

Traveling **Smarter:**

The Future of Transportation Technology in the Treasure Valley



Randy Knapick, AICP

May 8, 2014



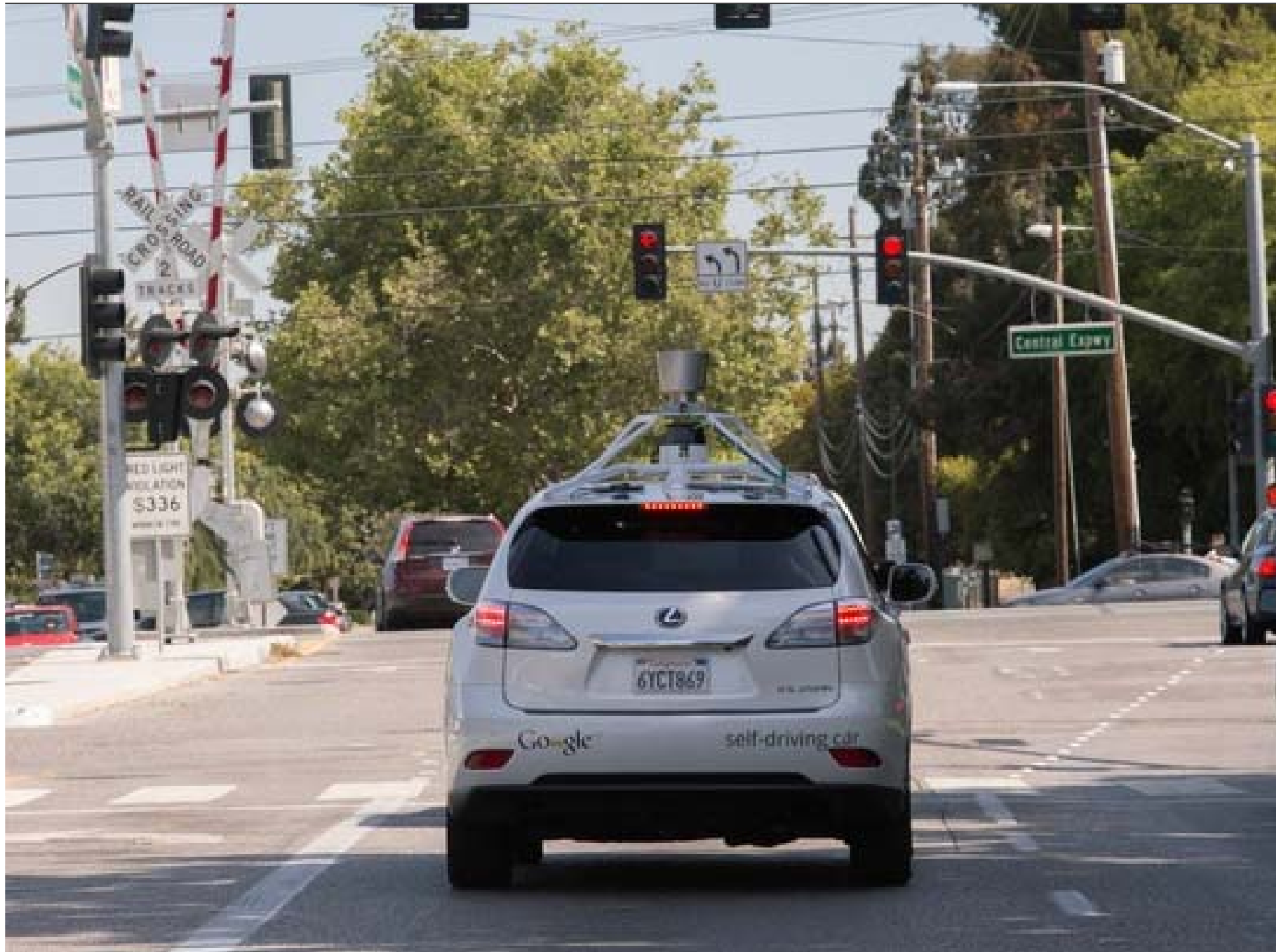


Subway in the Sky!

Commuters in Los Angeles soon may rush to work by this monorail overhead transit system, unhampered by street level traffic. Super-streamlined 100-passenger cars can travel safely at speeds up to 100 miles an hour. The 44-mile run through metropolitan Los Angeles will cut the present commuting time in half.







Digital Commerce

**Business
Intelligence**

**SOCIAL
MEDIA**

SMART Cities

**Cloud
Computing**

“The Digital Revolution”

*Augmented
Reality*

**Real Time
Information**

**Internet of
Things**

BIG Data

**Mobile
Computing**

Artificial Intelligence

The “Digital Revolution” challenges our thinking about solutions to our transportation needs.



“The Digital Revolution”

How is the Digital Revolution transforming transportation?

NEW

Infrastructure
Services
Partnerships
Expectations
Possibilities

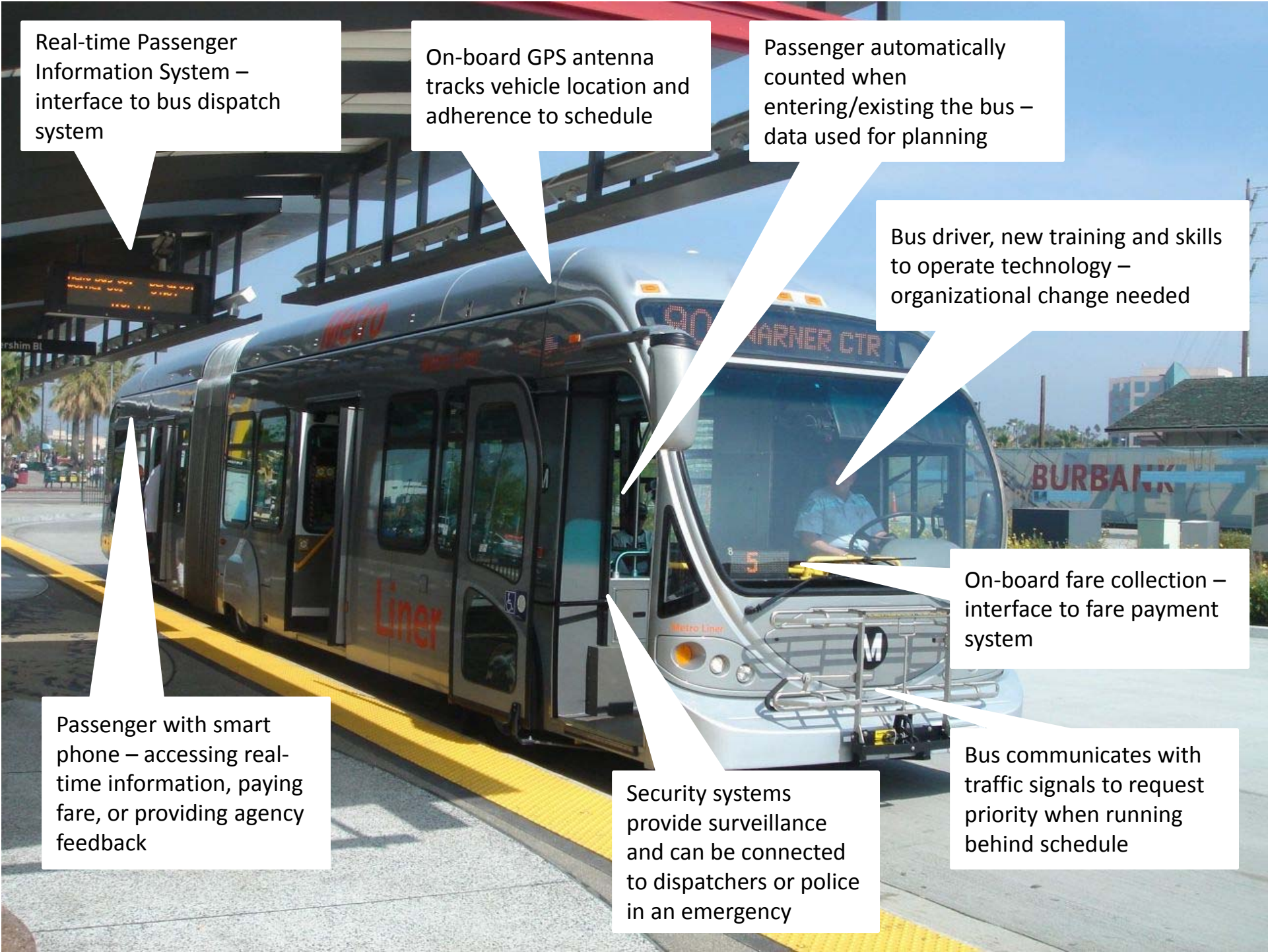
Information infrastructure
has become an integral part of
the transportation system.



“Intelligent Transportation Systems”

It's just a bus – right?





Real-time Passenger Information System – interface to bus dispatch system

On-board GPS antenna tracks vehicle location and adherence to schedule

Passenger automatically counted when entering/exiting the bus – data used for planning

Bus driver, new training and skills to operate technology – organizational change needed

On-board fare collection – interface to fare payment system

Bus communicates with traffic signals to request priority when running behind schedule

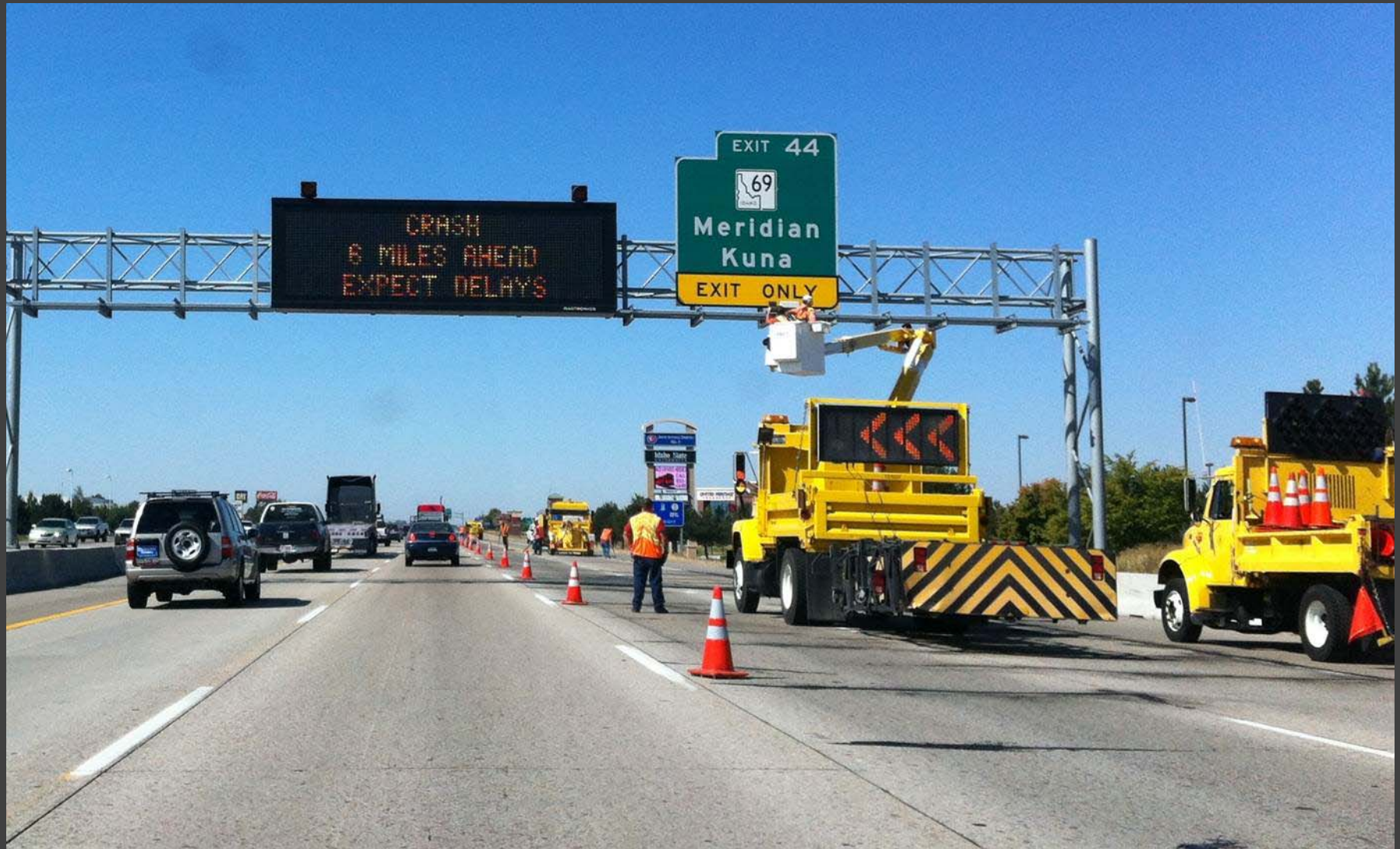
Security systems provide surveillance and can be connected to dispatchers or police in an emergency

Passenger with smart phone – accessing real-time information, paying fare, or providing agency feedback



Technology has enabling new approaches to actively manage the transportation system

Incident Management



Integrated Freeway/Arterial Management



Active Traffic Management



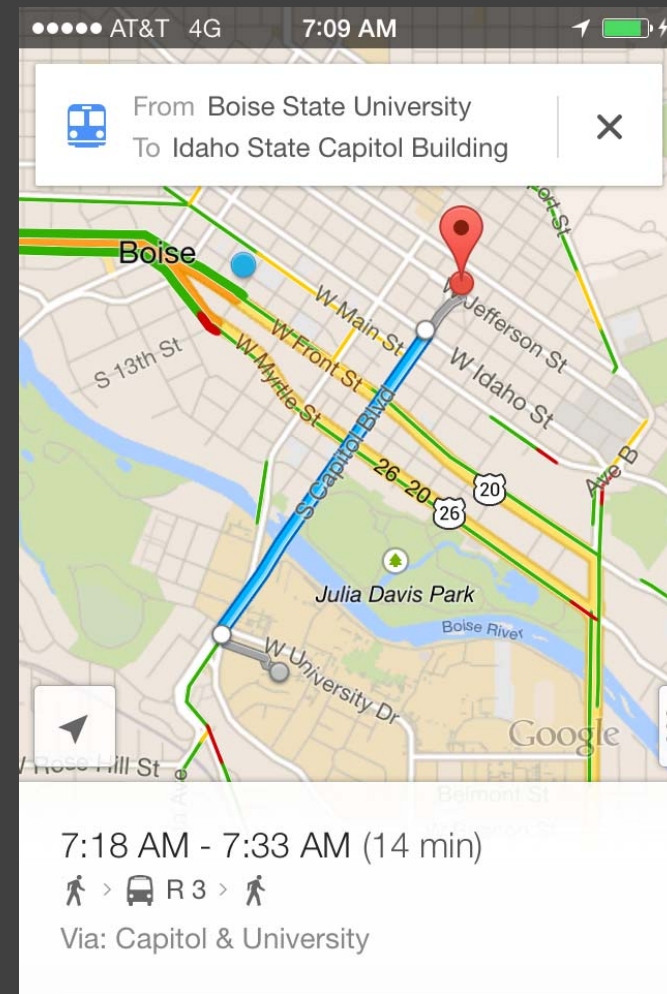
Transit Management



Consumer technology is changing the public's interactions and expectations regarding transportation

Customer Expectations

- “Seamless” Transportation System
- Real Time Information (and Feedback)
- Expectations of Choice and Availability
- More integrated user experiences
- Willingness to adopt new business models and behaviors



Verizon

10:15 AM

68%

Verizon

10:13 AM

67%

Hamlin Ave
W Byron St
W Grace St
N St Louis Av

John Hancock Center, Chicago

Via: Kennedy Expy E

ETA

10:38

7.7 mi.

Now

10:38

Cancel

Routes

Go

N Monticello Ave Alley

Report

Close



Traffic Jam



Police



Accident



Hazard



Camera



Chit Chat



Map Issue



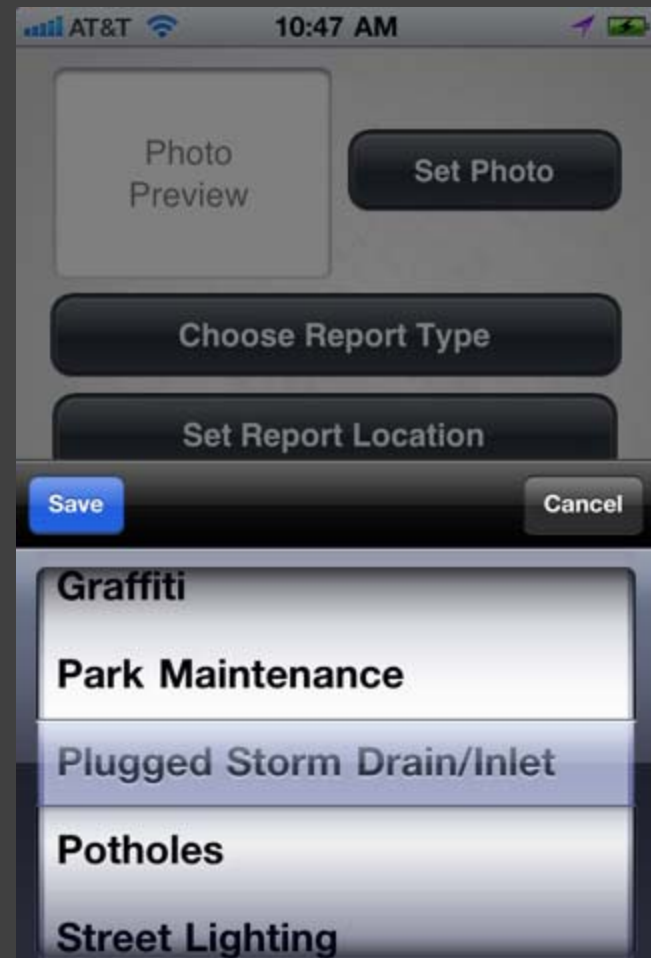
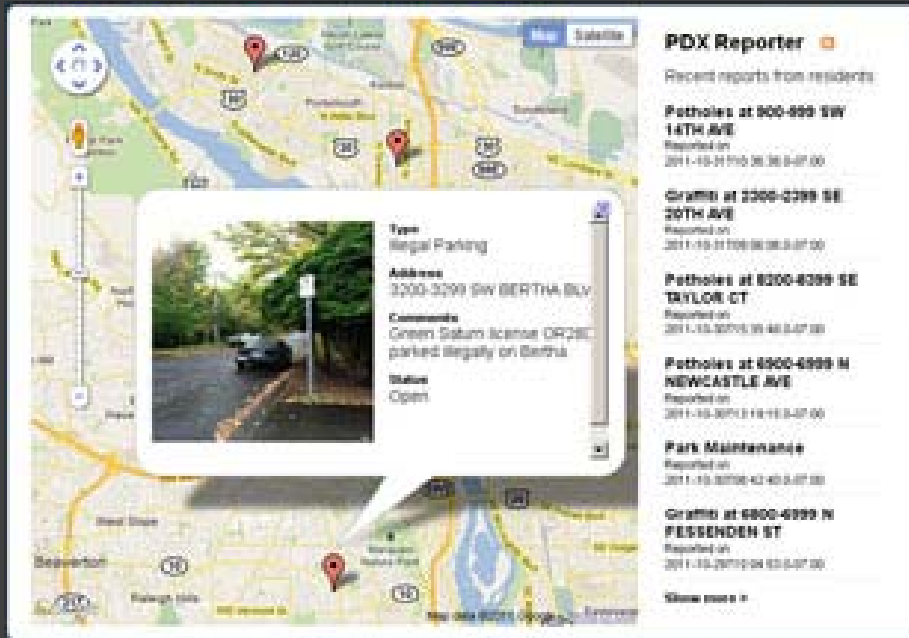
Gas Prices

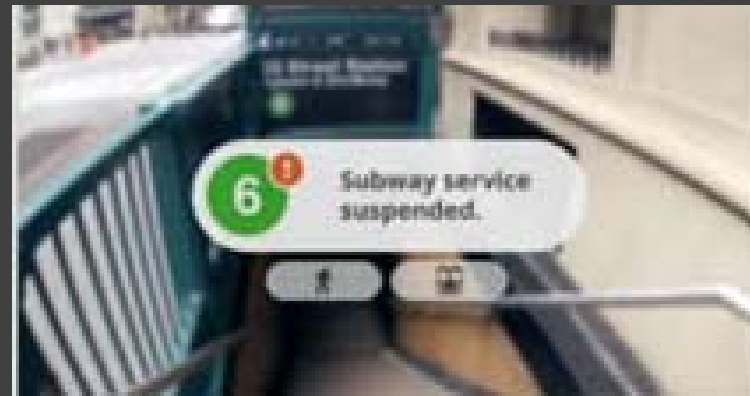
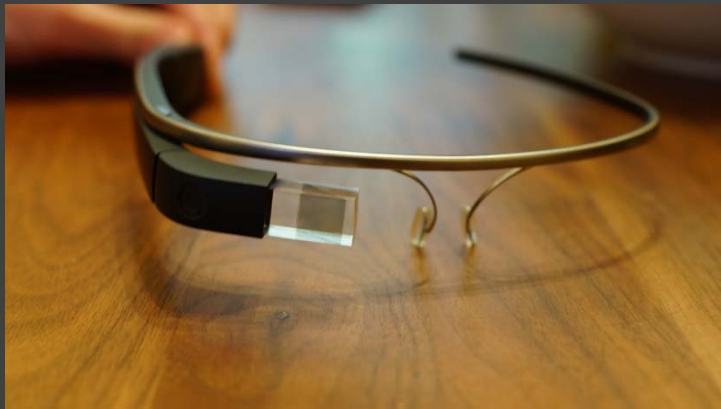


Check In

Location and time saved

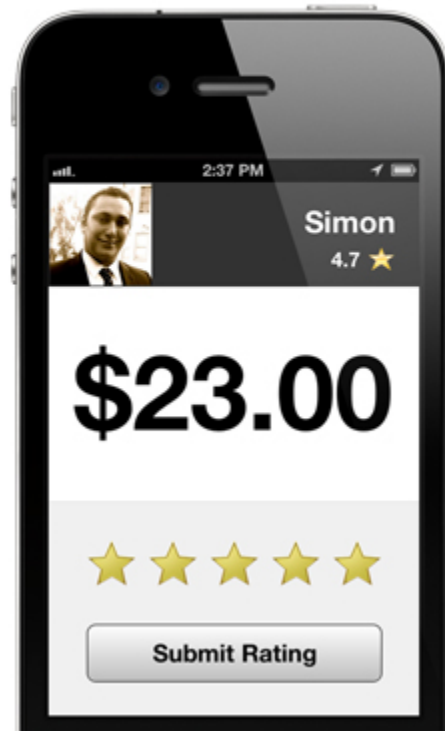






Technology is creating a “sharing economy” in transportation







Technology is enabling new means of pricing (and paying for) transportation service





TRI MET

My phone is my fare



Mobile ticketing is here!

GET IT ON Google play

Available on the App Store

Verizon 93 1:50 PM 43%

TRI MET

Single Rider Multiple Riders

Refresh SELECT A TICKET TO USE

 Active	Adult 1-Day Pass 	 Expires 4/4/13
 Active	Adult 2-Hour Ticket 	 Expires 4/4/13
 Active	Honored Ci... 30-Day Pass 	 Expires 5/2/13

Buy Tickets My Tickets Trip Tools Settings





Technology is improving efficiency of
behind-the-scenes transportation
system management





OD

Buses from this stop

View Customer Information

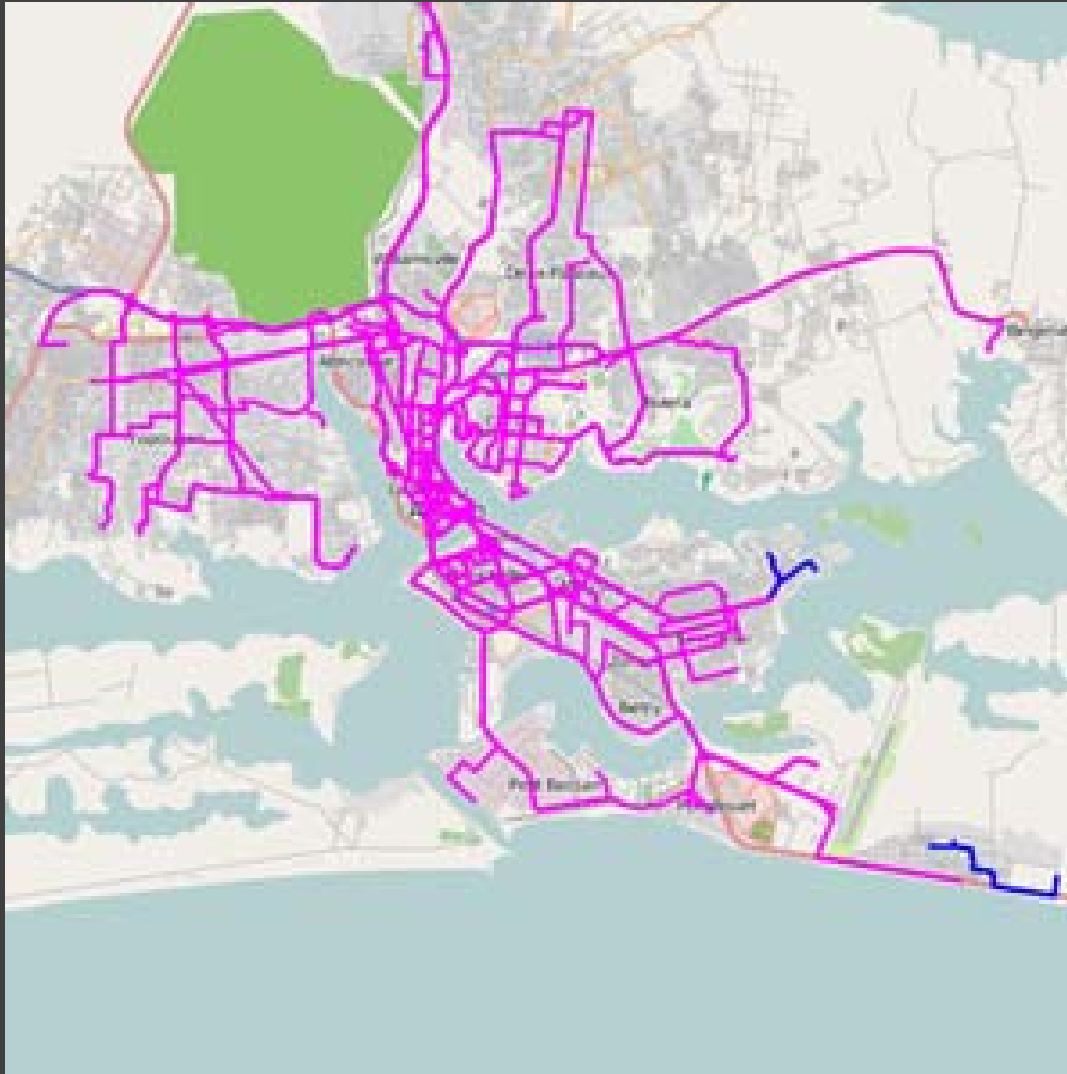
Real Time Information

Bus	Destination	Time
4	Stokelyth - Walsall	Due
42	Merry 148 - Walsall	16:04
4	Stokelyth - Walsall	4 mins
41	Halesowen - Walsall	15:11
4	Stokelyth - Walsall	10 mins
281	Merry 148 - West Bromwich	13 mins
48	Merry 148 - Walsall	16 mins

© 2018

Data analytics is providing new
insight into transportation system
performance





Abidjan, Ivory Coast:

Redrawing bus routes using cell phone data could reduce travel times by an estimated 10%

Technology is improving safety and
security of the transportation
network







What's Coming Down the Road?



What's Coming Down the Road?

- New business models and services offered by new and unconventional players
- “Smart” and connected vehicles and infrastructure
- Highly personalized information integrated into consumer devices
- Increase automation and assistive technologies
- Revolution in data analytics and visualization

What does it all mean for the

Treasure Valley?



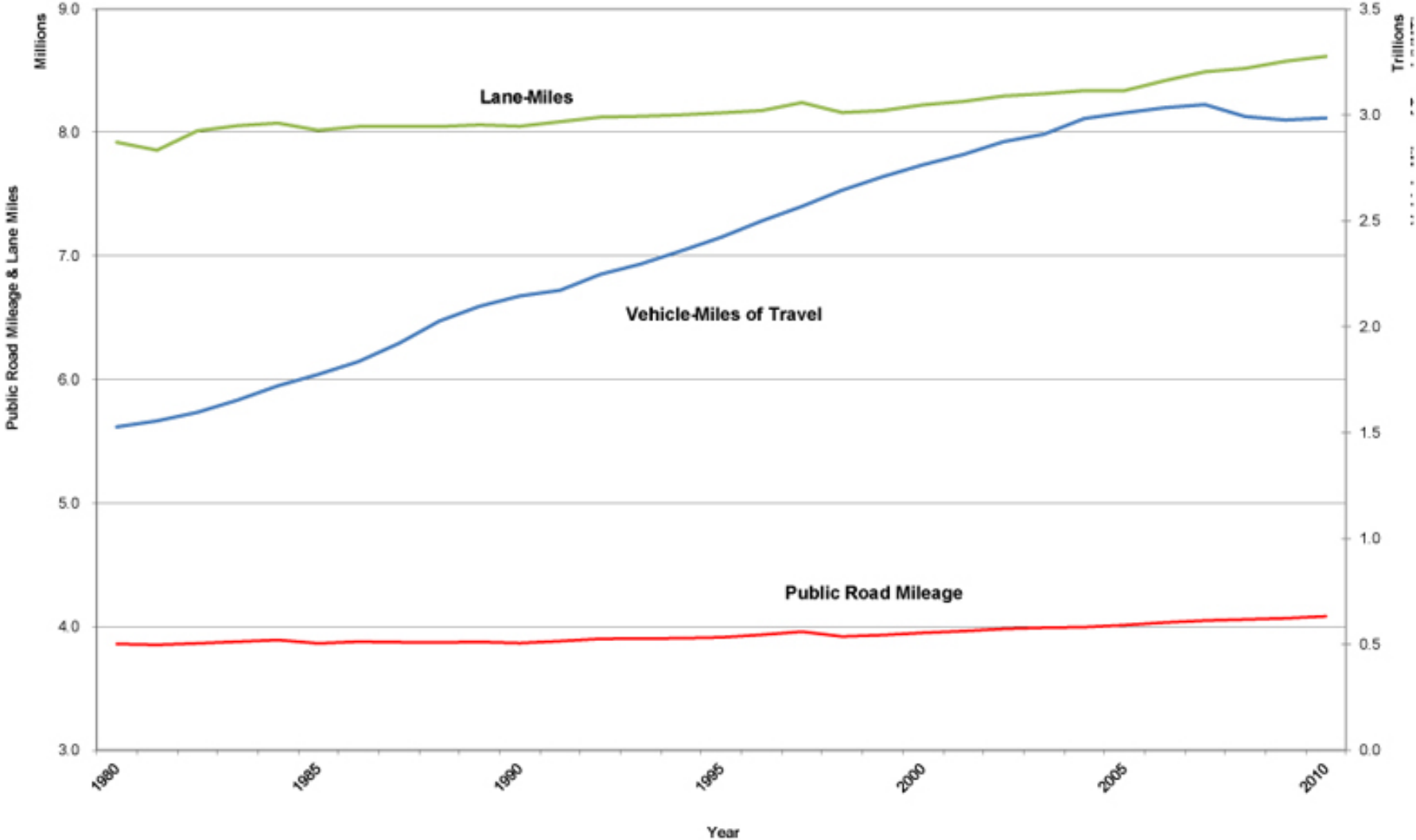
How Can We Maximize the Potential
of Emerging Technology in the
Treasure Valley?

A Critical Transportation Challenge in the Treasure Valley

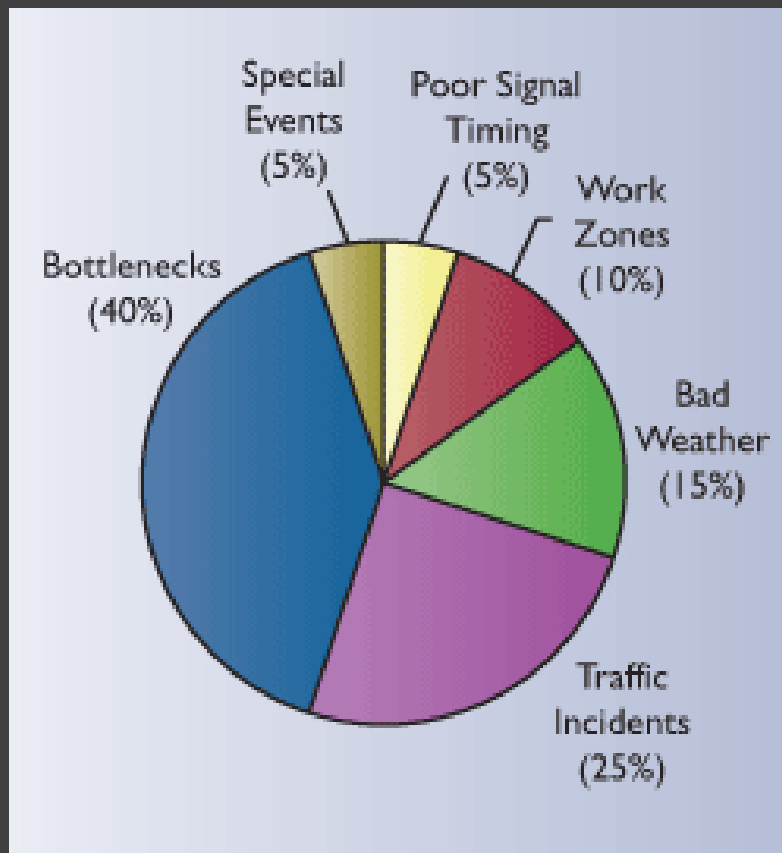


- The transportation network is not growing as fast as population
- Levels of transportation funding are diminished and uncertain

Public Road Mileage, Lane-Miles, and VMT
1980 - 2010



Congestion



The common causes of congestion cannot be practically addressed solely by expanding capacity.

OPPORTUNITY:

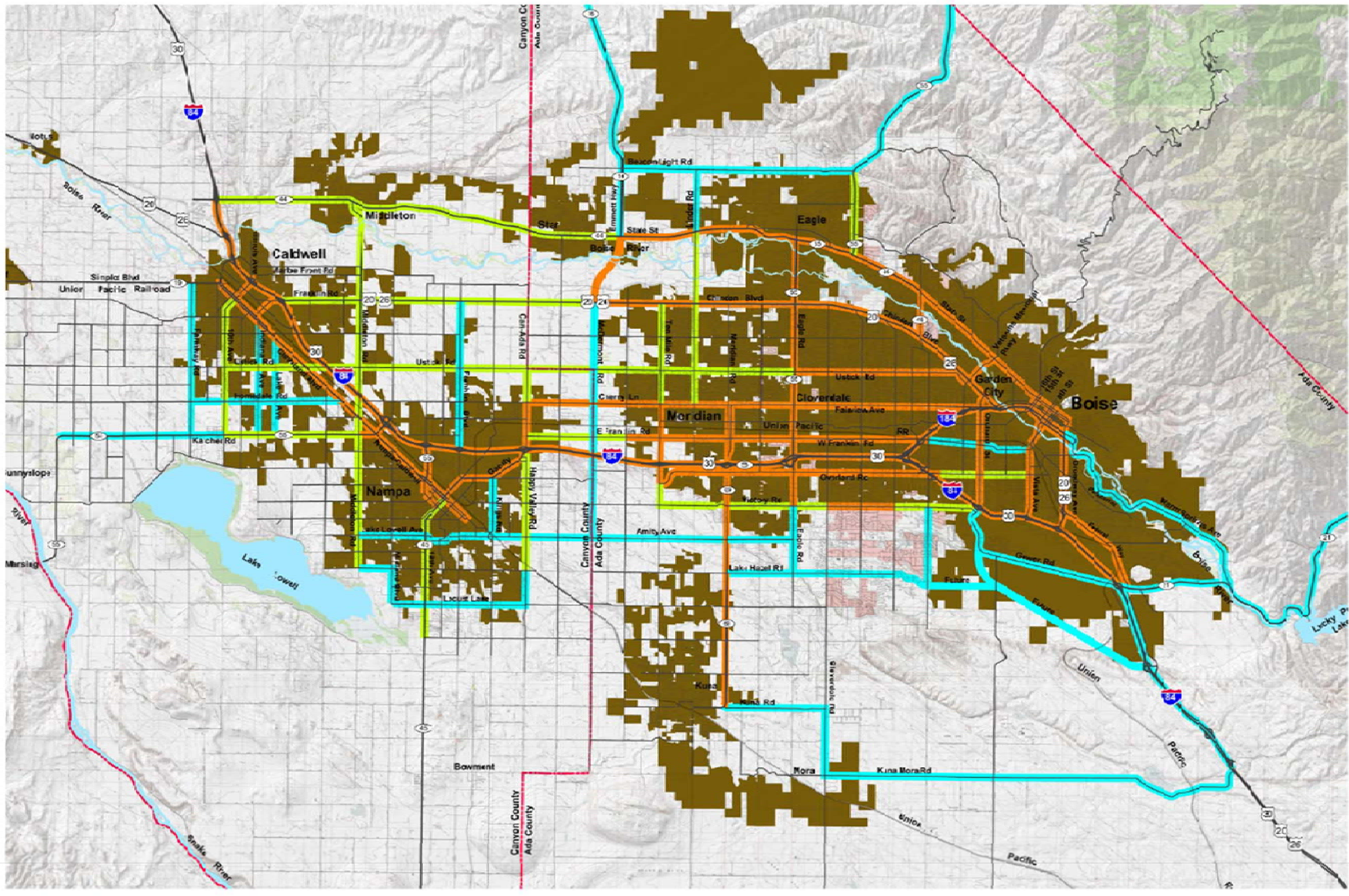
Use technology to maximize the performance of the region's multi-modal transportation system

Operational Vision for the Treasure Valley

“Provide active management of the Treasure valley’s multimodal transportation system through agency partnerships and investment in ITS technology as an essential regional strategy to maximize the performance of the transportation system.”



Figure ES-1 Treasure Valley Operations Priority Corridors



OPPORTUNITY:

Deploy relatively low-cost technology solutions to defer, or possibly eliminate, the need for more costly infrastructure investments



Road Widening

vs.



**Advanced Traffic
Signal Coordination**

OPPORTUNITY:

Create more informed travelers
who can make more informed
travel decisions

The public interest is served by making accurate, real-time information available to the public through many channels



OPPORTUNITY:

Use the region's emerging data infrastructure to transform transportation planning and performance measurement

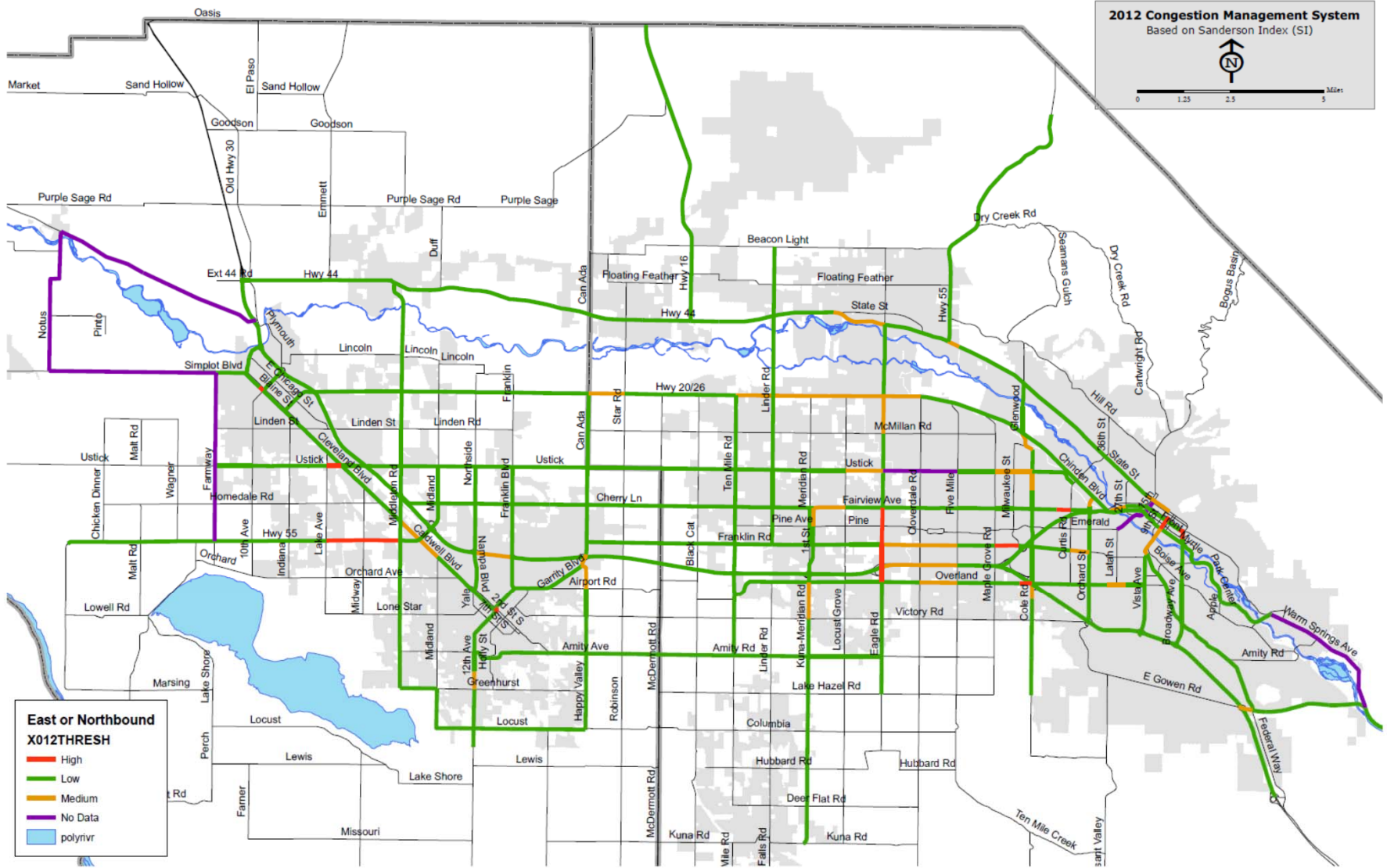


Figure 9-1: Treasure Valley CMS Corridor Weekday Peak Hour Rankings (East or Northbound) – 2012

2009 Planning Time Index One - Hour Weekday PM Peak



On Northbound State Highway 400 in the PM Peak, the travel time on the worst day of the month would be greater than 2.8 times the free-flow travel time.

OPPORTUNITY:

Develop policies, plans, and partnerships to be prepared to evaluate and respond to new and disruptive technologies



What Will It Take?

- Clear understanding and communication of the business case for new technologies
- Regional approaches to regional needs
- Integration of technology into regional transportation planning, policy, and investment
- Embrace of disruptive business models that may involve difficult institutional changes
- Flexibility to keep pace with evolving technologies
- Funding commitment for technology and operational programs

What is the Potential Payoff?

- Maximum reliability and capacity from the multi-modal transportation system
- Focused and cost-effective investment
- More informed decision making
- Improved safety
- Better decision making and performance measurement

Parting Thoughts



Technology is changing the definition
of “Transportation Infrastructure.”

Transportation technology creates
new solutions to the Valley's
transportation challenges.

Technological is an enabler.

You still have to know what you want from it to solve a problem.

People, processes, and policies are as important as technology widgets to implement effective change.

Technological uncertainty is
certain.





Thank You

For your interest and participation!



Randy Knapick, AICP

905 SW Stark Street
Portland, OR 97205
rknapick@ibigroup.com
503.222.2045

