

August 28, 2017

CITY
NOW



Panasonic in Colorado

SAGPA

Commission on Aging



Fujisawa SST: Tokyo, Japan

Peña Station Next: Denver, CO

Dalian Best City: Liaoning, China

Tsunashima: Yokohama, Japan

Skolkovo Smart City: Moscow, Russia

PanaHome Smart City: Shioashiya,
Osaka, Japan

Iskandar, Malaysia

DALIAN BEST CITY, CHINA

SKOLKOVO, RUSSIA





ISKANDAR, MALAYSIA

TSUNASHIMA, JAPAN



SHIOASHIYA, JAPAN





Technologies:

Smart Homes

Solar PV

Energy Storage

EV Charging

Mobility Solutions

Smart Street Lights

Public Safety

Health & Wellness



-70%



-30%



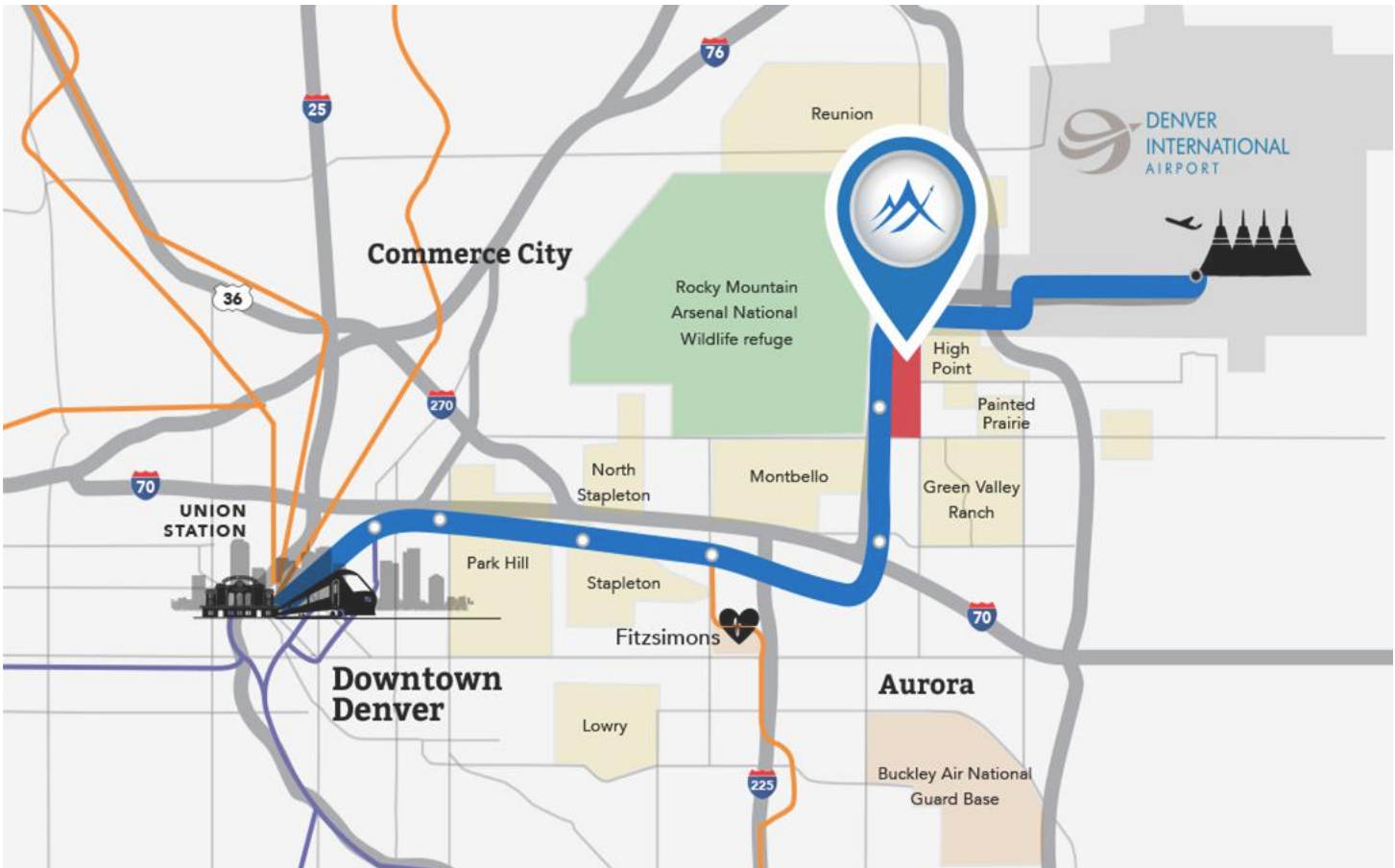
30%



+25%



THERE'S A BETTER WAY: SMART CITIES

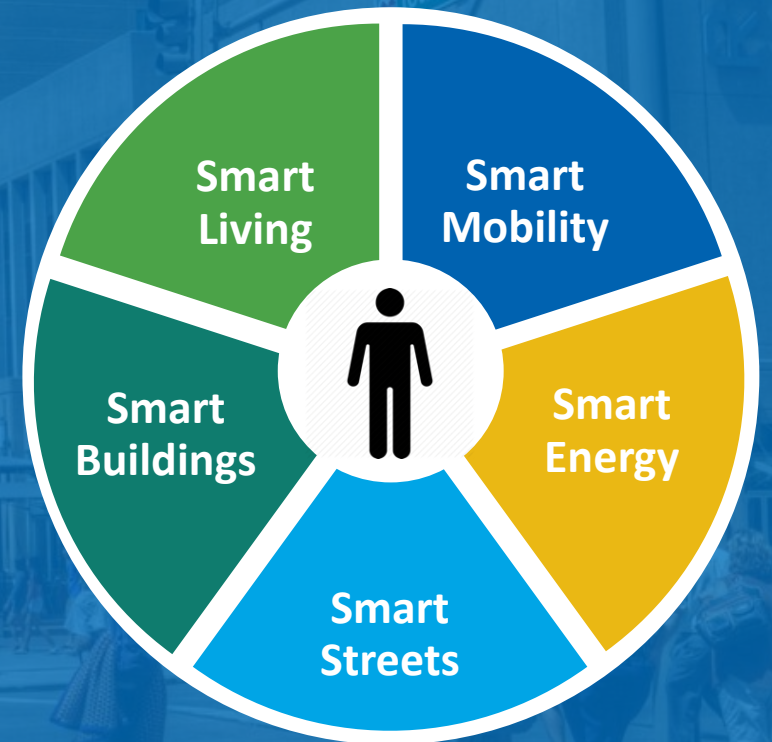






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Denver Pillars & Complex Change Management





Denver Airport Welcome Sign

Iconic, High Impact Design

P3 Business Model

Transforming Peña Station NEXT TOD

- 400 acre greenfield on new rail line
- PESCO HQ anchor tenant
- Energy resiliency via microgrid
- Smart lighting, parking & public safety
- Community Wi-Fi
- Autonomous EV shuttles
- **V2X Deployment Program**

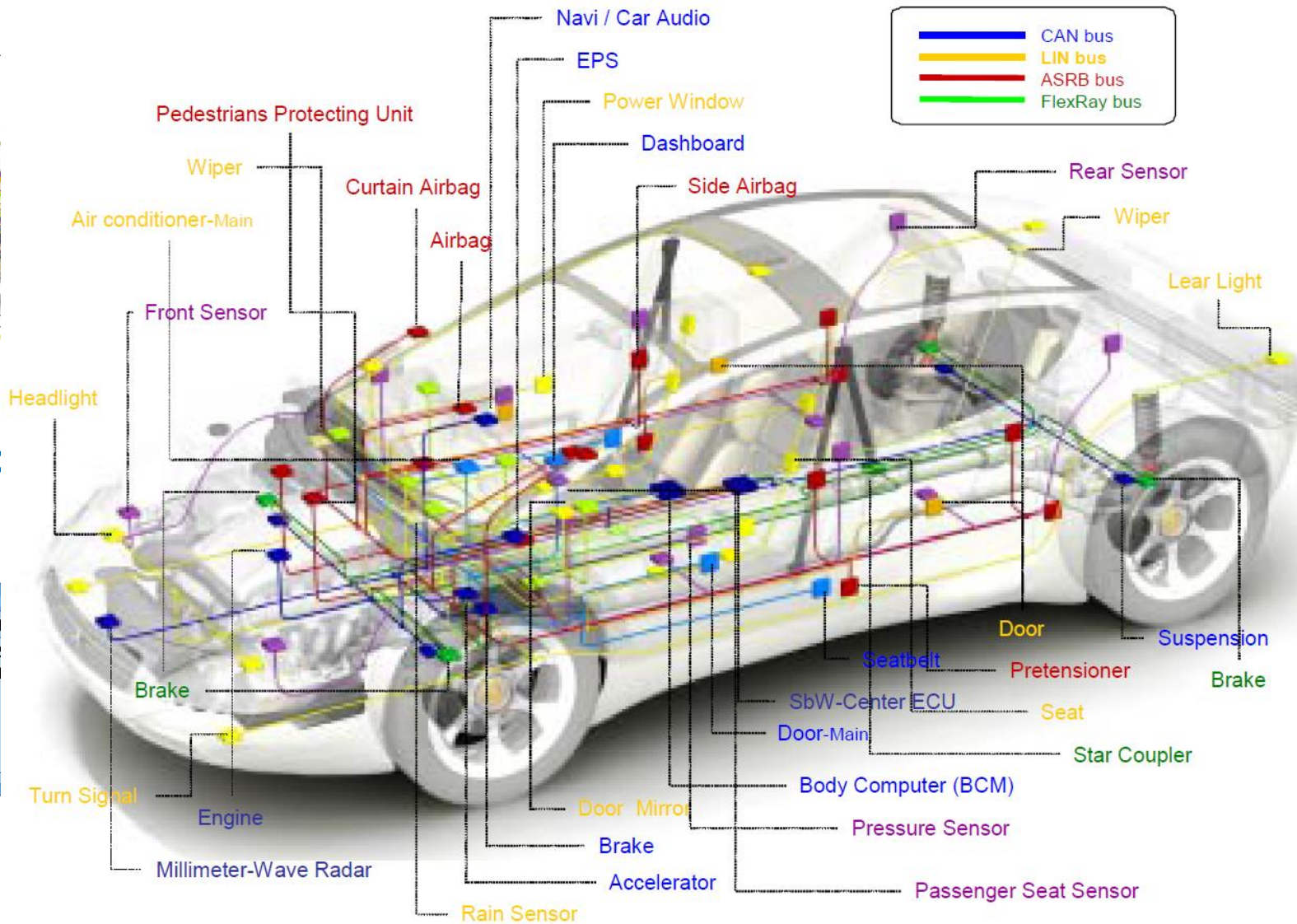
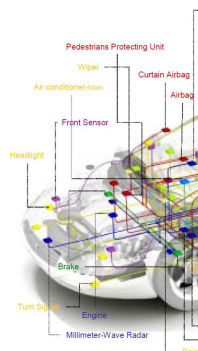




V2X Deployment Program

Vehicles have a lot to say...

Interconnected vehicle data enabled by V2X



All built on natic



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Alert

V2X = Connected Vehicle Technology

V2V = Vehicle-to-Vehicle communication

V2I = Vehicle-to-Infrastructure communication

I2V = Infrastructure-to-Vehicle communication

V2X = Vehicle-to-Everything communication

Why V2X Technology?



The three biggest problems facing our nation's roadways...



5.6 million crashes
32,719 deaths



6.9 billion hours in traffic



3.1 billion gallons wasted

“The safety benefit of V2V is undeniable. It will save lives, and everybody knows that. A delay in rolling out V2V will cost lives, and that’s a tragedy.”

- Harry Lightsey, General Motors

Why V2X Technology for the Older Population?



Challenges facing older drivers on our nation's roadways...



5,709 fatalities
221,00 injuries



66 percent of fatalities
occurred at non-intersections



18 percent of all licensed
drivers (2014; 2005 = 15%)

Some 46.2 million people — about 14.5 percent of the total U.S. resident population — were 65 and older.

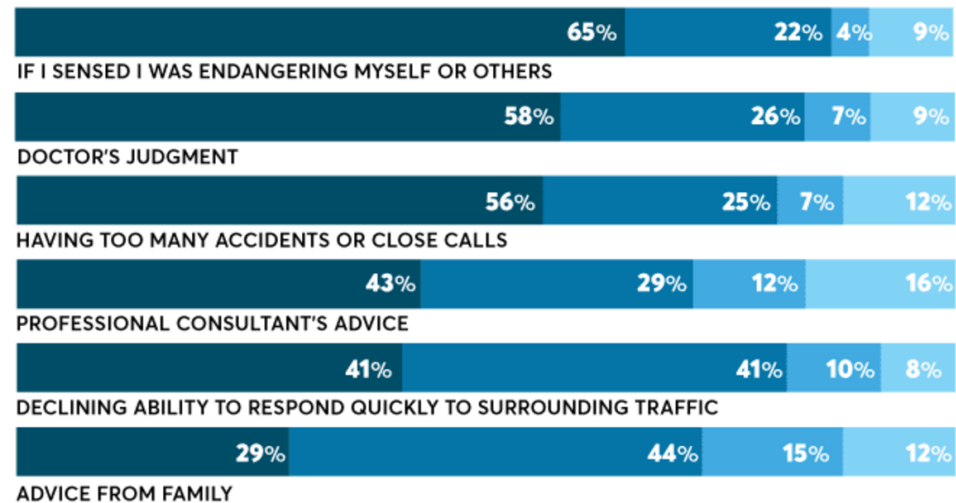
“Fatality rates are 17 times higher than those of 25 to 64 year olds.”

- AARP

Reasons Seniors Would Stop Driving

Factors people 65 and older say might make them hang up the car keys for good.

Likelihood of giving up driving → ■ Very Likely ■ Somewhat Likely ■ Not Very Likely ■ Not At All Likely



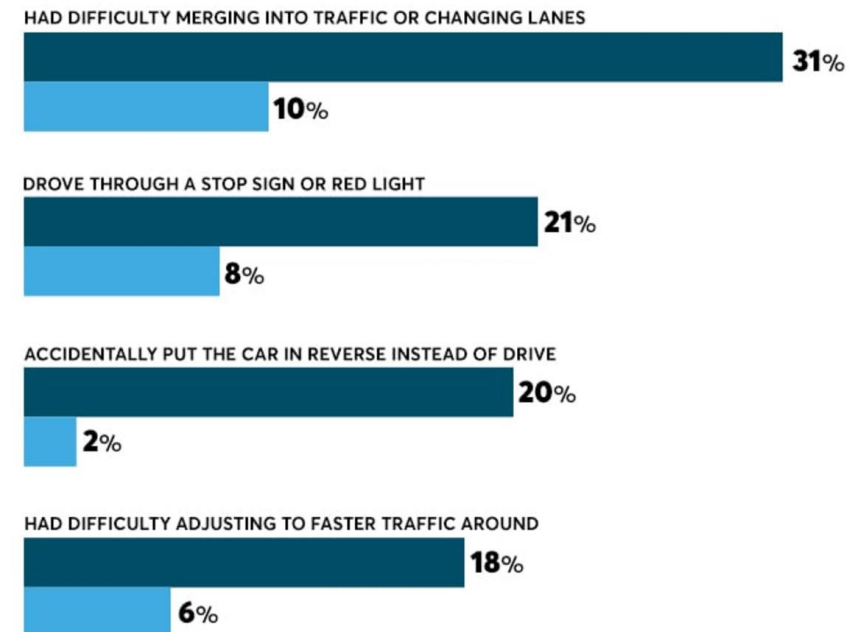
Source: Based on responses to a spring 2016 Consumer Reports survey of 4,543 drivers nationwide.

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Risky Business on the Road

Driving difficulties and errors reported during the previous six months, by age group.

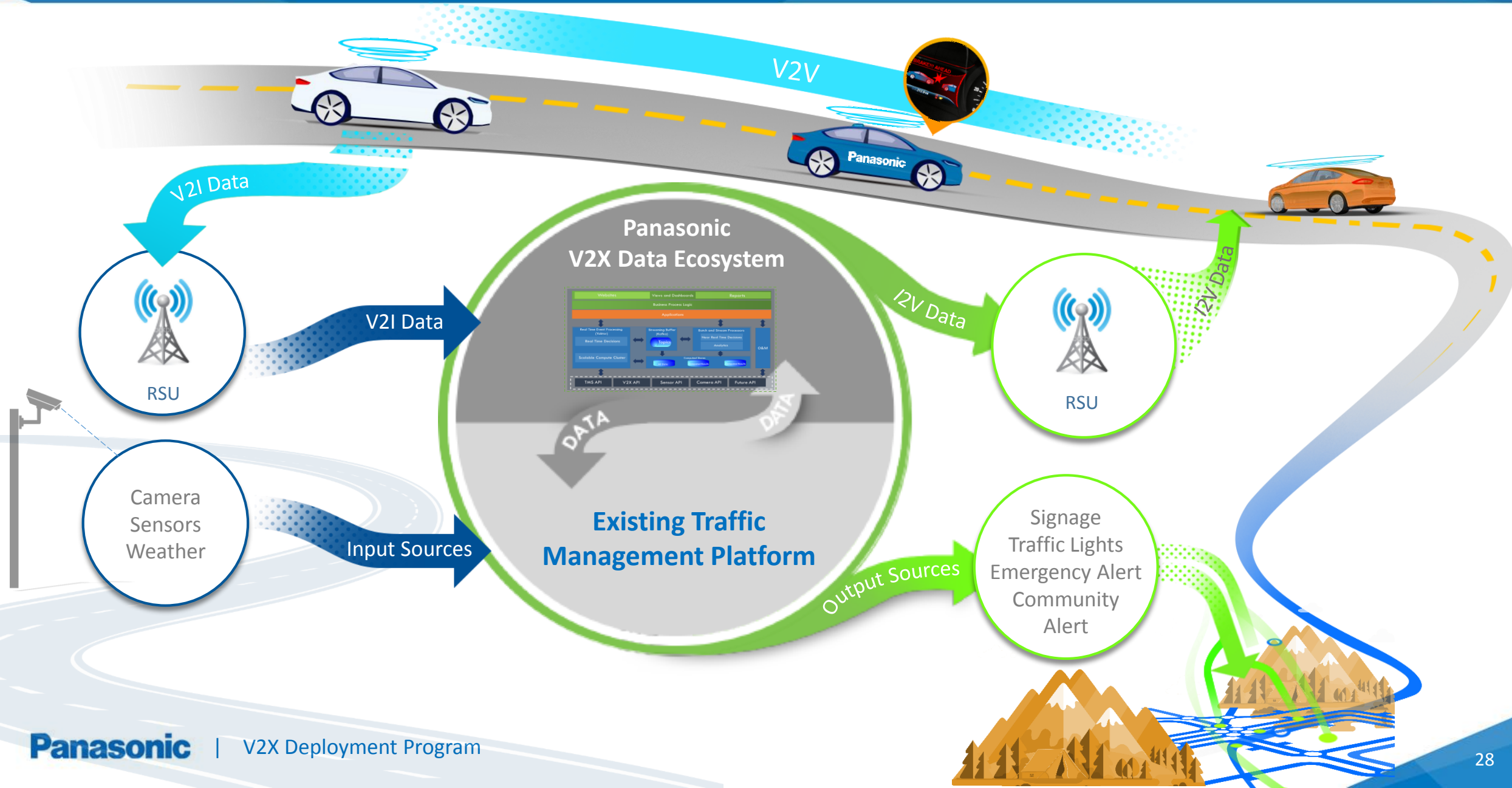
■ AGES 18-29 ■ AGES 75+

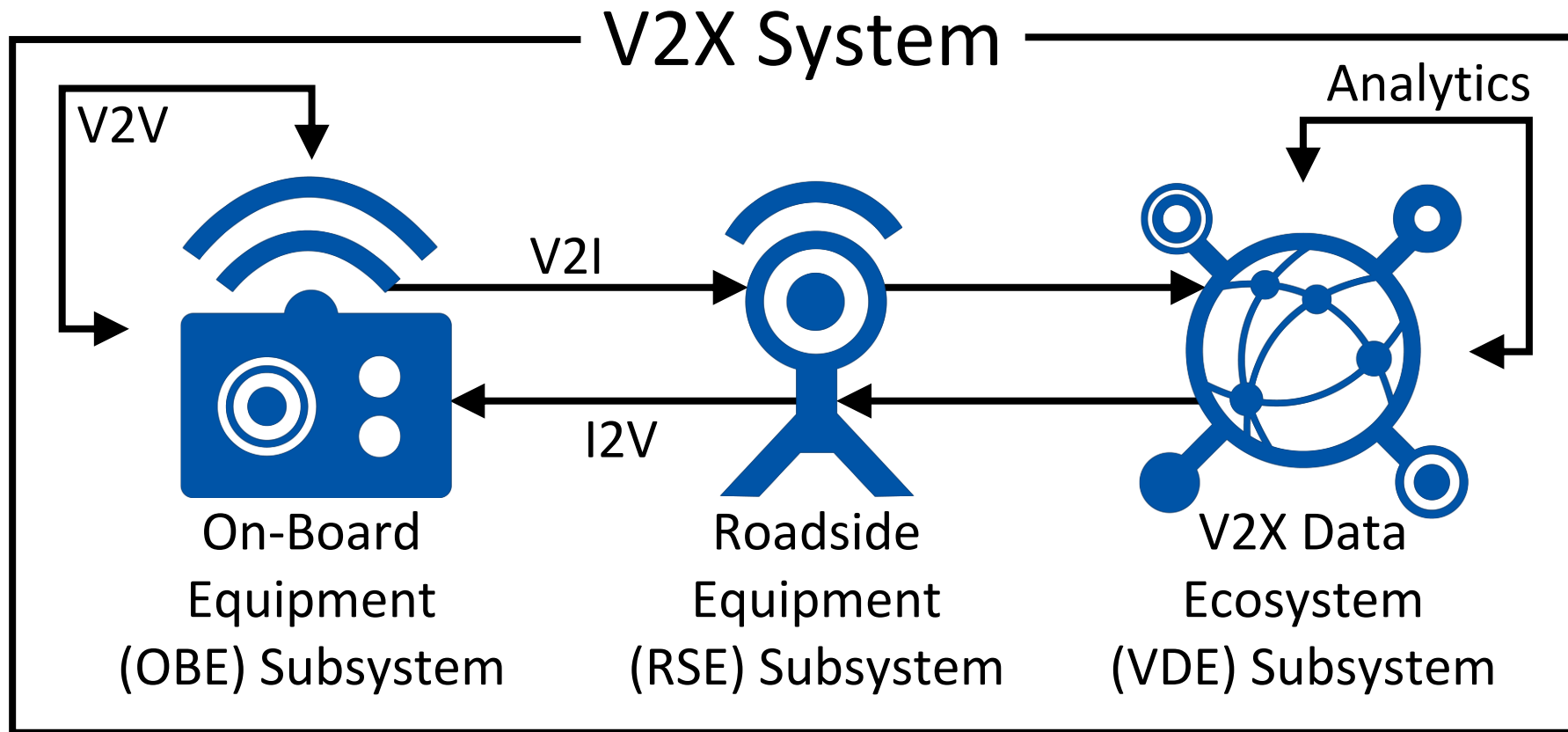


Source: Based on responses to a spring 2016 Consumer Reports survey of 4,543 drivers nationwide.

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Source: <https://www.consumerreports.org/elderly-driving/how-seniors-are-driving-safer-driving-longer/>





1. **On-Board Equipment (OBE)** – V2X equipment inside vehicles that transmits and receives data between vehicles and to the infrastructure.
2. **Roadside Equipment (RSE)** – V2X equipment installed on the infrastructure that transmits and receives data to and from vehicles.
3. **V2X Data Ecosystem (VDE)** – The “Brain”

The V2X Ecosystem Unlocks Even More

Imagine...



Prevent **419,000** additional crashes
Save **5,000** more lives
Avoid **5,000** more fatal crashes



Improve freeway travel times by **42** percent
Improve arterial travel times by **27** percent
Reduce poor weather incidents by **25** percent



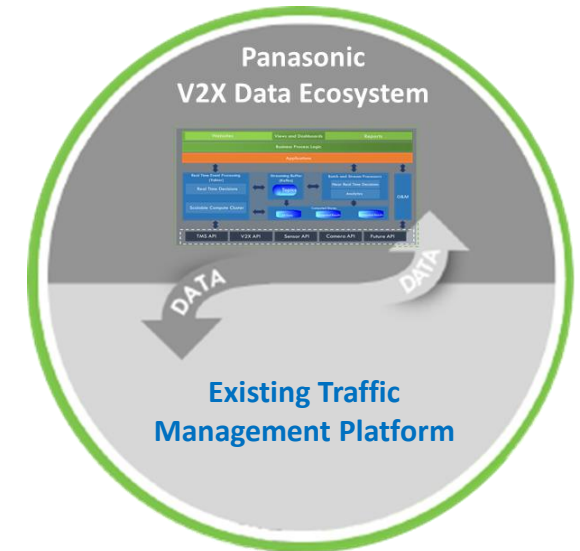
Improve fuel savings by **22** percent
Reduce VMT by **20** percent
Improve freeway travel times by **42** percent

V2X ecosystem gives roadway operators the **ultimate situational awareness of all roadways** providing:

- Highly accurate, geo-located traveler information
- Highly accurate, localized weather data
- Faster emergency response times
- Improved incident management
- More intelligent, coordinated traffic signal systems
- Improved truck parking information/availability
- Enhanced maintenance decision support systems (e.g., snow plow operations)
- Improved infrastructure diagnostics (e.g., pothole identification, roadway friction)

Benefit to Cities:

1. Empowers Cities with data ownership and delivers open data for the world.
2. Prepares Cities for autonomous vehicles





Questions / Discussion



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| V2X Deployment Program