) Program with Customs and Border Protection (CBP)
- City pays for additional service hours through tolls, which were increased by $0.50 for autos, and $0.50 per axle for commercial vehicles (January 2014)
- Allows the City to pay for CBP overtime in an effort to reduce wait times at Ports of Entry and staff all lanes during peak hours in general
- Agreement approved by City Council on December 3rd, 2013
- Annex renewed twice on 9/23/2014 and 9/22/2015 each for a one year term

Fares

FARES

Effective March 28, 2015

Class	US DOLLARS		MEXICAN PESOS	
	AMOUNT	EXTRA AXLE	AMOUNT	EXTR AXLE
1	$3.00	$1.50	p50.00	p25.00
2	$8.00	$4.00	p130.00	p65.00
3	$12.00	$4.00	p195.00	p65.00
4	$16.00	$4.00	p260.00	p65.00
5	$20.00	$4.00	p325.00	p65.00
6	$24.00	$4.00	p390.00	p65.00
7	$8.00	$4.00	p130.00	p65.00
8	$3.00	$0.00	p50.00	p0.00
9	$0.50	$0.00	p8.00	p0.00

*NOTE: PESO RATE SUBJECT TO CHANGE DUE TO CURRENCY FLUCTUATIONS

CLASS 1 NON-COMMERCIAL AUTOS/PICKUPS $3.00
(EXTRA AXLES $1.50)

CLASS 2 COMMERCIAL 2 AXLE VEHICLES $8.00
(EXTRA AXLE $4.00)

CLASS 3 - 6 COMMERCIAL VEHICLES $4.00 PER AXLE

CLASS 7 BUS OR R.V. $4.00 PER AXLE

CLASS 8 MOTORCYCLE $3.00

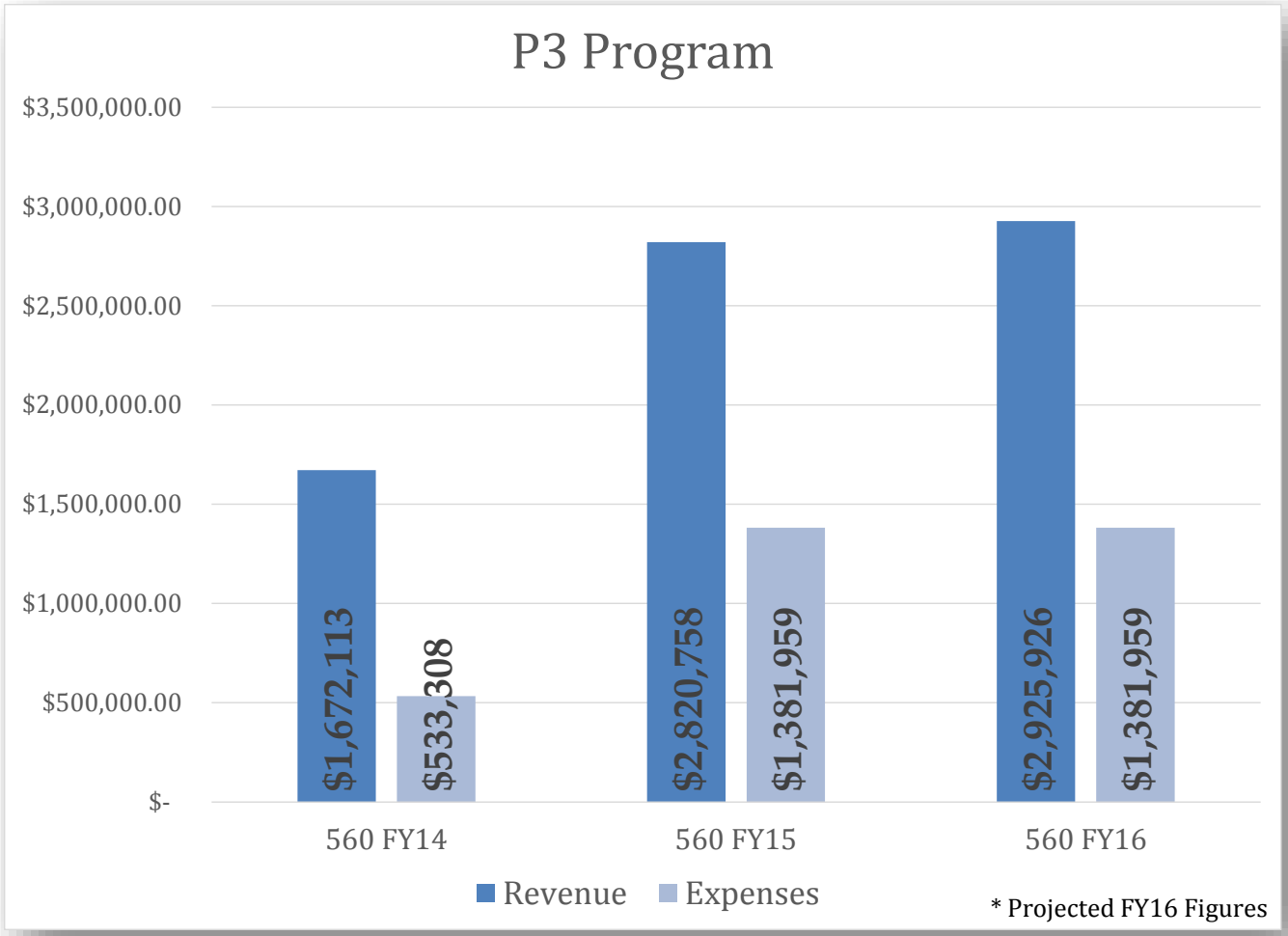
CLASS 9 PEDESTRIANS $0.50 per person

Fares

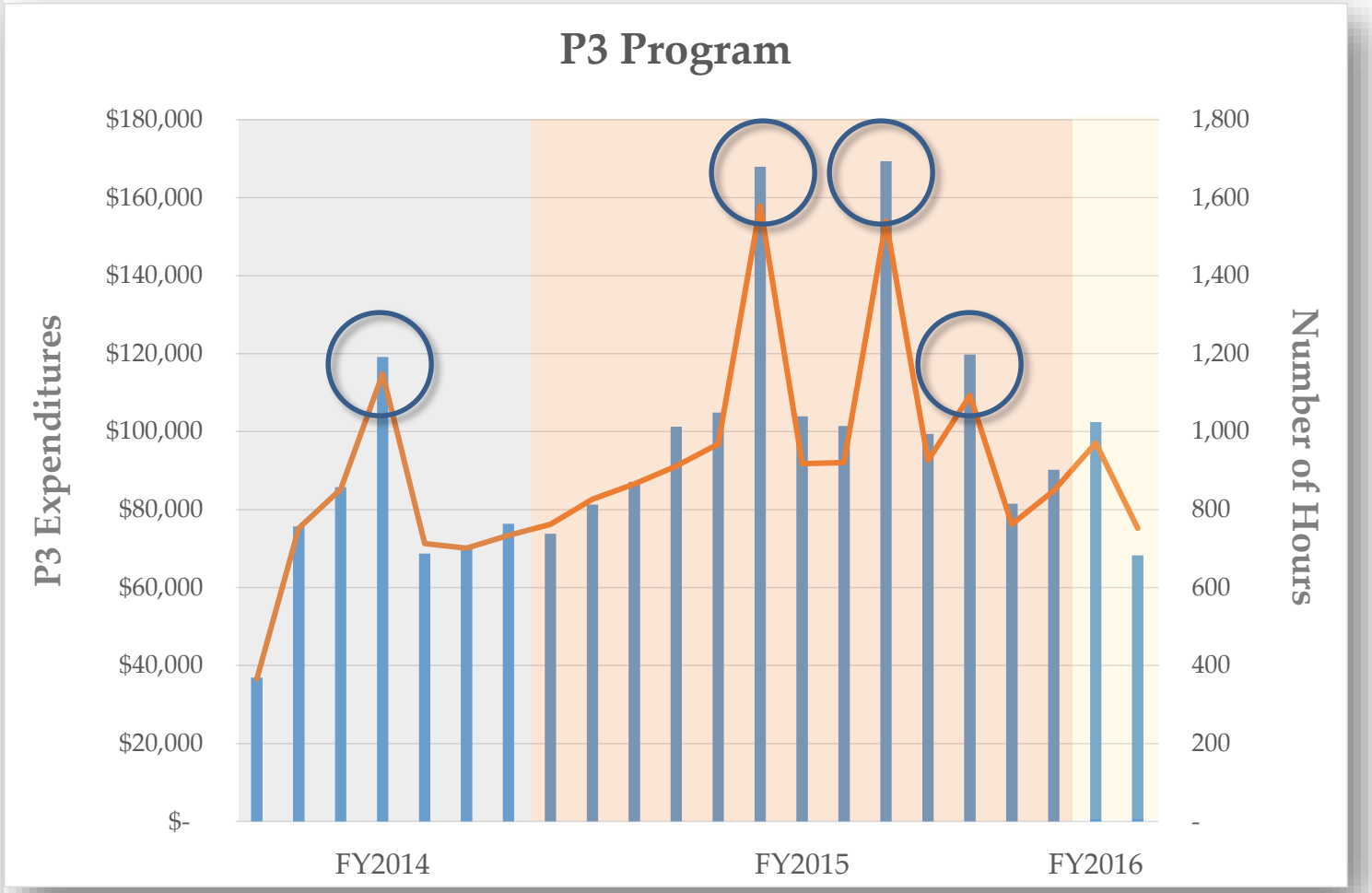
- Fares charged at El Paso International Bridges are competitive with other Texas ports of entry
- Research findings indicate that historically toll prices in El Paso are inelastic (Fullerton et al. 2009).

Location	Pedestrians	Autos & Pickups	3 Axel Trucks	5 Axel Trucks
Cameron International Bridge System	$1.00	$3.25	$12.50	$19.50
City of El Paso International Bridges	**$0.50**	**$3.00**	**$12.00**	**$20.00**
Del Rio International Bridge	$0.75	$3.50	$15.00	$25.00
Donna-Rio Bravo International Bridge	$0.50	$3.50	$12.00	$19.00
Eagle Pass International Bridge System	$0.50	$3.00	$11.25	$18.75
Laredo International Bridge System	$0.75	$3.50	$12.75	$21.25
McAllen International Bridge System	$1.00	$3.25	$7.00	-
Pharr-Reynosa International Bridge	-	$3.25	$15.25	$22.25
Starr-Camargo Bridge	$0.50	$3.50	$8.75	$15.25

Program Funding



Program Expenditures



P3 Coverage – Distribution of Hours

- Paso Del Norte – Pedestrians – 16 hrs. weekly
  - Monday from 10:00am - 2:00pm (4hrs.), 2 lanes
- Paso Del Norte – POV – 80 hrs. weekly
  - Monday from 5:00am - 6:00am (1hr.), 4 lanes
  - Saturdays from 2:00pm - 6:00pm (4hrs.), 6 lanes
  - Sundays from 10:00pm - 12:00am (2hrs.), 6 lanes
- Ysleta/Zaragoza – POV – 72 hrs. weekly
  - Saturdays from 2:00pm - 6:00pm (4hrs.), 6 lanes
  - Sundays from 10:00pm - 12:00am (2hrs.), 6 lanes
- Ysleta/Zaragoza – Cargo – 24 hrs. weekly
  - Wednesdays from 10:00am - 2:00pm (4hrs.), 1 lane
  - Thursdays from 10:00am - 2:00pm (4hrs.), 1 lane
  - Fridays from 10:00am - 2:00pm (4hrs.), 1 lane
- Holiday and special events coverage varies by POE

General Overview of Wait Times

- Customs Border Patrol (CBP)
  - Line of sight with landmarks (extends to top of bridge)
  - Driver survey
  - Unreliable methodology
- Texas Transportation Institute (TTI)
  - Radio Frequency Identification Technology (RFID) for cargo
    - Not in all bridges and end of queue sometimes beyond reader locations
  - Bluetooth (BT) for passenger vehicles
    - Limited to smart phones with BT turned on
- Freight carriers
  - Global Positioning System (GPS)
  - Appears to best capture complete crossing time
  - Limited availability
- City of El Paso International Bridges
  - Camera system using landmarks (to cross-reference w/ CBP wait time data)
  - Limited to range of time

General Overview of Wait Times

- Important Caveat – According to the GAO (2013), CBP data on wait times are unreliable for public reporting and management decisions given that CBP officers inconsistently implement approved methodologies.

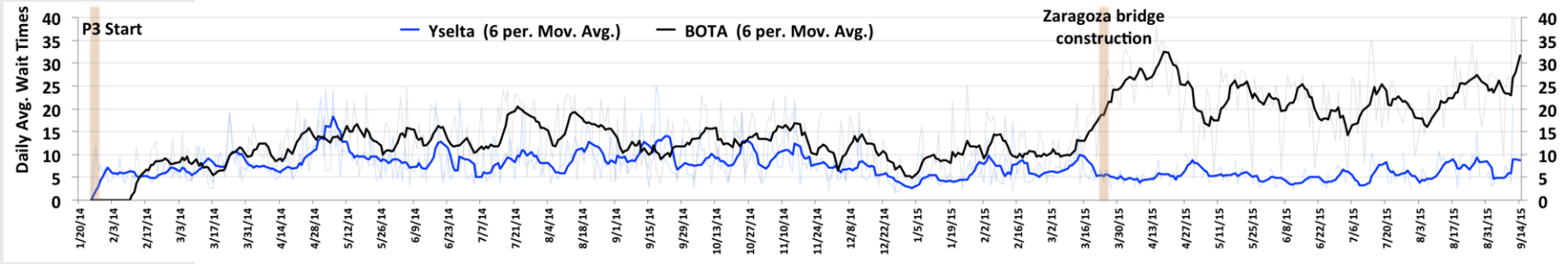
- Notwithstanding, this analysis uses CBP data because they are currently the most comprehensive

- As part of P3 MOU, CBP began providing hourly and daily wait times on a weekly basis
  - Awaiting access to historical wait times data from before the start of P3

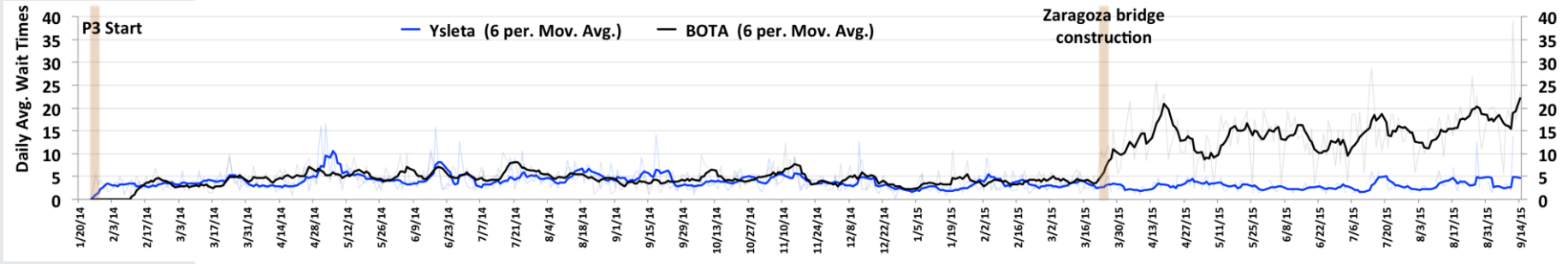
Wait Times (in minutes)

- Wait times data limited to start of P3 program
- Construction disruption until Dec. 2015

Standard Cargo Trucks



FAST Cargo Trucks

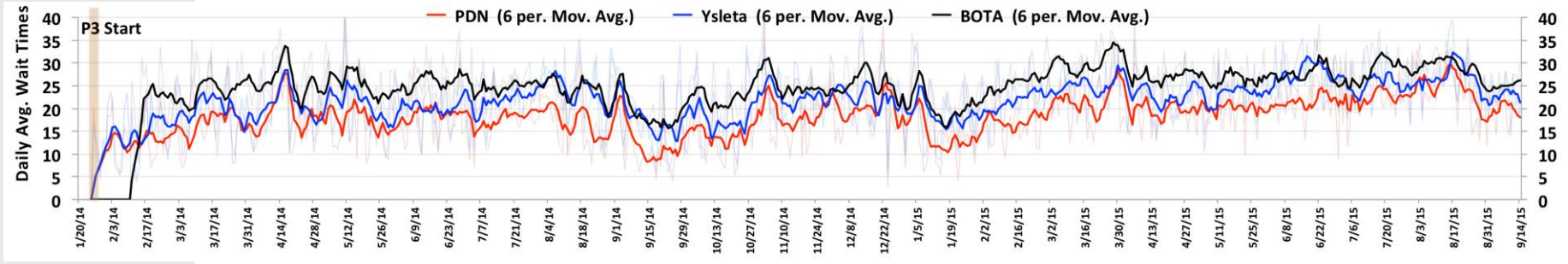


Source: CBP

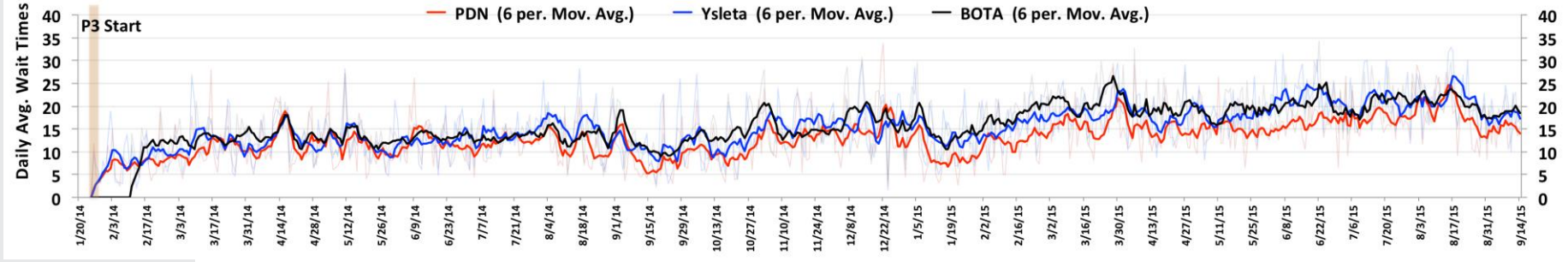
Wait Times (in minutes)

General trends appear across three bridges for standard and Ready lanes

Standard Passenger Vehicles



Ready Passenger Vehicles

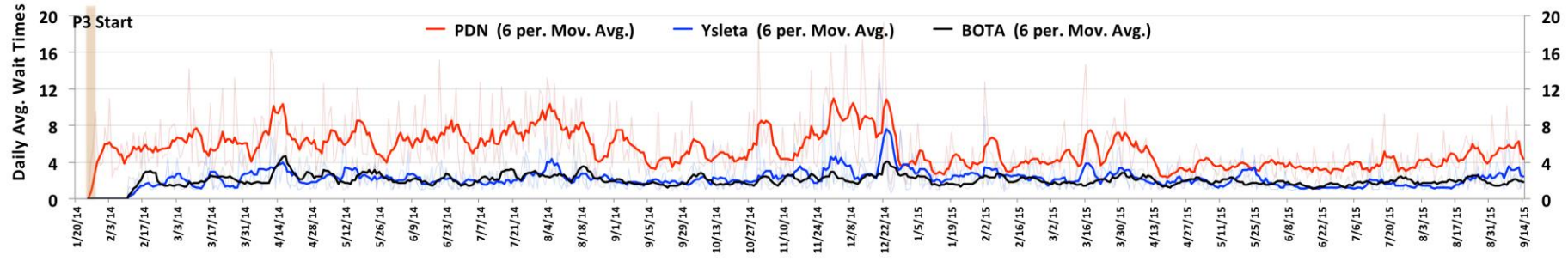


Source: CBP

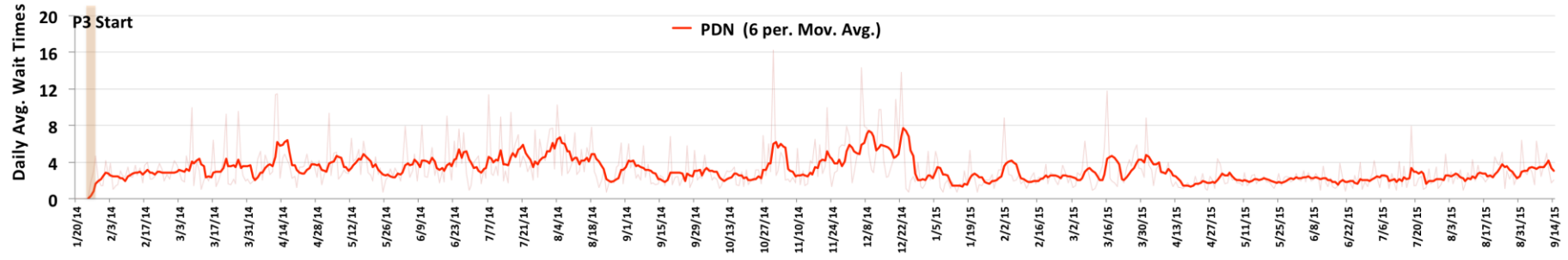
Wait Times (in minutes)

Highest wait times at PDN due to volume

Standard Pedestrians



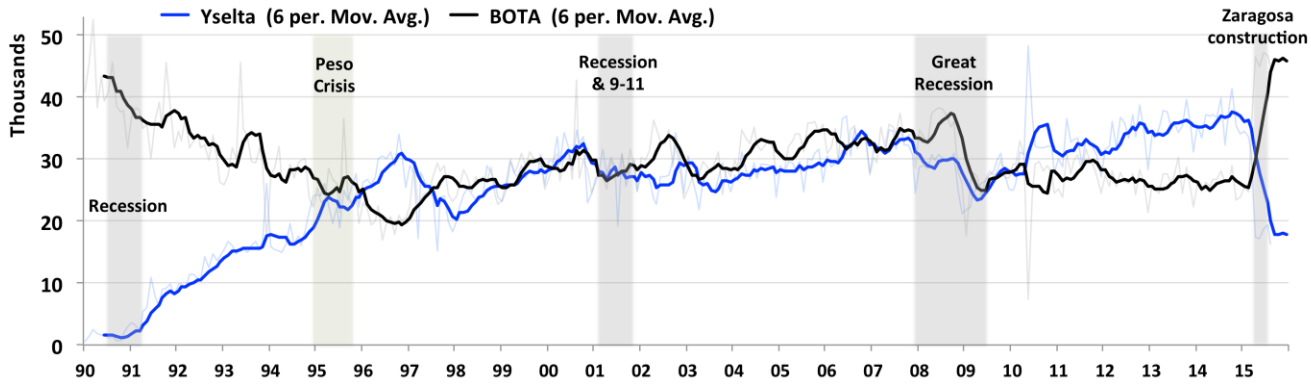
Ready Pedestrians

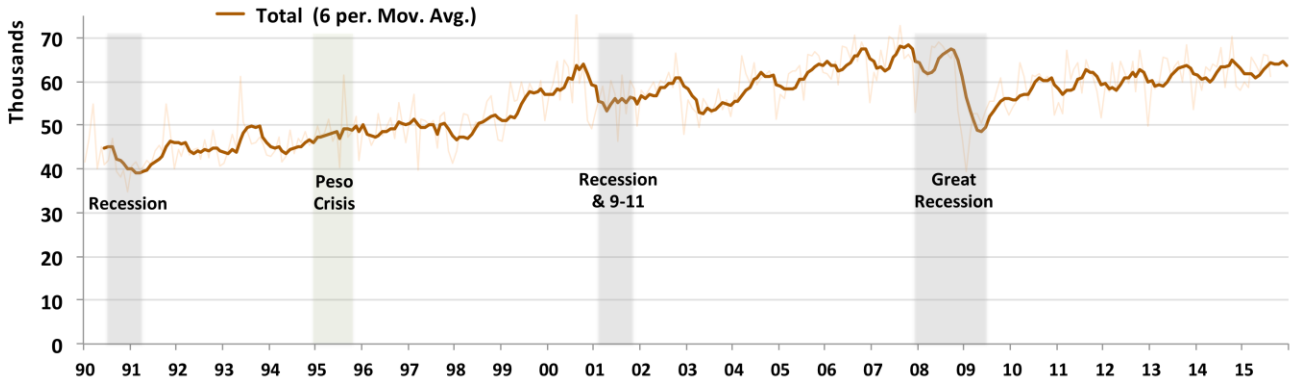


Source: CBP

Cargo Truck Crossings

- Highly correlated to US economic demand and external shocks
- Construction disruption until Dec. 2015

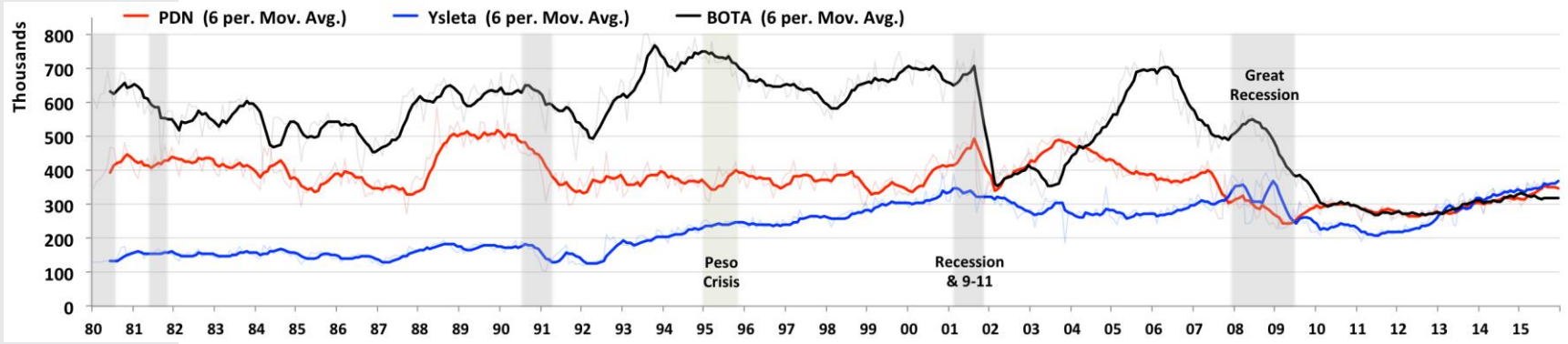


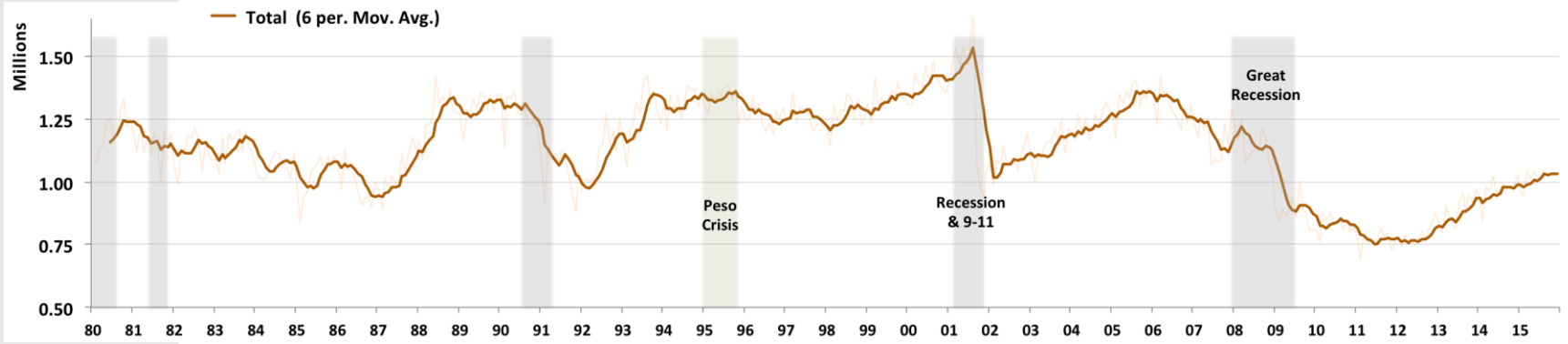


Source: CBP

Passenger Vehicle Crossings

- Correlated to regional social and economic activity and external shocks



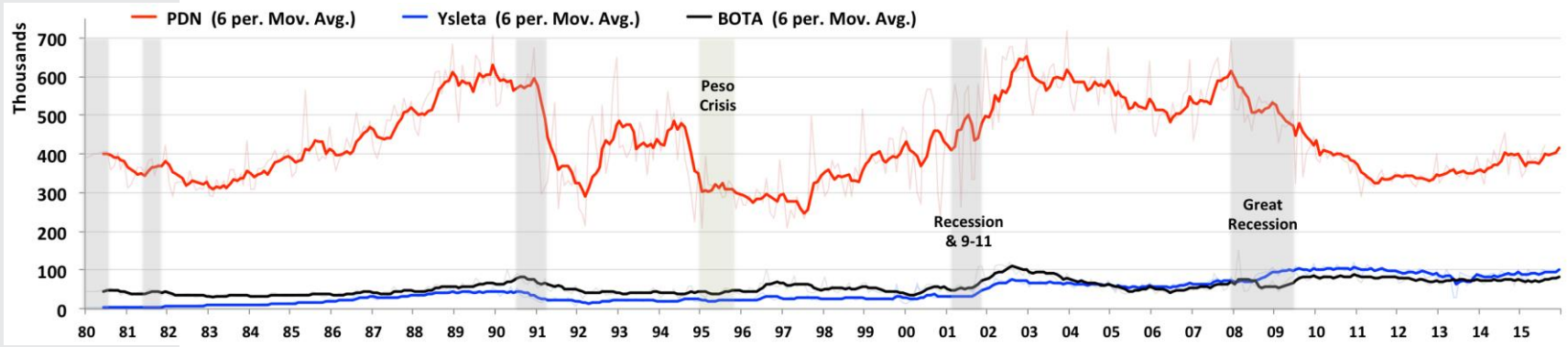


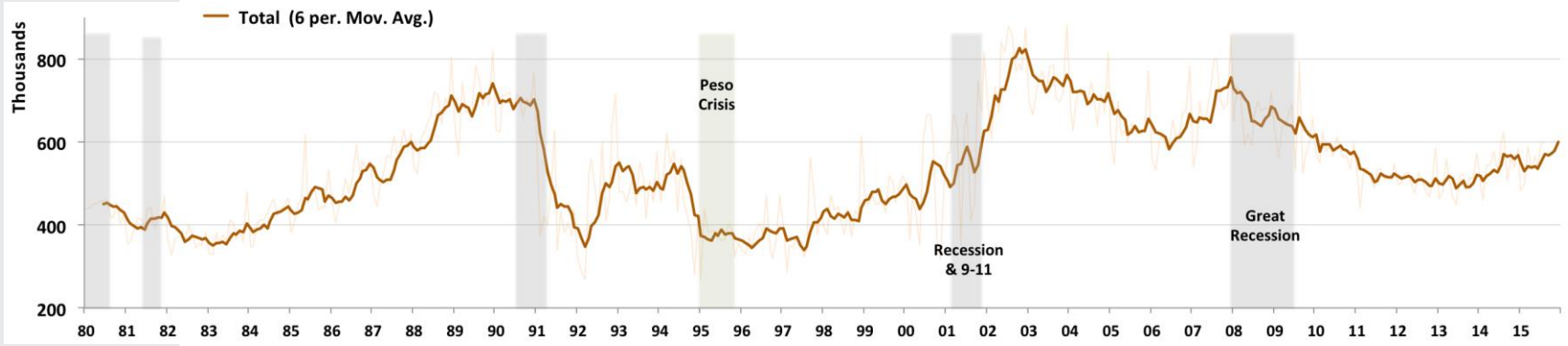
Source: CBP

Note: Ysleta bridge includes Ysleta DCL and PDN bridge includes Stanton DCL

Pedestrian Crossings

- Correlated to regional social and economic activity and external shocks

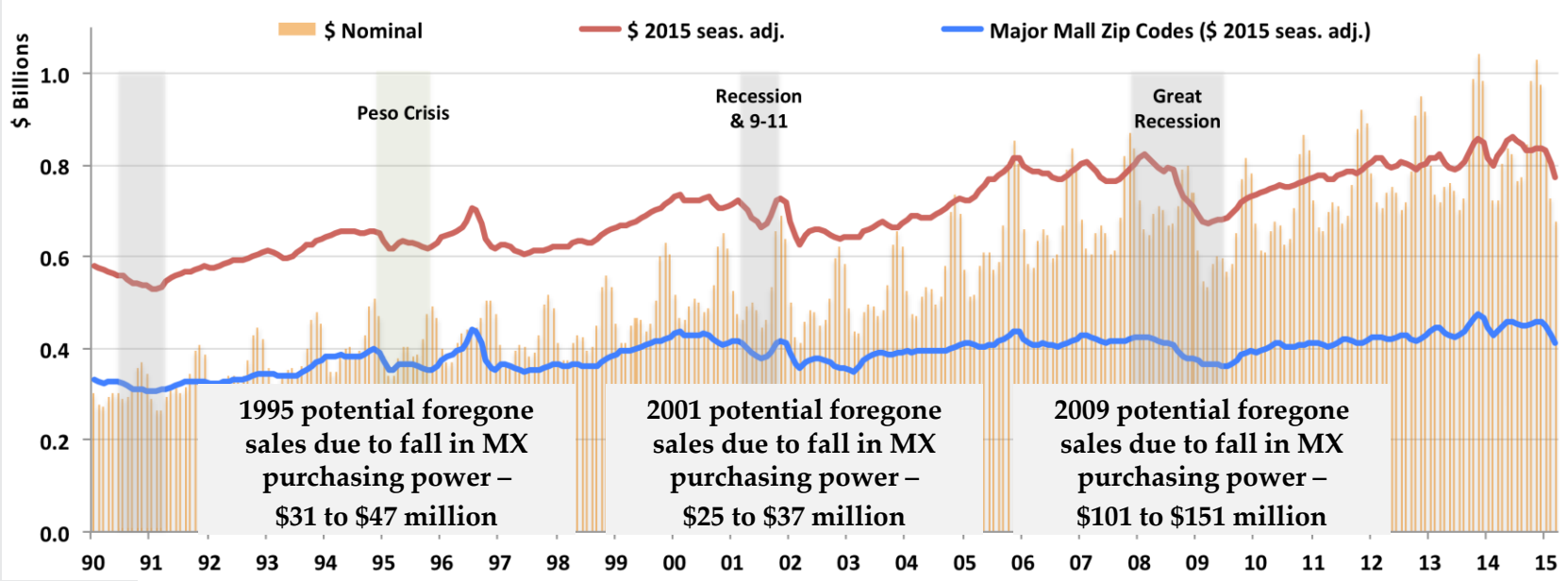




Source: CBP

Trends in Retail Sales

Estimated that MX shocks impact retail sales, overall and in zip codes where primary shopping is located.



Source: TCPA – Quarterly data interpolated using Denton routine and (EP Fed) Business Cycle Index monthly trend.

Trends in Retail Sales by Zip Code

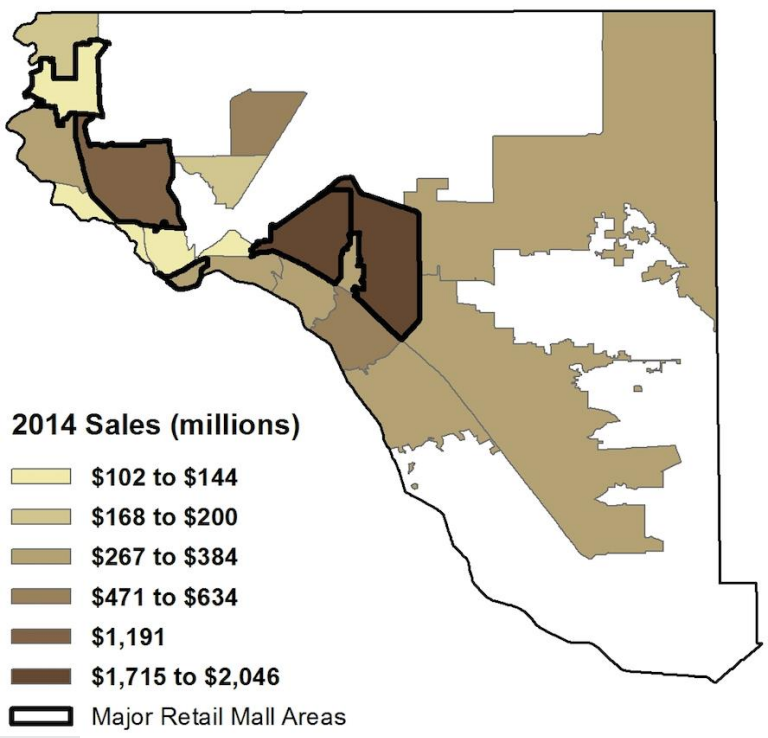
- $45.7 billion in sales between 2010 and 2014

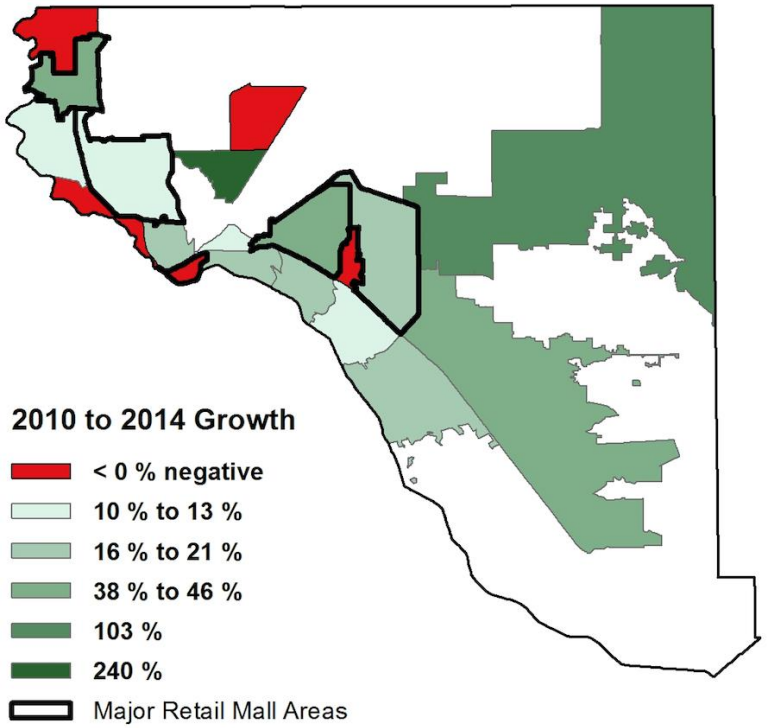
  share of sales by zip codes w/ major shopping malls:

  79925 (20%) ; 79936 (17%) ; 79912 (12%) ; 79901 (4%) ; 79835 (1.4%)

- Downtown – stagnant or negative growth since 1990

  drop of 40% in number of establishments





Source: TCPA

Note: Only zip codes with over $500 million in retail sales from 2010 to 2014 included in maps

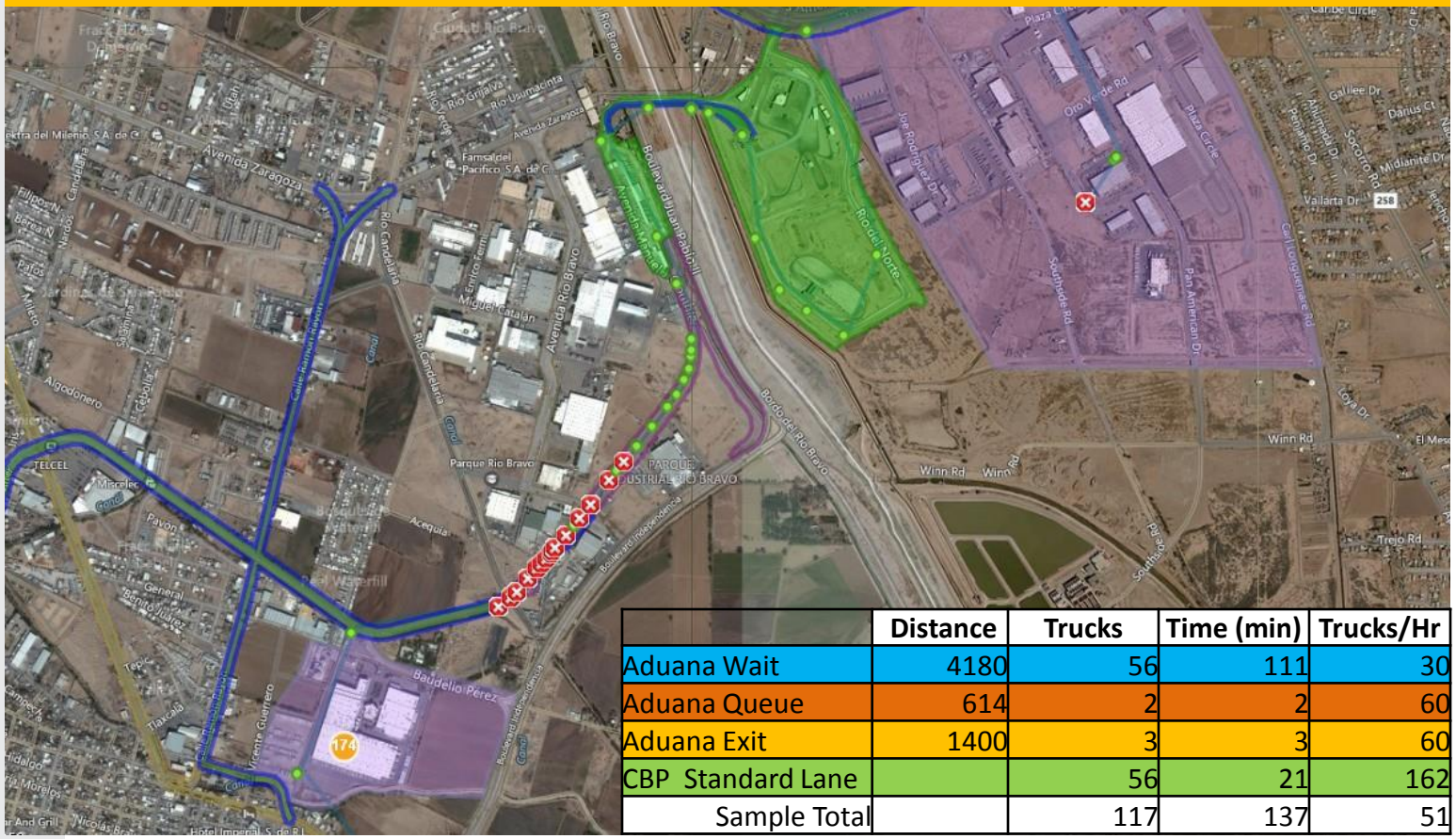
Benefits of Facilitating Crossings and Reduced Wait Times

- Wait times and bridge infrastructure/staffing influence business location decisions.
- Facilitating cargo and personal crossings has a direct impact on the regional economy – output, wages, taxes, and jobs.
- Wait times influence personal crossing decisions and, thus, the social and economic integration and performance of the region.
- According to CBP and the GAO, (lack of) staffing is the biggest obstacle towards improving the cross-border flow of goods and people.

Additional Lane Staffing

Opening an additional lane during peak times can facilitate the flow of an estimated **162 trucks per hour** (Secure Origins).

Zaragoza/Ysleta Standard Lanes: Oct 13, 2015



	Distance	Trucks	Time (min)	Trucks/Hr
Aduana Wait	4180	56	111	30
Aduana Queue	614	2	2	60
Aduana Exit	1400	3	3	60
CBP Standard Lane		56	21	162
Sample Total		117	137	51

Economic Impact Studies

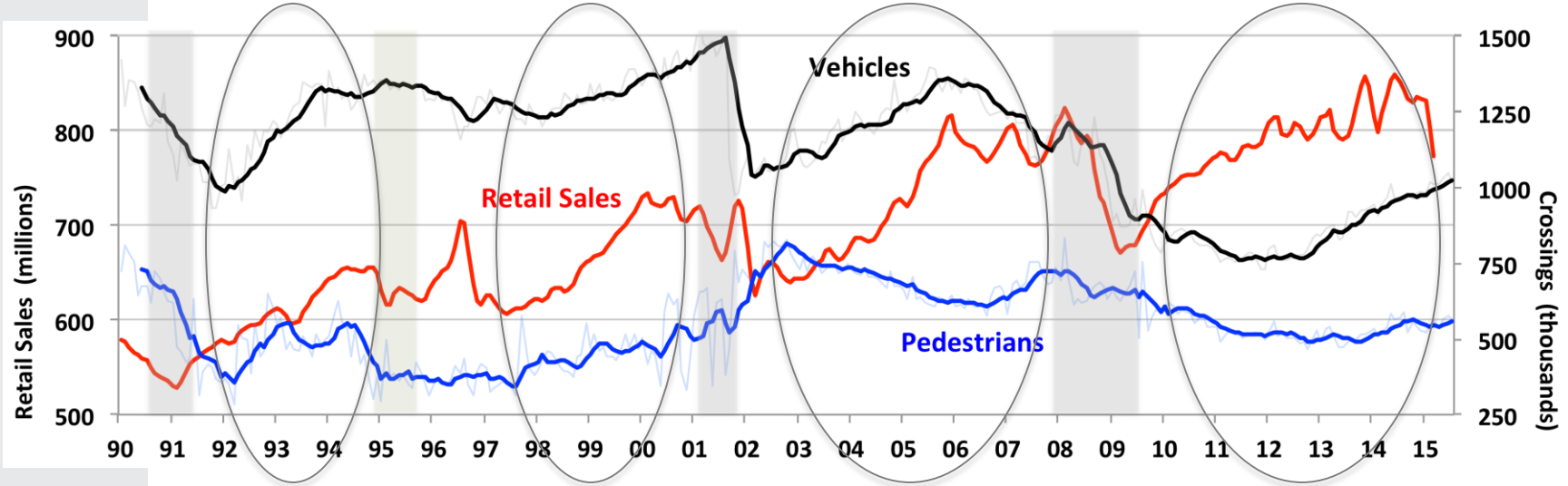
- Losses to US economy in 2008 (2017) due to border delays at El Paso commercial ports of entry estimated at $1.5 ($2.6) billion in output, $400 ($600) million in wages, $200 ($300) million in tax revenues, and 6,700 (11,500) jobs [Accenture (2008), draft report for Intl. Trade Admin.].

- Border dependent businesses and travelers contributed in 2010 to over $1 billion to the El Paso-Cd. Juarez regional economy and support nearly 700 thousand jobs. The 2035 forecast congestion and wait times were expected to contract economy by $54 billion and cost net job loss of 850 thousand [Cambridge Systematics et al. (2011), final report for TXDOT].

- A more comprehensive and scientifically sound study and methodology is needed that includes the regional individual ports of entry and all types of crossings. This will allow us to better isolate the economic impact of wait times.

Retail Sales and Crossings

- Periods of economic stability illustrate the positive relationship (e.g., from 2010 to 2015 $\rho = 0.6$)
- External shocks complicate the relationship



Source: CBP and TCPA Note: Data are seasonally adjusted.

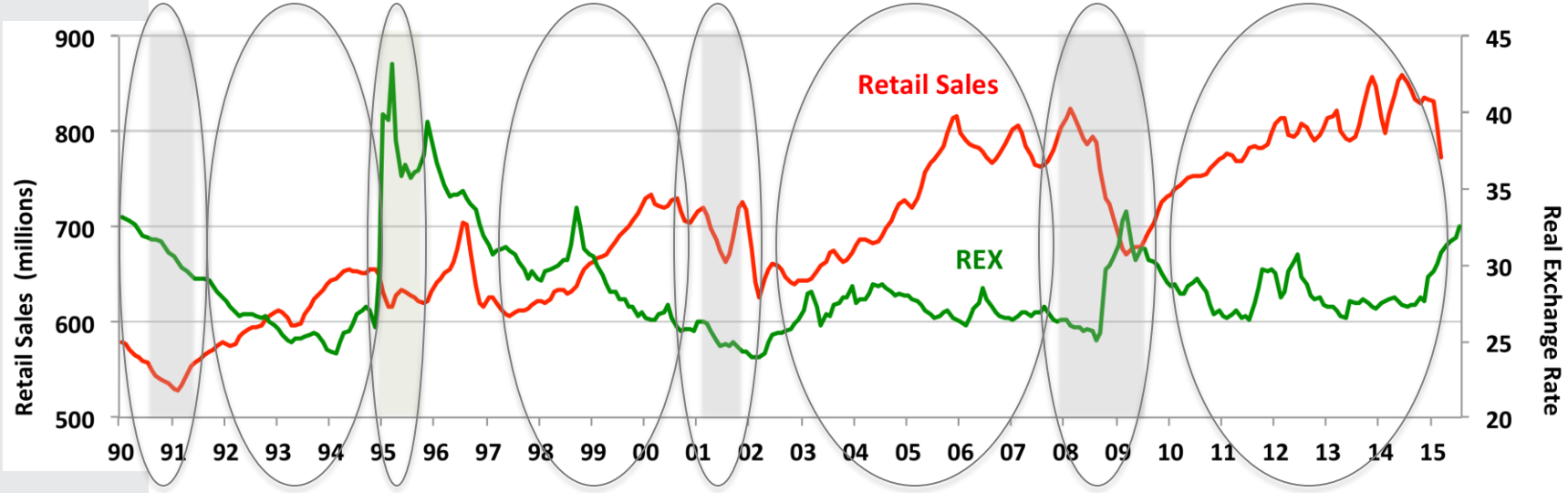
Retail and Exchange Rate

- Exchange rate affects purchasing power and thus crossings
- In periods of economic stability lower REX (stable or strong Peso) improves sales

MX crisis reduces sales

US downturn reduces sales

Global recession reduces sales



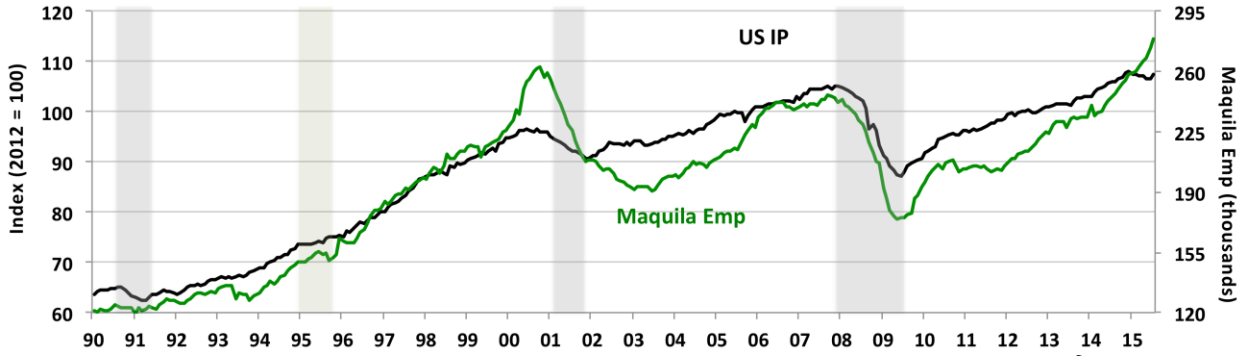
Source: CBP, TCPA, BANXICO, BLS, and INEGI

Note: Data seasonally adjusted.

Predictors of Crossings/Wait Times

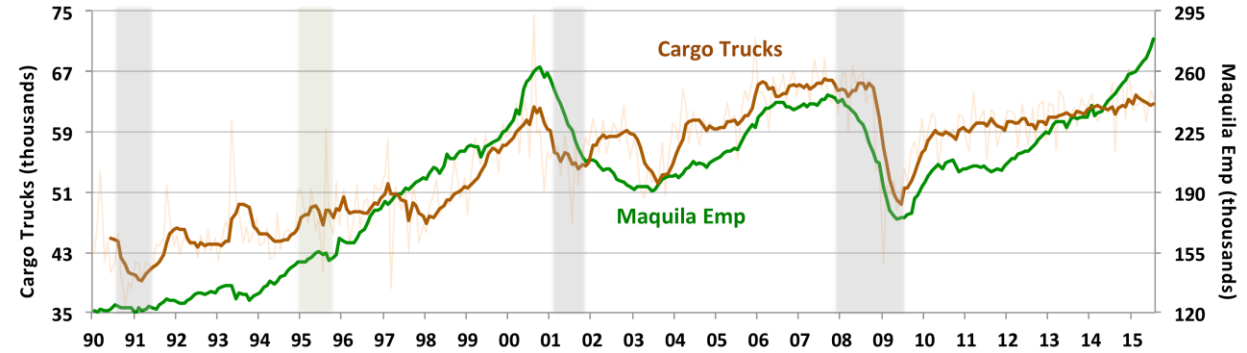
Base model specification

1. US industrial production ($\rho = 0.88$)
2. MX industrial production ($\rho = 0.80$)
3. Cd. Juarez maquiladora and/or nonagricultural employment ($\rho = 0.84$ / 0.38)
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]



Otl

1. Population
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]



Source: CBP, Fed, and INEGI Note: Data seasonally adjusted. Maquila job numbers reflect maquila (1990 to Dec. 2006) estimates extrapolated with nonfarm jobs (Jan. to June 2007) and IMMEX (July 2007 to present) growth rates.

Cargo Crossings Model

Preliminary Regression Equation 1:

$$\Delta(CARGO_t) = \beta_0 + \beta_1*\Delta(MQM_{t-i}) + \beta_2*\Delta(MXIP_{t-i}) + \beta_3*(RXR_{t-i}) + \beta_4*(USIP_{t-i}) + \mu_t$$

Where:

CARGO	=	Northbound Cargo Crossings
MQM	=	Cd. Juarez Maquiladora Employment
MXIP	=	Mexico Industrial Production
RXR	=	Real Exchange Rate (Pesos per Dollar)
USIP	=	U.S. Industrial Production
And:		$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0$

Preliminary Results:

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	16,384.1	3,491.8	4.6922	0.0000
MQM	0.0019	0.0189	0.1019	0.9189
MXIP	18.1795	64.1502	0.2834	0.7771
RXR	-217.6839	75.9047	-2.8679	0.0045
USIP	482.9020	104.8908	4.6039	0.0000
Multiple R	*R Square*	*Adj. R Square*	*F*	*Significance*
0.8443	0.7128	0.7085	165.0591	0.0000

Personal Vehicle Crossings Model

Preliminary Regression Equation 2:

$$\Delta(PV_t) = \beta_0 + \beta_1 * \Delta(JRZM_{t-i}) + \beta_2 * \Delta(RXR_{t-i}) + \mu_t$$

Where:

PV	=	Northbound Personal Vehicle Crossings
JRZM	=	Cd. Juarez Non-agricultural Employment
RXR	=	Real Exchange Rate (Pesos per Dollar)
And:		$\beta_1 > 0, \beta_2 < 0$

Preliminary Results:

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-331,195.7	268,775.6	-1.2322	0.2192
JRZM	4.7669	0.4467	10.6720	0.0000
RXR	-7,921.2716	6,395.3190	-1.2386	0.2168
Multiple R	*R Square*	*Adj. R Square*	*F*	*Significance*
0.6220	0.3868	0.3811	67.5071	0.0000

Pedestrian Crossings Model

Preliminary Regression Equation 3:

$$\Delta(PED_t) = \beta_0 + \beta_1 * \Delta(MQM_{t-i}) + \beta_2 * \Delta(RXR_{t-i}) + \mu_t$$

Where:

PED	=	Northbound Pedestrian Crossings
MQM	=	Cd. Juarez Maquiladora Employment
RXR	=	Real Exchange Rate (Pesos per Dollar)
And:		$\beta_1 > 0, \beta_2 < 0$

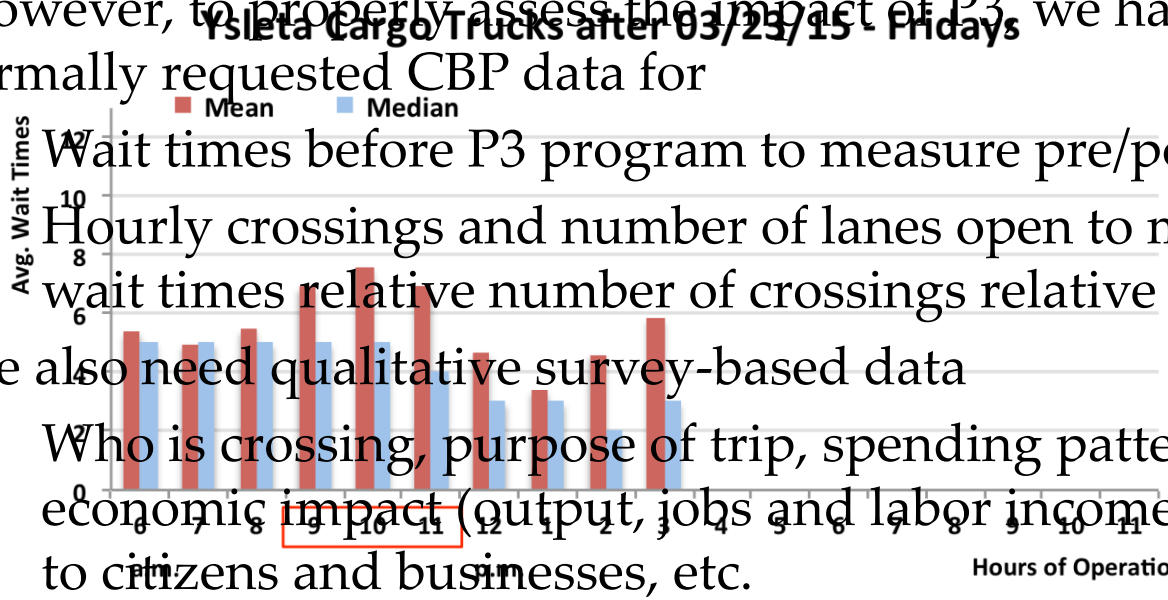
Preliminary Results:

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	874,037.4	82,712.0	10.5672	0.0000
MQM	0.4520	0.1735	2.6055	0.0096
RXR	-14,372.7021	2,311.5634	-6.2177	0.0000
Multiple R	*R Square*	*Adj. R Square*	*F*	*Significance*
0.4048	0.1639	0.1584	29.7964	0.0000

Moving Forward – Data

Currently we can analyze detailed hourly wait times for cargo, vehicles and pedestrians at PDN, Ysleta and BOTA since P3.

- However, to properly assess the impact of P3, we have formally requested CBP data for
  - Wait times before P3 program to measure pre/post
  - Hourly crossings and number of lanes open to measure the wait times relative number of crossings relative lanes open
- We also need qualitative survey-based data
  - Who is crossing, purpose of trip, spending patterns, economic impact (output, jobs and labor income), benefits to citizens and businesses, etc.



Moving Forward – Analysis

- Move from ad hoc estimates to a more comprehensive, scientific and timely methodology using GPS technology installed in cargo trucks
  - GPS data can also be captured using crowd source methods and smart phones for passenger vehicle and pedestrian wait times
    - In collaboration with Metropia
  - Data will be evaluated against CBP wait time estimates

- The importance of reliable and valid wait times data cannot be overstated in order to properly evaluate measureable outcomes.

Summary

- The benefits of reduced wait times and facilitating cross-border flows are well documented. But wait times and crossings influence one another and are influenced by many other factors, including additional staffing provided by the P3 program.
- The objective then is to go beyond descriptive analysis and isolate, as best as possible, via statistical and survey-based methods the impact or benefit of the P3 program.
- Additionally, the Lean Six Sigma projects that bring together experts and stakeholders are helping us identify potential solutions.

Zaragoza Lean Six Sigma Projects

Commercial Wait Time Reduction

- Event #1: Lean Six Sigma Value Stream Mapping – September 17th-18th, 2015
- Event #2: Lean Six Sigma Champion Training – September 30th – October 1st, 2015
- Event Participants: U.S. Customs and Border Protection, Department of Public Safety, Promofront, Congressman Beto O'Rourke's Office, Transportistas, Desarrollo Económico de Ciudad Juárez, MFI International, Secure Origins, Customs Brokers, TMAC, City of El Paso
- Maquila Tour in Ciudad Juarez – October 5th, 2015: TPI Composites and Bombardier Recreational Products (BRP)

Zaragoza Lean Six Sigma Projects
Commercial Wait Time Reduction

- List of Potential Improvement LSS Project, among others, include:
  - Use of Intelligent Transportation Systems signage
  - Pilot program for scheduling truck arrival at the port
  - Proposed reduction/management of empty truck crossings
  - Traffic control improvements on both sides of the border
  - Expand electronic tolling usage

  -- A total of 22 potential projects were identified for the Zaragoza POE

- LSS Steering Committee Meeting– November 5th, 2015

- Advanced project development started for LSS-related projects to make them eligible for state and federal funding

THE CITY OF EL PASO INTERNATIONAL BRIDGES

Progress Report of the Section 560 Annex (P3 Program) between the City of El Paso and U.S. Customs and Border Protection

Strategic Goal # 7- Enhance and Sustain El Paso's Infrastructure Network

7.3. Enhance Regional Comprehensive Transportation System