

### **Toward Sustainable Mobility The Case of California PATH**

## Alexander Skabardonis University of California, Berkeley

X CONGRESO INTERNACIONAL ITS X SIMPOSIO DEL ASFALTO





II SEMINARIO INTERNACIONAL DE PAVIMENTOS DE HORMIGÓN

www.congresodevialidad.org.ar



# Sustainability

"Meeting, and sometimes re-defining, the mobility needs of the present without compromising the ability of future generations to meet their needs" ITS America Position Statement on ITS and Sustainable Transportation (2012)

**BEARABLE QUITABLE** 

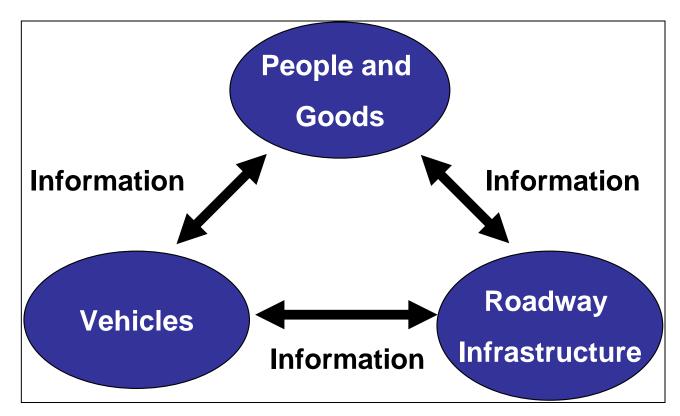
ECONOMIC

SUSTA

- Economic
  - Efficient and reliable movement of people & goods
- Social
  - Transportation options; safety and security
- Environmental
  - –Reduced emissions



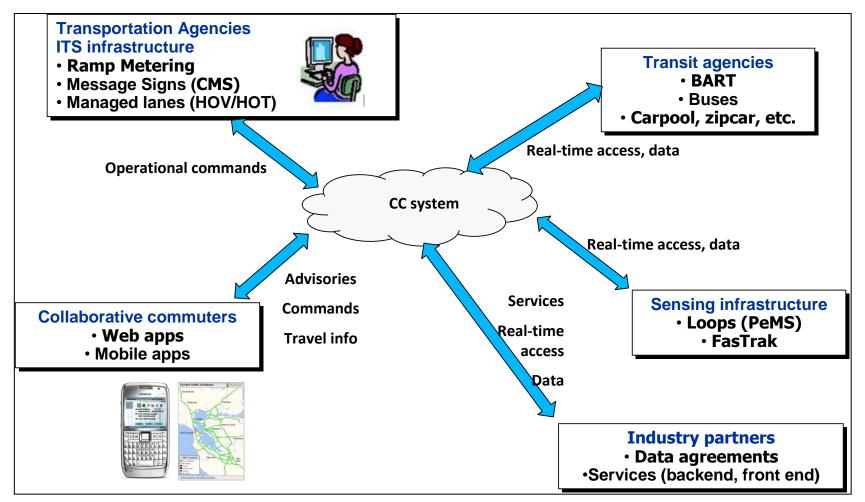
The Transportation System is Not Simply Infrastructure... Cooperative Elements Enable Safety And Efficiency





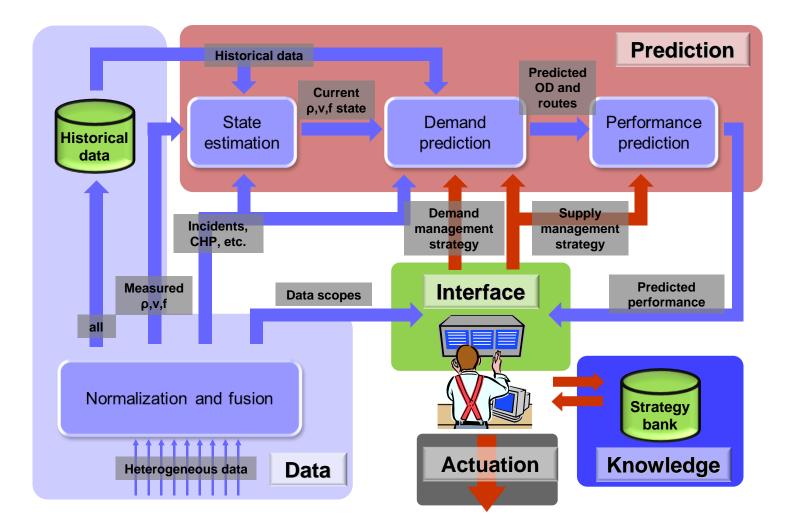
# **Connected Corridors**

Enable existing transportation infrastructure and vehicles to work together in a highly coordinated manner to improve corridor performance (safety and mobility)





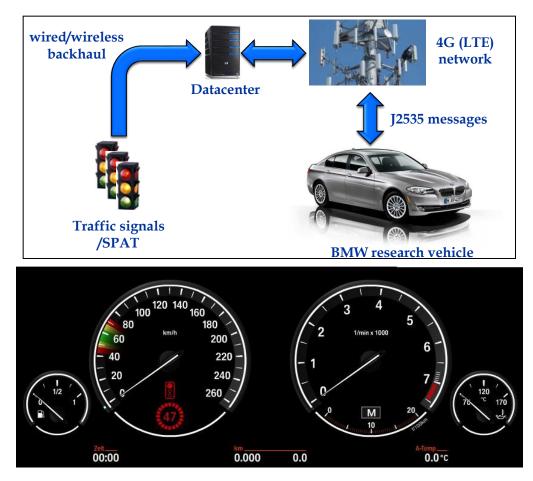
# **Framework for Decision Support**





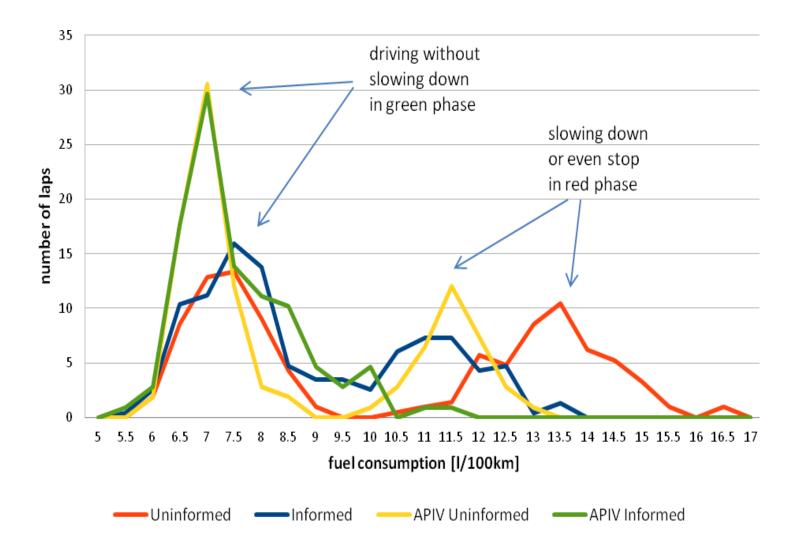
## **ECO Traffic Signal Control**

# In-vehicle driver speed advisory for min fuel consumption





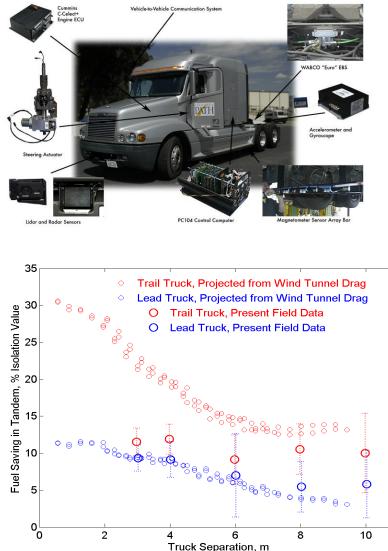
## **ECO Traffic Signal Control: Test Results**



## **Automated Truck Platooning**

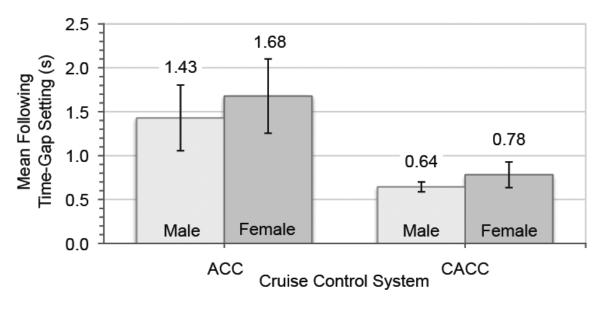
- Developed and tested 2 & 3truck platoons under automatic spacing control at gaps from 3 m to 10 m
- Demonstrated Fuel savings of 10 -15% measured







- Adaptive cruise control + V2V communication
- Field test showed drivers selecting short car following gaps
- Simulations showed potential doubling of lane capacity



Mean Time-Gap Preferences in Vehicle Following



## **Questions/Comments**

#### Alexander Skabardonis

University of California, Berkeley Institute of Transportation Studies 109 McLaughlin Hall Berkeley, CA 94720-1720 +1-510-642-9166 skabardonis@ce.berkeley.edu