



Summit on Increasing RAP Use in Pavements State's Perspective

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- **Current Practices**
- **Barriers**
 - **Real**
 - **Perceived**
- **Summary**
- **Challenge**



Why Use RAP?

- **Availability**
 - **2.3 Million Center Line Miles of HMA in Place**
- **Quality Materials Originally**
- **Economic Potential**
 - **Agency**
 - **Contractor**
- **Proven Technology**
- **Right Thing to Do**

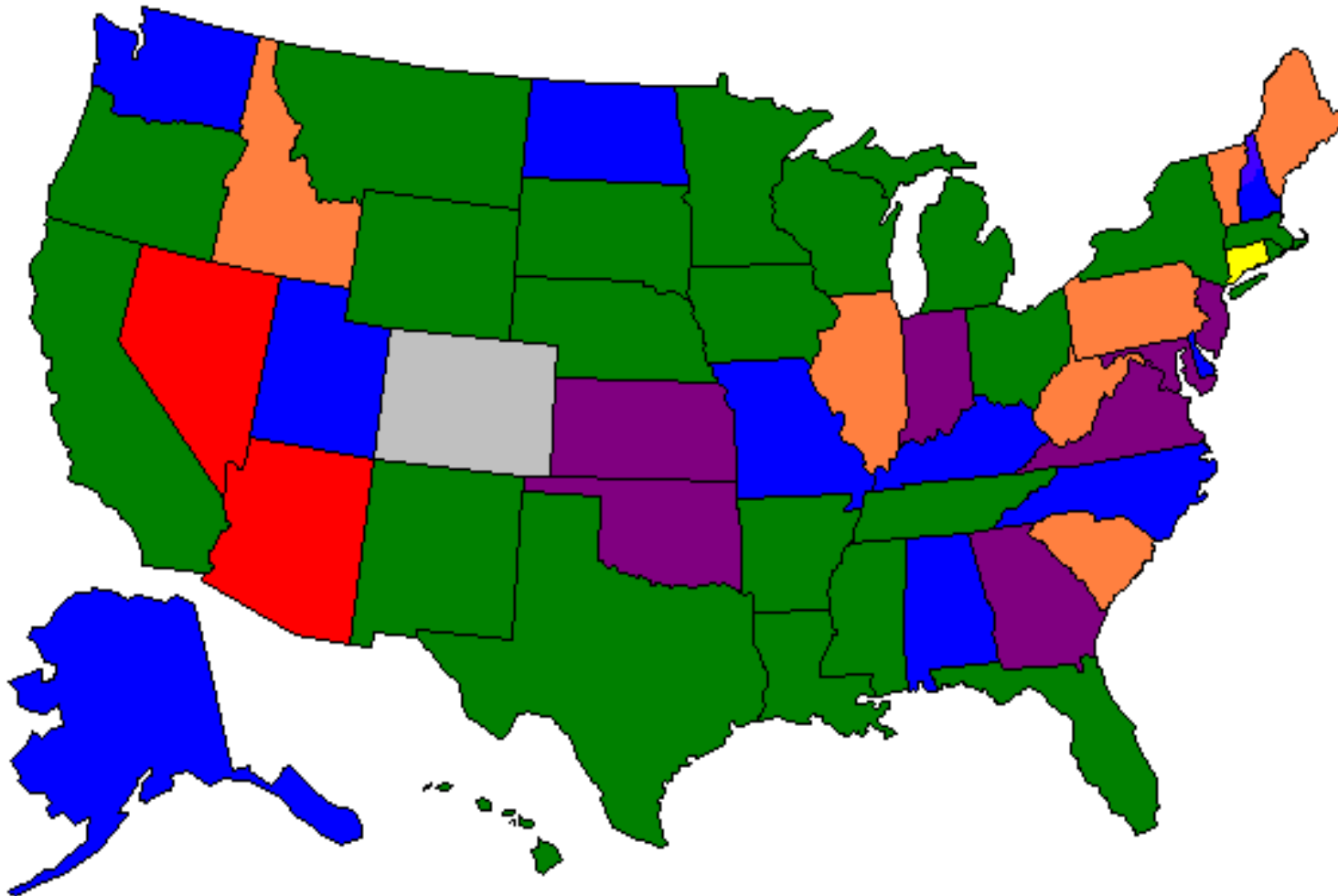


Current Practice

- **Surveyed States Mid 2007**
- **100% Response Rate**
- **Determine Current State of The Art**
- **Identify High RAP Users**
- **Share Information Between States**
- **Survey Again Early 2009**



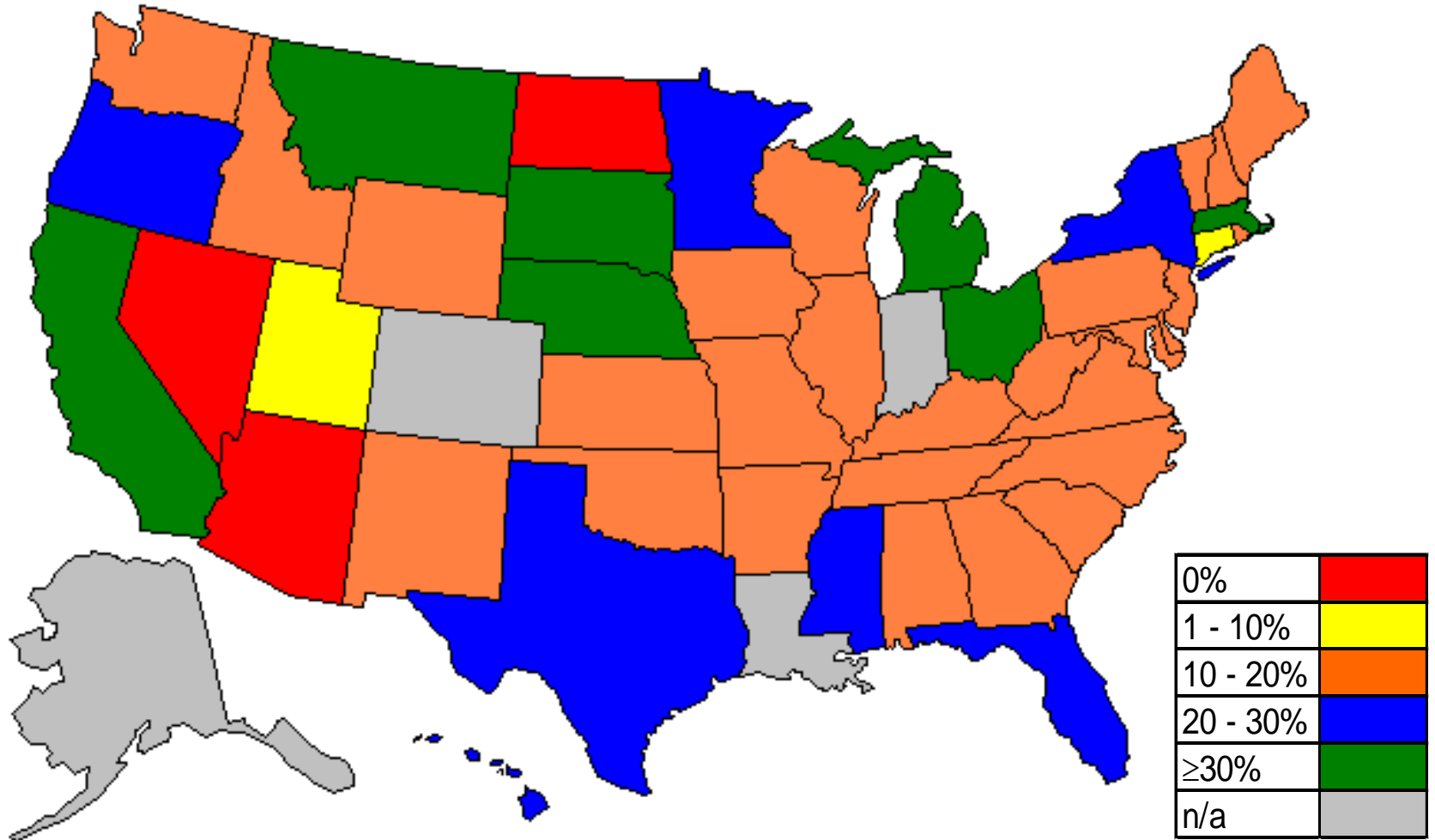
Base Mixes -- Allowed



0%	
10%	
15%	
20%	
25%	
≥30%	
n/a	

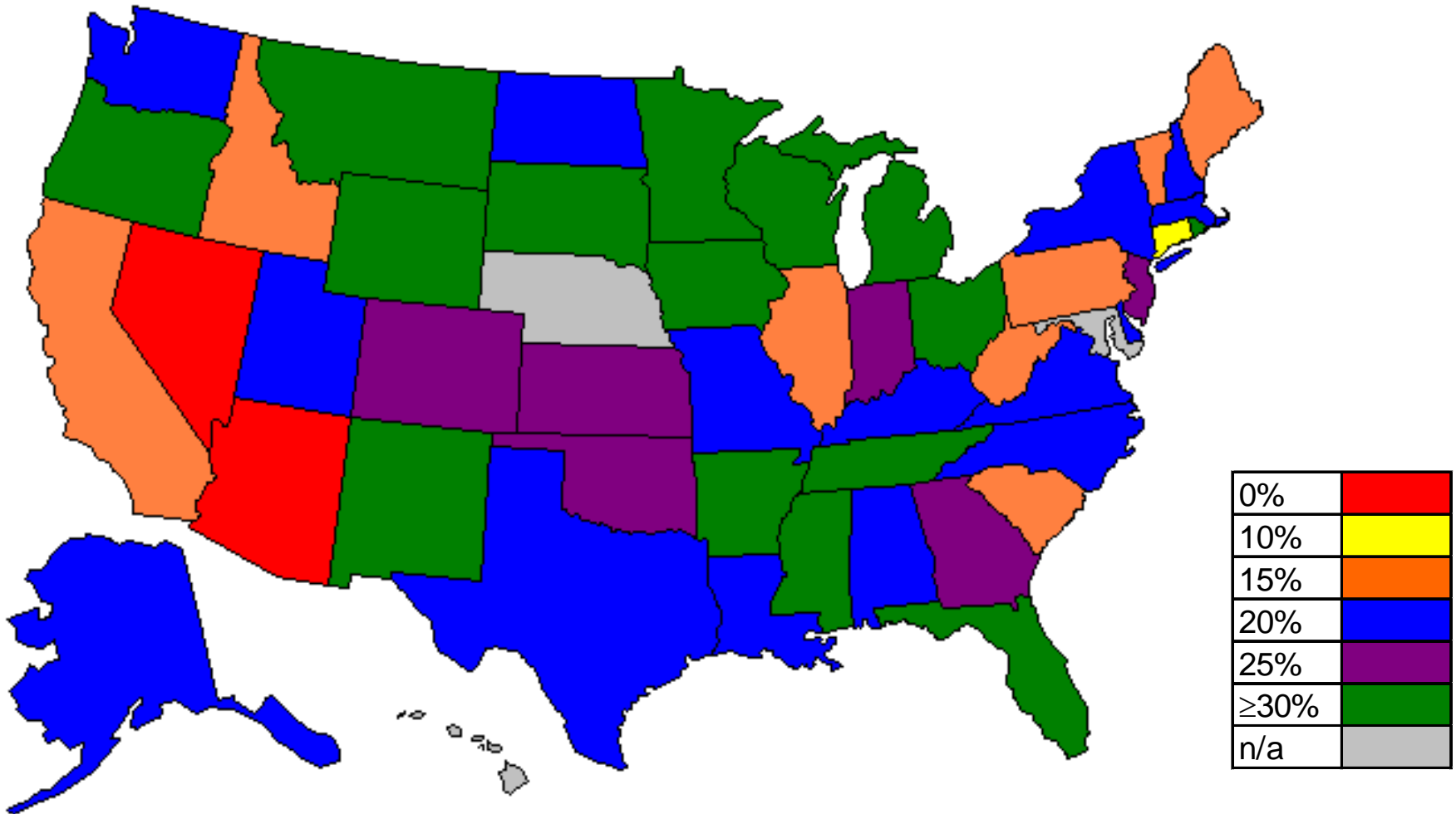


Base Mixes -- Average Use



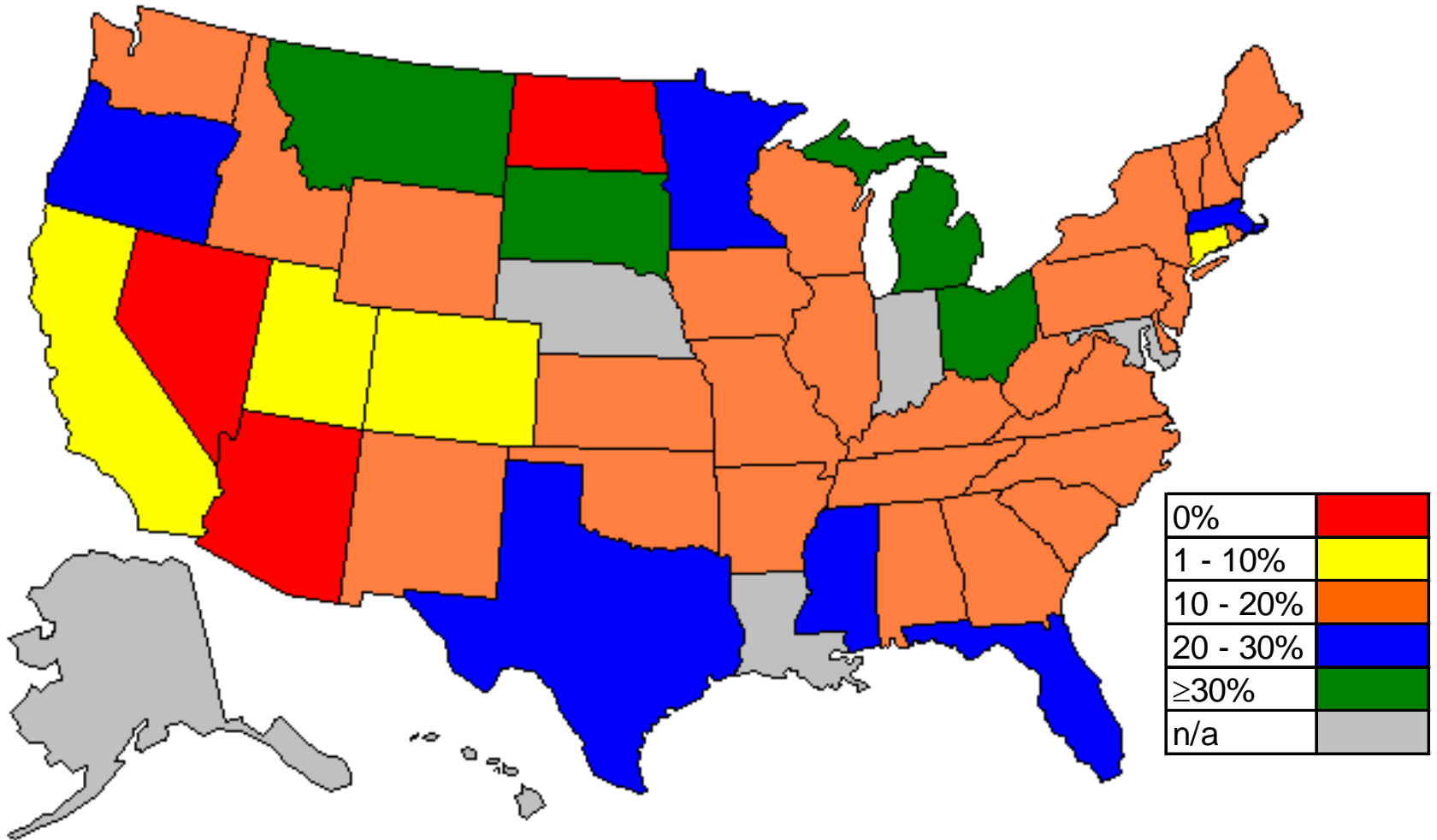


Intermediate Mixes -- Allowed



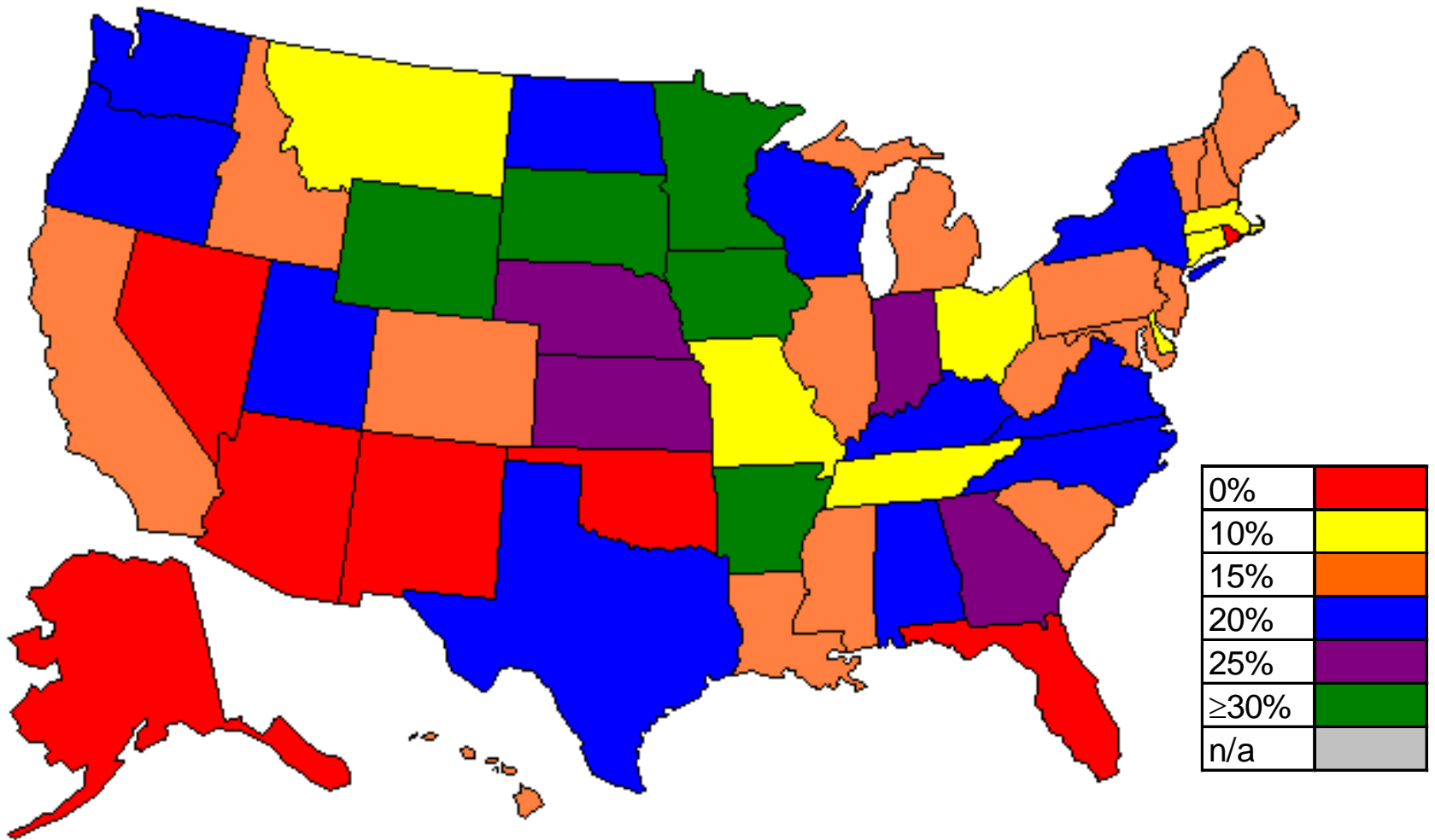


Intermediate Mixes -- Average Use



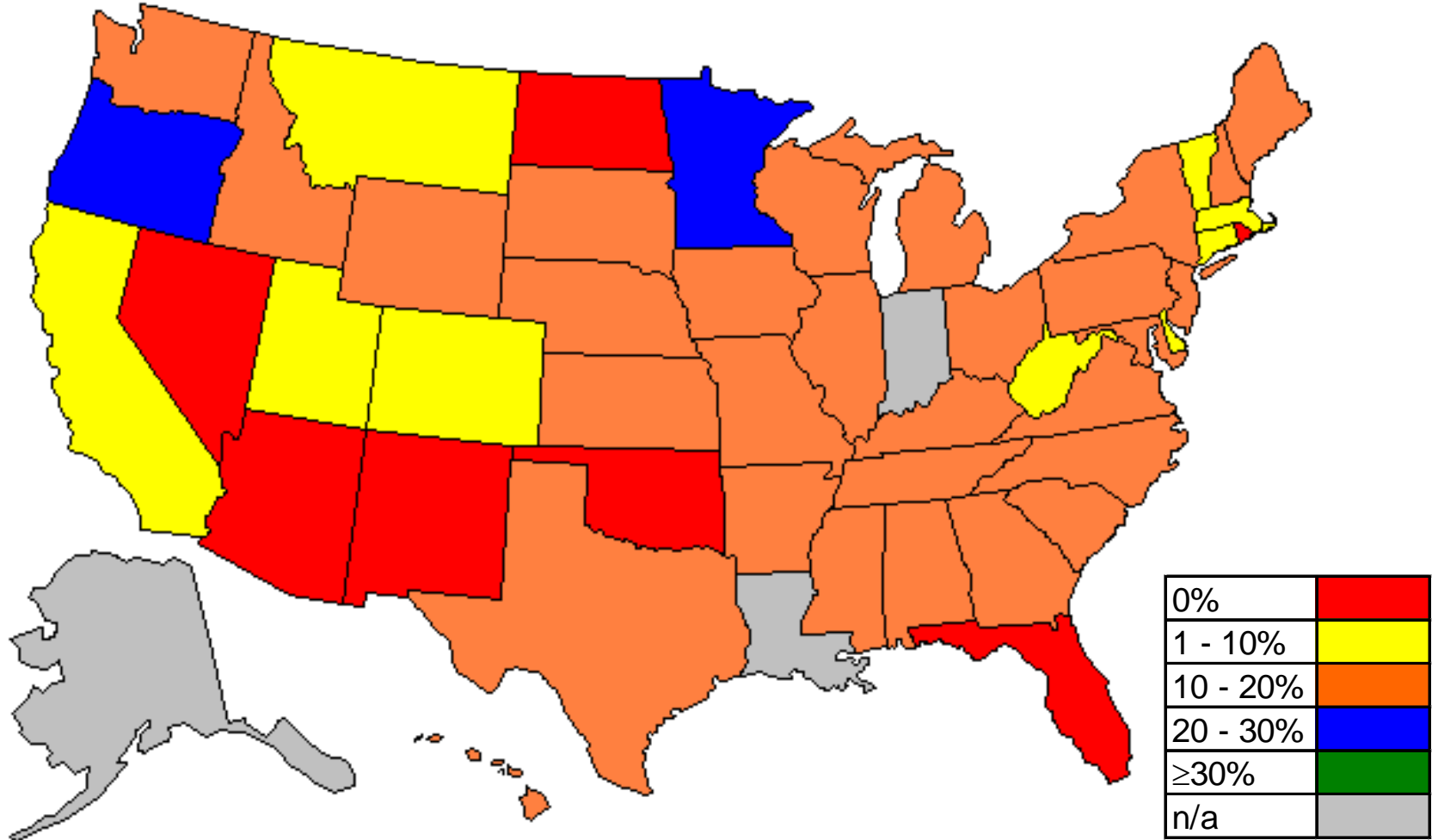


Surface Mixes -- Allowed





Surface Mixes -- Average Use





Barriers to Increasing RAP Use

- **Surveyed AASHTO Subcommittee on Materials**
- **One Question**
- **What is the major barrier to your state increasing the use of RAP in HMA?**
- **Response from 43 States**



Barriers

- **Stockpile Management**
 - **Quality of original stone**
 - **Gradation Control**
 - **Origin of Material Unknown**
 - **Processing Requirements**
 - **Additional Testing**



Barriers

- **Availability of RAP**
 - **Use in Base or Shoulders (unbound)**
 - **Used by Maintenance**
 - **Concern about moisture**
 - **Too contaminated**
 - **Cannot Meet Gradation Requirements**



Barriers

- **Binder Issues**
 - **Bumping Grade**
 - **Properties of Final Blend**
 - **Compaction Issues**
 - **Additional Tank Required**



Barriers

➤ Mix Issues

- Durability Questions
- Additional Testing Requirements
- Variability of RAP Mixes
- Unknown Performance Characteristics
- “Could” Have Early Failure



Barriers

- **Contractor Unwilling to Use**
- **Existing Specifications**
- **Resistance of Pavement Designers**
- **Research Did Not Support Performance**



Other Barriers

- **Resistance to Change**
- **Perceptions**
 - **Less Quality**
 - **Industry Can't Do It**
 - **Value Not Shared**
 - **Difficult to Evaluate**



Other Barriers

- **Low Risk Tolerance**
 - **It Might Fail**
 - **Current System is Working**
 - **More Research Needed**



Facts

➤ **Great Potential Exists**

- **Economic Potential**
- **Sustainability**

➤ **Resources Available**

- **AASHTO**
- **FHWA**
- **ETG**
- **TRB**
- **Trade Journals**
- **RMRC**
- **NAPA**
- **NCAT**
- **Asphalt Institute**
- **User Producer Groups**
- **Neighboring States**



Assistance is Available

Seek it Out!



Challenge

- **Move to the Next Level in Your State**
- **If Not Using – Move to 15%**
- **If Using 15 to 20% - Move to 25%**
- **If Using > 25% - Share Your Success with Others**



Closing Thought

If Not Using RAP – Why?

**If Not Increasing Use Now –
Why Not Begin?**