



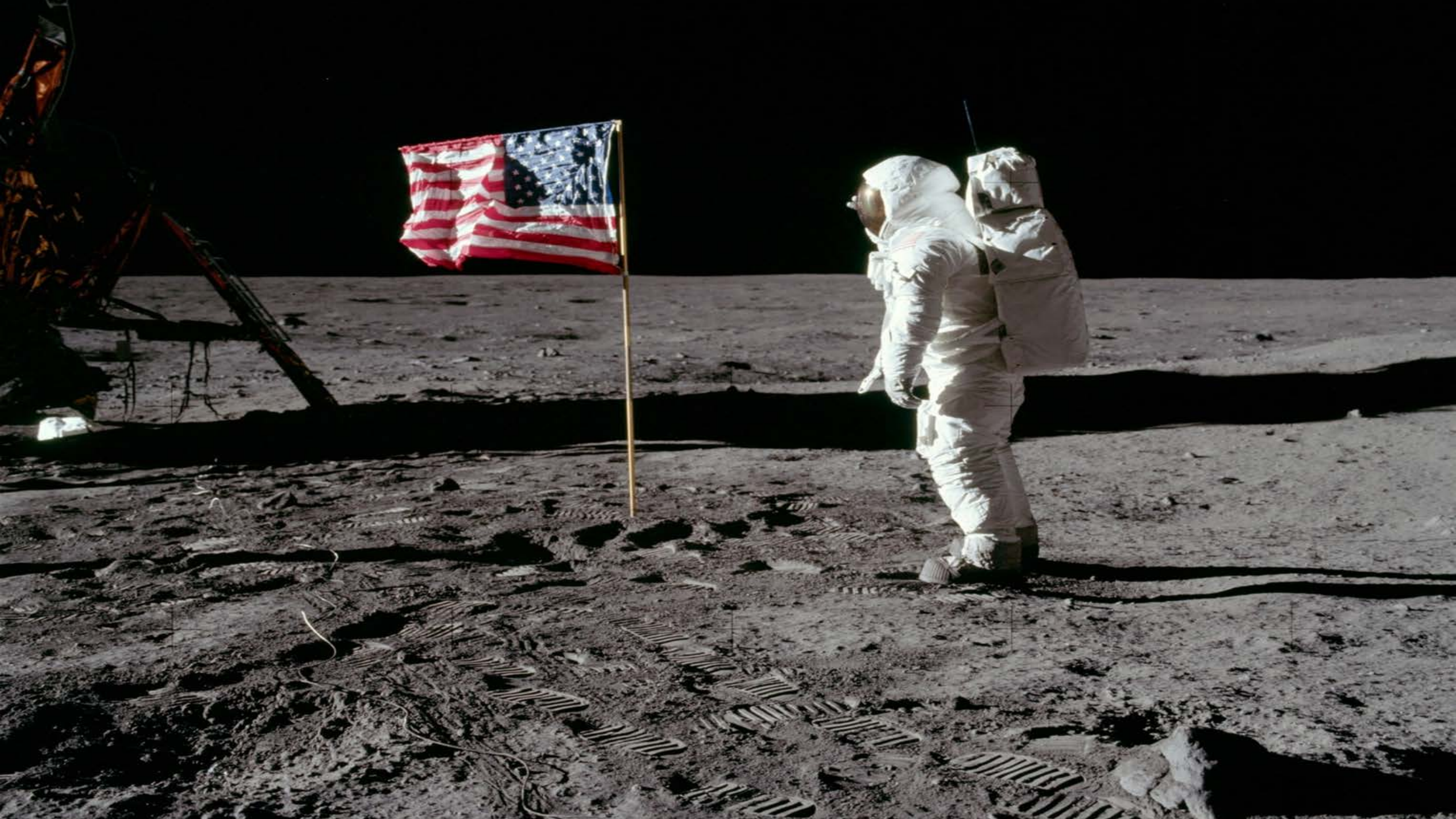
TOLLING. MOVING SMARTER.

ROAD CHARGE AND THE FUTURE OF TRANSPORTATION

*2015 IBTTA Transportation Finance &
Road Usage Charging Conference
April 27, 2015*

Jim Madaffer
Commissioner
California Transportation Commission





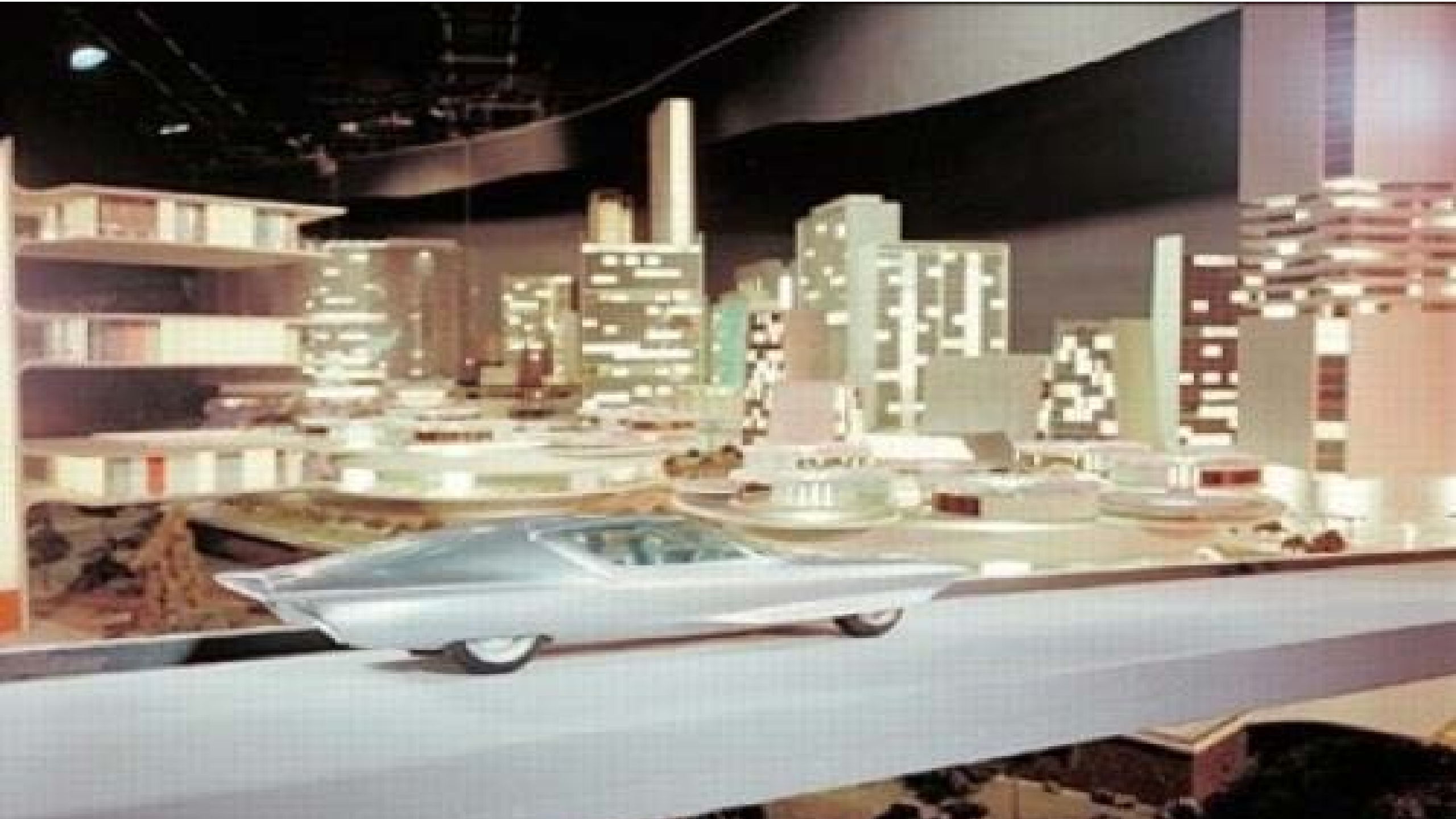




**I HAVE SEEN
THE FUTURE**
GENERAL MOTORS *Futurama*

TOMORROW-LAND

High spot of the New York World's Fair reopening this Spring—







An efficient transportation system is critical to California's economy and quality of life...



California Infrastructure Report Card

- ✓ **\$59 Billion** - Deferred Transportation Maintenance
Source: Governor Brown's 2015 Five-Year Infrastructure Plan
- ✓ **45th** - State Ranking for Overall Highway Performance
Source: Reason Foundation's 21st Annual Report on the Performance of State Highway Systems
- ✓ **\$296 Billion** - Ten-Year Project Funding Shortfall
Source: California Transportation Commission's 2011 Statewide Transportation Needs Assessment

California Infrastructure Report Card

Pavement

58%

of California Roadways Require Rehabilitation or Pavement Maintenance

87%

of California's Counties have an Average Pavement Rating of "At Risk" or "Poor"

25%

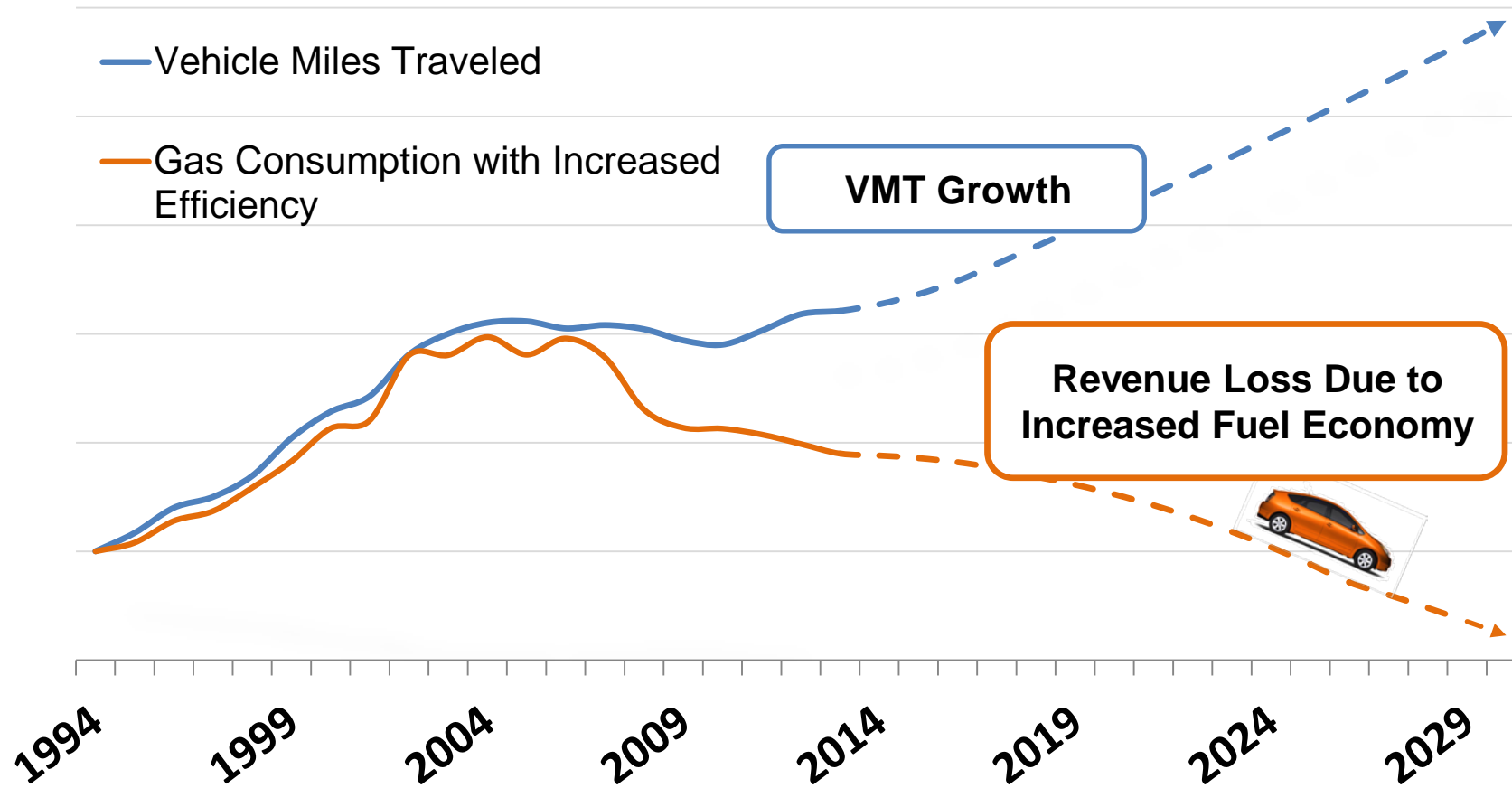
of Local Streets and Roads will be in "Failed" Condition by 2022 under our Current Funding Levels

6

of the Nation's 10 Worst Urban Area Pavement Conditions



Our transportation system is in financial crisis



CAFÉ Standards

Rising Federal Fuel Efficiency Standards for Passenger Vehicles and Light Trucks



The Gas Tax is DEAD

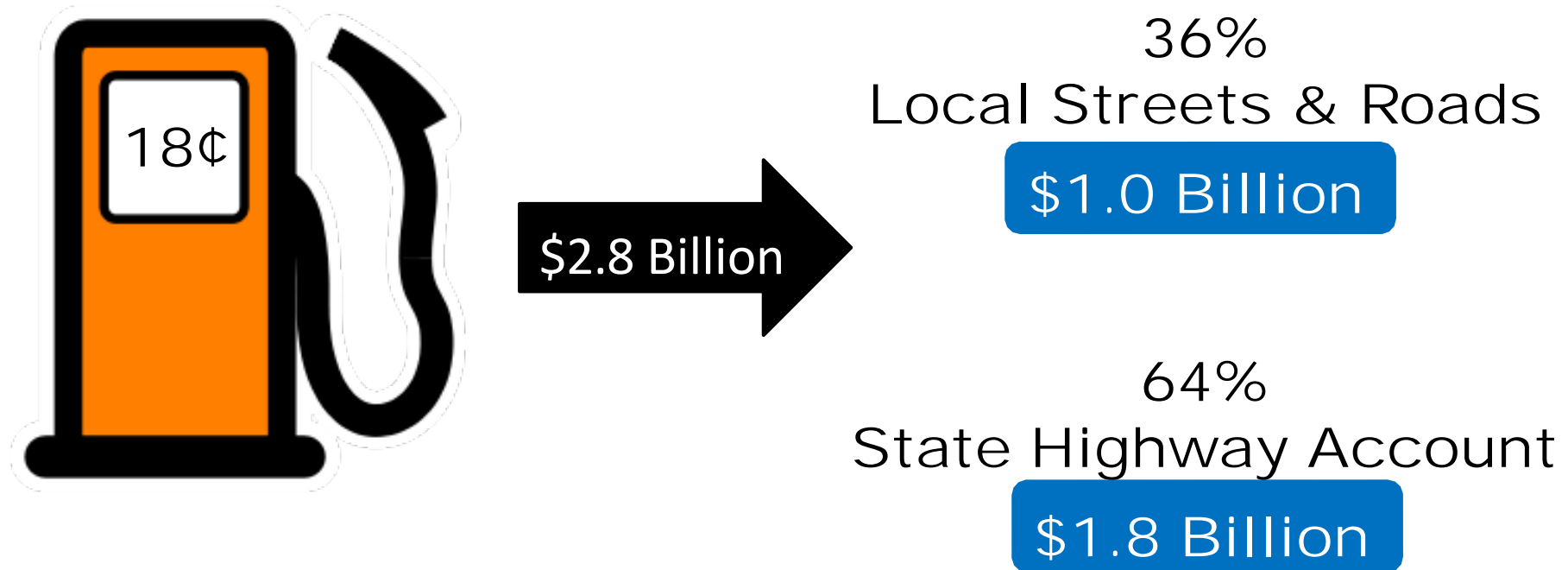
Source: National Highway Transit Administration

State Motorist Taxes and Fees

- Gasoline Excise Taxes
- Diesel Taxes
- Commercial Vehicle Weight Fees
- Motor Vehicle Fees

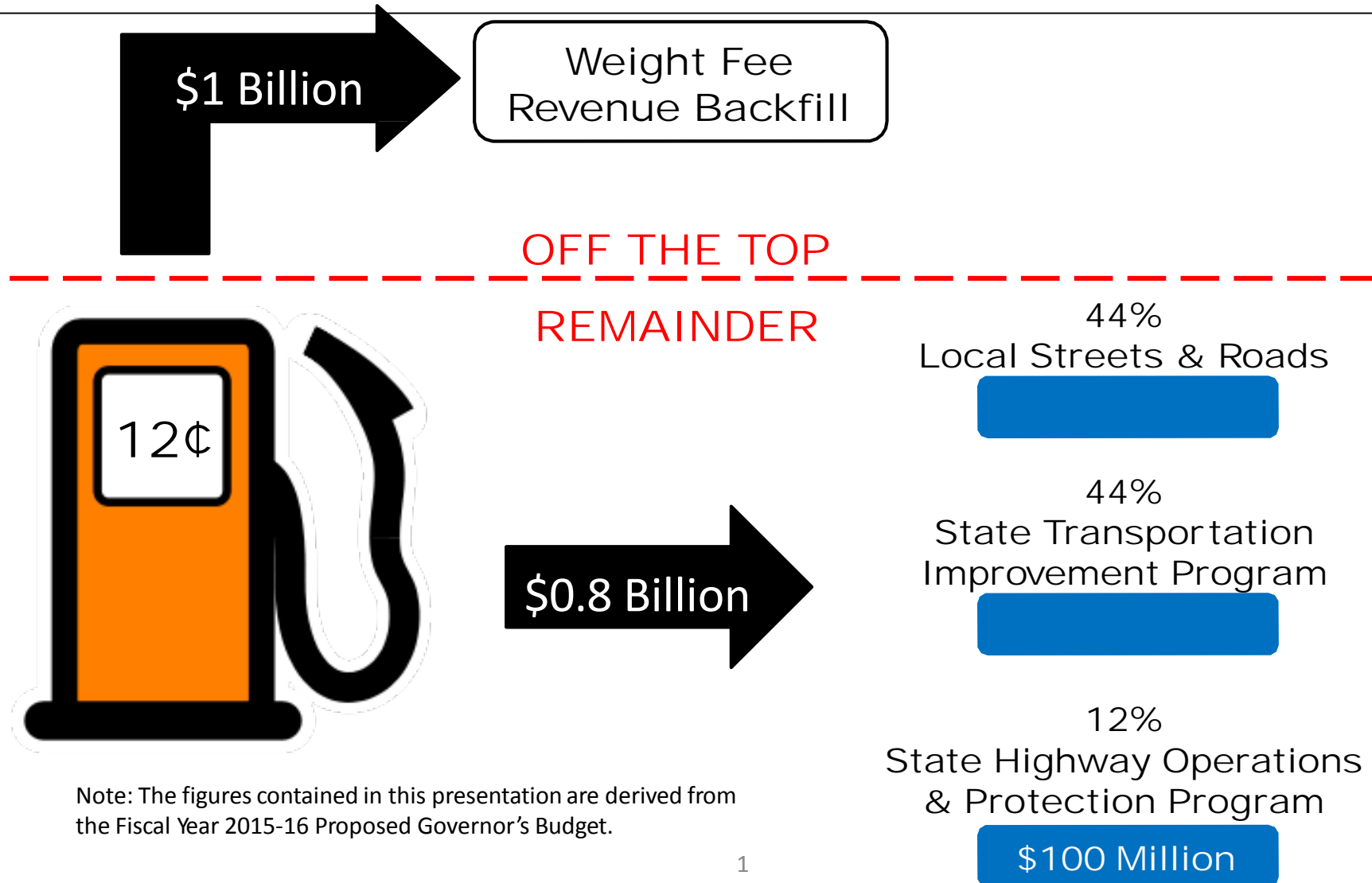
Note: The figures contained in this presentation are derived from the Fiscal Year 2015-16 Proposed Governor's Budget.

Base Excise Tax (Gasoline)



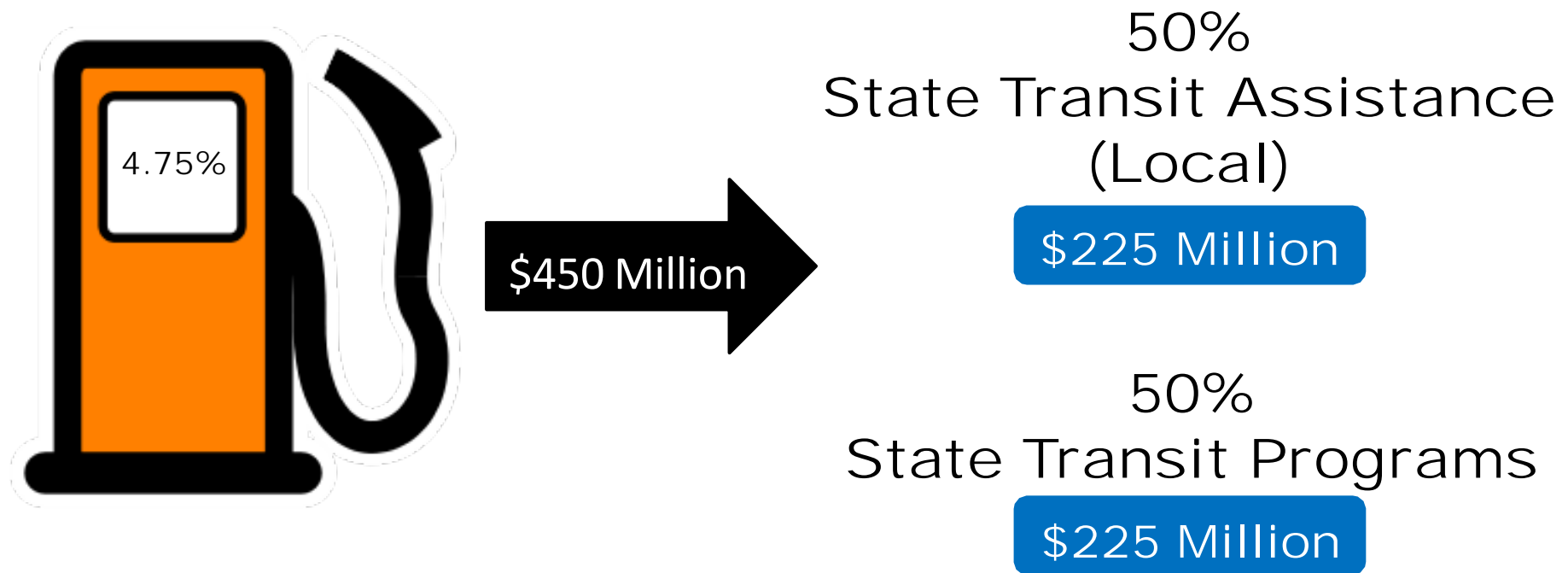
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Swap Excise Tax (Gasoline)



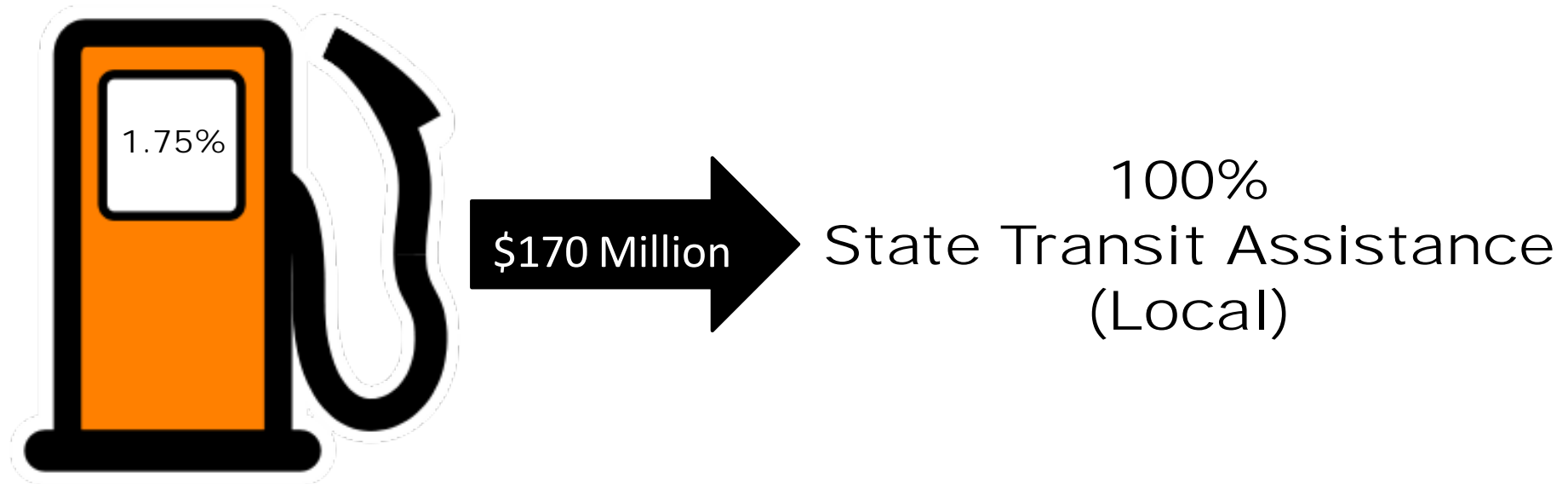
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Base Sales Tax (Diesel)



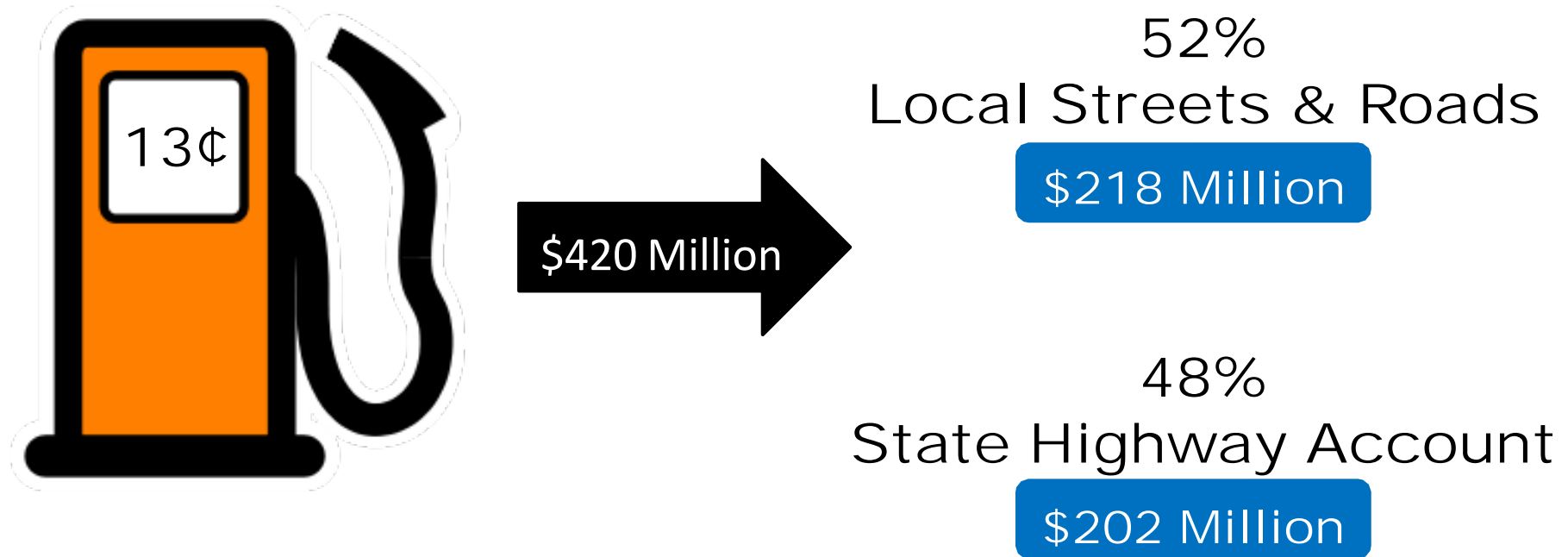
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Swap Sales Tax (Diesel)



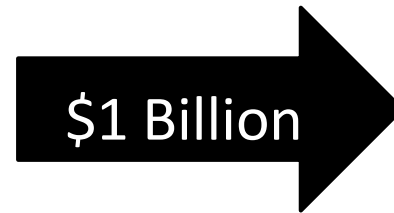
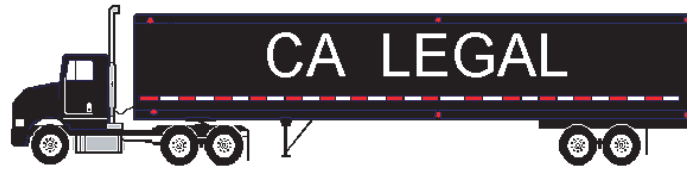
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Excise Tax (Diesel)



Note: The figures contained in this presentation are derived from the Fiscal Year 2015-16 Proposed Governor's Budget.

Commercial Vehicle Weight Fees



100%
State General Fund
for
Transportation Bond
Debt-Service

Note: The figures contained in this presentation are derived from the Fiscal Year 2015-16 Proposed Governor's Budget.

Motor Vehicle Fees

Driver's License



Vehicle Registration



\$3.1 Billion

California Highway Patrol

Department of Motor Vehicles

Other Agencies

~~Roads~~

Note: The figures contained in this presentation are derived from the Fiscal Year 2015-16 Proposed Governor's Budget.

Motor Vehicle Fees (Continued)



Note: The figures contained in this presentation are derived from the Fiscal Year 2015-16 Proposed Governor's Budget.

Summary

Total State Revenue	\$10.3 Billion
- Other State Agencies	\$3.7B
- Debt-Service	\$1.0B
- Transit	\$0.6B
- Capacity Increasing Projects	\$0.4B

Road Maintenance,
Rehabilitation, & Operations **\$4.6 Billion**

Note: The figures contained in this presentation are derived from the Fiscal Year 2015-16 Proposed Governor's Budget. Does not include federal funds, local measure funds, general sales tax that goes to locals, and reimbursements.

Revenue Solutions

- **Near-Term Solutions**

- Truck Weight Fees
- Excise Tax
- VLF/VRF
- Early Loan Repayments
- Cap & Trade
- New legislation . . . Speaker Atkins & Senator Beall

- **Long-Term Sustainable Solutions**

- Congestion Pricing/Tolling
- Public Private Partnerships (P3's)
- Road Charge Program (SB 1077)

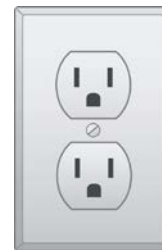


In 2014, Senate Bill 1077 was signed into law

- Directs the California Transportation Commission (CTC) to establish a Technical Advisory Committee
- TAC to report recommendations to the California State Transportation Agency (CalSTA)
- Requires CalSTA to implement a pilot program by January 2017
- Requires a report of findings and recommendations by June 2018

Road Charging is ...

- A policy whereby motorists pay for use based on the distance they travel on the roadway network.
- A “User Pays” principle – the more you drive, the more you pay.
- Similar to other utilities such as electricity, water, telephone.



Road Charge Technical Advisory Committee Composition

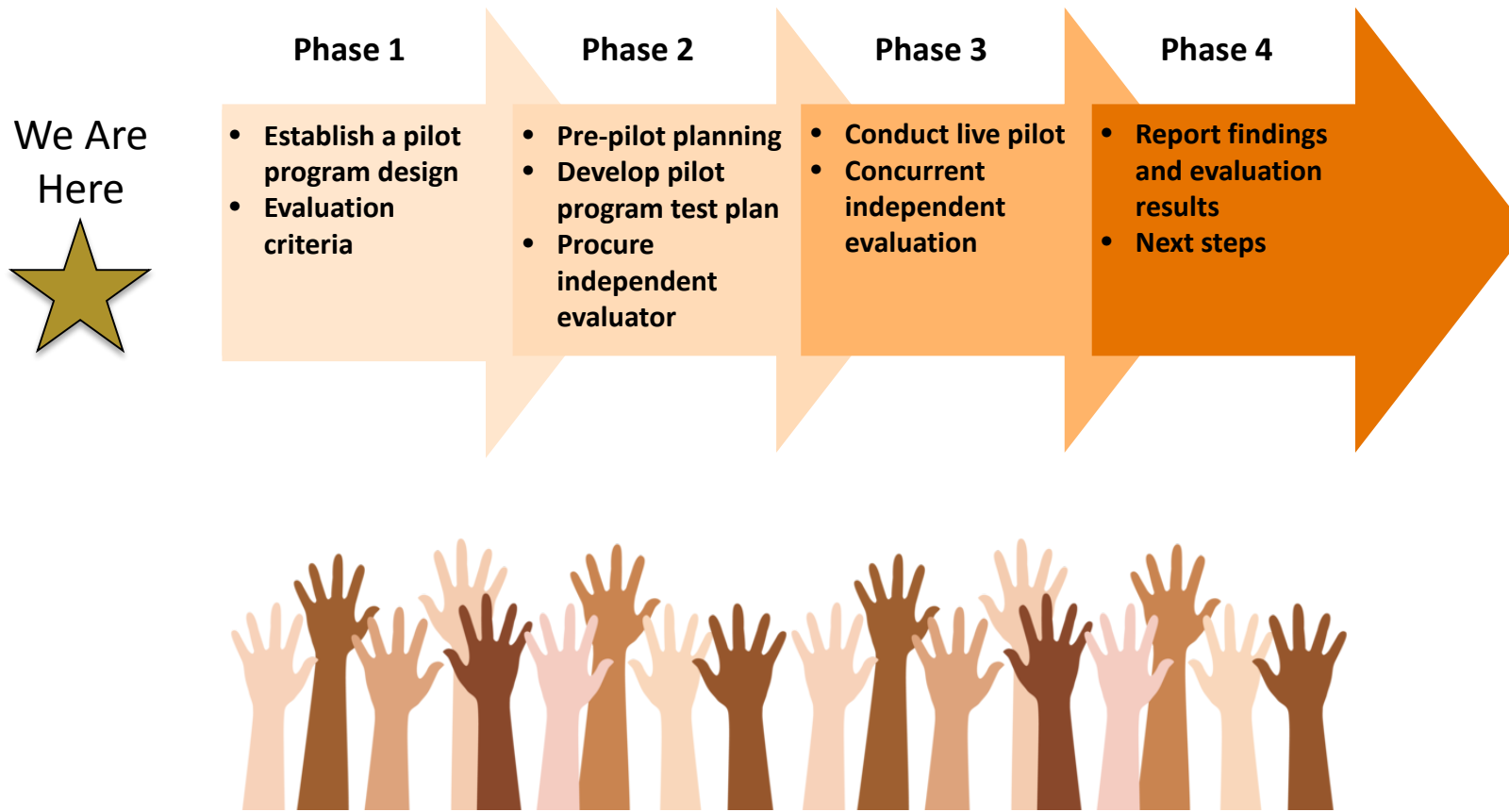
- 15 members:
 - Telecommunications Industry
 - Data Security & Privacy Industry
 - Privacy Rights Advocacy Organizations
 - Regional Transportation Agencies
 - Members of the Legislature
 - Highway User Groups
 - National Research & Policymaking Bodies
 - Other Relevant Stakeholders

The Technical Advisory Committee is examining all dimensions of a Road Charge

- Revenue sustainability
- Privacy protection
- Equity implications
- Technology alternatives
- Environmental sustainability
- Out-of-state travelers
- Communications & public outreach
- Organizational framework



As we design the pilot test, we want the public to participate



Input from California residents and businesses is integral to our effort

- Focus Groups
- Telephone surveys
- Website
- Online Questionnaire
- Twitter
- Facebook
- Public Meetings

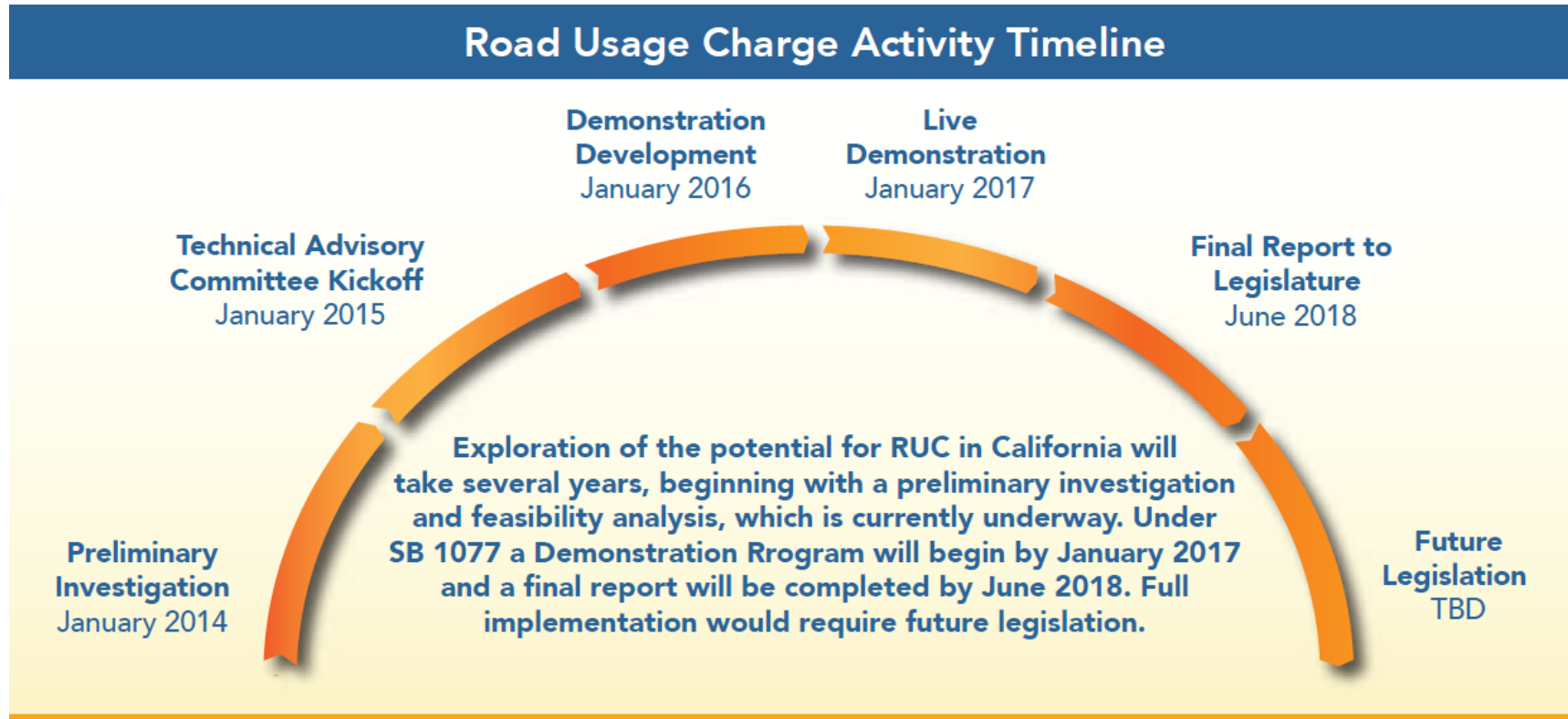


TAC monthly meetings around the state



Meeting Date	Meeting Location
April 24	Monterey
May 29	Fresno
June 26	Sacramento
July 24	Tahoe City
August 28	San Diego
September 25	North State
October 23	Bay Area
November 20	Los Angeles
December 11	Riverside

Road Charge Pilot Program Timeline





2007 DARPA Urban Challenge



'Boss' CMU Tartan Racing, 60 miles urban, 4h:10m

2008 Levandowski's Pribot



Delivered pizza across SF Bay bridge

2010 Audi 'Pikes Peak'



12 mile hill climb, 156 turns, 27min (cf 11m48s)

2011 AutoNOMOS Labs Berlin drive



50 miles of autonomous driving on Berlin roads

2013 Vislab BRAiVE, Parma



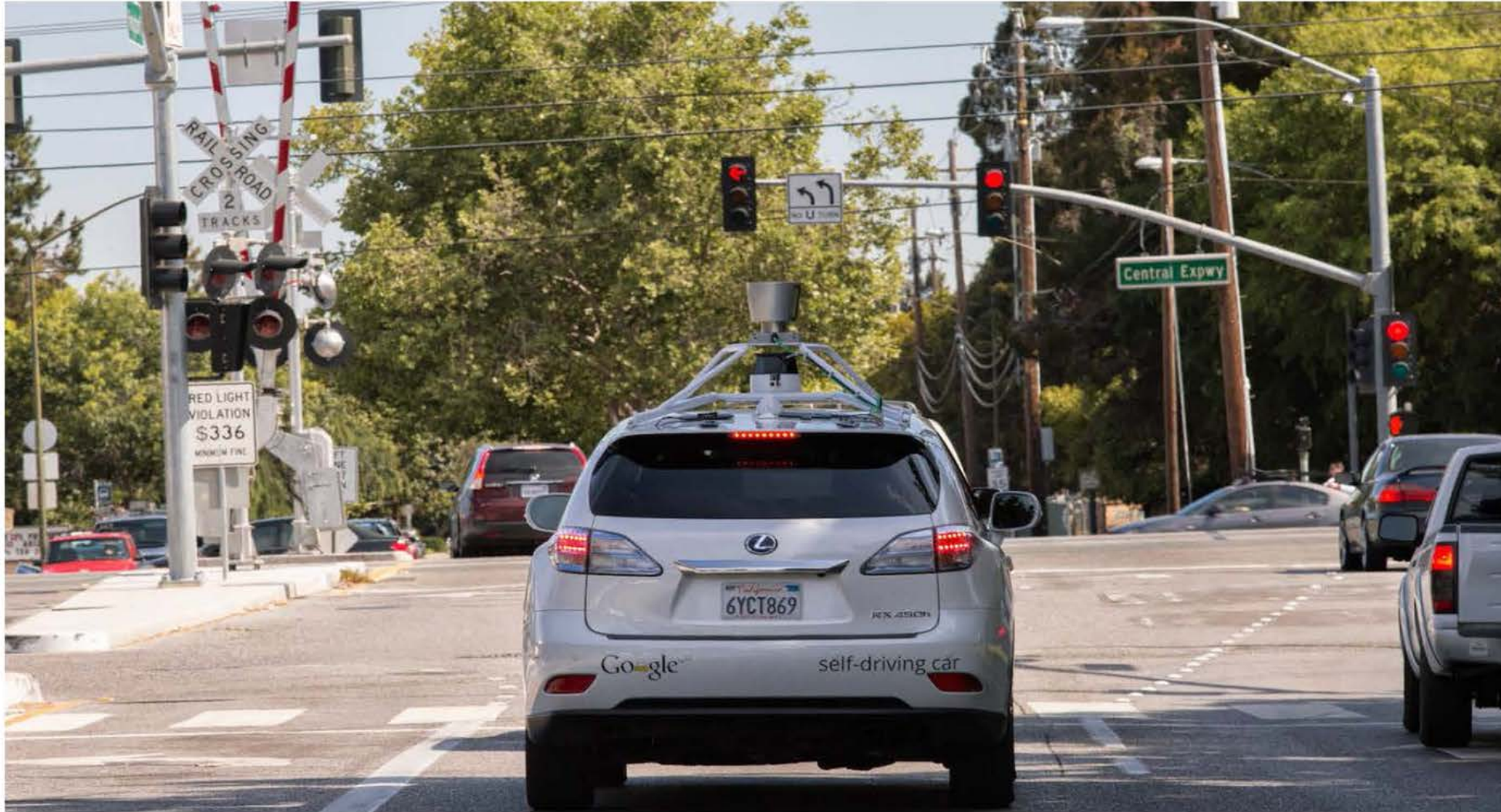
Rural-urban demo, in real, complex traffic, vision

2013 Daimler/Mercedes Bertha Benz Road Trip



60 mile rural-urban demo, vision based

2014 Google 'mastering city street driving'



700k miles, cyclists signals, construction zones

2014-2016 Google Prototype 'Vehicle' (NEV)



25mph, 100 pilot project CA for 2yrs. 2017-2019?...

2015 Tesla 'Autopilot' (Autonomous 2023)



'will go from on-ramp to off-ramp autonomously'

2015 Mercedes Benz F 015 Concept



“Innovative perspective into the future of mobility.”



Mercedes Benz Future Truck 2025

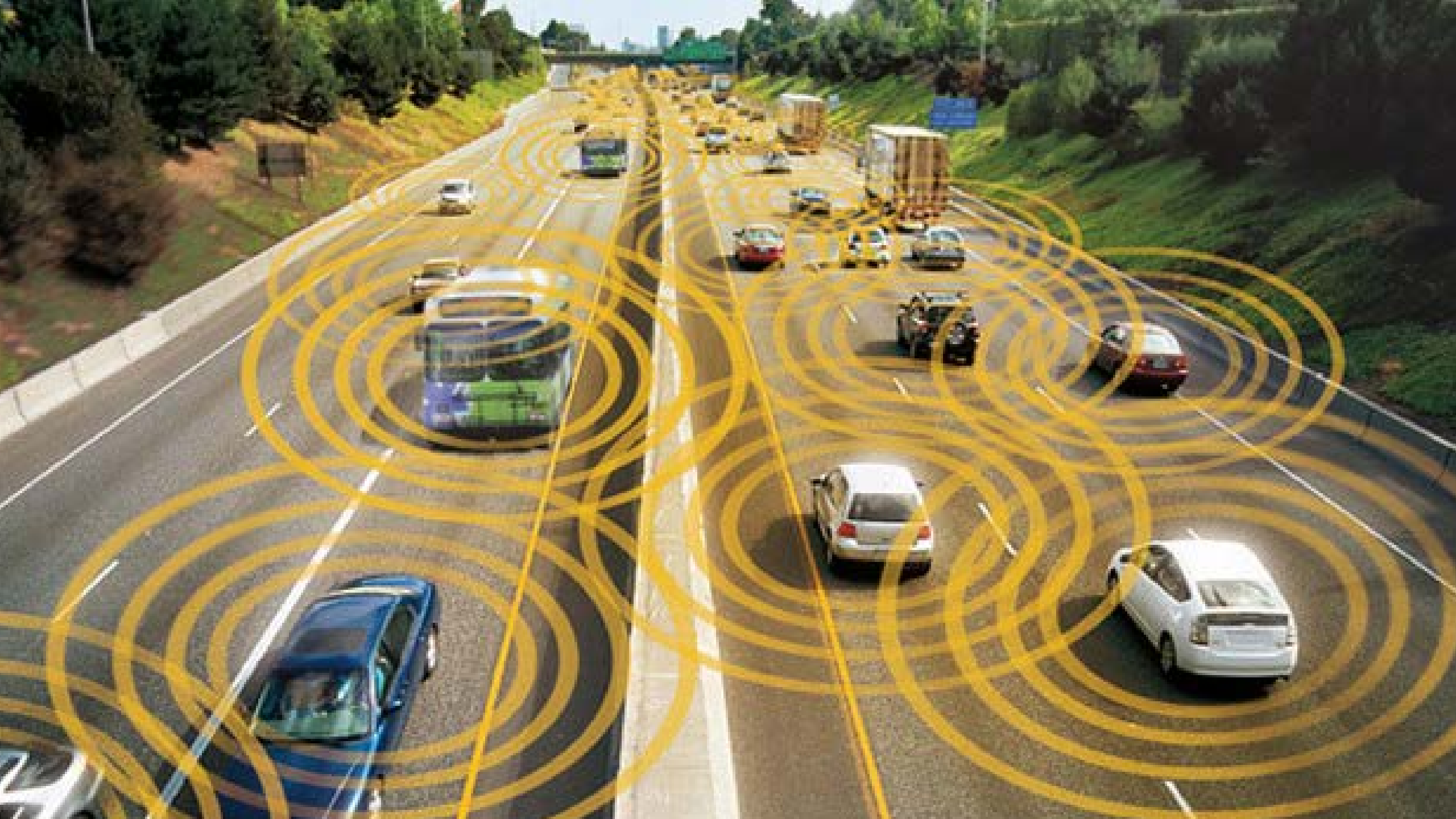


Many technological elements already available

2020-2025 Nissan Autonomous Drive



Range of Commercially viable AVs on road

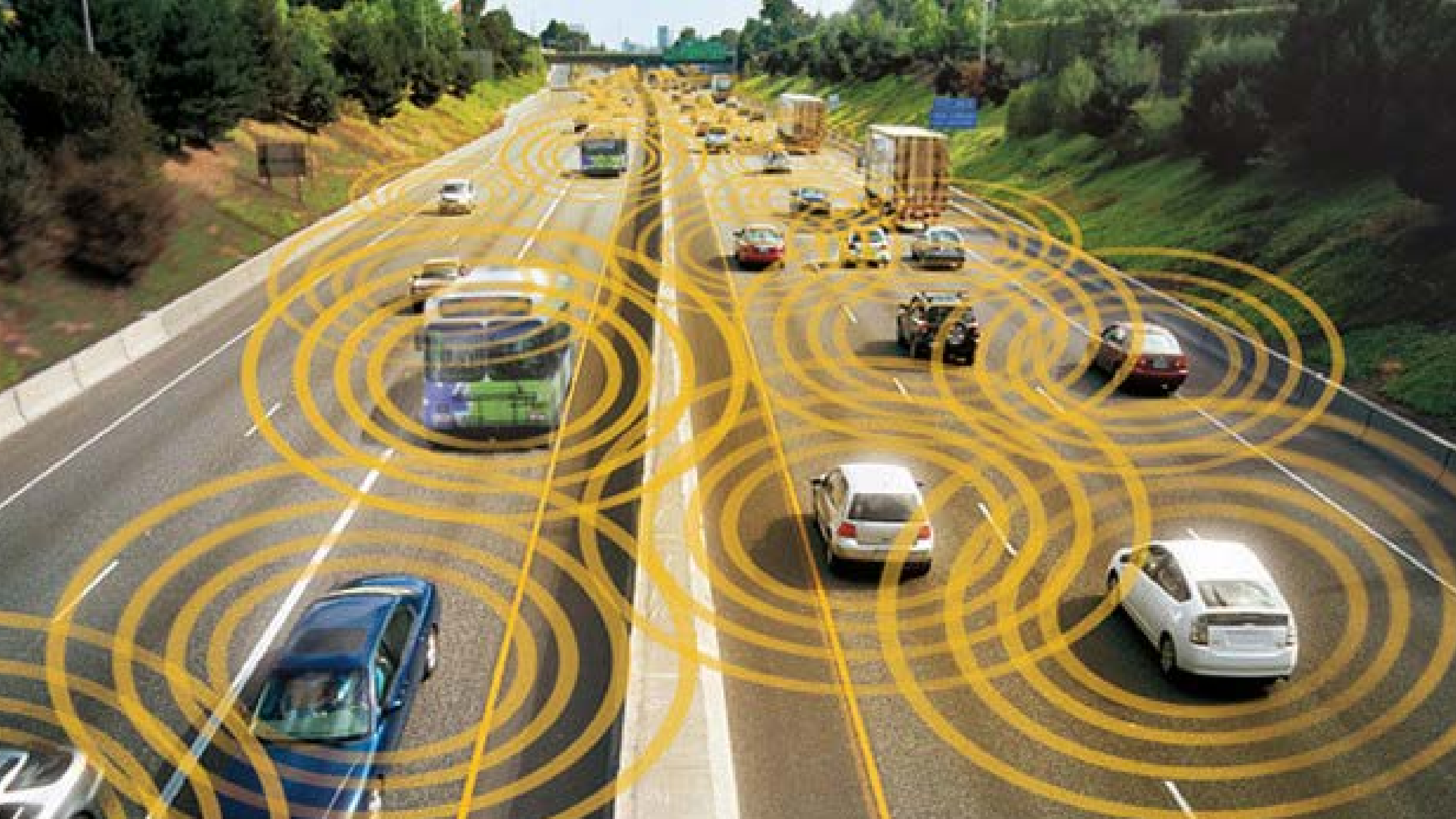




California PATH











New York City – April 2015

 **Enterprise**
CarShare



\$10.00

IN DRIVING CREDITS*

Plus

\$0 MEMBERSHIP FEE

\$10 APPLICATION FEE

Limited-time offer!



Join Now!
EnterpriseCarShare.com/JoinNYC

















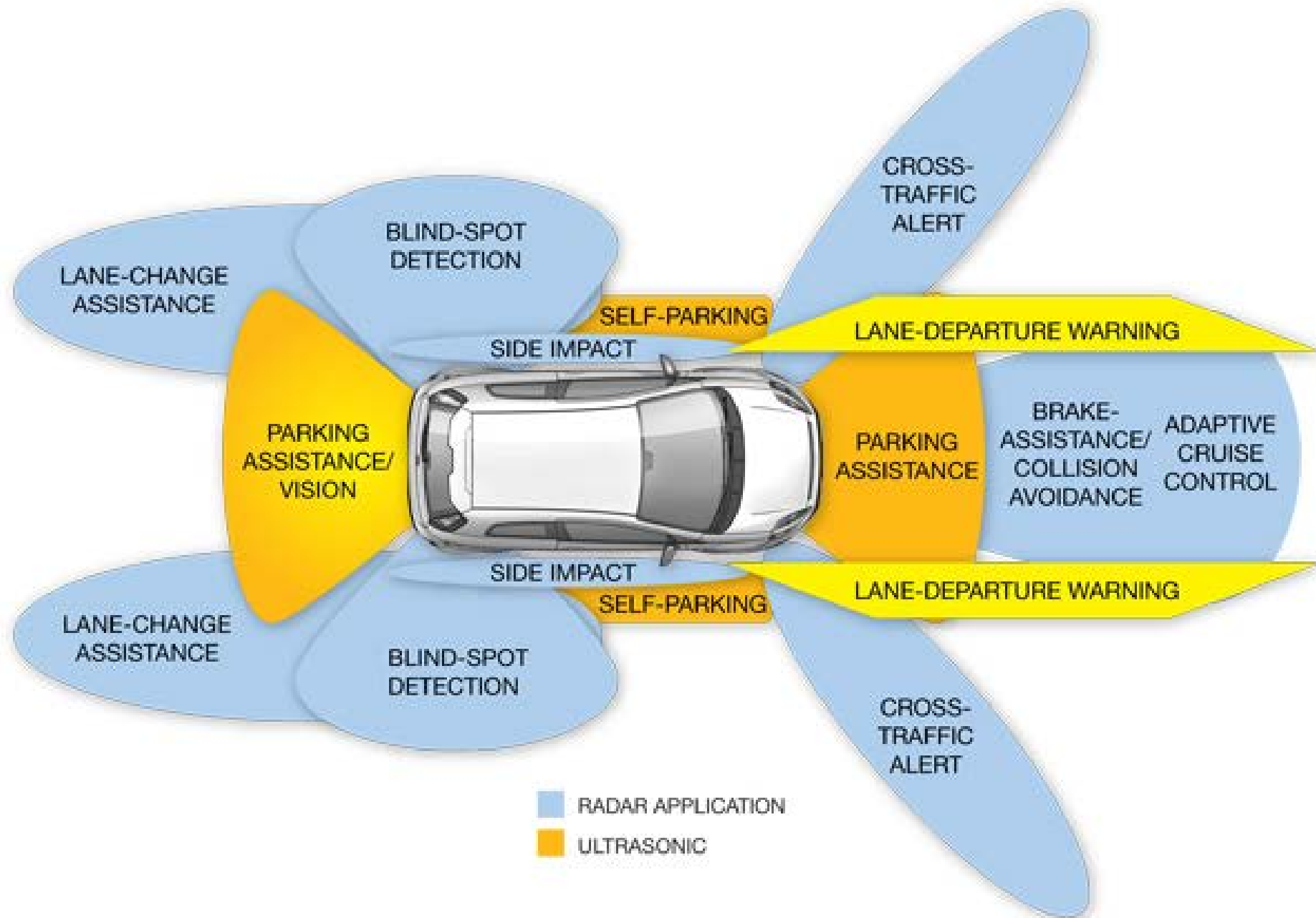


Figure 2 Several driver-assistance systems are currently using radar technology to provide blind-spot detection, parking assistance, collision avoidance, and other driver aids (courtesy Analog Devices).



The Future

NEXT EXIT 

A green rectangular sign with rounded corners and a white border is mounted on two wooden posts. The sign features the text "Welcome To The Future" in a white, sans-serif font. The background is a bright blue sky filled with numerous white, fluffy clouds. The sign is positioned in the lower-left quadrant of the frame, angled slightly upwards and to the right.

Welcome To
The Future

THANK YOU!



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