



## World of Opportunity

Transportation's Future & Performance Driven Decisions

# TODAY'S CHARGE

Explore the connections between  
our changing transportation world  
and the performance measures  
we'll need to prepare for and manage it

# AGENDA

introductions

video

short presentation

breakout discussions

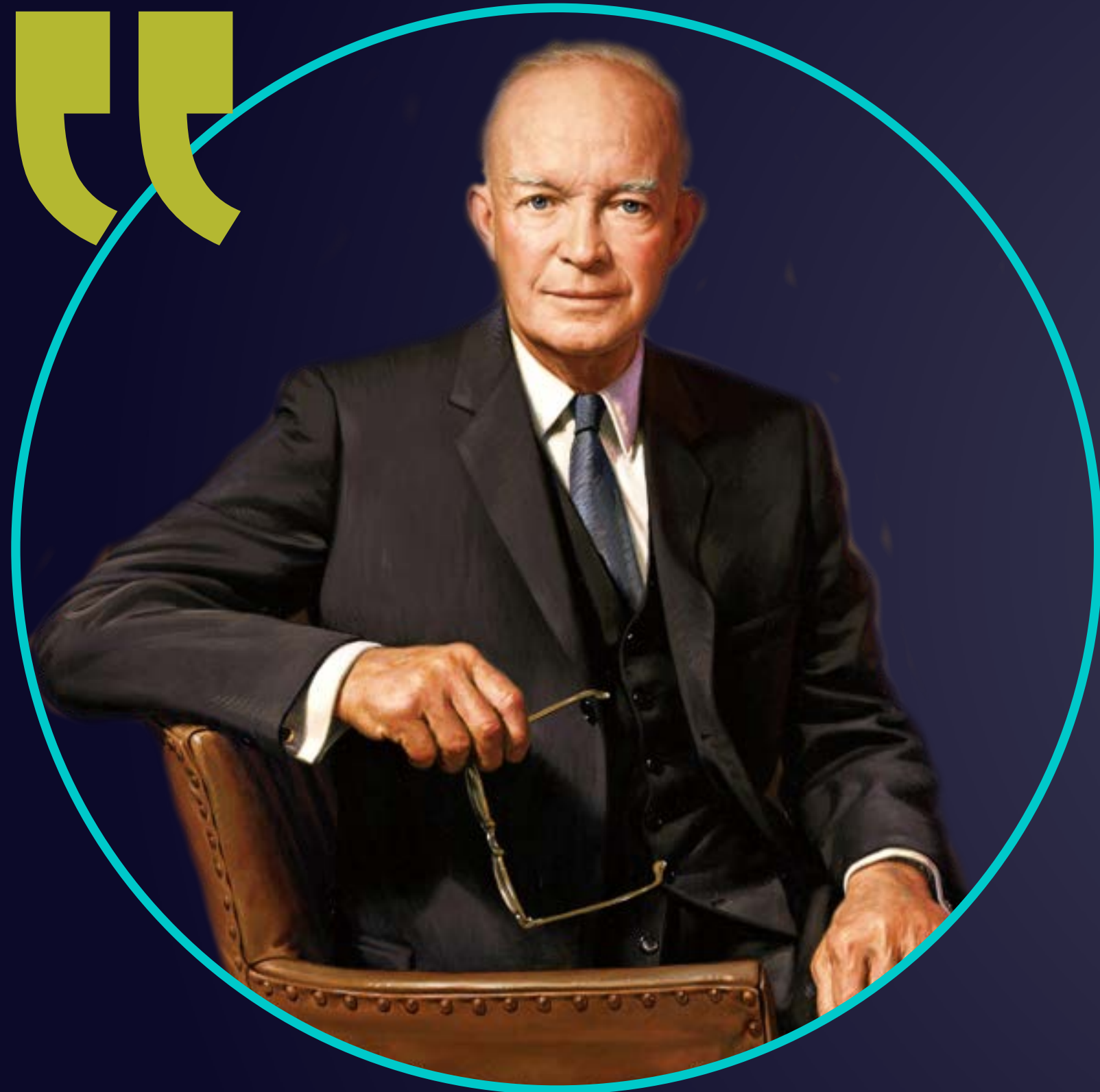
facilitated report out

Video goes here



# WE LIKE **IKE**

“



“If progress is to be steady we must have long term guides extending far ahead.”

# WHY DO WE PLAN FOR THE FUTURE?

Does it really make a difference?

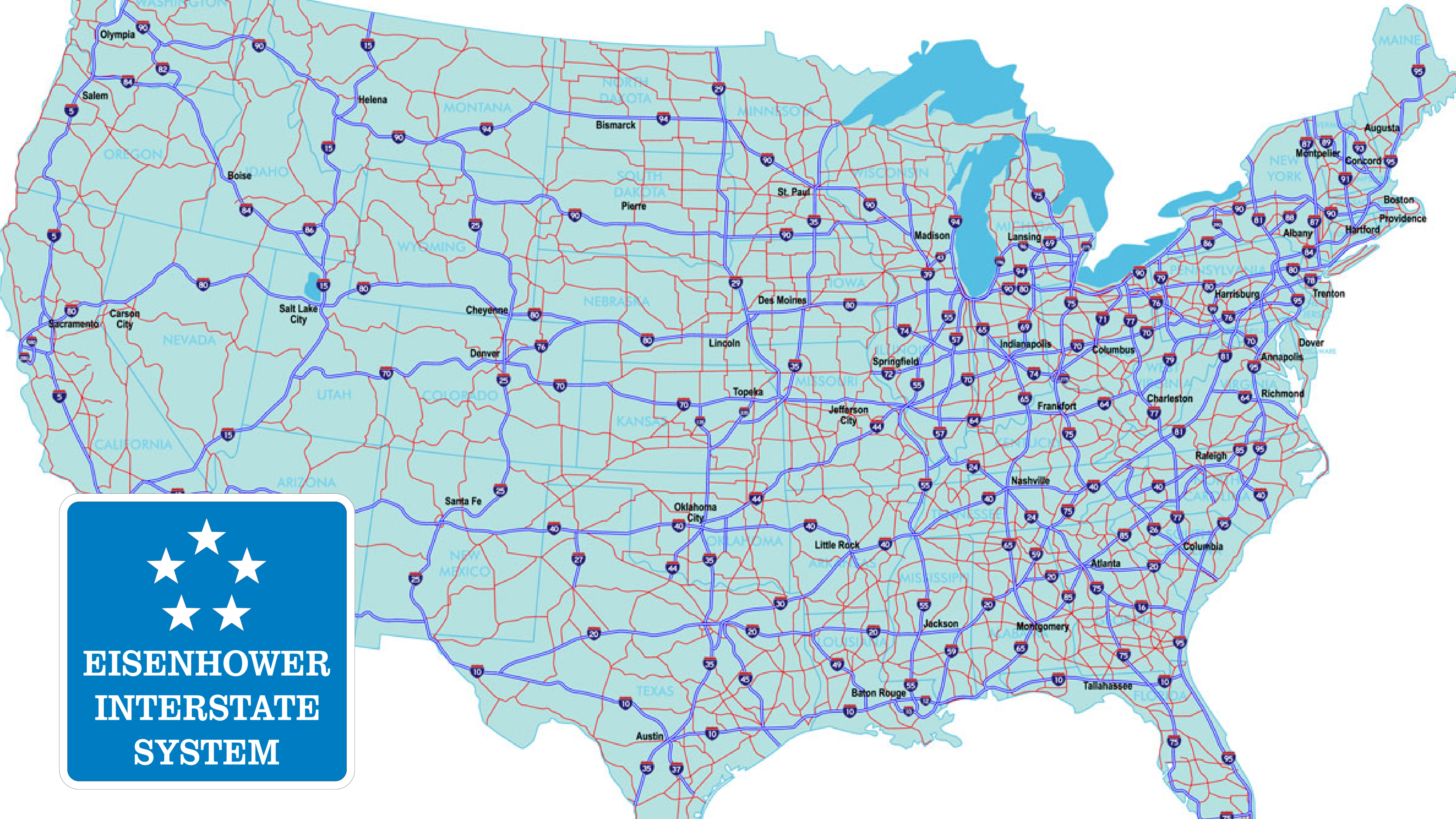












  
**EISENHOWER  
INTERSTATE  
SYSTEM**

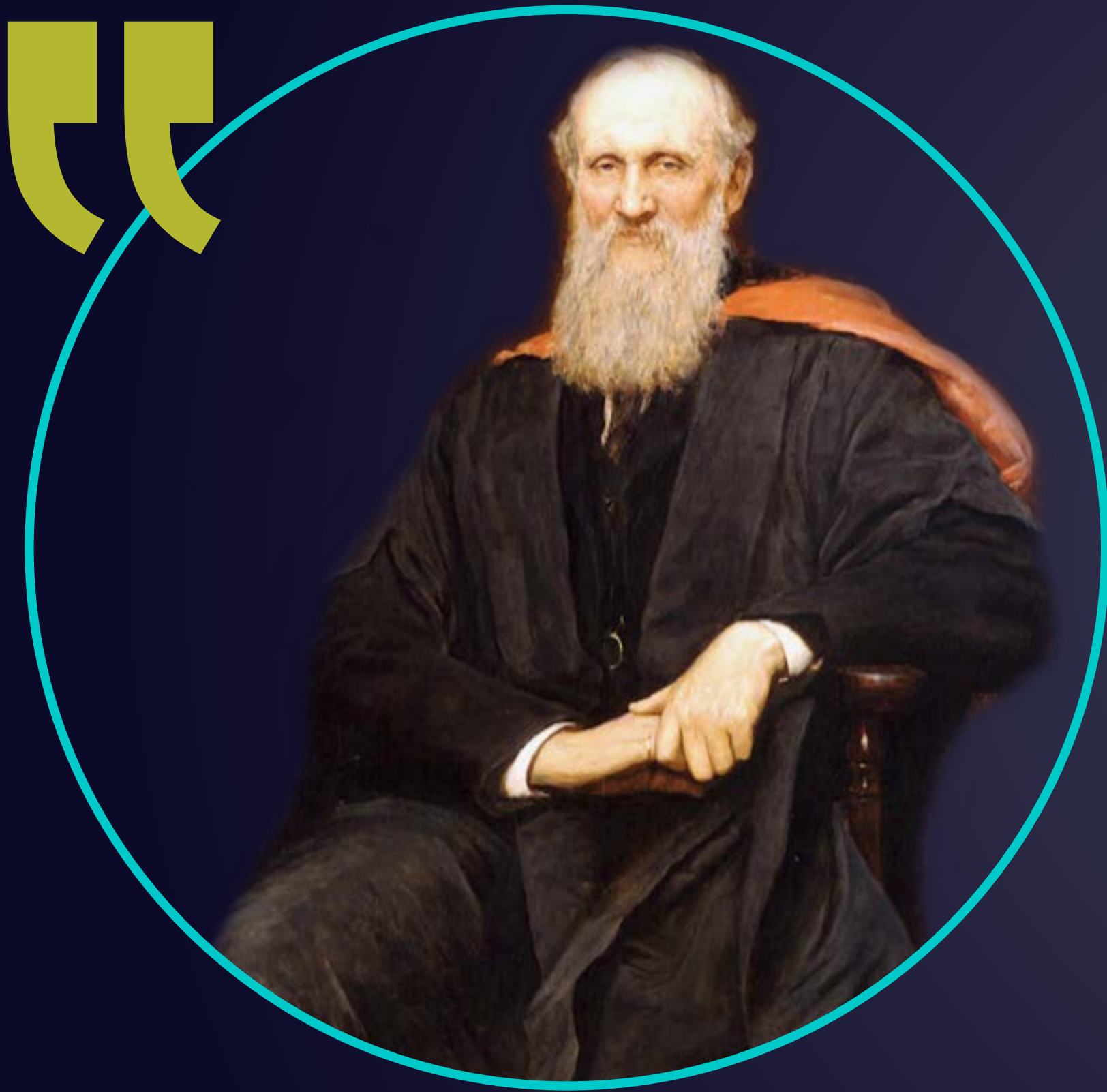
# IT'S EASY TO GET THE FUTURE WRONG

We have a long history of it, in fact.

# LORD KELVIN 1895

Mathematical Physicist

“



“Heavier-than-air flying machines are impossible.”



# HARRY WARNER 1925

One of the Warner Brothers



“Who the hell wants to hear actors talk?”

# THOMAS WATSON 1943

Chairman of IBM



“I think there is a world market for maybe five computers.”

# HOW TO NAVIGATE AN UNCERTAIN FUTURE





# 2-PART PERFORMANCE MEASURES ACTIVITY

1

Explore how the world around transportation might change ...



2

Explore what specific performance measures might be needed ...

- **Technology**
- **Socio-Demographics**
- **Climate**
- **Energy**

# BREAKOUT GROUPS

## SOCIO-DEMOGRAPHICS

transportation impacts of shifting socio-demographics.



## ENERGY & FUELS

future energy scenarios.



## FOUR Topics AT-A-GLANCE



## CLIMATE CHANGE

how to prepare for extreme weather events



## TECHNOLOGY

technology investments at the right time

# PART 1

Breakout Discussion – Scenarios for the Changing World Around Us





# THE SCENARIO PLANNING MINDSET



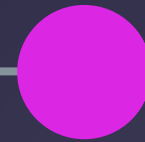
TODAY

PLANNING HORIZON



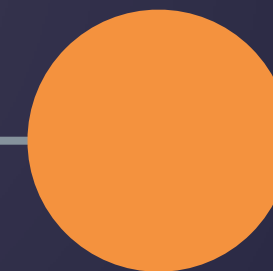
## POINT FORECAST

Planning for a short term point in time.



## RISK MANAGEMENT

Identifying and planning for both short and medium term risks.



## SCENARIO PLANNING

Looking out decades and letting the future drive the planning.



FUTURE 1

Possible Scenario



FUTURE 2

Possible Scenario

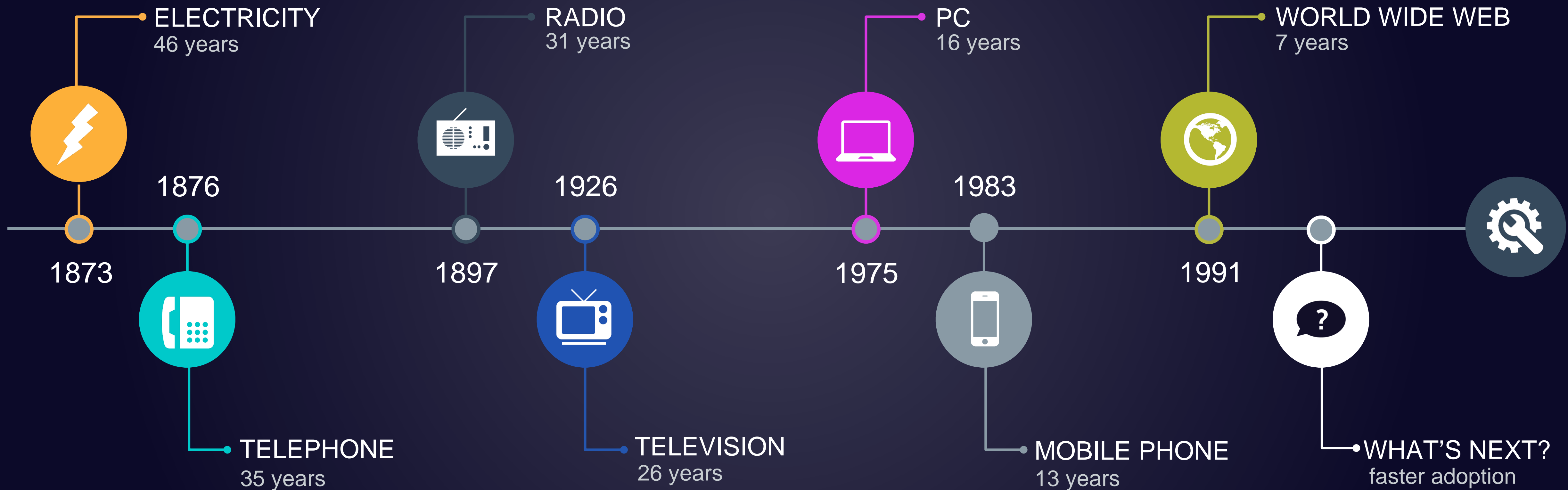


FUTURE 3

Possible Scenario

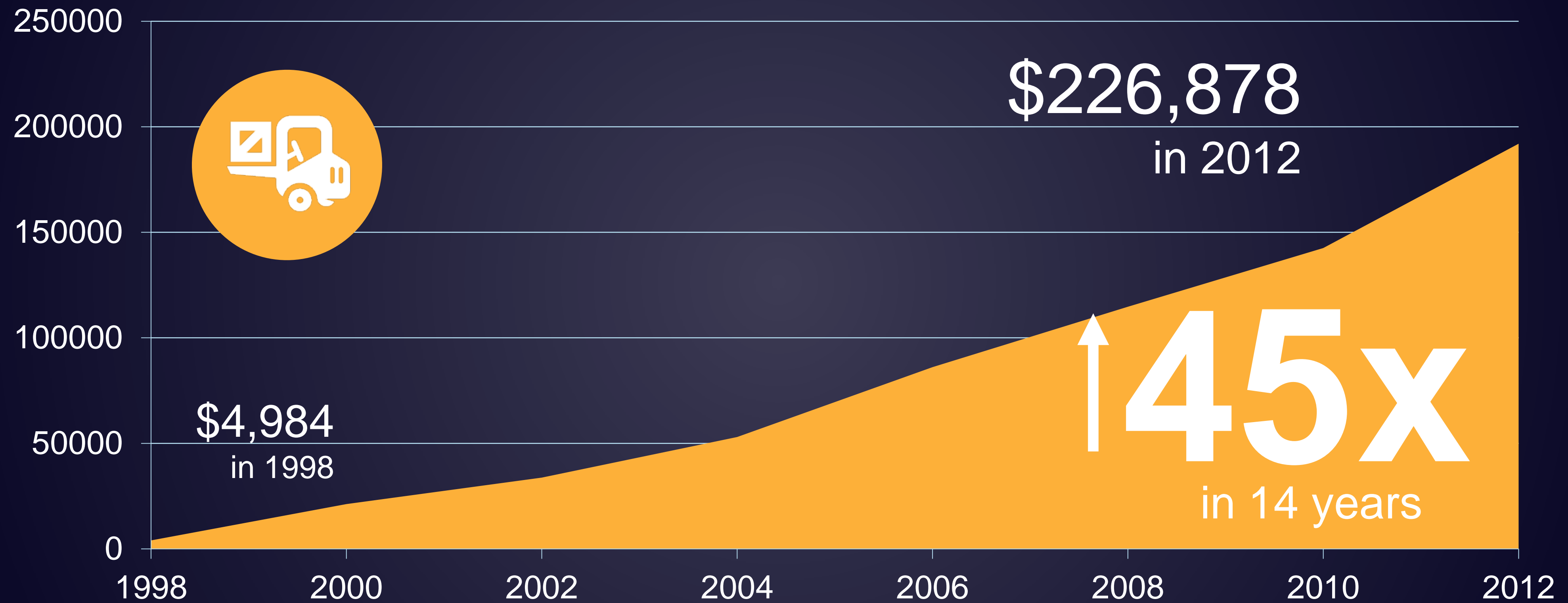
# CONSIDER THE SPEED OF CHANGE

Years until technology was used by one-quarter of Americans



# THINK ABOUT FREIGHT

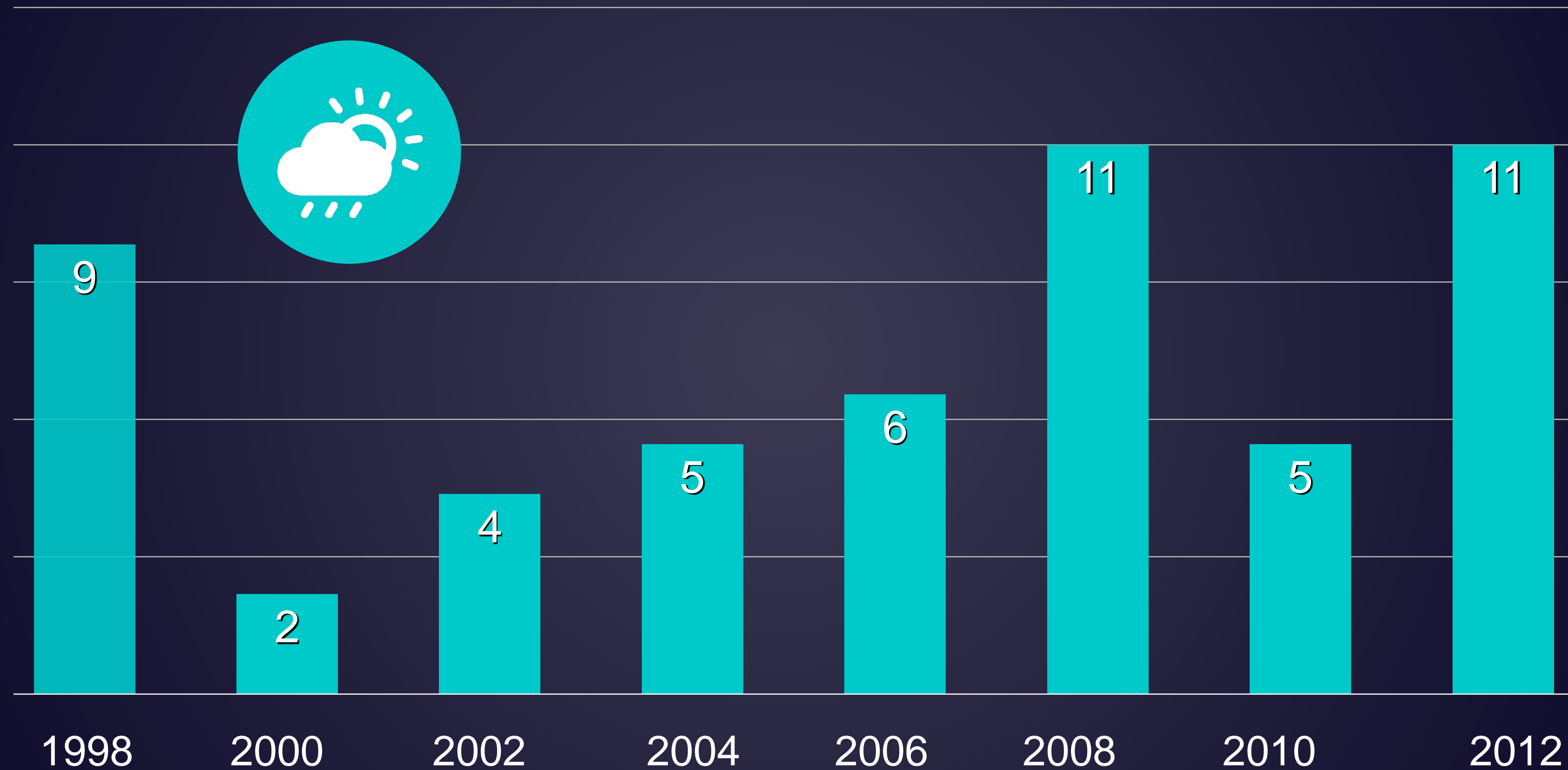
Total U.S. e-commerce sales (in millions)





# OR EXTREME WEATHER

Number of U.S. weather events (per year) costing **over \$1 Billion**

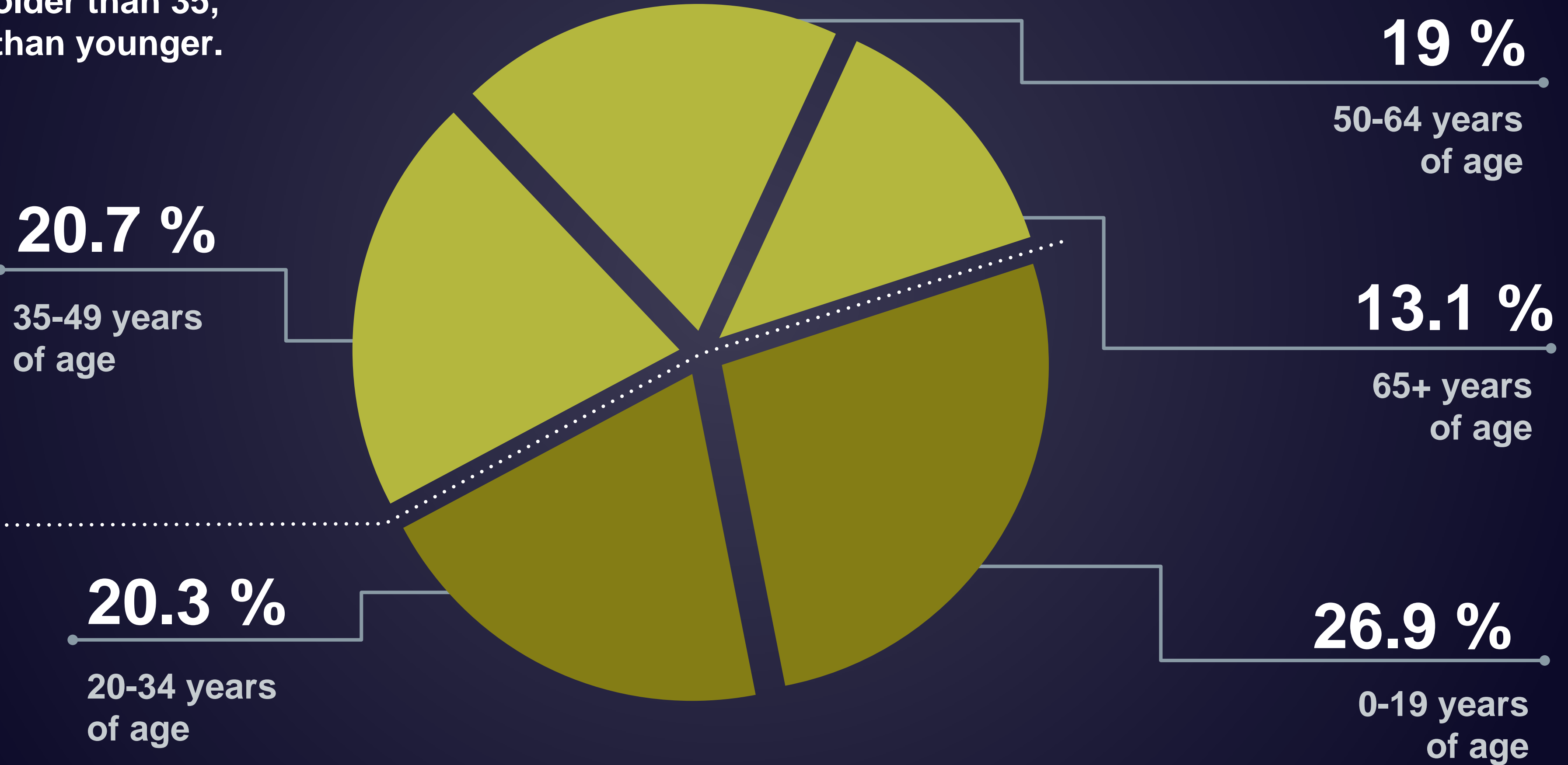


# SOCIODEMOGRAPHICS

## U.S. population by age group



More in U.S.  
older than 35,  
than younger.



# FORESIGHT SCENARIO EXAMPLES



## MOMENTUM

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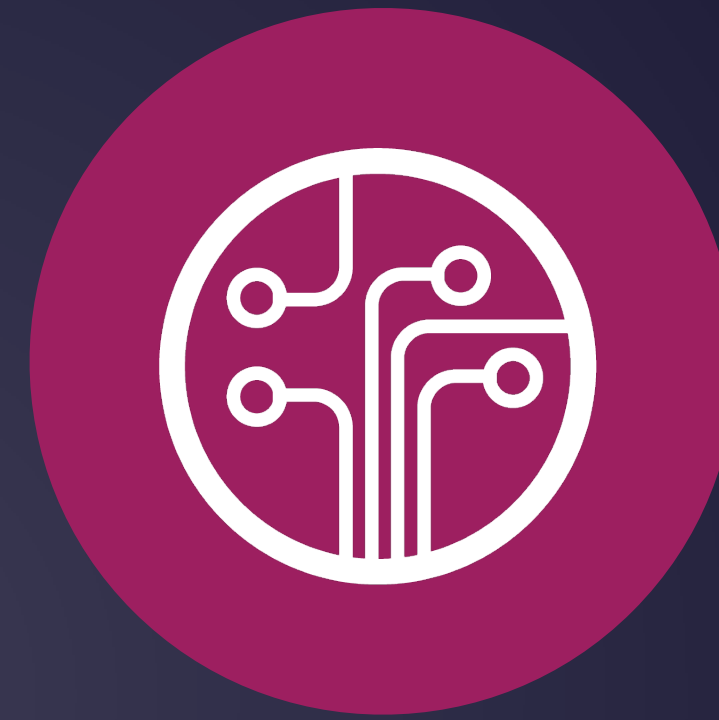
America gets older and more diverse. Global trade booms. Domestic growth flattens.



## GLOBAL CHAOS

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Worldwide financial instability leads to negative growth. Extreme weather increases its impact.



## TECH TRIUMPH

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New tech radically changes transportation. Economy booms and U.S. becomes more self reliant.



## GENTLE FOOTPRINT

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Public demands low-impact choices. Regulations reduce consumption, increase government control.

# DRIVING FORCES

How will they change in the future?



- **Economic**
- **Technological**
- **Political**
- **Social**
- **Environmental**



# MOMENTUM SCENARIO

## Driving Forces



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General continuation  
of current trends

- **Economy** – Concentration of wealth/activity in ‘mega-regions’
- **Technology** – Technology change favors gradual, not disruptive changes
- **Politics** – Slow adoption of new transportation funding mechanisms, stymies investment
- **Society** – Aging, more diverse population grows slowly and favors urban areas
- **Environment** – Environmental changes stay manageable

# GLOBAL CHAOS SCENARIO

## Driving Forces



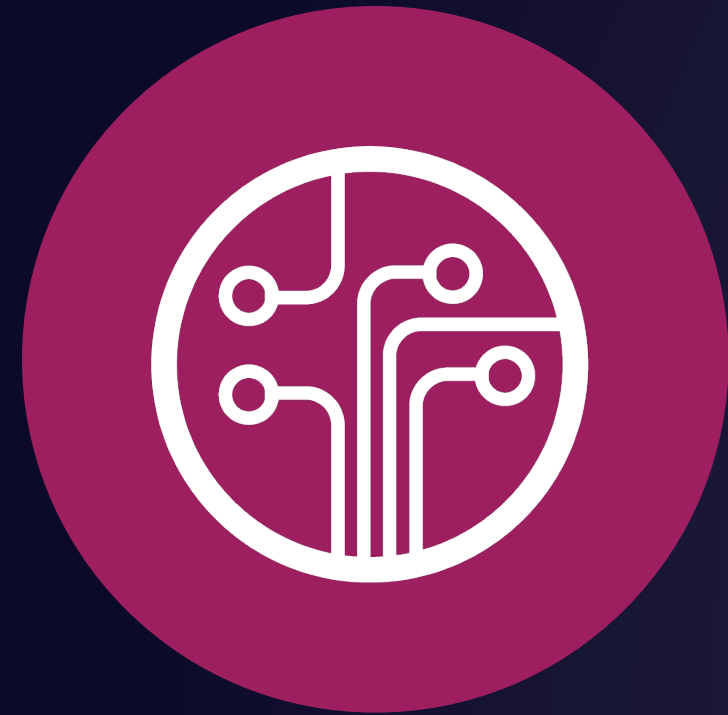
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Worldwide financial instability leads to negative growth. Extreme weather increases its impact.

- **Economy** – Growing global financial instability; trade wars, another Great Recession
- **Technology** – Technology advances are minimal due to instability
- **Politics** – Isolationist policies hinder economic growth
- **Society** – Population grows slowly and favors urban areas
- **Environment** – Increasing and visible impact of climate change

# TECH TRIUMPHS SCENARIO

## Driving Forces



### TECH TRIUMPH

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New tech radically changes transportation. Economy booms and U.S. becomes more self reliant.

- **Economic** – Productivity gains unleash rapid economic growth
- **Technological** – Autonomous cars improve safety
- **Political** – Stable economy promotes political harmony
- **Social** – Population grows and technology allows more dispersed development
- **Environmental** – Economic growth puts pressure on environment

# GENTLE FOOTPRINT SCENARIO

## Driving Forces



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Public demands low-impact choices. Regulations reduce consumption, increase government control.

- **Economy** – Many economic goals and aspirations are limited by efforts to make society more sustainable
- **Technology** – Energy consumption reduced
- **Politics** – Public consciousness and political will shift toward action on climate change
- **Society** – Substantial regulation and greater social and economic control
- **Environment** – Droughts and super storms plague U.S.





## FOCAL QUESTION

**For your table's topic area:**

*Discuss scenarios of what the world and transportation might look like in 2065*



# POLICY QUESTION IDEAS

- **WHAT** different transportation investment needs do different scenarios create for your topic?
- **HOW** do scenarios create change in your agency's roles? New roles? Eliminated roles? Modified existing roles?
- **WHERE** are we most vulnerable, or unprepared in relation to the demands of this future world?
- **WHAT** triggers would indicate that this future world is becoming real? Not real?
- **HOW** are our partners different in this new world?

# PART 2- PERFORMANCE MEASURES

Breakout Discussion – How Will Measures Change in Response to Future?





## FOCAL QUESTION

**For your table's topic area:**

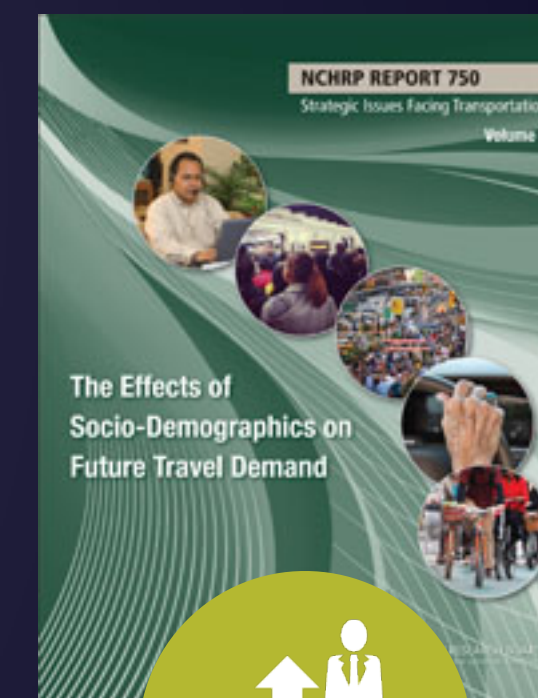
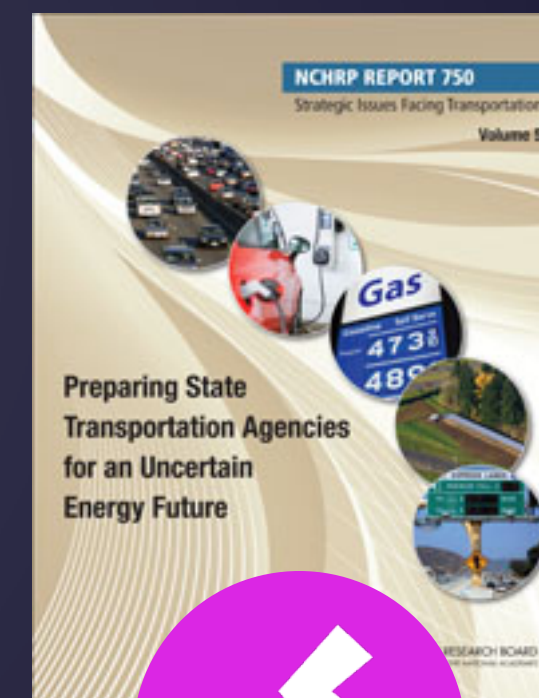
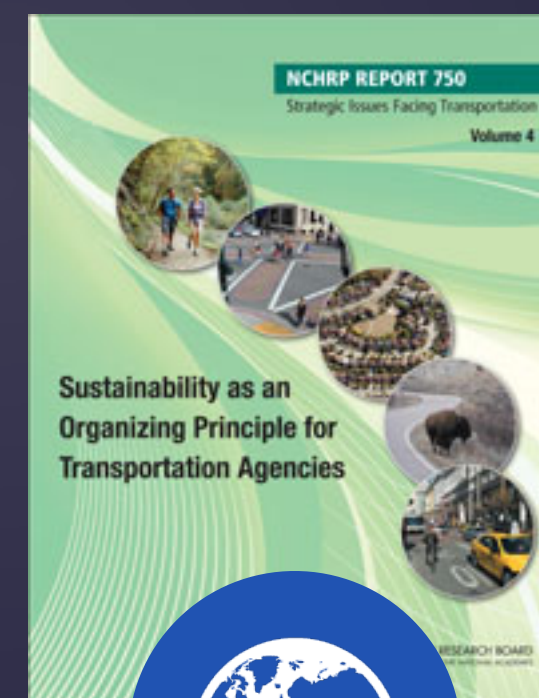
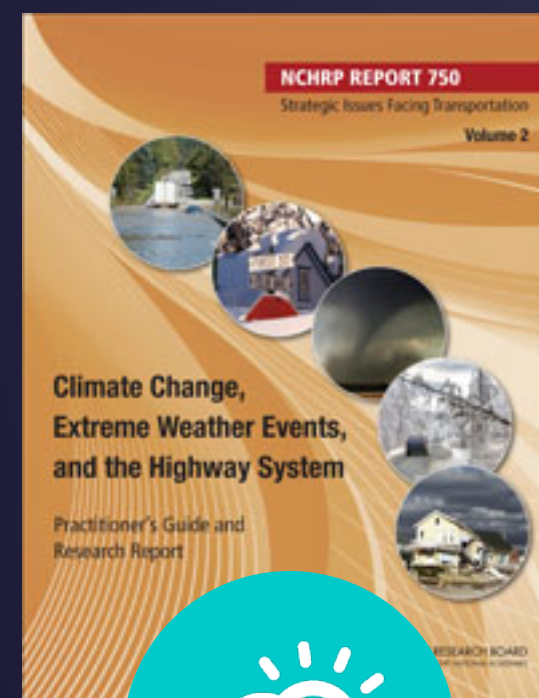
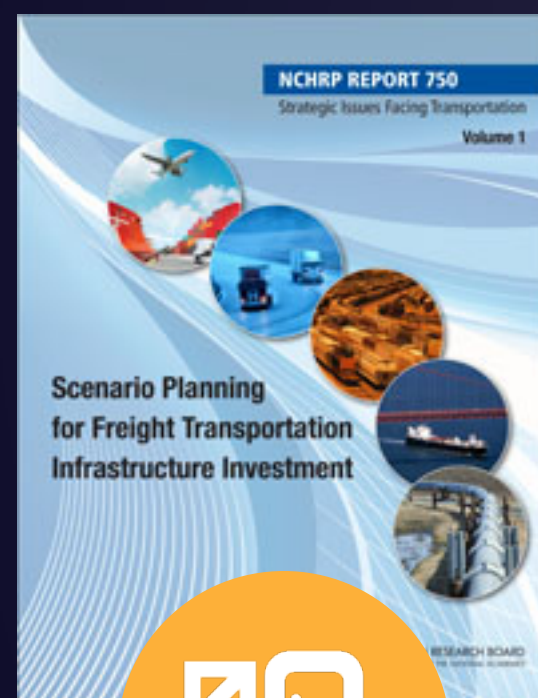
*Discuss what new measures might be needed to get us ready for the world and transportation in 2065*



# FORESIGHT 750 SERIES

Six reports designed to help you find future signposts

Visit [TRB.org/NCHRP](https://www.trb.org/NCHRP) and search for Report 750 to find and read all six reports in the Foresight Series.





**THANK  
YOU**



**See you in the FUTURE!**