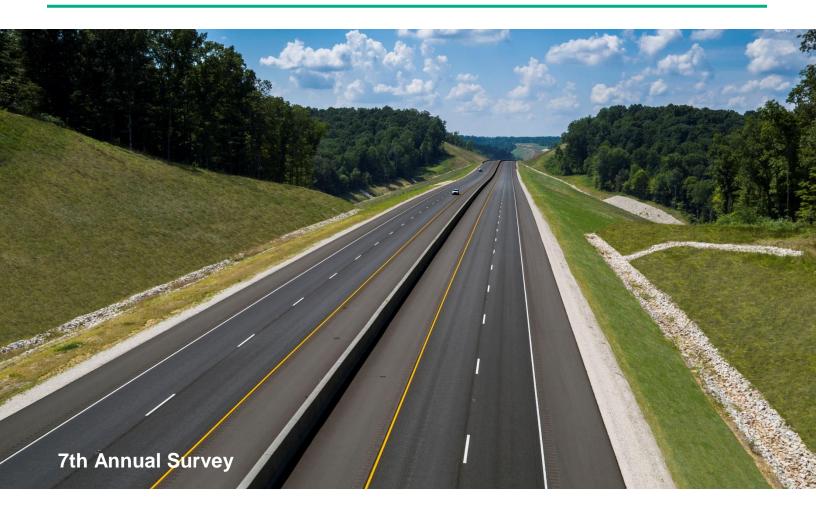


## Asphalt Pavement Industry Survey on

Recycled Materials and Warm-Mix Asphalt Usage 2016

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



## Asphalt Pavement Industry Survey on Recycled Materials and Warm-Mix Asphalt Usage: 2016 Appendix B

Appendix B to the seventh edition of the *Asphalt Pavement Industry Survey on Recycled Materials and Warm-Mix Asphalt Usage* (Hansen et al., 2017) covering the 2016 construction season survey provides details on the methodology used to collect and analyze the survey data, as well as reproduces the primary survey instruments used to collect data from asphalt mixture producers and from the State Asphalt Pavement Associations (SAPA).

## Introduction

This appendix 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 2015 construction season survey, including information from Tables 4, 6, 7, 8, 12 and 25 in the main report. 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 and generate estimated data from reported data.

Appendix B reports data for all 50 U.S. states, as well as the District of Columbia and Puerto Rico. 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. Estimates were not calculated for American Samoa, Guam, the Northern Mariana Islands, or the U.S. Virgin Islands due to a lack of producer input and other data sources. Table 1 in the main report, republished below, summarizes the number of respondents from each state and territory. A total of 229 companies representing 1,146 production plants responded to the 2016 construction season survey. Branches, subsidiaries, and operating units are counted as unique companies in Table 1 and throughout this report.

State	Cos.	Prod. Plants	State	Cos.	Prod. Plants	State	Cos.	Prod. Plants
Alabama	5	33	Kentucky	5	34	Ohio	5	66
Alaska	*	*	Louisiana	3	10	Oklahoma	5	16
American Samoa	NCR	NCR	Maine	3	17	Oregon	5	12
Arizona	3	21	Maryland	6	15	Pennsylvania	10	50
Arkansas	6	18	Massachusetts	5	19	Puerto Rico	NCR	NCR
California	4	52	Michigan	4	27	Rhode Island	*	*
Colorado	5	23	Minnesota	5	19	South Carolina	6	19
Connecticut	3	15	Mississippi	4	22	South Dakota	*	*
Delaware	*	*	Missouri	4	24	Tennessee	4	24
District of Columbia	NCR	NCR	Montana	*	*	Texas	7	46
Florida	6	30	Nebraska	*	*	U.S. Virgin Islands	NCR	NCR
Georgia	5	45	Nevada	3	4	Utah	11	25
Guam	NCR	NCR	New Hampshire	3	17	Vermont	*	*
Hawaii	*	*	New Jersey	3	12	Virginia	7	42
Idaho	5	17	New Mexico	4	8	Washington	4	19
Illinois	10	19	New York	10	60	West Virginia	5	18
Indiana	3	33	North Carolina	6	44	Wisconsin	4	67
lowa	7	23	North Dakota	*	*	Wyoming	6	6
Kansas	4	19	No. Mariana Islands	NCR	NCR	Total <sup>†</sup>	229	1,146

 Table 1: Number of Companies Completing 2016 Construction Season Survey by State/Territory

NCR = No Companies Responding

\* = Fewer than 3 Companies Reporting

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

ALABAMA	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Tons of HMA/WMA Produced	Tons, I	Villions	Tons.	Villions
Total	3.7	3.8	7.5	7.5
DOT	2.5	2.3	4.9	4.6
Other Agency	0.7	0.7	1.5	1.4
Commercial & Residential	0.5	0.7	1.1	1.5
Companies Reporting	4	5		
RAP	Tons, I	Ailliona	Topo	Villions
Accepted	0.7	0.9	1.4	1.7
Used in HMA/WMA Mixtures	0.9	0.9	1.4	1.8
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	0.92	1.14	1.85	2.28
	Avg. %			Used in
	Mixt		Mixt	
Average % for DOT Mixtures <sup>1</sup>	26.9%	25.1%		
Average % for Other Agency Mixtures <sup>1</sup>	20.9%	21.7%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	30.6%	25.2%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	00.070	20.270	25.1%	24.4%
	Other Rep	orted Data	20:170	21.170
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	45%	13%		
% of RAP Mixtures Using Softer Binders	19%	0%		
% of RAP Mixtures Using Rejuvenators	1%	0%	•	
RAS	Tons, Th			ousands
Unprocessed Shingles Accepted	27.3	8.0	54.9	16.0
Processed Shingles Accepted	25.0	10.0	50.3	19.9
Used in HMA/WMA Mixtures	61.9	11.2	124.4	22.4
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
	Avg. % Used in Mixtures		Avg. % Mixt	
Average % for DOT Mixtures <sup>1</sup>	3.77%	0.46%	Ινιιχι	ules
Average % for Other Agency Mixtures <sup>1</sup>	1.07%	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.64%	0.10%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	0.0170	0.1070	1.66%	0.30%
	Other Rep	orted Data	1.0070	0.0070
% Companies Reporting Using RAS	100%	60%		
% of RAS Mixtures Using Softer Binders	+	0%		
% of RAS Mixtures Using Rejuvenators	+	0%		
* .				A.11.
WMA Total	% of Total	Production		Villions
Total	400/	0.40/	3.4	2.4
DOT	48%	34%	2.4	1.6
Other Agency	50%	32%	0.7	0.5
Commercial & Residential	26%	23%	0.3	0.3
WMA Technologies		/larket		
Chemical Additive, %	9%	14%		
enerhour i duitre, 70		00/		
Additive Foaming, %	3%	0%		
	<u>3%</u> 88%	86%		
Additive Foaming, % Plant Foaming, %	88%	86%		
Additive Foaming, %		86% 0%		

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

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

ALASKA	Reported	d Values	Estimate	d Values
ALAONA	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, N	lillions	Tons	Millions
Total	*	*	4.7	4.6
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
RAP	Tons, N	Aillions	Tons, I	Villions
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	Avg. %	Used in
	Mixte	ures	Mixt	ures
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 Rep	orted Data		
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*	-	
% of RAP Mixtures Using Softer Binders	*	*		
% of RAP Mixtures Using Rejuvenators	*	*		
RAS	Tons, Th	ousands	Ions, Ir	ousands
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate		*	*	
Used in Cold-Mix Asphalt	*			*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
	Avg. % Mixte		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 Rep	orted Data		
% Companies Reporting Using RAS	*	*	-	
% of RAS Mixtures Using Softer Binders	+	*	-	
% of RAS Mixtures Using Rejuvenators	+	*		
WMA		Production	Tono	Villiona
	% of Total	FIGUICION	*	Villions *
Total	*	*	*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential				~
WMA Technologies	% of N	larket		
Chemical Additive, %	*	*		
Additive Foaming, %	*	*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
		orted Data		
	()thor Don			

<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.
 <sup>†</sup> Information not requested in 2015 Numbers may not add up exactly due to rounding

ARIZONA	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons	Villions	Tons	Millions
Total	*	2.4	6.8	7.1
DOT	*	0.4	*	1.1
Other Agency	*	1.5	*	4.5
Commercial & Residential	*	0.6	*	1.6
Companies Reporting	*	3		1.0
· · · ·		-	_	
RAP	lons, l	Millions	lons,	Millions
Accepted	*	0.3	*	1.0
Used in HMA/WMA Mixtures	*	0.2	*	0.6
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	*	0.4	*	1.05
		Used in		Used in
	Mixt		Mix	tures
Average % for DOT Mixtures <sup>1</sup>	*	6.5%		
Average % for Other Agency Mixtures <sup>1</sup>	*	8.5%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	11.1%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	8.8%
	Other Rep	orted Data		
% Companies Reporting Using RAP	*	100%		
% of RAP Fractionated	*	0%		
% of RAP Mixtures Using Softer Binders	*	8.5%		
% of RAP Mixtures Using Rejuvenators	*	0%		
RAS	Tons, Th	ousands	Tons, Th	nousands
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
Editorinod	Ανα %		Ανα %	Used in
	Avg. % Used in Mixtures		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>		0.0070	*	0.00%
	Other Rep	eported Data		
% Companies Reporting Using RAS	*	0%		
% of RAS Mixtures Using Softer Binders	+	0%		
% of RAS Mixtures Using Rejuvenators	+	0%		
	0/ - 5 - 5 - 1		<b>T</b>	Millions
	% of Total	Production	ions,	Millions
Total	*	00/	*	0.05
DOT	*	0%	*	0.00
Other Agency	*	0.2%	*	0.01
Commercial & Residential		2%	*	0.04
WMA Technologies	% of M	Market		
Chemical Additive, %	*	0%		
Additive Foaming, %	*	0%		
Plant Foaming, %	*	89%		
Organic Additive, %	*	11%		
	Other Rep	orted Data		
% Companies Reporting Producing WMA	*	100%		
		10070		

 % Companies Reporting Producing WMA
 \*
 100%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 \*
 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 \* Information not requested in 2015
 Numbers may not add up exactly due to rounding

2015 Tons, M 3.2 1.6 0.8 0.8	2016 Millions 5.5 3.2 0.8 1.6
3.2 1.6 0.8	5.5 3.2 0.8
3.2 1.6 0.8	5.5 3.2 0.8
1.6 0.8	3.2 0.8
0.8	0.8
	0.1
Tana I	
Tons, N 0.4	0.7
	-
0.5	0.5
	0.0
	0.0
	0.0
	0.0
	0165
	9.8%
	9.070
	12.6
	42.0
	60.0
	0.0
	0.0
	0.0
	0.0
	ures
	4.000/
	1.08%
<u>a</u>	
,	
	2.1
	0.9
	0.2
0.4	0.9
, a	
	0.0         0.0         0.0         0.34         Avg. %         Mixt         %         14.1%         14.1%         14.1%         14.1%         14.1%         0.0         0.147%         0.2

 % Companies Reporting Producing WMA
 83%
 50%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

CALIFORNIA	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Aillions	Tons. I	Villions
Total	9.3	9.7	25.5	25.0
DOT	2.7	1.9	7.4	4.8
Other Agency	2.9	3.4	8.0	8.8
Commercial & Residential	3.7	4.4	10.1	11.4
Companies Reporting	4	4		
RAP	Tons, N	lillions	Tons	Villions
Accepted	2.1	1.4	5.7	3.6
Used in HMA/WMA Mixtures	1.5	1.4	4.0	3.7
Used in Aggregate	0.0	0.2	0.0	0.4
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 RAP Stockpiled at Year-End	2.2	1.6	5.93	4.20
	Avg. %			Used in
	Mixt		Mixt	
Average % for DOT Mixtures <sup>1</sup>	15.8%	12.2%		
Average % for Other Agency Mixtures <sup>1</sup>	18.4%	12.9%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	20.0%	17.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	20.070	11.070	15.7%	14.7%
	Other Rep	orted Data	1011 / 0	1 111 /0
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	31%		
% of RAP Mixtures Using Softer Binders	8%	14%		
% of RAP Mixtures Using Rejuvenators	4%	13%		
			<b>T a a a T</b>	
RAS	Tons, Th			ousands
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.7	2.7	1.9	7.0
Used in HMA/WMA Mixtures	1.4	2.3	3.8	5.9
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
		Avg. % Used in Mixtures		Used in ures
Average % for DOT Mixtures <sup>1</sup>	0.88%	0.01%	Ινιιχι	ules
Average % for Other Agency Mixtures <sup>1</sup>	0.43%	0.01%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.54%	0.01%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	1.5478	0.0478	0.02%	0.02%
State Average All Mixtures Dased of TAS Tons Osed in Third WinA	Other Rep	Other Reported Data		0.0270
% Companies Reporting Using RAS	25%	25%		
% of RAS Mixtures Using Softer Binders	+	28%		
% of RAS Mixtures Using Rejuvenators	+	0%		
* *				
WMA	% of Total	Production		Villions
Total			0.2	2.7
DOT	2%	11%	0.2	0.5
Other Agency	0%	9%	0.0	0.8
Commercial & Residential	0%	13%	0.0	1.4
WMA Technologies	% of N	/larket		
Chemical Additive, %	41%	11%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	59%	89%		
Organic Additive, %	0%	0%		
	Other Rep			
0/ Componing Departing Producing \/\/\/				
% Companies Reporting Producing WMA	100%	100%		

 % Companies Reporting Producing WMA
 100%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 100%

 <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.
 1 Information not requested in 2015

 Numbers may not add up exactly due to rounding
 100%
 100%

COLORADO	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Villions	Tons	Millions
Total	1.5	2.4	7.2	7.5
DOT	0.4	1.1	2.1	3.6
Other Agency	0.7	0.7	3.4	2.2
Commercial & Residential	0.3	0.5	1.7	1.7
Companies Reporting	4	5		
RAP		4:11:0:00	Tana	
Accepted	Tons, M 0.8	0.6	3.8	Millions 1.9
Used in HMA/WMA Mixtures	0.8	0.6	3.0 1.4	1.9
Used in Aggregate	0.3	0.6	0.0	0.3
Used in Cold-Mix Asphalt	0.0	0.1	0.0	0.3
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.1	0.0	0.4	0.0
Total Tons of RAP Stockpiled at Year-End	0.0	0.0	1.15	2.28
	Avg. %	÷		Used in
	Avg. %			ures
Average % for DOT Mixtures <sup>1</sup>	13.8%	22.1%	IVIIX	0165
Average % for Other Agency Mixtures <sup>1</sup>	24.3%	24.5%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	27.1%	24.5%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	27.170	20.4 /0	20.1%	23.8%
State Average Air Mixtures Dased of TAAL Tons Osed in ThinA/WIMA	Other Rep	orted Data	20.178	20.070
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	26%	71%	-	
% of RAP Mixtures Using Softer Binders	23%	44%	-	
% of RAP Mixtures Using Rejuvenators	3%	0%	-	
- ·				
RAS	Tons, Th			ousands
Unprocessed Shingles Accepted	0.4	0.4	1.8	1.3
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	1.8	0.0	8.6	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
		Avg. % Used in Mixtures		Used in ures
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%	IVIIX	ules
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	2.61%	0.00%	-	
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	2.0170	0.0078	0.12%	0.00%
State Average All Millates Dased of TAO TONS Osed IT HIMA WINA	Other Rep	Other Reported Data		0.0070
% Companies Reporting Using RAS	50%	20%		
% of RAS Mixtures Using Softer Binders	+	0%	-	
% of RAS Mixtures Using Rejuvenators	+	0%		
WMA	% of Total	Production		Millions
Total		1000	0.6	1.1
DOT	4%	18%	0.1	0.7
Other Agency	11%	17%	0.4	0.1
Commercial & Residential	12%	5%	0.2	1.1
WMA Technologies	% of N			
Chemical Additive, %	56%	15%		
Additive Foaming, %	11%	5%		
Plant Foaming, %	33%	74%		
Organic Additive, %	0%	7%		
	Other Rep			
% Companies Reporting Producing WMA	75%	80%		
	1570	00 /0		

 % Companies Reporting Producing WMA
 75%
 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.

 † Information not requested in 2015

 Numbers may not add up exactly due to rounding

CONNECTICUT	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
ons of HMA/WMA Produced	Tons, I	Villions	Tons.	Millions
Total	*	2.5	3.1	4.6
DOT	*	1.0	*	1.8
Other Agency	*	0.9	*	1.6
Commercial & Residential	*	0.7	*	1.2
Companies Reporting	*	3		1.2
		-	_	
RAP	Tons, I		I ons, I	Millions
Accepted	*	0.4	*	0.8
Used in HMA/WMA Mixtures	*	0.5	*	1.0
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 RAP Stockpiled at Year-End	*	1.0	*	1.86
		Used in		Used in
	Mixt		Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	*	19%		
Average % for Other Agency Mixtures <sup>1</sup>	*	22%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	25%	·	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	21.3%
		orted Data		
% Companies Reporting Using RAP	*	67%		
% of RAP Fractionated	*	0%		
% of RAP Mixtures Using Softer Binders	*	0%		
% of RAP Mixtures Using Rejuvenators	*	0%		
RAS	Tons, Th	ousands	Tons, Th	nousands
Unprocessed Shingles Accepted	*	0.0	*	0.0
Processed Shingles Accepted	*	0.4	*	0.7
Used in HMA/WMA Mixtures	*	0.4	*	0.7
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
	Avg. %	Used in	Avg. %	Used in
	Mixt		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>	*	0.06%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	0.02%
	Other Rep			
% Companies Reporting Using RAS	*	33%		
% of RAS Mixtures Using Softer Binders	t –	0%		
% of RAS Mixtures Using Rejuvenators	t –	0%		
NMA	% of Total	Production	Tons.	Millions
Total			*	2.6
DOT	*	65%	*	1.2
Other Agency	*	55%	*	0.9
Commercial & Residential	*	46%	*	0.6
WMA Technologies	% of M	Market		0.0
	*			
Chemical Additive, %	*	5%		
Additive Foaming, %		0%		
Plant Foaming, %	*	94%		
Organic Additive, %	*	1%		
	Other Rep	orted Data		
% Companies Reporting Producing WMA	*	67%		

% 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.
 † Information not requested in 2015 Numbers may not add up exactly due to rounding

DELAWARE	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
ons of HMA/WMA Produced	Tons, I	Aillions	Tons, N	/illions
Total	*	*	1.7	1.6
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
· · · ·				
RAP	Tons, M	Aillions	Tons, N	/lillions
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. %		Avg. %	Used in
	Mixt		Mixt	ures
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 Rep	orted Data		
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*		
% of RAP Mixtures Using Rejuvenators	*	*		
RAS	Tana Th	e v e e e e e e	Tana Th	e ve e e ele
	Tons, Th	ousands	Tons, Th	
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled				
	Avg. % Used in Mixtures		Avg. %	
Average % for DOT Mixtures1	*	ures *	Mixt	ures
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>			â	^
	Other Rep	orted Data		
% Companies Reporting Using RAS		*		
% of RAS Mixtures Using Softer Binders		*		
% of RAS Mixtures Using Rejuvenators		*		
NMA	% of Total	Production	Tons, N	/lillions
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
WMA Technologies	% of N	larket		
	*	*		
Chemical Additive, %	*	*		
Additive Foaming, %				
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
		anta d Data		
	Other Rep	oned Data		

ing

<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.
 <sup>†</sup> Information not requested in 2015 Numbers may not add up exactly due to rounding

DISTRICT OF COLUMBIA	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, I	lillions	Tons	Millions
Total	NCR	NCR	1.7	1.4
DOT	NCR	NCR	NCR	NCR
Other Agency	NCR	NCR	NCR	NCR
Commercial & Residential	NCR	NCR	NCR	NCR
Companies Reporting	NCR	NCR	NOR	NOR
RAP	Tons, M			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
	Mixt		Mixt	tures
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 Rep			
% 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	_	
RAS	Tons, Th	ousands	Tons, Th	nousands
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
Euronitou	Avg. %			Used in
	Mixt			
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 Rep	orted Data	_	_
% Companies Reporting Using RAS	NCR	NCR		
% of RAS Mixtures Using Softer Binders	+	NCR	-	
% of RAS Mixtures Using Rejuvenators	+	NCR		
	0/ of Total		Topo	Milliono
WMA Total	% of Total	FIGULCTION	NCR	Millions NCR
Total	NOD	NCD		
DOT	NCR	NCR	NCR	NCR
Other Agency	NCR	NCR	NCR	NCR
Commercial & Residential	NCR	NCR	NCR	NCR
WMA Technologies	% of N			
Chemical Additive, %	NCR	NCR		
Additive Foaming, %	NCR	NCR		
Plant Foaming, %	NCR	NCR		
Organic Additive, %	NCR	NCR		
	Other Rep			
% Companies Reporting Producing WMA	NCR	NCR		
		NON		

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

 <sup>1</sup> Information not requested in 2015
 Numbers may not add up exactly due to rounding

FLORIDA	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons	Villions	Tons	Villions
Total	6.0	5.4	14.4	15.0
DOT	2.9	2.2	6.8	6.0
Other Agency	1.1	1.2	2.6	3.2
Commercial & Residential	2.1	2.1	5.0	5.7
Companies Reporting	6	6	0.0	0.11
RAP		4:11:0:00	Tana	
Accepted	<u> </u>	1.7	5.0	Villions 4.7
Used in HMA/WMA Mixtures	2.1	1.7		
Used in Aggregate	0.0	0.0	4.8 0.1	4.8
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	1.1	3.68	3.02
		Used in		Used in
	Mixt		Mixt	
Average % for DOT Mixtures <sup>1</sup>	26.8%	25.6%		000
Average % for Other Agency Mixtures <sup>1</sup>	32.6%	31.2%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	36.6%	38.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	00.070	00.070	33.5%	31.7%
	Other Rep	orted Data	00.070	01117
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	6%	-	
% of RAP Mixtures Using Softer Binders	68%	73%	-	
% of RAP Mixtures Using Rejuvenators	17%	4%	-	
- ·				
RAS		ousands	Tons, Th	
Unprocessed Shingles Accepted	2.6	0.0	6.1	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	2.8	0.0	6.7	0.0
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0		0.0	
Used in Other Landfilled	0.0	0.0	0.0	0.0
Lanuilleu				
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%	IVIIX	ales
Average % for Other Agency Mixtures <sup>1</sup>	1.22%	0.00%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.73%	0.00%	-	
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	011 070	010070	0.05%	0.00%
	Other Rep	orted Data	010070	0.0070
% Companies Reporting Using RAS	17%	0%	-	
% of RAS Mixtures Using Softer Binders	+	0%	-	
% of RAS Mixtures Using Rejuvenators	+	0%	-	
WMA	0/ of Total	Production	Tong	Villiona
	% 01 10181	FIGUICTION	1.3	Millions
Total DOT	16%	30%	1.3	5.4 1.8
	5%	30%		
Other Agency Commercial & Residential	<u> </u>	43%	0.1	1.1 2.5
			0.0	2.0
WMA Technologies		Market		
Chemical Additive, %	96%	25%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	4%	75%		
Organic Additive, %	0%	0%		
	Other Rep	orted Data		
		17%		

 % Companies Reporting Producing WMA
 83%
 17%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

GEORGIA	Reported	d Values	Estimate	d Values
SLOKGIA	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Villions	Tons.	Millions
Total	*	7.0	5.0	10.0
DOT	*	3.6	*	5.2
Other Agency	*	1.6	*	2.4
Commercial & Residential	*	1.7	*	2.4
Companies Reporting	*	5		
RAP	Tons, N	-	Tone	Millions
Accepted	*	3.1	*	4.4
Used in HMA/WMA Mixtures	*	1.9	*	2.7
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	*	5.3	*	7.58
	Avg. %			Used in
	Mixt			tures
Average % for DOT Mixtures <sup>1</sup>	*	26.7%	IVIIX	ules
Average % for Other Agency Mixtures <sup>1</sup>	*	27.0%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	29.7%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>		23.170	*	27.4%
	Other Rep	orted Data		21.470
% Companies Reporting Using RAP	*	100%		
% of RAP Fractionated	*	1%		
% of RAP Mixtures Using Softer Binders	*	0%		
% of RAP Mixtures Using Rejuvenators	*	0%		
RAS	Tons, Th		Ions, Ir	nousands
Unprocessed Shingles Accepted	*	2.0	*	2.9
Processed Shingles Accepted	*	2.0	*	2.9
Used in HMA/WMA Mixtures		0.6	*	0.9
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
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	0.00%		aloo
Average % for Other Agency Mixtures <sup>1</sup>	*	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	0.04%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>		010170	*	0.01%
	Other Reported Data			0.0.70
% Companies Reporting Using RAS	*	40%		
% of RAS Mixtures Using Softer Binders	+	0%		
% of RAS Mixtures Using Rejuvenators	+	1%		
	0( - ( T- (-)		Τ	N 4:11:
	% of Total	FIGUL	*	Millions
Total DOT	*	0.00/	*	0.04
	*	0.2%	*	0.01
Other Agency	*	0.4%	*	0.01
Commercial & Residential		0.6%		0.01
WMA Technologies	% of N			
Chemical Additive, %	*	100%		
Additive Foaming, %	*	0%		
Plant Foaming, %	*	0%		
Organic Additive, %	*	0%		
	Other Rep			
% Companies Reporting Producing WMA	*	20%		
	·	2070		

 % Companies Reporting Producing WMA
 \*
 20%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 \*
 20%

 <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.
 \*
 1

 \* Information not requested in 2015
 Numbers may not add up exactly due to rounding
 \*
 1

HAWAII	Reported	Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, N	/illions	Tons, N	Aillions
Total	*	*	1.7	1.1
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
		I	_	
RAP	Tons, N	Aillions	Tons, N	Aillions
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. %		Avg. %	
	Mixt		Mixt	ures
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 Rep	orted Data		
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*		
% of RAP Mixtures Using Rejuvenators	*	*		
- ·	<b>TT</b>		Taura Th	
RAS	Tons, Th	ousands	Tons, Th	ousands
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt				
Used in Other	*	*	*	*
Landfilled	*	*	*	*
		Avg. % Used in Mixtures		Used in
Average % for DOT Mixtures <sup>1</sup>	*	Jres	Mixt	ures
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 Der	anta d Data		
0/ Ocean action Llain a DAO	Other Rep			
% Companies Reporting Using RAS		*		
% of RAS Mixtures Using Softer Binders	<u>†</u>	*		
% of RAS Mixtures Using Rejuvenators		<u> </u>		
NMA	% of Total	Production	Tons, N	Aillions
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
WMA Technologies	% of N	larket		
Chemical Additive, %	*	*		
	*	*		
Additive Foaming, %				
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Rep	orted 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.
 † Information not requested in 2015 Numbers may not add up exactly due to rounding

IDAHO	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, I	Villions	Tons	Millions
Total	1.1	1.3	3.0	2.7
DOT	0.4	0.6	1.1	1.3
Other Agency	0.3	0.3	0.8	0.7
Commercial & Residential	0.4	0.3	1.1	0.7
Companies Reporting	6	5		0.1
		1 -		
RAP	Tons, I			Millions
	0.2	0.3	0.5	0.6
Used in HMA/WMA Mixtures	0.3	0.3	0.7	0.6
Used in Aggregate 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
Total Tons of RAP Stockpiled at Year-End	0.0	0.0	0.0	0.0
		Used in		Used in
	Mixt			ures
Average % for DOT Mixtures <sup>1</sup>	40.3%	17.2%	IVIIX	0100
Average % for Other Agency Mixtures <sup>1</sup>	22.6%	18.2%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	31.1%	31.9%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	51.170	51.970	25.0%	21.3%
	Other Rep	orted Data	20.070	21.07
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	8%	12%	-	
% of RAP Mixtures Using Softer Binders	53%	76%	-	
% of RAP Mixtures Using Rejuvenators	0%	0%	-	
× ·				
RAS		ousands		nousands
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
	Avg. % Mixt	Used in	Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%	IVIIX	ules
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>	0.0078	0.0078	0.00%	0.00%
	Other Rep	orted Data	0.0078	0.0076
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	+	0%	-	
% of RAS Mixtures Using Rejuvenators	+	0%	-	
			_	
	% of Total	Production		Millions
Total	000/	000/	0.8	0.6
DOT	23%	20%	0.3	0.3
Other Agency	15%	21%	0.1	0.2
Commercial & Residential	39%	27%	0.4	0.2
WMA Technologies <sup>‡</sup>		/larket		
Chemical Additive, %	31%	53%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	69%	67%		
Organic Additive, %	0%	0%		
		orted Data		
% Companies Reporting Producing WMA	83%	80%		

 
 % Companies Reporting Producing WMA
 83%
 80%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.
 † Information not requested in 2015
 ‡ WMA Technologies use may exceed 100 due to the use of multiple WMA technologies in combination

Numbers may not add up exactly due to rounding

ILLINOIS	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, I	Villions	Tons	Villions
Total	5.2	2.2	15.8	14.1
DOT	2.3	0.8	7.1	5.0
Other Agency	1.6	0.8	4.9	5.0
Commercial & Residential	1.3	0.6	3.9	4.2
Companies Reporting	15	10	0.0	
		1	-	A-11-
RAP	Tons, I			Villions
	1.9	0.5	5.8	3.5
Used in HMA/WMA Mixtures	1.3	0.5	4.0	3.3
Used in Aggregate	0.7	0.0	2.1	0.2
Used in Cold-Mix Asphalt	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			3.43	3.79
	Avg. %			Used in
Average % for DOT Mixtures1	Mixt 19.3%	ures 14.4%	Mixt	ules
Average % for DOT Mixtures <sup>1</sup> Average % for Other Agency Mixtures <sup>1</sup>	24.0%	25.5%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	24.0%	31.0%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	27.4%	31.0%	25.1%	23.2%
State Average All Mixtures Dased on RAP Tons Used in HMA/WIMA-	Other Dep	arted Data	25.1%	23.270
% Companies Reporting Using RAP	Other Rep 100%	90%		
% of RAP Fractionated	56%	89%	-	
% of RAP Mixtures Using Softer Binders	42%	58%	-	
% of RAP Mixtures Using Rejuvenators	0%	0.2%	-	
RAS		ousands	Tons, Th	
Unprocessed Shingles Accepted	0.0	12.0	0.0	77.6
Processed Shingles Accepted	111.5	37.3	339.2	241.5
Used in HMA/WMA Mixtures	101.6	38.0	309.1	246.0
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
		Avg. % Used in		Used in
	Mixt	1	Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	2.26%	1.24%	-	
Average % for Other Agency Mixtures <sup>1</sup>	2.83%	2.85%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	3.30%	1.03%	1.000/	4 = 40/
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			1.96%	1.74%
	Other Rep			
% Companies Reporting Using RAS	60%	60%	-	
% of RAS Mixtures Using Softer Binders		64%	-	
% of RAS Mixtures Using Rejuvenators	Ť	0.3%		
WMA	% of Total	Production	Tons, I	Villions
Total			5.5	2.2
DOT	18%	13%	1.2	0.7
Other Agency	54%	30%	2.6	1.5
Commercial & Residential	43%	3%	1.6	0.1
WMA Technologies	% of M	Aarket		
Chemical Additive, %	14%	25%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	86%	75%		
Organic Additive, %	0%	0%		
		orted Data		
% Companies Reporting Producing WMA	33%	50%		

 % Companies Reporting Producing WMA
 33%
 50%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

INDIANA	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, I	Villions	Tons, I	Millions
Total	5.1	4.8	10.5	10.0
DOT	2.1	2.4	4.3	4.9
Other Agency	1.7	1.5	3.6	3.2
Commercial & Residential	1.3	0.9	2.6	1.9
Companies Reporting	4	3		
RAP	Tana	Ailliono	Topo	Villions
Accepted	1.2	Villions 1.2	2.6	2.5
Used in HMA/WMA Mixtures		1.2	2.0	2.3
Used in Aggregate	<u> </u>	0.0	0.2	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.2	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	1.7	1.8	3.51	3.65
		Used in		Used in
		ures	Avg. %	
Average % for DOT Mixtures <sup>1</sup>	25.1%	20.2%	IVIIX	0105
Average % for Other Agency Mixtures <sup>1</sup>	25.1%	20.2%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	25.6%	26.0%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	23.076	20.076	28.1%	21.8%
State Average Air Mixtures Dased of TAI Toris Used in ThinA/WIMA	Other Rep	orted Data	20.170	21.070
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	46%	72%	-	
% of RAP Mixtures Using Softer Binders	31%	67%	-	
% of RAP Mixtures Using Rejuvenators	0%	0%	-	
RAS		ousands		ousands
Unprocessed Shingles Accepted	17.5	3.5	36.3	7.3
Processed Shingles Accepted	5.0	10.3	10.4	21.5
Used in HMA/WMA Mixtures	57.7	32.4	119.8	67.6
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
		Used in	Avg. % Used in	
Average 0/ for DOT Mixtures1	2.55%	ures 0.41%	Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	2.55%	0.41%	-	
Average % for Other Agency Mixtures <sup>1</sup>	2.96%	0.91%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup> State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	2.40%	0.97%	1.14%	0.68%
	Other Ben	orted Data	1.14%	0.00%
% Companies Reporting Using RAS	75%	100%		
% of RAS Mixtures Using Softer Binders	+		-	
% of RAS Mixtures Using Softer Binders % of RAS Mixtures Using Rejuvenators	Ť	9% 0%		
	<b>I</b>			
WMA	% of Total	Production		Villions
Total			5.7	7.9
DOT	56%	79%	2.4	3.9
Other Agency	55%	81%	2.0	2.6
Commercial & Residential	50%	75%	1.3	1.4
WMA Technologies	% of M	Market		
Chemical Additive, %	3%	3%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	97%	97%		
Organic Additive, %	0%	0%		
		orted Data		
0/ Companies Departing Draduaing \0/\04				
% Companies Reporting Producing WMA	75%	100%		

 % Companies Reporting Producing WMA
 75%
 100%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

IOWA	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Tons of HMA/WMA Produced	Tons, M	Villions	Tons.	Millions
Total	1.5	2.2	3.6	3.9
DOT	0.7	0.9	1.7	1.7
Other Agency	0.4	0.9	1.1	1.6
Commercial & Residential	0.3	0.4	0.8	0.7
Companies Reporting	6	7	0.0	0.11
RAP			Tana	
Accepted	Tons, M 0.2	0.4	0.5	Millions 0.7
Used in HMA/WMA Mixtures	0.2		0.5	-
		0.3		0.6
Used in Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt 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	0.0	0.0	0.0
Total Toris of RAP Stockpiled at Tear-End	Avg. %	- · ·		Used in
	Mixt			ures
Average % for DOT Mixtures <sup>1</sup>	14.6%	12.6%	IVIIX	0105
Average % for Other Agency Mixtures <sup>1</sup>	14.0%	15.6%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	17.5%	14.4%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	17.570	14.470	13.3%	14.12%
	Other Rep	orted Data	10.070	14.1270
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	3%		
% of RAP Mixtures Using Softer Binders	74%	8%		
% of RAP Mixtures Using Rejuvenators	17%	0.4%		
RAS	Tons, Th			nousands
Unprocessed Shingles Accepted	10.4	7.0	25.4	12.5
Processed Shingles Accepted	13.7	6.6	33.4	11.8
Used in HMA/WMA Mixtures	12.7	5.0	30.9	8.9
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
	Avg. % Mixt			
Average % for DOT Mixtures <sup>1</sup>	1.34%	0.21%	IVIIX	ules
Average % for Other Agency Mixtures <sup>1</sup>	1.66%	0.21%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.67%	0.36%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	1.0770	0.3070	0.86%	0.23%
Otale Average Air Mixtures Dased on NAO Tons Osed in ThinA WinA	Other Rep	orted Data	0.0070	0.2370
% Companies Reporting Using RAS	50%	57%		
% of RAS Mixtures Using Softer Binders	+	19%		
% of RAS Mixtures Using Rejuvenators	+	0.4%		
* .				
WMA	% of Total	Production		Millions
Total		4.4.5.4	0.2	0.9
DOT	3%	11%	0.1	0.2
Other Agency	5%	27%	0.1	0.4
Commercial & Residential	8%	44%	0.1	0.3
WMA Technologies	% of N	/larket		
Chemical Additive, %	62%	23%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	38%	77%		
Organic Additive, %	0%	0%		
	Other Rep			
% Companies Reporting Producing WMA	67%	43%		
	01/0	40/0		

 % Companies Reporting Producing WMA
 67%
 43%

 <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.

 † Information not requested in 2015

 Numbers may not add up exactly due to rounding

Cons of HMAWMA Produced         2015         2016         2015         2015         2015         2015         2015         2015         2015         2015         2015         2015         2015         2015         2016         2015         2015         2015         2015         2015         2015         2015         2015         2015         2015         2016         2017         200         2016         2017         2016         2016         2017         2016         2016         2017         2016         2016         2017         2016         2016         2017         2016         2016         2016         2017         2016         2016         2017         2016         2016         2017         2017         2017         2017         2017         2017         2017         2017         2017         2017         2017         2017         2016         201	KANSAS	Reporte	d Values	Estimate	ed Values
Total       1.9       1.7       4.0       3         DOT       0.7       0.4       1.4       0.0         Comparies Reporting       0.7       0.4       1.4       0.0         Comparies Reporting       4       4       4       4         CAP       Tons, Millions       Tons, Millions       Tons, Millions       Tons, Millions         Comparies Reporting       0.3       0.3       0.3       0.6       0         Used in Aggregate       0.0		2015	2016	2015	2016
Total       1.9       1.7       4.0       3         DOT       0.7       0.4       1.4       1.0         Comparies Reporting       0.7       0.4       1.4       1.0         Comparies Reporting       4       4       4       4         RAP       Tons, Millions       Tons, Millions       Tons, Millions       Tons, Millions         Comparies Reporting       0.3       0.3       0.3       0.6       0         Used in Aggregate       0.0	Cons of HMA/WMA Produced	Tons	Villions	Tons	Millions
DOT         0.7         0.9         1.5         2           Other Agency         0.7         0.4         1.4         0           Commercial & Residential         0.5         0.3         1.0         0           Companies Reporting         4         4         4         4           RAP         Tons, Millions         Tons, Millions         Tons, Millions         Tons, Millions           Accepted         0.3         0.3         0.7         0         0         0.0			1		3.5
Other Agency         0.7         0.4         1.4         0           Commercial & Residential         0.5         0.3         1.0         0           Companies Reporting         4         4         4         0           RAP         Tons, Millions         Tons, Millions         Tons, Millions         Tons, Millions           Accepted         0.3         0.3         0.6         0         0           Used in Agregate         0.0         0.0         0.0         0.0         0           Used in Cold-Mix Asphalt         0.0         0.0         0.0         0.0         0           Used in Cold-Mix Asphalt         0.0         0.0         0.0         0.0         0.0         0.0           Total Tons of RAP Stockpiled at Year-End         0.5         0.6         1.07         1.1         Average % for DOT Mixtures'         Naverage % for ODT Mixtures'         18.6%         21.6%         24.6%         24.6%         24.6%         25.%         17.5%         20.5%           State Average & Mor ODT Mixtures'         18.6%         11.6%         19.3%         75%         2%         75%         2%         75%         2%         75%         2%         75%         20.5%         17.5%         20.1				-	2.0
Commercial & Residential         0.5         0.3         1.0         0           Companies Reporting         4         4         4           RAP         Tons, Millions         Tons, Millions         Tons, Millions           Accepted         0.3         0.3         0.6         0           Used in HMAWMA Mixtures         0.0					0.9
RAP         Tons, Millions         Tons, Millions           Accepted         0.3         0.3         0.6         0           Used in HMA/WMA Mixtures         0.3         0.3         0.7         0           Used in Aggregate         0.0         0.0         0.0         0         0           Used in CM+Mx Asphalt         0.0         0.0         0.0         0.0         0         0           Landfilled         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0           Average % for DOT Mixtures'         18.1%         19.3%         Mixtures         May 9, % Used in Mixtures					0.7
RAP         Tons, Millions         Tons, Millions           Accepted         0.3         0.3         0.6         0           Used in HMA/WMA Mixtures         0.3         0.3         0.3         0.7         0           Used in Aggregate         0.0         0.0         0.0         0.0         0.0         0           Used in Cher         0.0					1
Accepted         0.3         0.3         0.6         0           Used in HMAVWMA Mixtures         0.3         0.3         0.7         0           Used in HMAVWMA Asphalt         0.0		Tons	Millions	Tone	Millione
Used in HMA/WMA Mixtures         0.3         0.7         0           Used in Cold-Mix Asphalt         0.0         0.0         0.0         0.0           Used in Cold-Mix Asphalt         0.0         0.0         0.0         0.0         0.0           Landfilled         0.0         0.0         0.0         0.0         0.0         0.0           Average % for DOT Mixtures1         18.1%         19.3%         22.5%         Mixtures           State Average % for Commercial & Residential Mixtures1         18.6%         21.6%         Mixtures           Average % for Commercial & Residential Mixtures1         23.3%         22.5%         22.5%           State Average All Mixtures Dased on RAP Tons Used in HMA/WMA2         Other Reported Data         10.5         15.0         22.1           % Companies Reporting Using RAP         100%         100%         100%         10.5         15.0         22.1         37           Yorcessed Shingles Accepted         22.2         24.5         46.8         52         17.7           Unprocessed Shingles Accepted         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0 <td></td> <td></td> <td></td> <td></td> <td>0.7</td>					0.7
Used in Cold-Mix Asphalt         0.0 <td></td> <td></td> <td></td> <td></td> <td>0.7</td>					0.7
Used in Cold-Mix Asphalt         0.0         0.0         0.0         0.0           Landfilled         0.0         0.0         0.1         0           Total Tons of RAP Stockpiled at Year-End         0.5         0.6         1.07         1.           Average % for DOT Mixtures1         18.1%         19.3%         Average % for Other Agency Mixtures1         23.3%         22.5%           State Average % for COmmercial & Residential Mixtures1         23.3%         22.5%         21.5%           State Average % for Commercial & Residential Mixtures1         23.3%         22.5%         22.5%           State Average All Mixtures Using Softer Binders         46%         73%         6         73%           % of RAP Mixtures Using Softer Binders         46%         73%         73%         70%           % of RAP Mixtures Using Softer Binders         10.5         15.0         22.1         3           Processed Shingles Accepted         10.5         15.0         22.1         3           Processed Shingles Accepted         0.0         0.0         0.0         0.0           Uprocessed Shingles Accepted         0.0         0.0         0.0         0.0         0.0           Used in Other         0.0         0.0         0.0         0.0					0.1
Used in Other         0.0         0.0         0.1         0.0           Landfilled         0.0         0.0         0.0         0.0         0.0           Total Tons of RAP Stockpiled at Year-End         0.5         0.6         1.07         1.           Average % for DOT Mixtures1         18.1%         19.3%         Average % for Other Agency Mixtures1         18.6%         21.6%           Average % for Other Agency Mixtures1         18.6%         21.6%         23.3%         22.5%           State Average % for Other Agency Mixtures1         23.3%         22.5%         17.5%         20.           % companies Reporting Using RAP         100%         100%         3%         6         17.5%         20.           % of RAP Mixtures Using Rejuvenators         1%         2%         7%         7%         7%           RAS         Tons, Thousands         Tons, Thousands         Tons, Thousands         50.7         70           Used in Agregate         0.0					0.0
Landfilled         0.0					0.0
Total Tons of RAP Stockpiled at Year-End         0.5         0.6         1.07         1.           Average % for DOT Mixtures'         18.1%         19.3%         Average % for Other Agency Mixtures'         18.6%         21.6%           Average % for Other Agency Mixtures'         18.6%         21.6%         22.5%         Mixtures           State Average % for Other Agency Mixtures'         23.3%         22.5%         17.5%         20.           State Average % for Commercial & Residential Mixtures'         00%         100%         100%         10.5%         20.           % of RAP Mixtures Using Softer Binders         4%         73%         4%         22.         24.5         46.6         52           Wead in Mixtures Using Rejuvenators         1%         2%         Tons, Thousards         Tons, Thousards         Tons, Thousards         50.7         70           Upprocessed Shingles Accepted         22.2         24.1         33.4         50.7         70         10.6         0.0         0.					0.0
Avg. % Used in Mixtures         Avg. % Used in Mixtures           Average % for DOT Mixtures <sup>1</sup> 18.1%         19.3%           Average % for Cherr Agency Mixtures <sup>1</sup> 18.6%         21.6%           Average % for Commercial & Residential Mixtures <sup>1</sup> 23.3%         22.5%           State Average All Mixtures Based on RAP Tons Used in HMAWMA <sup>2</sup> 17.5%         20.           % Companies Reporting Using RAP         100%         100%         6%           % of RAP Fractionated         0%         3%         46%         73%           % of RAP Mixtures Using Softer Binders         1%         2%         70ns, Thousands           Unprocessed Shingles Accepted         10.5         15.0         22.1         33.4           Processed Shingles Accepted         24.1         33.4         50.7         70           Used in Aggregate         0.0         0.0         0.0         0.0         0.0           Used in Cold-Mix Asphalt         0.0 </td <td></td> <td></td> <td></td> <td></td> <td>1.19</td>					1.19
Average % for DOT Mixtures'         Ibitures         Mixtures           Average % for Other Agency Mixtures'         18.1%         19.3%           Average % for Other Agency Mixtures'         23.3%         22.5%           State Average All Mixtures Based on RAP Tons Used in HMAWMA2         0ther Reported Data           % Companies Reporting Using RAP         100%         100%           % of RAP Mixtures Using Softer Binders         46%         73%           % of RAP Mixtures Using Rejuvenators         1%         22.1           Processed Shingles Accepted         10.5         15.0         22.1           Processed Shingles Accepted         10.5         15.0         22.1         3           Processed Shingles Accepted         0.0         0.0         0.0         0.0           Used in MAWMA Mixtures         24.1         33.4         50.7         70           Used in Other         0.0					
Average % for DOT Mixtures'       18.1%       19.3%         Average % for Other Agency Mixtures'       18.6%       21.6%         Average % for Commercial & Residential Mixtures'       23.3%       22.5%         State Average All Mixtures Based on RAP Tons Used in HMAWMA2       17.5%       20.         Companies Reporting Using RAP       100%       100%       6%         % of RAP Fractionated       0%       3%       46%       73%         % of RAP Mixtures Using Softer Binders       10.5       16.0       22.1       3         Mixtures Using Rejuvenators       10.5       16.0       22.1       3         Processed Shingles Accepted       22.2       24.5       46.8       52         Used in Aggregate       0.0       0.0       0.0       0.0       0.0         Used in Other       0.0       <					
Average % for Other Agency Mixtures1       18.6%       21.6%         Average % for Commercial & Residential Mixtures1       23.3%       22.5%         State Average All Mixtures Based on RAP Tons Used in HMA/WMA2       17.5%       20.         % Companies Reporting Using RAP       100%       3%         % of RAP Fractionated       0%       3%         % of RAP Mixtures Using Softer Binders       46%       73%         % of RAP Mixtures Using Rejuvenators       1%       22.2         RAS       Tons, Thousands       Tons, Thousands         Unprocessed Shingles Accepted       10.5       15.0       22.1         Processed Shingles Accepted       22.2       24.5       46.8       52         Used in Adgregate       0.0       0.0       0.0       0.0       0.0         Used in Cold-Mix Asphalt       0.0       0.0       0.0       0.0       0.0       0.0         Landfilled       0.0       0.	Average % for DOT Mixtures <sup>1</sup>	18.1%	19.3%		
Average % for Commercial & Residential Mixtures <sup>1</sup> 23.3%       22.5%         State Average All Mixtures Based on RAP Tons Used in HMA/VMA2       Other Reported Data         % Companies Reporting Using RAP       100%       100%         % of RAP Fractionated       0%       3%         % of RAP Mixtures Using Softer Binders       46%       73%         % of RAP Mixtures Using Rape       10.5       15.0       22.1         RAS       Tons, Thousands       Tons, Thousands       Tons, Thousands         Upprocessed Shingles Accepted       22.2       24.5       46.8       50.7         Used in Aggregate       0.0       0.0       0.0       0.0       0.0         Used in Aggregate       0.0       0.0       0.0       0.0       0.0         Used in Cold-Mix Asphalt       0.0       0.0       0.0       0.0       0.0         Used in Other       Average % for DOT Mixtures <sup>1</sup> 1.36%       1.36%       Mixtures         Average % for Commercial & Residential Mixtures <sup>1</sup> 0.00%       0.00%       4         Average % for Commercial & Residential Mixtures <sup>1</sup> 1.36%       1.27%       2.0         Markit average % for Commercial & Residential Mixtures <sup>1</sup> 1.36%       1.27%       2.0					
State Äverage All Mixtures Based on RAP Tons Used in HMAWMA <sup>2</sup> 0ther Reported Data       00%       17.5%       20.         % Companies Reporting Using RAP       100%       100%       00%       3%         % of RAP Fractionated       0%       3%       3%         % of RAP Mixtures Using Softer Binders       46%       73%         % of RAP Mixtures Using Rejuvenators       1%       2%         Tons, Thousands       Tons, Thousands       Tons, Thousands         Unprocessed Shingles Accepted       22.2       24.5       46.8       52         Used in Adgregate       0.0       0.	Average % for Commercial & Residential Mixtures <sup>1</sup>				
% Companies Reporting Using RAP       100%       100%         % of RAP Fractionated       0%       3%         % of RAP Mixtures Using Softer Binders       46%       73%         % of RAP Mixtures Using Rejuvenators       1%       2%         RAS       Tons, Thousands       Tons, Thousands         Unprocessed Shingles Accepted       22.2       24.5       46.8       52         Used in HMAVWMA Mixtures       24.1       33.4       50.7       70         Used in Aggregate       0.0				17.5%	20.5%
% Companies Reporting Using RAP       100%       100%         % of RAP Fractionated       0%       3%         % of RAP Mixtures Using Softer Binders       46%       73%         % of RAP Mixtures Using Rejuvenators       1%       2%         RAS       Tons, Thousands       Tons, Thousands         Unprocessed Shingles Accepted       22.2       24.5       46.8       52         Used in HMAVWMA Mixtures       24.1       33.4       50.7       70         Used in Aggregate       0.0			orted Data		
% of RAP Mixtures Using Softer Binders         46%         73%           % of RAP Mixtures Using Rejuvenators         1%         2%           RAS         Tons, Thousands         Tons, Thousands           Unprocessed Shingles Accepted         10.5         15.0         22.1         3           Processed Shingles Accepted         22.2         24.5         46.8         52           Used in HMAWMA Mixtures         24.1         33.4         50.7         70           Used in Cold-Mix Asphalt         0.0         0	% Companies Reporting Using RAP	100%	100%		
% of RAP Mixtures Using Rejuvenators       1%       2%         RAS       Tons, Thousands       Tons, Thousands         Unprocessed Shingles Accepted       22.2       24.5       46.8       52         Used in HMA/WMA Mixtures       24.1       33.4       50.7       70         Used in Aggregate       0.0       0.0       0.0       0.0       0.0         Used in Cold-Mix Asphalt       0.0       0.0       0.0       0.0       0.0         Used in Other       0.0       0.0       0.0       0.0       0.0       0.0         Landfilled       Aver 36       Vsed in Mixtures       May.9       Vsed in Mixtures       May.9       Vsed in Mixtures         Average % for DOT Mixtures1       0.00%       0.00%       0.00%       May.9       Vsed in Mixtures         Average % for Commercial & Residential Mixtures1       1.36%       1.36%       1.27%       2.0         % Companies Reporting Using RAS       100%       75%       0       75%       0       75%         % of RAS Mixtures Using Softer Binders       1       91%       3.1       2         DOT       93%       89%       1.4       1       3.1       2         DOT       93%       68%					
RAS         Tons, Thousands         Tons, Thousands           Unprocessed Shingles Accepted         10.5         15.0         22.1         3'           Processed Shingles Accepted         22.2         24.5         46.8         50.7           Used in HMAWMM Mixtures         24.1         33.4         50.7         70           Used in Aggregate         0.0<		46%	73%		
Unprocessed Shingles Accepted         10.5         15.0         22.1         3           Processed Shingles Accepted         22.2         24.5         46.8         52           Used in HMAVWMA Mixtures         24.1         33.4         50.7         70           Used in Aggregate         0.0 <td>% of RAP Mixtures Using Rejuvenators</td> <td>1%</td> <td>2%</td> <td></td> <td></td>	% of RAP Mixtures Using Rejuvenators	1%	2%		
Unprocessed Shingles Accepted         10.5         15.0         22.1         3           Processed Shingles Accepted         22.2         24.5         46.8         52           Used in HMAWMM Mixtures         24.1         33.4         50.7         70           Used in Cold-Mix Asphalt         0.0         0	RAS	Tons Th	ousands	Tons T	nousands
Processed Shingles Accepted         22.2         24.5         46.8         52           Used in HMA/WMA Mixtures         24.1         33.4         50.7         70           Used in Aggregate         0.0         0.0         0.0         0.0         0           Used in Cold-Mix Asphalt         0.0					31.9
Used in HMA/WMA Mixtures         24.1         33.4         50.7         70           Used in Aggregate         0.0         0.0         0.0         0.0         0           Used in Cold-Mix Asphalt         0.0         0.0         0.0         0.0         0           Used in Cold-Mix Asphalt         0.0         4         Average % for COmmercial & Residential Mixtures <sup>1</sup> 4.61%         3.15%         Average % for Commercial & Residential Mixtures <sup>1</sup> 1.36%         1.27%         2.0         1.27%         2.0         1.27%         2.0         1.27%         2.0         1.27%         3.1         1.2         1.27%         3.1         1.2					52.05
Used in Aggregate         0.0         0.0         0.0         0.0           Used in Cold-Mix Asphalt         0.0         0.0         0.0         0.0         0.0           Used in Other         0.0         0.0         0.0         0.0         0.0         0.0           Used in Other         0.0         0.0         0.0         0.0         0.0         0.0           Landfilled         0.0         2.0         0.0         4         Average % for DOT Mixtures1         Average % for Other Agency Mixtures1         0.00%         0.00%         Mixtures           Average % for Commercial & Residential Mixtures1         1.36%         1.36%         1.27%         2.0           % Companies Reporting Using RAS         100%         75%         1.27%         2.0           % Companies Reporting Using RAS         100%         75%         1.27%         2.0           WMA         % of Total Production         3.1         2         2         3.1         2           DOT         93%         89%         1.4         1         1         0         0           Chemical Additive, %         47%         74%         0%         0%         0%         0%           WMA         69%         50%<					70.96
Used in Cold-Mix Asphalt         0.0         Mixtures					0.0
Used in Other         0.0         4         Aver age % for DOT Mixtures 1         4.61%         3.15%         0.00%					0.0
Avg. % Used in Mixtures     Avg. % Used in Mixtures       Average % for DOT Mixtures <sup>1</sup> 4.61%     3.15%       Average % for Other Agency Mixtures <sup>1</sup> 0.00%     0.00%       Average % for Commercial & Residential Mixtures <sup>1</sup> 1.36%     1.36%       State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup> 1.27%     2.0       % Companies Reporting Using RAS     100%     75%       % of RAS Mixtures Using Softer Binders     1     91%       % of RAS Mixtures Using Rejuvenators     1     0%       WMA     % of Total Production     Tons, Million       Total     3.1     2       DOT     93%     89%     1.4       Other Agency     69%     50%     1.0     0       Commercial & Residential     68%     44%     0.7     0       WMA Technologies     % of Market     0%     0%     0%       Chemical Additive, %     47%     74%     40%       Additive Foaming, %     0%     0%     0%       Organic Additive, %     0%     0%     0%       Organic Additive, %     0%     0%     0%       WMA Fechnologies     0%     0%     0%       0ranic Additive, %     53%     26%       0rganic Additive, %     0%     0% <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td>		0.0	0.0	0.0	0.0
MixturesMixturesAverage % for DOT Mixtures14.61%3.15%Average % for Other Agency Mixtures10.00%0.00%Average % for Commercial & Residential Mixtures11.36%1.36%State Average All Mixtures Based on RAS Tons Used in HMA/WMA21.27%2.0Companies Reporting Using RAS100%75%% of RAS Mixtures Using Softer Binders†91%% of RAS Mixtures Using Rejuvenators†0%WMA% of Total ProductionTons, MillionTotal3.12DOT93%89%1.4Other Agency69%50%1.0Commercial & Residential68%44%0.7WMA Technologies% of Market68%47%Chemical Additive, %47%74%Additive Foaming, %0%0%Organic Additive, %0%0%Matter Exported Data0%0%% Companies Reporting Producing WMA100%50%					4.3
Average % for DOT Mixtures1       4.61%       3.15%         Average % for Other Agency Mixtures1       0.00%       0.00%         Average % for Commercial & Residential Mixtures1       1.36%       1.36%         State Average All Mixtures Based on RAS Tons Used in HMA/WMA2       1.27%       2.0         % Companies Reporting Using RAS       100%       75%         % of RAS Mixtures Using Softer Binders       1       91%         % of RAS Mixtures Using Rejuvenators       1       00%         WMA       % of Total Production       Tons, Million         Total       3.1       2         DOT       93%       89%       1.4         Other Agency       69%       50%       1.0       0         Commercial & Residential       68%       44%       0.7       0         WMA Technologies       % of Market       47%       74%         Chemical Additive, %       0%       0%       0%         Additive Foaming, %       0%       0%       0%         Other Reported Data       53%       26%       0%         Organic Additive, %       0%       0%       0%         MA Technologies       0%       0%       0%         WMA Technologies		Avg. % Used in		Avg. %	Used in
Average % for Other Agency Mixtures10.00%0.00%Average % for Commercial & Residential Mixtures11.36%1.36%State Average All Mixtures Based on RAS Tons Used in HMA/WMA21.27%2.0Companies Reporting Using RAS00%75%% of RAS Mixtures Using Softer Binders191%% of RAS Mixtures Using Rejuvenators10%WMA% of Total ProductionTons, MillionTotal3.12DOT93%89%1.4Other Agency69%50%1.0Commercial & Residential68%44%0.7Other Reported Data% of Market0%0%Plant Foaming, %0%0%0%Organic Additive, %0%0%0%Organic Additive, %0%0%0%MA Technologies0%0%0%Organic Additive, %0%0%0%Organic Additive, %0%0%0%Organic Additive, %0%0%0%Organic Additive, %0%0%0%Organic Additive, %0%0%0%Organic Additive, %0%0%0%Other Reported Data0%0%0%MA Companies Reporting Producing WMA100%50%			ures	Mix	tures
Average % for Commercial & Residential Mixtures <sup>1</sup> 1.36%       1.36%         State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup> 1.27%       2.0         Øreal of the companies Reporting Using RAS       100%       75%         % of RAS Mixtures Using Softer Binders       1       91%         % of RAS Mixtures Using Rejuvenators       1       0%         WMA       % of Total Production       Tons, Million         Total       3.1       2         DOT       93%       89%       1.4         Other Agency       69%       50%       1.0       0         Commercial & Residential       68%       44%       0.7       0         WMA Technologies       % of Market       0%       0%       0%         Chemical Additive, %       47%       74%       Additive Foaming, %       26%         Organic Additive, %       0%       0%       0%       0%       0%         Organic Additive, %       0%       0%       0%       0%       0%         Organic Additive, %       00%       0%       0%       0%       0%         Organic Additive, %       00%       0%       0%       0%       0%         Organic Additive, % <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup> 1.27%       2.0         What Companies Reporting Using RAS       100%       75%         % of RAS Mixtures Using Softer Binders       †       91%         % of RAS Mixtures Using Rejuvenators       †       0%         WMA       % of Total Production       Tons, Million         Total       3.1       2         DOT       93%       89%       1.4         Other Agency       69%       50%       1.0       0         Commercial & Residential       68%       44%       0.7       0         WMA Technologies       % of Market       47%       74%         Additive Foaming, %       0%       0%       0%         Organic Additive, %       0%       0%       0%         Organic Additive, %       100%       50%       10	Average % for Other Agency Mixtures <sup>1</sup>				
Other Reported Data% Companies Reporting Using RAS100%75%% of RAS Mixtures Using Softer Binders†91%% of RAS Mixtures Using Rejuvenators†0%WMA% of Total ProductionTons, MillionTotal		1.36%	1.36%		
% Companies Reporting Using RAS100%75%% of RAS Mixtures Using Softer Binders†91%% of RAS Mixtures Using Rejuvenators†0%WMA% of Total ProductionTons, MillionTotal	State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			1.27%	2.03%
% of RAS Mixtures Using Softer Binders       †       91%         % of RAS Mixtures Using Rejuvenators       †       0%         WMA       % of Total Production       Tons, Million         Total       3.1       2         DOT       93%       89%       1.4       1         Other Agency       69%       50%       1.0       0         Commercial & Residential       68%       44%       0.7       0         WMA Technologies       % of Market       47%       74%         Additive Foaming, %       0%       0%       0%         Plant Foaming, %       53%       26%       0%         Organic Additive, %       0%       0%       0%         WMA Feopreted Data       0%       0%       0%					
% of RAS Mixtures Using Rejuvenators†0%WMA% of Total ProductionTons, MillionTotal3.12DOT93%89%1.41Other Agency69%50%1.00Commercial & Residential68%44%0.70WMA Technologies% of Market47%74%Chemical Additive, %47%74%0%0%Plant Foaming, %0%0%0%0%Organic Additive, %0%0%0%0%Market0%0%0%0%00%0%0%0%0%00%0%0%0%0%00%0%0%0%0%00%0%0%0%0%00%0%0%0%0%00%0%0%0%0%000%0%0%0%0%000%0%0%0%0%00%0%0%0%0%000%0%0%0%0%000%0%0%0%0%000%0%0%0%0%000%0%0%0%0%000%0%0%0%0%000%0%0%0%0%000%0%0%0%000%0%0%		100%			
WMA       % of Total Production       Tons, Million         Total       3.1       2         DOT       93%       89%       1.4       1         Other Agency       69%       50%       1.0       0         Commercial & Residential       68%       44%       0.7       0         WMA Technologies       % of Market         Chemical Additive, %       47%       74%         Additive Foaming, %       0%       0%       0%         Plant Foaming, %       53%       26%       0%         Organic Additive, %       0%       0%       0%         Vother Reported Data       100%       50%       50%					
Total         3.1         2           DOT         93%         89%         1.4         1           Other Agency         69%         50%         1.0         0           Commercial & Residential         68%         44%         0.7         0           WMA Technologies         % of Market              Chemical Additive, %         47%         74%             Additive Foaming, %         0%         0%         0%             Plant Foaming, %         53%         26% </td <td>% of RAS Mixtures Using Rejuvenators</td> <td>t</td> <td>0%</td> <td></td> <td></td>	% of RAS Mixtures Using Rejuvenators	t	0%		
Total         3.1         2           DOT         93%         89%         1.4         1           Other Agency         69%         50%         1.0         0           Commercial & Residential         68%         44%         0.7         0           WMA Technologies         % of Market         ************************************	WMA	% of Total	Production	Tons,	Millions
DOT         93%         89%         1.4         1           Other Agency         69%         50%         1.0         0           Commercial & Residential         68%         44%         0.7         0           WMA Technologies         % of Market         47%         74%           Additive Foaming, %         0%         0%         0%           Plant Foaming, %         53%         26%         0%           Organic Additive, %         0%         0%         0%           Chemical Reporting Producing WMA         100%         50%         50%					2.5
Other Agency         69%         50%         1.0         0           Commercial & Residential         68%         44%         0.7         0           WMA Technologies         % of Market         47%         74%           Chemical Additive, %         0%         0%         0%           Plant Foaming, %         0%         0%         0%           Organic Additive, %         0%         0%         0%           Vother Reported Data         100%         50%         50%		93%	89%	1.4	1.8
Commercial & Residential68%44%0.70WMA Technologies% of MarketChemical Additive, %47%74%Additive Foaming, %0%0%Plant Foaming, %53%26%Organic Additive, %0%0%Other Reported Data0%% Companies Reporting Producing WMA100%50%					0.4
WMA Technologies% of MarketChemical Additive, %47%Additive Foaming, %0%Plant Foaming, %53%Organic Additive, %0%Other Reported Data% Companies Reporting Producing WMA100%		68%			0.3
Chemical Additive, %47%74%Additive Foaming, %0%0%Plant Foaming, %53%26%Organic Additive, %0%0%Other Reported Data% Companies Reporting Producing WMA100%50%		% of I	Market		
Additive Foaming, %0%Plant Foaming, %53%Organic Additive, %0%Organic Additive, %0%Other Reported Data% Companies Reporting Producing WMA100%					
Plant Foaming, %53%26%Organic Additive, %0%0%Other Reported Data% Companies Reporting Producing WMA100%50%					
Organic Additive, %     0%       Other Reported Data       % Companies Reporting Producing WMA       100%					
Other Reported Data           % Companies Reporting Producing WMA         100%         50%					
% Companies Reporting Producing WMA 100% 50%					
20 Companies reporting roudoing whith 100% 30%	% Companies Reporting Producing WMA				
	Average percent based on contractor's reported percentage for each sector, adjusted ba				

KENTUCKY	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Villions	Tons I	Villions
Total	4.1	3.2	6.5	6.9
DOT	2.8	2.0	4.5	4.2
Other Agency	0.8	0.7	1.2	1.4
Commercial & Residential	0.5	0.6	0.8	1.3
Companies Reporting	6	5	0.0	
RAP		4:11:	Tana	
	Tons, M 0.4		Tons, I 0.6	
Accepted Used in HMA/WMA Mixtures		0.5 0.4	1.0	1.0 0.9
Used in Aggregate	0.6	0.4	0.0	0.9
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	0.0	1.13	0.0
	0.7 Avg. %	- · ·	Avg. %	
	Avg. %		Avg. % Mixt	
Average % for DOT Mixtures <sup>1</sup>	16.2%	12.6%	IVIIXL	ules
Average % for Other Agency Mixtures <sup>1</sup>	17.4%	13.3%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	17.4%	13.3%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	10.0%	13.2%	15.1%	12.8%
	Other Rep	orted Data	13.176	12.070
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	50%	75%		
% of RAP Mixtures Using Softer Binders	17%	2%	-	
% of RAP Mixtures Using Rejuvenators	0%	16%		
- ·				
RAS	Tons, Th		Tons, Th	
Unprocessed Shingles Accepted	2.0	3.0	3.2	6.4
Processed Shingles Accepted	19.1	3.3	30.3	7.1
Used in HMA/WMA Mixtures	29.5	7.6	46.9	16.2
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
	Avg. %		Avg. % Used ir Mixtures	
	Mixt		Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	2.65%	0.33%	-	
Average % for Other Agency Mixtures <sup>1</sup>	2.48%	0.12%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	2.95%	0.03%	0.70%	0.000/
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	Other Der	anta d Data	0.72%	0.23%
% Companies Departing Using DAS	Other Rep		-	
% Companies Reporting Using RAS	50%	60%	-	
% of RAS Mixtures Using Softer Binders % of RAS Mixtures Using Rejuvenators	<u>†</u>	0% 11%	-	
WMA	% of Total	Production	Tons, I	
Total			3.9	4.0
DOT	60%	62%	2.7	2.6
Other Agency	67%	67%	0.8	0.9
Commercial & Residential	50%	36%	0.4	0.5
WMA Technologies	% of N	/larket		
Chemical Additive, %	8%	37%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	92%	63%		
Organic Additive, %	0%	0%		
	Other Rep			
% Companies Penerting Producing WMA				
% Companies Reporting Producing WMA	100%	80%		

 % 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.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.
 † Information not requested in 2015 Numbers may not add up exactly due to rounding

LOUISIANA	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, I	Villions	Tons	Millions
Total	*	1.9	4.0	2.7
DOT	*	0.9	*	1.3
Other Agency	*	0.4	*	0.6
Commercial & Residential	*	0.5	*	0.8
Companies Reporting	*	3		
RAP	T	A:11:	Tana	A:11:
Accepted	Tons, N	0.5	ions,	Millions 0.7
	*		*	-
Used in HMA/WMA Mixtures Used in Aggregate	*	0.4	*	0.5
Used in Cold-Mix Asphalt	*	0.0	*	0.0
Used in Other	*	0.0	*	0.0
Landfilled	*	0.0	*	0.0
	*	0.0	*	0.0
Total Tons of RAP Stockpiled at Year-End				
	Avg. % Mixt			Used in ures
Average % for DOT Mixtures <sup>1</sup>	*	21.7%	IVIIX	ules
Average % for Other Agency Mixtures <sup>1</sup>	*	15.1%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	18.6%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>		10.076	*	19.4%
State Average Air Mixtures Dased on KAP Tons Osed in ThinA/WIMA	Other Rep	orted Data		19.47
% Companies Reporting Using RAP		100%		
% of RAP Fractionated	*	80%		
% of RAP Mixtures Using Softer Binders	*	15%		
% of RAP Mixtures Using Rejuvenators	*	0%		
* ·				
RAS	Tons, Th		Tons, Th	ousands
Unprocessed Shingles Accepted	*	5.0	*	7.2
Processed Shingles Accepted	*	0.0	*	0.0
Used in HMA/WMA Mixtures	*	7.5	*	10.7
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
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	0.00%		ules
Average % for Other Agency Mixtures <sup>1</sup>	*	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	1.39%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>		1.0070	*	0.40%
	Other Rep	orted Data		0.1070
% Companies Reporting Using RAS	*	33%		
% of RAS Mixtures Using Softer Binders	+	27%		
% of RAS Mixtures Using Rejuvenators	+	14%		
	I		-	
NMA	% of Total	Production	lons,	Millions
Total	*	700/	*	2.1
DOT	*	79%	*	1.0
Other Agency	*	65%		0.4
Commercial & Residential		87%	*	0.7
WMA Technologies	% of N			
Chemical Additive, %	*	0%		
Additive Foaming, %	*	0%		
Plant Foaming, %	*	100%		
Organic Additive, %	*	0%		
	Other Rep			
% Companies Reporting Producing WMA	*	100%		
		10070		

 % Companies Reporting Producing WMA
 \*
 100%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 \*
 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 \* Information not requested in 2015
 Numbers may not add up exactly due to rounding

MAINE	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Villions	Tons. I	Millions
Total	*	2.1	2.3	1.6
DOT	*	1.0	*	0.1
Other Agency	*	0.4	*	0.3
Commercial & Residential	*	0.6	*	0.5
Companies Reporting	*	3		0.0
		1 -		
RAP	Tons, M		lons, l	Millions
Accepted	*	0.4	*	0.3
Used in HMA/WMA Mixtures	*	0.3	*	0.3
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	*	0.4	*	0.34
	Avg. %		Avg. %	Used in
	Mixt		Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	*	16.5%		
Average % for Other Agency Mixtures <sup>1</sup>	*	13.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	15.5%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			*	15.6%
	Other Rep	orted Data		
% Companies Reporting Using RAP	*	100%		
% of RAP Fractionated	*	0%		
% of RAP Mixtures Using Softer Binders	*	4%		
% of RAP Mixtures Using Rejuvenators	*	0%		
RAS	Tana Th		Tana Th	
	Tons, Th			ousands
Unprocessed Shingles Accepted	*	0.0	*	0.0
Processed Shingles Accepted	*	7.9	*	6.1
Used in HMA/WMA Mixtures	*	7.5	*	5.7
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
		Avg. % Used in Mixtures		Used in
Average % for DOT Mixtures <sup>1</sup>	*	0.48%	IVIIXL	ures
Average % for Other Agency Mixtures <sup>1</sup>	*	0.46%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	0.23%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>		0.24 /0	*	0.36%
State Average Air Mixtures Dased of RAS Tons Used in HimA/WIMA-	Other Dep	arted Data		0.30%
0/ Companies Departing Using DAS	Other Rep			
% Companies Reporting Using RAS		33%		
% of RAS Mixtures Using Softer Binders	Ť	0%		
% of RAS Mixtures Using Rejuvenators	Ť	0%		
WMA	% of Total	Production	Tons, I	Villions
Total			*	0.2
DOT	*	18%	*	0.1
Other Agency	*	8%	*	0.0
Commercial & Residential	*	16%	*	0.1
WMA Technologies	% of N			
Chemical Additive, %	*	11%		
	*			
Additive Foaming, %	*	0%		
Plant Foaming, %		23%		
Organic Additive, %	*	66%		
	Other Rep	1		
% Companies Reporting Producing WMA	*	67%		

ing

<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.
 <sup>†</sup> Information not requested in 2015 Numbers may not add up exactly due to rounding

MARYLAND	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Villions	Tons.	Villions
Total	3.3	3.3	7.5	7.5
DOT	1.0	1.3	2.2	2.9
Other Agency	1.2	0.8	2.7	1.8
Commercial & Residential	1.2	1.2	2.7	2.8
Companies Reporting	6	6		
RAP			Topo	Villions
Accepted	<u>Tons, N</u> 1.0	1.3	2.3	2.9
Used in HMA/WMA Mixtures	0.8	0.9	1.7	2.9
Used in Aggregate	0.8	0.9	0.5	0.3
Used in Cold-Mix Asphalt	0.2	0.2	0.0	0.0
Used in Other		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	1.2	1.76	2.64
	0.8 Avg. %			Used in
	Avg. %		Avg. %	
Average % for DOT Mixtures <sup>1</sup>	20.1%	24.2%	IVIIX	0165
Average % for Other Agency Mixtures <sup>1</sup>	22.5%	24.2%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	30.1%	24.9%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	30.1%	29.37	23.0%	26.2%
State Average All Mixtures Dased Of TAAL TORS Osed IT TIMA WIMA	Other Rep	orted Data	23.078	20.270
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	0%	-	
% of RAP Mixtures Using Softer Binders	3%	12%	-	
% of RAP Mixtures Using Rejuvenators	0%	8%	-	
· ·				
RAS	Tons, Th			ousands
Unprocessed Shingles Accepted	0.4	0.0	0.8	0.0
Processed Shingles Accepted	0.3	0.0	0.7	0.0
Used in HMA/WMA Mixtures	3.1	1.0	7.0	2.3
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
	Avg. %		Avg. % Used in	
Average % for DOT Mixtures1	0.52%		IVIIX	ures
Average % for DOT Mixtures <sup>1</sup>		0.05%	-	
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.01%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.43%	0.02%	0.00%	0.020/
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	Other Ben	arted Data	0.09%	0.03%
% Companies Reporting Lising RAS	Other Rep 33%			
% Companies Reporting Using RAS % of RAS Mixtures Using Softer Binders	33%	17% 0%		
% of RAS Mixtures Using Softer Binders % of RAS Mixtures Using Rejuvenators	T	0%		
NMA	% of Total	Production		Villions
Total			3.9	2.1
DOT	44%	16%	1.0	0.5
Other Agency	57%	36%	1.5	0.7
Commercial & Residential	53%	37%	1.4	1.0
WMA Technologies <sup>‡</sup>	% of N	/larket		
Chemical Additive, %	26%	35%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	74%	70%		
Organic Additive, %	0%	0%		
	Other Rep			
0/ Companies Departing Draducing M/MA				
% Companies Reporting Producing WMA	83%	50%		

 % Companies Reporting Producing WMA
 83%
 50%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

† Information not requested in 2015
 ‡ WMA Technologies use may exceed 100 due to the use of multiple WMA technologies in combination

Numbers may not add up exactly due to rounding

MASSACHUSETTS	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Villions	Tons, I	Aillions
Total	2.9	3.0	6.2	6.4
DOT	1.4	1.3	3.1	2.8
Other Agency	0.5	0.9	1.1	1.9
Commercial & Residential	0.9	0.8	2.0	1.7
Companies Reporting	4	5		
RAP			Tana	1:11:0:00
	Tons, M 0.4		Tons, I 1.0	
Accepted Used in HMA/WMA Mixtures	0.4	0.4	1.0	0.9 1.1
Used in Aggregate	0.0	0.5	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	0.0	1.0	1.10	2.04
	Avg. %	-	Avg. %	
	Mixt		Mixt	
Average % for DOT Mixtures <sup>1</sup>	18.0%	16.7%	IVIIAL	
Average % for Other Agency Mixtures <sup>1</sup>	16.6%	18.9%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	18.6%	18.5%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	10.070	10.070	18.0%	17.8%
	Other Rep	orted Data	10.070	11.070
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	6%	4%		
% of RAP Mixtures Using Softer Binders	25%	9%		
% of RAP Mixtures Using Rejuvenators	0%	0.4%		
RAS			Taura Th	
	Tons, Th		Tons, Th	
Unprocessed Shingles Accepted	0.8	6.9	1.6	14.9
Processed Shingles Accepted	2.1	2.6	4.5	5.6
Used in HMA/WMA Mixtures	2.1	2.6 0.0	4.5 5.4	5.6 0.0
Used in Aggregate Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other		0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Landilleu	0.0			
	Avg. %		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.04%	0.02%	WIXC	
Average % for Other Agency Mixtures <sup>1</sup>	0.06%	0.05%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.13%	0.24%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	0.1070	0.2170	0.07%	0.09%
	Other Rep	orted Data	0.0170	0.0070
% Companies Reporting Using RAS	50%	40%		
% of RAS Mixtures Using Softer Binders	+	0%		
% of RAS Mixtures Using Rejuvenators	+	0%		
WMA	% of Total		Tona	Ailliona
Total	70 01 TOTAL	FIGUICION	Tons, I 1.9	3.0
DOT	57%	05%	1.9	2.7
Other Agency	14%	95% 16%	0.2	0.3
Commercial & Residential	14%	3%	0.2	0.3
			0.0	0.0
WMA Technologies	% of N	1		
Chemical Additive, %	53%	65%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	6%	0%		
Organic Additive, %	41%	35%		
	Other Rep	orted Data		
% Companies Reporting Producing WMA	75%	100%		

 % Companies Reporting Producing WMA
 75%
 100%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

MICHIGAN	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Tons of HMA/WMA Produced	Tons, I	Villions	Tons.	Millions
Total	7.1	5.9	12.6	14.0
DOT	2.3	1.1	4.1	2.5
Other Agency	1.6	1.3	2.9	3.2
Commercial & Residential	3.2	3.5	5.6	8.4
Companies Reporting	5	4		-
RAP	Tons, I	Ailliona	Topo	Villions
Accepted	2.1	2.2	3.7	5.3
Used in HMA/WMA Mixtures	2.1	1.9	4.0	4.5
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	2.3	1.8	4.14	4.26
	Avg. %			Used in
	Mixt		Mixt	
Average % for DOT Mixtures <sup>1</sup>	21.5%	19.4%		
Average % for Other Agency Mixtures <sup>1</sup>	28.3%	25.6%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	38.3%	38.1%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	00.070	001170	31.6%	31.9%
	Other Rep	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	10%	20%	-	
% of RAP Mixtures Using Softer Binders	29%	24%	-	
% of RAP Mixtures Using Rejuvenators	0%	0%	-	
RAS	Tons, Th	ousands	Tons, Th	oueande
Unprocessed Shingles Accepted	0.0	2.0	0.0	4.7
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	3.2	0.5	5.8	1.2
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
Editorinod			Avg. %	
		Avg. % Used in Mixtures		ures
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.02%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.01%	-	
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>		1	0.05%	0.01%
	Other Rep	orted Data		
% Companies Reporting Using RAS	0%	25%		
% of RAS Mixtures Using Softer Binders	†	4%		
% of RAS Mixtures Using Rejuvenators	†	0%		
WMA	% of Total	Production	Tons	Millions
Total	70 01 1 0tal		7.1	0.9
DOT	62%	2%	2.6	0.9
Other Agency	31%	4%	0.9	0.0
Commercial & Residential	65%	8%	3.7	0.7
WMA Technologies		/arket	0.7	0.7
Chemical Additive, %	0%	5%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	95%		
Organic Additive, %	0%	0%		
	Other Rep	orted Data		
% Companies Reporting Producing WMA	80%	75%		

 % Companies Reporting Producing WMA
 80%
 75%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

MINNESOTA	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, I	Villions	Tons	Villions
Total	6.1	4.6	13.5	13.0
DOT	1.4	0.7	3.2	2.1
Other Agency	2.9	2.4	6.5	6.7
Commercial & Residential	1.8	1.5	3.9	4.2
Companies Reporting	7	5		
RAP		4:11:0:00	Tana	
Accepted	Tons, M 1.4	1.1	3.0	Millions 3.0
Used in HMA/WMA Mixtures	1.4	1.1	3.0	2.7
Used in Aggregate	0.0	0.2	0.1	0.5
Used in Cold-Mix Asphalt	0.0	0.2	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	0.0	3.61	2.61
	Avg. %			Used in
	Mixt			ures
Average % for DOT Mixtures <sup>1</sup>	20.7%	20.9%	IVIIXL	0165
Average % for Other Agency Mixtures <sup>1</sup>	23.5%	20.9%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	23.0%	21.2%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	23.078	21.0%	21.9%	21.1%
	Other Rep	orted Data	21.370	21.170
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	3%		
% of RAP Mixtures Using Softer Binders	16%	5%	-	
% of RAP Mixtures Using Rejuvenators	0%	3%		
- · ·				
RAS	Tons, Th			ousands
Unprocessed Shingles Accepted	0.0	0.5	0.0	1.4
Processed Shingles Accepted	2.6	2.3	5.6	6.4
Used in HMA/WMA Mixtures	5.5	2.3	12.0	14.9
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
		Avg. % Used in Mixtures		Used in
Average 0/ fer DOT Misturgel			Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	0.10%	0.08%	-	
Average % for Other Agency Mixtures <sup>1</sup>	3.26%	0.18%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.84%	0.03%	0.00%	0.440/
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	Other Der	arted Data	0.09%	0.11%
0/ Componing Departing Llaing DAS	Other Rep		-	
% Companies Reporting Using RAS	43%	40%		
% of RAS Mixtures Using Softer Binders % of RAS Mixtures Using Rejuvenators	<u>†</u>	0% 0%		
WMA	% of Total	Production		Villions
Total			9.1	10.4
DOT	43%	33%	1.3	0.7
Other Agency	77%	89%	5.0	6.0
Commercial & Residential	73%	89%	2.8	3.7
WMA Technologies	% of N	/larket		
Chemical Additive, %	3%	1%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	97%	99%		
Organic Additive, %	0%	0%		
	Other Rep			
0/ Companies Departing Draducing 14/144				
% Companies Reporting Producing WMA	100%	80%		

 % 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.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.
 † Information not requested in 2015 Numbers may not add up exactly due to rounding

MISSISSIPPI	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Tons of HMA/WMA Produced	Tons.	Villions	Tons. I	Villions
Total	2.1	2.7	4.5	4.7
DOT	1.5	1.8	3.1	3.2
Other Agency	0.4	0.4	0.8	0.7
Commercial & Residential	0.3	0.5	0.6	0.9
Companies Reporting	3	4		
RAP	Tons, I	Villiona	Topo	Villions
Accepted	0.4	0.6	0.8	1.1
Used in HMA/WMA Mixtures	0.4	0.5	0.8	0.9
Used in Aggregate	0.4	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	0.6	0.0	1.22	0.83
		Used in		Used in
		ures	Mixt	
Average % for DOT Mixtures <sup>1</sup>	19.1%	15.6%	IVIIX	
Average % for Other Agency Mixtures <sup>1</sup>	18.6%	20.9%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	24.4%	32.3%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	24.470	02.070	17.1%	19.5%
	Other Rep	orted Data	17.170	10.070
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	43%	27%	-	
% of RAP Mixtures Using Softer Binders	0%	0%	-	
% of RAP Mixtures Using Rejuvenators	0%	0%	-	
RAS		ousands		ousands
Unprocessed Shingles Accepted	0.0	1.0	0.0	1.8
Processed Shingles Accepted	7.3	0.0	15.8	0.0
Used in HMA/WMA Mixtures	1.0	0.9	2.1	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
	Avg. % Mixt	Used in	Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%	IVIIX	ules
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.00%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.92%	0.18%	-	
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	110270	0.1070	0.05%	0.03%
	Other Rep	orted Data	0.0070	0.0070
% Companies Reporting Using RAS	33%	25%		
% of RAS Mixtures Using Softer Binders	+	0%		
% of RAS Mixtures Using Rejuvenators	+	0%	-	
× ·			Tana	Villions
WMA Total	% or rotal	Production		
Total DOT	19%	670/	1.1 0.6	3.2
Other Agency	36%	67% 95%		2.1
			0.3	0.7
Commercial & Residential	30%	43%	0.2	0.4
WMA Technologies		Market		
Chemical Additive, %	0%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	100%		
Organic Additive, %	0%	0%		
		orted Data		
% Companies Reporting Producing WMA	100%	75%		

 % Companies Reporting Producing WMA
 100%
 75%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

MISSOURI	Reporte	d Values	Estimate	d Values	
	2015	2016	2015	2016	
Fons of HMA/WMA Produced	Tons, I	Villions	Tons	Millions	
Total	1.6	1.8	6.0	6.3	
DOT	1.1	0.9	3.9	3.2	
Other Agency	0.3	0.3	1.0	0.9	
Commercial & Residential	0.3	0.7	1.0	2.3	
Companies Reporting	4	4			
RAP		4:11:0:00	Tana		
	Tons, I 0.3	0.4	1.3	Millions	
Accepted Used in HMA/WMA Mixtures	0.3	0.4	1.3	1.3 1.5	
Used in Aggregate	0.4	0.4	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	1.1	0.76	3.84	
	Avg. %			Used in	
	Mixt			ures	
Average % for DOT Mixtures <sup>1</sup>	22.3%	23.3%		ules	
Average % for Other Agency Mixtures <sup>1</sup>	20.3%	20.5%			
Average % for Commercial & Residential Mixtures <sup>1</sup>	18.2%	23.6%			
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	10.270	23.078	23.5%	23.0%	
	Other Rep	orted Data	20.070	20.070	
% Companies Reporting Using RAP	100%	100%			
% of RAP Fractionated	0%	32%			
% of RAP Mixtures Using Softer Binders	35%	4%			
% of RAP Mixtures Using Rejuvenators	19%	0%			
RAS	Tons, Th			nousands	
Unprocessed Shingles Accepted	20.1	0.5	74.9	1.7	
Processed Shingles Accepted	2.0	3.0	7.5	10.5	
Used in HMA/WMA Mixtures	26.1	6.6	97.4	22.9	
Used in Aggregate	0.2	0.0	0.6	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	
		Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	1.02%	0.43%	IVIIX	ures	
Average % for Other Agency Mixtures <sup>1</sup>	2.28%	0.43%	-		
Average % for Commercial & Residential Mixtures <sup>1</sup>	2.63%	0.21%	-		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	2.0370	0.3378	1.62%	0.36%	
State Average Air Mixtures Dased on NAS Tons Osed in ThinA WIMA	Other Rep	orted Data	1.02 /0	0.3076	
% Companies Reporting Using RAS	100%	75%			
% of RAS Mixtures Using Softer Binders	+	0%			
% of RAS Mixtures Using Rejuvenators		0%			
WMA	% of Total	Production		Millions	
Total			2.3	1.4	
DOT	37%	36%	1.5	1.1	
Other Agency	47%	21%	0.5	0.2	
Commercial & Residential	35%	3%	0.4	0.1	
WMA Technologies	% of N	/larket			
Chemical Additive, %	48%	0%			
Additive Foaming, %	0%	0%			
Plant Foaming, %	52%	92%			
Organic Additive, %	0%	9%			
	Other Rep				
% Companies Reporting Producing WMA	100%	100%			
	100 /0	100 /0			

 % Companies Reporting Producing WMA
 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.

 † Information not requested in 2015

 Numbers may not add up exactly due to rounding

MONTANA	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Villions	Tons.	Millions
Total	*	*	4.1	3.9
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
RAP	Tons, M	Villions	Tons, I	Villions
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	Avg. % Used in	
	Mixt		Mixt	
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 Rep	orted Data		
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*	-	
% of RAP Mixtures Using Softer Binders	*	*	-	
	*	*	-	
% of RAP Mixtures Using Rejuvenators				
RAS	Tons, Th	ousands	Tons, Th	ousands
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
	Ava %	Used in	Avg. %	Used in
		Avg. % Used in Mixtures		
Average % for DOT Mixtures <sup>1</sup>	*	*	Mixt	ulco
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>	A <sup>2</sup> Other Reported Data			
	Other Rep			
% Companies Reporting Using RAS	^	*	-	
% of RAS Mixtures Using Softer Binders	†	*		
% of RAS Mixtures Using Rejuvenators	†	*		
NMA	% of Total	Production	Tons. I	Villions
Total	,		*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
WMA Technologies	% of N	harket		
Chemical Additive, %	*	*		
Additive Foaming, %	*	*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Rep	orted Data		
0/ Ocean anian Descenting Descharing 10/040				
% Companies Reporting Producing WMA	*	*		

% 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.
 † Information not requested in 2015 Numbers may not add up exactly due to rounding

NEBRASKA	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
ons of HMA/WMA Produced	Tons, I	Aillions	Tons	Villions
Total	*	*	3.0	2.7
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
RAP	Tons, I	Villions	Tons, I	Villions
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		Avg. % Used in	
	Mixt	ures	Mixt	ures
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 Rep	orted Data		
% Companies Reporting Using RAP	*	*	-	
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*	-	
% of RAP Mixtures Using Rejuvenators	*	*		
RAS	<b>T T</b>		Taura Th	
	Tons, Th	ousands		ousands
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt				
Used in Other	*	*	*	*
Landfilled	*	*	*	*
	Avg. % Used in		Avg. %	
	Mixt	ures *	Mixt	ures
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 Rep	orted Data		
% Companies Reporting Using RAS	*	*		
% of RAS Mixtures Using Softer Binders	†	*		
% of RAS Mixtures Using Rejuvenators	†	*		
WMA	% of Total	Production	Tons.	Villions
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
WMA Technologies	0/ of M	/larket		l
	*			
Chemical Additive, %				
Additive Foaming, %	*	*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Rep	orted Data		
% Companies Reporting Producing WMA	*	*		
	· · · · · · · · · · · · · · · · ·	1		

% 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.
 † Information not requested in 2015 Numbers may not add up exactly due to rounding

NEVADA	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, I	Villions	Tons	Millions
Total	*	1.0	3.5	3.3
DOT	*	0.1	*	0.5
Other Agency	*	0.5	*	1.7
Commercial & Residential	*	0.3	*	1.2
Companies Reporting	*	3		1.2
		1 -	Τ	A:11:
RAP	Tons, I	0.2	Tons,	Millions 0.8
Accepted Used in HMA/WMA Mixtures	*	0.2	*	
	*		*	0.7
Used in Aggregate Used in Cold-Mix Asphalt	*	0.0	*	0.1
Used in Other	*	0.0	*	0.0
Landfilled	*		*	0.0
	*	0.0	*	0.0
Total Tons of RAP Stockpiled at Year-End	Avg. %	-		Used in
	Mixt			ures
Average % for DOT Mixtures <sup>1</sup>	*	11.6%	IVIIX	ules
Average % for Other Agency Mixtures <sup>1</sup>	*	24.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	24.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>		21.770	*	21.7%
	Other Rep	orted Data		21.77
% Companies Reporting Using RAP		100%		
% of RAP Fractionated	*	0%		
% of RAP Mixtures Using Softer Binders	*	12%		
% of RAP Mixtures Using Rejuvenators	*	0%		
RAS	Tons, Th		Tons, Th	nousands
Unprocessed Shingles Accepted	*	0.3	*	0.9
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
		Avg. % Used in Mixtures		Used in
Average % for DOT Mixtures <sup>1</sup>	IVIIXt		IVIIXI	ures
	*	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	*	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>		0.00%	*	0.000/
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	Other Reported Data			0.00%
% Companies Reporting Using RAS		33%		
% of RAS Mixtures Using Softer Binders % of RAS Mixtures Using Rejuvenators	T	0% 0%		
	I			
NMA	% of Total	Production	Tons,	Millions
Total		,	*	0.1
DOT	*	0%	*	0.0
Other Agency	*	0%	*	0.0
Commercial & Residential	*	9%	*	0.1
WMA Technologies	% of N	/larket		
Chemical Additive, %	*	0%		
Additive Foaming, %	*	0%		
Plant Foaming, %	*	100%		
Organic Additive, %	*	0%		
	Other Rep			
0/ Companies Departing Draduaing \A/\\AA		1		
% Companies Reporting Producing WMA	^	100%		

 % Companies Reporting Producing WMA
 \*
 100%

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

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

 † Information not requested in 2015

 Numbers may not add up exactly due to rounding

NEW HAMPSIRE	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Villions	Tons, I	Villions
Total	1.3	1.5	1.8	1.4
DOT	0.4	0.5	0.5	0.4
Other Agency	0.3	0.4	0.4	0.4
Commercial & Residential	0.6	0.7	0.8	0.6
Companies Reporting	3	3		
RAP	Tons, N	Ailliana	Tons, I	Villiana
Accepted	0.1	0.3	0.1	0.3
Used in HMA/WMA Mixtures	0.1	0.3	0.1	0.3
Used in Aggregate	0.2	0.0	0.3	0.3
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	0.0	0.0	0.0
	Avg. % Used in			Used in
	Avg. %		Avg. % Mixt	
Average % for DOT Mixtures <sup>1</sup>	22.8%	19.0%	IVIIXU	0100
Average % for Other Agency Mixtures <sup>1</sup>	22.0%	20.3%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	23.8%	20.3%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	23.07	21.070	18.5%	20.6%
State Average All Mixtures Dased of TAIL Tons Osed IT HMA/WIMA	Other Rep	orted Data	10.576	20.076
% 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%	0%		
RAS	Tons, Th	1		ousands
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	2.5	3.8	3.4	3.6
Used in HMA/WMA Mixtures	2.5	3.4	3.4	3.2
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
		Avg. % Used in		Used in
Automatic Of fear DOT Minterest	Mixt		Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	2.31%	0.05%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	2.75%	0.48%	0.40%	0.000/
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	Other Der	auta d Data	0.19%	0.23%
0/ Companies Departing Llaing DAS	Other Rep			
% Companies Reporting Using RAS	33%	33%		
% of RAS Mixtures Using Softer Binders	<u>†</u>	0%		
% of RAS Mixtures Using Rejuvenators		0%		
WMA	% of Total	Production		Villions
Total			0.9	0.4
DOT	64%	26%	0.3	0.1
Other Agency	38%	40%	0.2	0.1
Commercial & Residential	46%	23%	0.4	0.1
WMA Technologies	% of N	/larket		
Chemical Additive, %	20%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	70%	55%		
Organic Additive, %	10%	45%		
	Other Rep			
0/ Companies Departing Producting 10/040		1		
% Companies Reporting Producing WMA	33%	67%		

 % Companies Reporting Producing WMA
 33%
 67%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

NEW JERSEY	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Villions	Tons.	Millions
Total	*	2.7	8.7	4.5
DOT	*	0.3	*	0.5
Other Agency	*	1.7	*	2.8
Commercial & Residential	*	0.8	*	1.3
Companies Reporting	*	3		_
RAP	Tons, N	Ailliono	Topo	Millions
Accepted	*	1.2	*	1.9
Used in HMA/WMA Mixtures	*	0.5	*	0.9
Used in Aggregate	*	0.5	*	0.9
Used in Cold-Mix Asphalt	*	0.0	*	0.2
Used in Other	*	0.0	*	0.0
Landfilled	*	0.0	*	0.0
Total Tons of RAP Stockpiled at Year-End	*	2.33	*	3.84
	Avg. %			Used in
	Avg. %			ures
Average % for DOT Mixtures <sup>1</sup>	*	19%	IVIIX	0165
Average % for Other Agency Mixtures <sup>1</sup>	*	19%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	23%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>		23%	*	19%
State Average All Mixtures Based on RAP Tons Used in HMA/WMA-	Other Ben	artad Data		1970
% Companies Reporting Using RAP	Other Rep	100%		
% of RAP Fractionated	*	16%	-	
% of RAP Mixtures Using Softer Binders	*	7%		
	*	0%		
% of RAP Mixtures Using Rejuvenators				
RAS	Tons, Th		Tons, Th	ousands
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
	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>		ł	*	0.00%
	Other Rep	orted Data		
% Companies Reporting Using RAS	*	0%		
% of RAS Mixtures Using Softer Binders	+	0%		
% of RAS Mixtures Using Rejuvenators	+	0%		
WMA	% of Total	Braduction	Topo	Millions
Total	76 UT TUIAI		*	1.5
DOT	*	10%	*	0.1
Other Agency	*	41%	*	1.1
Commercial & Residential	*	22%	*	0.3
				0.3
WMA Technologies	<u>% of N</u>			
Chemical Additive, %	*	2%		
Additive Foaming, %	*	0%		
Plant Foaming, %	*	98%		
Organic Additive, %	*	0%		
	Other Rep	orted Data		
% Companies Reporting Producing WMA	*	67%		
		0.70		

% 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.
 † Information not requested in 2015 Numbers may not add up exactly due to rounding

NEW MEXICO	Reported	l Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, N	lillions	Tons, I	Millions
Total	NCR	1.0	3.5	3.5
DOT	NCR	0.5	NCR	1.8
Other Agency	NCR	0.2	NCR	0.8
Commercial & Residential	NCR	0.2	NCR	0.8
Companies Reporting	NCR	4	Horr	0.0
			_	
RAP	Tons, N		Tons, I	
Accepted	NCR	0.4	NCR	1.2
Used in HMA/WMA Mixtures	NCR	0.2	NCR	0.8
Used in Aggregate	NCR	0.0	NCR	0.0
Used in Cold-Mix Asphalt	NCR	0.0	NCR	0.0
Used in Other	NCR	0.0	NCR	0.0
Landfilled	NCR	0.0	NCR	0.0
Total Tons of RAP Stockpiled at Year-End	NCR	0.1	NCR	0.35
	Avg. %		Avg. %	
	Mixtu		Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	NCR	24%		
Average % for Other Agency Mixtures <sup>1</sup>	NCR	17%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	NCR	23%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			NCR	22%
	Other Repo			
% Companies Reporting Using RAP	NCR	100%		
% of RAP Fractionated	NCR	52%		
% of RAP Mixtures Using Softer Binders	NCR	28%	-	
% of RAP Mixtures Using Rejuvenators	NCR	0%		
RAS	Tons, Th	Tons, Thousands		ousands
Unprocessed Shingles Accepted	NCR	1.5	NCR	5.2
Processed Shingles Accepted	NCR	0.0	NCR	0.0
Used in HMA/WMA Mixtures	NCR	1.3	NCR	4.4
Used in Aggregate	NCR	0.0	NCR	0.0
Used in Cold-Mix Asphalt	NCR	0.0	NCR	0.0
Used in Other	NCR	0.0	NCR	0.0
Landfilled	NCR	0.0	NCR	0.0
Editoritod	Avg. %		Avg. %	
		Mixtures		ures
Average % for DOT Mixtures <sup>1</sup>	NCR	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	NCR	0.00%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	NCR	0.53%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			NCR	0.00%
	Other Repo	orted Data		
% Companies Reporting Using RAS	NCR	25%		
% of RAS Mixtures Using Softer Binders	+	2%		
% of RAS Mixtures Using Rejuvenators	+	0%		
	0/ of Total I	•	Tana	1:11:0:00
WMA	% of Total I	roduction		Villions
Total		400/	NCR	1.0
DOT	NCR	40%	NCR	0.7
Other Agency	NCR	22%	NCR	0.2
Commercial & Residential	NCR	8%	NCR	0.1
WMA Technologies	% of N			
Chemical Additive, %	NCR	0%		
Additive Foaming, %	NCR	0%		
Plant Foaming, %	NCR	100%		
Organic Additive, %	NCR	0%		
	Other Repo			
% Companies Reporting Producing WMA	NCR	100%		
	NUK	100 /0		

 % Companies Reporting Producing WMA
 NCR
 100%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

NEW YORK	Reporte	d Values	Estimate	d Values	
	2015	2016	2015	2016	
Fons of HMA/WMA Produced	Tons, I	Villions	Tons, I	Millions	
Total	7.2	5.7	16.8	17.0	
DOT	2.0	1.7	4.7	5.0	
Other Agency	3.0	2.1	7.0	6.2	
Commercial & Residential	2.2	2.0	5.2	5.8	
Companies Reporting	12	10			
RAP	Tana	Ailliana	Tana		
	<u>Tons, I</u> 1.1	0.9	2.5	Villions 2.6	
Accepted					
Used in HMA/WMA Mixtures Used in Aggregate	<u> </u>	0.9	2.7 0.1	2.8 0.1	
Used in Cold-Mix Asphalt	0.0	0.0	0.1	0.1	
Used in Other	0.0	0.0	0.0	0.0	
Landfilled				0.0	
Total Tons of RAP Stockpiled at Year-End	0.0	0.0	0.0 2.58	4.1	
Total Tons of RAP Stockpiled at Year-End	Avg. %			Used in	
	Mixt		Avg. %		
Average % for DOT Mixtures <sup>1</sup>	18.0%	16%	IVIIX	0105	
Average % for Other Agency Mixtures <sup>1</sup>	18.9%	16%			
Average % for Commercial & Residential Mixtures <sup>1</sup>	17.0%	17%	-		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	17.070	17/0	16.1%	16.2%	
State Average All Mixtures Dased of TAAL Tons Osed in LimA WMA	Other Rep	orted Data	10.178	10.270	
% Companies Reporting Using RAP	100%	100%			
% of RAP Fractionated	15%	12%	-		
% of RAP Mixtures Using Softer Binders	3%	12 //	-		
% of RAP Mixtures Using Rejuvenators	9%	6%	-		
RAS		ousands		ousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0	
Processed Shingles Accepted	0.3	0.0	0.6	0.0	
Used in HMA/WMA Mixtures	0.3	0.0	0.6	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	
		Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%	IVIIX	ules	
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>	0:1070	0.0070	0.00%	0.00%	
	Other Rep	orted Data	0:0070	0.0070	
% Companies Reporting Using RAS	8%	0%			
% of RAS Mixtures Using Softer Binders	+	0%	-		
% of RAS Mixtures Using Rejuvenators	+	0%	-		
			_		
	% of Total	Production		Millions	
Total	0.001	050/	3.3	4.2	
DOT	30%	35%	1.4	1.7	
Other Agency	20%	23%	1.4	1.3	
Commercial & Residential	11%	19%	0.6	1.1	
WMA Technologies		/larket			
Chemical Additive, %	49%	28%			
Additive Foaming, %	0%	0%			
Plant Foaming, %	51%	72%			
Organic Additive, %	0%	0%			
		orted Data			
% Companies Reporting Producing WMA	83%	100%			
	03%	100%			

 % Companies Reporting Producing WMA
 83%
 100%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

NORTH CAROLINA	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Tons of HMA/WMA Produced	Tons, M	Villions	Tons	Millions
Total	5.9	4.8	11.0	15.0
DOT	3.8	2.8	7.1	8.6
Other Agency	0.7	0.6	1.3	2.0
Commercial & Residential	1.4	1.4	2.6	4.4
Companies Reporting	8	6	2.0	
		<u></u>		
RAP	Tons, M			Millions
Accepted	1.3	1.1	2.4	3.6
Used in HMA/WMA Mixtures	1.6	1.1	2.9	3.4
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 3.02	0.0
Total Tons of RAP Stockpiled at Year-End	1.6			3.5
	Avg. %			Used in
	Mixt		Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	26.6%	21.1%		
Average % for Other Agency Mixtures <sup>1</sup>	20.5%	22.7%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	30.6%	25.8%		00 70/
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			26.3%	22.7%
	Other Rep			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	34%	39%	_	
% of RAP Mixtures Using Softer Binders	30%	49%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th	ousands	Tons. Th	nousands
Unprocessed Shingles Accepted	37.0	79.0	68.7	248.2
Processed Shingles Accepted	46.7	51.0	86.6	160.2
Used in HMA/WMA Mixtures	73.7	71.3	136.8	223.9
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
	Avg. %		Ava. %	Used in
	Mixt		Mixtures	
Average % for DOT Mixtures <sup>1</sup>	2.73%	1.82%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	1.65%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.25%	0.77%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			1.24%	1.49%
	Other Rep	orted Data		
% Companies Reporting Using RAS	38%	50%		
% of RAS Mixtures Using Softer Binders	†	54%		
% of RAS Mixtures Using Rejuvenators	+	0%		
WMA	% of Total		Topo	Millions
Total	76 UT TULAT		0.4	0.0
DOT	4%	0.3%	0.4	0.0
		0.3%		
Other Agency	0% 5%	0%	0.0	0.0
Commercial & Residential			0.1	0.0
WMA Technologies	% of N			
Chemical Additive, %	36%	100%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	64%	0%		
riant realining, 70				
Organic Additive, %	0%	0%		
	0% Other Rep			

 % Companies Reporting Producing WMA
 63%
 17%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

NORTH DAKOTA	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
ons of HMA/WMA Produced	Tons	Millions	Tons	Millions
Total	*	*	3.0	2.1
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
RAP	Tons, I	Millions	Tons, I	Villions
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	Avg. %	Used in
		ures	Mixt	
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 Ren	orted Data		
% Companies Reporting Using RAP	*			
% of RAP Fractionated	*	*	-	
% of RAP Mixtures Using Softer Binders	*	*	-	
	*	*	-	
% of RAP Mixtures Using Rejuvenators				
RAS	Tons, Th	nousands	Tons, Th	ousands
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Euronioa	Δνα %	Used in	Δνα %	Used in
	Mixt	Mixtures		
Average % for DOT Mixtures <sup>1</sup>	*	*	I IIIX	
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>			*	*
State Average All Mixtures Dased of KAS Toris Osed in ThinAvvinA	Other Ben	ortod Data		
0/ Componing Departing Lloing DAS		orted Data		
% Companies Reporting Using RAS		*	-	
% of RAS Mixtures Using Softer Binders	<u>†</u>	*		
% of RAS Mixtures Using Rejuvenators	Ť	Ŷ		
NMA	% of Total	Production	Tons, I	Villions
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
WMA Technologies	% of 1	Market		
	/0 UT	*		
Chemical Additive, %	<b>^</b>	^		
Additive Foaming, %	*	*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Rep	orted Data		
% Companies Reporting Producing WMA	*	*		
		1		

% 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.
 † Information not requested in 2015 Numbers may not add up exactly due to rounding

ОНЮ	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Tons of HMA/WMA Produced	Tons, M	Aillions	Tons.	Millions
Total	11.0	10.4	17.4	19.0
DOT	5.7	3.8	9.0	6.9
Other Agency	3.2	3.5	5.1	6.42
Commercial & Residential	2.1	3.1	3.3	5.7
Companies Reporting	4	5		
RAP	Tons, N	Ailliona	Topo	Millions
Accepted	2.5	2.8	4.0	5.1
Used in HMA/WMA Mixtures	3.1	2.8	4.8	5.2
Used in Aggregate	0.1	0.0	0.2	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.2	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.2
Total Tons of RAP Stockpiled at Year-End	2.0	2.2	3.13	3.96
	Avg. %			Used in
	Mixt		Mixt	
Average % for DOT Mixtures <sup>1</sup>	33.2%	28.3%	IVIIAL	ules
Average % for Other Agency Mixtures <sup>1</sup>	27.3%	26.5%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	30.6%	27.0%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	30.070	21.070	27.8%	27.3%
	Other Rep	orted Data	21.070	21.070
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	19%	6%		
% of RAP Mixtures Using Softer Binders	24%	24%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th			ousands
Unprocessed Shingles Accepted	12.0	0.2	19.0	0.4
Processed Shingles Accepted	2.2	0.8	3.5	1.4
Used in HMA/WMA Mixtures	14.9	18.7	23.5	34.1
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
		Avg. % Used in Mixtures		Used in
			Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	2.07%	0.16%		
Average % for Other Agency Mixtures <sup>1</sup>	2.39%	0.19%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.30%	0.20%	0.4.49/	0.4.00/
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.14%	0.18%
0/ Ocean entire Departie e Using DAO	Other Rep			
% Companies Reporting Using RAS	50%	40%		
% of RAS Mixtures Using Softer Binders	<u>†</u>	0%		
% of RAS Mixtures Using Rejuvenators	Ť	0%		
WMA	% of Total	Production	Tons, I	Villions
Total			10.1	11.1
DOT	59%	64%	5.3	4.4
Other Agency	55%	54%	2.8	3.4
Commercial & Residential	59%	58%	2.0	3.3
WMA Technologies	% of N	/larket		
Chemical Additive, %	0%	0%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	100%		
Organic Additive, %	0%	0%		
	Other Rep			
% Companies Reporting Producing WMA	100%	80%		

 % 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.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.
 † Information not requested in 2015 Numbers may not add up exactly due to rounding

OKLAHOMA	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Tons of HMA/WMA Produced	Tons, M	Aillions	Tons.	Millions
Total	2.1	2.2	6.3	5.2
DOT	1.0	1.1	3.1	2.6
Other Agency	0.3	0.4	0.9	0.9
Commercial & Residential	0.7	0.7	2.3	1.7
Companies Reporting	5	5		
RAP	Tons, N		Topo	Villions
Accepted	0.5	0.2	1.6	0.5
Used in HMA/WMA Mixtures	0.3	0.2	1.0	0.9
Used in Aggregate	0.0	0.4	0.0	0.9
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	0.0	1.67	0.0
	Avg. %		Avg. %	
	Mixt		Mixt	
Average % for DOT Mixtures <sup>1</sup>	18.1%	14.3%	IVIIAL	
Average % for Other Agency Mixtures <sup>1</sup>	18.1%	16.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	24.5%	20.4%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	24.070	20.470	19.6%	16.7%
	Other Rep	orted Data	10.070	10.170
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	83%	50%	-	
% of RAP Mixtures Using Softer Binders	7%	5%	-	
% of RAP Mixtures Using Rejuvenators	0%	0%	-	
RAS	Tons, Th		Tons, Th	
Unprocessed Shingles Accepted	35.0	28.3	106.6	66.7
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	17.6	8.7	53.6	20.6
Used in Aggregate	0.0	0.0	0.3	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
	Avg. % Mixt		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.05%	Ινιιχι	ules
Average % for Other Agency Mixtures <sup>1</sup>	0.94%	0.05%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	3.09%	1.11%	-	
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	0.0070	1.1170	0.85%	0.40%
	Other Rep	orted Data	0.0070	0.4070
% Companies Reporting Using RAS	40%	40%		
% of RAS Mixtures Using Softer Binders	+	39%	-	
% of RAS Mixtures Using Rejuvenators	+	0%	-	
			_	
WMA	% of Total	Production		Millions
Total	4004	000/	3.1	1.9
DOT	49%	38%	1.5	1.0
Other Agency	62%	39%	0.6	0.3
Commercial & Residential	44%	38%	1.0	0.7
WMA Technologies	% of N			
Chemical Additive, %	0%	7%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	93%		
Organic Additive, %	0%	0%		
	Other Rep			
% Companies Reporting Producing WMA	80%	80%		
	00 /0	0070		

 % Companies Reporting Producing WMA
 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.

 † Information not requested in 2015

 Numbers may not add up exactly due to rounding

OREGON	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, I	Villions	Tons	Millions
Total	1.7	1.6	4.9	5.4
DOT	0.3	0.5	0.7	1.6
Other Agency	0.5	0.4	1.4	1.2
Commercial & Residential	0.9	0.8	2.7	2.7
Companies Reporting	4	5		
RAP		Aillione	Tana	
Accepted	Tons, I 0.5	0.4	1.6	Millions 1.2
Used in HMA/WMA Mixtures		0.4	1.0	1.2
Used in Aggregate	0.5	0.4	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	0.0	1.51	2.19
	Avg. %			Used in
	Mixt			ures
Average % for DOT Mixtures <sup>1</sup>	25.1%	20.6%		ules
Average % for Other Agency Mixtures <sup>1</sup>	22.5%	20.0%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	28.8%	22.5%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	20.078	22.370	27.1%	21.8%
	Other Rep	orted Data	27.170	21.070
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	3%	7%	-	
% of RAP Mixtures Using Softer Binders	23%	35%	-	
% of RAP Mixtures Using Rejuvenators	5%	31%	-	
RAS	Tons, Th			ousands
Unprocessed Shingles Accepted	30.0	20.0	87.2	67.0
Processed Shingles Accepted	2.8	0.0	8.2	0.0
Used in HMA/WMA Mixtures	36.9	12.0	107.3	40.6
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
	Avg. %		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%	IVIIX	ures
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.68%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	2.78%	1.22%	-	
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	2.70%	1.2270	2.21%	0.75%
State Average All Mixtures Dased of TAS Tons Osed in ThinA WIMA	Other Rep	orted Data	2.21/0	0.7576
% Companies Reporting Using RAS	100%	60%		
% of RAS Mixtures Using Softer Binders	+	72%	-	
% of RAS Mixtures Using Rejuvenators	+	75%	-	
WMA	% of Total	Production		Millions
Total			0.5	0.8
DOT	13%	13%	0.1	0.2
Other Agency	12%	27%	0.2	0.3
Commercial & Residential	10%	11%	0.3	0.3
WMA Technologies	% of M	Market		
Chemical Additive, %	0%	2%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	100%	98%		
Organic Additive, %	0%	0%		
		orted Data		
% Companies Reporting Producing WMA	75%	60%		
	13%	00%		

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

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

PENNSYLVANIA	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	<i>l</i> illions	Tons	Millions
Total	4.6	7.3	19.4	19.0
DOT	2.4	4.3	10.1	11.1
Other Agency	0.7	1.1	2.8	2.8
Commercial & Residential	1.5	1.2	6.5	5.1
Companies Reporting	8	10	0.0	0.1
			-	A.111
RAP	Tons, M			Millions
	0.6	1.1	2.6	2.8
Used in HMA/WMA Mixtures	0.7	1.1	2.9	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	1.0	1.6	4.11	4.12
	Avg. %		Avg. %	Used in ures
Average % for DOT Mixtures <sup>1</sup>	Mixt 16.4%	14.8%	IVIIX	ules
Average % for DOT Mixtures <sup>1</sup> Average % for Other Agency Mixtures <sup>1</sup>	16.4%	14.8%		
Average % for Other Agency Mixtures <sup>1</sup> Average % for Commercial & Residential Mixtures <sup>1</sup>	21.0%	14.9%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	21.0%	15.3%	14.9%	14.9%
State Average All Mixtures Dased on KAP Tons Used in ThinA/WIMA	Other Ben	orted Data	14.9%	14.970
% Companies Reporting Using RAP	Other Rep 100%	100%		
% of RAP Fractionated	19%	2%	-	
% of RAP Mixtures Using Softer Binders	6%	3%	-	
% of RAP Mixtures Using Rejuvenators	4%	5%	-	
- ·				
RAS	Tons, Th		Tons, Th	
Unprocessed Shingles Accepted	46.0	37.5	194.3	97.4
Processed Shingles Accepted	0.0	1.5	0.0	3.9
Used in HMA/WMA Mixtures	53.0	5.4	223.9	14.0
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	0.2	0.0	0.5
		Avg. % Used in		Used in
Average 0/ for DOT Mixturee1	Mixt 1.56%	1	IVIIX	ures
Average % for DOT Mixtures <sup>1</sup> Average % for Other Agency Mixtures <sup>1</sup>	2.06%	0.06%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	2.06%	0.08%	-	
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	2.1370	0.10%	1.15%	0.07%
State Average All Mixtures Dased on KAS Tons Used in ThMA/WMA	Other Rep	orted Data	1.15%	0.07 /d
% Companies Reporting Using RAS	38%	20%		
% of RAS Mixtures Using Softer Binders		0%	-	
% of RAS Mixtures Using Rejuvenators	+	21%		
NMA	% of Total	Production		Millions
Total		1	9.4	8.3
DOT	78%	58%	7.8	6.4
Other Agency	18%	29%	0.5	0.8
Commercial & Residential	17%	20%	1.1	1.0
WMA Technologies	% of N	larket		
Chemical Additive, %	70%	36%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	30%	65%		
Organic Additive, %	0%	0%		
	Other Rep			
% Companies Reporting Producing WMA	88%	100%		
	00 70	100%		

 % Companies Reporting Producing WMA
 88%
 100%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

PUERTO RICO	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Villions	Tons	Millions
Total	*	NCR	1.0	1.0
DOT	*	NCR	*	NCR
Other Agency	*	NCR	*	NCR
Commercial & Residential	*	NCR	*	NCR
Companies Reporting	*	NCR		NCK
		NCR		
RAP	Tons, M		Tons, I	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. %		Ava %	Used in
	Mixt			ures
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>		NCK	*	NCR
State Average All Mixtures based on RAP Tons Used in HMA/WMA-	Oth an Dan	anta d Data		NCK
	Other Rep			
% Companies Reporting Using RAP	*	NCR		
% of RAP Fractionated		NCR		
% of RAP Mixtures Using Softer Binders	*	NCR		
% of RAP Mixtures Using Rejuvenators	*	NCR		
RAS	Tons, Th	ousands	Tons. Th	nousands
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
Landined	Δια 9/		Aug 9/	Used in
	Avg. % Used in Mixtures			ures
Average % for DOT Mixtures <sup>1</sup>	*	NCR	IVIIX	ules
	*	NCR		
Average % for Other Agency Mixtures <sup>1</sup>	*			
Average % for Commercial & Residential Mixtures <sup>1</sup>		NCR	*	NOD
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	NCR
	Other Rep			
% Companies Reporting Using RAS	*	NCR		
% of RAS Mixtures Using Softer Binders	†	NCR		
% of RAS Mixtures Using Rejuvenators	†	NCR		
WMA	% of Total	Production	Tons	Millions
Total	70 01 10101	rioddelloll	*	NCR
DOT	*	NCR	*	NCR
	*	NCR	*	NCR
Other Agency	*		*	
Commercial & Residential		NCR		NCR
WMA Technologies	% of N	1		
Chemical Additive, %	*	NCR		
Additive Foaming, %	*	NCR		
Plant Foaming, %	*	NCR		
Organic Additive, %	*	NCR		
	Other Rep			
		1		
% Companies Reporting Producing WMA	*	NCR		

ing

<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.
 <sup>†</sup> Information not requested in 2015 Numbers may not add up exactly due to rounding

RHODE ISLAND	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
ons of HMA/WMA Produced	Tons, I	Villions	Tons, M	Aillions
Total	*	*	2.3	1.9
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
RAP	Tons, I	Millions	Tons, M	Aillions
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	Avg. %	Used in
	Mixt		Mixt	
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 Rep	orted Data		
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*	-	
% of RAP Mixtures Using Rejuvenators	*	*	-	
- ·		1		
RAS	Tons, Th	ousands	Tons, Th	ousands
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
	Avg. % Used in Mixtures		Avg. % Mixt	
Average % for DOT Mixtures <sup>1</sup>	*	*	IVIIXU	ules
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 Den	arted Data		
0/ Companies Departing Using DAC	Other Rep	orted Data		
% Companies Reporting Using RAS		*		
% of RAS Mixtures Using Softer Binders	<u>†</u>	*		
% of RAS Mixtures Using Rejuvenators	1	*		
<b>WMA</b>	% of Total	Production	Tons, M	Aillions
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
WMA Technologies	% of M	/larket		
	/o UI I	*		
Chemical Additive, %				
Additive Foaming, %	*	*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Rep	orted Data		
% Companies Reporting Producing WMA	*	*		
	·	1		

% 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.
 † Information not requested in 2015 Numbers may not add up exactly due to rounding

SOUTH CAROLINA	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Aillions	Tons, N	Millions
Total	1.7	3.1	5.5	6.5
DOT	1.0	1.9	3.2	4.0
Other Agency	0.3	0.5	1.0	1.0
Commercial & Residential	0.4	0.8	1.3	1.6
Companies Reporting	5	6	110	1.0
	Tons, M		Tons, N	1
Accepted	0.2	0.7	0.7	1.4
Used in HMA/WMA Mixtures	0.3	0.7	1.0	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	0.1	0.5	0.35	0.95
	Avg. %		Avg. %	
	Mixt		Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	17.4%	22.6%		
Average % for Other Agency Mixtures <sup>1</sup>	17.5%	21.7%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	23.0%	23.2%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			18.8%	22.6%
	Other Rep			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	24%	63%		
% of RAP Mixtures Using Softer Binders	0%	0.5%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th	ousands	Tons, Th	ousands
Unprocessed Shingles Accepted	8.0	4.0	26.2	8.4
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.0	0.5	0.0	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
Euroniou	Avg. %		Avg. %	
		Mixtures		ures
Average % for DOT Mixtures <sup>1</sup>	0.00%	0.00%		
Average % for Other Agency Mixtures <sup>1</sup>	0.00%	0.05%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.00%	0.04%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.00%	0.02%
	Other Rep	orted Data		
% Companies Reporting Using RAS	20%	33%		
% of RAS Mixtures Using Softer Binders	+	0%		
% of RAS Mixtures Using Rejuvenators	+	0%		
	0/ of Tatal		Terrer	Villiona
WMA Total	% of Total	FIGULCTION		Villions
Total	<b>E0</b> 0/	4 40/	1.7	0.7
DOT	53%	14%	1.7	0.5
Other Agency	1%	9%	0.0	0.1
Commercial & Residential	0%	4%	0.0	0.1
WMA Technologies	% of N			
	4000/	100%		
Chemical Additive, %	100%			
	0%	0%		
Chemical Additive, % Additive Foaming, %				
Chemical Additive, % Additive Foaming, % Plant Foaming, %	0% 0%	0% 0%		
Chemical Additive, % Additive Foaming, %	0%	0% 0% 0%		

 % Companies Reporting Producing WMA
 80%
 83%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

SOUTH DAKOTA	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Aillions	Tons, N	lillions
Total	NCR	*	2.1	1.6
DOT	NCR	*	NCR	*
Other Agency	NCR	*	NCR	*
Commercial & Residential	NCR	*	NCR	*
Companies Reporting	NCR	*		
RAP		4:11:	Tana N	1:11:000
Accepted	Tons, M NCR	*	Tons, M 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. %	l leod in	Avg. %	lead in
	Mixt		Mixtu	
Average % for DOT Mixtures <sup>1</sup>	NCR	*	IVIIXIU	100
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>	NOR		NCR	*
	Other Rep	orted Data	NOR	
% Companies Reporting Using RAP	NCR	*		
% of RAP Fractionated	NCR	*	-	
% of RAP Mixtures Using Softer Binders	NCR	*	-	
% of RAP Mixtures Using Rejuvenators	NCR	*	-	
RAS	Tons, Th	ousands	Tons, The	ousands
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	
		Avg. % Used in Mixtures		Used in
Average % for DOT Mixtures <sup>1</sup>	NCR	*	Mixtu	lles
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>	NOR		NCR	*
State Average All Mixtures Dased of TAO TONS Osed IT HMA/WMA	Other Rep	orted Data	NOR	
% Companies Reporting Using RAS	NCR	*		
% of RAS Mixtures Using Softer Binders	+	*	-	
% of RAS Mixtures Using Rejuvenators	+	*	-	
WMA	% of Total	Production	Tons, N	lillions
Total			NCR	*
DOT	NCR	*	NCR	*
Other Agency	NCR	*	NCR	*
Commercial & Residential	NCR	*	NCR	*
WMA Technologies		/larket		
Chemical Additive, %	NCR	*		
Additive Foaming, %	NCR	*		
Plant Foaming, %	NCR	*		
Organic Additive, %	NCR	*		
	Other Rep	orted Data		
% Companies Reporting Producing WMA	NCR	*		
		I		

 % 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.
 \*

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

TENNESSEE	Reported	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, M	Villions	Tons I	Villions
Total	5.5	2.4	7.8	8.2
DOT	2.6	0.5	3.7	1.7
Other Agency	0.9	0.4	1.3	1.5
Commercial & Residential	2.0	1.4	2.8	5.0
Companies Reporting	8	4		
RAP		4:11:0:00	Tana	Alliana
	Tons, M 2.0		Tons, I 2.8	
Accepted Used in HMA/WMA Mixtures	1.2	0.6	1.8	2.0 1.7
Used in Aggregate	0.0	0.5	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	2.0	0.0	2.80	2.98
	2.0 Avg. %		2.80 Avg. %	
	Mixt		Avg. % Mixt	
Average % for DOT Mixtures <sup>1</sup>	18.4%	18.6%	IVIIXL	uies
Average % for Other Agency Mixtures <sup>1</sup>	22.9%	20.8%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	24.5%	20.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	24.37	21.070	22.6%	18.6%
	Other Rep	orted Data	22.070	10.070
% Companies Reporting Using RAP	88%	100%		
% of RAP Fractionated	20%	22%		
% of RAP Mixtures Using Softer Binders	20 %	0%		
% of RAP Mixtures Using Rejuvenators	18%	0%		
RAS	Tons, Th		Tons, Th	
Unprocessed Shingles Accepted	0.0	15.0	0.0	52.4
Processed Shingles Accepted	23.0	24.8	32.5	86.6
Used in HMA/WMA Mixtures	20.8	22.0	29.4	76.8
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
		Avg. % Used in		Used in
	Mixt		Mixt	ures
Average % for DOT Mixtures <sup>1</sup>	0.58%	0.95%	-	
Average % for Other Agency Mixtures <sup>1</sup>	1.65%	0.72%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.65%	0.99%	0.000/	0.000/
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			0.38%	0.93%
	Other Rep			
% Companies Reporting Using RAS	50%	50%	-	
% of RAS Mixtures Using Softer Binders		0%		
% of RAS Mixtures Using Rejuvenators	Ť	0%		
<b>WMA</b>	% of Total	Production	Tons, I	Villions
Total			2.5	4.4
DOT	20%	49%	0.7	0.8
Other Agency	35%	37%	0.4	0.6
Commercial & Residential	48%	61%	1.3	3.0
WMA Technologies	% of N			
Chemical Additive, %	56%	88%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	44%	12%		
Organic Additive, %	0%	0%		
	Other Rep			
% Companies Reporting Producing WMA	75%	50%		

 % Companies Reporting Producing WMA
 75%
 50%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

TEXAS	Reported	d Values	Estimated Values	
ILARU	2015	2016	2015	2016
Tons of HMA/WMA Produced	Tons, M	Villions	Tons, I	Villions
Total	8.3	8.0	20.0	24.0
DOT	4.5	4.1	10.8	12.3
Other Agency	2.4	2.1	5.8	6.2
Commercial & Residential	1.4	1.8	3.3	5.5
Companies Reporting	8	7		
RAP	Tana M	4:11:	Tana	Alliana
Accepted		0.9	1.2	Villions 2.8
		1.1	2.5	3.2
Used in HMA/WMA Mixtures Used in Aggregate	1.0	0.0	0.1	0.1
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	1.3	0.0	3.13	1.4
Total Toris of RAP Stockpiled at Teal-End	Avg. %		3.13 Avg. %	
	Mixt		Avg. %	
Average % for DOT Mixtures <sup>1</sup>	17.2%	13.6%	Ινιιχι	ules
Average % for Other Agency Mixtures <sup>1</sup>	17.2%	13.0%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	16.6%	12.8%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	10.0 %	12.0 /0	12.6%	13.3%
State Average Air Mixtures Dased of TAI Toris Osed in ThinAveraiA	Other Rep	orted Data	12.076	15.570
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	50%	15%	-	
% of RAP Mixtures Using Softer Binders	29%	13%	-	
% of RAP Mixtures Using Rejuvenators	0%	0%	-	
RAS	Tons, Th			ousands
Unprocessed Shingles Accepted	86.0	35.0	208.1	105.4
Processed Shingles Accepted	26.6	25.8	64.4	77.8
Used in HMA/WMA Mixtures	124.5	71.0	301.2	213.8
Used in Aggregate	0.0	0.0	2.9	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
		Avg. % Used in Mixtures		Used in
Average % for DOT Mixtures <sup>1</sup>	2.98%		Mixt	ures
	2.54%	0.94%		
Average % for Other Agency Mixtures <sup>1</sup>	2.30%	0.64%	-	
Average % for Commercial & Residential Mixtures <sup>1</sup> State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	2.30%	1.07%	1 5 1 9/	0.000/
	Other Rep	orted Data	1.51%	0.89%
% Companies Reporting Using RAS	75%	71%		
% of RAS Mixtures Using Softer Binders	15%		-	
% of RAS Mixtures Using Rejuvenators	+	17% 0%	-	
WMA	% of Total	Production		Villions
Total			5.4	6.6
DOT	42%	34%	4.5	1.0
Other Agency	12%	16%	0.7	1.0
Commercial & Residential	7%	25%	0.2	1.4
WMA Technologies	% of N	/larket		
Chemical Additive, %	67%	94%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	33%	6%		
Organic Additive, %	0%	0%		
	Other Rep			
0/ Componing Departing Producing \0/\04				
% Companies Reporting Producing WMA	75%	100%		

 % Companies Reporting Producing WMA
 75%
 100%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

UTAH	Reporte	d Values	Estimate	ed Values
	2015	2016	2015	2016
Tons of HMA/WMA Produced	Tons	Villions	Tons	Millions
Total	3.3	4.1	3.5	3.6
DOT	1.0	1.1	1.1	0.9
Other Agency	0.8	0.8	0.9	0.7
Commercial & Residential	1.4	2.3	1.5	2.0
Companies Reporting	8	11		-
RAP	Topo	Villions	Topo	Millions
Accepted	0.8	1.0	0.9	0.9
Used in HMA/WMA Mixtures	0.8	1.0	0.9	0.9
Used in Aggregate	0.0	0.0	0.9	0.9
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	1.7	1.4	1.84	1.25
		Used in	-	Used in
		ures		ures
Average % for DOT Mixtures <sup>1</sup>	21.2%	15.8%		
Average % for Other Agency Mixtures <sup>1</sup>	23.7%	18.6%		
Average % for Commercial & Residential Mixtures <sup>1</sup>	35.1%	32.2%	-	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>			25.3%	25.4%
	Other Rep	orted Data		
% Companies Reporting Using RAP	100%	91%	-	
% of RAP Fractionated	6%	13%	-	
% of RAP Mixtures Using Softer Binders	56%	50%	-	
% of RAP Mixtures Using Rejuvenators	19%	2%	-	
RAS	Tone Th	ousands	Tone Th	nousands
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
Editatilou		Used in		Used in
	Mixtures 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 Rep	orted Data		
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	†	0%	-	
% of RAS Mixtures Using Rejuvenators	†	0%		
WMA	% of Total	Production	Tone	Millions
Total	78 UT T ULAT		2.3	1.9
DOT	63%	62%	0.4	0.6
Other Agency	49%	43%	1.2	0.0
Commercial & Residential	79%	43% 51%	2.3	1.0
			2.0	1.0
WMA Technologies <sup>‡</sup>		Market		
Chemical Additive, %	13%	8%		
Additive Foaming, %	0%	0%		
Plant Foaming, %	87%	97%		
Organic Additive, %	0%	0%		
	Other Rep	orted Data		
% Companies Reporting Producing WMA	89%	82%		

<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. † Information not requested in 2015
 ‡ WMA Technologies use may exceed 100 due to the use of multiple WMA technologies in combination

Numbers may not add up exactly due to rounding

VERMONT	Reporte	d Values	Estimate	d Values
	2015	2016	2015	2016
Fons of HMA/WMA Produced	Tons, I	Villions	Tons, N	/illions
Total	*	*	2.3	1.7
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
Companies Reporting	*	*		
RAP	Tons, I	Villions	Tons, N *	/lillions
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. %		Avg. %	Used in
	Mixt		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 Rep	orted Data		
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*		
% of RAP Mixtures Using Rejuvenators	*	*		
RAS	T		Tana Th	
	Tons, Th		Tons, Th	ousands
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used in Aggregate	*	*	*	*
Used in Cold-Mix Asphalt				
Used in Other	*	*	*	*
Landfilled	*	*	*	*
	Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	*	wies *	IVIIXU	lies
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 Rep	orted Data		
% Companies Reporting Lloing RAS				
% Companies Reporting Using RAS	+	*		
% of RAS Mixtures Using Softer Binders		*		
% of RAS Mixtures Using Rejuvenators				
WMA	% of Total	Production	Tons, N	/lillions
Total			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
WMA Technologies	% of M	/larket		
Chemical Additive, %	*	*		
	*	*		
Additive Foaming, %		*		
Plant Foaming, %	*	*		
Organic Additive, %	*	*		
	Other Rep	orted 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.
 † Information not requested in 2015 Numbers may not add up exactly due to rounding

VIRGINIA	Reporte	Reported Values		Estimated Values	
	2015	2016	2015	2016	
Fons of HMA/WMA Produced	Tons, I	Villions	Tons, I	Millions	
Total	6.8	7.4	12.5	12.0	
DOT	3.5	2.9	6.5	4.7	
Other Agency	1.1	1.3	2.1	2.0	
Commercial & Residential	2.1	3.3	3.9	5.3	
Companies Reporting	7	7		0.0	
RAP		4:11:0:00	Tana		
Accepted	Tons, I 1.9	2.3	Tons, M 3.6	3.7	
Used in HMA/WMA Mixtures		2.3	3.6	3.4	
Used in Aggregate	1.9	0.1	0.1	0.1	
Used in Cold-Mix Asphalt	0.0	0.1	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	1.7	2.2	3.06	3.57	
	Avg. %		Avg. %		
	Avg. %		Avg. %		
Average % for DOT Mixtures <sup>1</sup>	25.9%	26.4%	IVIIXL	0165	
Average % for Other Agency Mixtures <sup>1</sup>	25.9%	26.4%			
Average % for Commercial & Residential Mixtures <sup>1</sup>	32.4%	29.7%			
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	32.4%	29.1%	28.7%	28.1%	
State Average All Mixtures Dased of TAAL TONS Osed IT HMA WIMA	Other Rep	orted Data	20.770	20.170	
% Companies Reporting Using RAP	100%	100%			
% of RAP Fractionated	34%	34%			
% of RAP Mixtures Using Softer Binders	3%	5%	-		
% of RAP Mixtures Using Rejuvenators	0%	0.5%	·		
RAS	Tons, Th		Tons, Th		
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0	
Processed Shingles Accepted	5.6	2.0	10.4	3.3	
Used in HMA/WMA Mixtures	5.5	3.5	10.1	5.7	
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	
		Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.79%	0.08%	IVIIXL	ures	
Average % for Other Agency Mixtures <sup>1</sup>	0.41%	0.03%	-		
Average % for Commercial & Residential Mixtures <sup>1</sup>	0.15%	0.04%	-		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	0.1378	0.0278	0.08%	0.05%	
State Average All Mixtures Dased of TAS Toris Osed in Third WinA	Other Reported Data		0.0078	0.0376	
% Companies Reporting Using RAS	29%	14%			
% of RAS Mixtures Using Softer Binders	2370	0%	·		
% of RAS Mixtures Using Rejuvenators	+	0%	·		
WMA	% of Total	Production	Tons, I		
Total			10.3	8.1	
DOT	75%	64%	4.9	3.0	
Other Agency	82%	72%	1.8	1.5	
Commercial & Residential	94%	68%	3.6	3.6	
WMA Technologies	% of N	1			
Chemical Additive, %	19%	19%			
Additive Foaming, %	0%	0%			
	81%	82%			
Plant Foaming, %	<u>81%</u>	82% 0%			
	81% 0% Other Rep	0%			

 % Companies Reporting Producing WMA
 86%
 100%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

WASHINGTON	Reporte	d Values	Estimate	d Values	
WASHINGTON	2015	2016	2015	2016	
Fons of HMA/WMA Produced	Tons	Villions	Tons	Millions	
Total	3.5	1.9	5.3	5.8	
DOT	0.7	0.3	1.1	0.8	
Other Agency	1.3	0.6	1.9	1.9	
Commercial & Residential	1.5	1.0	2.3	3.2	
Companies Reporting	5	4			
RAP			Tana	Alliana	
Accepted		0.4	1.1	Millions 1.3	
Used in HMA/WMA Mixtures Used in Aggregate	0.9	0.5	1.3	1.5	
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		0.0	0.0	1.67	
	0.6	Used in		Used in	
	Mixt			ures	
Average % for DOT Mixtures <sup>1</sup>	26.8%	23.3%	IVIX		
Average % for Other Agency Mixtures <sup>1</sup>	20.8%	23.3%			
Average % for Commercial & Residential Mixtures <sup>1</sup>	29.2%	27.7%	-		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	29.270	21.170	24.8%	25.5%	
	Other Rep	orted Data	24.070	20.07	
% Companies Reporting Using RAP	100%	100%	-		
% of RAP Fractionated	18%	0%	-		
% of RAP Mixtures Using Softer Binders	8%	13%	-		
% of RAP Mixtures Using Rejuvenators	0%	0%	-		
- · ·					
RAS	Tons, Th			nousands	
Unprocessed Shingles Accepted	2.8	0.0	4.3	0.0	
Processed Shingles Accepted	4.2	4.1	6.4	12.9	
Used in HMA/WMA Mixtures	7.7	0.0	11.8	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	
		Avg. % Used in Mixtures		Avg. % Used in Mixtures	
Average % for DOT Mixtures <sup>1</sup>	0.16%	0.00%		uies	
Average % for Other Agency Mixtures <sup>1</sup>	1.81%	0.01%	-		
Average % for Commercial & Residential Mixtures <sup>1</sup>	1.20%	0.01%	-		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	1.2070	0.0170	0.22%	0.01%	
	Other Rep	orted Data	0.2270	0.0170	
% Companies Reporting Using RAS	60%	25%			
% of RAS Mixtures Using Softer Binders	+	53%	-		
% of RAS Mixtures Using Rejuvenators	+	0%			
	0( af Tatal		Τ	A:11:	
WMA	% of Total	Production		Millions	
Total	00/	150/	1.1	1.0	
DOT	9%	15%	0.1	0.1	
Other Agency	18%	16%	0.3	0.3	
Commercial & Residential	29%	19%	0.7	0.6	
WMA Technologies		Market			
Chemical Additive, %	5%	52%			
Additive Foaming, %	0%	0%			
Plant Foaming, %	95%	48%			
Organic Additive, %	0%	0%			
		orted Data			
% Companies Reporting Producing WMA					
	0%	0%			

 % Companies Reporting Producing WMA
 100%
 75%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2

 <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.
 +

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

Reported	d Values	Estimate	d Values	
2015	2016	2015	2016	
Tons.	Villions	Tons. N	Villions	
1.7			4.1	
			2.9	
	0.1		0.2	
	0.5		1.0	
	5		-	
	Ailliana	Tono N	Ailliona	
		,	0.5	
			0.5	
			0.0	
			0.0	
			0.0	
	÷.		0.0	
			0.0	
		IVIIXL	0100	
14.170	7.4 /0	13 7%	14.2%	
Other Rep	orted Data	13.776	14.270	
	1			
			0.0	
			0.0	
			0.0	
			0.0	
			0.0	
			0.0	
			0.0	
			Avg. % Used in	
		IVIIXI	ures	
0.0078	0.0078	0.00%	0.00%	
Other Rep	orted Data	0.0078	0.0078	
+				
	070			
	<b>D</b>	L Lons M	Aillions	
% of Total	Production		~ .	
		0.0	0.1	
0%	1%	0.0 0.0	0.0	
0% 0%	1% 6%	0.0 0.0 0.0	0.0 0.0	
0% 0% 0%	1% 6% 1%	0.0 0.0	0.0	
0% 0% 0% % of N	1% 6% 1% /arket	0.0 0.0 0.0	0.0 0.0	
0% 0% 0% % of N 0%	1% 6% 1% Market 0%	0.0 0.0 0.0	0.0 0.0	
0% 0% 0% % of N	1% 6% 1% /arket	0.0 0.0 0.0	0.0 0.0	
0% 0% 0% % of N 0%	1% 6% 1% Market 0%	0.0 0.0 0.0	0.0 0.0	
0% 0% 0% 0% 0% 0%	1% 6% 1% Aarket 0% 0% 100%	0.0 0.0 0.0	0.0 0.0	
0% 0% 0% 0% 0%	1% 6% 1% Aarket 0% 0% 100% 0%	0.0 0.0 0.0	0.0 0.0	
	2015 Tons, N 1.7 1.3 0.2 0.3 3 Tons, N 0.2 0.2 0.2 0.0 0.0 0.0 0.0 0.0	Tons, Millions           1.7         2.2           1.3         1.5           0.2         0.1           0.3         0.5           3         5           Tons, Millions         0.2           0.2         0.3           0.2         0.3           0.2         0.3           0.2         0.3           0.2         0.3           0.0         0.0           0.0         0.0           0.0         0.0           0.0         0.0           0.0         0.0           0.0         0.0           0.0         0.0           0.0         0.0           0.1         0.1           Avg. % Used in Mixtures           13.9%         13.9%           14.0%         12.4%           14.1%         7.4%           Other Reported Data         100%           0%         0%           0%         0%           0%         0%           0.0         0.0           0.0         0.0           0.0         0.0           0.0         0.0	2015         2016         2015           Tons, Millions         Tons, N           1.7         2.2         3.5           1.3         1.5         2.6           0.2         0.1         0.3           0.3         0.5         0.6           3         5         5           Tons, Millions         Tons, N           0.2         0.3         0.5           0.2         0.3         0.5           0.2         0.3         0.5           0.0         0.0         0.0           0.0         0.0         0.0           0.0         0.0         0.0           0.0         0.0         0.0           0.0         0.0         0.0           0.0         0.0         0.0           0.0         0.0         0.0           0.1         0.1         0.11           Avg. % Used in Mixtures         Avg. % Mixtures           13.9%         13.9%           14.0%         12.4%           0.0         0.0           0.0         0.0           0.0         0.0           0.0         0.0           0.0	

 % Companies Reporting Producing WMA
 0%
 20%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 2 Average percent based on total reported tons of RAP or RAS used in HMA/WMA divided by reported total tons HMA/WMA produced.

 † Information not requested in 2015
 Numbers may not add up exactly due to rounding

WISCONSIN	Reporte	d Values	Estimate	d Values	
	2015	2016	2015	2016	
Fons of HMA/WMA Produced	Tons, I	Villions	Tons.	Millions	
Total	8.1	7.1	11.0	12.0	
DOT	4.2	2.6	5.7	4.3	
Other Agency	1.9	2.3	2.5	3.9	
Commercial & Residential	2.1	2.3	2.8	3.8	
Companies Reporting	3	4			
RAP		Ailliona	Topo	Milliono	
Accepted	<u> </u>	1.2	1.5	Millions 2.0	
Used in HMA/WMA Mixtures	1.3	1.5	1.8	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	1.3	1.5	1.71	2.45	
	Avg. %			Used in	
	Mixt			ures	
Average % for DOT Mixtures <sup>1</sup>	18.0%	20.2%		0100	
Average % for Other Agency Mixtures <sup>1</sup>	18.0%	20.2%			
Average % for Commercial & Residential Mixtures <sup>1</sup>	22.2%	25.0%	-		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>	22.270	23.076	16.1%	21.6%	
	Other Rep	orted Data	10.170	21.070	
% Companies Reporting Using RAP	100%	100%			
% of RAP Fractionated	2%	14%	-		
% of RAP Mixtures Using Softer Binders	30%	7%	-		
% of RAP Mixtures Using Rejuvenators	2%	6%	-		
× ·					
RAS	Tons, Th			nousands	
Unprocessed Shingles Accepted	66.5	66.5	89.8	111.7	
Processed Shingles Accepted	13.5	19.7	18.2	33.1	
Used in HMA/WMA Mixtures	69.1	77.6	93.3	130.4	
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	
		Avg. % Used in		Avg. % Used in	
	Mixt		Mixt	ures	
Average % for DOT Mixtures <sup>1</sup>	2.48%	0.63%	-		
Average % for Other Agency Mixtures <sup>1</sup>	2.69%	1.19%	-		
Average % for Commercial & Residential Mixtures <sup>1</sup>	3.00%	1.50%	0.05%	1.09%	
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>	Other Den	0.85% 1.09 Other Reported Data			
% Companies Departing Using DAS					
% Companies Reporting Using RAS	100%	100%	-		
% of RAS Mixtures Using Softer Binders	†	32% 29%	-		
% of RAS Mixtures Using Rejuvenators		29%			
WMA	% of Total	Production		Millions	
Total			1.3	1.3	
DOT	10%	8%	0.5	0.3	
Other Agency	14%	18%	0.4	0.7	
Commercial & Residential	13%	7%	0.4	0.3	
WMA Technologies	% of M	<i>l</i> arket			
Chemical Additive, %	83%	97%			
Additive Foaming, %	13%	0%			
Plant Foaming, %	3%	3%			
Organic Additive, %	0%	0%			
	O% Other Rep				
% Companies Reporting Producing WMA	100%	100%			

 % Companies Reporting Producing WMA
 100%

 <sup>1</sup> Average percent based on contractor's reported percentage for each sector, adjusted based upon reported tonnage.
 100%

 <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.
 1 Information not requested in 2015

 Numbers may not add up exactly due to rounding
 100%
 100%

WYOMING	Reporte	Reported Values		Estimated Values	
	2015	2016	2015	2016	
Tons of HMA/WMA Produced	Tons, I	Millions	Tons.	Millions	
Total	*	0.3	2.6	2.2	
DOT	*	0.2	*	1.3	
Other Agency	*	0.1	*	0.4	
Commercial & Residential	*	0.1	*	0.5	
Companies Reporting	*	6			
RAP	Tana	Aillione	Tana	Millione	
	1001S, 1	Millions	tons,	Millions 0.2	
Accepted Used in HMA/WMA Mixtures	*	0.0	*	-	
Used in Aggregate	*	0.0	*	0.2	
Used in Cold-Mix Asphalt	*		*	0.0	
Used in Other	*	0.0	*	0.0	
Landfilled	*		*		
	*	0.0	*	0.0	
Total Tons of RAP Stockpiled at Year-End					
		Used in ures		Used in tures	
Average % for DOT Mixtures	*		IVIIX	lures	
Average % for DOT Mixtures <sup>1</sup> Average % for Other Agency Mixtures <sup>1</sup>	*	8.9% 7.9%			
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	14.7%			
State Average All Mixtures Based on RAP Tons Used in HMA/WMA <sup>2</sup>		14.770	*	10.11%	
State Average All Mixtures based on KAP Tons Osed in ThinA/WIMA	Other Ben	orted Data		10.117	
% Companies Reporting Using RAP		67%			
% of RAP Fractionated	*	0%			
% of RAP Mixtures Using Softer Binders	*	0%			
% of RAP Mixtures Using Rejuvenators	*	0%			
- · ·					
RAS	Tons, Th	ousands	Tons, Tl	nousands	
Unprocessed Shingles Accepted	*	1.4	*	9.1	
Processed Shingles Accepted	*	1.4	*	9.1	
Used in HMA/WMA Mixtures	*	0.3	*	2.0	
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	
	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>	*	0.14%			
Average % for Commercial & Residential Mixtures <sup>1</sup>	*	0.28%			
State Average All Mixtures Based on RAS Tons Used in HMA/WMA <sup>2</sup>			*	0.09%	
	Other Rep	orted Data			
% Companies Reporting Using RAS	*	17%			
% of RAS Mixtures Using Softer Binders	†	0%			
% of RAS Mixtures Using Rejuvenators	†	0%			
<b>WMA</b>	% of Total	Production	Tons	Millions	
Total			*	0.5	
DOT	*	29%	*	0.4	
Other Agency	*	9%	*	0.0	
Commercial & Residential	*	20%	*	0.1	
WMA Technologies	% of M	Varket			
Chemical Additive, %	*	0%			
	*				
Additive Foaming, %	*	0%			
Plant Foaming, %		100%			
Organic Additive, %	*	0%			
	Other Rep	orted Data			
% Companies Reporting Producing WMA	*	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.
 <sup>†</sup> Information not requested in 2015 Numbers may not add up exactly due to rounding