Commission for Environmental Cooperation (CEC) of North America

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Innovation and Technology

- Introduction

- Impacts

- Opportunities to mitigate impacts

- Future applications

- Final Remarks

Introduction

- **Transportation is a function of economic development**

- **Urban area**

  - Traffic congestion is growing in every major city

  - Infrastructure can't keep pace

  - Passenger and commercial vehicles interact making congestion even higher

  - Commercial vehicles in urban areas have much higher emissions than inter-urban trucks

Introduction

- **Intercity/International travel**
  - Congestion at land ports of entry is also increasing
  - Stakeholders with different objectives operate at land ports of entry, making coordination difficult
    - State   Public
    - Federal   Private
  - Security and vehicle safety inspections increase crossing time and make process unreliable

Impacts

- Transactional costs ⬆

- Competitiveness ⬇

- Emission levels ⬆

Opportunities to mitigate impacts

Hyperconnectivity

- Machine-to-machine (M2M) connections in automotive and transportation will triple between 2012 and 2017.

- **Connected Vehicle**
 - Vehicle to Vehicle (V2V)
  - Vehicle to Infrastructure (V2I)

The future vehicle is connected

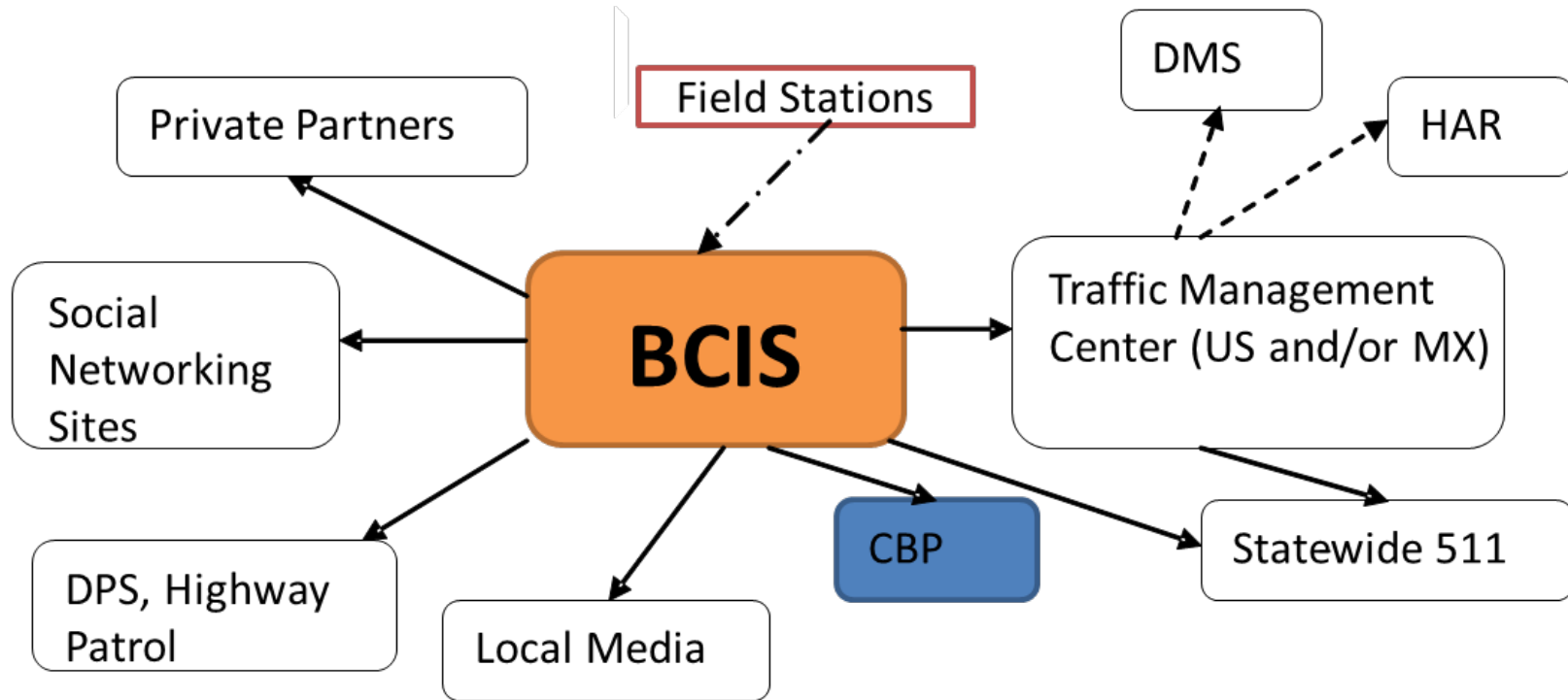M2M connections in automotive and transportation worldwide (in M)
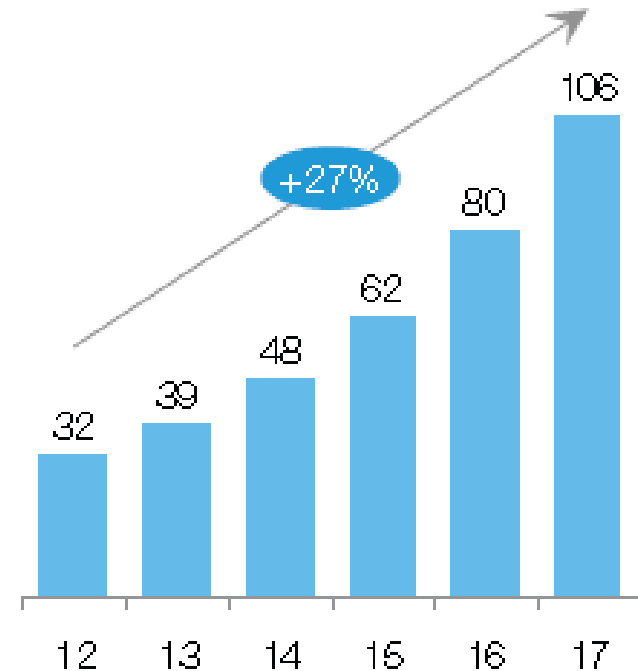
+27%

12	13	14	15	16	17
32	39	48	62	80	106

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Opportunities to mitigate impacts

Border Crossing Time Measurement System

Opportunities to mitigate impacts

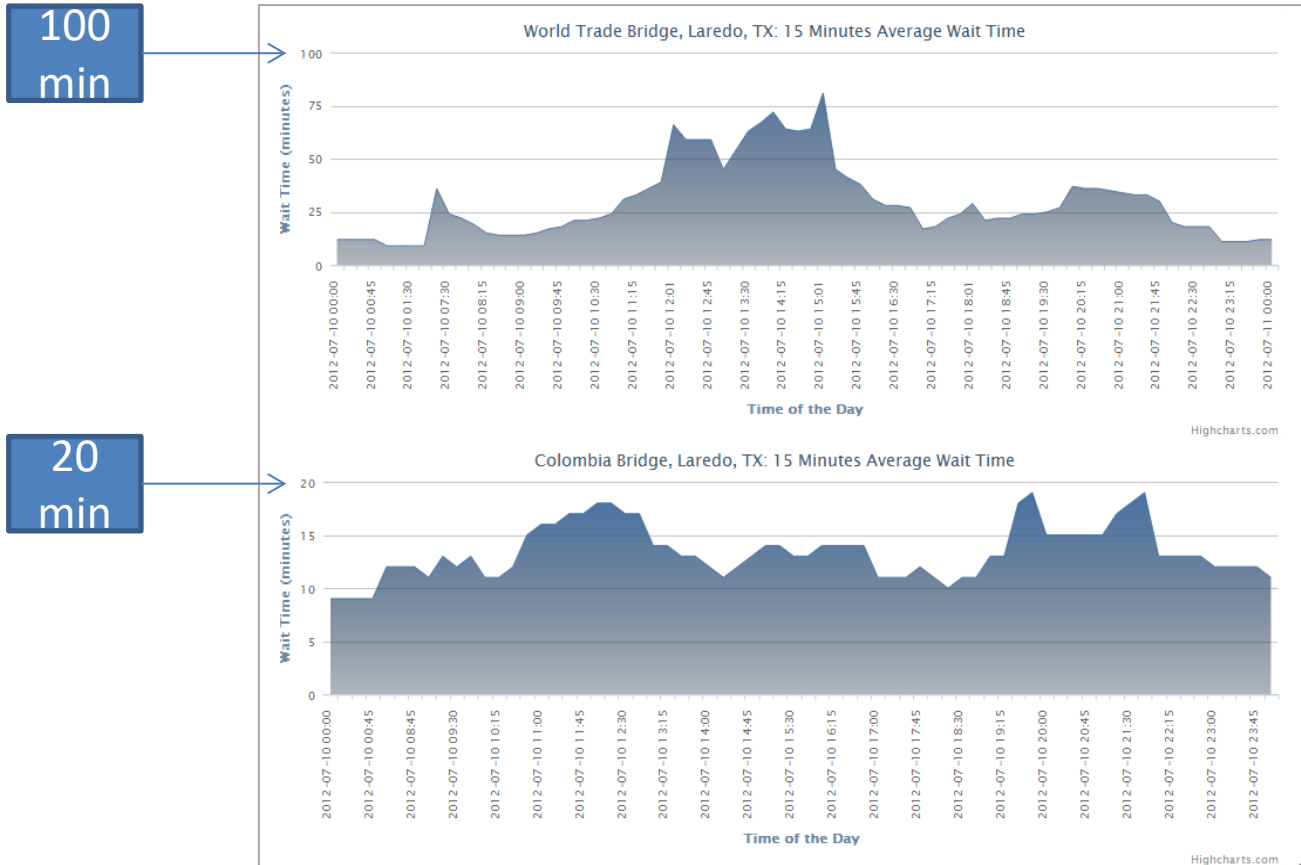**Border Crossing Time Measurement System**
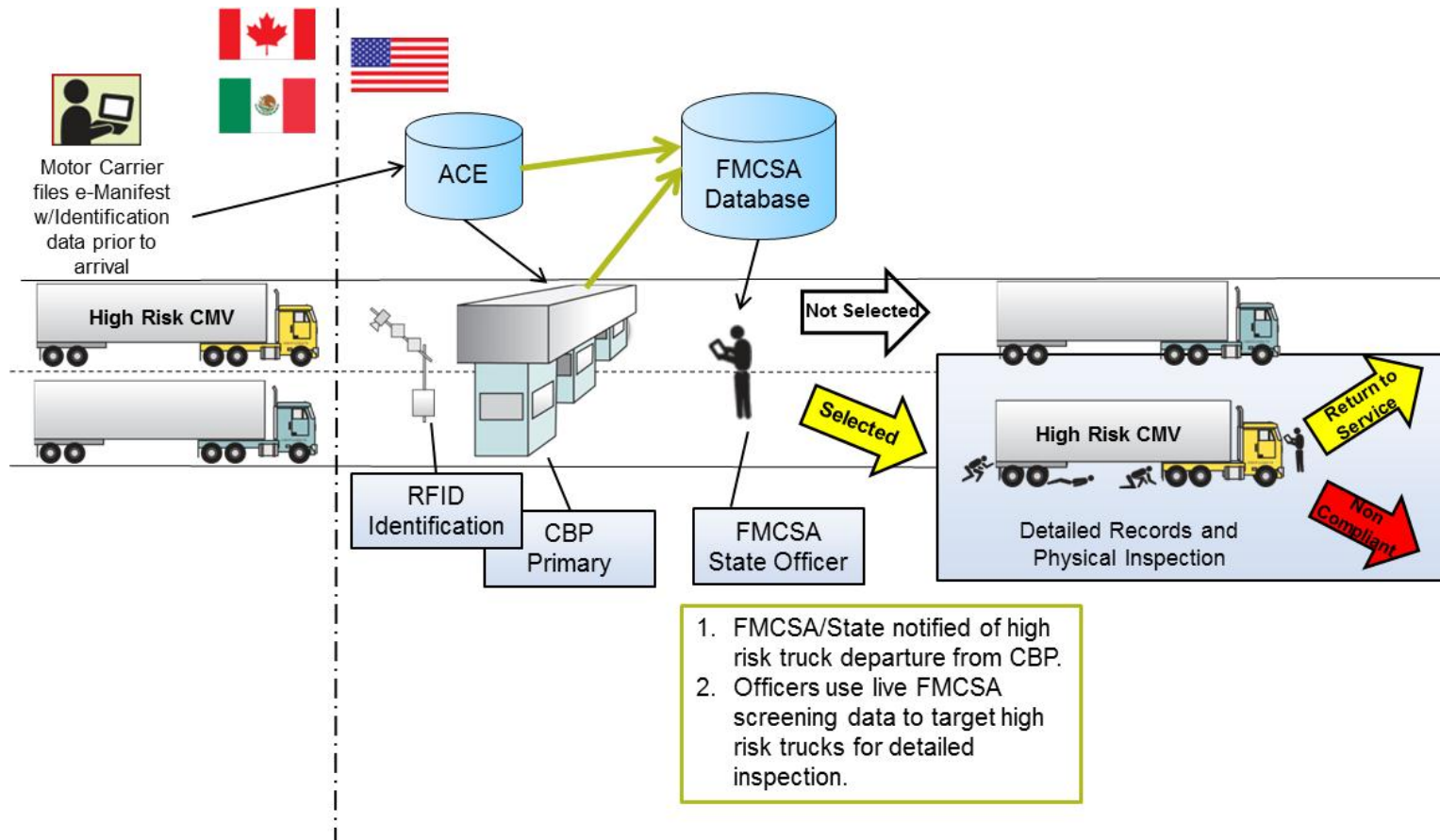

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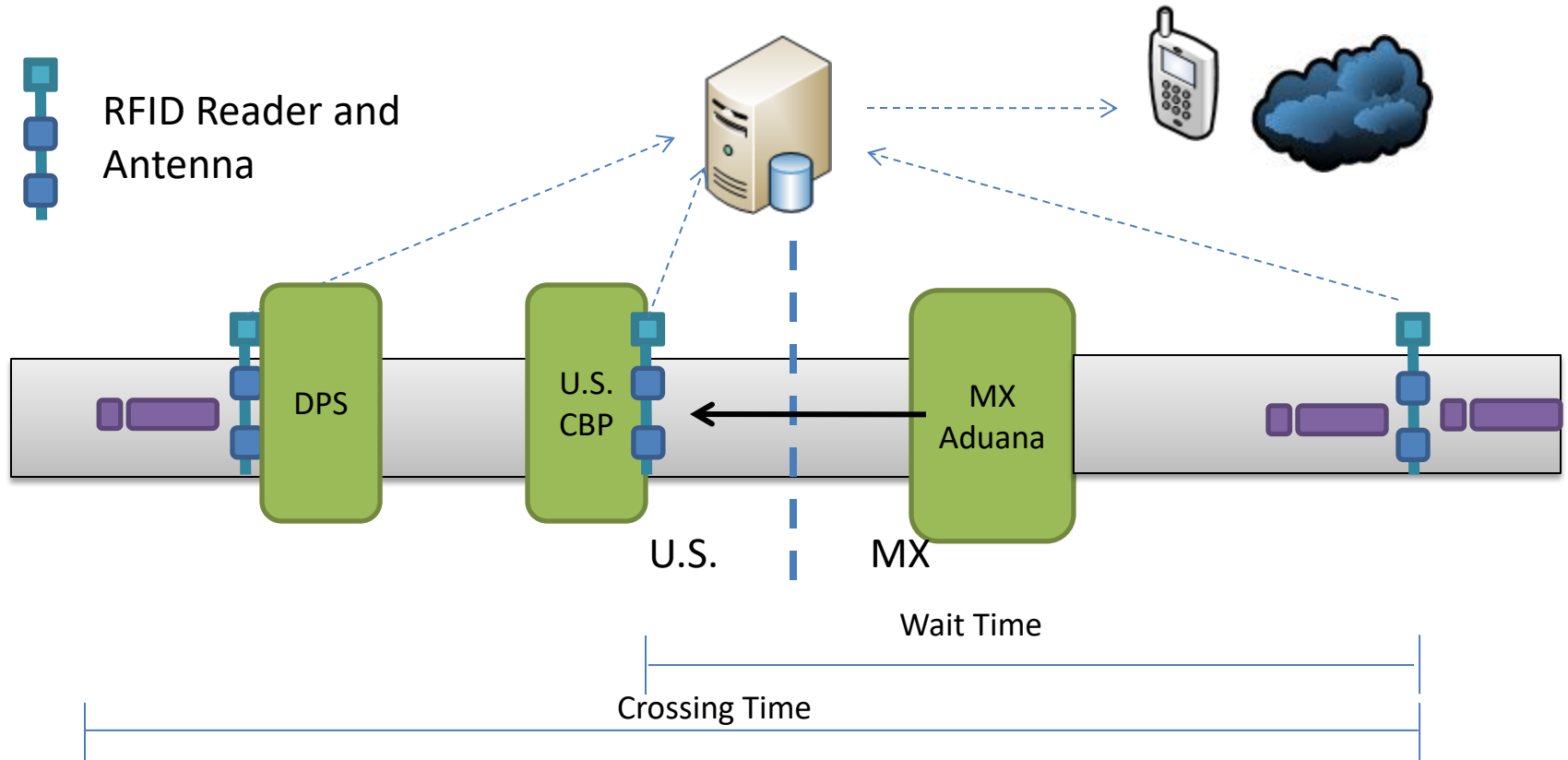
Opportunities to mitigate impacts

Border Crossing Time Measurement System
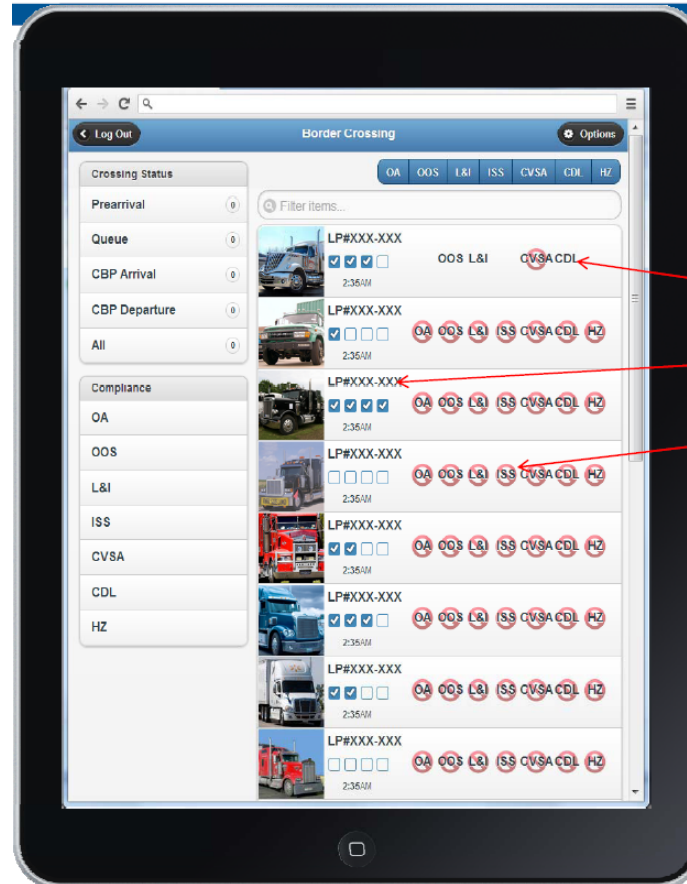
Opportunities to mitigate impacts

International Border Crossing e-screening project

Opportunities to mitigate impacts

International Border Crossing e-screening project

International Border Crossing e-screening project

Future Applications

COMET – Condition-based Megacity Traffic Management

- Use real-time information collected from vehicles, infrastructure and people

- Analyses information for active traffic management through routing and dynamic tolling

- Ensuring traffic flow, air quality, access rights, safety and security.

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Future Applications

COMET – Condition-based Megacity Traffic Management

Input
Real-time traffic monitoring

— Collect data from sensors built into vehicles sending information and communicating with other cars and the infrastructure
— Collect data from sensors and cameras installed in city (at critical places)
— Use input from drivers
— Collect data from other sources, e.g. weather stations, mobile phones and police hotline

Processing
Real-time data analytics

— Combine data (e.g. time, weather forecast, real-time traffic and events) from all available sources
— Integrate data in one platform for detailed analysis
— Analyse and process data to derive smart forecasts
— Develop recommendations to steer traffic according to predefined parameters

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Final Remarks

Technology per se is not the principle hurdle to the development of this solution, successful implementation depends on addressing institutional barriers:

- legal frameworks
- regulatory constraints,
- establishing new collaborative models between businesses and governments

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Gracias, Thanks, Merci

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