

Messaging & Implementation Subcommittee

December 13, 2023



Emulsion Task Force Purpose

The AASHTO Emulsion Task Force aims to develop and promote standardized practices for the use of asphalt emulsions in road construction. It focuses on research, specifications, and guidelines to enhance the performance and sustainability of asphalt emulsion-based materials in transportation infrastructure projects.

ChatGPT!

Emulsion Task Force Purpose

**Advance changes in emulsion technology
and encourage state DOTs and local
agencies to incorporate them into their
pavement preservation programs.**

Messaging and Implementation Project

NCHRP 20-44 (26): Implementing Guide Specifications for the Construction of Chip Seals and Micro Surfacing

Goal: Adoption of AASHTO Guide Specifications for Construction of Chip Seals, Micro Surfacing, and Fog Seals by all state DOTs.

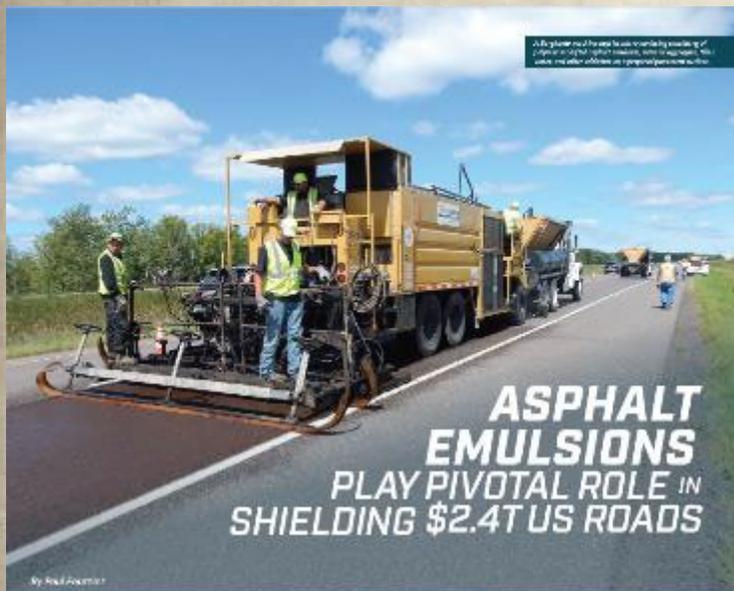
Project Tasks:

1. Information Dissemination
2. Outreach
3. Training
4. Demonstrations

Task: Information Dissemination

- A. Assemble Baseline Data from Agencies
- B. Magazine Articles
- C. Assemble Speakers Bureau through ETF
- D. Develop Audio-Visual Tools & Printed Materials

Completed Messaging



Asphalt emulsion for use in road construction. Photo courtesy of the National Asphalt Pavement Association.

ASPHALT EMULSIONS PLAY PIVOTAL ROLE IN SHIELDING \$2.4T US ROADS

By David J. ...

Asphalt emulsion is a group of highway technology products that are a key component of the language and materials related to public roads, and in the process, are also the key that allows them to be used in a wide range of applications. The diverse collection of emulsions, asphalt, sealers, treatments, primers and topcoats are used in a wide range of applications. The diverse collection of emulsions, asphalt, sealers, treatments, primers and topcoats are used in a wide range of applications. The diverse collection of emulsions, asphalt, sealers, treatments, primers and topcoats are used in a wide range of applications.

The construction of emulsions is a complex process that involves several steps. The process starts with the selection of the base material, which is then mixed with water and other additives to create the emulsion. The emulsion is then applied to the road surface, where it forms a protective layer that shields the road from damage. This process is repeated until the entire road surface is covered.

Preservation Origins
The origins of asphalt emulsion preservation can be traced back to the early 1900s. At that time, roads were made of dirt and gravel, and they were in poor condition. The use of asphalt emulsion was a revolutionary idea that allowed roads to be paved with a more durable material.

The use of asphalt emulsion has become a standard practice in road construction. It is a cost-effective and efficient way to preserve roads and extend their lifespan. The use of asphalt emulsion has also led to the development of new technologies and materials that have further improved road preservation.

Preserving \$2.4 Trillion Investment
The \$2.4 trillion investment in the U.S. road network is a significant asset that needs to be protected. Asphalt emulsion preservation is a key component of this effort, as it helps to reduce the cost of road maintenance and repair.

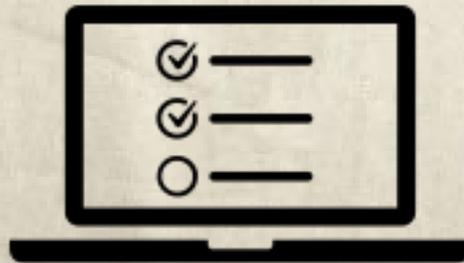
By using asphalt emulsion, road owners can extend the life of their roads and reduce the need for costly repairs. This is a win-win situation for everyone involved in the road construction industry.

The use of asphalt emulsion is a proven and effective way to preserve roads and extend their lifespan. It is a cost-effective and efficient way to protect the \$2.4 trillion investment in the U.S. road network.



Task: Survey Questionnaire

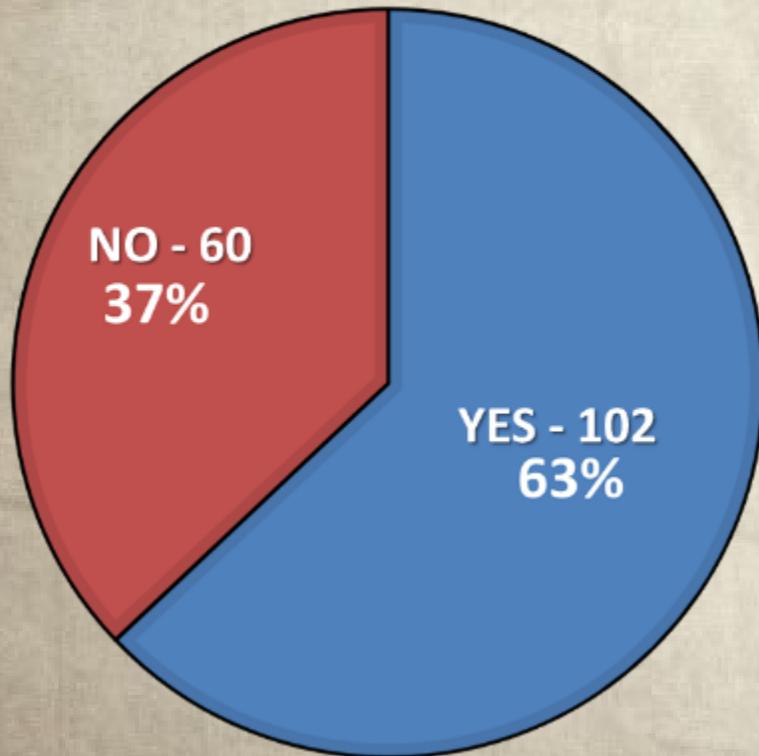
- A. Will be sent to all state DOTs and many local agencies.
- B. The online survey will have only 9 questions.
- C. Survey results will be posted on the ETF website.



Completed Survey

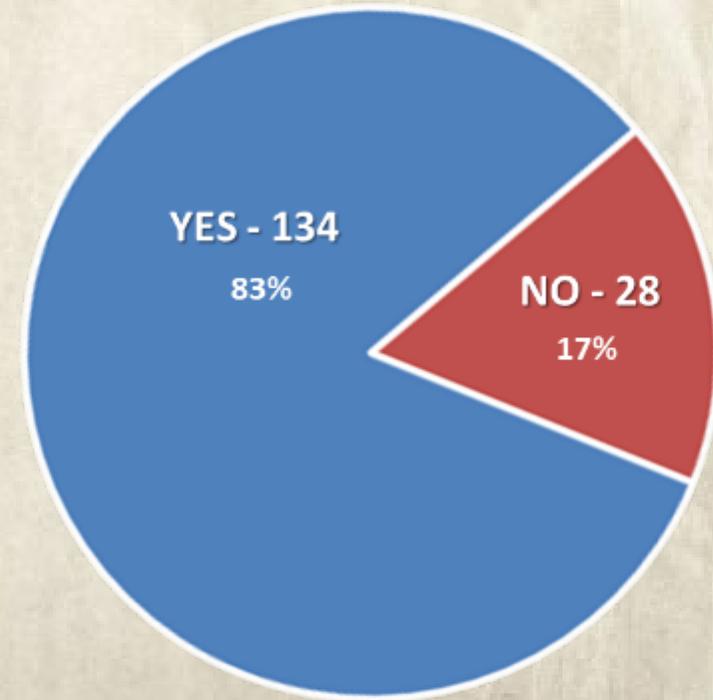
Question

Are you aware of the AASHTO Standards?

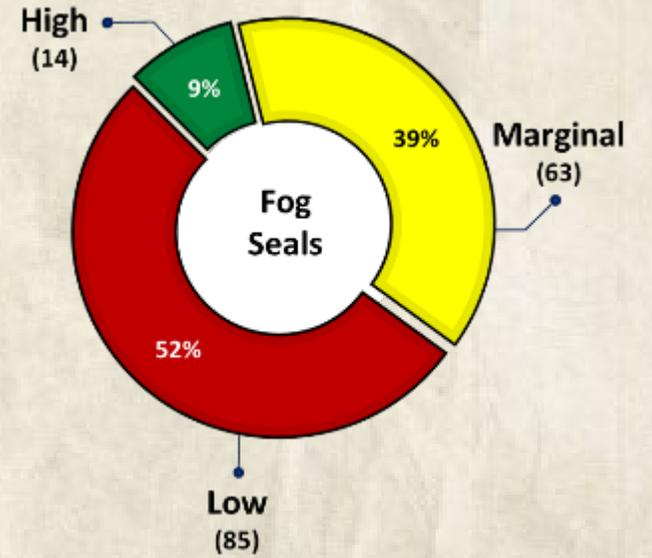
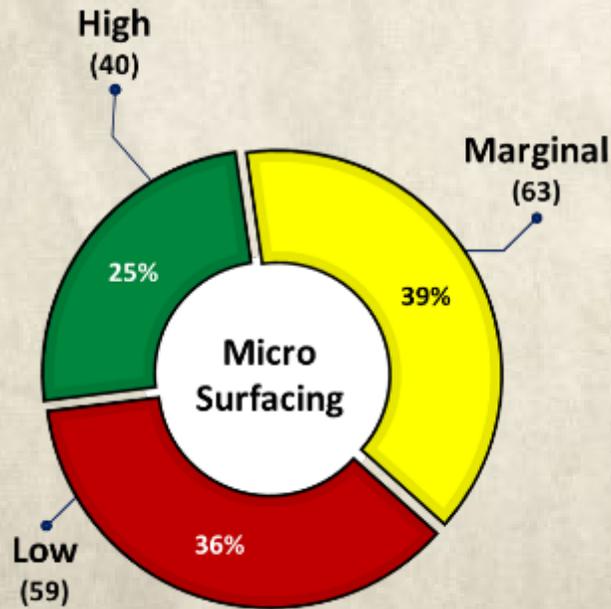
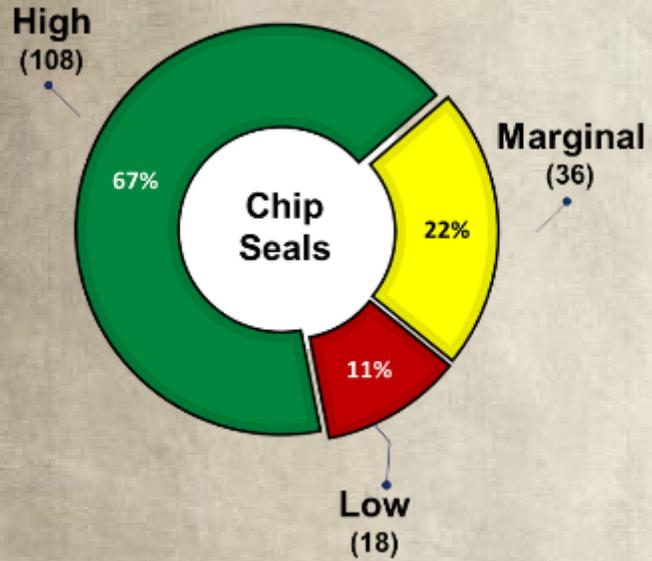


Question

Do you believe your agency would be interested in adopting all or part of the new standards?



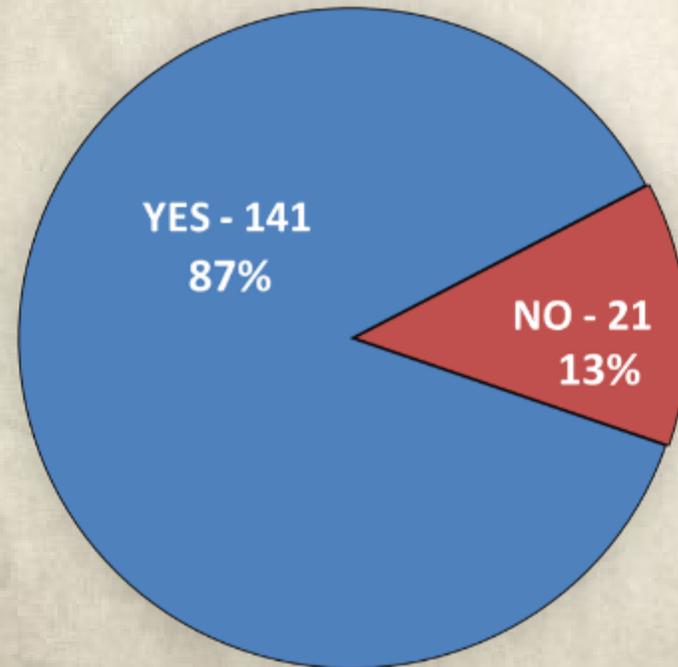
Completed Survey



Completed Survey

Question

Would your agency be interested in a free training course that covers the new AASHTO Construction Guide Specifications?



Task: Outreach

- A. Discuss new Standards with Agencies and Contracting Community.
- B. Make Presentations about new Standards
 - National Meetings & Conferences
 - Regional Meetings
 - State & Local Meetings
- C. Offer Best Practices document for Chip Seals and Micro Surfacing.

Completed Outreach



MPPPP



NEPPP



SEPPP



RMWPPP



Task: Training

- A. Prepare training courses for (A) Engineers and (B) Technicians for emulsions and all emulsified asphalt treatments
- B. Prepare appropriate training media materials
 - PowerPoints
 - Training Manuals
 - Workbooks
 - Technical brochures



AI or ETF?

When designed and constructed properly on an appropriately selected pavement the expected life extension provided should range from five to seven years.



The life expectancy of a chip seal can vary based on factors such as traffic volume, weather conditions, and maintenance practices. Generally, a well applied chip seal can last between five to ten years.

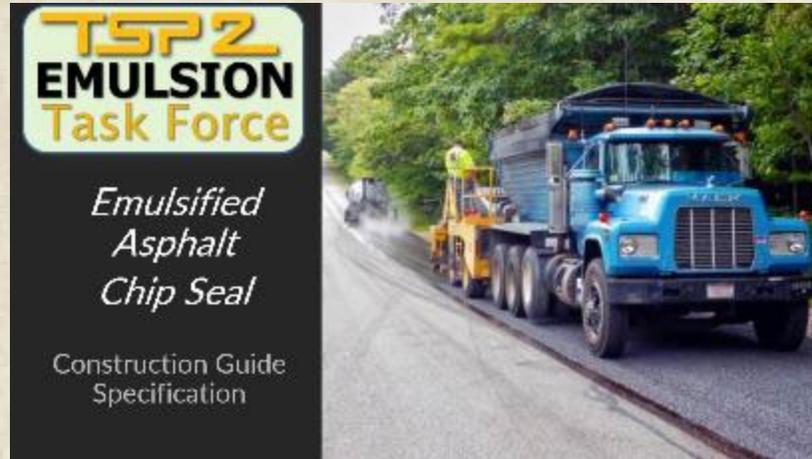
AI or ETF?

Slurry surfacing systems provide life extending benefits as well as surface condition improvements, and are considered a cost-effective treatment strategy, preserving past investments in existing highways, roads and streets.

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Slurry surfacing systems offer several benefits, including surface sealing to prevent water penetration, improved skid resistance, and the ability to correct minor surface irregularities. Additionally, slurry seals are cost-effective and can extend the life of road surfaces.

# Completed Training



**TSP2 Emulsion Task Force**

Search...

About ETF ▾ Meetings & Presentations Specs & Checklists ▾ NCHRP 20-44(26) **Training**

### Training

- Fog Seal Training - Power Point - with voice
- Chip Seal Training - Power Point - no voice
- Chip Seal Training - Power Point - with voice
- Micro Surfacing Training - Power Point - with voice



<http://tsp2-etf.org/training/>

# Completed Training



## Best Practice Flyers

- Provide 1-page handouts with highlights of each guide: micro surfacing, chip seal, and fog seal.
- Discuss materials, design, and construction specs for micro surfacing, chip seal, and fog seal.

<http://tsp2-etf.org/specs-checklists/specifications/>

The screenshot shows a web browser window with the URL [tsp2-etf.org/specs-checklists/specifications/](http://tsp2-etf.org/specs-checklists/specifications/). The page title is "Specifications". Under the heading "Draft Construction Guide Specifications", there is a list of four links: "Construction Guide for 406 Emulsified Chip Seal [2020-09-02] (V-2)", "Construction Guide for 407 Hot Applied Chip Seal [2020-09-04] (V-3)", "Construction Guide for 408 Micro Surfacing [2020-09-02] (V-6)", and "Construction Guide for 410 Emulsified Asphalt Fog Seal [2020-09-04] (V-2)". Below this is the "Construction Guide Highlights" section, which is circled in red. It contains three links: "Chip Seal Construction Guide Highlights (V1.1)", "Fog Seal Construction Guide Highlights (V1.1)", and "Micro Surfacing Construction Guide Highlights (V1.1)". At the bottom, there is a "Draft Design Specifications" section with a list of links including "Design for Chip Seals [2016-05-17] (V-1 Final)", "Design for FDR [2018-07-25]", "Design for Fog Seal [2016-11-04] (V-1 Final)", "Design for Micro Surfacing [2016-07-11] (V-1 Final)", "Design for Sand Seal [2017-11-14] (V-1 Final)", "Design for Sand Seal [2017-12-19] (V-2 Final)", "Design for Scrub Seal [2017-06-02] (V-1 Final)", "Design for Slurry Seal [2016-11-13] (V-1 Final)", "Design for Tack Coats [2016-11-04] (V-1 Final)", and "Design for UTBWC [2019-06-04] (V-4.0 Final)".

# Completed Training

**Detailed power point presentations that illustrate:**

- Important elements
- Key points for “no fly zones”
- Consequences of non-inclusion
- Major “keys for success”



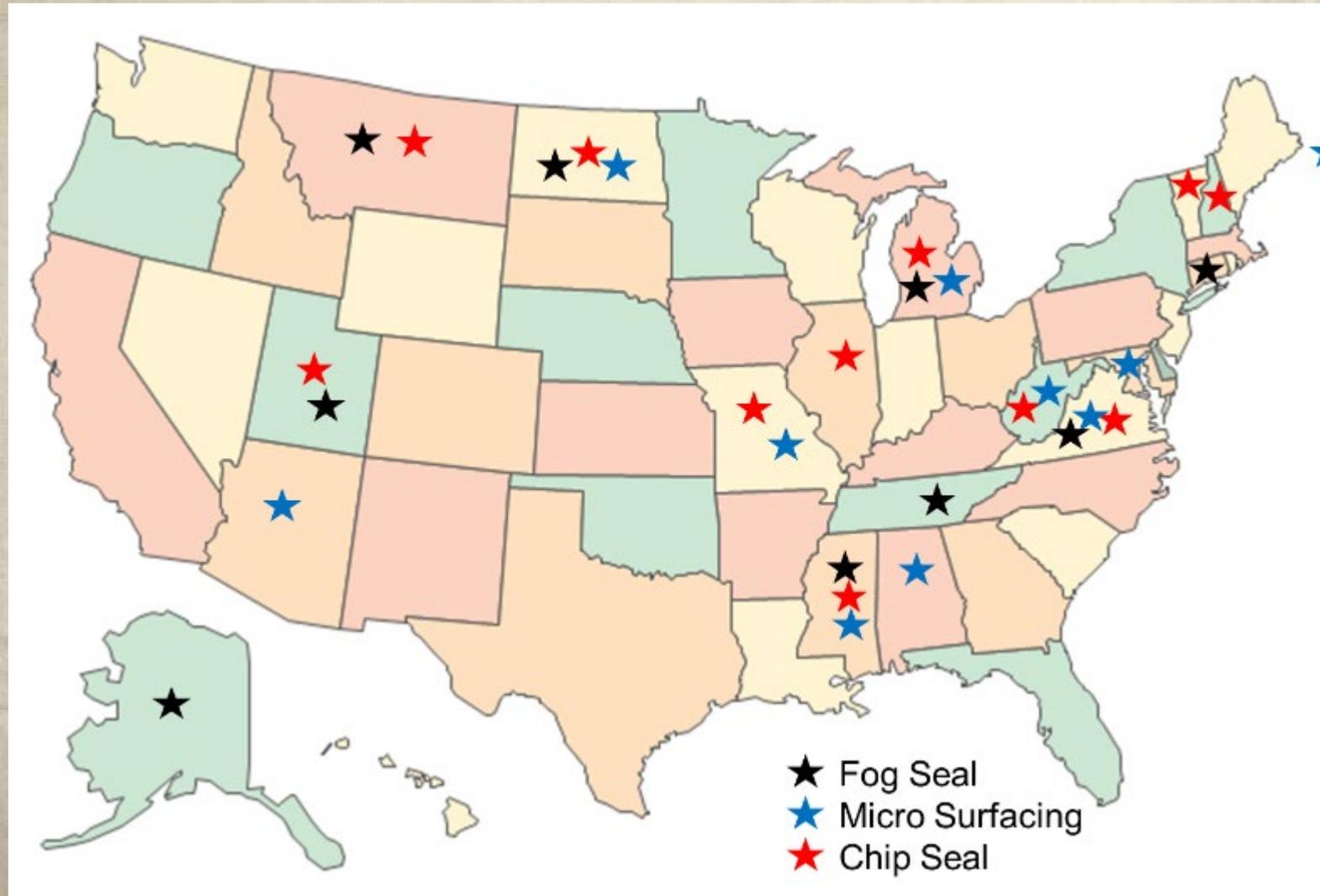
Knowledge checks will recap each section

Presentations will be kept to less than one hour

# Task: Demonstrations

- A. Conduct a demonstration in each of four AASHTO regions using the construction guide specifications and provisional material and design specifications to showcase new concepts.
- B. Select projects in coordination with state DOTs or local agencies that regularly program treatments such as micro surfacing, chip seal, or fog seal for construction.

# Completed Demonstration Project Locations



# What's Next?

- Continuation of NCHRP 20-44
- Follow-up of demo projects
- More implementation of specifications
- New treatments



# Who Thunk It?



Walt Disney (1958)



OpenAI (2023)

# Disney or AI?

1. Speed, safety, and comfort will be the keynotes of tomorrow's highways.
2. Radiant heat will keep the surface dry through rain, ice, and snow.
3. The development of high-speed transportation systems will revolutionize long distance travel.
4. Systems integrated into vehicles and highways could provide drivers with real time information about the road, traffic, and points of interest.
5. Pre-fabricated bridges and overpasses will be moved immediately into place.
6. Lanes will be equipped to facilitate communication between vehicles.
7. Cars will be automatically operated and guided to pre-set locations.
8. Highways will feature advanced sensors and communication technologies to enable real time monitoring of traffic.
9. Levitating or anti-gravity cars may hover above the road surfaces.



ChatGPT



ChatGPT



ChatGPT



ChatGPT



ChatGPT

# Disney's Magic Highway U.S.A.



# Improve Widespread Adoption

- Utilize toolbox of materials (specs, guides, training, demo sheets, etc.)
- Follow up on demo projects and identify champions
- Continue outreach and sharing the message



March 25-27, 2024 | Nashville, TN

## Pavement Preservation: AASHTO Specifications and Emulsion Task Force

Originally formed in 2008 as a collaboration between DOTs, Academic, and Industry the...

- Pavement Preservation

## New AASHTO Chip Seal Specifications Training Course

Many agencies seek to utilize pavement preservation methods more to maintain their ne...

- Pavement Preservation

## AASHTO Microsurfacing Specifications Training Course

Developed through the AASHTO Emulsion Task Force, the new Micro Surfacing Constructio...

- Pavement Preservation

# New Treatments

- *NCHRP 14-43*: Cold Central Plant Recycling and Cold In-Place Recycling
- *NCHRP 14-44*: Slurry Seals, Scrub Seals, and Tack Coats
- *NCHRP 14-48*: Sand Seals and Ultra-thin Bonded Surface Treatments

**All will need Information Dissemination, Outreach, Training, and Demonstrations**

# Learning From the Past

- Outreach was crucial
- Need to find liaisons and educate them on mission
- Significant time commitment start to finish
- Review sessions & training were very important/rewarding
- Agencies fell into 3 categories of use level
- Different ways to get project to construction
- Need to know requirements going into project for best documentation and value

# Long-Term Goals

- Where do we see the project in 1 year? 2 Years? 5 Years?
- Identify a timeline with realistic goals
- Align NCHRP project timelines for new treatments
- Allow for better planning of resources

# Which is the real road?



**Richardson Highway, California**



# Which is the real road?



**Pacific Coast Highway, California**

# Which is the real road?



**Kancamagus Highway, New Hampshire**

# Synergies / Partnerships

- Leverage efforts of other organizations and boards
- Maximize time and effort of our volunteers
- Increase chances for widespread use and success



# Questions?

**BURN SOME DUST**



**EAT MY RUBBER**