NATIONAL STRATEGY FOR HIGHWAY AUTOMATION

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Today’s Touch Points

- 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
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A VISION FOR HIGHWAY AUTOMATION

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- 52 DOT’s, August 19, 2019
THE NATIONAL STRATEGY FOR HIGHWAY AUTOMATION

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
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
Why is a National Strategy Needed?

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

- Accelerate Highway Automation
- Avoid ‘Patchwork’ Deployments
- Save Time and Money
- “Unity is strength”
Is a Regional Strategy Needed?

- MAASTO states are freight states
- Cooperate and plan well together
- No frills/git-er-done attitude
What will be the Benefits?

• 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
A Sample of CAT Research Activities

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
Current CAT Activities

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

**THE “WHY, WHEN, AND WHERE”**
Outlines the national vision and phased strategic deployment of infrastructure readiness for AVs.

**National Strategy for Highway Automation**

**FHWA National Highway Automation ConOps**

**Roadway Automation Integration Research**

**THE “HOW”**
This first iteration ConOps will outline how AVs will operate on and interact with the physical and digital infrastructure of the nation’s roadways.

**THE “WHAT”**
Outlines the standards, consistency, and interoperability of physical & digital infrastructure, and institutions to support national roadway automation readiness.
The Approach

“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

National Strategy for Highway Automation
There are challenges…

- 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!*
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**National Strategy for Highway Automation**
Next Steps

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

AASHTO Reauthorization Recommendation:
Strategic Highway Research Program (SHRP)

Strategic *Transportation* Research Program (STRP)
Next Steps

**AASHTO Reauthorization Recommendation:**

1. Strategic Highway Research Program (SHRP)
2. **Strategic Transportation Research Program (STRP)**
3. Strategic Highway Automation Research Program (SHARP)
Food for Thought…

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?
Thank You!