



Private Data in the Public Interest



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Digital Geographic Research Corporation
Santa Barbara, California

Outline

- Technical
 - METRIS in the ports of Los Angeles and Long Beach
 - Broader concept of METRIS
- Institutional
 - Successes and challenges
 - Issues of interest to OLT

Background



Image: Google Earth



Source: Unknown



Source: Unknown

Solution

Enter



Metropolitan Transport
Information System



2007-03-02 18:11
I-710 N at DELAMO
Lane 3

CA-9A45949

Pacific Express

POLB >> BNSF

Dep: 2007-03-02 17:48

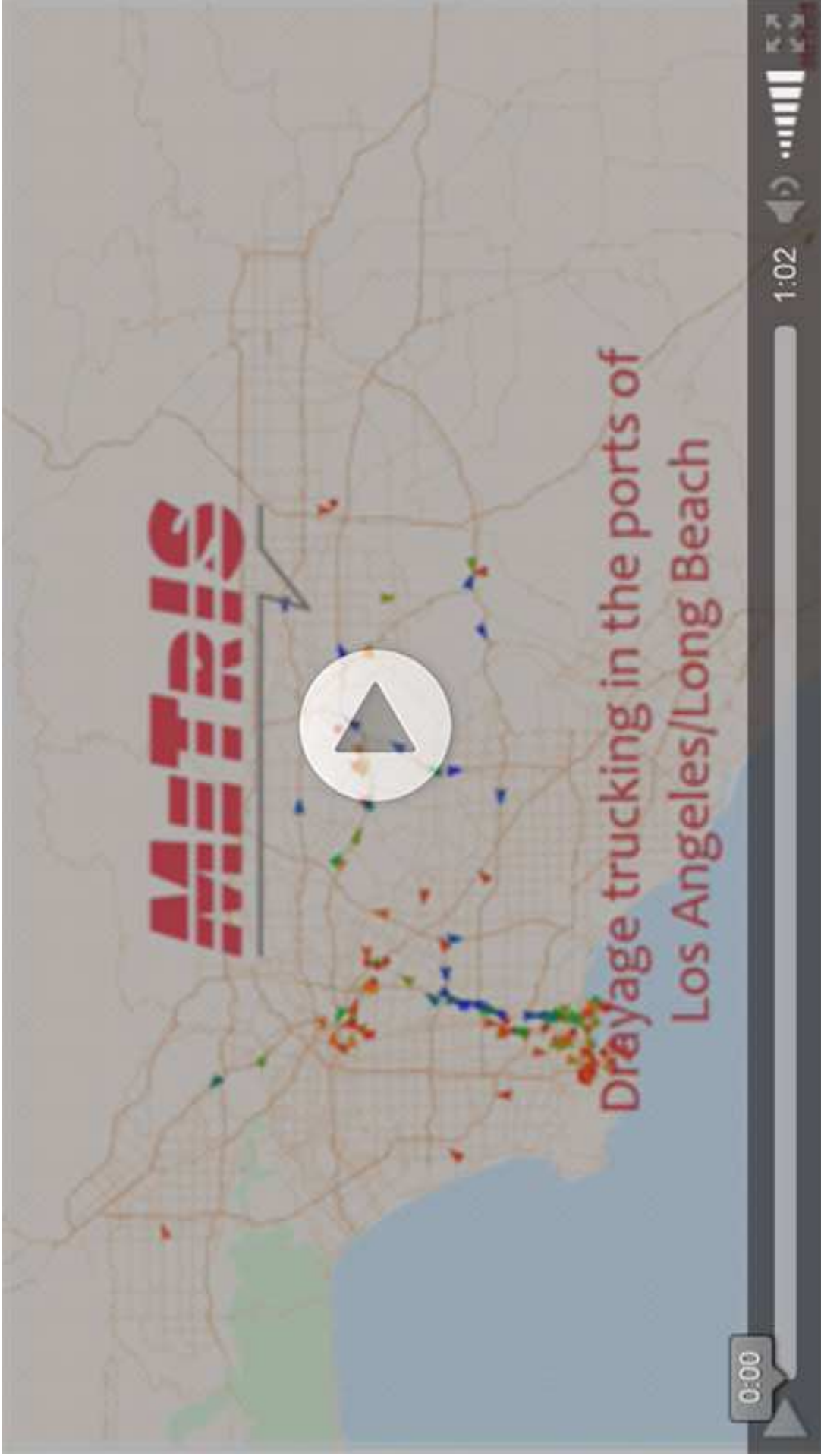
ETA: 2007-03-02 19:25

Driver: Bill Smith

148 Sony TVs

Last rest: 4 hrs

I-710 DELAMO BLVD
2007-03-02 18:11



General Areas of Interest

- Private Interest
 - Where's my truck?
 - Where are my goods?
 - ETA?
 - Detention claims (\$\$\$)
 - Route guidance
 - Fuel efficiency
 - Stolen truck recovery
 - Automation of logs and documentation
- Public Interest
 - Operations
 - Security
 - Planning

Public: Planning/Operations

- Where do trucks ply? Origin? Destination?
- What routes?
- What time of day? What days of week?

Public: Planning/Operations

- Travel time (in real-time) and turn tables
- Detention at terminals and warehouses
- Illegal use of streets, parking
- Congestion and queues

1: Inside the Port: Congestion



Source: Unknown

US Congress wades into port congestion, labor issues

Mark Szakonyi, Executive Editor, JOC.com | May 13, 2015 4:00PM EDT



WASHINGTON — In the aftermath of the crippling West Coast longshore labor negotiations, legislation pushed by the third-ranking Senate Republican aims to keep Congress more in the loop on port congestion flare-ups and gauge how labor negotiations impact port performance.

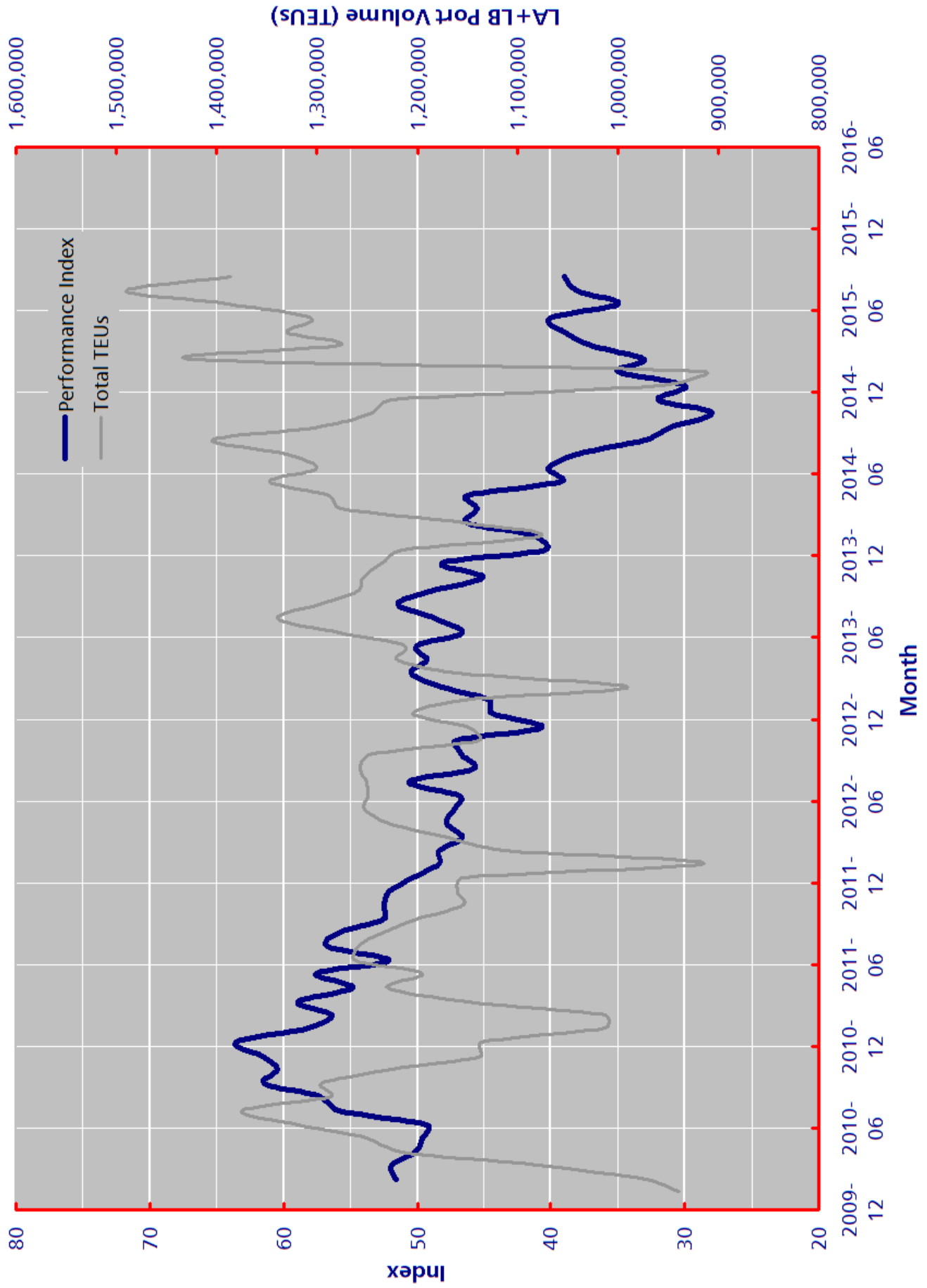
The legislation — co-introduced by Sen. John Thune of South Dakota — would also require the Bureau of Transportation Statistics to create a port performance statistics program and update Congress annually on the capacity and performance of key ports. In an effort to determine whether labor negotiations have an impact on port productivity, the bill, introduced Wednesday, would require the Department of Transportation to report on the state of port performance before and after the expiration of labor contracts. The DOT reports — done in consultation with the Commerce and Labor departments — would also give legislators estimates on the economic impact and how long it will take for port productivity to be restored.

“The recent labor dispute at West Coast ports underscored how a lack of data and transparency to quantify ongoing problems at our ports can affect businesses from coast to coast,” Thune said in a statement. “At present, statistics for air cargo and even forms of ground transportation are more developed and accessible

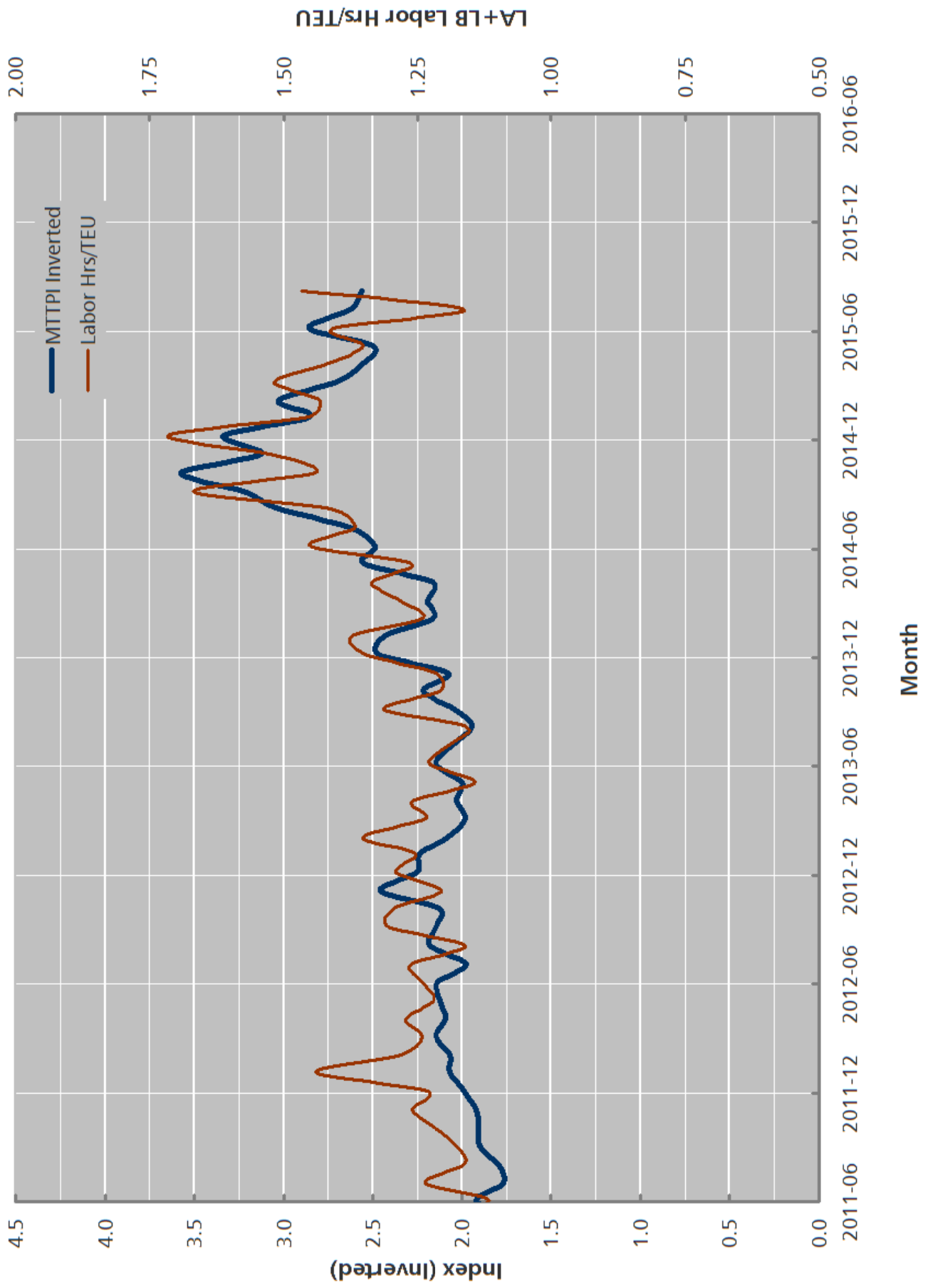
http://www.joc.com/port-news/us-ports/us-congress-wades-port-congestion-labor-disruption-issues_20150513.html



METRIS Turn Time Performance Index, and Container Volume

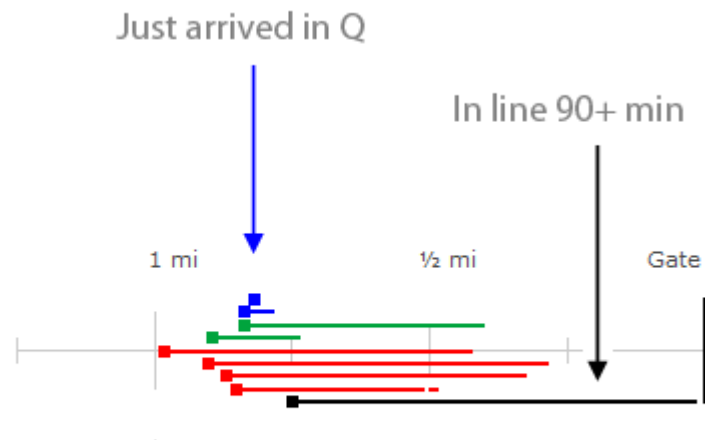


METRIS Turn Time Performance Index (Inverted), and Labor Hrs/TEU



PIER PASS VIDEO

LiveQ



Joined Q: ■ 0-15 ■ 15-30 ■ 30-60 ■ 60-90 ■ >90 min ago

Tue 2012-05-29 18:52:12





Los Angeles-GGS Gate Camera 01/02/2015 16:10:31

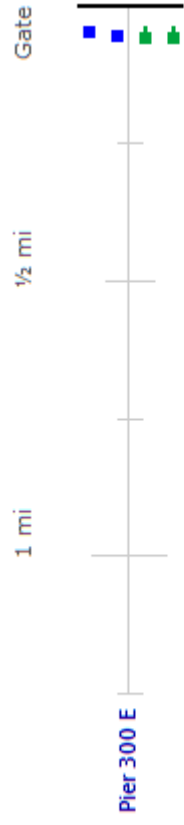


Los Angeles-GGS Gate Camera 01/05/2015 19:28:37



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Fri 2015-01-02 16:12:17



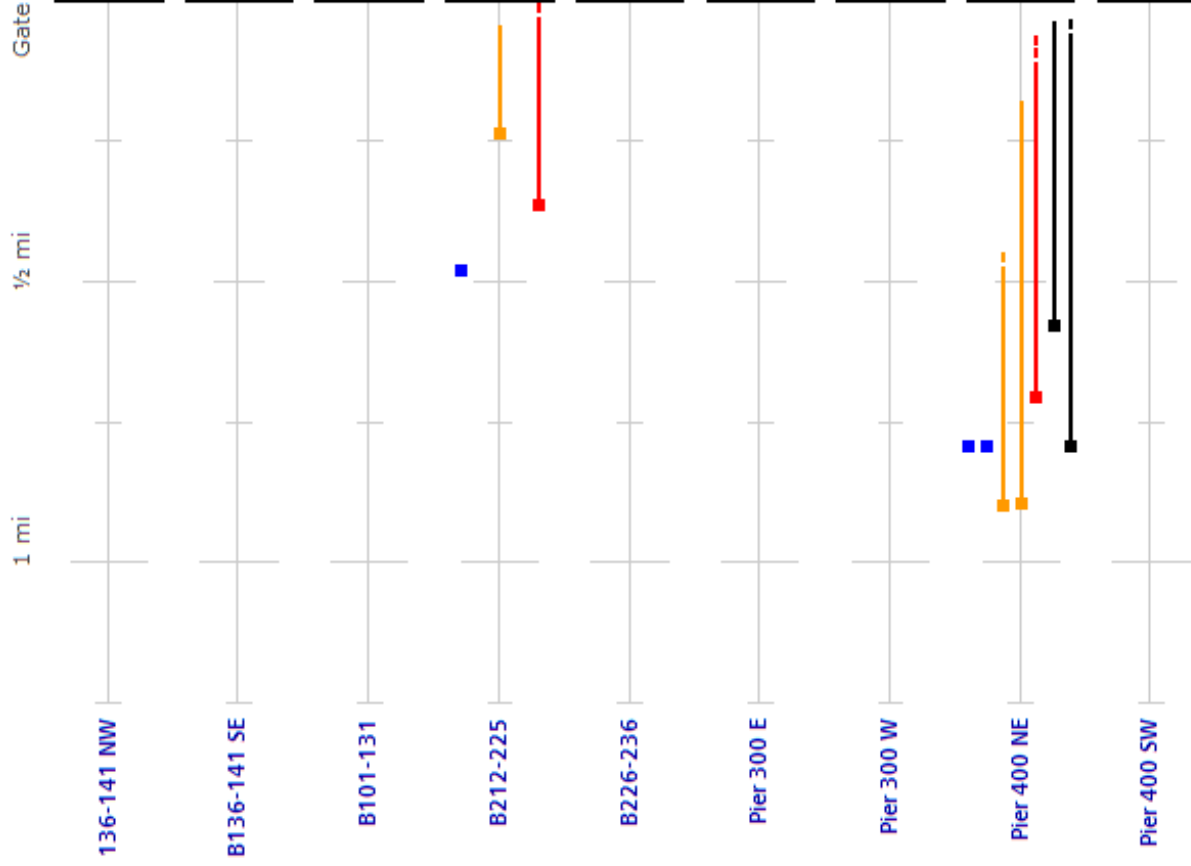
Joined Q: 0-15 15-30 30-60 60-90 >90 min ago

Mon 2015-01-05 19:27:01



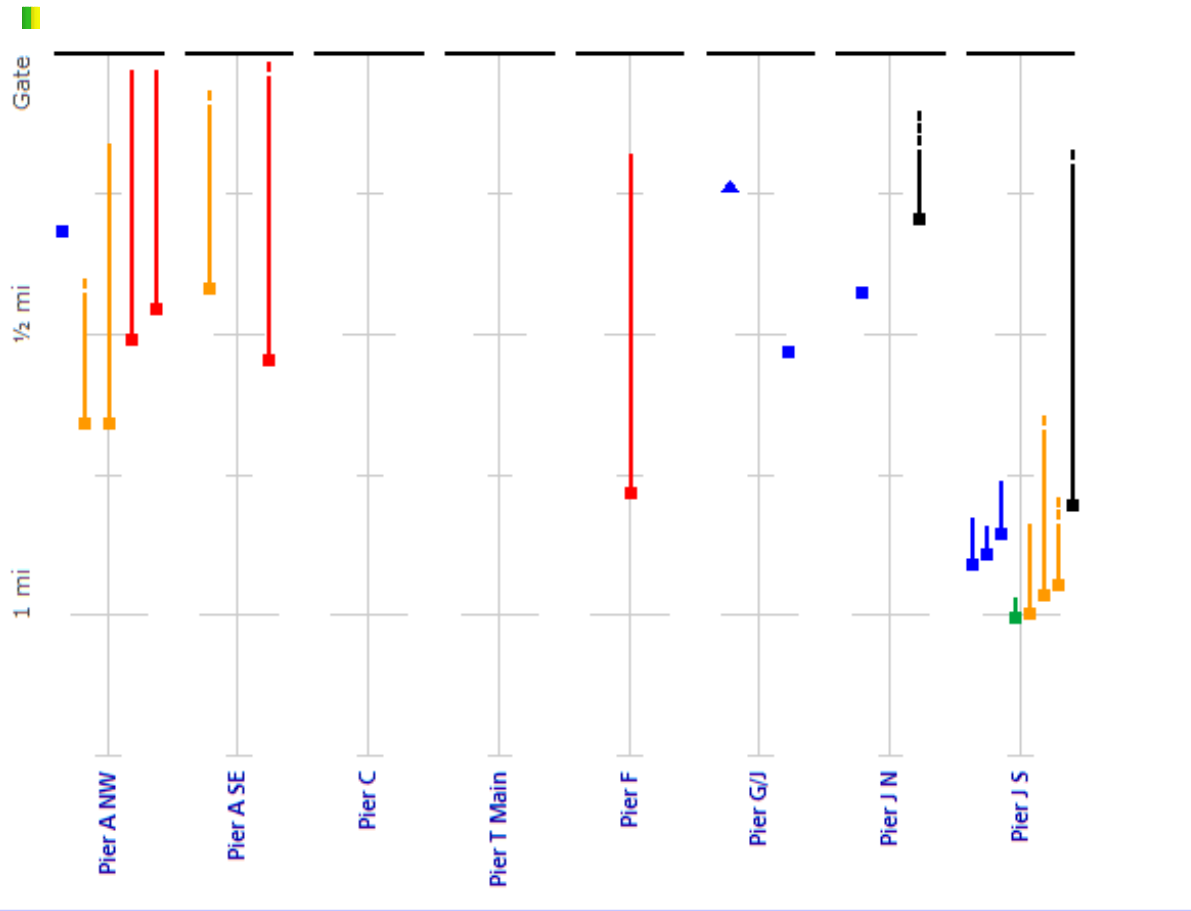
POLA Gates

POLB Gates



Joined Q: ■ 0-15 ■ 15-30 ■ 30-60 ■ 60-90 ■ >90 min ago

Mon 2015-01-12 19:06:01 



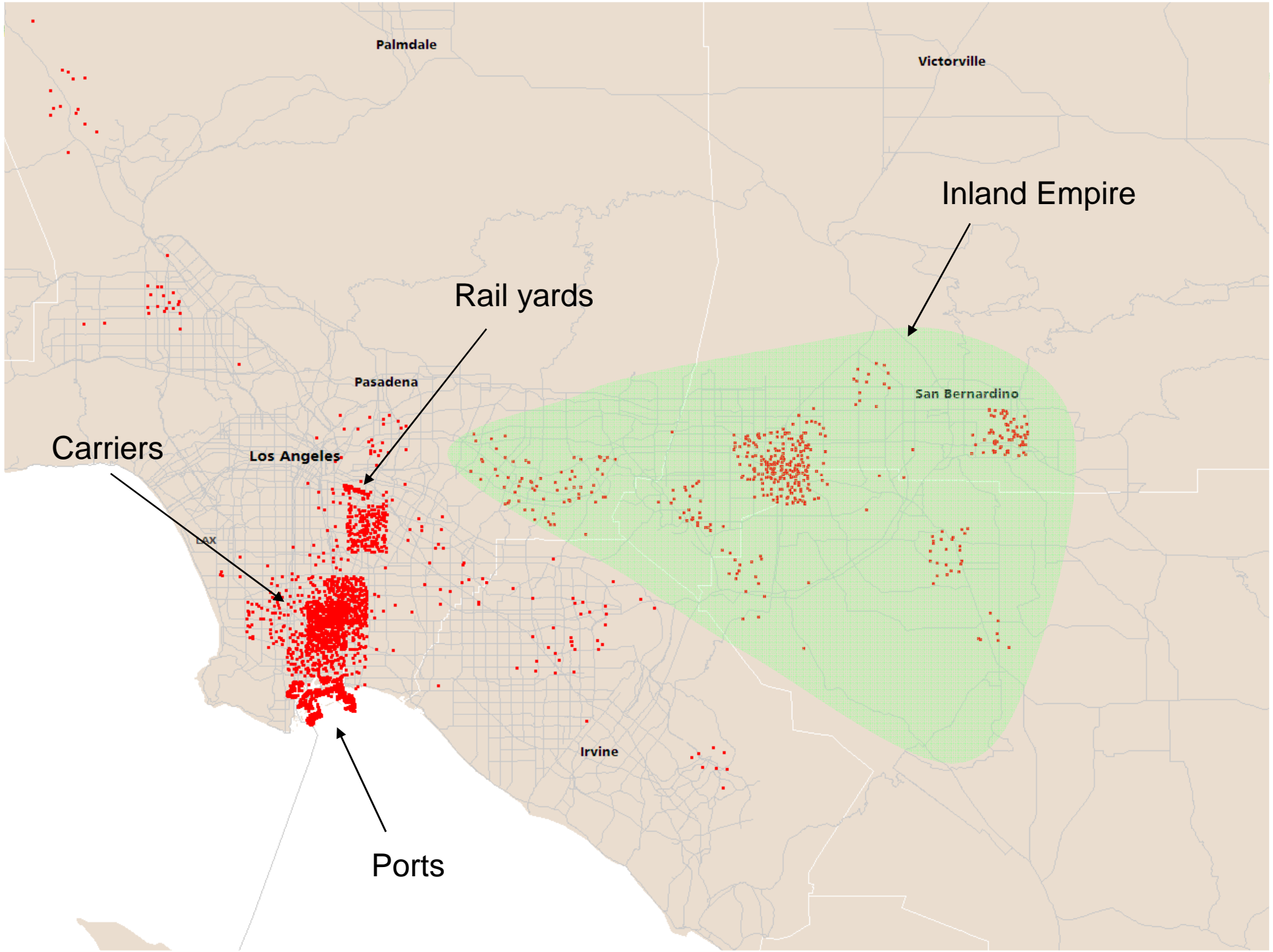
Joined Q: ■ 0-15 ■ 15-30 ■ 30-60 ■ 60-90 ■ >90 min ago

Mon 2015-01-12 19:06:01 

2: Outside the port

Focus on
unproductive
travel





Palmdale

Victorville

Inland Empire

Rail yards

Carriers

Los Angeles

Pasadena

San Bernardino

Irvine

Ports

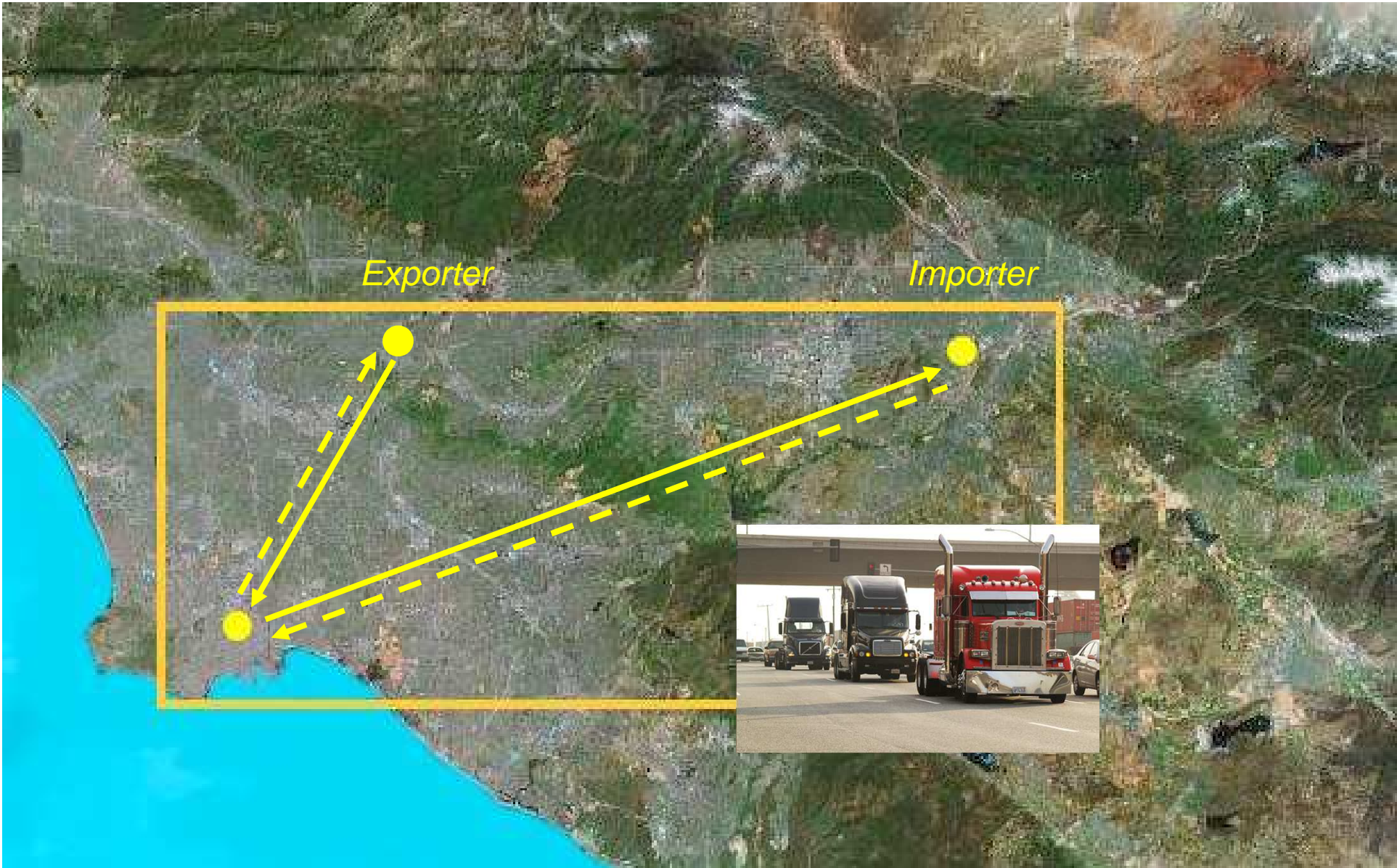


Image: Google

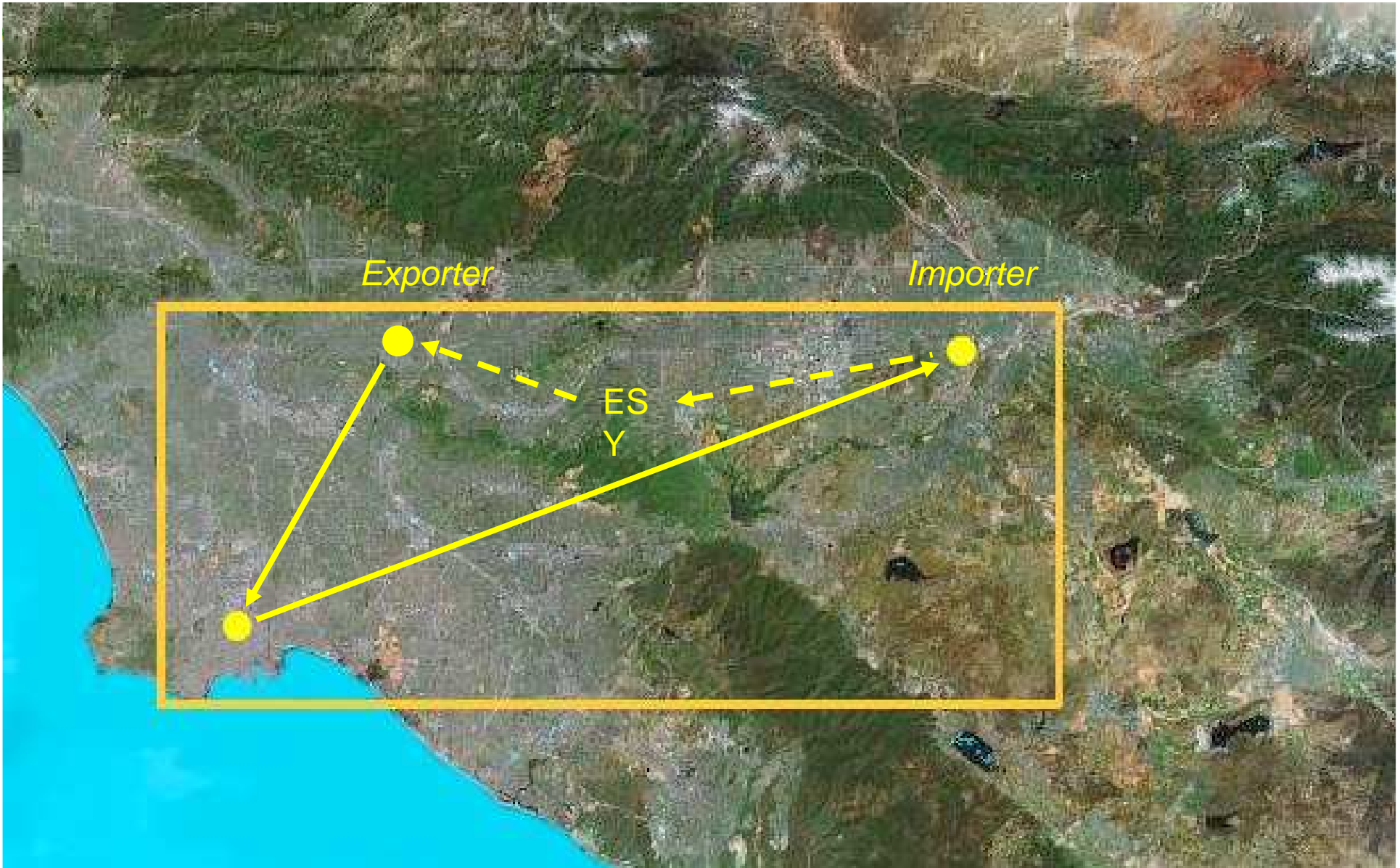
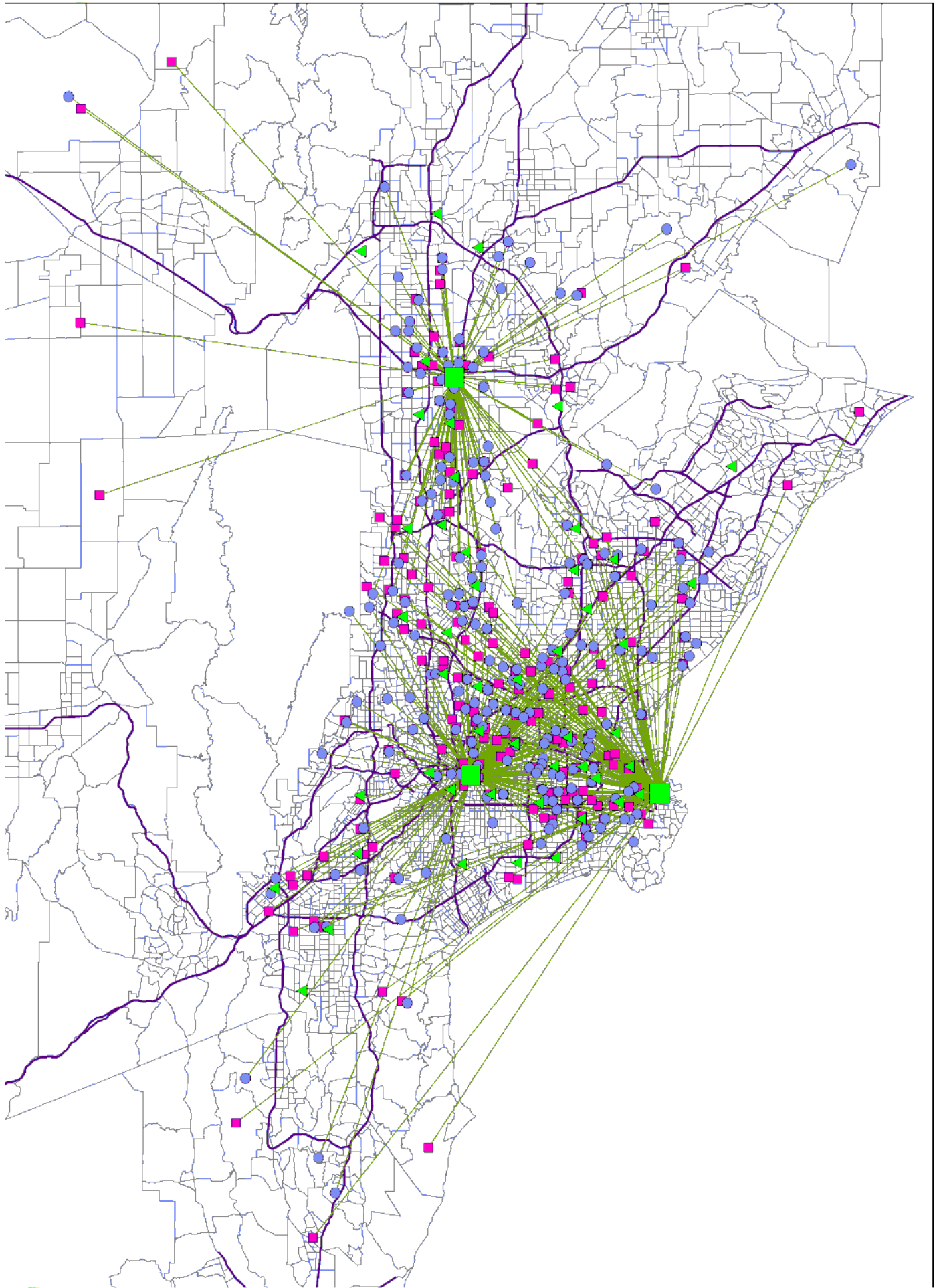


Image: Google



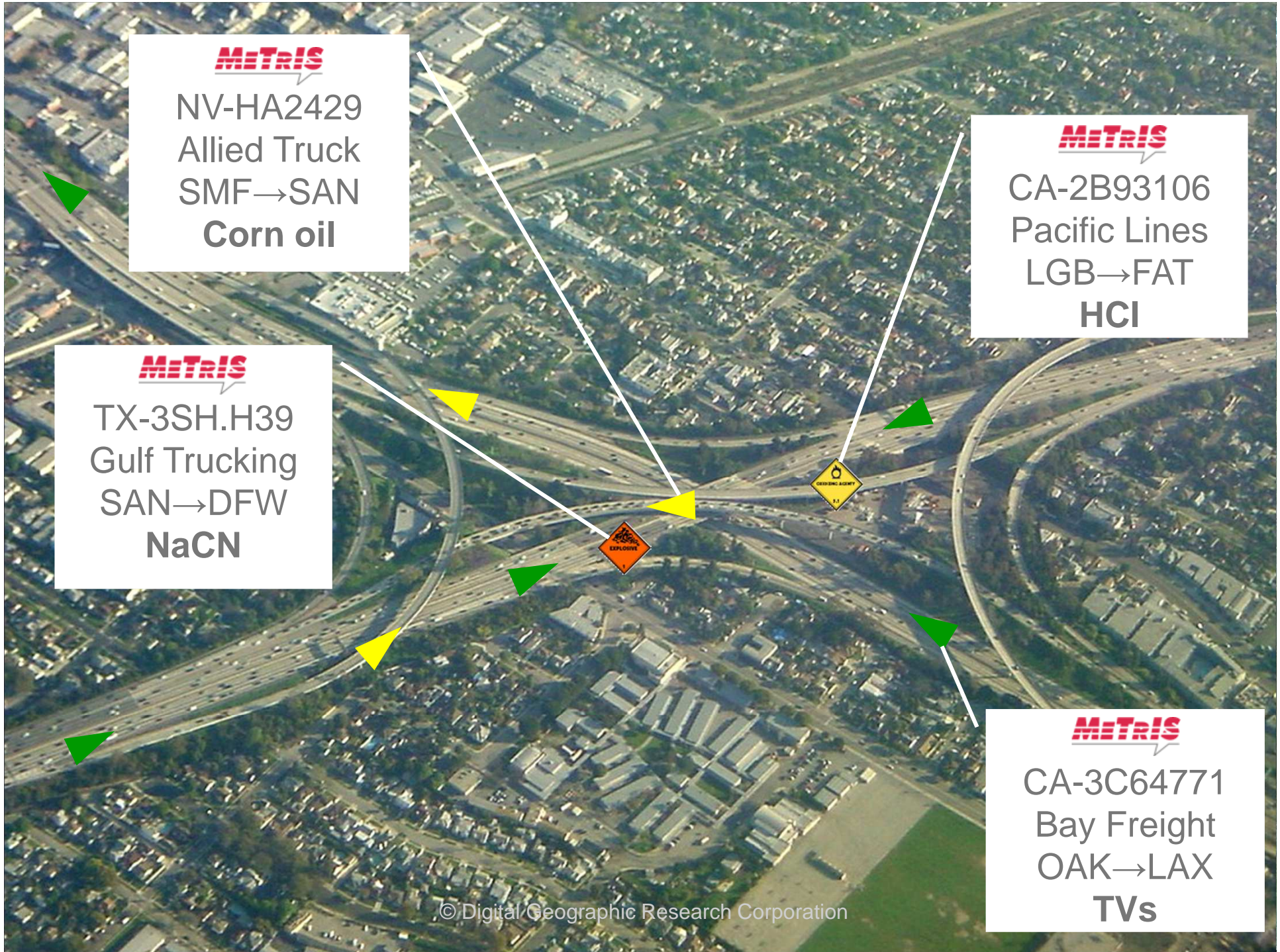
ESY Benefits

- Returning empties to port
 - 10,000 trips/day
 - 400,000 km/day
- Savings with ESYs
 - 74,000 km/day
 - 4,500 fewer port entries/day
 - 20,000 l of fuel/day
 - 51 tn of CO₂/day



3: Security Applications

- Transportation events
 - Accidental, deliberate
 - Collisions, derailments, explosions
- Infrastructure threats
 - Natural, accidental, deliberate
 - Loss of key infrastructure: real-time detection
 - Planning resilient transport networks

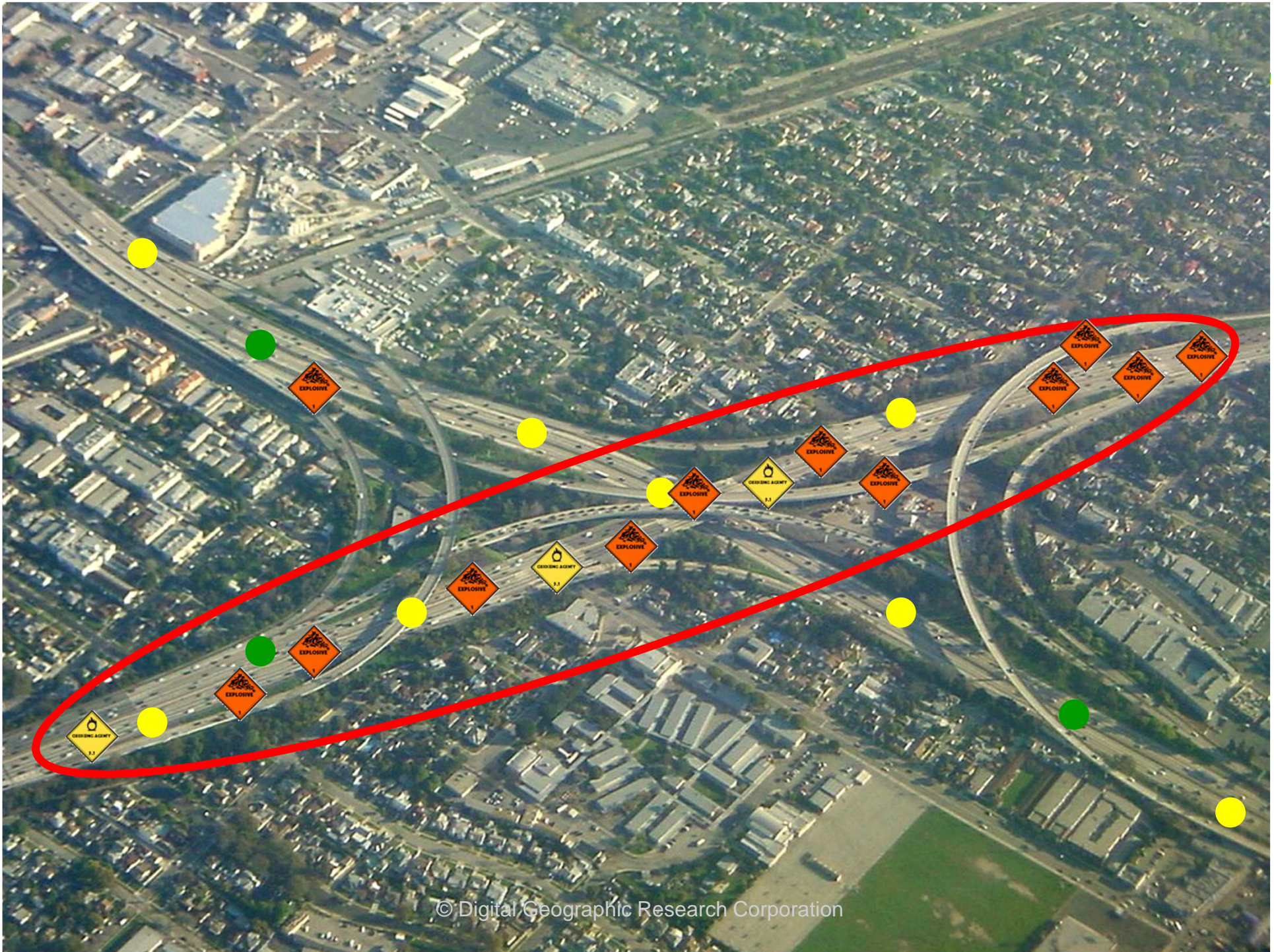


MeTrIS
NV-HA2429
Allied Truck
SMF→SAN
Corn oil

MeTrIS
CA-2B93106
Pacific Lines
LGB→FAT
HCI

MeTrIS
TX-3SH.H39
Gulf Trucking
SAN→DFW
NaCN

MeTrIS
CA-3C64771
Bay Freight
OAK→LAX
TVs



METRIS: Technical Details

- GPS ping
 - Normally every 12 seconds
 - For detailed metropolitan application
- Currently no contact with driver
- App under development:
container ID, destination





BNSF's problem

Image: Bing



METRIS route compliance

Outline

- Technical
 - METRIS in the ports of Los Angeles and Long Beach
 - Broader concept of METRIS
 - Private passenger vehicles
 - Pedestrians, esp. crowd management

- Institutional
 - Successes and challenges

Successes

- Instrumentation: 250 trucks
- 2011 turn time study
 - Ports
 - Truckers
 - Marine terminals
 - Cargo Owners (retailers)
- 2012-13 POLB
- Ongoing analyses





REUTERS

EDITION: U.S.

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inmel

2011年 10月 12日 星期二

There's Hope for Congestion Relief at the West Coast Ports

还有希望在缓解西海岸港口拥堵 来源: Material Handling & Logistics 21/04/2011 16:37

字体大小: [-] [+]

阅读中文版 (机器翻译): 还有希望在缓解西海岸港口

PierPass Inc. and Ability/Tri-Modal Transportation Services Inc. have released the results of a study that uses global positioning system (GPS) tracking to provide a common language and set of facts that the port community can use to discuss truck queuing and terminal visit times at the Port of Los Angeles and Long Beach.

"Truckers and terminal operators have often talked past one another, with truckers relying on anecdotes and emphasizing extreme instances of delay, and terminals quoting gate records that don't count wait times outside of the port. Both have used a metric (turn times) that means different things to different people. With objective, technology-based metrics of queuing and terminal visit times, we can now talk the same language."

The study evaluates three time periods: queue time, spent waiting in line outside the gates, terminal time, and measuring time. The sum of queue and terminal time, measuring time in line outside the gates, and terminal time, will have a solid foundation upon which to build efficiency solutions."

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Key findings of the study include:

- The median queue time in October was 20 minutes and the terminal time 31 minutes, for a total median visit time of 51 minutes.
- The vast majority of visits take less than two hours: 27% are under 30 minutes, 58% under an hour, 75% under 1 1/2 hours, and 86% under two hours. A further 12% of visits take two to four hours, and 1% to 2% of visits take between four and eight hours.
- About 91% of queue times were under an hour.
- The median queue and visit times include trucks that choose to arrive early to wait for the 6:00 p.m. off-peak to start.

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Groundbreaking Study Provides First Comprehensive Measurement of Truck Queuing and Visit Times at the Ports

Tuesday, 12.04.2011 | 21:59 Uhr
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Key findings of the study include:

Supply Chain Logistics 2011

5th - 7th, 2011
at Regency Downs
Dubai, Toronto, USA

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Business News | Fri Oct 24, 2014 11:50pm EDT

Port squeeze threatens US retailers' holiday stocking plans

CHICAGO/LOS ANGELES | BY NANDITA BOSE AND LISA BAERTLEIN



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LA-LB terminals criticized despite improved truck turn times

Bill Mongelluzzo, Senior Editor | Jul 07, 2015 8:08PM EDT



JOC | Port News | U.S. Ports | Port of Los Angeles

Trucker turn times measurement is flawed, consultant says

Bill Mongelluzzo, Senior Editor | Sep 03, 2014 4:10PM EDT



Institutional Issues

- METRIS port application is one example
 - Very large geographic scale: GPS calculations are difficult
 - No traction on ESY: loss of revenue

Challenges

- Compulsive conflict, esp. truckers vs terminals
- Cultural divides: business + government + union + non-union
- Poor understanding of nuanced findings
- Weak leadership: ports are landlords only

Closing Thoughts

Closing Thoughts

- Cool tech! Convergence of buzzwords
 - Big Data, Cloud, IoT, Telematics, M2M
- The private sector wants better services
- Private sector data facilitates that

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Ministério dos
Transportes

