

# NATIONAL STRATEGY FOR HIGHWAY AUTOMATION

The background features a long-exposure photograph of a highway at night, showing white and red light trails from vehicles. A prominent blue diagonal stripe runs from the top right towards the bottom left. In the top left corner, there is a close-up of a yellow road line on asphalt. A yellow horizontal line with a square end is positioned below the title.

Scott Marler, Iowa DOT/  
AASHTO Highway Automation  
Task Force Co-Chair

MAASTO CAV Summit  
October 2019



# Today's Touch Points

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- Recap the National Strategy Concept
  - Historical Context
  - What is it?
  - Why is it needed?
  - What will be the benefits?
- Relationship to Other CAT Activities
- Update on the Approach
- Discuss Next Steps

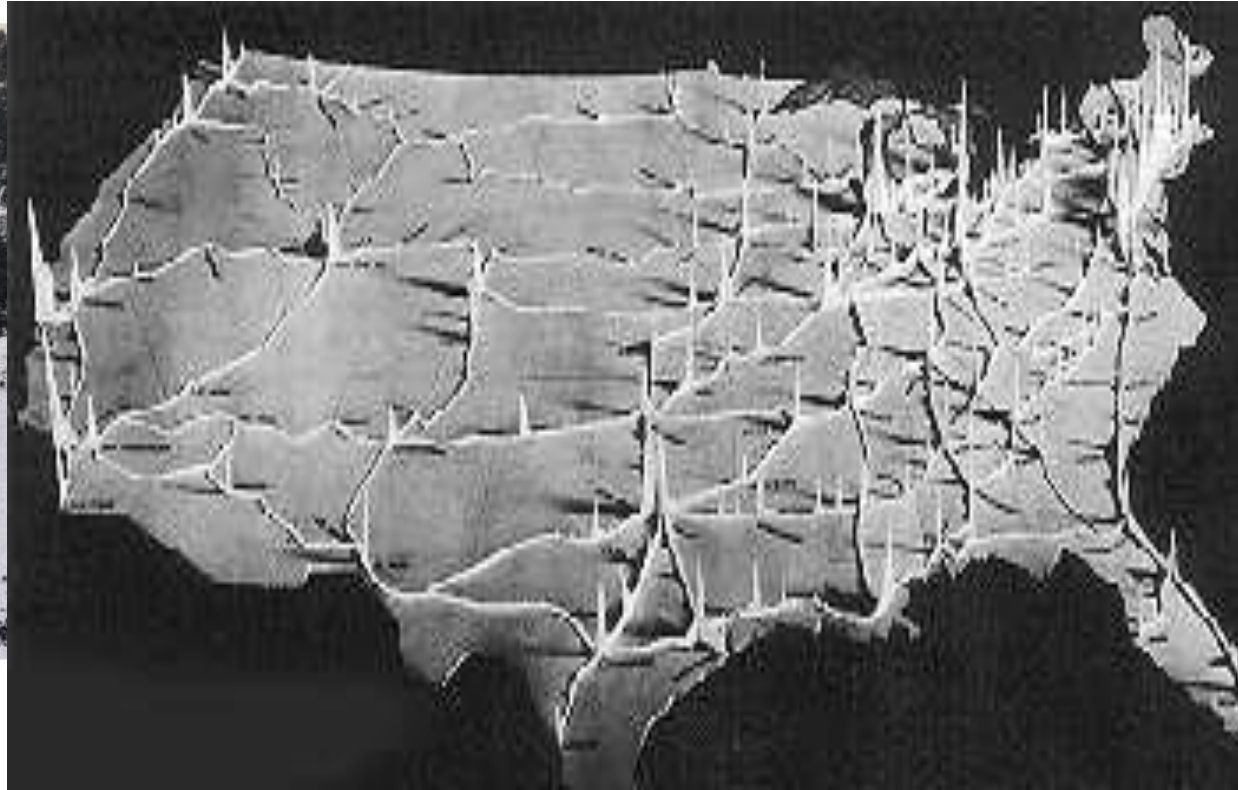
# A VISION FOR HIGHWAY AUTOMATION

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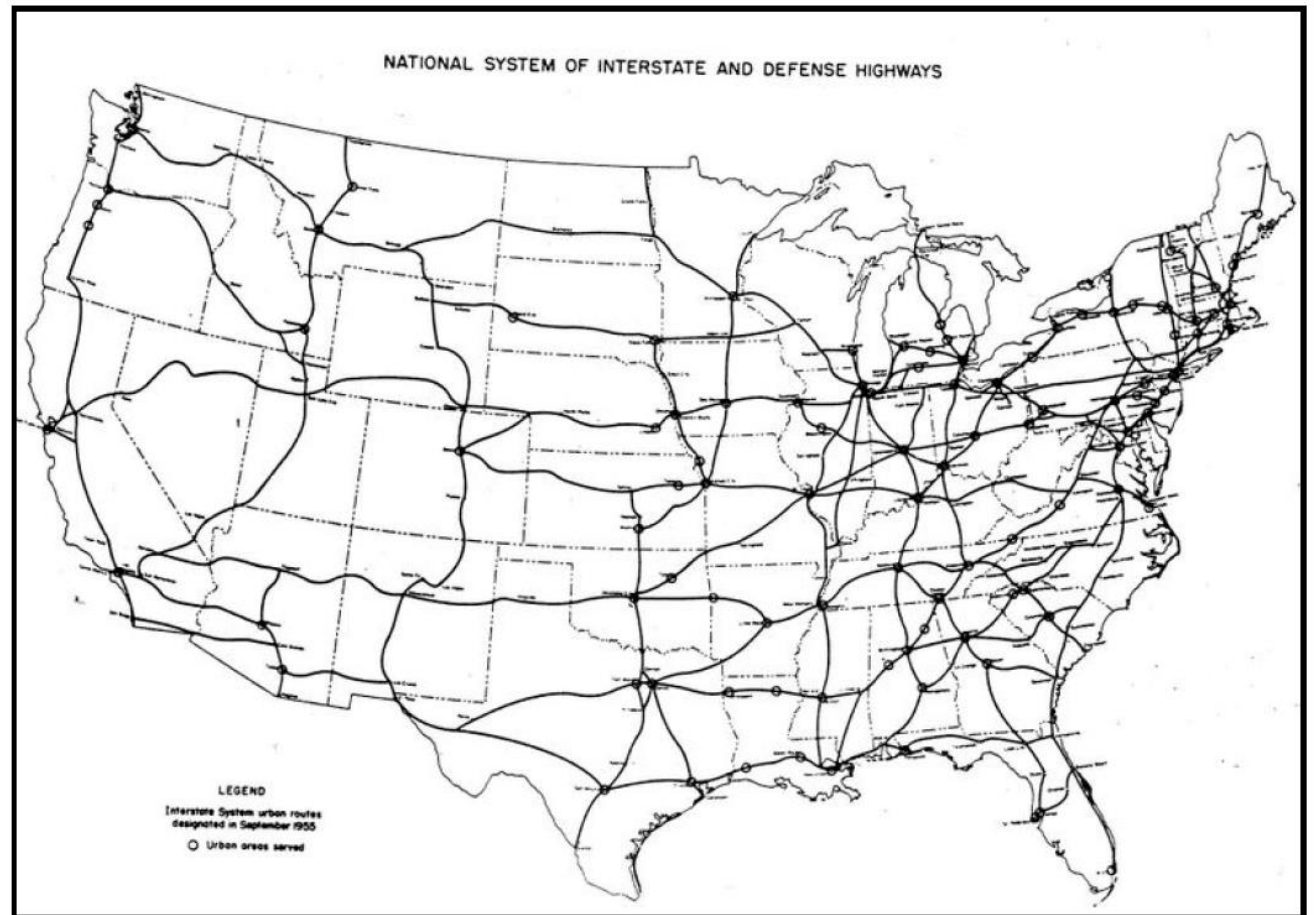
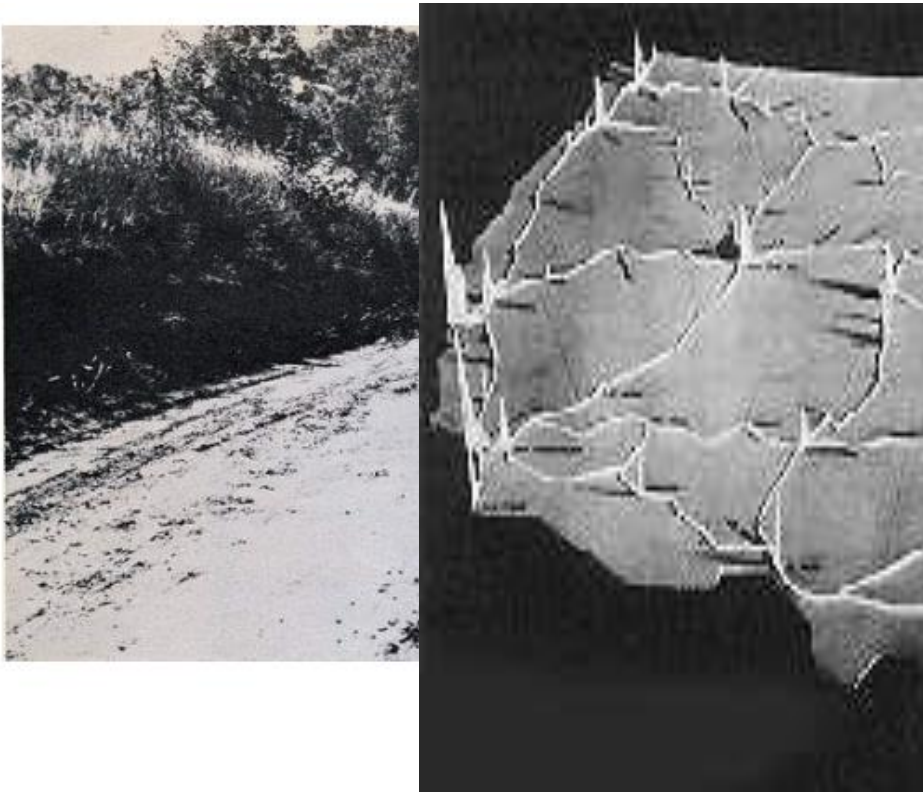


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“The loss of 36,750 lives last year on our nation’s highways and streets demands that we act boldly.”





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- 52 DOT’s, August 19, 2019



# THE NATIONAL STRATEGY FOR HIGHWAY AUTOMATION

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Vision: A world class roadway system for coast to coast highway automation *readiness* by 2025

National Strategy: Focus on freight first, then major metro areas, then the full NHS

# THE NATIONAL STRATEGY FOR HIGHWAY AUTOMATION

## Objective/Goals


- Deploy Level 3 & 4 freight automation, supported by physical & digital infrastructure improvements, data, and freight specific strategies through cities.
  - 15,000+ miles of NHS
  - Top 30 GDP Cities Connected
  - Lays foundation for Highway Automation for passenger vehicles
- Connect major freight corridors to major metro areas

*National Highway Freight Network*



# Why is a National Strategy Needed?

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- Reduce traffic crashes/fatalities/serious injuries
  - Reduce congestion nationwide
  - Increase global economic competitiveness
  - National security and preparedness
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# Why is a National Strategy Needed?

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- Accelerate Highway Automation
- Avoid 'Patchwork' Deployments
- Save Time and Money
- "Unity is strength"

# Is a Regional Strategy Needed?

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- MAASTO states are freight states
- Cooperate and plan well together
- No frills/git-er-done attitude

# What will be the Benefits?

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- Benefits for drivers “today”
  - Physical (e.g. Pavement Markings and Signage)
  - Digital (e.g. Expanded and consistent real-time information)
- Extensive benefits “tomorrow”
  - Progressive increase in highway automation supported by a standardized, nationwide physical and digital infrastructure
  - Increasing availability of V2X (V2V, V2I, SPaT, emergency vehicles)

# Relationship to Other Cooperative Automated Transportation (CAT) Activities


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# A Sample of CAT Research Activities

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## Research Examples Include:

- Connected Road Classification System Development
  - Road Markings for Machine Vision
  - Dedicating Lanes for Priority or Exclusive Use by CVs & AVs
  - Challenges to CAV and AV Application in Truck Freight Operations
  - USDOT Research into Scenario Planning for CAVs
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# Current CAT Activities

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## Privately-led Activities

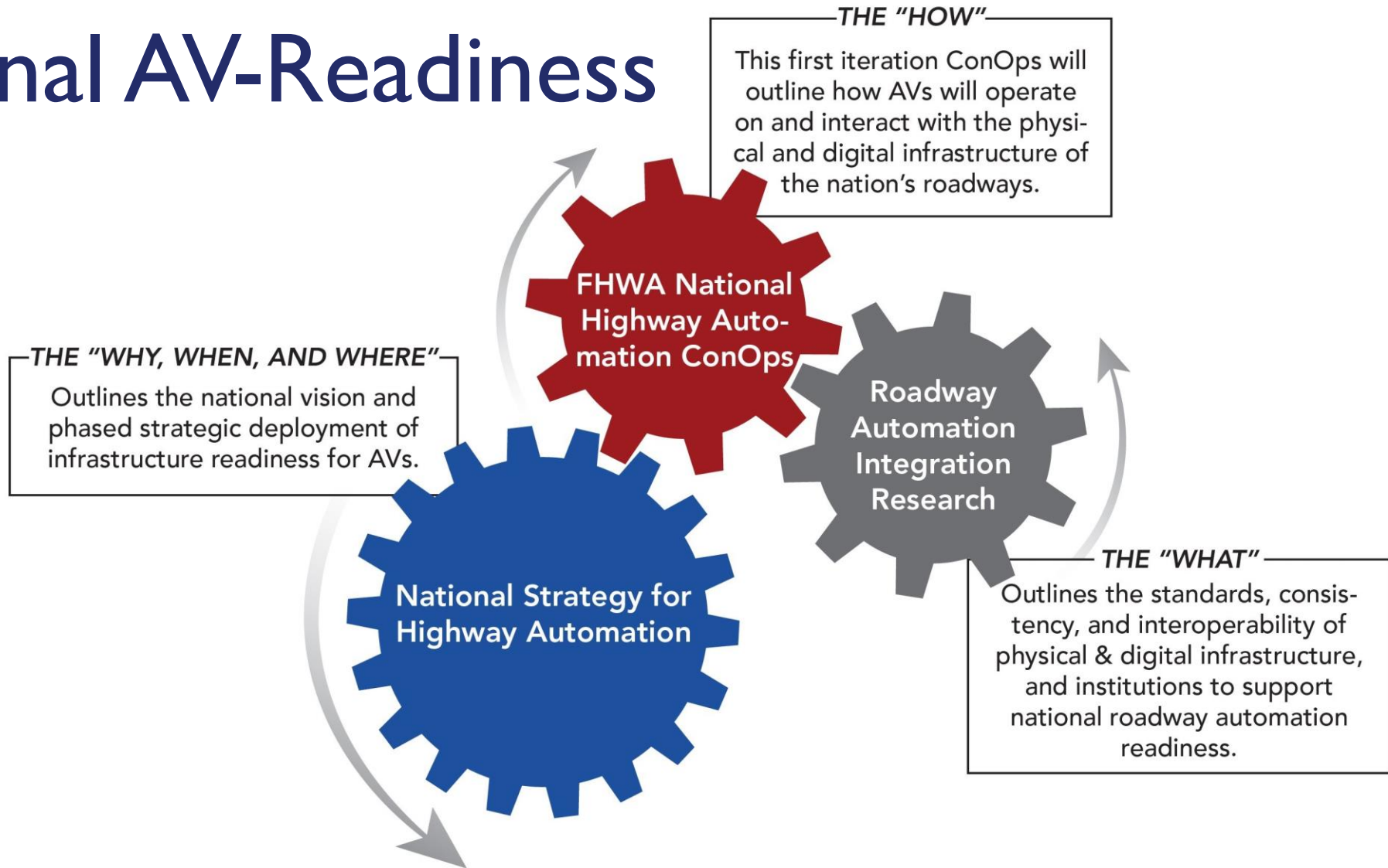
- Increasing level of automation in Vehicles on the road (e.g. ACC, lane departure warning)
- Truck Platooning Examples
- Ongoing expansion of AV testing and use

## Publicly-led Activities

- CAT Coalition
- CAT Guiding Principles
- National Dialogue on Highway Automation (FHWA)
- Many states with current or developing CAT plans
- Highway Automation Concept of Operations (FHWA)

# National AV-Readiness

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# The Approach

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**“Human progress never rolls in on wheels of inevitability; it comes through the tireless efforts of [people] willing to be coworkers with God...”**

**- Martin Luther King, Jr./Letter from Birmingham Jail**

# ADVANCING THE NATIONAL STRATEGY

## Initial Components

- National Vision
- National Business Case & Goals
- Industry Analysis
- Technical & Policy Analysis
- Phased National Deployment Plan
- Implementation Plan
- Readiness Parameters – Technical, Institutional, & Policy & Regulatory
- Return on Investment Analysis
- Financial Plan
- Communications Plan
- R&D Innovation Roadmap

# There are challenges...

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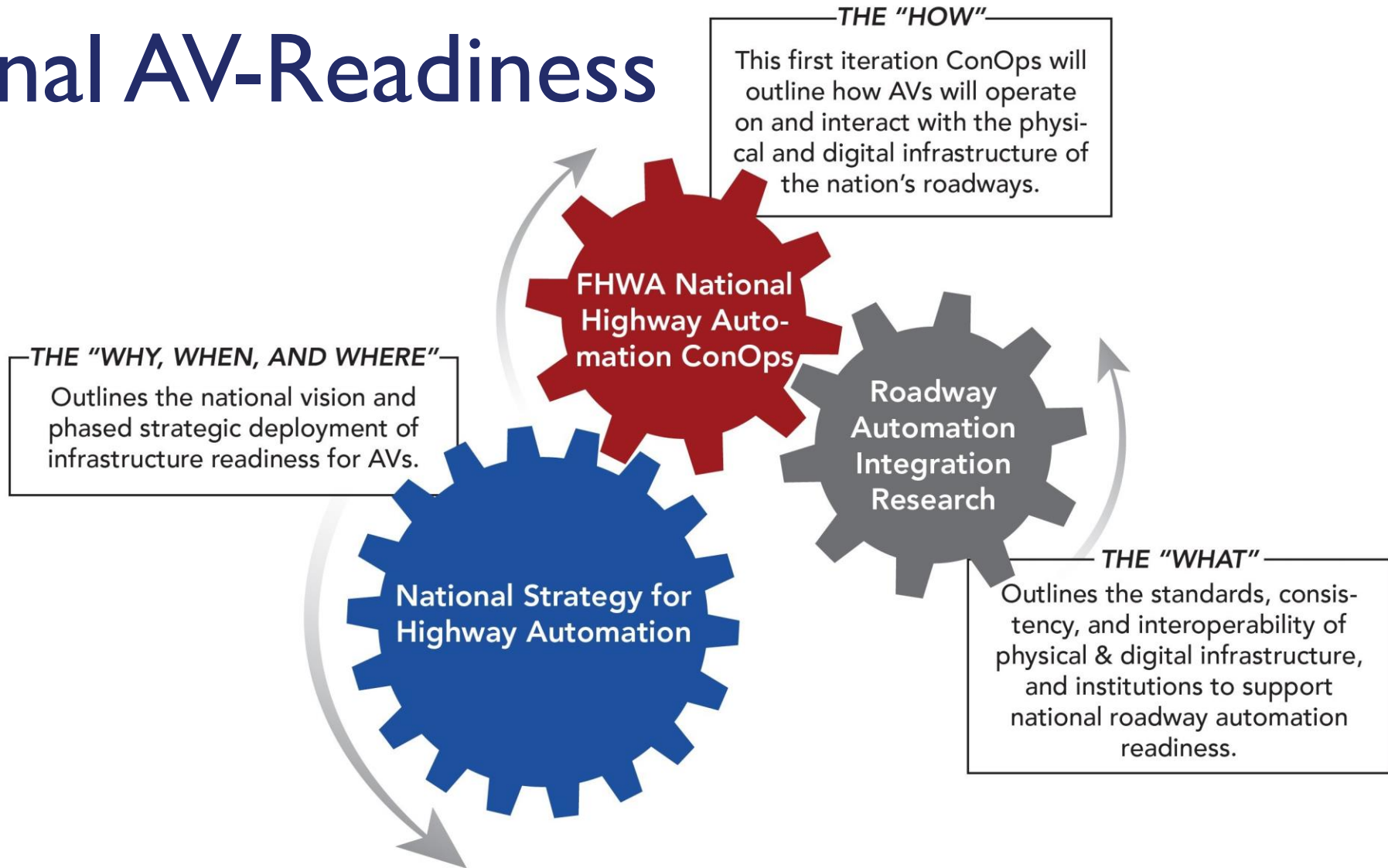
- **Lack of a clear definition of what the National Strategy is:**
  - What will it be? How will state and local DOTs use it?
- **There is a lot going on right now:**
  - National Dialogue, AV 3.0, ATCMTD Grants, etc.
  - Lack of clarity on how everything fits together

***It's all about fit!***



# National AV-Readiness

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# Next Steps

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## 1. Convene a Workshop:

- Bring clarity to the National Strategy
- Document the clarity in a 'Vision' for the Strategy
- Provide insight and input to the Highway Automation ConOps

*Planning to host in Iowa in early December!*

## 2. Leverage the Highway Automation Concept of Operations



# Next Steps

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## **AASHTO Reauthorization Recommendation:**

Strategic Highway Research Program (SHRP)



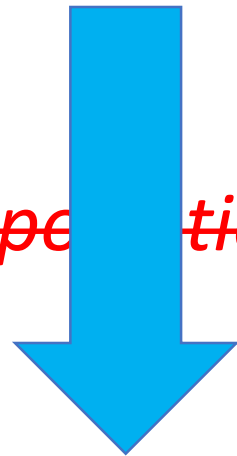
Strategic *Transportation* Research Program (STRP)

# Next Steps

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**Strategic Highway Automation Research Program (SHARP)**

# Food for Thought...

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- 1. Should MAASTO consider mirroring the national strategy at a regional level? Especially in support of freight automation?**
  - 2. How can MAASTO support and engage with the national strategy?**
  - 3. Should MAASTO states collaborate on grant opportunities to pilot regional and national approaches?**
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Thank You!

