

# Asphalt Pavement Industry Survey on Recycled Materials and Warm-Mix Asphalt Usage 2017

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IS-138 Appendix B:  
State-by-State Use of  
Recycled Materials and Warm-Mix Asphalt  
In Asphalt Pavement Mixtures

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8th Annual Survey

# Asphalt Pavement Industry Survey on Recycled Materials and Warm-Mix Asphalt Usage: 2017

## Appendix B

### Introduction

Appendix B provides a state-by-state breakdown of data reported in the main Asphalt Pavement Industry Survey on Recycled Materials and Warm-Mix Asphalt Usage report for the 2017 construction season survey, including information from Tables 5, 6, 7, 8, 11, 12 and 15 in the main report (Williams et al., 2018). The accuracy of the state-level data and estimates will vary depending upon the number of companies participating in the survey in a given state and the tonnage produced by each respondent. Appendix A outlines the methodology used to collect data and to generate estimates.

Appendix B reports data for all 50 U.S. states, as well as the District of Columbia, Puerto Rico, and American Samoa. Estimates for Guam, the Northern Mariana Islands, and U.S. Virgin Islands were not made due to a lack of producer responses and other reliable data. In instances where fewer than three companies in a state responded to the survey, only estimated total tonnages for the state are reported to protect proprietary company data. Table 1 in the main report, republished below, summarizes the number of respondents from each state and territory. A total of 238 companies representing 1,158 production plants responded to the 2017 construction season survey. Branches, subsidiaries, and operating units are counted as unique companies in Table 1 and throughout this report. A degree of fluctuation in year-to-year comparisons of data is influenced by which companies responded to the 2017 construction season survey versus prior year survey respondents. Throughout the tables, where percentages and totals are calculated, the numbers may not add up exactly due to rounding.

**Table 1: Number of Companies Completing 2017 Construction Season Survey in Each State/Territory**

State	Cos.	Plants	State	Cos.	Plants	State	Cos.	Plants
Alabama	6	50	Kentucky	4	39	Ohio	7	74
Alaska	*	*	Louisiana	5	7	Oklahoma	5	18
American Samoa	*	*	Maine	3	17	Oregon	4	7
Arizona	3	8	Maryland	6	11	Pennsylvania	10	50
Arkansas	4	13	Massachusetts	8	29	Puerto Rico	NCR	NCR
California	6	39	Michigan	7	45	Rhode Island	*	*
Colorado	5	21	Minnesota	4	28	South Carolina	7	24
Connecticut	3	19	Mississippi	5	22	South Dakota	*	*
Delaware	*	*	Missouri	7	30	Tennessee	5	22
District of Columbia	*	*	Montana	*	*	Texas	7	48
Florida	5	28	Nebraska	3	8	U.S. Virgin Islands	NCR	NCR
Georgia	5	15	Nevada	3	4	Utah	9	19
Guam	NCR	NCR	New Hampshire	4	20	Vermont	*	*
Hawaii	3	8	New Jersey	3	19	Virginia	5	33
Idaho	6	19	New Mexico	3	6	Washington	7	33
Illinois	7	15	New York	11	72	West Virginia	4	15
Indiana	5	38	North Carolina	7	52	Wisconsin	4	63
Iowa	6	16	North Dakota	3	7	Wyoming	3	6
Kansas	3	17	No. Mariana Islands	NCR	NCR	<b>Total†</b>	238	1,158

NCR = No Companies Responding

\* = Fewer than 3 Companies Reporting

† = Total includes companies/production plants from states with fewer than 3 companies reporting.

ALABAMA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	3.8	4.9	7.5	7.0
DOT	2.3	3.3	4.6	4.8
Other Agency	0.7	0.8	1.4	1.2
Commercial & Residential	0.7	0.8	1.5	1.1
Companies Reporting	5	6		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.9	1.3	1.7	1.9
Used in HMA/WMA Mixtures	0.9	1.2	1.8	1.7
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.14	1.94	2.28	2.78
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	25.1%	23.7%		
Average % for Other Agency Mixtures <sup>1</sup>	21.7%	24.7%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	25.2%	26.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			24.4%	24.3%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	13%	29%		
% of RAP Mixtures Using Softer Binders	0%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	8.0	0.0	16.0	0.0
Processed Shingles Accepted	10.0	0.0	19.9	0.0
Used in HMA/WMA Mixtures	11.2	0.0	22.4	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.46%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.10%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.30%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	60%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			2.4	0.7
DOT	34%	13%	1.6	0.6
Other Agency	32%	3%	0.5	0.0
Commercial & Residential	23%	3%	0.3	0.0
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	14%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	86%	67%		
Organic Additive, %	0%	33%		
	Other Reported Data			
% Companies Reporting Producing WMA	60%	50%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

ALASKA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	*	*	4.6	5.1
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAP Stockpiled at Year-End	*	*	*	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*		
% of RAP Mixtures Using Rejuvenators	*	*		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAS Stockpiled at Year-End	†	*	†	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAS	*	*		
% of RAS Mixtures Using Softer Binders	*	*		
% of RAS Mixtures Using Rejuvenators	*	*		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	*	*		
Additive Foaming, %	*	*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Reported Data			
% Companies Reporting Producing WMA	*	*		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

AMERICAN SAMOA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	NCR	*	0.03	0.03
DOT	NCR	*	NCR	*
Other Agency	NCR	*	NCR	*
Commercial & Residential	NCR	*	NCR	*
Companies Reporting	NCR	*		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	NCR	*	NCR	*
Used in HMA/WMA Mixtures	NCR	*	NCR	*
Used in Aggregate	NCR	*	NCR	*
Used in Cold-Mix Asphalt	NCR	*	NCR	*
Used in Other	NCR	*	NCR	*
Landfilled	NCR	*	NCR	*
Total Tons of RAP Stockpiled at Year-End	NCR	*	NCR	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	NCR	*		
Average % for Other Agency Mixtures <sup>1</sup>	NCR	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	NCR	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			NCR	*
	Other Reported Data			
% Companies Reporting Using RAP	NCR	*		
% of RAP Fractionated	NCR	*		
% of RAP Mixtures Using Softer Binders	NCR	*		
% of RAP Mixtures Using Rejuvenators	NCR	*		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	NCR	*	NCR	*
Processed Shingles Accepted	NCR	*	NCR	*
Used in HMA/WMA Mixtures	NCR	*	NCR	*
Used in Aggregate	NCR	*	NCR	*
Used in Cold-Mix Asphalt	NCR	*	NCR	*
Used in Other	NCR	*	NCR	*
Landfilled	NCR	*	NCR	*
Total Tons of RAS Stockpiled at Year-End	†	*	†	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	NCR	*		
Average % for Other Agency Mixtures <sup>1</sup>	NCR	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	NCR	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			NCR	*
	Other Reported Data			
% Companies Reporting Using RAS	NCR	*		
% of RAS Mixtures Using Softer Binders	NCR	*		
% of RAS Mixtures Using Rejuvenators	NCR	*		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			NCR	*
DOT	NCR	*	NCR	*
Other Agency	NCR	*	NCR	*
Commercial & Residential	NCR	*	NCR	*
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	NCR	*		
Additive Foaming, %	NCR	*		
Plant Foaming, %	NCR	*		
Organic Additive, %	NCR	*		
	Other Reported Data			
% Companies Reporting Producing WMA	NCR	*		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

ARIZONA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.4	1.2	7.1	6.5
DOT	0.4	0.2	1.1	1.2
Other Agency	1.5	0.2	4.5	1.1
Commercial & Residential	0.6	0.8	1.6	4.3
Companies Reporting	3	3		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.3	0.1	1.0	0.7
Used in HMA/WMA Mixtures	0.2	0.1	0.6	0.6
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.4	0.10	1.05	0.54
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	6.5%	11.9%		
Average % for Other Agency Mixtures <sup>1</sup>	8.5%	5.0%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	11.1%	10.2%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			8.8%	9.5%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	0%		
% of RAP Mixtures Using Softer Binders	8.5%	23%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.0	0.0	0.0	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.00%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.05	4.3
DOT	0%	50%	0.00	0.6
Other Agency	0.2%	0%	0.01	0.0
Commercial & Residential	2%	87%	0.04	3.7
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	0%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	89%	100%		
Organic Additive, %	11%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	67%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

ARKANSAS	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.3	1.9	5.5	6.0
DOT	1.3	1.3	3.2	4.2
Other Agency	0.3	0.3	0.8	0.9
Commercial & Residential	0.7	0.3	1.6	0.9
Companies Reporting	6	4		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.3	0.1	0.7	0.5
Used in HMA/WMA Mixtures	0.2	0.2	0.5	0.7
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.2	0.20	0.54	0.64
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	10.4%	11.8%		
Average % for Other Agency Mixtures <sup>1</sup>	10.5%	8.5%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	8.2%	10.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			9.8%	11.2%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	1%	0%		
% of RAP Mixtures Using Softer Binders	0%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	5.3	8.5	12.6	26.7
Processed Shingles Accepted	17.6	0.0	42.0	0.0
Used in HMA/WMA Mixtures	25.0	6.1	60.0	19.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	38.7	†	121.6
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.87%	0.10%		
Average % for Other Agency Mixtures <sup>1</sup>	1.49%	0.80%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.30%	0.80%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			1.08%	0.32%
	Other Reported Data			
% Companies Reporting Using RAS	67%	25%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			2.1	4.1
DOT	30%	72%	0.9	3.0
Other Agency	29%	51%	0.2	0.4
Commercial & Residential	58%	72%	0.9	0.7
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	0%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	100%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	50%	100%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

CALIFORNIA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	9.7	5.9	25.0	26.0
DOT	1.9	1.1	4.8	4.8
Other Agency	3.4	1.6	8.8	6.9
Commercial & Residential	4.4	3.3	11.4	14.3
Companies Reporting	4	6		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	1.4	1.1	3.6	4.8
Used in HMA/WMA Mixtures	1.4	1.1	3.7	4.7
Used in Aggregate	0.2	0.0	0.4	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.6	0.60	4.20	2.63
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	12.2%	14.6%		
Average % for Other Agency Mixtures <sup>1</sup>	12.9%	23.7%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	17.3%	16.6%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			14.7%	18.1%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	31%	57%		
% of RAP Mixtures Using Softer Binders	14%	21%		
% of RAP Mixtures Using Rejuvenators	13%	38%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0
Processed Shingles Accepted	2.7	6.0	7.0	26.3
Used in HMA/WMA Mixtures	2.3	1.9	5.9	8.3
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	4.0	†	17.5
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.01%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.01%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.04%	0.10%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.02%	0.03%
	Other Reported Data			
% Companies Reporting Using RAS	25%	17%		
% of RAS Mixtures Using Softer Binders	28%	100%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			2.7	6.5
DOT	11%	24%	0.5	1.1
Other Agency	9%	24%	0.8	1.7
Commercial & Residential	13%	26%	1.4	3.7
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	11%	27%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	89%	73%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	67%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

COLORADO	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.4	2.0	7.5	5.3
DOT	1.1	0.8	3.6	2.0
Other Agency	0.7	0.7	2.2	1.8
Commercial & Residential	0.5	0.5	1.7	1.4
Companies Reporting	5	5		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.6	0.5	1.9	1.4
Used in HMA/WMA Mixtures	0.6	0.5	1.8	1.2
Used in Aggregate	0.1	0.0	0.3	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.7	0.70	2.28	1.85
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	22.1%	25.7%		
Average % for Other Agency Mixtures <sup>1</sup>	24.5%	23.1%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	26.4%	21.1%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			23.8%	23.5%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	71%	22%		
% of RAP Mixtures Using Softer Binders	44%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.4	0.0	1.3	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.0	0.0	0.0	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	7.8	†	20.7
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.00%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	20%	20%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			1.1	0.8
DOT	18%	16	0.7	0.3
Other Agency	17%	16	0.1	0.3
Commercial & Residential	5%	13	1.1	0.2
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	15%	67%		
Additive Foaming, %	5%	0%		
Plant Foaming, %	74%	33%		
Organic Additive, %	7%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	80%	60%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

CONNECTICUT	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.5	2.8	4.6	4.9
DOT	1.0	1.1	1.8	1.9
Other Agency	0.9	0.9	1.6	1.5
Commercial & Residential	0.7	0.9	1.2	1.5
Companies Reporting	3	3		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.4	0.5	0.8	0.8
Used in HMA/WMA Mixtures	0.5	0.5	1.0	0.9
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.0	1.14	1.86	1.97
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	19%	13.9%		
Average % for Other Agency Mixtures <sup>1</sup>	22%	19.5%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	25%	20.2%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			21.3%	17.6%
	Other Reported Data			
% Companies Reporting Using RAP	67%	100%		
% of RAP Fractionated	0%	0%		
% of RAP Mixtures Using Softer Binders	0%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.4	0.9	0.7	1.6
Used in HMA/WMA Mixtures	0.4	0.0	0.7	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.06%	0.10%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.02%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	33%	33%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			2.6	1.4
DOT	65%	25%	1.2	0.5
Other Agency	55%	30%	0.9	0.4
Commercial & Residential	46%	30%	0.6	0.5
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	5%	2%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	94%	49%		
Organic Additive, %	1%	49%		
	Other Reported Data			
% Companies Reporting Producing WMA	67%	67%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

DELAWARE	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	*	*	1.6	1.5
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAP Stockpiled at Year-End	*	*	*	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*		
% of RAP Mixtures Using Rejuvenators	*	*		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAS Stockpiled at Year-End	†	*	†	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAS	*	*		
% of RAS Mixtures Using Softer Binders	†	*		
% of RAS Mixtures Using Rejuvenators	†	*		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	*	*		
Additive Foaming, %	*	*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Reported Data			
% Companies Reporting Producing WMA	*	*		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

DISTRICT OF COLUMBIA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	NCR	*	1.4	1.4
DOT	NCR	*	NCR	*
Other Agency	NCR	*	NCR	*
Commercial & Residential	NCR	*	NCR	*
Companies Reporting	NCR	*		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	NCR	*	NCR	*
Used in HMA/WMA Mixtures	NCR	*	NCR	*
Used in Aggregate	NCR	*	NCR	*
Used in Cold-Mix Asphalt	NCR	*	NCR	*
Used in Other	NCR	*	NCR	*
Landfilled	NCR	*	NCR	*
Total Tons of RAP Stockpiled at Year-End	NCR	*	NCR	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	NCR	*		
Average % for Other Agency Mixtures <sup>1</sup>	NCR	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	NCR	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			NCR	*
	Other Reported Data			
% Companies Reporting Using RAP	NCR	*		
% of RAP Fractionated	NCR	*		
% of RAP Mixtures Using Softer Binders	NCR	*		
% of RAP Mixtures Using Rejuvenators	NCR	*		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	NCR	*	NCR	*
Processed Shingles Accepted	NCR	*	NCR	*
Used in HMA/WMA Mixtures	NCR	*	NCR	*
Used in Aggregate	NCR	*	NCR	*
Used in Cold-Mix Asphalt	NCR	*	NCR	*
Used in Other	NCR	*	NCR	*
Landfilled	NCR	*	NCR	*
Total Tons of RAS Stockpiled at Year-End	†	*	†	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	NCR	*		
Average % for Other Agency Mixtures <sup>1</sup>	NCR	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	NCR	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			NCR	*
	Other Reported Data			
% Companies Reporting Using RAS	NCR	*		
% of RAS Mixtures Using Softer Binders	NCR	*		
% of RAS Mixtures Using Rejuvenators	NCR	*		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			NCR	*
DOT	NCR	*	NCR	*
Other Agency	NCR	*	NCR	*
Commercial & Residential	NCR	*	NCR	*
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	NCR	*		
Additive Foaming, %	NCR	*		
Plant Foaming, %	NCR	*		
Organic Additive, %	NCR	*		
	Other Reported Data			
% Companies Reporting Producing WMA	NCR	*		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

FLORIDA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	5.4	4.6	15.0	16.5
DOT	2.2	2.1	6.0	7.6
Other Agency	1.2	1.1	3.2	4.1
Commercial & Residential	2.1	1.4	5.7	4.9
Companies Reporting	6	5		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	1.7	1.1	4.7	3.9
Used in HMA/WMA Mixtures	1.7	1.6	4.8	5.8
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.1	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.1	2.04	3.02	7.26
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	25.6%	34.0%		
Average % for Other Agency Mixtures <sup>1</sup>	31.2%	38.3%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	38.3%	35.1%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			31.7%	35.3%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	6%	28%		
% of RAP Mixtures Using Softer Binders	73%	83%		
% of RAP Mixtures Using Rejuvenators	4%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.0	0.0	0.0	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	9.5	†	33.9
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.00%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			5.4	1.1
DOT	30%	2%	1.8	0.2
Other Agency	33%	5%	1.1	0.2
Commercial & Residential	43%	15%	2.5	0.7
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	25%	100%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	75%	0%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	17%	40%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

GEORGIA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	7.0	2.2	10.0	14.6
DOT	3.6	1.3	5.2	8.3
Other Agency	1.6	0.5	2.4	3.4
Commercial & Residential	1.7	0.5	2.4	3.0
Companies Reporting	5	5		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	3.1	0.3	4.4	2.2
Used in HMA/WMA Mixtures	1.9	0.5	2.7	3.3
Used in Aggregate	0.0	0.0	0.0	0.2
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	5.3	0.36	7.58	2.37
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	26.7%	20.6%		
Average % for Other Agency Mixtures <sup>1</sup>	27.0%	25.6%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	29.7%	25.6%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			27.4%	22.7%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	1%	8%		
% of RAP Mixtures Using Softer Binders	0%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	2.0	0.0	2.9	0.0
Processed Shingles Accepted	2.0	0.0	2.9	0.0
Used in HMA/WMA Mixtures	0.6	0.0	0.9	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	22.9	†	149.3
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.04%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.01%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	40%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	1%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.04	6.3
DOT	0.2%	43%	0.01	3.6
Other Agency	0.4%	43%	0.01	1.4
Commercial & Residential	0.6%	43%	0.01	1.3
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	100%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	0%	100%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	20%	60%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

HAWAII	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	*	0.8	1.1	1.1
DOT	*	0.2	*	0.3
Other Agency	*	0.5	*	0.7
Commercial & Residential	*	0.1	*	0.1
Companies Reporting	*	3		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	*	0.2	*	0.3
Used in HMA/WMA Mixtures	*	0.2	*	0.2
Used in Aggregate	*	0.0	*	0.0
Used in Cold-Mix Asphalt	*	0.0	*	0.0
Used in Other	*	0.0	*	0.0
Landfilled	*	0.0	*	0.0
Total Tons of RAP Stockpiled at Year-End	*	0.12	*	0.18
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	20.3%		
Average % for Other Agency Mixtures <sup>1</sup>	*	20.3%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	21.9%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	20.0%
	Other Reported Data			
% Companies Reporting Using RAP	*	100%		
% of RAP Fractionated	*	67%		
% of RAP Mixtures Using Softer Binders	*	0%		
% of RAP Mixtures Using Rejuvenators	*	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	*	0.0	*	0.0
Processed Shingles Accepted	*	0.0	*	0.0
Used in HMA/WMA Mixtures	*	0.0	*	0.0
Used in Aggregate	*	0.0	*	0.0
Used in Cold-Mix Asphalt	*	0.0	*	0.0
Used in Other	*	0.0	*	0.0
Landfilled	*	0.0	*	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	*	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	*	0%		
% of RAS Mixtures Using Softer Binders	*	0%		
% of RAS Mixtures Using Rejuvenators	*	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			*	0.0
DOT	*	0%	*	0.0
Other Agency	*	0%	*	0.0
Commercial & Residential	*	0%	*	0.0
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	*	0%		
Additive Foaming, %	*	0%		
Plant Foaming, %	*	0%		
Organic Additive, %	*	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	*	0%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

IDAHO	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	1.3	1.7	2.7	2.8
DOT	0.6	1.0	1.3	1.7
Other Agency	0.3	0.2	0.7	0.4
Commercial & Residential	0.3	0.5	0.7	0.7
Companies Reporting	5	6		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.3	0.6	0.6	1.0
Used in HMA/WMA Mixtures	0.3	0.5	0.6	0.8
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.3	0.53	0.73	0.86
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	17.2%	25.8%		
Average % for Other Agency Mixtures <sup>1</sup>	18.2%	27.3%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	31.9%	31.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			21.3%	27.3%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	12%	17%		
% of RAP Mixtures Using Softer Binders	76%	79%		
% of RAP Mixtures Using Rejuvenators	0%	3%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.0	0.0	0.0	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.00%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.6	1.3
DOT	20%	56%	0.3	0.9
Other Agency	21%	36%	0.2	0.1
Commercial & Residential	27%	29%	0.2	0.2
<b>WMA Technologies<sup>‡</sup></b>	% of Market			
Chemical Additive, %	43%	50%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	57%	50%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	80%	67%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

ILLINOIS	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.2	2.1	14.1	13.0
DOT	0.8	0.9	5.0	5.8
Other Agency	0.8	0.7	5.0	4.1
Commercial & Residential	0.6	0.5	4.2	3.1
Companies Reporting	10	7		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.5	0.5	3.5	3.2
Used in HMA/WMA Mixtures	0.5	0.5	3.3	3.3
Used in Aggregate	0.0	0.0	0.2	0.2
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.1
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.6	0.53	3.79	3.26
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	14.4%	24.3%		
Average % for Other Agency Mixtures <sup>1</sup>	25.5%	23.6%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	31.0%	28.7%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			23.2%	25.1%
	Other Reported Data			
% Companies Reporting Using RAP	90%	100%		
% of RAP Fractionated	89%	55%		
% of RAP Mixtures Using Softer Binders	58%	14%		
% of RAP Mixtures Using Rejuvenators	0.2%	1%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	12.0	4.0	77.6	24.5
Processed Shingles Accepted	37.3	7.2	241.5	44.3
Used in HMA/WMA Mixtures	38.0	10.1	246.0	62.2
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	1.1	†	6.7
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	1.24%	0.40%		
Average % for Other Agency Mixtures <sup>1</sup>	2.85%	0.60%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.03%	0.60%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			1.74%	0.48%
	Other Reported Data			
% Companies Reporting Using RAS	60%	43%		
% of RAS Mixtures Using Softer Binders	64%	40%		
% of RAS Mixtures Using Rejuvenators	0.3%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			2.2	4.5
DOT	13%	33%	0.7	1.9
Other Agency	30%	41%	1.5	1.7
Commercial & Residential	3%	29%	0.1	0.9
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	25%	50%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	75%	50%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	50%	71%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

INDIANA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	4.8	6.6	10.0	11.8
DOT	2.4	2.9	4.9	5.1
Other Agency	1.5	2.2	3.2	4.0
Commercial & Residential	0.9	1.5	1.9	2.7
Companies Reporting	3	5		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	1.2	1.5	2.5	2.7
Used in HMA/WMA Mixtures	1.0	1.5	2.2	2.6
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.8	2.20	3.65	3.94
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	20.2%	19.8%		
Average % for Other Agency Mixtures <sup>1</sup>	21.9%	23.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	26.0%	24.0%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			21.8%	22.1%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	72%	43%		
% of RAP Mixtures Using Softer Binders	67%	22%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	3.5	3.6	7.3	6.5
Processed Shingles Accepted	10.3	3.6	21.5	6.4
Used in HMA/WMA Mixtures	32.4	13.2	67.6	23.6
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	13.8	†	24.6
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.41%	0.30%		
Average % for Other Agency Mixtures <sup>1</sup>	0.91%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.97%	0.30%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.68%	0.20%
	Other Reported Data			
% Companies Reporting Using RAS	100%	80%		
% of RAS Mixtures Using Softer Binders	9%	25%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			7.9	10.4
DOT	79%	88%	3.9	4.5
Other Agency	81%	88%	2.6	3.5
Commercial & Residential	75%	88%	1.4	2.4
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	3%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	97%	100%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	60%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

IOWA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.2	1.6	3.9	3.9
DOT	0.9	0.9	1.7	2.1
Other Agency	0.9	0.4	1.6	1.0
Commercial & Residential	0.4	0.3	0.7	0.8
Companies Reporting	7	6		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.4	0.3	0.7	0.8
Used in HMA/WMA Mixtures	0.3	0.2	0.6	0.4
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.4	0.22	0.76	0.51
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	12.6%	10.8%		
Average % for Other Agency Mixtures <sup>1</sup>	15.6%	10.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	14.4%	10.2%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			14.1%	10.7%
	Other Reported Data			
% Companies Reporting Using RAP	100%	83%		
% of RAP Fractionated	3%	0%		
% of RAP Mixtures Using Softer Binders	8%	21%		
% of RAP Mixtures Using Rejuvenators	0.4%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	7.0	7.0	12.5	16.5
Processed Shingles Accepted	6.6	0.7	11.8	1.7
Used in HMA/WMA Mixtures	5.0	4.1	8.9	9.7
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	19.4	†	46.3
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.21%	0.30%		
Average % for Other Agency Mixtures <sup>1</sup>	0.19%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.36%	0.40%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.23%	0.25%
	Other Reported Data			
% Companies Reporting Using RAS	57%	33%		
% of RAS Mixtures Using Softer Binders	19%	25%		
% of RAS Mixtures Using Rejuvenators	0.4%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.9	0.4
DOT	11%	5%	0.2	0.1
Other Agency	27%	13%	0.4	0.1
Commercial & Residential	44%	20%	0.3	0.2
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	23%	50%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	77%	50%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	43%	33%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

KANSAS	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	1.7	1.1	3.5	2.0
DOT	0.9	0.4	2.0	0.8
Other Agency	0.4	0.4	0.9	0.8
Commercial & Residential	0.3	0.3	0.7	0.5
Companies Reporting	4	3		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.3	0.4	0.7	0.7
Used in HMA/WMA Mixtures	0.3	0.2	0.7	0.4
Used in Aggregate	0.0	0.0	0.1	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.6	0.23	1.19	0.43
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	19.3%	15.8%		
Average % for Other Agency Mixtures <sup>1</sup>	21.6%	22.2%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	22.5%	19.2%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			20.5%	19.0%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	3%	5%		
% of RAP Mixtures Using Softer Binders	73%	65%		
% of RAP Mixtures Using Rejuvenators	2%	3%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	15.0	0.0	31.9	0.0
Processed Shingles Accepted	24.5	2.5	52.05	4.7
Used in HMA/WMA Mixtures	33.4	5.5	70.96	10.2
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	2.0	0.0	4.3	0.0
Total Tons of RAS Stockpiled at Year-End	†	11.0	†	20.5
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	3.15%	1.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.36%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			2.03%	0.51%
	Other Reported Data			
% Companies Reporting Using RAS	75%	33%		
% of RAS Mixtures Using Softer Binders	91%	100%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			2.5	0.5
DOT	89%	38%	1.8	0.3
Other Agency	50%	19%	0.4	0.1
Commercial & Residential	44%	13%	0.3	0.1
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	74%	88%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	26%	12%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	50%	66%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

<b>KENTUCKY</b>	<b>Reported Values</b>		<b>Estimated Values</b>	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	<b>Tons, Millions</b>		<b>Tons, Millions</b>	
Total	3.2	4.4	6.9	4.3
DOT	2.0	2.1	4.2	2.1
Other Agency	0.7	1.3	1.4	1.3
Commercial & Residential	0.6	1.1	1.3	1.1
Companies Reporting	5	4		
<b>RAP</b>	<b>Tons, Millions</b>		<b>Tons, Millions</b>	
Accepted	0.5	1.2	1.0	1.2
Used in HMA/WMA Mixtures	0.4	1.1	0.9	1.1
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.4	0.96	0.94	0.96
	<b>Avg. % Used in Mixtures</b>		<b>Avg. % Used in Mixtures</b>	
Average % for DOT Mixtures <sup>1</sup>	12.6%	24.5%		
Average % for Other Agency Mixtures <sup>1</sup>	13.3%	24.2%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	13.2%	24.5%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			12.8%	24.4%
	<b>Other Reported Data</b>			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	75%	53%		
% of RAP Mixtures Using Softer Binders	2%	8%		
% of RAP Mixtures Using Rejuvenators	16%	26%		
<b>RAS</b>	<b>Tons, Thousands</b>		<b>Tons, Thousands</b>	
Unprocessed Shingles Accepted	3.0	0.0	6.4	0.0
Processed Shingles Accepted	3.3	12.0	7.1	12.0
Used in HMA/WMA Mixtures	7.6	13.9	16.2	13.8
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	5.5	†	5.5
	<b>Avg. % Used in Mixtures</b>		<b>Avg. % Used in Mixtures</b>	
Average % for DOT Mixtures <sup>1</sup>	0.33%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.12%	0.60%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.03%	0.60%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.23%	0.31%
	<b>Other Reported Data</b>			
% Companies Reporting Using RAS	60%	50%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	11%	55%		
<b>WMA</b>	<b>% of Total Production</b>		<b>Tons, Millions</b>	
Total			4.0	3.3
DOT	62%	77%	2.6	1.6
Other Agency	67%	75%	0.9	0.9
Commercial & Residential	36%	75%	0.5	0.8
<b>WMA Technologies</b>	<b>% of Market</b>			
Chemical Additive, %	37%	50%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	63%	50%		
Organic Additive, %	0%	0%		
	<b>Other Reported Data</b>			
% Companies Reporting Producing WMA	80%	100%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

LOUISIANA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	1.9	1.2	2.7	7.8
DOT	0.9	0.6	1.3	4.1
Other Agency	0.4	0.3	0.6	2.0
Commercial & Residential	0.5	0.3	0.8	1.7
Companies Reporting	3	5		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.5	0.3	0.7	1.8
Used in HMA/WMA Mixtures	0.4	0.3	0.5	1.7
Used in Aggregate	0.0	0.0	0.0	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.2	0.17	0.25	1.06
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	21.7%	23.5%		
Average % for Other Agency Mixtures <sup>1</sup>	15.1%	16.9%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	18.6%	21.7%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			19.4%	20.3%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	80%	75%		
% of RAP Mixtures Using Softer Binders	15%	12%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	5.0	0.0	7.2	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	7.5	0.0	10.7	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.39%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.40%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	33%	0%		
% of RAS Mixtures Using Softer Binders	27%	0%		
% of RAS Mixtures Using Rejuvenators	14%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			2.1	6.3
DOT	79%	83%	1.0	3.4
Other Agency	65%	78%	0.4	1.6
Commercial & Residential	87%	81%	0.7	1.4
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	0%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	100%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	80%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

MAINE	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.1	2.0	1.6	1.7
DOT	1.0	0.6	0.1	0.6
Other Agency	0.4	0.5	0.3	0.4
Commercial & Residential	0.6	0.8	0.5	0.7
Companies Reporting	3	3		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.4	0.2	0.3	0.2
Used in HMA/WMA Mixtures	0.3	0.4	0.3	0.3
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.4	0.53	0.34	0.46
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	16.5%	19.8%		
Average % for Other Agency Mixtures <sup>1</sup>	13.8%	19.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	15.5%	21.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			15.6%	20.3%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	27%		
% of RAP Mixtures Using Softer Binders	4%	2%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	7.9	5.9	6.1	5.1
Used in HMA/WMA Mixtures	7.5	3.9	5.7	3.4
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	1.0	†	0.8
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.48%	0.60%		
Average % for Other Agency Mixtures <sup>1</sup>	0.25%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.24%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.36%	0.20%
	Other Reported Data			
% Companies Reporting Using RAS	33%	66%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.2	0.1
DOT	18%	8%	0.1	0.0
Other Agency	8%	6%	0.0	0.0
Commercial & Residential	16%	4%	0.1	0.0
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	11%	33%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	23%	0%		
Organic Additive, %	66%	67%		
	Other Reported Data			
% Companies Reporting Producing WMA	67%	100%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

MARYLAND	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	3.3	2.4	7.5	7.8
DOT	1.3	1.2	2.9	3.9
Other Agency	0.8	0.5	1.8	1.5
Commercial & Residential	1.2	0.7	2.8	2.4
Companies Reporting	6	6		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	1.3	0.7	2.9	2.2
Used in HMA/WMA Mixtures	0.9	0.5	2.0	1.8
Used in Aggregate	0.2	0.0	0.3	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.2	0.71	2.64	2.29
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	24.2%	21.6%		
Average % for Other Agency Mixtures <sup>1</sup>	24.9%	21.2%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	29.3%	24.6%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			26.2%	22.5%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	0%		
% of RAP Mixtures Using Softer Binders	12%	29%		
% of RAP Mixtures Using Rejuvenators	8%	16%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.5	0.0	1.6
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	1.0	7.1	2.3	22.7
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	10.5	†	33.8
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.05%	0.50%		
Average % for Other Agency Mixtures <sup>1</sup>	0.01%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.02%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.03%	0.29%
	Other Reported Data			
% Companies Reporting Using RAS	17%	33%		
% of RAS Mixtures Using Softer Binders	0%	25%		
% of RAS Mixtures Using Rejuvenators	0%	15%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			2.1	2.7
DOT	16%	36%	0.5	1.4
Other Agency	36%	40%	0.7	0.6
Commercial & Residential	37%	30%	1.0	0.7
<b>WMA Technologies<sup>‡</sup></b>	% of Market			
Chemical Additive, %	35%	20%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	70%	80%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	50%	83%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

MASSACHUSETTS	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	3.0	5.0	6.4	6.5
DOT	1.3	2.2	2.8	2.8
Other Agency	0.9	0.7	1.9	0.9
Commercial & Residential	0.8	2.1	1.7	2.8
Companies Reporting	5	8		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.4	0.9	0.9	1.2
Used in HMA/WMA Mixtures	0.5	0.8	1.1	1.0
Used in Aggregate	0.0	0.1	0.0	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.0	0.56	2.04	0.72
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	16.7%	20.2%		
Average % for Other Agency Mixtures <sup>1</sup>	18.9%	4.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	18.5%	14.5%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			17.8%	15.6%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	4%	3%		
% of RAP Mixtures Using Softer Binders	9%	5%		
% of RAP Mixtures Using Rejuvenators	0.4%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	6.9	9.0	14.9	11.7
Processed Shingles Accepted	2.6	2.9	5.6	3.7
Used in HMA/WMA Mixtures	2.6	2.9	5.6	3.7
Used in Aggregate	0.0	15.0	0.0	19.4
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.8	†	1.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.02%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.05%	0.10%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.24%	0.10%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.09%	0.06%
	Other Reported Data			
% Companies Reporting Using RAS	40%	25%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			3.0	3.8
DOT	95%	83%	2.7	2.3
Other Agency	16%	8%	0.3	0.1
Commercial & Residential	3%	51%	0.0	1.4
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	65%	75%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	0%	0%		
Organic Additive, %	35%	25%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	100%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

MICHIGAN	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	5.9	9.0	14.0	13.7
DOT	1.1	2.9	2.5	4.3
Other Agency	1.3	2.3	3.2	3.5
Commercial & Residential	3.5	3.9	8.4	5.9
Companies Reporting	4	7		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	2.2	2.8	5.3	4.2
Used in HMA/WMA Mixtures	1.9	2.5	4.5	3.8
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.8	3.42	4.26	5.18
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	19.4%	21.7%		
Average % for Other Agency Mixtures <sup>1</sup>	25.6%	26.5%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	38.1%	33.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			31.9%	27.9
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	20%	24%		
% of RAP Mixtures Using Softer Binders	24%	24%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	2.0	2.0	4.7	3.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.5	0.5	1.2	0.8
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	1.5	†	2.3
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.02%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.01%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.01%	0.01%
	Other Reported Data			
% Companies Reporting Using RAS	25%	14%		
% of RAS Mixtures Using Softer Binders	4%	33%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.9	2.3
DOT	2%	17%	0.0	0.7
Other Agency	4%	15%	0.1	0.5
Commercial & Residential	8%	18%	0.7	1.1
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	5%	25%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	95%	75%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	75%	57%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

MINNESOTA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	4.6	6.0	13.0	6.9
DOT	0.7	1.7	2.1	2.0
Other Agency	2.4	2.5	6.7	2.9
Commercial & Residential	1.5	1.8	4.2	2.1
Companies Reporting	5	4		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	1.1	1.5	3.0	1.7
Used in HMA/WMA Mixtures	1.0	1.2	2.7	1.3
Used in Aggregate	0.2	0.5	0.5	0.5
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.9	1.15	2.61	1.31
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	20.9%	17.4%		
Average % for Other Agency Mixtures <sup>1</sup>	21.2%	17.9%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	21.0%	23.6%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			21.1%	19.5%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	3%	10%		
% of RAP Mixtures Using Softer Binders	5%	10%		
% of RAP Mixtures Using Rejuvenators	3%	1%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.5	0.0	1.4	0.0
Processed Shingles Accepted	2.3	10.4	6.4	11.9
Used in HMA/WMA Mixtures	2.3	13.9	14.9	15.9
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	25.3	†	28.8
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.08%	0.40%		
Average % for Other Agency Mixtures <sup>1</sup>	0.18%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.03%	0.30%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.11%	0.23%
	Other Reported Data			
% Companies Reporting Using RAS	40%	25%		
% of RAS Mixtures Using Softer Binders	0%	5%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			10.4	3.4
DOT	33%	48%	0.7	0.9
Other Agency	89%	50%	6.0	1.4
Commercial & Residential	89%	48%	3.7	1.0
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	1%	29%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	99%	71%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	80%	100%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

MISSISSIPPI	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.7	2.8	4.7	4.8
DOT	1.8	1.6	3.2	2.8
Other Agency	0.4	0.7	0.7	1.2
Commercial & Residential	0.5	0.5	0.9	0.8
Companies Reporting	4	5		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.6	0.3	1.1	0.5
Used in HMA/WMA Mixtures	0.5	0.5	0.9	0.9
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.5	0.16	0.83	0.27
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	15.6%	18.8%		
Average % for Other Agency Mixtures <sup>1</sup>	20.9%	18.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	32.3%	15.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			19.5%	18.4%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	27%	25%		
% of RAP Mixtures Using Softer Binders	0%	3%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	1.0	0.0	1.8	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.9	0.0	1.6	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.18%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.03%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	25%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			3.2	3.9
DOT	67%	92%	2.1	2.6
Other Agency	95%	67%	0.7	0.8
Commercial & Residential	43%	67%	0.4	0.6
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	0%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	100%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	75%	60%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

MISSOURI	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	1.8	3.9	6.3	6.5
DOT	0.9	1.4	3.2	2.4
Other Agency	0.3	0.7	0.9	1.1
Commercial & Residential	0.7	1.8	2.3	3.0
Companies Reporting	4	7		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.4	0.8	1.3	1.4
Used in HMA/WMA Mixtures	0.4	0.9	1.5	1.5
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.1	1.51	3.84	2.53
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	23.3%	23.3%		
Average % for Other Agency Mixtures <sup>1</sup>	20.5%	19.1%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	23.6%	23.1%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			23.0%	22.5%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	32%	10%		
% of RAP Mixtures Using Softer Binders	4%	39%		
% of RAP Mixtures Using Rejuvenators	0%	6%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.5	41.5	1.7	69.5
Processed Shingles Accepted	3.0	4.4	10.5	7.4
Used in HMA/WMA Mixtures	6.6	10.8	22.9	18.2
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	78.7	†	132.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.43%	0.50%		
Average % for Other Agency Mixtures <sup>1</sup>	0.21%	0.60%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.33%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.36%	0.28%
	Other Reported Data			
% Companies Reporting Using RAS	75%	57%		
% of RAS Mixtures Using Softer Binders	0%	62%		
% of RAS Mixtures Using Rejuvenators	0%	35%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			1.4	2.2
DOT	36%	33%	1.1	0.8
Other Agency	21%	34%	0.2	0.4
Commercial & Residential	3%	33%	0.1	1.0
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	0%	33%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	92%	67%		
Organic Additive, %	9%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	71%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

MONTANA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	*	*	3.9	4.2
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAP Stockpiled at Year-End	*	*	*	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*		
% of RAP Mixtures Using Rejuvenators	*	*		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAS Stockpiled at Year-End	†	*	†	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAS	*	*		
% of RAS Mixtures Using Softer Binders	*	*		
% of RAS Mixtures Using Rejuvenators	*	*		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	*	*		
Additive Foaming, %	*	*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Reported Data			
% Companies Reporting Producing WMA	*	*		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

NEBRASKA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	*	0.5	2.7	2.8
DOT	*	0.2	*	1.2
Other Agency	*	0.2	*	0.8
Commercial & Residential	*	0.1	*	0.8
Companies Reporting	*	3		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	*	0.1	*	0.8
Used in HMA/WMA Mixtures	*	0.1	*	0.5
Used in Aggregate	*	0.0	*	0.2
Used in Cold-Mix Asphalt	*	0.0	*	0.0
Used in Other	*	0.0	*	0.0
Landfilled	*	0.0	*	0.0
Total Tons of RAP Stockpiled at Year-End	*	0.22	*	1.17
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	21.3%		
Average % for Other Agency Mixtures <sup>1</sup>	*	18.0%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	16.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	18.8%
	Other Reported Data			
% Companies Reporting Using RAP	*	100%		
% of RAP Fractionated	*	0%		
% of RAP Mixtures Using Softer Binders	*	0%		
% of RAP Mixtures Using Rejuvenators	*	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	*	0.0	*	0.0
Processed Shingles Accepted	*	0.0	*	0.0
Used in HMA/WMA Mixtures	*	0.0	*	0.0
Used in Aggregate	*	0.0	*	0.0
Used in Cold-Mix Asphalt	*	0.0	*	0.0
Used in Other	*	0.0	*	0.0
Landfilled	*	0.0	*	0.0
Total Tons of RAS Stockpiled at Year-End	†	3.3	†	17.7
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	*	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	*	0%		
% of RAS Mixtures Using Softer Binders	*	0%		
% of RAS Mixtures Using Rejuvenators	*	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			*	0.0
DOT	*	0%	*	0.0
Other Agency	*	0%	*	0.0
Commercial & Residential	*	0%	*	0.0
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	*	0%		
Additive Foaming, %	*	0%		
Plant Foaming, %	*	0%		
Organic Additive, %	*	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	*	0%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

NEVADA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	1.0	1.3	3.3	3.4
DOT	0.1	0.4	0.5	1.1
Other Agency	0.5	0.2	1.7	0.5
Commercial & Residential	0.3	0.7	1.2	1.8
Companies Reporting	3	3		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.2	0.2	0.8	0.4
Used in HMA/WMA Mixtures	0.2	0.2	0.7	0.4
Used in Aggregate	0.0	0.0	0.1	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.2	0.05	0.8	0.12
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	11.6%	8.0%		
Average % for Other Agency Mixtures <sup>1</sup>	24.8%	11.3%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	21.7%	14.7%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			21.7%	12.0%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	33%		
% of RAP Mixtures Using Softer Binders	12%	17%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.3	0.2	0.9	0.5
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.0	0.0	0.0	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.2	†	0.4
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.00%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	33%	33%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.1	0.3
DOT	0%	0%	0.0	0.0
Other Agency	0%	0%	0.0	0.0
Commercial & Residential	9%	14%	0.1	0.3
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	0%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	100%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	66%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

NEW HAMPSHIRE	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	1.5	2.5	1.4	3.0
DOT	0.5	0.6	0.4	0.7
Other Agency	0.4	0.6	0.4	0.8
Commercial & Residential	0.7	1.2	0.6	1.5
Companies Reporting	3	4		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.3	0.5	0.3	0.6
Used in HMA/WMA Mixtures	0.3	0.5	0.3	0.7
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.8	1.01	0.08	1.23
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	19.0%	25.8%		
Average % for Other Agency Mixtures <sup>1</sup>	20.3%	17.0%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	21.8%	23.0%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			20.6%	22.1%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	0%		
% of RAP Mixtures Using Softer Binders	0%	0%		
% of RAP Mixtures Using Rejuvenators	0%	25%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	3.8	3.1	3.6	3.8
Used in HMA/WMA Mixtures	3.4	3.1	3.2	3.7
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.05%	0.30%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.48%	0.30%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.23%	0.12%
	Other Reported Data			
% Companies Reporting Using RAS	33%	50%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.4	1.3
DOT	26%	52%	0.1	0.4
Other Agency	40%	17%	0.1	0.1
Commercial & Residential	23%	50%	0.1	0.8
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	0%	33%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	55%	29%		
Organic Additive, %	45%	38%		
	Other Reported Data			
% Companies Reporting Producing WMA	67%	75%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

NEW JERSEY	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.7	4.0	4.5	10.2
DOT	0.3	0.5	0.5	1.3
Other Agency	1.7	2.1	2.8	5.4
Commercial & Residential	0.8	1.4	1.3	3.5
Companies Reporting	3	3		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	1.2	1.2	1.9	3.2
Used in HMA/WMA Mixtures	0.5	0.8	0.9	2.0
Used in Aggregate	0.1	0.0	0.2	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	2.33	5.91	3.84	15.05
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	19%	10.8%		
Average % for Other Agency Mixtures <sup>1</sup>	17%	16.7%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	23%	26.2%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			19%	19.3%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	16%	12%		
% of RAP Mixtures Using Softer Binders	7%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.0	0.0	0.0	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.00%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			1.5	0.3
DOT	10%	0%	0.1	0.0
Other Agency	41%	3%	1.1	0.2
Commercial & Residential	22%	3%	0.3	0.1
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	2%	55%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	98%	45%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	67%	67%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

NEW MEXICO	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	1.0	0.9	3.5	3.0
DOT	0.5	0.2	1.8	0.5
Other Agency	0.2	0.3	0.8	1.0
Commercial & Residential	0.2	0.4	0.8	1.4
Companies Reporting	4	3		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.4	0.3	1.2	0.8
Used in HMA/WMA Mixtures	0.2	0.2	0.8	0.6
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.1	0.10	0.35	0.31
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	24%	17.7%		
Average % for Other Agency Mixtures <sup>1</sup>	17%	19.4%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	23%	22.7%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			22%	20.6%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	52%	37%		
% of RAP Mixtures Using Softer Binders	28%	8%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	1.5	0.0	5.2	0.0
Processed Shingles Accepted	0.0	5.0	0.0	16.0
Used in HMA/WMA Mixtures	1.3	3.1	4.4	9.9
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	1.8	†	5.8
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.53%	0.70%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.00%	0.33%
	Other Reported Data			
% Companies Reporting Using RAS	25%	33%		
% of RAS Mixtures Using Softer Binders	2%	50%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			1.0	0.1
DOT	40%	2%	0.7	0.0
Other Agency	22%	5%	0.2	0.1
Commercial & Residential	8%	5%	0.1	0.1
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	0%	17%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	83%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	67%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

NEW YORK	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	5.7	7.3	17.0	16.5
DOT	1.7	2.5	5.0	5.6
Other Agency	2.1	2.6	6.2	5.8
Commercial & Residential	2.0	2.3	5.8	5.1
Companies Reporting	10	11		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.9	1.0	2.6	2.3
Used in HMA/WMA Mixtures	0.9	1.2	2.8	2.7
Used in Aggregate	0.0	0.0	0.1	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.4	1.07	4.1	2.40
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	16%	15.6%		
Average % for Other Agency Mixtures <sup>1</sup>	16%	16.0%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	17%	17.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			16.2%	16.2%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	12%	14%		
% of RAP Mixtures Using Softer Binders	1%	4%		
% of RAP Mixtures Using Rejuvenators	6%	9%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.0	0.1	0.0	0.1
Used in HMA/WMA Mixtures	0.0	0.0	0.0	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.00%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	0%	9%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			4.2	2.5
DOT	35%	18%	1.7	1.0
Other Agency	23%	11%	1.3	0.6
Commercial & Residential	19%	16%	1.1	0.8
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	28%	40%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	72%	60%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	73%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

NORTH CAROLINA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	4.8	6.4	15.0	16.0
DOT	2.8	4.3	8.6	10.8
Other Agency	0.6	0.6	2.0	1.5
Commercial & Residential	1.4	1.5	4.4	3.8
Companies Reporting	6	7		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	1.1	1.3	3.6	3.3
Used in HMA/WMA Mixtures	1.1	1.1	3.4	2.8
Used in Aggregate	0.0	0.0	0.1	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.1	1.02	3.5	2.55
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	21.1%	17.8%		
Average % for Other Agency Mixtures <sup>1</sup>	22.7%	13.6%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	25.8%	19.0%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			22.7%	17.8%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	39%	29%		
% of RAP Mixtures Using Softer Binders	49%	44%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	79.0	74.0	248.2	185.6
Processed Shingles Accepted	51.0	9.4	160.2	23.5
Used in HMA/WMA Mixtures	71.3	82.0	223.9	205.8
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	75.2	†	188.6
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	1.82%	1.40%		
Average % for Other Agency Mixtures <sup>1</sup>	1.65%	0.90%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.77%	0.90%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			1.49%	1.29%
	Other Reported Data			
% Companies Reporting Using RAS	50%	57%		
% of RAS Mixtures Using Softer Binders	54%	60%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.0	5.9
DOT	0.3%	55%	0.0	5.9
Other Agency	0%	0%	0.0	0.0
Commercial & Residential	0%	0%	0.0	0.0
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	100%	100%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	0%	0%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	17%	29%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

NORTH DAKOTA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	*	1.2	2.1	2.7
DOT	*	0.7	*	1.5
Other Agency	*	0.3	*	0.8
Commercial & Residential	*	0.2	*	0.4
Companies Reporting	*	3		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	*	0.2	*	0.4
Used in HMA/WMA Mixtures	*	0.1	*	0.3
Used in Aggregate	*	0.1	*	0.2
Used in Cold-Mix Asphalt	*	0.0	*	0.0
Used in Other	*	0.0	*	0.0
Landfilled	*	0.0	*	0.0
Total Tons of RAP Stockpiled at Year-End	*	0.15	*	0.34
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	11.8%		
Average % for Other Agency Mixtures <sup>1</sup>	*	11.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	12.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	11.9%
	Other Reported Data			
% Companies Reporting Using RAP	*	67%		
% of RAP Fractionated	*	0%		
% of RAP Mixtures Using Softer Binders	*	3%		
% of RAP Mixtures Using Rejuvenators	*	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	*	0.0	*	0.0
Processed Shingles Accepted	*	0.0	*	0.0
Used in HMA/WMA Mixtures	*	0.0	*	0.0
Used in Aggregate	*	0.0	*	0.0
Used in Cold-Mix Asphalt	*	0.0	*	0.0
Used in Other	*	0.0	*	0.0
Landfilled	*	0.0	*	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	*	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	*	0%		
% of RAS Mixtures Using Softer Binders	*	0%		
% of RAS Mixtures Using Rejuvenators	*	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			*	0.2
DOT	*	8%	*	0.1
Other Agency	*	5%	*	0.0
Commercial & Residential	*	10%	*	0.0
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	*	87%		
Additive Foaming, %	*	0%		
Plant Foaming, %	*	13%		
Organic Additive, %	*	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	*	67%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

OHIO	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	10.4	11.6	19.0	14.8
DOT	3.8	4.4	6.9	5.7
Other Agency	3.5	3.4	6.42	4.3
Commercial & Residential	3.1	3.8	5.7	4.8
Companies Reporting	5	7		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	2.8	2.9	5.1	3.7
Used in HMA/WMA Mixtures	2.8	3.2	5.2	4.1
Used in Aggregate	0.0	0.0	0.0	0.1
Used in Cold-Mix Asphalt	0.0	0.1	0.0	0.1
Used in Other	0.1	0.0	0.2	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	2.2	3.58	3.96	4.58
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	28.3%	26.6%		
Average % for Other Agency Mixtures <sup>1</sup>	26.5%	27.0%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	27.0%	29.4%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			27.3%	27.6%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	6%	25%		
% of RAP Mixtures Using Softer Binders	24%	30%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.2	7.3	0.4	9.4
Processed Shingles Accepted	0.8	0.0	1.4	0.0
Used in HMA/WMA Mixtures	18.7	4.9	34.1	6.3
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	55.7	†	71.2
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.16%	0.10%		
Average % for Other Agency Mixtures <sup>1</sup>	0.19%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.20%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.18%	0.04%
	Other Reported Data			
% Companies Reporting Using RAS	40%	29%		
% of RAS Mixtures Using Softer Binders	0%	33%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			11.1	8.2
DOT	64%	50%	4.4	2.8
Other Agency	54%	57%	3.4	2.5
Commercial & Residential	58%	60%	3.3	2.9
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	0%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	100%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	80%	86%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

OKLAHOMA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.2	2.4	5.2	4.8
DOT	1.1	1.1	2.6	2.1
Other Agency	0.4	0.5	0.9	0.9
Commercial & Residential	0.7	0.9	1.7	1.8
Companies Reporting	5	5		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.2	0.6	0.5	1.3
Used in HMA/WMA Mixtures	0.4	0.4	0.9	0.7
Used in Aggregate	0.0	0.1	0.0	0.2
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.0	0.36	0.91	0.72
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	14.3%	13.7%		
Average % for Other Agency Mixtures <sup>1</sup>	16.8%	13.3%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	20.4%	16.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			16.7%	14.6%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	50%	65%		
% of RAP Mixtures Using Softer Binders	5%	19%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	28.3	52.0	66.7	103.1
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	8.7	9.1	20.6	18.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	8.2	†	16.3
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.05%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.05%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.11%	1.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.40%	0.37%
	Other Reported Data			
% Companies Reporting Using RAS	40%	40%		
% of RAS Mixtures Using Softer Binders	39%	50%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			1.9	4.0
DOT	38%	75%	1.0	1.6
Other Agency	39%	83%	0.3	0.8
Commercial & Residential	38%	91%	0.7	1.6
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	7%	2%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	93%	98%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	80%	60%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

OREGON	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	1.6	1.4	5.4	5.4
DOT	0.5	0.3	1.6	1.1
Other Agency	0.4	0.7	1.2	2.8
Commercial & Residential	0.8	0.4	2.7	1.5
Companies Reporting	5	4		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.4	0.4	1.2	1.4
Used in HMA/WMA Mixtures	0.4	0.3	1.2	1.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.7	0.21	2.19	0.78
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	20.6%	16.8%		
Average % for Other Agency Mixtures <sup>1</sup>	22.0%	17.6%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	22.5%	19.6%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			21.8%	18.0%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	7%	3%		
% of RAP Mixtures Using Softer Binders	35%	0%		
% of RAP Mixtures Using Rejuvenators	31%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	20.0	0.0	67.0	0.0
Processed Shingles Accepted	0.0	0.1	0.0	0.4
Used in HMA/WMA Mixtures	12.0	0.1	40.6	0.3
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	3.2	†	12.3
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.68%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.22%	0.10%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.75%	0.01%
	Other Reported Data			
% Companies Reporting Using RAS	60%	50%		
% of RAS Mixtures Using Softer Binders	72%	0%		
% of RAS Mixtures Using Rejuvenators	75%	25%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.8	0.4
DOT	13%	0%	0.2	0.0
Other Agency	27%	7%	0.3	0.2
Commercial & Residential	11%	11%	0.3	0.2
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	2%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	98%	100%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	60%	75%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

PENNSYLVANIA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	7.3	7.7	19.0	19.8
DOT	4.3	3.7	11.1	9.6
Other Agency	1.1	1.3	2.8	3.3
Commercial & Residential	1.2	2.7	5.1	7.0
Companies Reporting	10	10		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	1.1	1.8	2.8	4.5
Used in HMA/WMA Mixtures	1.1	1.1	2.8	2.9
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.6	2.71	4.12	7.01
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	14.8%	13.8%		
Average % for Other Agency Mixtures <sup>1</sup>	14.9%	14.5%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	15.3%	16.1%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			14.9%	14.7%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	2%	5%		
% of RAP Mixtures Using Softer Binders	3%	3%		
% of RAP Mixtures Using Rejuvenators	5%	8%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	37.5	23.8	97.4	61.3
Processed Shingles Accepted	1.5	9.6	3.9	24.9
Used in HMA/WMA Mixtures	5.4	36.3	14.0	93.7
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.2	0.0	0.5	0.0
Total Tons of RAS Stockpiled at Year-End	†	69.5	†	179.4
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.06%	0.60%		
Average % for Other Agency Mixtures <sup>1</sup>	0.06%	0.40%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.10%	0.40%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.07%	0.47%
	Other Reported Data			
% Companies Reporting Using RAS	20%	40%		
% of RAS Mixtures Using Softer Binders	0%	10%		
% of RAS Mixtures Using Rejuvenators	21%	11%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			8.3	15.7
DOT	58%	94%	6.4	9.0
Other Agency	29%	74%	0.8	2.4
Commercial & Residential	20%	62%	1.0	4.3
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	36%	55%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	65%	45%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	100%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

PUERTO RICO	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	NCR	NCR	1.0	1.6
DOT	NCR	NCR	NCR	NCR
Other Agency	NCR	NCR	NCR	NCR
Commercial & Residential	NCR	NCR	NCR	NCR
Companies Reporting	NCR	NCR		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	NCR	NCR	NCR	NCR
Used in HMA/WMA Mixtures	NCR	NCR	NCR	NCR
Used in Aggregate	NCR	NCR	NCR	NCR
Used in Cold-Mix Asphalt	NCR	NCR	NCR	NCR
Used in Other	NCR	NCR	NCR	NCR
Landfilled	NCR	NCR	NCR	NCR
Total Tons of RAP Stockpiled at Year-End	NCR	NCR	NCR	NCR
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	NCR	NCR		
Average % for Other Agency Mixtures <sup>1</sup>	NCR	NCR		
Average % for Commercial & Residential Mixtures <sup>1</sup>	NCR	NCR		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			NCR	NCR
	Other Reported Data			
% Companies Reporting Using RAP	NCR	NCR		
% of RAP Fractionated	NCR	NCR		
% of RAP Mixtures Using Softer Binders	NCR	NCR		
% of RAP Mixtures Using Rejuvenators	NCR	NCR		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	NCR	NCR	NCR	NCR
Processed Shingles Accepted	NCR	NCR	NCR	NCR
Used in HMA/WMA Mixtures	NCR	NCR	NCR	NCR
Used in Aggregate	NCR	NCR	NCR	NCR
Used in Cold-Mix Asphalt	NCR	NCR	NCR	NCR
Used in Other	NCR	NCR	NCR	NCR
Landfilled	NCR	NCR	NCR	NCR
Total Tons of RAS Stockpiled at Year-End	†	NCR	†	NCR
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	NCR	NCR		
Average % for Other Agency Mixtures <sup>1</sup>	NCR	NCR		
Average % for Commercial & Residential Mixtures <sup>1</sup>	NCR	NCR		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			NCR	NCR
	Other Reported Data			
% Companies Reporting Using RAS	NCR	NCR		
% of RAS Mixtures Using Softer Binders	NCR	NCR		
% of RAS Mixtures Using Rejuvenators	NCR	NCR		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			NCR	NCR
DOT	NCR	NCR	NCR	NCR
Other Agency	NCR	NCR	NCR	NCR
Commercial & Residential	NCR	NCR	NCR	NCR
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	NCR	NCR		
Additive Foaming, %	NCR	NCR		
Plant Foaming, %	NCR	NCR		
Organic Additive, %	NCR	NCR		
	Other Reported Data			
% Companies Reporting Producing WMA	NCR	NCR		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

RHODE ISLAND	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	*	*	1.9	2.0
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAP Stockpiled at Year-End	*	*	*	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*		
% of RAP Mixtures Using Rejuvenators	*	*		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAS Stockpiled at Year-End	†	*	†	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAS	*	*		
% of RAS Mixtures Using Softer Binders	†	*		
% of RAS Mixtures Using Rejuvenators	†	*		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	*	*		
Additive Foaming, %	*	*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Reported Data			
% Companies Reporting Producing WMA	*	*		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

SOUTH CAROLINA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	3.1	3.9	6.5	7.6
DOT	1.9	2.5	4.0	4.9
Other Agency	0.5	0.8	1.0	1.6
Commercial & Residential	0.8	0.5	1.6	1.0
Companies Reporting	6	7		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.7	0.8	1.4	1.5
Used in HMA/WMA Mixtures	0.7	0.8	1.5	1.6
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.5	0.89	0.95	1.74
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	22.6%	20.4%		
Average % for Other Agency Mixtures <sup>1</sup>	21.7%	20.7%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	23.2%	21.5%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			22.6%	20.7%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	63%	50%		
% of RAP Mixtures Using Softer Binders	0.5%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	4.0	0.0	8.4	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.5	0.0	1.1	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.05%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.04%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.02%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	33%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.7	1.5
DOT	14%	23%	0.5	1.1
Other Agency	9%	15%	0.1	0.2
Commercial & Residential	4%	15%	0.1	0.2
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	100%	75%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	0%	25%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	83%	71%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

SOUTH DAKOTA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	*	*	1.6	2.0
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAP Stockpiled at Year-End	*	*	*	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*		
% of RAP Mixtures Using Rejuvenators	*	*		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAS Stockpiled at Year-End	†	*	†	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAS	*	*		
% of RAS Mixtures Using Softer Binders	*	*		
% of RAS Mixtures Using Rejuvenators	*	*		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	*	*		
Additive Foaming, %	*	*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Reported Data			
% Companies Reporting Producing WMA	*	*		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

TENNESSEE	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.4	2.5	8.2	9.2
DOT	0.5	0.7	1.7	2.5
Other Agency	0.4	0.4	1.5	1.4
Commercial & Residential	1.4	1.4	5.0	5.2
Companies Reporting	4	5		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.6	0.7	2.0	2.5
Used in HMA/WMA Mixtures	0.5	0.6	1.7	2.1
Used in Aggregate	0.0	0.1	0.0	0.2
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.9	0.87	2.98	3.16
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	18.6%	18.6%		
Average % for Other Agency Mixtures <sup>1</sup>	20.8%	23.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	21.8%	24.7%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			18.6%	22.8%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	22%	55%		
% of RAP Mixtures Using Softer Binders	0%	0%		
% of RAP Mixtures Using Rejuvenators	0%	22%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	15.0	20.0	52.4	72.7
Processed Shingles Accepted	24.8	0.0	86.6	0.0
Used in HMA/WMA Mixtures	22.0	15.3	76.8	55.8
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	54.6	†	198.3
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.95%	0.60%		
Average % for Other Agency Mixtures <sup>1</sup>	0.72%	0.60%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.99%	0.60%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.93%	0.61%
	Other Reported Data			
% Companies Reporting Using RAS	50%	40%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	33%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			4.4	9.2
DOT	49%	100%	0.8	2.5
Other Agency	37%	100%	0.6	1.4
Commercial & Residential	61%	100%	3.0	5.2
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	88%	20%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	12%	80%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	50%	60%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

TEXAS	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	8.0	7.9	24.0	20.0
DOT	4.1	5.4	12.3	13.7
Other Agency	2.1	1.3	6.2	3.2
Commercial & Residential	1.8	1.2	5.5	3.1
Companies Reporting	7	7		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.9	0.9	2.8	2.4
Used in HMA/WMA Mixtures	1.1	1.2	3.2	3.0
Used in Aggregate	0.0	0.0	0.1	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.5	2.00	1.4	5.04
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	13.6%	14.8%		
Average % for Other Agency Mixtures <sup>1</sup>	13.1%	14.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	12.8%	15.1%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			13.3%	14.9%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	15%	39%		
% of RAP Mixtures Using Softer Binders	14%	31%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	35.0	88.8	105.4	223.9
Processed Shingles Accepted	25.8	28.1	77.8	70.9
Used in HMA/WMA Mixtures	71.0	78.8	213.8	198.8
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	22.6	†	57.1
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.94%	0.80%		
Average % for Other Agency Mixtures <sup>1</sup>	0.64%	1.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.07%	1.40%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.89%	0.99%
	Other Reported Data			
% Companies Reporting Using RAS	71%	100%		
% of RAS Mixtures Using Softer Binders	17%	35%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			6.6	9.2
DOT	34%	50%	1.0	6.9
Other Agency	16%	35%	1.0	1.1
Commercial & Residential	25%	38%	1.4	1.2
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	94%	85%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	6%	15%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	86%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

UTAH	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	4.1	3.5	3.6	4.0
DOT	1.1	1.1	0.9	1.2
Other Agency	0.8	0.4	0.7	0.4
Commercial & Residential	2.3	2.1	2.0	2.4
Companies Reporting	11	9		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	1.0	0.6	0.9	0.7
Used in HMA/WMA Mixtures	1.0	0.8	0.9	0.9
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.4	1.42	1.25	1.62
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	15.8%	15.0%		
Average % for Other Agency Mixtures <sup>1</sup>	18.6%	15.0%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	32.2%	26.7%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			25.4%	21.9%
	Other Reported Data			
% Companies Reporting Using RAP	91%	100%		
% of RAP Fractionated	13%	8%		
% of RAP Mixtures Using Softer Binders	50%	48%		
% of RAP Mixtures Using Rejuvenators	2%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.0	0.0	0.0	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.00%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			1.9	3.4
DOT	62%	84%	0.6	1.0
Other Agency	43%	81%	0.3	0.3
Commercial & Residential	51%	88%	1.0	2.1
<b>WMA Technologies<sup>‡</sup></b>	% of Market			
Chemical Additive, %	8%	34%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	97%	66%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	82%	89%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

VERMONT	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	*	*	1.7	1.9
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAP Stockpiled at Year-End	*	*	*	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*		
% of RAP Mixtures Using Rejuvenators	*	*		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAS Stockpiled at Year-End	†	*	†	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	*		
Average % for Other Agency Mixtures <sup>1</sup>	*	*		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	*
	Other Reported Data			
% Companies Reporting Using RAS	*	*		
% of RAS Mixtures Using Softer Binders	†	*		
% of RAS Mixtures Using Rejuvenators	†	*		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	*	*		
Additive Foaming, %	*	*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Reported Data			
% Companies Reporting Producing WMA	*	*		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

VIRGINIA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	7.4	4.9	12.0	12.0
DOT	2.9	2.1	4.7	5.2
Other Agency	1.3	0.8	2.0	2.1
Commercial & Residential	3.3	2.0	5.3	4.8
Companies Reporting	7	5		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	2.3	1.5	3.7	3.7
Used in HMA/WMA Mixtures	2.1	1.6	3.4	3.9
Used in Aggregate	0.1	0.1	0.1	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.1
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	2.2	1.47	3.57	3.58
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	26.4%	31.9%		
Average % for Other Agency Mixtures <sup>1</sup>	27.7%	32.3%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	29.7%	33.1%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			28.1%	32.4%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	34%	36%		
% of RAP Mixtures Using Softer Binders	5%	14%		
% of RAP Mixtures Using Rejuvenators	0.5%	4%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	2.0	0.0	3.3	0.0
Used in HMA/WMA Mixtures	3.5	0.0	5.7	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	2.0	†	4.9
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.08%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.04%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.02%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.05%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	14%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			8.1	7.7
DOT	64%	69%	3.0	3.6
Other Agency	72%	52%	1.5	1.1
Commercial & Residential	68%	64%	3.6	3.1
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	19%	27%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	82%	73%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	100%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

WASHINGTON	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	1.9	4.5	5.8	6.0
DOT	0.3	0.9	0.8	1.2
Other Agency	0.6	1.6	1.9	2.2
Commercial & Residential	1.0	1.9	3.2	2.6
Companies Reporting	4	7		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.4	0.9	1.3	1.3
Used in HMA/WMA Mixtures	0.5	0.9	1.5	1.2
Used in Aggregate	0.0	0.0	0.1	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.5	0.87	1.67	1.18
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	23.3%	17.0%		
Average % for Other Agency Mixtures <sup>1</sup>	22.6%	18.4%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	27.7%	22.4%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			25.5%	19.9%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	14%		
% of RAP Mixtures Using Softer Binders	13%	16%		
% of RAP Mixtures Using Rejuvenators	0%	7%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	7.8	0.0	10.5
Processed Shingles Accepted	4.1	2.8	12.9	3.8
Used in HMA/WMA Mixtures	0.0	11.9	0.4	16.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	2.9	†	3.9
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.01%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.01%	0.60%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.01%	0.27%
	Other Reported Data			
% Companies Reporting Using RAS	25%	43%		
% of RAS Mixtures Using Softer Binders	53%	17%		
% of RAS Mixtures Using Rejuvenators	0%	17%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			1.0	1.0
DOT	15%	5%	0.1	0.1
Other Agency	16%	19%	0.3	0.4
Commercial & Residential	19%	22%	0.6	0.6
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	52%	42%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	48%	58%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	75%	86%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

WEST VIRGINIA	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	2.2	1.5	4.1	2.6
DOT	1.5	1.2	2.9	2.0
Other Agency	0.1	0.1	0.2	0.1
Commercial & Residential	0.5	0.3	1.0	0.5
Companies Reporting	5	4		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.3	0.3	0.5	0.5
Used in HMA/WMA Mixtures	0.3	0.3	0.6	0.5
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.1	0.32	0.24	0.55
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	13.9%	17.5%		
Average % for Other Agency Mixtures <sup>1</sup>	12.4%	15.5%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	7.4%	18.0%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			14.2%	17.6%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	15%	4%		
% of RAP Mixtures Using Softer Binders	0%	3%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.0	0.0	0.0	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.00%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.1	0.0
DOT	1%	0%	0.0	0.0
Other Agency	6%	0%	0.0	0.0
Commercial & Residential	1%	0%	0.0	0.0
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	0%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	0%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	20%	0%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

WISCONSIN	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	7.1	8.7	12.0	12.0
DOT	2.6	5.3	4.3	7.2
Other Agency	2.3	1.5	3.9	2.0
Commercial & Residential	2.3	2.0	3.8	2.8
Companies Reporting	4	4		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	1.2	1.5	2.0	2.1
Used in HMA/WMA Mixtures	1.5	1.4	2.6	1.9
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.5	1.16	2.45	1.60
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	20.2%	15.6%		
Average % for Other Agency Mixtures <sup>1</sup>	20.0%	16.3%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	25.0%	17.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			21.6%	16.1%
	Other Reported Data			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	14%	4%		
% of RAP Mixtures Using Softer Binders	7%	19%		
% of RAP Mixtures Using Rejuvenators	6%	5%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	66.5	52.0	111.7	71.4
Processed Shingles Accepted	19.7	16.8	33.1	23.1
Used in HMA/WMA Mixtures	77.6	66.2	130.4	90.8
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	45.7	†	62.7
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.63%	0.90%		
Average % for Other Agency Mixtures <sup>1</sup>	1.19%	1.50%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.50%	0.30%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			1.09%	0.76%
	Other Reported Data			
% Companies Reporting Using RAS	100%	100%		
% of RAS Mixtures Using Softer Binders	32%	53%		
% of RAS Mixtures Using Rejuvenators	29%	10%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			1.3	0.6
DOT	8%	3%	0.3	0.2
Other Agency	18%	11%	0.7	0.2
Commercial & Residential	7%	5%	0.3	0.1
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	97%	100%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	3%	0%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	100%	100%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding

WYOMING	Reported Values		Estimated Values	
	2016	2017	2016	2017
<b>Tons of HMA/WMA Produced</b>	Tons, Millions		Tons, Millions	
Total	0.3	0.1	2.2	2.5
DOT	0.2	0.1	1.3	1.0
Other Agency	0.1	0.0	0.4	0.5
Commercial & Residential	0.1	0.1	0.5	1.0
Companies Reporting	6	3		
<b>RAP</b>	Tons, Millions		Tons, Millions	
Accepted	0.0	0.0	0.2	0.4
Used in HMA/WMA Mixtures	0.0	0.0	0.2	0.3
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.0	0.02	0.2	0.40
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	8.9%	2.5%		
Average % for Other Agency Mixtures <sup>1</sup>	7.9%	17.5%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	14.7%	17.5%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			10.1%	11.7%
	Other Reported Data			
% Companies Reporting Using RAP	67%	67%		
% of RAP Fractionated	0%	50%		
% of RAP Mixtures Using Softer Binders	0%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
<b>RAS</b>	Tons, Thousands		Tons, Thousands	
Unprocessed Shingles Accepted	1.4	0.0	9.1	0.0
Processed Shingles Accepted	1.4	0.0	9.1	0.0
Used in HMA/WMA Mixtures	0.3	0.0	2.0	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	†	0.0	†	0.0
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.14%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.28%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.09%	0.00%
	Other Reported Data			
% Companies Reporting Using RAS	17%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
<b>WMA</b>	% of Total Production		Tons, Millions	
Total			0.5	1.6
DOT	29%	10%	0.4	0.1
Other Agency	9%	95%	0.0	0.5
Commercial & Residential	20%	100%	0.1	1.0
<b>WMA Technologies</b>	% of Market			
Chemical Additive, %	0%	5%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	95%		
Organic Additive, %	0%	0%		
	Other Reported Data			
% Companies Reporting Producing WMA	83%	67%		

<sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.

<sup>2</sup> Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Question not asked for 2016

Numbers may not add up exactly due to rounding



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## **8<sup>th</sup> Annual Asphalt Pavement Industry Survey IS 138 — Appendix B**

