

INFORMATION TECHNOLOGY, TRANSPORTATION AND CLIMATE CHANGE

Jean-David Margulici

Institut pour la Ville en Mouvement – December 16, 2009

About CCIT...

2

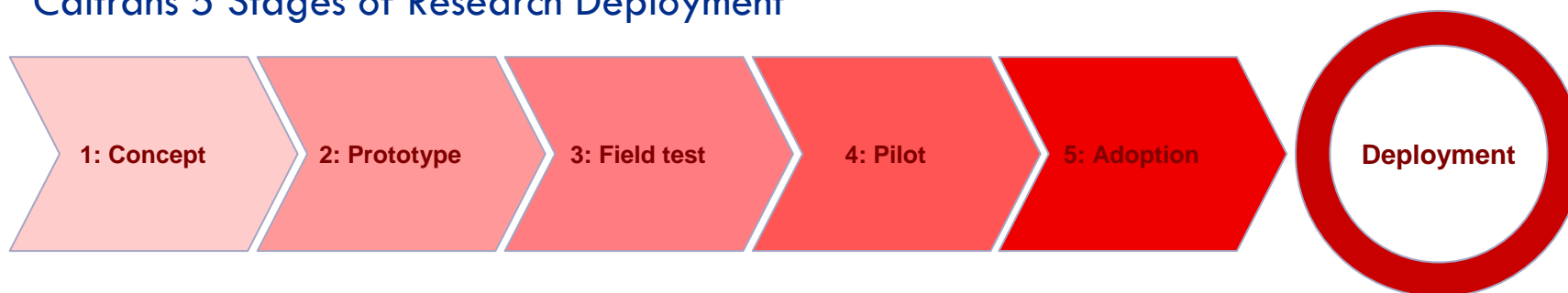


*The California Center for Innovative Transportation (CCIT) **accelerates the implementation of research** results and the **deployment of technical solutions by practitioners** to enable a safer, cleaner and more efficient surface transportation system.*

Genesis of CCIT

3

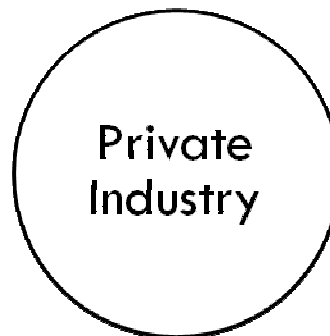
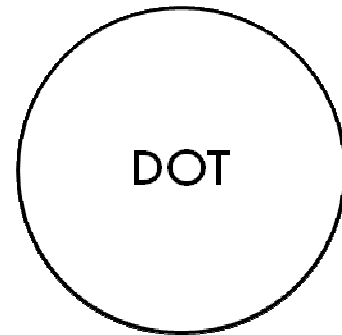
Caltrans 5 Stages of Research Deployment



Intellectual Property Licensing ? **Practitioners Assistance**
Push & Pull ? **Public-Private Joint Development** ?
Business Models ? **Innovation Best Practices**
Deployment Guidelines ? **Commercialization**

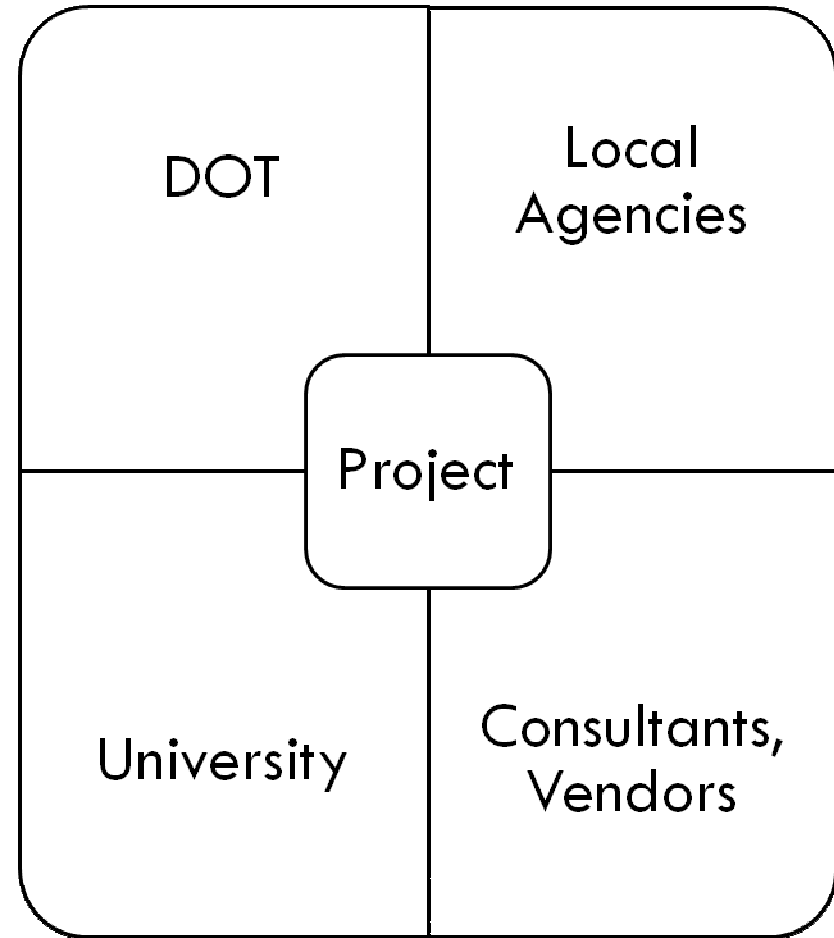
Implementation Model: Push-Pull

4



Implementation Model: Project Assistance

5



Implementation Model: Pull

6

DOT
Public Agencies

University
Research

Vendor



Reducing GHG from Transportation

7

Too many petroleum-fueled vehicle-hours per individual



Reducing GHG from Transportation (2)

8

Too many petroleum-fueled vehicle-hours per individual

Alternative fuels, i.e. Electric Vehicle

Less vehicle-miles / individual, i.e. Transportation Demand Management

Better traffic flows, i.e. Traffic Management

Smarter travel, i.e. Traveler Information / Driver Assistance



Electric Vehicles

9



Charging Infrastructure

10

better place

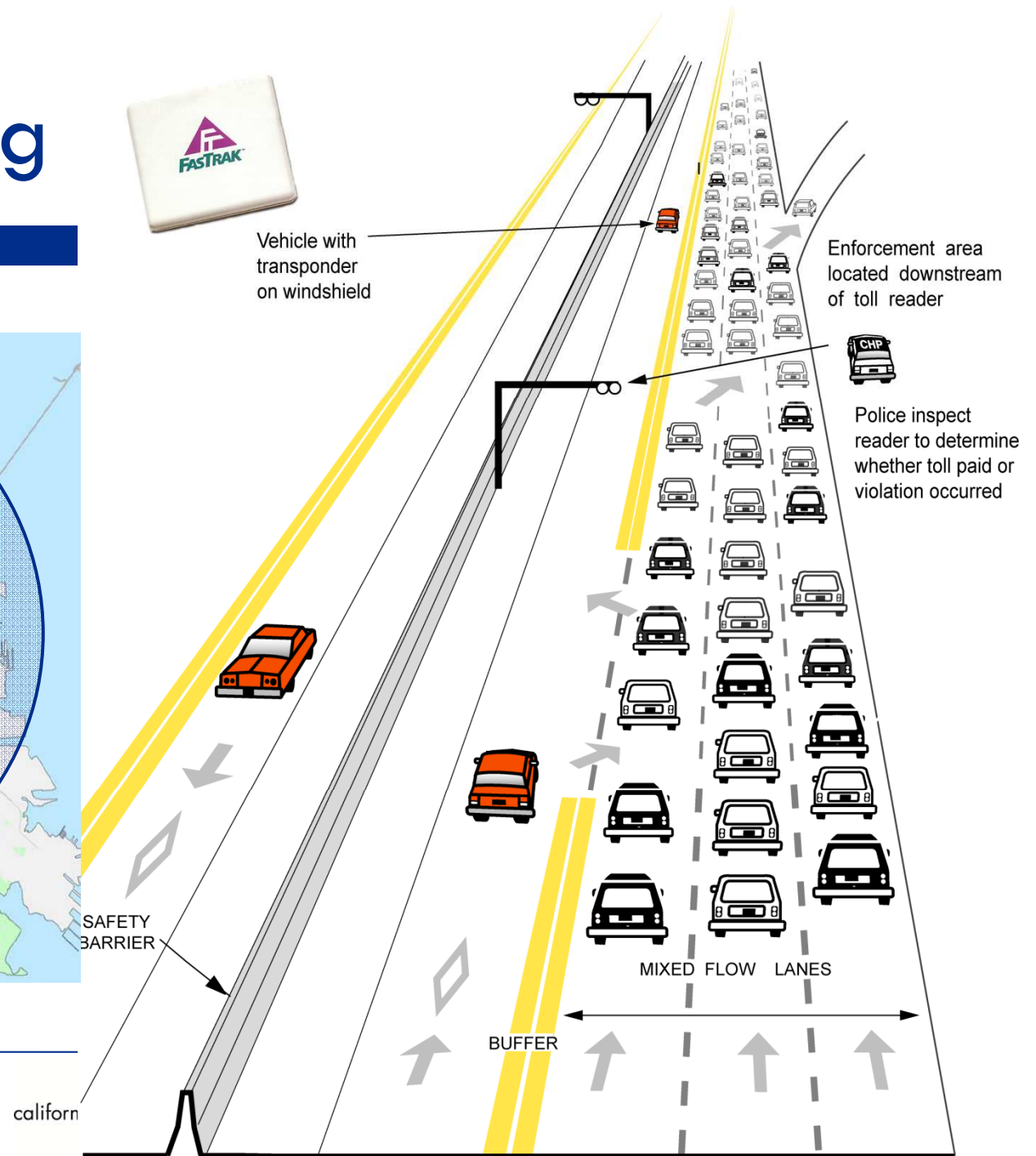
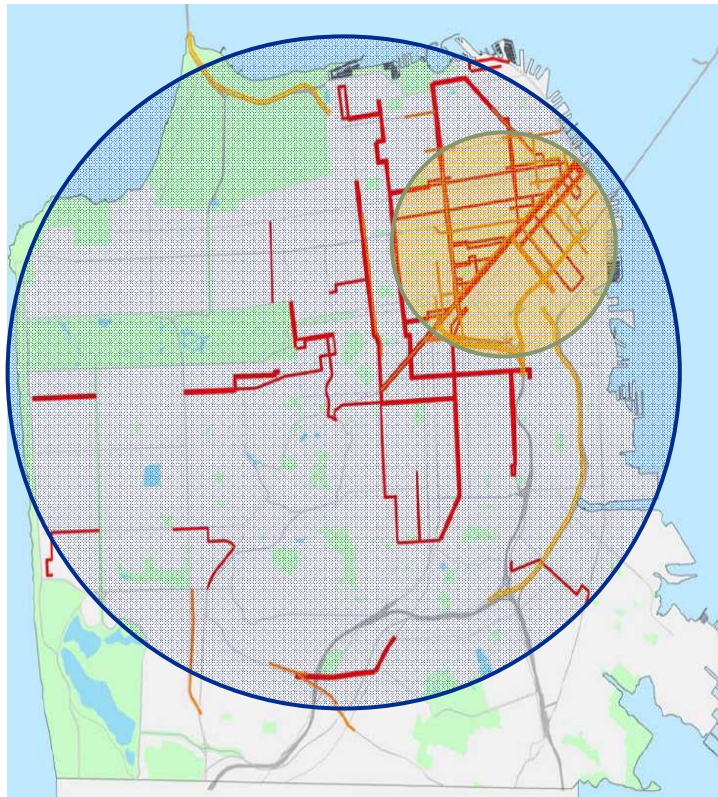


battery exchange
stations



TDM: Pricing

11



Source: Parsons Brinckerhoff, 2003

TDM: Vehicle Occupancy

12

Carpooling



zimride.com
ZIMRIDE
A CARPOOL COMMUNITY

iCarpoolTM



Parking



Shuttles

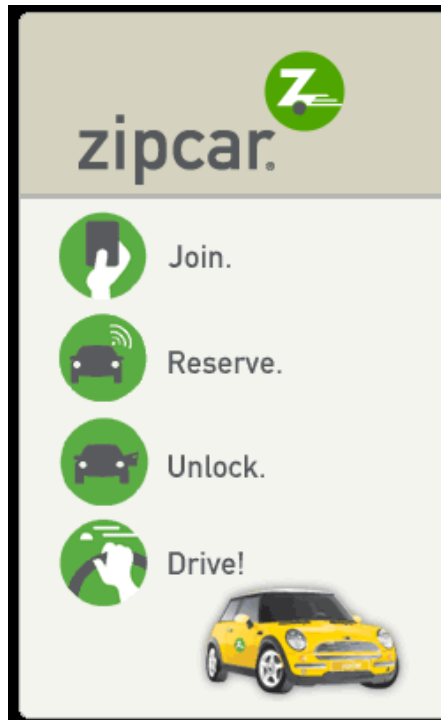


TDM: Automobile as a Service

13

Carsharing

Mileage-Based Premiums

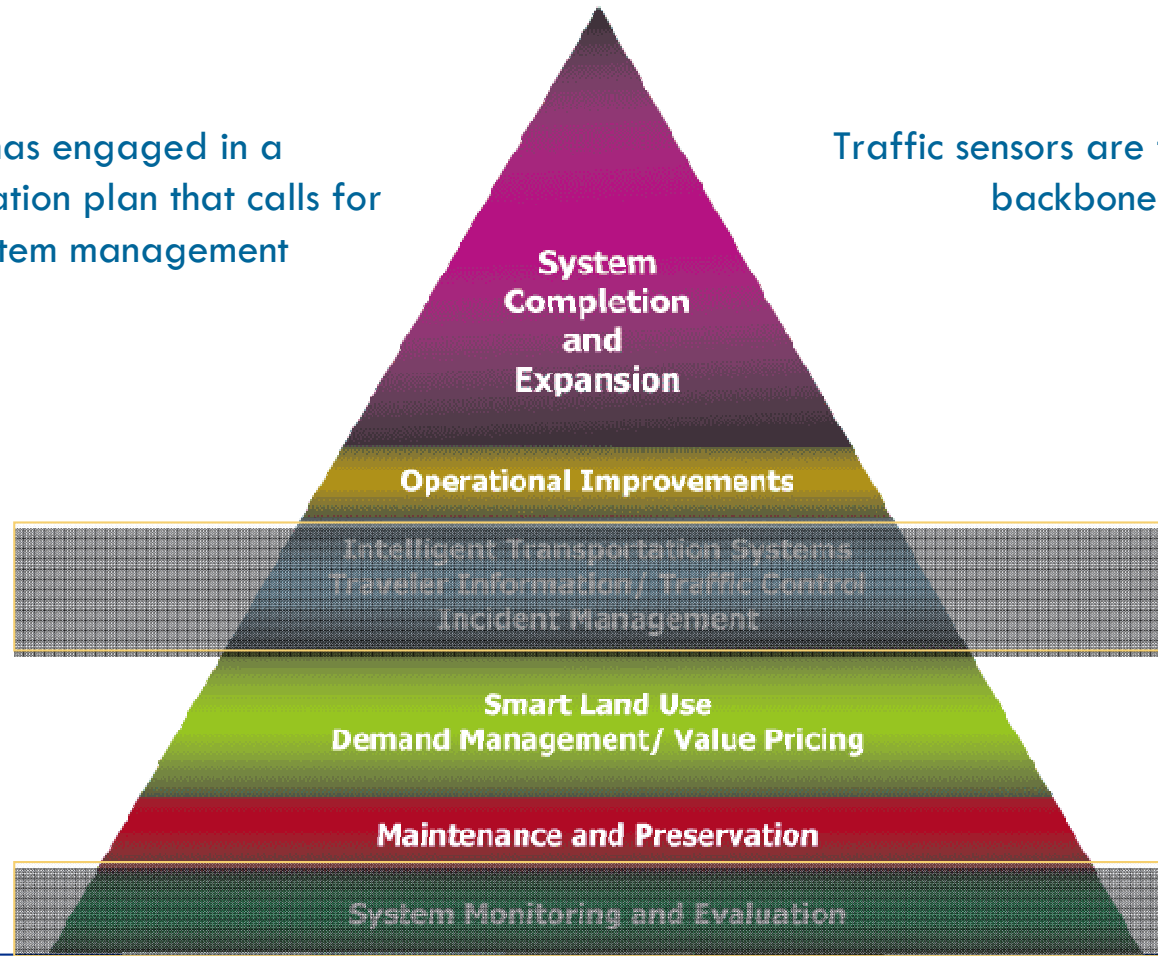


System Management: a New Infrastructure Paradigm

14

Caltrans has engaged in a modernization plan that calls for robust system management

Traffic sensors are the technological backbone enabling system management



Integrated Corridor Concept: I-80

15

- Systems Management elements:
 - ▣ Surveillance and Monitoring
 - ▣ Adaptive Ramp Metering
 - ▣ Traveler Information system
 - ▣ Incident Management system
 - ▣ Arterial and Transit Management systems
- Active Traffic Management elements:
 - ▣ Variable Speed Limit signs
 - ▣ Potential Lane Management system
 - ▣ Commercial Vehicle Operation system

ICM Concept



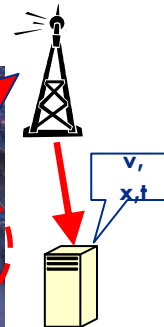
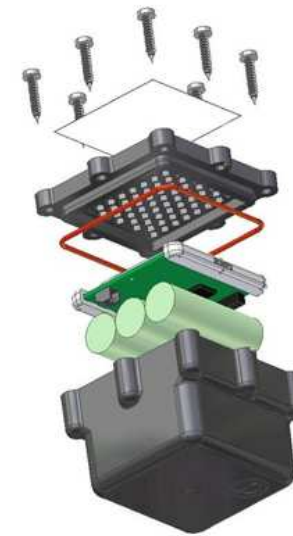
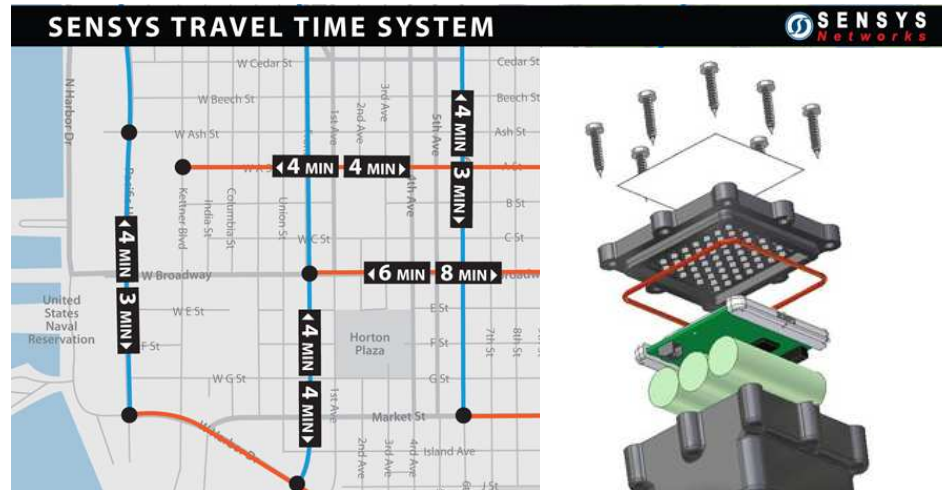
Traffic Detection: State of the Art

16



Traffic Detection: Mobile Probes

17



Traveler Information

18

511 SF Bay Area
On the phone. 511 On the web. 511.org

TRANSIT TRAFFIC RIDESHARE BICYCLING

Travel Tools and Info

TransLink is here!

For AC Transit and Golden Gate Transit & Ferry.
Discount fares available!

Get your TransLink card now. >>

FASTRAK
Get your FasTrak toll tag at select Costco and Safeway locations today.

Apply Now

New FasTrak-only Lanes

SF Region Traffic Conditions

Santa Rosa, Petaluma, Fairfield, San Rafael, San Francisco, Walnut, Palo Alto, San Jose

Legend: No congestion, Heavy, No data, Moderate, Stop and go

Looking for company on your bike ride to work? **Find a BikeBuddy!**

CLICK HERE FOR MORE TIPS.

RIDE TRANSIT FREE
on the first 4 Spare the Air weekdays.

San Francisco Muni
J-Church
Destination: Pleasant St & Embarcadero Station from Church St & 30th St
Stop: Church St & 30th St
Arriving in **2 minutes**
Also arriving in 5, 9 and 18 minutes

TRAVEL TIME TO
SF DOWNTOWN 10 MIN
SFO 23 MIN

FWY - SJ 52 MIN
CALTRAIN 41 MIN
TRAIN AT 5:30

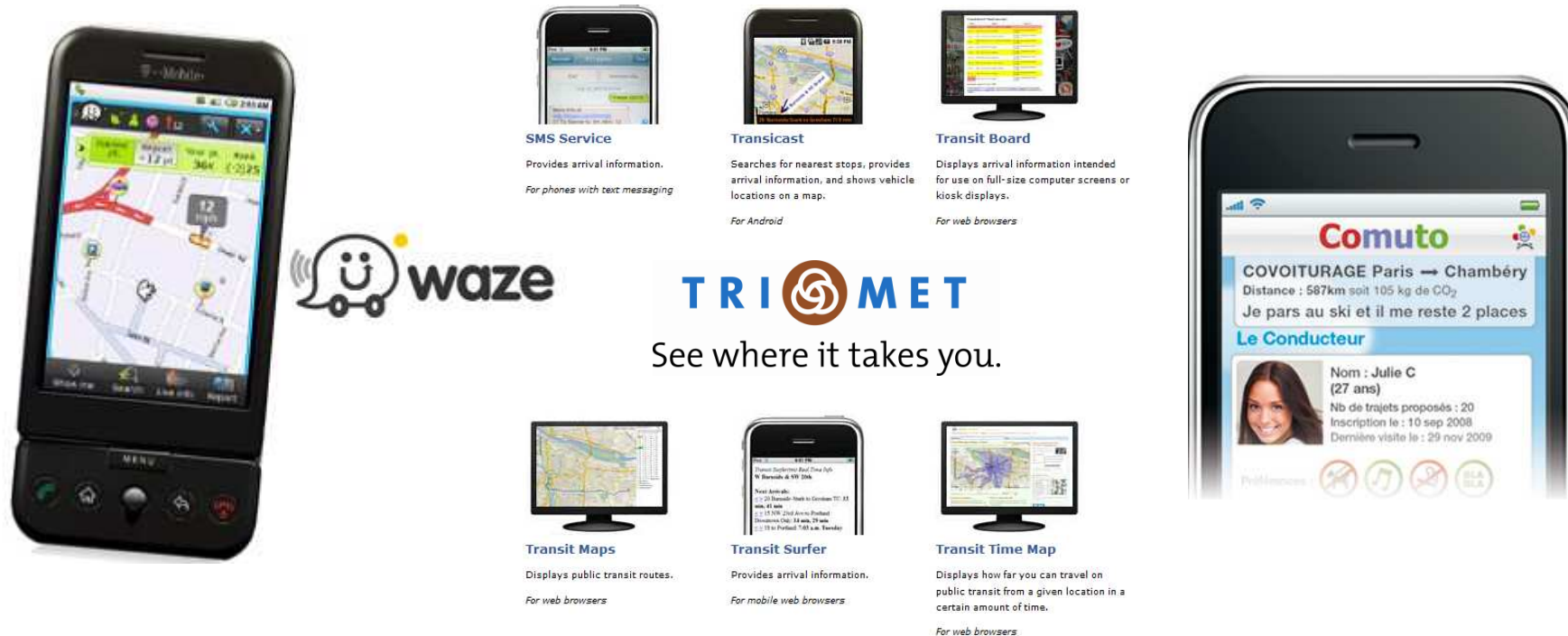
© 2006 Metropolitan Transportation Commission

Traveler Information: New Models

19

Crowdsourcing

Mobile Development



SMS Service
Provides arrival information.
For phones with text messaging

Transicast
Searches for nearest stops; provides arrival information, and shows vehicle locations on a map.
For Android

Transit Board
Displays arrival information intended for use on full-size computer screens or kiosk displays.
For web browsers

Transit Maps
Displays public transit routes.
For web browsers

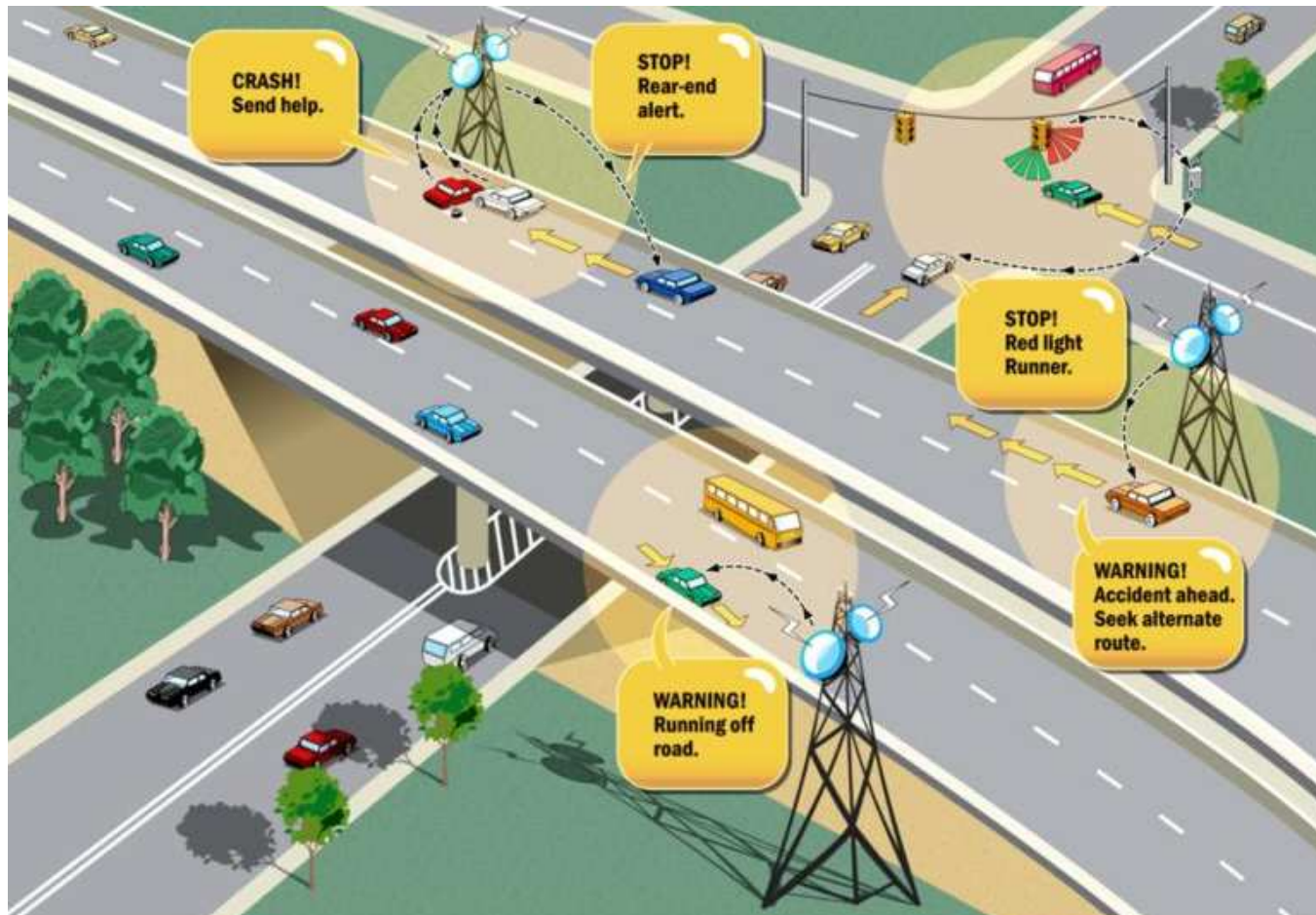
Transit Surfer
Provides arrival information.
For mobile web browsers

Transit Time Map
Displays how far you can travel on public transit from a given location in a certain amount of time.
For web browsers

Comuto
COVOITURAGE Paris → Chambéry
Distance : 587km soit 105 kg de CO₂
Je pars au ski et il me reste 2 places
Le Conducteur
Nom : Julie C (27 ans)
Nb de trajets proposés : 20
Inscription le : 10 sep 2008
Dernière visite le : 29 nov 2009

Connected Vehicle: Intellidrive

20



IntelliDriveSM
Safer.
Smarter.
Greener.

Automated Driver Assistance Systems

21



Beyond Travel...

22



Conclusion

23

Applications

Electric Vehicles

Transportation Demand Management

Traffic Management

Traveler Information

Dematerialization

Enabling Technologies

Wireless Networks

Global Navigation Satellite Systems

Microscopic Electro-Mechanic Systems

Mobile Applications

Social Networks



Thank You!

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