



Modified Asphalt Market Survey 2006 - 2007

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The Association of Modified Asphalt Producers Meeting

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Modified Asphalt Survey



- Review DOT Survey & Results
- Actual Reported Usage in 2006
- Forecast 2007 Modified Usage
- State's Views on Modified Asphalt

The Survey

- All data received in 2006 was included in 2005.
- This report will be revised & a webcast will be scheduled for the end of April.
- History: Many consistent years are available in this format on the AMAP website for your review.

Updates included in 2005

- Arkansas
- Idaho
- Tennessee

2006 State DOT in Review

34 States participated in the Survey or 68%

- States which did not respond to date are:
 - **Alaska**, **Hawaii**, **Idaho**, **Kansas**, **Maine**, **Michigan**,
New York, Ohio, **Oklahoma**, Oregon, **Vermont**,
Virginia, Wisconsin, **Wyoming**

(**Bold** indicates omissions from 2005 survey)

2006 DOT in Review

Total Binders Reported: **6,265,360** liquid tons

- 33% of responses Expect to use **More** in 2007
- 35% of responses Expect to use **Less** in 2007
- 32% of responses Expect to use **Same** in 2007

2006 DOT in Review

Total Modified Reported: **1,684,747** liquid tons

- 38% of responses used **More** in 2006 vs 2005
- 29% of responses used **Less** in 2006 vs 2005
- 27% of responses Expect to use **More** in 2007
- 29% of responses Expect to use **Less** in 2007

2006 DOT in Review

Total Modified reported:

Reported: **1,684,747** liquid tons

- **27%** of Binder reported was Modified
- Reported ratio reflects an Increase from 2005

Modifiers Used (of the respondents)

2005

- 80% SBS Modified
- 45% SB Modified
- 45% SBR Latex Modified
- 19% Other Polymer Modified (EVA, etc)
- 12% Chemical Modified (oils, etc)
- 16% Other (GTR)
- 16% PPA
- 13% Other Chemical (Air Blown)

Modifiers Used (of the respondents)

2006

- 85% SBS Modified
- 56% SB Modified
- 53% SBR Latex Modified
- 15% Other Polymer Modified (EVA, etc)
- 12% Chemical Modified (oils, etc)
- 18% Other (GTR)
- 21% PPA
- 12% Other Chemical (Air Blown)

Most Common Binders Reported

2005

- | | |
|----------------|-------------------|
| • 81% PG 64-22 | 32% are Modified |
| • 58% PG 76-22 | 100% are Modified |
| • 49% PG 58-28 | 58% are Modified |
| • 45% PG 64-28 | 97% are Modified |
| • 38% PG 70-22 | 90% are Modified |
| • 29% PG 70-28 | 100% are Modified |
| • 19% PG 58-34 | 100% are Modified |
| • 16% PG 76-28 | 100% are Modified |
| • 16% PG 58-22 | 84% are Modified |

Most Common Binders Reported

2006

- | | |
|----------------|-------------------|
| • 74% PG 64-22 | 38% are Modified |
| • 59% PG 76-22 | 100% are Modified |
| • 44% PG 58-28 | 62% are Modified |
| • 53% PG 64-28 | 97% are Modified |
| • 38% PG 70-22 | 85% are Modified |
| • 23% PG 70-28 | 100% are Modified |
| • 15% PG 58-34 | 100% are Modified |
| • 15% PG 76-28 | 100% are Modified |
| • 12% PG 58-22 | 62% are Modified |

Other Binders Reported

- PG 82-22 Modified
- PG 76-34 Modified
- PG 76-16 Modified
- PG 70-40 Modified
- PG 70-10 Modified
- PG 64-16 Modified
- PG 67-22 88% are Modified

2006 DOT in Review

- 53% specify for Modification
- 73% must be Modified to Meet Specification.
- 56% Specify Type of Modifier
- 18% Specify Percent of Modifier
- 21% have a Stability Specification

Modes Of Failure Addressed with Modified Binder

- 73% Rutting
- 50% Fatigue Cracking
- 50% Thermal Cracking
- 12% Other

2006 DOT in Review

Plus Specifications

- 82% of those responded have *Plus* Specs

However:

- 56% of **ALL** States have *Plus* Specs

Plus Specifications & the DOTs

- 81% have *Plus* Specifications
 - 67% are Elastic Recovery
 - 43% are DSR; Phase
 - 25% are DSR; Multiple Stress Creep Recovery
 - 25% are Other (Ring & Ball; FTIR; etc)
 - 21% are Forced Ductility
 - 11% are Toughness & Tenacity
 - 11% are Direct Tension

Direct Tension vs. M320 Table 2

- 15% of responses are using the DT
 - 76% to better predict Thermal Cracking
 - 38% to identify Modification
 - 20% to identify Modification Type
- 15% of responses are using M320 Table 2
(5 States)

Would Consider Specifications...

To Improve or Reduce:

- 67% Compaction
- 70% Rutting Resistance
- 73% Fatigue Cracking

Experiences with Modified Asphalt

- **Very Satisfied** 35%
- **Satisfied** 41%
- **Neutral** 15%
- **Unsatisfied** 3%
- No Comment** 6%

76% are Satisfied

Experiences with Modified Construction

- **Very Satisfied** 21%
- **Satisfied** 50%
- **Neutral** 21%
- **Unsatisfied** 3%
- No Comment** 5%

71% are Satisfied

2006 DOT Spending Expectation

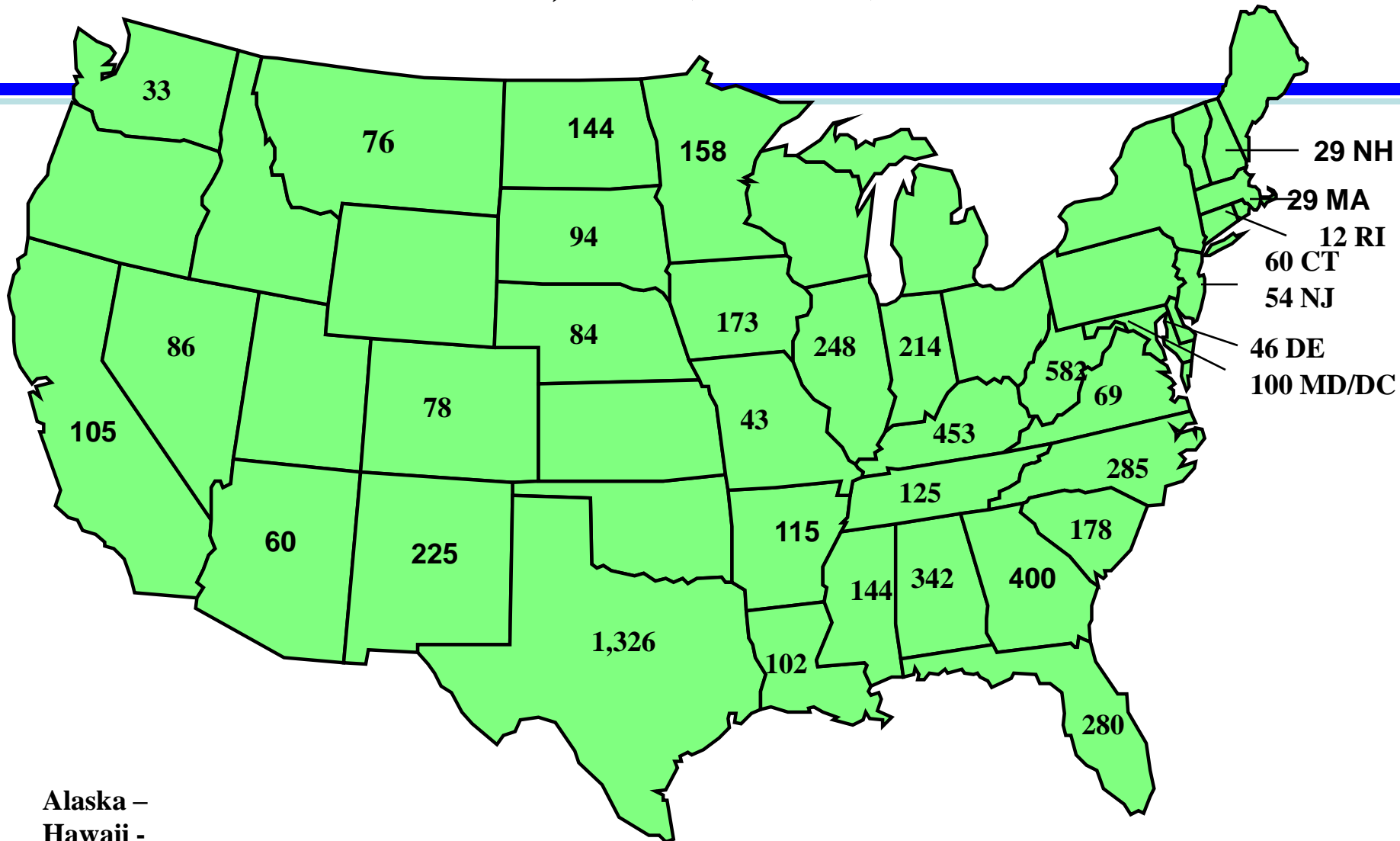
- 35% Expect to Spend **More** on Paving
- 42% Expect to Spend the **Same** on Paving
- 23% Expect to Spend **Less** on Paving

2006 Forecast Summary

- **33%** Expect to Use **More** Binder in 2007
- **35%** Expect to Use **Less** Binder in 2007
- Total Binder: **6,370,234**
- Modified Binder: **1,642,906** or **26%** of total
- Volume **Binder Increase** from 2006: **1.67%**
- Volume **Modified Decrease** from 2006: **(2.4%)**

Reported Total Asphalt Usage

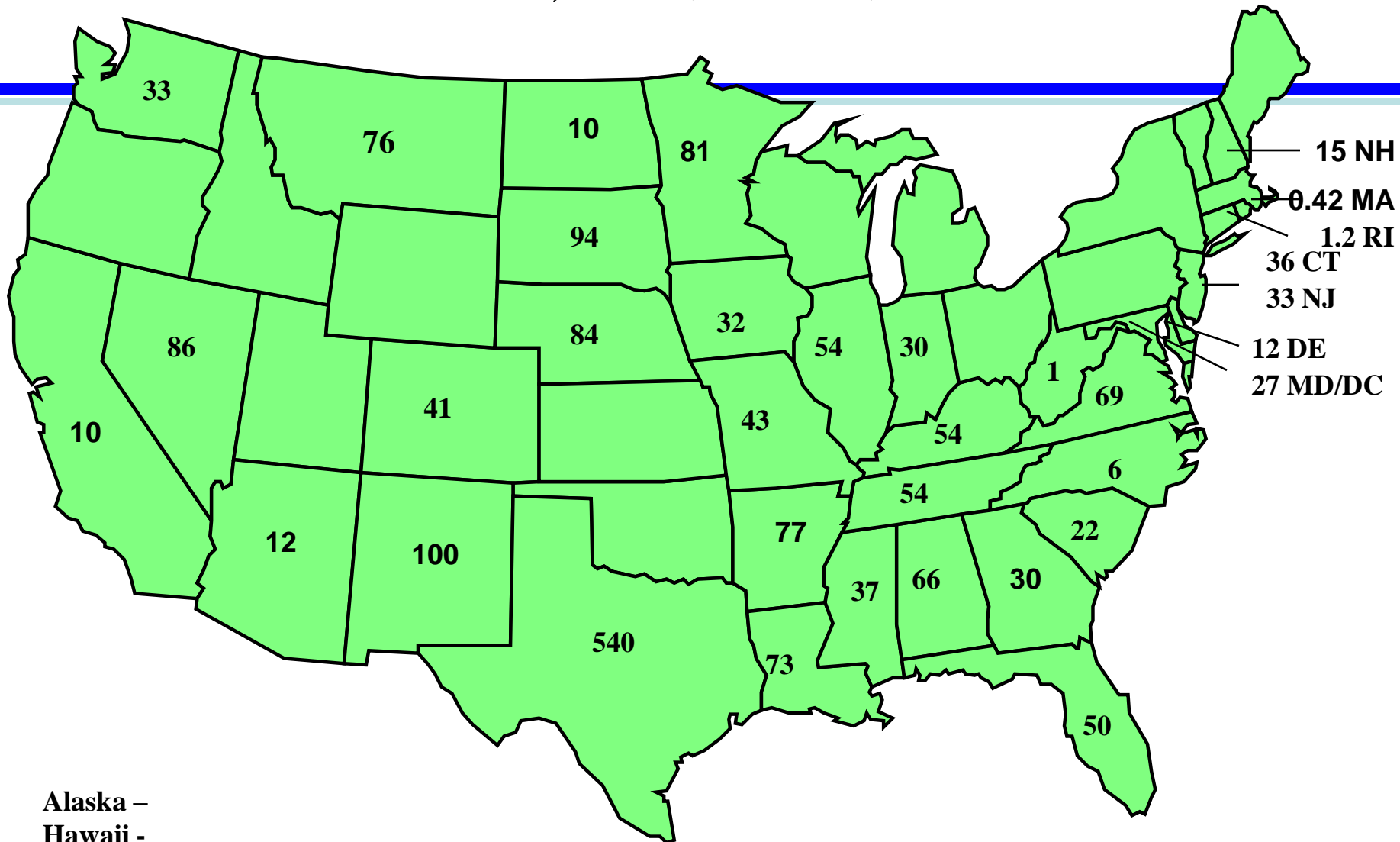
2006, DOT(000 TONS)



Total 6,265,360

Reported Modified Asphalt Usage

2006, DOT(000 TONS)

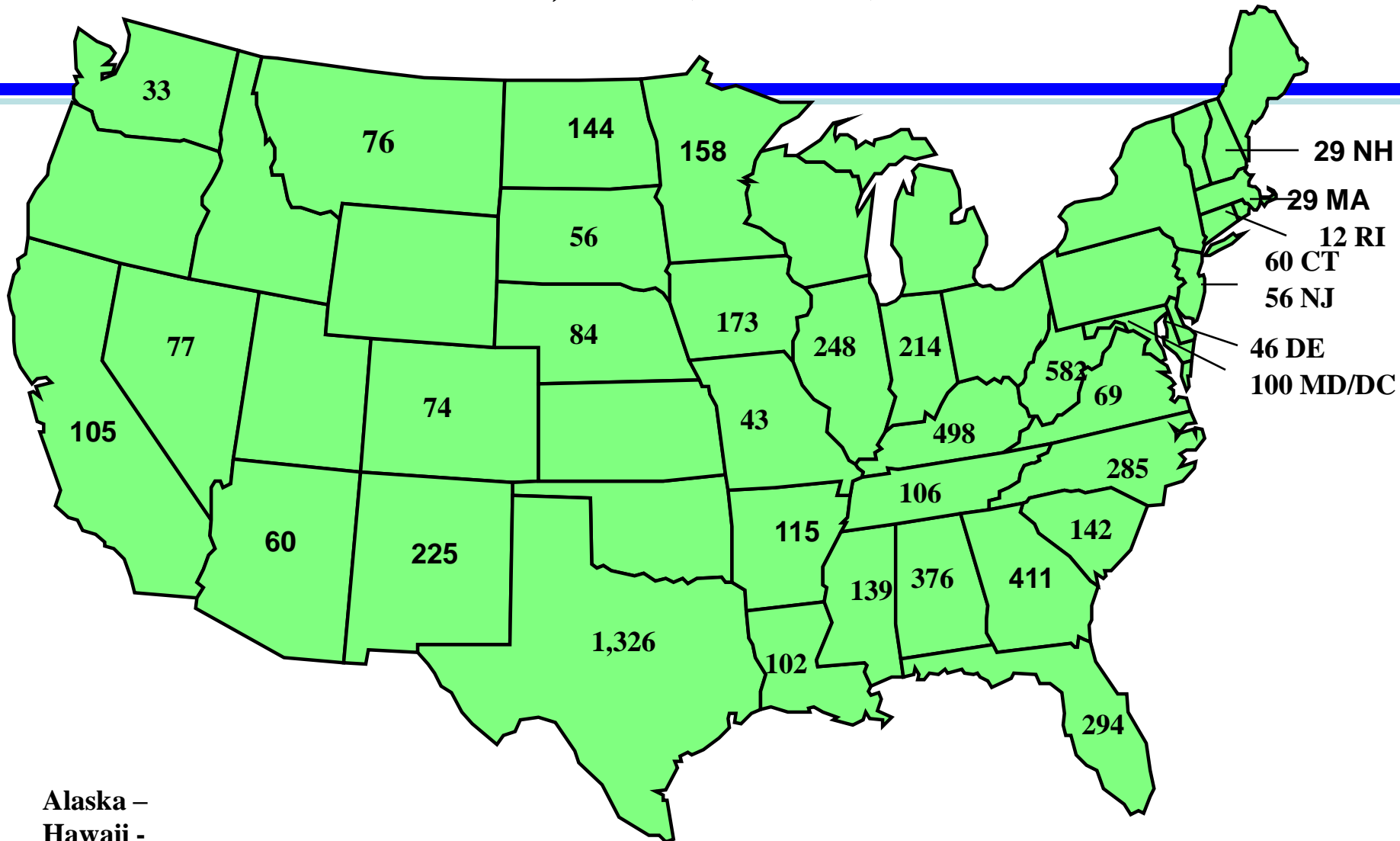


Alaska –
Hawaii -

Total 1,684,747

Total Asphalt Forecast

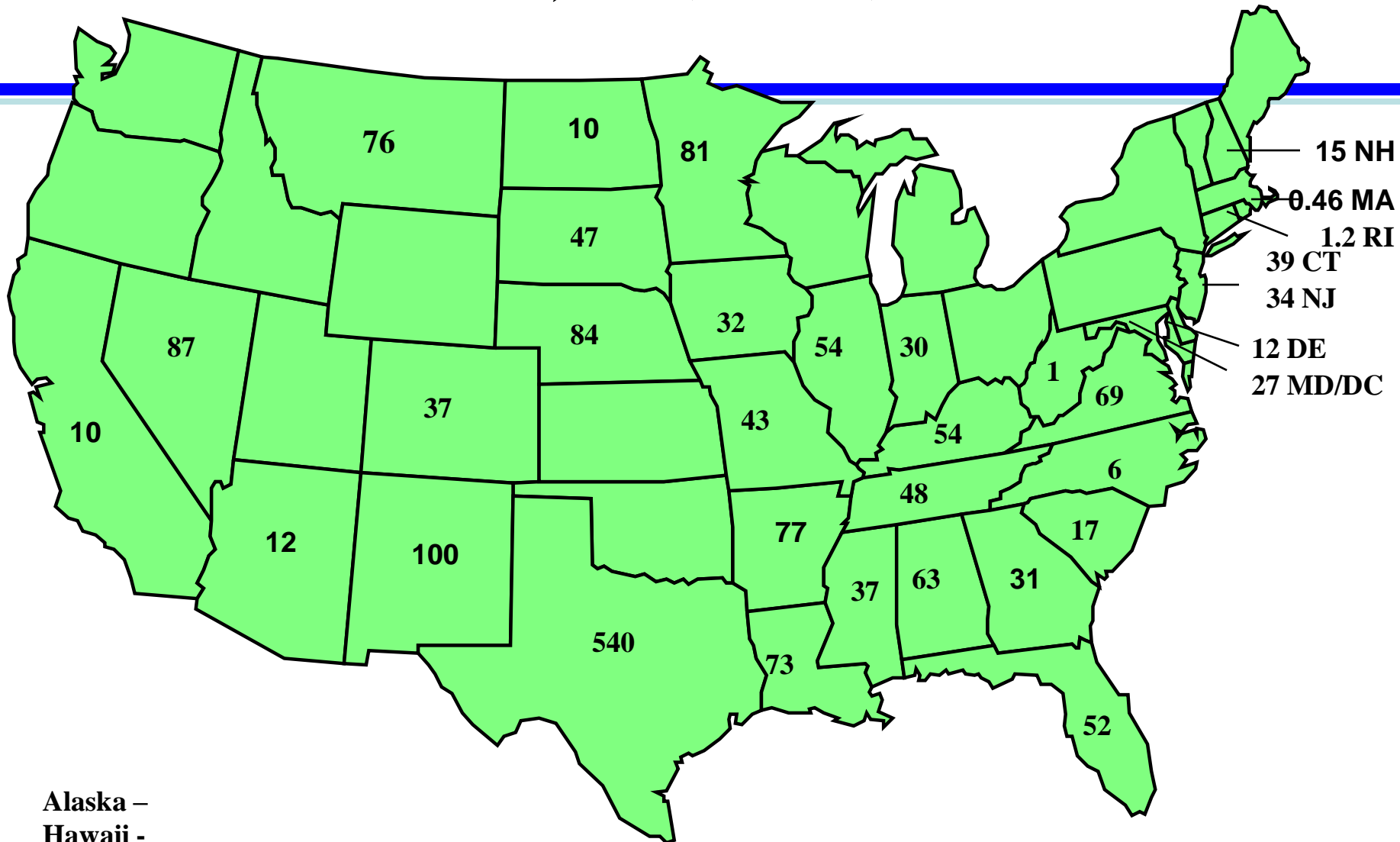
2007, DOT(000 TONS)



Total **6,370,234** **+1.67%**

Modified Asphalt Forecast

2007, DOT(000 TONS)



Alaska –
Hawaii -

Total 1,642,906 -2.4%

This Survey...

- Will be updated as additional information is received.
- Webinar to be scheduled for Mid April
- Will be located on the AMAP website
www.ModifiedAsphalt.org



Questions?

www.modifiedasphalt.org





Many thanks

- To all the participating States DOTs for their responses
- To all the members that helped collect all the information

www.modifiedasphalt.org



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