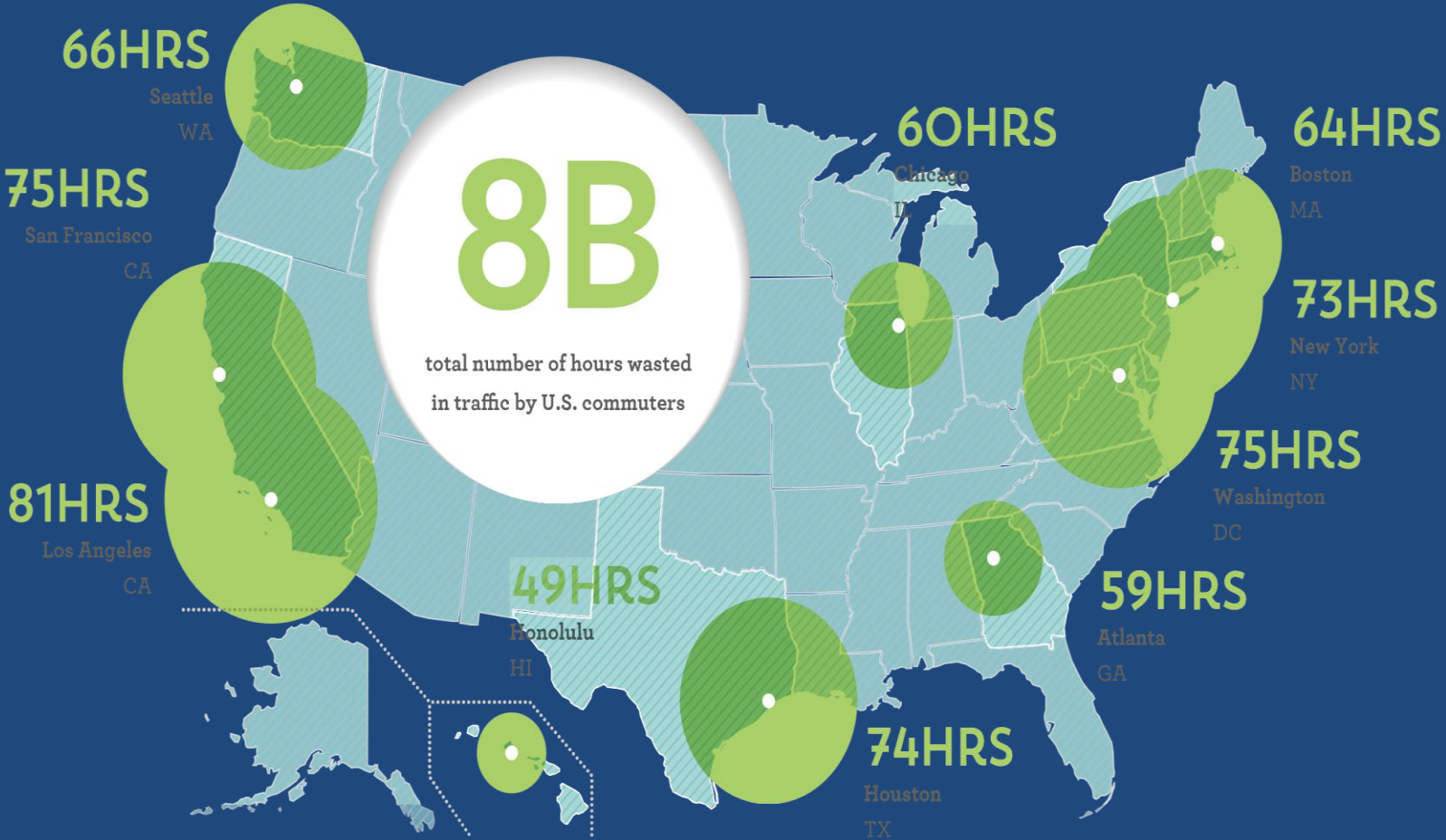


# The Future of Transportation: Automated, Connected, Electric and Shared

Washington Public Ports Association  
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# Seattle Area Traffic is 6<sup>th</sup> Worst in U.S.



U.S. CONGESTION BY NUMBERS:

YOU'LL NEVER  
GET TO WORK  
ON TIME  
HAHA!!

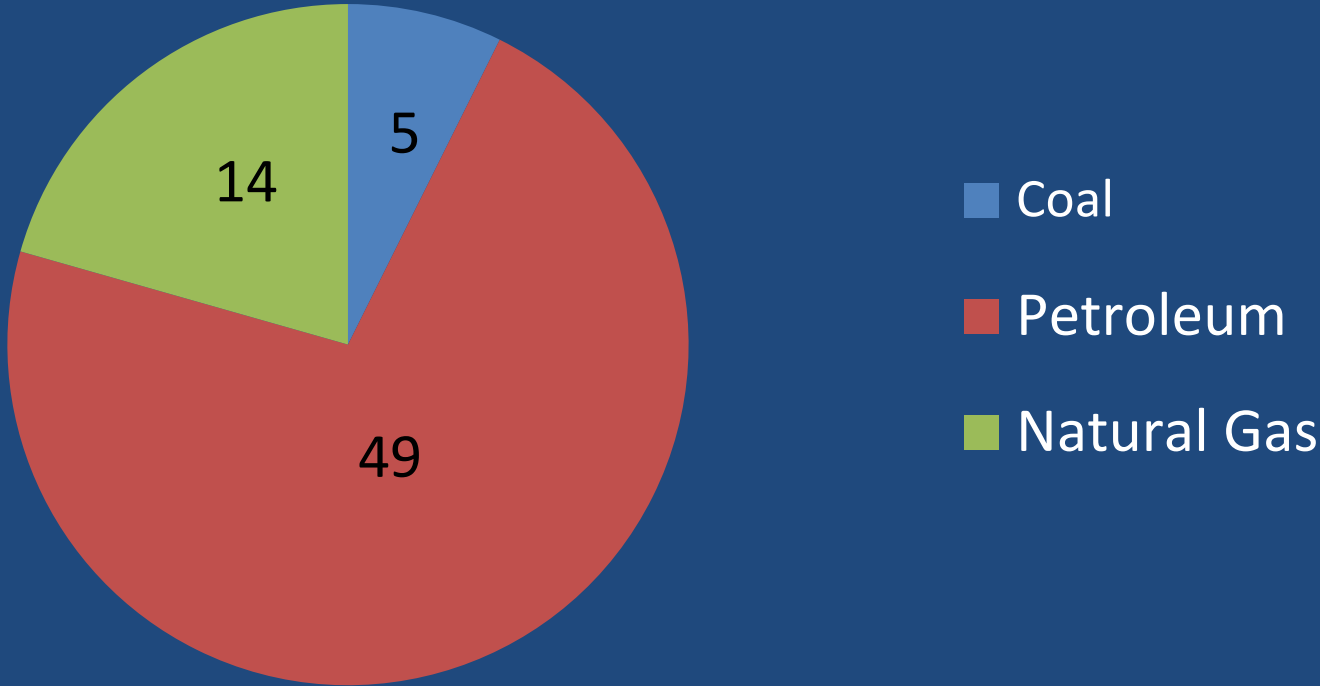


# Collisions, Deaths and Injuries Are Up

- Vehicle deaths in the U.S. last year: Over 40,000—up from 32,000 two years ago
- Worldwide vehicle death toll: over one million
- Vehicle deaths and injuries in the U.S. costs over \$70 billion a year.

# Oil Use Produces Most of Washington State's CO<sub>2</sub> Emissions

Washington State Fossil Fuel Use in 2011  
Millions of Metric Tons of CO<sub>2</sub>



# The Future of Transportation

- Vehicles will be Autonomous (Self-Driving), Connected, Electric and Shared. ACES
- Personal vehicles will link to faster, more flexible public transportation options into core areas
- The Mobility Internet







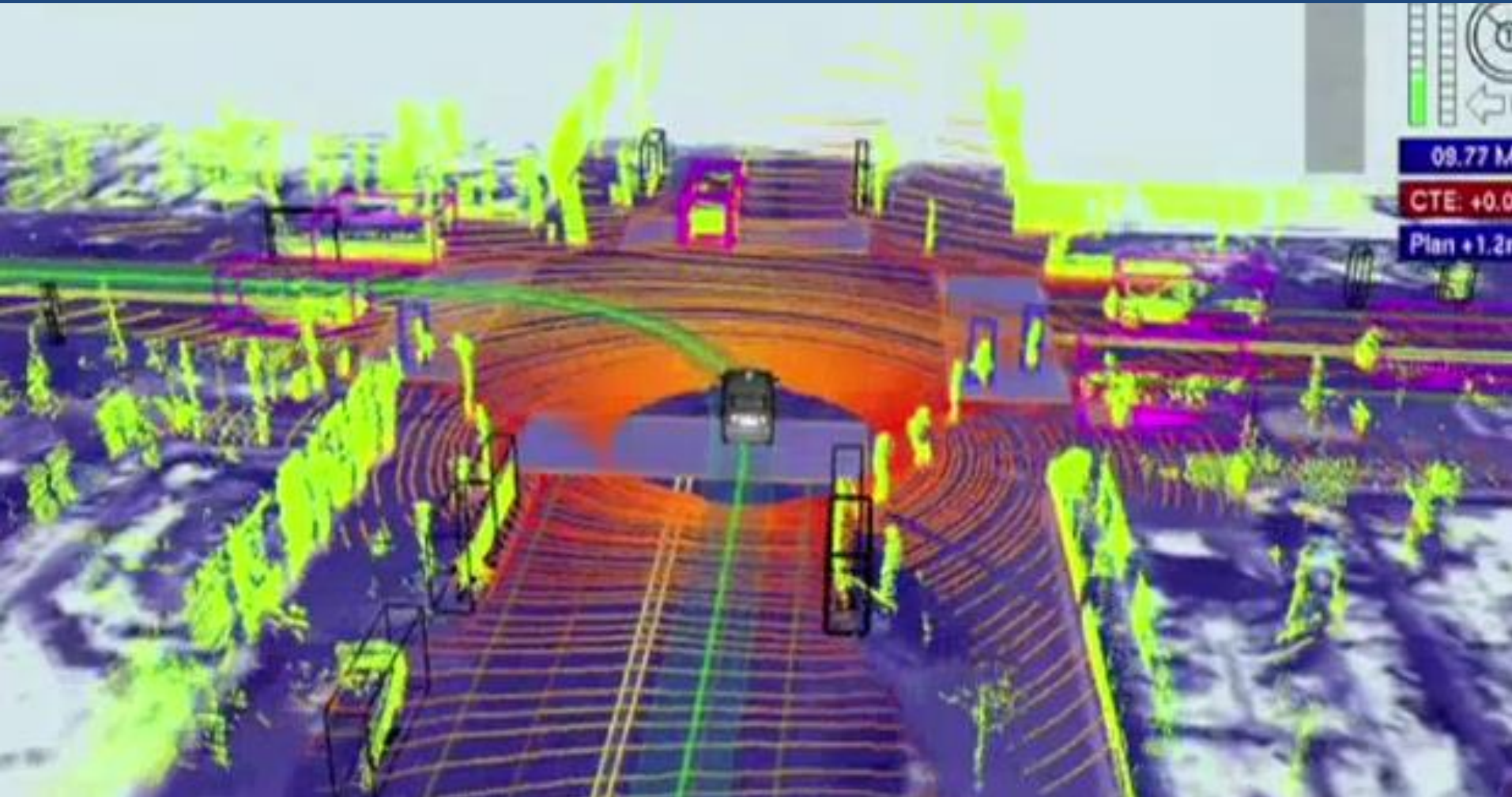
VOLKSWAGEN

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# What a Google Car “Sees”



# Self-Driving Vehicles

- New technologies are already reducing driver error
- Fully autonomous vehicles will cut vehicle collisions by as much as 80%
- Will cut urban congestion and reduce pollution

# Three Factors That Will Accelerate the Autonomous Vehicle Future

- Moore's Law is in the "Second Half of the Chess Board"
- Major Automakers are in Full Competitive Mode
- The Tort Liability System will Demand Crash Avoidance Systems

## Smart Public Transit

- Drivers can reserve seats on flexible van pools, car pools and ride share companies
- More Autonomous and Electric transit
- Virtual trains on virtual rail
- Virtual dedicated lanes will expand lane capacity



# BMW's ReachNow Car-share/ Ride Share Service



# Autonomous, Connected, Electric, Shared Vans



# Easy Mile's Autonomous, Electric Shuttle







olli

olli



# Metro's Nissan Leaf Vanpool



# All Electric Metro Buses





PROTERRA CATALYST™

NOT IN SERVICE

BATTERY ELECTRIC

ZERO EMISSIONS

