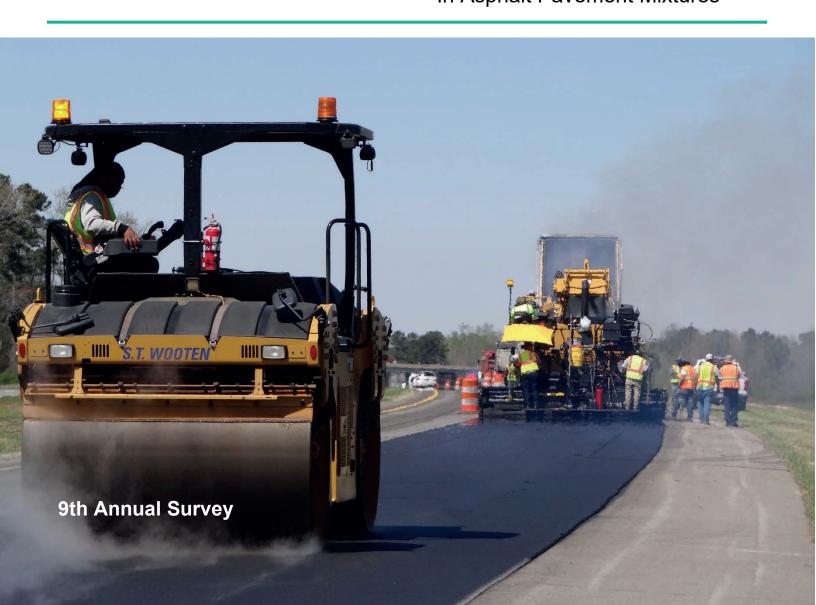


Asphalt Pavement Industry Survey on

Recycled Materials and Warm-Mix Asphalt Usage 2018

IS-138 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: 2018 Appendix B

Introduction

Appendix B provides a state-by-state breakdown of data reported in the Asphalt Pavement Industry Survey on Recycled Materials and Warm-Mix Asphalt Usage report for the 2018 construction season survey (Williams et al., 2019), including information from Tables 5, 6, 7, 8, 11, 12 and 15. The accuracy of the state-level data and estimates will vary depending upon the number of companies participating in the survey in a given state and the tonnage produced by each respondent. Appendix A outlines the methodology used to collect data and to generate estimates.

Appendix B reports data for all 50 U.S. states, as well as the District of Columbia and the five U.S. territories. In instances where fewer than three companies in a state/territory responded to the survey, only estimated total tonnages are reported to protect proprietary company data. Table 1 in the main report, republished below, summarizes the number of respondents from each state and territory. A total of 272 companies representing 1,328 production plants responded to the 2018 construction season survey. Branches, subsidiaries, and operating units are counted as unique companies in Table 1 and throughout the report. Throughout the tables, where percentages and totals are calculated, the numbers may not add up exactly due to rounding.

A degree of fluctuation in year-to-year comparisons of data is influenced by which companies responded to the 2018 construction season survey versus prior-year survey respondents. Approximately 80 percent of 2017 responding companies participated in the 2018 survey, too. Additional factors influencing the reliability of state-level data in this appendix are explained in the Data Estimation Method section of Appendix A.

Table 1: Number of Companies Completing 2018 Construction Season Survey in Each State/Territory

State	Cos.	Prod. Plants	State	Cos.	Prod. Plants	State	Cos.	Prod. Plants
Alabama	9	49	Kentucky	10	51	Ohio	9	88
Alaska	*	*	Louisiana	4	4	Oklahoma	6	17
American Samoa	*	*	Maine	*	*	Oregon	4	14
Arizona	5	27	Maryland	11	25	Pennsylvania	8	46
Arkansas	7	29	Massachusetts	7	34	Puerto Rico	NCR	NCR
California	6	52	Michigan	5	40	Rhode Island	*	*
Colorado	3	15	Minnesota	5	28	South Carolina	6	24
Connecticut	3	15	Mississippi	9	29	South Dakota	NCR	NCR
Delaware	*	*	Missouri	9	32	Tennessee	5	40
District of Columbia	*	*	Montana	*	*	Texas	6	51
Florida	13	48	Nebraska	3	7	U.S. Virgin Islands	*	*
Georgia	6	46	Nevada	*	*	Utah	9	20
Guam	NCR	NCR	New Hampshire	4	16	Vermont	*	*
Hawaii	3	8	New Jersey	3	19	Virginia	7	36
ldaho	5	18	New Mexico	3	5	Washington	9	35
Illinois	12	25	New York	12	58	West Virginia	3	15
Indiana	7	54	North Carolina	7	62	Wisconsin	6	64
lowa	4	16	North Dakota	*	*	Wyoming	*	*
Kansas	4	19	No. Mariana Islands	NCR	NCR	Total [†]	272	1,328

NCR = No companies responding

* = Fewer than 3 companies reporting

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

		s may not add	T '	
ALABAMA	Reported V	alues	Estimated	
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, I	Millions	Tons,	Millions
Total	4.9	5.0	7.0	6.7
DOT	3.3	3.4	4.8	4.6
Other Agency	0.8	0.9	1.2	1.2
Commercial & Residential	0.8	0.7	1.1	0.9
No. of Companies Reporting	6	9		
RAP	Tons, I			Millions
Accepted	1.3	0.8	1.9	1.1
Used in HMA/WMA Mixtures	1.2	1.3	1.7	1.7
Used as 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 Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.94	1.8	2.78	2.41
Total Tolls of KAP Stockplied at Tear-Ellu	Avg. %			Used in
	Mixt			tures
Average % for DOT Mixtures ¹	23.7%	23.6%		
Average % for Other Agency Mixtures ¹	24.7%	25.2%		
Average % for Commercial & Residential Mixtures ¹	26.8%	27.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			24.3%	26.0%
	Other Rep			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	29%	16%		
% of RAP Mixtures Using Softer Binders	0%	0%	-	
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th			nousands
Unprocessed Shingles Accepted	0.0	10.0	0.0	13.4
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures Used as Aggregate	0.0	5.0 0.0	0.0	6.7 0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	0.0	40.5	0.0	54.3
	Avg. %			Used in
	Mixt			tures
Average % for DOT Mixtures ¹	0.00%	0.10%		
Average % for Other Agency Mixtures ¹	0.00%	0.10%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.20%		- 1-4
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	011 - D		0.00%	0.10%
0/ Occurrence Demonstrate Heiman DAO	Other Rep			
% Companies Reporting Using RAS	0%	11%	-	
% of RAS Mixtures Using Softer Binders % of RAS Mixtures Using Rejuvenators	0% 0%	0% 0%	-	
			Т	M:II:
WMA Technologies Total Tons Produced With WMA Technology at Reduced Temperature†	% of Total	Production	Tons,	Millions
Total Tons Produced With WMA Technology at Reduced Temperatures [†]			0.7	1.5 1.3
DOT	13%	40%	0.6	1.8
Other Agency	3%	55%	0.0	0.7
Commercial & Residential	3%	30%	0.0	0.3
WMA Technologies	Other Rep			
Chemical Additive, % of Market	0%	34%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	67%	66%		
Organic Additive, % of Market	33%	0%		
Other Reported Data	3370	U 70	Tone	Millions
% Companies Reporting Using WMA Technologies	50%	33%	10113,	WIIIIUI IS

<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.

For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.</sup>

			up exactly due	,
ALASKA	Reported	Values	Estimate	d Values
ALAGNA	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	/lillions	Tons, I	Millions
Total	*	*	5.1	2.0
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
No. of Companies Reporting	*	*		
RAP	Tons, N	/lillions	Tons, I	Millions
Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used as Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAP Stockpiled at Year-End	*	*	*	*
	Avg. %	Used in	Avg. %	Used in
	Mixtu	ures	Mixt	
Average % for DOT Mixtures ¹	*	*		
Average % for Other Agency Mixtures ¹	*	*		
Average % for Commercial & Residential Mixtures ¹	*	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			*	*
	Other Repo	orted Data		
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*	_	
% of RAP Mixtures Using Rejuvenators	*	*		
RAS	Tons, The	ousands	Tons, Th	ousands
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used as Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAS Stockpiled at Year-End	*	*	*	*
	Avg. % (Avg. % Mixt	
Average % for DOT Mixtures ¹	*	*		
Average % for Other Agency Mixtures ¹	*	*		
Average % for Commercial & Residential Mixtures ¹	*	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			*	*
	Other Repo	orted Data		
% Companies Reporting Using RAS	*	*		
% of RAS Mixtures Using Softer Binders	*	*		
% of RAS Mixtures Using Rejuvenators	*	*		
WMA	% of Total I	Production	Tons, N	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			*	*
Total Tons Produced With WMA Technology at HMA Temperatures [†]				*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	*	*		
Additive Foaming, % of Market	*	*		
Plant Foaming, % of Market	*	*		
Organic Additive, % of Market	*	*		
	*	*		
% Companies Reporting Using WMA Technologies ¹ Average percent based on contractor's reported percentage for each sector, adjusted based				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

Estimated Values 2017 2018 Tons, Millions 0.03 0.03 * * * * * Tons, Millions * * * * * * * * Avg. % Used in Mixtures * * Tons, Thousands * * * * * * * * * * * * * * *	AVWMA Produced	s of HMA/WMA Produced Tons, of tal DOT Other Agency Commercial & Residential to, of Companies Reporting Tons, occepted Second HMA/WMA Mixtures Used in HMA/WMA Mixtures Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End State Average All Mixtures Based on RAP Tons Used in HMA/WMA Other Rep Companies Reporting Using RAP Companies Reporting Using RAP Companies Reporting Using RAP Companies Reporting Using RAP Cof RAP Fractionated Cof RAP Mixtures Using Softer Binders Cof RAP Mixtures Using Rejuvenators Tons, Ti Tons, Ti Nerage % for Other Agency Mixtures Second Shingles Accepted Landfilled Companies Reporting Using Rape Cof RAP Mixtures Using Rejuvenators Cother Rep Cother R	17 o	7 ons, N	2018 Millions * * * * * *	2017 Tons 0.03 *		201 Iillions
Tons, Millions 0.03	IA/WMA Produced	Sof HMA/WMA Produced	-0	ons, N	Millions * * * * * *	Tons 0.03 *	s, N	1illions
0.03	*	Total DOT Other Agency Commercial & Residential Io. of Companies Reporting Tons, Io. of Companies Reporting Used in HMAWMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Other Landfilled Io. of Io. of RAP Stockpiled at Year-End Io. of Io. of RAP Stockpiled at Year-End Io. of Io.	- o		* * * * * * *	0.03	s, N	
0.03		Total DOT Other Agency Commercial & Residential Io. of Companies Reporting Tons, Io. of Companies Reporting Used in HMAWMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Other Landfilled Io. of Io. of RAP Stockpiled at Year-End Io. of Io. of RAP Stockpiled at Year-End Io. of Io.	- o		* * * * * * *	0.03	<u> </u>	
* * * * * * * * * * * * * * * * * * * * * Avg. % Used in Mixtures * * * * * * * * * * * * * * *	gency rotal & Residential * * * * * * * * * * * * * * * * * * *	Other Agency Other	- - -	ons, N	* * *	*	-	
* * * * * * * * * * * * * * * * * * *	Sericy S	Other Agency Commercial & Residential to. of Companies Reporting Tons, tocepted Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Avg. % Mixtureage % for DOT Mixtures¹ Werage % for Commercial & Residential Mixtures¹ Total Tons of RAP Stockpiled at Year-End Avg. % Other Reg. % Go RAP Mixtures Using Softer Binders Total Tons of RAS Stockpiled at Year-End Avg. % Tons, Ti Used in Other Avg. % Mixtures Using Rejuvenators Tons, Ti Used in Cold-Mix Asphalt Landfilled Total Tons of RAP Stockpiled at Year-End Avg. % Mixtures Using Softer Binders Tons, Ti Used in Cold-Mix Asphalt Used in HMA/WMA Mixtures Landfilled Total Tons of RAS Stockpiled at Year-End Avg. % Avg. % Mixtures Using Softer Binders Tons, Ti Used in Cold-Mix Asphalt Avg. % Avg	- O	ons, N	*			*
Tons, Millions *	Trois Residential	Commercial & Residential to, of Companies Reporting Tons, Accepted Used in HMA/WMA Mixtures Used an Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Werage % for DOT Mixtures¹ Werage % for Other Agency Mixtures¹ Werage % for Commercial & Residential Mixtures¹ State Average All Mixtures Based on RAP Tons Used in HMA/WMA² Companies Reporting Using RAP Sof RAP Fractionated Sof RAP Mixtures Using Softer Binders Soft RAP Mixtures Using Rejuvenators Soft RAP Stockpiled Accepted Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt * * * * * * * * * * * * *	- O	ons, N	*	.1.	\neg	*
* * * * * * * * * * * * * * * Avg. % Used in Mixtures * * * * Tons, Thousands * * * * * * * * * * * * * * *	Tons, Millions Tons, Thousands Tons	Tons, tocepted	0	ons, N		*	-+	*
* * * * * * * * * * * * * * * Avg. % Used in Mixtures * * * * Tons, Thousands * * * * * * * * * * * * * * *	Tons, Millions	Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Old-Mix Asphalt Werage % for DOT Mixtures¹ Werage % for DOT Mixtures¹ Werage % for Commercial & Residential Mixtures¹ State Average All Mixtures Based on RAP Tons Used in HMA/WMA² Other Rep 6 Companies Reporting Using RAP 6 of RAP Fractionated 6 of RAP Mixtures Using Softer Binders 6 of RAP Mixtures Using Rejuvenators 8 Tons, Ti Unprocessed Shingles Accepted 1 * Used in HMA/WMA Mixtures Used in AlmA/WMA Mixtures Used in Cold-Mix Asphalt Used in Cold-		ons, N	A:II: a.a			
* * * * * * * * * * * * * * * Avg. % Used in Mixtures * * * * Tons, Thousands * * * * * * * * * * * * * * *	MMAVWA Mixtures	Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Other Landfilled ** ** ** ** ** ** ** ** **		ons, N		T	- 1	4:11:
* * * * * * * * * Avg. % Used in Mixtures * * Tons, Thousands * * * * * * * * * * * * * * *	S Aggregate	Used in HMAWMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Other Landfilled ** Total Tons of RAP Stockpiled at Year-End Avg. % Mix Everage % for DOT Mixtures¹ Everage % for Other Agency Mixtures¹ Everage % for Commercial & Residential Mixtures¹ Everage % for RAP Fractionated Everage % for RAP Fractionated Everage % for RAP Fractionated Everage % for RAP Mixtures Using Rejuvenators Everage % for RAP Mixtures Using Rejuvenators Everage % for RAP Mixtures Using Rejuvenators Everage % Index Accepted Everage & Shingles Accepted Everage & Ev			VIIIIONS	Ions	S, IV	illions
* * * * * * * * * Avg. % Used in Mixtures * * Tons, Thousands * * * * * * * * * * * * * * *	S Aggregate	Used as Aggregate Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Other Landfilled ** ** ** ** ** ** ** ** **			<u> </u>		\dashv	
* * * Avg. % Used in Mixtures * * Tons, Thousands * * * * * * * * * * * *	Cold-Mix Asphalt	Used in Cold-Mix Asphalt Used in Cold-Mix Asphalt Used in Other Landfilled ** ** Avg. % Mix ** Average % for DOT Mixtures¹ ** ** ** ** ** ** ** ** **					_	
* * * Avg. % Used in Mixtures * * Tons, Thousands * * * * * * * * * *	Cotter	Used in Other Landfilled * Total Tons of RAP Stockpiled at Year-End * Avg. * Mix Average * for DOT Mixtures¹ Average * for Other Agency Mixtures¹ Average * for Commercial & Residential Mixtures¹ Average All Mixtures Based on RAP Tons Used in HMA/WMA² Other Rep * Companies Reporting Using RAP * Companies Accepted * Companies Accepted * Companies Accepted * Companies Accepted * Companies Reporting Using Rap * Cotal Tons of RAS Stockpiled at Year-End * Cotal Tons of RAS Stockpiled at Year-End * Average * for Other Agency Mixtures¹ * Cotal Tons Reporting Using RAS * Companies Reporting Rejuvenators * Author of Total Tons Produced With WMA Technology at Reduced Temperature¹ * Cotal Tons Produced With WMA Technology at HMA Temperatures¹ * Cother Agency * Coth						
* * * Avg. % Used in Mixtures * * Tons, Thousands * * * * * * * * * * * *	## ## ## ## ## ## ## ## ## ## ## ## ##	Landfilled * otal Tons of RAP Stockpiled at Year-End * Avg. % Mix werage % for DOT Mixtures¹ * werage % for Other Agency Mixtures¹ * werage % for Commercial & Residential Mixtures¹ * other Rep * Other Rep * Other Rep * Other Rep * of RAP Fractionated * of RAP Mixtures Using RAP * of RAP Mixtures Using Rejuvenators * * * * * * * * * * * * * * * * * * *						
* * Avg. % Used in Mixtures * * Tons, Thousands * * * * * * * * * * * *	Sof RAP Stockpiled at Year-End	Total Tons of RAP Stockpiled at Year-End Avg. % Mix Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹ Average % for Commercial & Residential Mixtures¹ Average % for Commercial & Residential Mixtures¹ Average & for Commercial & Residential Mixtures¹ Average All Mixtures Based on RAP Tons Used in HMA/WMA² Other Rep Companies Reporting Using RAP Average & for RAP Fractionated Average & for RAP Mixtures Using Softer Binders Average & for RAP Mixtures Using Rejuvenators Tons, TI Approcessed Shingles Accepted Average & for Shingles Accepted Average & for Cold-Mix Asphalt Average & for Cold-Mix Asphalt Average & for Other Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹ Average % for Other Agency Mixtures Based on RAS Tons Used in HMA/WMA² Other Rep Companies Reporting Using RAS Average Mixtures Using Rofter Binders Average Mixtures Using Rejuvenators Average % for Companies Reporting Using RAS Average % for RAS Mixtures Using Rejuvenators Average % for Other Agency Mixtures Using Rejuvenators Average % for Other Rep Companies Reporting Using RAS Average % for Other Rep Companies Reporting Using RAS Average % for Other Rep Companies Reporting Using RAS Average % for Other Rep Companies Reporting Using RAS Average % for Other Rep Companies Reporting Using RAS Average % for Other Rep Companies Reporting Using RAS Average % for Other Rep Companies Reporting Using RAS Average % for Other Rep Companies Reporting Using RAS Average % for Other Rep Companies Reporting Using RAS Average % for Other Rep Companies Reporting Using RAS Average % for Other Rep Companies Reporting Using RAS Average % for Other Rep Companies R	_				_	
Avg. % Used in Mixtures * * Tons, Thousands * * * * * * * * * * * *	Avg. % Used in Mixtures % for DOT Mixtures¹ % for Other Agency Mixtures¹ % for Commercial & Residential Mixtures¹ % for Commercial & Residential Mixtures¹ rage All Mixtures Based on RAP Tons Used in HMA/WMA² Other Reported Data * * * * * * * * * * * * * * * * * *	Avg. % Mix Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹ ** State Average All Mixtures Based on RAP Tons Used in HMA/WMA² Other Rep ** Companies Reporting Using RAP ** Cof RAP Fractionated ** Cof RAP Mixtures Using Softer Binders ** Cof RAP Mixtures Using Rejuvenators ** Tons, TI Inprocessed Shingles Accepted ** Processed Shingles Accepted ** Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled ** Cotal Tons of RAS Stockpiled at Year-End Avg. % Mix Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average All Mixtures Based on RAS Tons Used in HMA/WMA² Other Rep ** Cotal Tons Produced With WMA Technology at Reduced Temperature¹ Total Tons Produced With WMA Technology at HMA Temperatures¹ Total Tons Produced With WMA Technology at HMA Temperatures¹ Total Tons Produced With WMA Technology at HMA Temperatures¹ Total Tons Produced With WMA Technology at HMA Temperatures¹ Total Tons Produced With WMA Technology at HMA Temperatures² Total Tons Produced With WMA Technology at HMA Temperatures² Total Tons Produced With WMA Technology at HMA Temperatures² Total Tons Produced With WMA Technology at HMA Temperatures² Total Tons Produced With WMA Technology at HMA Temperatures² Total Tons Produced With WMA Technology at HMA Temperatures² Total Tons Produced With WMA Technology at HMA Temperatures² Total Tons Produced With WMA Technology at HMA Temperatures² Total Tons Produced With WMA Technology at HMA Temperatures² Total Tons Produced With WMA Technology at HMA Temperatures² Total Tons Produced With WMA Technology at HMA Temperatures²						
* * * Tons, Thousands * * * * * * * * * * * * * * *	Mixtures Mixtures Based on RAP Tons Used in HMA/WMA ² Trage All Mixtures Based on RAP Tons Used in HMA/WMA ² Mixtures Using Reporting Using RAP Fractionated Mixtures Using Softer Binders Mixtures Using Rejuvenators Tons, Thousands Seed Shingles Accepted Mixtures Mixtures Tons, Thousands Tons, Thousands Seed Shingles Accepted Mixtures Mixtures Mixtures Mixtures Mixtures Tons, Thousands Mixtures Mixtur	Mix Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹ Average % for Commercial & Residential Mixtures¹ Average % for Commercial & Residential Mixtures¹ Average All Mixtures Based on RAP Tons Used in HMA/WMA² Other Rep Average All Mixtures Based on RAP Tons Used in HMA/WMA² Other Rep Average Mixtures Using RaP Average Shingles Accepted Average Shingles Acc					\perp	
* * * Tons, Thousands * * * * * * * * *	% for DOT Mixtures¹ * * % for Other Agency Mixtures¹ * * % for Commercial & Residential Mixtures¹ * * rage All Mixtures Based on RAP Tons Used in HMA/WMA² * * unies Reporting Using RAP * * Fractionated * * Mixtures Using Softer Binders * * Mixtures Using Rejuvenators * * Tons, Thousands Tons, Thousands sed Shingles Accepted * * * d Shingles Accepted * * * HMA/WMA Mixtures * * * s Aggregate * * * Cold-Mix Asphalt * * * Other * * *	Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹ Average % for Commercial & Residential Mixtures¹ Attate Average All Mixtures Based on RAP Tons Used in HMA/WMA² Other Rep Companies Reporting Using RAP Companies Reporting Using RAS Companies Reporting Masource Compani						
Tons, Thousands	A	Average % for Other Agency Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹ Average % for Commercial & Residential Mixtures¹ * ** ** ** ** ** ** ** ** ** ** ** **		Mixtu		M	lixtu	ires
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Tons, Millions * * * * * * *	Mixtures Mixtures Based on RAS Tons Used in HMA/WMA2 Tage All Mixtures Based on RAS Tons Used in HMA/WMA2 Tage All Mixtures Based on RAS Tons Used in HMA/WMA2 Mixtures Using Reported Data Mixtures Using Softer Binders Mixtures Using Rejuvenators Mixtures Using Rejuvenators Mixtures Using Reported Data Mixtures Using Reported Data Mixtures Using Reported Data Mixtures Using Rejuvenators Mixtures Using Rejuvenators Mixtures Mixtures Mixtures Using Rejuvenators Mixtures Mixtures Mixtures Using Rejuvenators Mixtures Mixtures Using Rejuvenators Mixtures Mixtures Mixtures Using Rejuvenators Mixtures Mixtures Using Reported Data Mixtur	COMMINICIONAL A LACTUCATURA			*	*		*
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Tons, Millions * * * * * * * * * * * * *	Mixtures			- D	ambacl D 1		ضي	
Tons, Millions * * * * * * * * * * * * *	Mixtures Mixtures Based on RAS Tons Used in HMA/WMA ²	VMA Technologies Other Rer		r Repr	orted Data			
Tons, Millions * * * * * * * * * * * * *	Mixtures Mixtures Based on RAS Tons Used in HMA/WMA ²			rich	•			
Tons, Millions * * * * * * * * * * * * *	Mixtures Mixtures Mixtures Mixtures Mixtures Mixtures Mixtures Mixtures Mixtures * * * Mixtures Mixtures Mixtures * * Mixtures Mixtures * * Mixtures Mixtures * * Mixtures * * Mixtures Based on RAS Tons Used in HMA/WMA² * * Other Reported Data * * Mixtures Using RAS Mixtures Using Softer Binders Mixtures Using Rejuvenators * * Mixtures Using Rejuvenators * Mixtures Using Rejuven	Chemical Additive % of Market	r		*			
Tons, Millions * * * * * * * * * * * * *	Mixtures * * * * * * * * * * * *	Chemical Additive, 70 Of Warket	r					
Tons, Millions * * * * * * * * * * * * *	Mixtures	Additive Feeming 0/ of Market	r		*			
Tons, Millions * * * * * * * * * * * * *	Mixtures Mixtures Agency Mixtures Trage All Mixtures Based on RAS Tons Used in HMA/WMA2 Other Reported Data Tons, Millions Mixtures Mixtures Using RAS Mixtures Using Softer Binders Mixtures Using Rejuvenators Mixtures Mixtu	Additive Foaming, % of Market *	r		*			
Tons, Millions * * * * * * * * * * * * *	Mixtures Mixtures Based on RAS Tons Used in HMA/WMA ² Other Reported Data mies Reporting Using RAS Mixtures Using Softer Binders Mixtures Using Rejuvenators Mixtures Using Rejuvenators		r					
Tons, Millions * * * * * * * * * * * * *	Mixtures Mixtures Based on RAS Tons Used in HMA/WMA² Tage All Mixtures Based on RAS Tons Used in HMA/WMA² Mixtures Using RAS Mixtures Using Softer Binders Mixtures Using Rejuvenators Mixtures Using Rejuvenators Mixtures Mixtures Mixtures Mixtures Mixtures Mixtures Mixtures * * * * * * * * * * * *	Plant Foaming, % of Market *	r		† . 			
Tons, Millions * * * * * * * * * * * * *	Mixtures Mixtures Based on RAS Tons Used in HMA/WMA² Tage All Mixtures Based on RAS Tons Used in HMA/WMA² Mixtures Using RAS Mixtures Using Softer Binders Mixtures Using Rejuvenators Mixtures Using Rejuvenators Mixtures Mixtures Mixtures Mixtures Mixtures Mixtures Mixtures * * * * * * * * * * * *		r		*			
Tons, Millions * * * * * * * * * * * * *	Mixtures * * * * * * * * * * * * *	Organic Additive, 70 or Market	r		<u> </u>			
Tons, Millions * * * * * * * * * * * * *	Mixtures Mixtures Based on RAS Tons Used in HMA/WMA2 Tage All Mixtures Based on RAS Tons Used in HMA/WMA2 Other Reported Data Mixtures Using Reporting Using RAS Mixtures Using Softer Binders Mixtures Using Rejuvenators Tons, Millions Se Produced With WMA Technology at Reduced Temperature† Se Produced With WMA Technology at HMA Temperatures† Mixtures M	6 Companies Reporting Using WMA Technologies *	r		*			

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	may not add	up exactly due	to rounding
ARIZONA	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	/lillions	Tons, I	Millions
Total	1.2	3.7	6.5	7.6
DOT	0.2	1.9	1.2	3.9
Other Agency	0.2	0.1	1.1	0.1
Commercial & Residential	0.8	1.7	4.3	3.5
No. of Companies Reporting	3	5		
RAP	Tons, N	/lillions	Tons, I	Millions
Accepted	0.1	0.8	0.7	1.6
Used in HMA/WMA Mixtures	0.1	0.4	0.6	0.9
Used as 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	0.10	0.58	0.54	1.18
·	Avg. %	Used in	Avg. %	Used in
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	11.9%	12.3%		
Average % for Other Agency Mixtures ¹	5.0%	11.0%		
Average % for Commercial & Residential Mixtures ¹	10.2%	13.5%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			9.5%	11.6%
	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	10%		
% of RAP Mixtures Using Softer Binders	23%	11%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th	ousands	Tons, Th	ousands
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 as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	0.0	0.0	0.0	0.0
	Avg. %		Avg. %	
A 2/ C DOTAK (1	Mixtu		Mixt	ures
Average % for DOT Mixtures1	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹ State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.00%	0.00%	0.000/	0.000/
State Average All Mixtures based on RAS Tons Used in HMA/WMA-	Other Den	arted Data	0.00%	0.00%
% Companies Reporting Using RAS	Other Repo	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Soller Birders % of RAS Mixtures Using Rejuvenators	0%	0%		
	0 70			4:11:
WMA	0/ 5 - 1 - 1		l ons, l	Millions
Total Tana Draduoed Mith MAA Taskaslasu at Daduard Tanasarti +	% of Total	Production	,	
Total Tons Produced With WMA Technology at Reduced Temperature [†]	% of Total	Production	4.3	0.3
Total Tons Produced With WMA Technology at HMA Temperatures [†]			4.3	0.8
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT	50%	6%	4.3 0.6	0.8 0.2
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency	50% 0%	6% 0%	4.3 0.6 0.0	0.8 0.2 0.0
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency Commercial & Residential	50% 0% 87%	6% 0% 25%	4.3 0.6	0.8 0.2
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency Commercial & Residential WMA Technologies	50% 0% 87% Other Repo	6% 0% 25% orted Data	4.3 0.6 0.0	0.8 0.2 0.0
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market	50% 0% 87% Other Repo	6% 0% 25% orted Data 45%	4.3 0.6 0.0	0.8 0.2 0.0
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	50% 0% 87% Other Repo	6% 0% 25% orted Data 45% 0%	4.3 0.6 0.0	0.8 0.2 0.0
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market Plant Foaming, % of Market	50% 0% 87% Other Repo 0% 0% 100%	6% 0% 25% orted Data 45% 0% 55%	4.3 0.6 0.0	0.8 0.2 0.0
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	50% 0% 87% Other Repo	6% 0% 25% orted Data 45% 0%	4.3 0.6 0.0	0.8 0.2 0.0

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		may not add		
ARKANSAS	Reported		ĺ	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N			Millions
Total	1.9	3.1	6.0	5.4
DOT	1.3	0.6	4.2	1.0
Other Agency	0.3	1.9	0.9	3.4
Commercial & Residential	0.3	0.6	0.9	1.0
No. of Companies Reporting	4	7		
RAP	Tons, N		Tons, I	Millions
Accepted	0.1	0.2	0.5	0.3
Used in HMA/WMA Mixtures	0.2	0.4	0.7	0.6
Used as 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	0.20	0.30	0.64	0.52
	Avg. % Mixt	Used in Jires		Used in ures
Average % for DOT Mixtures ¹	11.8%	12.1%		
Average % for Other Agency Mixtures ¹	8.5%	11.3%		
Average % for Commercial & Residential Mixtures ¹	10.8%	13.4%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			11.2%	11.5%
	Other Rep			
% Companies Reporting Using RAP	100%	100%	_	
% of RAP Fractionated	0%	21%		
% of RAP Mixtures Using Softer Binders	0%	14%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th			nousands
Unprocessed Shingles Accepted	8.5	8.0	26.7	13.9
Processed Shingles Accepted	0.0	11.6	0.0	20.2
Used in HMA/WMA Mixtures	6.1	49.4	19.0	86.1
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	38.7	33.0	121.6	57.5
	Avg. % Mixto			Used in ures
Average % for DOT Mixtures ¹	0.10%	1.32%		
Average % for Other Agency Mixtures ¹	0.80%	1.58%		
Average % for Commercial & Residential Mixtures ¹	0.80%	1.61%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.32%	1.59%
	Other Rep			
% Companies Reporting Using RAS	25%	71%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total	Production	Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			4.1	0.4
Total Tons Produced With WMA Technology at HMA Temperatures [†]				1.6
DOT	72%	53%	3.0	0.5
Other Agency	51%	35%	0.4	1.2
Commercial & Residential	72%	30%	0.7	0.3
WMA Technologies	Other Rep			
Chemical Additive, % of Market	0%	2%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	100%	100%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	100%	29%		
Average percent based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector.				

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
CALIFORNIA	Reported	l Values	Estimate	d Values
OALII OKNIA	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, M	1illions	Tons.	Millions
Total	5.9	10.8	26.0	27.7
DOT	1.1	2.9	4.8	7.4
Other Agency	1.6	2.1	6.9	5.4
Commercial & Residential	3.3	5.8	14.3	14.9
No. of Companies Reporting	6	6		
RAP	Tons, M	1illions	Tons,	Millions
Accepted	1.1	2.4	4.8	6.2
Used in HMA/WMA Mixtures	1.1	1.7	4.7	4.4
Used as Aggregate	0.0	0.2	0.0	0.6
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	0.60	1.52	2.63	3.90
	Avg. % l	Jsed in		Used in
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	14.6%	15.4%		
Average % for Other Agency Mixtures ¹	23.7%	15.3%		
Average % for Commercial & Residential Mixtures ¹	16.6%	18.1%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	OII D		18.1%	15.7%
0/ Occurrencies Demonstrate Lleiene DAD	Other Repo			
% Companies Reporting Using RAP	100%	100%	-	
% of RAP Fractionated	57%	28%	-	
% of RAP Mixtures Using Softer Binders	21%	28%	-	
% of RAP Mixtures Using Rejuvenators	38%	8%		
RAS	Tons, The			ousands
Unprocessed Shingles Accepted	0.0	10.0	0	25.6
Processed Shingles Accepted	6.0	0.0	26.3	0.0
Used in HMA/WMA Mixtures	1.9	7.0	8.3	18.0
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	4.0	10.0	17.5	25.6
	Avg. % l Mixtu			Used in ures
Average % for DOT Mixtures ¹	0.00%	0.00%	IVIIXI	uies
Average % for Other Agency Mixtures ¹	0.00%	0.06%	-	
Average % for Commercial & Residential Mixtures ¹	0.10%	0.07%	-	
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.1070	0.01 70	0.03%	0.06%
	Other Repo	orted Data		
% Companies Reporting Using RAS	17%	17%		
% of RAS Mixtures Using Softer Binders	100%	100%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total F		Tons	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]				4.5
Total Tons Produced With WMA Technology at HMA Temperatures [†]			6.5	2.0
DOT	24%	26%	1.1	1.9
Other Agency	24%	39%	1.7	2.1
Commercial & Residential	26%	17%	3.7	2.5
WMA Technologies	Other Repo			
Chemical Additive, % of Market	27%	40%		
Additive Foaming, % of Market	0%	4%		
Plant Foaming, % of Market	73%	56%		
Organic Additive, % of Market	0%	0%		
•	67%	100%		
% Companies Reporting Using WMA Technologies 1 Average percent based on contractor's reported percentage for each sector, adjusted based on contractor of the contract of the				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	may not add	up exactly due	to rounding
COLORADO	Reported	l Values	Estimate	d Values
OOLONADO	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	/illions	Tons, I	Millions
Total	2.0	2.0	5.3	7.8
DOT	0.8	0.3	2.0	1.2
Other Agency	0.7	0.9	1.8	3.5
Commercial & Residential	0.5	0.8	1.4	3.1
No. of Companies Reporting	5	3		
RAP	Tons, N	Millions	Tons, I	Millions
Accepted	0.5	0.6	1.4	2.4
Used in HMA/WMA Mixtures	0.5	0.4	1.2	1.6
Used as Aggregate	0.0	0.1	0.1	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	0.70	0.37	1.85	1.46
	Avg. %	Used in	Avg. %	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	25.7%	19.7%		
Average % for Other Agency Mixtures ¹	23.1%	19.7%		
Average % for Commercial & Residential Mixtures ¹	21.1%	21.7%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	011 5		23.5%	20.0%
N.O B H BAB	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	22%	33%		
% of RAP Mixtures Using Softer Binders	0%	25%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, The			ousands
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 as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	7.8	7.2	20.7	28.1
	Avg. %			
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	3.0070	0.0070	0.00%	0.00%
	Other Repo	orted Data	2.0070	
% Companies Reporting Using RAS	20%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total I		Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 01 10 01 1			1.0
Total Tons Produced With WMA Technology at HMA Temperatures [†]			0.8	0.2
DOT	16%	11%	0.3	0.1
Other Agency	16%	16%	0.3	0.6
Commercial & Residential	13%	15%	0.2	0.5
WMA Technologies	Other Repo			
Chemical Additive, % of Market	67%	82%		
Additive Foaming, % of Market	0%	0%		
		18%		
Plant Foaming, % of Market	33%			
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies 1 Average percent based on contractor's reported percentage for each sector, adjusted base	60%	67%		

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	may not add	up exactly due	to rounding
CONNECTICUT	Reported	Values	Estimate	d Values
OONNEO 1100 1	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	/lillions	Tons. I	Millions
Total	2.8	2.2	4.9	4.9
DOT	1.1	0.5	1.9	1.1
Other Agency	0.9	0.6	1.5	1.3
Commercial & Residential	0.9	1.1	1.5	2.5
No. of Companies Reporting	3	3		
RAP	Tons, N	/lillions	Tons, I	Millions
Accepted	0.5	0.4	0.8	0.9
Used in HMA/WMA Mixtures	0.5	0.3	0.9	0.8
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.14	1.00	1.97	2.22
	Avg. %	Jsed in	Avg. %	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	13.9%	15.0%		
Average % for Other Agency Mixtures ¹	19.5%	15.7%		
Average % for Commercial & Residential Mixtures ¹	20.2%	16.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	64 5		17.6%	15.3%
N.O B H.i. BAB	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	17%		
% of RAP Mixtures Using Softer Binders	0%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, The			ousands
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.9	0.7	1.6	1.6
Used in HMA/WMA Mixtures	0.0	0.7	0.0	1.6
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	0.0	0.1	0.0	0.2
	Avg. %		Avg. %	
Average % for DOT Mixtures ¹	0.00%	0.00%	Mixt	ures
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.10%	0.06%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.1070	0.0070	0.00%	0.03%
	Other Repo	orted Data	0.0070	0.0070
% Companies Reporting Using RAS	33%	33%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total I		Tons I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OF TOTAL	.50000001		0.0
Total Tons Produced With WMA Technology at HMA Temperatures [†]			1.4	3.4
DOT	25%	94%	0.5	1.0
Other Agency	30%	68%	0.4	0.9
Commercial & Residential	30%	57%	0.5	1.4
WMA Technologies	Other Repo			
Chemical Additive, % of Market	2%	0%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	49%	100%		
Organic Additive, % of Market	49%	0%		
% Companies Reporting Using WMA Technologies 1 Average percent based on contractor's reported percentage for each sector, adjusted base	67%	33%		

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
DELAWARE	Reported	l Values	Estimate	d Values
DELATIANE	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	Millions	Tons, I	Millions
Total	*	*	1.5	1.6
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
No. of Companies Reporting	*	*		
· · · · · ·	T 1	A:II:	Т	A:II:
RAP	Tons, N	/IIIIONS *	i ons, i	Millions *
Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used as Aggregate	*	*	*	*
Used in Cold-Mix Asphalt				
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAP Stockpiled at Year-End	*	*	*	*
	Avg. %		Avg. %	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	*	*		
Average % for Other Agency Mixtures ¹	*	*		
Average % for Commercial & Residential Mixtures ¹	*	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			*	*
	Other Repo	orted Data		
% Companies Reporting Using RAP	*	*		
% of RAP Fractionated	*	*		
% of RAP Mixtures Using Softer Binders	*	*		
% of RAP Mixtures Using Rejuvenators	*	*	-	
RAS	Tana Th		Tana Th	
-	Tons, Th	ousanas *	rons, in	ousands
Unprocessed Shingles Accepted	*	*	*	*
Processed Shingles Accepted	*	*	*	*
Used in HMA/WMA Mixtures				*
Used as Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAS Stockpiled at Year-End	*	*	*	*
	Avg. %	Used in	Avg. %	Used in
	Mixtu	ıres	Mixt	ures
Average % for DOT Mixtures ¹	*	*		
Average % for Other Agency Mixtures ¹	*	*		
Average % for Commercial & Residential Mixtures ¹	*	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			*	*
	Other Repo	orted Data		
% Companies Reporting Using RAS	*	*		
% of RAS Mixtures Using Softer Binders	*	*		
% of RAS Mixtures Using Rejuvenators	*	*		
	0/ of Total !	Droducties	Tana	Aillions
WMA	% of Total I	roduction	Tons, I	viilions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			*	*
Total Tons Produced With WMA Technology at HMA Temperatures [†]	Ji.	4		
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	*	*		
Additive Foaming, % of Market	*	*		
	*	*		
Plant Foaming, % of Market	*	*		
Organic Additive, % of Market				
% Companies Reporting Using WMA Technologies 1 Average percent based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector.	*	*		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		-	up exactly due	
DISTRICT OF COLUMBIA	Reported	l Values	Estimate	d Values
DIGTRICT OF COLUMNIA	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	/lillions	Tons, N	Millions
Total	*	*	1.4	1.5
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
No. of Companies Reporting	*	*		
RAP	Tons, N	/lillions	Tons, N	Millions
Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used as Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAP Stockpiled at Year-End	*	*	*	*
	Avg. %	Used in	Avg. %	Used in
	Mixtu		Mixt	
Average % for DOT Mixtures ¹	*	*		
Average % for Other Agency Mixtures ¹	*	*		
Average % for Commercial & Residential Mixtures ¹	*	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			*	*
	Other Repo	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 as Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAS Stockpiled at Year-End	*	*	*	*
	Avg. % I		Avg. % Mixt	
Average % for DOT Mixtures ¹	*	*		
Average % for Other Agency Mixtures ¹	*	*		
Average % for Commercial & Residential Mixtures ¹	*	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			*	*
	Other Repo	orted Data		
% Companies Reporting Using RAS	*	*		
% of RAS Mixtures Using Softer Binders	*	*		
% of RAS Mixtures Using Rejuvenators	*	*		
WMA	% of Total I	Production	Tons, N	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]				*
Total Tons Produced With WMA Technology at HMA Temperatures [†]			*	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	*	*		
Additive Foaming, % of Market	*	*		
	*	*		
Plant Foaming, % of Market	*	*		
Organic Additive, % of Market				
% Companies Reporting Using WMA Technologies ¹ Average percent based on contractor's reported percentage for each sector, adjusted based	*	*		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		may not add		
FLORIDA	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	L		Millions
Total	4.6	10.2	16.5	16.0
DOT	2.1	3.7	7.6	5.8
Other Agency	1.1	3.7	4.1	5.7
Commercial & Residential	1.4	2.8	4.9	4.5
No. of Companies Reporting	5	13	1.0	1.0
RAP	Tons, N		Tone	Millions
Accepted	1.1	2.4	3.9	3.7
Used in HMA/WMA Mixtures	1.6	2.4	5.8	4.4
Used as Aggregate	0.0	0.1	0.0	0.2
Used in Cold-Mix Asphalt	0.0	0.1	0.0	0.2
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	2.04	0.29	7.26	0.45
	Avg. % Mixtu			Used in ures
Average % for DOT Mixtures ¹	34.0%	23.8%	IVIIA	
Average % for Other Agency Mixtures ¹	38.3%	26.7%		
Average % for Commercial & Residential Mixtures ¹	35.1%	28.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			35.3%	27.3%
	Other Repo	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	28%	23%		
% of RAP Mixtures Using Softer Binders	83%	55%		
% of RAP Mixtures Using Rejuvenators	0%	12%		
RAS	-	L	Topo Th	ou condo
Unprocessed Shingles Accepted	Tons, Th	6.5	0.0	ousands 10.2
Processed Shingles Accepted	0.0	5.0	0.0	7.8
Used in HMA/WMA Mixtures	0.0	4.5	0.0	7.0
Used as 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
	9.5	1.0		1.6
Total Tons of RAS Stockpiled at Year-End	9.5 Avg. %		33.9	Used in
	Avg. % Mixtu			ures
Average % for DOT Mixtures ¹	0.00%	0.00%	Wilde	
Average % for Other Agency Mixtures ¹	0.00%	0.04%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.06%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.00%	0.04%
	Other Repo	orted Data		
% Companies Reporting Using RAS	0%	8%		
% of RAS Mixtures Using Softer Binders	0%	100%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total		Tons	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]				2.1
Total Tons Produced With WMA Technology at HMA Temperatures [†]			1.1	4.0
DOT	2%	37%	0.2	2.2
Other Agency	5%	45%	0.2	2.6
Commercial & Residential	15%	30%	0.7	1.3
WMA Technologies	Other Repo			
Chemical Additive, % of Market	100%	100%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	0%	0%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	40%	15%		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	may not add	up exactly due	to rounding
GEORGIA	Reported	l Values	Estimate	d Values
OLONOIA	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	/lillions	Tons, I	Millions
Total	2.2	5.7	14.6	14.2
DOT	1.3	2.8	8.3	7.0
Other Agency	0.5	1.1	3.4	2.7
Commercial & Residential	0.5	1.8	3.0	4.5
No. of Companies Reporting	5	6		
RAP	Tons, N	/lillions	Tons, I	Millions
Accepted	0.3	2.5	2.2	6.3
Used in HMA/WMA Mixtures	0.5	1.5	3.3	3.6
Used as Aggregate	0.0	0.0	0.2	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.7	0.0	1.7
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.36	3.80	2.37	9.47
	Avg. %		Avg. %	Used in
	Mixtu		Mixt	
Average % for DOT Mixtures ¹	20.6%	24.8%		
Average % for Other Agency Mixtures ¹	25.6%	24.8%		
Average % for Commercial & Residential Mixtures ¹	25.6%	25.7%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			22.7%	25.4%
	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	8%	3%		
% of RAP Mixtures Using Softer Binders	0%	14%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th	ousands	Tons. Th	ousands
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 as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	22.9	0.0	149.3	0.0
	Avg. %	Used in	Avg. %	Used in
	Mixtu		Mixt	
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.00%	0.00%
	Other Repo			
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total	Production	Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			6.2	0.0
Total Tons Produced With WMA Technology at HMA Temperatures [†]			6.3	1.5
DOT	43%	14%	3.6	1.0
Other Agency	43%	1%	1.4	0.0
Commercial & Residential	43%	11%	1.3	0.5
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	0%	0%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	100%	100%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies 1 Average percent based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector and the contractor's reported percentage for each sector and the contractor and the con	60%	17%		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		-	up exactly due	
GUAM	Reported	Values	Estimate	d Values
OUAINI -	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, M	lillions	Tons. I	Millions
Total	NCR	NCR	0.12	0.12
DOT	NCR	NCR	NCR	NCR
Other Agency	NCR	NCR	NCR	NCR
Commercial & Residential	NCR	NCR	NCR	NCR
No. of Companies Reporting	NCR	NCR		
RAP	Tons, M	lillions	Tons.	Millions
Accepted	NCR	NCR	NCR	NCR
Used in HMA/WMA Mixtures	NCR	NCR	NCR	NCR
Used as 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
Total Total Ottokplied at Total Ella	Avg. % l			Used in
	Mixtu			ures
Average % for DOT Mixtures ¹	NCR	NCR		
Average % for Other Agency Mixtures ¹	NCR	NCR		
Average % for Commercial & Residential Mixtures ¹	NCR	NCR		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			NCR	NCR
	Other Repo	rted Data		
% Companies Reporting Using RAP	NCR	NCR		
% of RAP Fractionated	NCR	NCR		
% of RAP Mixtures Using Softer Binders	NCR	NCR		
% of RAP Mixtures Using Rejuvenators	NCR	NCR		
RAS	Tons, Tho	ousands	Tons Th	ousands
Unprocessed Shingles Accepted	NCR	NCR	NCR	NCR
Processed Shingles Accepted	NCR	NCR	NCR	NCR
Used in HMA/WMA Mixtures	NCR	NCR	NCR	NCR
Used as Aggregate	NCR	NCR	NCR	NCR
Used in Cold-Mix Asphalt	NCR	NCR	NCR	NCR
Used in Other	NCR	NCR	NCR	NCR
Landfilled	NCR	NCR	NCR	NCR
Total Tons of RAS Stockpiled at Year-End	NCR	NCR	NCR	NCR
Total Total Citatio Stockplied at Total Elia	Avg. % l			Used in
	Mixtu		Mixtures	
Average % for DOT Mixtures ¹	NCR	NCR		
Average % for Other Agency Mixtures ¹	NCR	NCR		
Average % for Commercial & Residential Mixtures ¹	NCR	NCR		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			NCR	NCR
	Other Repo			
% Companies Reporting Using RAS	NCR	NCR		
% of RAS Mixtures Using Softer Binders	NCR	NCR		
% of RAS Mixtures Using Rejuvenators	NCR	NCR		
NMA	% of Total F	Production	Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]				NCR
Total Tons Produced With WMA Technology at HMA Temperatures [†]			NCR	NCR
DOT	NCR	NCR	NCR	NCR
Other Agency	NCR	NCR	NCR	NCR
Commercial & Residential	NCR	NCR	NCR	NCR
WMA Technologies	Other Repo			
Chemical Additive, % of Market	NCR	NCR		
Additive Foaming, % of Market	NCR	NCR		
Plant Foaming, % of Market	NCR	NCR		
Organic Additive, % of Market % Companies Reporting Using WMA Technologies	NCR NCR	NCR		
	NOD	NCR		

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	may not add	up exactly due	to rounding
HAWAII	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	/lillions	Tons, I	Millions
Total	0.8	0.7	1.1	1.1
DOT	0.2	0.3	0.3	0.5
Other Agency	0.5	0.3	0.7	0.5
Commercial & Residential	0.1	0.1	0.1	0.1
No. of Companies Reporting	3	3		
RAP	Tons, N	/lillions	Tons, I	Millions
Accepted	0.2	0.1	0.3	0.2
Used in HMA/WMA Mixtures	0.2	0.2	0.2	0.3
Used as 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	0.12	0.10	0.18	0.17
	Avg. %		Avg. %	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	20.3%	26.7%		
Average % for Other Agency Mixtures ¹	20.3%	23.3%		
Average % for Commercial & Residential Mixtures ¹	21.9%	20.0%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	011 5		20.0%	23.1%
N.O B H BAB	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	67%	67%		
% of RAP Mixtures Using Softer Binders	0%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th			ousands
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 as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	0.0	0.0	0.0	0.0
	Avg. % Mixtu		Avg. % Mixt	
Average % for DOT Mixtures ¹	0.00%	0.00%	IVIIAL	uies
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.0070	0.0070	0.00%	0.00%
	Other Repo	orted Data		
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total	Production	Tons I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OF TOTAL	TOGGOGOT		0.0
Total Tons Produced With WMA Technology at HMA Temperatures [†]			0.0	0.0
DOT	0%	0%	0.0	0.0
Other Agency	0%	0%	0.0	0.0
Commercial & Residential	0%	0%	0.0	0.0
WMA Technologies	Other Repo		0.0	0.0
Chemical Additive, % of Market	0%	0%		
	0%	0%		
Additive Foaming, % of Market				
Plant Foaming, % of Market	0%	0%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies 1 Average percent based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector and the contractor's reported percentage for each sector and the contractor and the con	0%	0%		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
IDAHO	Reported			d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	/lillions	Tons, I	Millions
Total	1.7	1.5	2.8	2.9
DOT	1.0	8.0	1.7	1.5
Other Agency	0.2	0.4	0.4	8.0
Commercial & Residential	0.5	0.3	0.7	0.6
No. of Companies Reporting	6	5		
RAP	Tons, M	/lillions	Tons, I	Millions
Accepted	0.6	0.5	1.0	0.9
Used in HMA/WMA Mixtures	0.5	0.4	0.8	0.8
Used as 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	0.53	0.73	0.86	1.41
	Avg. %			Used in
	Mixt	ures		ures
Average % for DOT Mixtures ¹	25.8%	26.0%		
Average % for Other Agency Mixtures ¹	27.3%	27.4%		
Average % for Commercial & Residential Mixtures ¹	31.3%	32.2%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			27.3%	27.3%
	Other Rep			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	17%	28%		
% of RAP Mixtures Using Softer Binders	79%	79%		
% of RAP Mixtures Using Rejuvenators	3%	2%		
RAS	Tons, Th	ousands	Tons. 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 as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	0.0	0.0	0.0	0.0
	Avg. %	Used in	Avg. %	Used in
	Mixt		Mixt	ures
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.00%	0.00%
	Other Rep			
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total	Production	Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			1.3	1.5
Total Tons Produced With WMA Technology at HMA Temperatures [†]				0.7
DOT	56%	76%	0.9	1.2
Other Agency	36%	95%	0.1	0.7
Commercial & Residential	29%	47%	0.2	0.3
WMA Technologies [‡]	Other Rep	orted Data		
Chemical Additive, % of Market	50%	73%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	50%	27%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	67%	80%		
Companies Reporting Using WMA Technologies Average percent based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor.				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	may not add	up exactly due	to rounding
ILLINOIS	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	1illions	Tons. I	Millions
Total	2.1	3.2	13.0	12.5
DOT	0.9	0.8	5.8	3.1
Other Agency	0.7	1.1	4.1	4.3
Commercial & Residential	0.5	1.3	3.1	5.1
No. of Companies Reporting	7	12		
RAP	Tons, N	1illions	Tons, I	Millions
Accepted	0.5	2.6	3.2	10.2
Used in HMA/WMA Mixtures	0.5	0.9	3.3	3.5
Used as Aggregate	0.0	0.4	0.2	1.4
Used in Cold-Mix Asphalt	0.0	0.0	0.1	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	0.53	1.00	3.26	3.91
	Avg. % l	Jsed in	Avg. %	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	24.3%	25.7%		
Average % for Other Agency Mixtures ¹	23.6%	27.0%		
Average % for Commercial & Residential Mixtures ¹	28.7%	29.6%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			25.1%	28.1%
	Other Repo			
% Companies Reporting Using RAP	100%	83%		
% of RAP Fractionated	55%	39%		
% of RAP Mixtures Using Softer Binders	14%	23%		
% of RAP Mixtures Using Rejuvenators	1%	3%		
RAS	Tons, The		Tons, Th	
Unprocessed Shingles Accepted	4.0	24.5	24.5	95.7
Processed Shingles Accepted	7.2	57.1	44.3	223.0
Used in HMA/WMA Mixtures	10.1	70.1	62.2	273.8
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	1.1	1.0	6.7	3.9
	Avg. % I		Avg. %	
Average 0/ fee DOT Mixtures1	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹ Average % for Other Agency Mixtures ¹	0.40% 0.60%	2.33% 2.11%		
Average % for Commercial & Residential Mixtures ¹ State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.60%	2.20%	0.48%	2.19%
State Average All Ivilixitates based of IVAS Tolls Osed III TilviA/VVIVIA	Other Repo	orted Data	U. 1 U /0	۷. ۱۶/۵
% Companies Reporting Using RAS	43%	nieu Dala		
% of RAS Mixtures Using Softer Binders	40%			
% of RAS Mixtures Using Rejuvenators	0%			
WMA		Production	Tone !	Ailliona
Total Tons Produced With WMA Technology at Reduced Temperature [†]	% of Total I	TOUUCIION	Tons, I	4.6
Total Tons Produced With WMA Technology at Reduced Temperatures [†]			4.5	4.0
DOT	33%	38%	1.9	1.2
Other Agency	41%	84%	1.7	3.6
Commercial & Residential	29%	79%	0.9	4.0
WMA Technologies	Other Repo		0.0	r.0
Chemical Additive, % of Market	50%	21%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	50%	79%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	71%	50%		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
INDIANA	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	Millions	Tons	Millions
Total	6.6	8.3	11.8	12.5
DOT	2.9	3.4	5.1	5.1
Other Agency	2.2	2.3	4.0	3.5
Commercial & Residential	1.5	2.6	2.7	3.9
No. of Companies Reporting	5	7	2.1	5.9
· · · · · · · · · · · · · · · · · · ·	-	•	_	4.11.
RAP	Tons, N			Millions
Accepted	1.5	1.9	2.7	2.9
Used in HMA/WMA Mixtures	1.5	2.0	2.6	3.0
Used as 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	2.20	2.37	3.94	3.57
	Avg. % l			Used in
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	19.8%	22.0%		
Average % for Other Agency Mixtures ¹	23.8%	23.4%		
Average % for Commercial & Residential Mixtures ¹	24.0%	26.1%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			21.1%	24.1%
	Other Repo	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	43%	69%		
% of RAP Mixtures Using Softer Binders	22%	8%		
% of RAP Mixtures Using Rejuvenators	0%	8%		
RAS	Tons, The		Tono Th	nousands
Unprocessed Shingles Accepted	3.6	0.9	6.5	1.4
Processed Shingles Accepted Processed Shingles Accepted	3.6	8.4	6.4	12.7
Used in HMA/WMA Mixtures	13.2	17.5		
			23.6	26.4
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	13.8	9.0	24.6	13.6
	Avg. % I		Avg. % Used in	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	0.30%	0.22%		
Average % for Other Agency Mixtures ¹	0.00%	0.19%		
Average % for Commercial & Residential Mixtures ¹	0.30%	0.21%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.20%	0.21%
	Other Repo			
% Companies Reporting Using RAS	80%	71%		
% of RAS Mixtures Using Softer Binders	25%	10%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total I	Production	Tons.	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]				3.7
Total Tons Produced With WMA Technology at HMA Temperatures [†]			10.4	5.5
DOT	88%	82%	4.5	4.2
Other Agency	88%	56%	3.5	1.9
Commercial & Residential	88%	79%	2.4	3.1
	Other Repo		£. í	J. 1
WMA Technologies				
Chemical Additive, % of Market	0%	0%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	100%	100%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	60%	57%		
Average percent based on contractor's reported percentage for each sector, adjusted has				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
OWA -	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
ons of HMA/WMA Produced	Tons, M	Millions	Tons, I	Millions
Total	1.6	1.8	3.9	3.8
DOT	0.9	1.0	2.1	2.1
Other Agency	0.4	0.6	1.0	1.3
Commercial & Residential	0.3	0.2	0.8	0.4
No. of Companies Reporting	6	4	0.0	0.4
·	-	•	T 1	A:III: a a
AP	Tons, M		Tons, I	
Accepted Library 1944 A Minteres	0.3	0.3	0.8	0.6
Used in HMA/WMA Mixtures	0.2	0.3	0.4	0.7
Used as 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	0.22	0.12	0.51	0.25
	Avg. % l		Avg. %	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	10.8%	17.0%		
Average % for Other Agency Mixtures ¹	10.8%	19.3%		
Average % for Commercial & Residential Mixtures ¹	10.2%	20.0%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			10.7%	18.3%
	Other Repo			
% Companies Reporting Using RAP	83%	100%		
% of RAP Fractionated	0%	1%		
% of RAP Mixtures Using Softer Binders	21%	19%		
% of RAP Mixtures Using Rejuvenators	0%	3%		
AS	Tons, The	ousands	Tons, Th	ousands
Unprocessed Shingles Accepted	7.0	2.5	16.5	5.3
Processed Shingles Accepted	0.7	0.0	1.7	0.0
Used in HMA/WMA Mixtures	4.1	4.2	9.7	8.9
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	19.4	14.5	46.3	30.6
Total Total Otto Clockpilea at Teal-Ella	Avg. % l		Avg. %	
	Mixtu		Mixt	
Average % for DOT Mixtures ¹	0.30%	0.20%	IVIIXU	uics
Average % for Other Agency Mixtures ¹	0.00%	0.27%		
Average % for Commercial & Residential Mixtures ¹	0.40%	0.27%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.4070	0.21 /0	0.25%	0.23%
Ciate Average All Mixtures based of TVAC TOTS OSCU III TIMA/WIMA	Other Repo	orted Data	0.2370	0.2370
% Companies Reporting Using RAS	33%	50%		
% of RAS Mixtures Using Softer Binders	25%	25%		
% of RAS Mixtures Using Rejuvenators	0%	<u>25%</u> 5%		
MA	% of Total F	Production	Tons, I	
	70 01 TOtal 1			1.1
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 01 Total 1		0.4	
Total Tons Produced With WMA Technology at Reduced Temperature [†] Total Tons Produced With WMA Technology at HMA Temperatures [†]			0.4	0.9
Total Tons Produced With WMA Technology at Reduced Temperature [†] Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT	5%	64%	0.1	0.9 1.4
Total Tons Produced With WMA Technology at Reduced Temperature [†] Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency	5% 13%	64% 30%	0.1 0.1	0.9 1.4 0.4
Total Tons Produced With WMA Technology at Reduced Temperature [†] Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT	5% 13% 20%	64% 30% 69%	0.1	0.9 1.4
Total Tons Produced With WMA Technology at Reduced Temperature [†] Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency	5% 13%	64% 30% 69%	0.1 0.1	0.9 1.4 0.4
Total Tons Produced With WMA Technology at Reduced Temperature [†] Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency Commercial & Residential	5% 13% 20%	64% 30% 69%	0.1 0.1	0.9 1.4 0.4
Total Tons Produced With WMA Technology at Reduced Temperature† Total Tons Produced With WMA Technology at HMA Temperatures† DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market	5% 13% 20% Other Repo	64% 30% 69% orted Data 51%	0.1 0.1	0.9 1.4 0.4
Total Tons Produced With WMA Technology at Reduced Temperature† Total Tons Produced With WMA Technology at HMA Temperatures† DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	5% 13% 20% Other Repo 50% 0%	64% 30% 69% orted Data 51% 0%	0.1 0.1	0.9 1.4 0.4
Total Tons Produced With WMA Technology at Reduced Temperature† Total Tons Produced With WMA Technology at HMA Temperatures† DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market Plant Foaming, % of Market	5% 13% 20% Other Repo 50% 0% 50%	64% 30% 69% orted Data 51% 0% 49%	0.1 0.1	0.9 1.4 0.4
Total Tons Produced With WMA Technology at Reduced Temperature† Total Tons Produced With WMA Technology at HMA Temperatures† DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	5% 13% 20% Other Repo 50% 0%	64% 30% 69% orted Data 51% 0%	0.1 0.1	0.9 1.4 0.4

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
KANSAS	Reported	l Values	Estimate	d Values
NANOAO	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N			Millions
Total	1.1	2.4	2.0	2.5
DOT	0.4	1.4	0.8	1.5
Other Agency	0.4	0.5	0.8	0.5
Commercial & Residential	0.3	0.5	0.5	0.5
No. of Companies Reporting	3	4	0.5	0.5
RAP	_	· ·	Tono	Milliona
	Tons, N			Millions
Accepted	0.4	1.0	0.7	1.0
Used in HMA/WMA Mixtures	0.2	0.5	0.4	0.5
Used as 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	0.23	0.83	0.43	0.86
	Avg. % l Mixtu			Used in ures
Average % for DOT Mixtures ¹	15.8%	21.3%		
Average % for Other Agency Mixtures ¹	22.2%	17.5%		
Average % for Commercial & Residential Mixtures ¹	19.2%	20.0%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			19.0%	20.8%
	Other Repo	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	5%	29%		
% of RAP Mixtures Using Softer Binders	65%	68%		
% of RAP Mixtures Using Rejuvenators	3%	15%		
RAS			Tana Th	
	Tons, The			ousands
Unprocessed Shingles Accepted	0.0	2.0	0.0	2.1
Processed Shingles Accepted	2.5	13.0	4.7	13.5
Used in HMA/WMA Mixtures	5.5	13.0	10.2	13.5
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	11.0	2.0	20.5	2.1
	Avg. % l Mixtu		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	1.00%	0.67%		
Average % for Other Agency Mixtures ¹	0.00%	0.43%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.0070		0.51%	0.54%
	Other Repo	orted Data		
% Companies Reporting Using RAS	33%	75%		
% of RAS Mixtures Using Softer Binders	100%	67%		
% of RAS Mixtures Using Rejuvenators	0%	34%		
VMA	% of Total I		Tons	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OI 10tal I	TOGGOTION		0.7
Total Tons Produced With WMA Technology at HMA Temperatures [†]			0.5	0.7
DOT	38%	62%	0.3	0.7
Other Agency	19%	50%	0.3	0.9
Commercial & Residential	13%	48%	0.1	0.3
			U. I	0.3
WMA Technologies Chamical Additive % of Market	Other Repo			
Chemical Additive, % of Market	88%	58%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	12%	42%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	66%	75%		
Average percent based on contractor's reported percentage for each sector, adjusted has	and upon reported to	nnago		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		s may not add		
KENTUCKY	Reported	d Values	Estimate	d Values
NENT O OTT	2017	2018	2017	2018
ons of HMA/WMA Produced	Tons, N	Millions	Tons.	Millions
Total	4.4	4.7	4.3	5.8
DOT	2.1	2.6	2.1	3.2
Other Agency	1.3	1.2	1.3	1.5
Commercial & Residential	1.1	0.9	1.1	1.1
No. of Companies Reporting	4	10		•
RAP	Tons, N	Millions	Tons,	Millions
Accepted	1.2	0.8	1.2	1.0
Used in HMA/WMA Mixtures	1.1	0.7	1.1	0.9
Used as 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	0.96	0.97	0.96	1.2
	Avg. %	Used in	Avg. %	Used in
Average % for DOT Mixtures ¹	24.5%	ures 15.1%	Mix	tures
Average % for DOT Mixtures ¹ Average % for Other Agency Mixtures ¹	24.5%	15.1%		
Average % for Commercial & Residential Mixtures ¹	24.2%	15.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	24.5%	13.6%	24.4%	15.7%
State Average All Mixtures Based on RAP Tons Used in HMA/WMA-	Other Rep	orted Data	24.4%	15.7%
% Companies Panarting Lights BAD	100%			
% Companies Reporting Using RAP % of RAP Fractionated	53%	100% 42%	-	
	8%	22%	-	
% of RAP Mixtures Using Softer Binders	26%	18%	-	
% of RAP Mixtures Using Rejuvenators		L		
RAS	Tons, Th			nousands
Unprocessed Shingles Accepted	0.0	8.0	0.0	9.9
Processed Shingles Accepted	12.0	13.4	12.0	16.5
Used in HMA/WMA Mixtures	13.9	1.1	13.8	1.4
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	5.5	15.3	5.5	18.9
	Avg. % Mixt		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	0.00%	0.02%	IVIIX	uico
Average % for Other Agency Mixtures ¹	0.60%	0.02%		
Average % for Commercial & Residential Mixtures ¹	0.60%	0.02%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.31%	0.02%
<u> </u>	Other Rep	orted Data		
% Companies Reporting Using RAS	50%	20%		
% of RAS Mixtures Using Softer Binders	0%	45%		
% of RAS Mixtures Using Rejuvenators	55%	90%	-	
WMA	% of Total		Tons,	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]				1.6
Total Tons Produced With WMA Technology at HMA Temperatures [†]			3.3	1.3
DOT	77%	65%	1.6	2.1
Other Agency	75%	42%	0.9	0.6
Commercial & Residential	75%	19%	0.8	0.2
WMA Technologies	Other Rep			
Chemical Additive, % of Market	50%	53%		
Additive Foaming, % of Market	0%	9%		
Plant Foaming, % of Market	50%	38%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	100%	60%		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly du	
LOUISIANA	Reported	d Values	Estimate	d Values
	2017	2018	2017	2018
ons of HMA/WMA Produced	Tons, N	Millions	Tons.	Millions
Total	1.2	0.9	7.8	7.4
DOT	0.6	0.5	4.1	4.1
Other Agency	0.3	0.2	2.0	1.6
Commercial & Residential	0.3	0.2	1.7	1.7
No. of Companies Reporting	5	4		
RAP	Tons, N	Millions	Tons.	Millions
Accepted	0.3	0.2	1.8	1.8
Used in HMA/WMA Mixtures	0.3	0.2	1.7	1.6
Used as Aggregate	0.0	0.0	0.1	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.17	0.16	1.06	1.32
7544. 15115 5112 11 51551 2114	Avg. %			Used in
	Mixt		Mix	tures
Average % for DOT Mixtures ¹	23.5%	23.3%		
Average % for Other Agency Mixtures ¹	16.9%	18.0%		
Average % for Commercial & Residential Mixtures ¹	21.7%	22.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			20.3%	22.2%
	Other Rep			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	75%	95%		
% of RAP Mixtures Using Softer Binders	12%	25%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th	ousands	Tons, 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 as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	0.0	0.0	0.0	0.0
	Avg. %			Used in
	Mixt		Mix	tures
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%	0.0001	0.000
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0"	1 15	0.00%	0.00%
0/ O	Other Rep			
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total	Production	Tons,	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			6.3	5.9
Total Tons Produced With WMA Technology at HMA Temperatures [†]				0.0
DOT	83%	74%	3.4	3.0
Other Agency	78%	81%	1.6	1.3
Commercial & Residential	81%	90%	1.4	1.6
WMA Technologies	Other Rep	orted Data		
Chemical Additive, % of Market	0%	2%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	100%	98%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	80% ed upon reported to	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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	may not add	up exactly due	to rounding
MAINE	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	/illions	Tons. I	Millions
Total	2.0	*	1.7	1.7
DOT	0.6	*	0.6	*
Other Agency	0.5	*	0.4	*
Commercial & Residential	0.8	*	0.7	*
No. of Companies Reporting	3	*		
RAP	Tons, N	Millions	Tons, I	Millions
Accepted	0.2	*	0.2	*
Used in HMA/WMA Mixtures	0.4	*	0.3	*
Used as 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	0.53	*	0.46	*
	Avg. %	Used in	Avg. %	Used in
	Mixtu		Mixt	
Average % for DOT Mixtures ¹	19.8%	*		
Average % for Other Agency Mixtures ¹	19.8%	*		
Average % for Commercial & Residential Mixtures ¹	21.8%	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			20.3%	*
	Other Repo	orted Data		
% Companies Reporting Using RAP	100%	*		
% of RAP Fractionated	27%	*		
% of RAP Mixtures Using Softer Binders	2%	*		
% of RAP Mixtures Using Rejuvenators	0%	*		
RAS	Tons, Th	ousands	Tons, Th	ousands
Unprocessed Shingles Accepted	0.0	*	0.0	*
Processed Shingles Accepted	5.9	*	5.1	*
Used in HMA/WMA Mixtures	3.9	*	3.4	*
Used as Aggregate	0.0	*	0.0	*
Used in Cold-Mix Asphalt	0.0	*	0.0	*
Used in Other	0.0	*	0.0	*
Landfilled	0.0	*	0.0	*
Total Tons of RAS Stockpiled at Year-End	1.0	*	0.8	*
	Avg. %	Used in	Avg. %	Used in
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	0.60%	*		
Average % for Other Agency Mixtures ¹	0.00%	*		
Average % for Commercial & Residential Mixtures ¹	0.00%	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	011 5		0.20%	*
0/ 0	Other Repo	orted Data		
% Companies Reporting Using RAS	66%	*		
% of RAS Mixtures Using Softer Binders	0%	*		
% of RAS Mixtures Using Rejuvenators	0%			
WMA	% of Total I	Production	Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature†			0.1	*
Total Tons Produced With WMA Technology at HMA Temperatures [†]				*
DOT	8%	*	0.0	*
Other Agency	6%	*	0.0	*
Commercial & Residential	4%	*	0.0	*
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	33%	*		
Additive Foaming, % of Market	0%	*		
Plant Foaming, % of Market	0%	*		
Organic Additive, % of Market	67%	*		
% Companies Reporting Using WMA Technologies	100%	*		
¹ Average percent based on contractor's reported percentage for each sector, adjusted base		nnage nnage		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		s may not add		
MARYLAND	Reported	d Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N			Millions
Total	2.4	4.4	7.8	6.8
DOT	1.2	1.5	3.9	2.3
Other Agency	0.5	1.1	1.5	1.7
Commercial & Residential	0.7	1.8	2.4	2.8
No. of Companies Reporting	6	11	2.7	2.0
RAP	_		Tana	Millione
	Tons, N			Millions
Accepted	0.7	1.6	2.2	2.5
Used in HMA/WMA Mixtures	0.5	1.2	1.8	1.8
Used as Aggregate	0.0	0.3	0.1	0.5
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.71	1.02	2.29	1.58
	Avg. % Mixt			Used in tures
Average % for DOT Mixtures ¹	21.6%	23.2%		
Average % for Other Agency Mixtures ¹	21.2%	21.3%		
Average % for Commercial & Residential Mixtures ¹	24.6%	29.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			22.5%	26.4%
	Other Rep	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	14%		
% of RAP Mixtures Using Softer Binders	29%	19%		
% of RAP Mixtures Using Rejuvenators	16%	4%		
RAS		<u> </u>	Tono Th	a u a a a a a
	Tons, Th			nousands
Unprocessed Shingles Accepted	0.5	3.0	1.6	4.6
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	7.1	0.0	22.7	0.0
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	10.5	3.0	33.8	4.6
	Avg. % Mixt		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	0.50%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.29%	0.00%
5	Other Rep	orted Data		
% Companies Reporting Using RAS	33%	0%		
% of RAS Mixtures Using Softer Binders	25%	0%		
% of RAS Mixtures Using Rejuvenators	15%	0%		
WMA	% of Total	•	Tons,	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			2.7	3.2
Total Tons Produced With WMA Technology at HMA Temperatures [†]			2.7	0.6
DOT	36%	72%	1.4	1.7
Other Agency	40%	59%	0.6	1.0
Commercial & Residential	30%	40%	0.7	1.1
WMA Technologies [‡]	Other Rep			
Chemical Additive, % of Market	20%	36%		
	0%			
Additive Foaming, % of Market	1 11%	0%		
		0.407		
Plant Foaming, % of Market	80%	64%		
		64% 0% 55%		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	may not add	up exactly due	to rounding
MASSACHUSETTS	Reported	l Values	Estimate	d Values
MIAGGAGHOGETTO	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	Millions	Tons. I	Millions
Total	5.0	5.0	6.5	6.5
DOT	2.2	1.7	2.8	2.2
Other Agency	0.7	1.3	0.9	1.7
Commercial & Residential	2.1	2.0	2.8	2.6
No. of Companies Reporting	8	7		
RAP	Tons, N	Millions	Tons, I	Millions
Accepted	0.9	1.3	1.2	1.7
Used in HMA/WMA Mixtures	0.8	0.8	1.0	1.0
Used as Aggregate	0.1	0.2	0.1	0.2
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.1	0.0	0.1
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.56	1.28	0.72	1.66
	Avg. %		Avg. %	
	Mixtu		Mixt	
Average % for DOT Mixtures ¹	20.2%	16.1%		
Average % for Other Agency Mixtures ¹	4.8%	15.1%		
Average % for Commercial & Residential Mixtures ¹	14.5%	16.0%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			15.6%	15.6%
	Other Repo	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	3%	14%		
% of RAP Mixtures Using Softer Binders	5%	2%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, The	ousands	Tons. Th	ousands
Unprocessed Shingles Accepted	9.0	24.0	11.7	31.2
Processed Shingles Accepted	2.9	2.3	3.7	3.0
Used in HMA/WMA Mixtures	2.9	2.3	3.7	3.0
Used as Aggregate	15.0	24.0	19.4	31.2
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	0.8	25.0	1.0	32.5
	Avg. %	Jsed in	Avg. % Used in	
	Mixtu	ıres	Mixt	ures
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.10%	0.07%		
Average % for Commercial & Residential Mixtures ¹	0.10%	0.07%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.06%	0.05%
	Other Repo			
% Companies Reporting Using RAS	25%	29%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total I	Production	Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			3.8	2.2
Total Tons Produced With WMA Technology at HMA Temperatures [†]				2.8
DOT	83%	96%	2.3	2.1
Other Agency	8%	43%	0.1	8.0
Commercial & Residential	51%	81%	1.4	2.1
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	75%	78%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	0%	0%		
Organic Additive, % of Market	25%	22%		
% Companies Reporting Using WMA Technologies	100%	100%		
Average percent based on contractor's reported percentage for each sector, adjusted base				

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		s may not add		
MICHIGAN	Reported	d Values	Estimate	ed Values
	2017	2018	2017	2018
ons of HMA/WMA Produced	Tons, I	Millions	Tons	Millions
Total	9.0	8.8	13.7	14.3
DOT	2.9	2.7	4.3	4.4
Other Agency	2.3	2.1	3.5	3.4
Commercial & Residential	3.9	4.0	5.9	6.5
No. of Companies Reporting	7	5	0.0	0.0
RAP	Tons, N	-	Tone	Millions
Accepted	2.8	2.4	4.2	3.9
Used in HMA/WMA Mixtures	2.5	2.4	3.8	4.1
			0.0	0.0
Used as Aggregate	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	3.42	3.17	5.18	5.15
	Avg. % Mixt			Used in tures
Average % for DOT Mixtures ¹	21.7%	21.8%		
Average % for Other Agency Mixtures ¹	26.5%	26.2%		
Average % for Commercial & Residential Mixtures ¹	33.3%	34.4%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			27.9%	28.4%
	Other Rep	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	24%	17%		
% of RAP Mixtures Using Softer Binders	24%	35%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS			Tono Ti	acucanda
	Tons, Th			nousands
Unprocessed Shingles Accepted	2.0	2.0	3.0	3.3
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	0.5	0.5	0.8	0.8
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	1.5	1.5	2.3	2.4
	Avg. % Mixt		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.01%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.0070	0.0.7	0.01%	0.01%
	Other Rep	orted Data		
% Companies Reporting Using RAS	14%	20%		
% of RAS Mixtures Using Softer Binders	33%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total		Tons,	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]				0.1
Total Tons Produced With WMA Technology at HMA Temperatures [†]			2.3	2.4
DOT	17%	29%	0.7	1.3
Other Agency	15%	18%	0.5	0.5
Commercial & Residential	18%	10%	1.1	0.7
WMA Technologies	Other Rep			<u> </u>
Chemical Additive, % of Market	25%	0%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	75%	100%		
Organic Additive, % of Market % Companies Reporting Using WMA Technologies	0%	0%		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		s may not add		
MINNESOTA	Reported	d Values	Estimate	ed Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	L		Millions
Total	6.0	6.5	6.9	10.0
DOT	1.7	1.8	2.0	2.8
Other Agency	2.5	3.0	2.9	4.6
Commercial & Residential	1.8	1.7	2.1	2.6
No. of Companies Reporting	4	5	2.1	2.0
	-	_	Tana	Milliana
RAP	Tons, N			Millions
Accepted	1.5	1.9	1.7	2.9
Used in HMA/WMA Mixtures	1.2	1.6	1.3	2.5
Used as Aggregate	0.5	0.8	0.5	1.2
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.15	2.13	1.31	3.28
	Avg. % Mixto			Used in tures
Average % for DOT Mixtures ¹	17.4%	23.3%		
Average % for Other Agency Mixtures ¹	17.9%	23.5%		
Average % for Commercial & Residential Mixtures ¹	23.6%	27.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			19.5%	24.6%
	Other Rep	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	10%	11%		
% of RAP Mixtures Using Softer Binders	10%	28%		
% of RAP Mixtures Using Rejuvenators	1%	1%		
RAS	Tons, Th	L	Tone Th	nousands
Unprocessed Shingles Accepted	0.0	12.7	0.0	19.5
Processed Shingles Accepted Processed Shingles Accepted	10.4	0.0	11.9	0.0
Used in HMA/WMA Mixtures				22.3
	13.9 0.0	14.5 0.0	15.9 0.0	0.0
Used as Aggregate				0.0
Used in Cold-Mix Asphalt Used in Other	0.0	0.0	0.0	0.0
	0.0			
Landfilled	0.0	0.0 25.0	0.0	0.0 38.5
Total Tons of RAS Stockpiled at Year-End	25.3		28.8	
	Avg. % Mixt			
Average % for DOT Mixtures ¹	0.40%	0.18%		
Average % for Other Agency Mixtures ¹	0.00%	0.20%		
Average % for Commercial & Residential Mixtures ¹	0.30%	0.26%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.23%	0.22%
	Other Rep	orted Data		
% Companies Reporting Using RAS	25%	40%		
% of RAS Mixtures Using Softer Binders	5%	20%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total		Tons,	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			3.4	5.4
Total Tons Produced With WMA Technology at HMA Temperatures [†]				0.6
DOT	48%	40%	0.9	1.1
Other Agency	50%	67%	1.4	3.1
Commercial & Residential	48%	69%	1.0	1.8
WMA Technologies	Other Rep	orted Data		
Chemical Additive, % of Market	29%	1%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	71%	99%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	100%	80%		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		s may not add		
MISSISSIPPI	Reported	l Values		ed Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	Millions	Tons	Millions
Total	2.8	3.9	4.8	5.5
DOT	1.6	2.2	2.8	3.1
Other Agency	0.7	1.0	1.2	1.4
Commercial & Residential	0.5	0.7	0.8	1.0
No. of Companies Reporting	5	9		
RAP	Tons, N	/lillions	Tons.	Millions
Accepted	0.3	1.1	0.5	1.6
Used in HMA/WMA Mixtures	0.5	0.8	0.9	1.1
Used as 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	0.16	0.49	0.27	0.69
Total Total Office of the Cookpiles at Total Ella	Avg. %			Used in
	Mixto			tures
Average % for DOT Mixtures ¹	18.8%	18.3%		
Average % for Other Agency Mixtures ¹	18.8%	20.2%		
Average % for Commercial & Residential Mixtures ¹	15.8%	21.1%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			18.4%	19.7%
	Other Rep			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	25%	19%		
% of RAP Mixtures Using Softer Binders	3%	0%		
% of RAP Mixtures Using Rejuvenators	0%	1%		
RAS	Tons, Th	ousands	Tons, Th	nousands
Unprocessed Shingles Accepted	0.0	0.1	0.0	0.1
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 as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	0.0	0.0	0.1	0.1
	Avg. %		Avg. % Used in	
A 0/ C DOTAL 4 1	Mixto		Mix	tures
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%			
Average % for Commercial & Residential Mixtures ¹ State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.00%	0.00%	0.00%	0.00%
State Average All Mixtures based on RAS Tons Osed in HiviA/WMA*	Other Rep	orted Data	0.00%	0.00%
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%	-	
	0%	0%		
% of RAS Mixtures Using Rejuvenators			T	M:II:
WMA Total Tons Produced With WMA Technology at Reduced Temperature [†]	1 % of Lotal	Production	I ons,	Millions
TOTAL TODE PRODUCED WITH WIND TERRITORY OF POSTERO TOMOGRATIVAL				1.1
			3.9	
Total Tons Produced With WMA Technology at HMA Temperatures [†]		0.40/		3.2
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT	92%	84%	2.6	2.6
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency	92% 67%	81%	2.6 0.8	2.6 1.1
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency Commercial & Residential	92% 67% 67%	81% 58%	2.6	2.6
Total Tons Produced With WMA Technology at HMA Temperatures† DOT Other Agency Commercial & Residential WMA Technologies	92% 67% 67% Other Repo	81% 58% orted Data	2.6 0.8	2.6 1.1
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market	92% 67% 67% Other Repo	81% 58% orted Data 0%	2.6 0.8	2.6 1.1
Total Tons Produced With WMA Technology at HMA Temperatures† DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	92% 67% 67% Other Repo	81% 58% orted Data 0% 3%	2.6 0.8	2.6 1.1
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market Plant Foaming, % of Market	92% 67% 67% Other Repo	81% 58% orted Data 0%	2.6 0.8	2.6 1.1
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	92% 67% 67% Other Repo	81% 58% orted Data 0% 3%	2.6 0.8	2.6 1.1

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
MISSOURI	Reported	Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, M			Millions
Total	3.9	3.8	6.5	6.5
DOT	1.4	1.2	2.4	2.1
Other Agency	0.7	1.0	1.1	1.7
Commercial & Residential	1.8	1.6	3.0	2.7
No. of Companies Reporting	7	9	0.0	
RAP	Tons, M	lillions	Tons	Millions
Accepted	0.8	0.8	1.4	1.4
Used in HMA/WMA Mixtures	0.8	0.8	1.5	1.4
Used as 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 1.51	1.55	2.53	2.65
Total Tons of RAP Stockpiled at Year-End				Used in
	Avg. % l Mixtu			usea in tures
Average % for DOT Mixtures ¹	23.3%	20.8%		
Average % for Other Agency Mixtures ¹	19.1%	20.0%		
Average % for Commercial & Residential Mixtures ¹	23.1%	21.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			22.5%	21.1%
· ·	Other Repo	rted Data		
% Companies Reporting Using RAP	100%	89%		
% of RAP Fractionated	10%	16%		
% of RAP Mixtures Using Softer Binders	39%	35%		
% of RAP Mixtures Using Rejuvenators	6%	4%		
RAS			Tono Th	a u a a a a a
Unprocessed Shingles Accepted	Tons, Tho	25.0	69.5	ousands 42.8
Processed Shingles Accepted Processed Shingles Accepted	4.4	4.5	7.4	7.7
				32.5
Used in HMA/WMA Mixtures Used as Aggregate	10.8	19.0	18.2	
	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	78.7	42.4	132.0	72.5
	Avg. % l Mixtu		Avg. % Used ir Mixtures	
Average % for DOT Mixtures ¹	0.50%	0.70%	IVIIA	uics
Average % for Other Agency Mixtures ¹	0.60%	0.35%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.35%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.0070	0.0070	0.28%	0.50%
State / (vorage / iii ivii/karoo Bassa oii i v ke Torio Good iii i iivii v v v viii (Other Repo	rted Data	0.2070	0.0070
% Companies Reporting Using RAS	57%	67%		
% of RAS Mixtures Using Softer Binders	62%	66%		
% of RAS Mixtures Using Rejuvenators	35%	8%		
WMA	% of Total F		Tone	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	/0 OF TOTAL	TOUUGION		1.0
Total Tons Produced With WMA Technology at HMA Temperatures [†]			2.2	0.2
DOT	33%	26%	0.8	0.2
	34%	20%	0.6	0.3
Uiner Agency		2070	1.0	0.3
Other Agency Commercial & Residential		12%		0.0
Commercial & Residential	33%	12%	1.0	
Commercial & Residential WMA Technologies	33% Other Repo	rted Data	1.0	
Commercial & Residential WMA Technologies Chemical Additive, % of Market	33% Other Repo	orted Data 41%	1.0	
Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	33% Other Repo	rted Data	1.0	
Commercial & Residential WMA Technologies Chemical Additive, % of Market	33% Other Repo	orted Data 41%	1.0	
Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	33% Other Repo 33% 0%	orted Data 41% 0%	1.0	

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

Cons of HMA/WMA Produced Total DOT Other Agency Commercial & Residential No. of Companies Reporting ACCEPTED ACCEPTED Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	eportece 117 Tons, N * * * * Tons, N * * Mixture Mixtu	* * * * *	Estimate 2017 Tons, N 4.2 * * Tons, N * * Tons, N * * * * * * * * * * * * *	2018 Millions 4.2 * * Millions * * * * * * * * * * * * *	
Ons of HMA/WMA Produced Total DOT Other Agency Commercial & Residential No. of Companies Reporting Accepted Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	Tons, N. * * * * * * * * * * * * *	Aillions * * * Aillions * * Aillions * * * * * * * * * * * * *	Tons, N 4.2 * * * Tons, N * * * * * * * * * * * * *	Aillions 4.2 * * * Millions * * * * * * * * * * * * *	
Total DOT Other Agency Commercial & Residential No. of Companies Reporting Accepted Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Commercial & Residential Mixtures¹ Average % for Commercial & Residential Mixtures¹	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	4.2 * * * Tons, N * * *	4.2 * * * Millions * *	
Total DOT Other Agency Commercial & Residential No. of Companies Reporting Accepted Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Commercial & Residential Mixtures¹ Average % for Commercial & Residential Mixtures¹	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	4.2 * * * Tons, N * * *	4.2 * * * Millions * *	
Other Agency Commercial & Residential No. of Companies Reporting ACCEPTED ACCEPTED Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	* * * * Tons, N * * * * * * * * * * * * * * * * * * *	* * * Aillions * * * * * * * *	* * * Tons, N * * * * * * *	* # # # # # # # # # # # # # #	
Other Agency Commercial & Residential No. of Companies Reporting ACCEPTED ACCEPTED Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	* * Tons, N * * * * * * * * * * * * * * * * * * *	* * Aillions * * * * * * * * * *	* Tons, N * * * *	/illions * * * * *	
Commercial & Residential No. of Companies Reporting AP Accepted Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	* Tons, N * * * * * * * * * * * * * * * * * *	* ####################################	Tons, N * * * *	Millions * * * *	
No. of Companies Reporting AP Accepted Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	Tons, N * * * * * * * * * * * * *	Aillions * * * * * * *	* * * * *	* * *	
Accepted Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	* * * * * * * * * * * * *	* * * * * *	* * * * *	* * * *	
Accepted Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	* * * * * * * * * * * * *	* * * * * *	* * * * *	* * *	
Used in HMA/WMA Mixtures Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	* * * * * * * * * * *	* * * * *	*	*	
Used as Aggregate Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	* * * * *	* *	*	*	
Used in Cold-Mix Asphalt Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	* * * vg. % l	*			
Used in Other Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	* * .vg. % l	*	*		
Landfilled Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	* .vg. % l			*	
Total Tons of RAP Stockpiled at Year-End Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹	* .vg. % l	*	*	*	
Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹			*	*	
Average % for DOT Mixtures¹ Average % for Other Agency Mixtures¹ Average % for Commercial & Residential Mixtures¹		lood in	Δνα 0/	lood in	
Average % for Other Agency Mixtures ¹ Average % for Commercial & Residential Mixtures ¹	IVIIALL		Avg. % l Mixtu		
Average % for Other Agency Mixtures ¹ Average % for Commercial & Residential Mixtures ¹	*	*	IVIIXU	1100	
Average % for Commercial & Residential Mixtures ¹	*	*			
	*	*	-		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			*	*	
	ar Pano	orted Data			
% Companies Reporting Using RAP	*	*	-		
	*	*	-		
	*	*	-		
	*	*			
	ons, The	ousands	Tons, Th	ousands	
Unprocessed Shingles Accepted *	*	*	*	*	
Flocessed Shirigles Accepted	*	*	*	*	
Osed III HIMA/WIMA MIXTURES	*	*	*	*	
Osed as Aggregate	*	*	*		
Osed III Cold-Wilk Aspiralt	*	*	*	*	
Osed III Ottlei	*	*	*	*	
Landinied	*	*		*	
Total Toris of RAS Stockplied at Teal-End	*	••	*	*	
A		Used in	Avg. % Used in		
A 0/ / DOTA: / 1	Mixtu	ıres *	Mixtu	ıres	
Average 70 101 DOT Mixtures	*	*	-		
Average % for Other Agency Mixtures	*	*	-		
Average % for Commercial & Residential Mixtures	-		*	*	
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²					
	er Kepo	orted Data	-		
% Companies Reporting Using RAS	*	*			
% of RAS Mixtures Using Softer Billders	*	*			
70 OF RAS INIXILITES USING REJUVENALORS					
	f Total I	Production	Tons, N	/lillions	
Total Tons Produced With WMA Technology at Reduced Temperature [†]			*	*	
Total Tons Produced With WMA Technology at HMA Temperatures [†]			4	*	
DOT	*	*	*	*	
Other Agency	*	*	*	*	
Commercial & Residential	*	*	*	*	
WMA Technologies Other	er Repo	orted Data			
	*	*			
	*	*			
	*	*			
Plant Foaming % of Market	*	*			
i lant i danning, 70 di Market					

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	s may not add	up exactly due	to rounding
NEBRASKA	Reported	d Values	Estimate	d Values
TIEDINAONA	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	Millions	Tons, I	Millions
Total	0.5	0.6	2.8	3.0
DOT	0.2	0.3	1.2	1.5
Other Agency	0.2	0.2	0.8	1.0
Commercial & Residential	0.1	0.1	0.8	0.5
No. of Companies Reporting	3	3		
RAP	Tons, N	Millions	Tons, I	Millions
Accepted	0.1	0.2	0.8	1.0
Used in HMA/WMA Mixtures	0.1	0.2	0.5	0.8
Used as Aggregate	0.0	0.1	0.2	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	0.22	0.32	1.17	1.60
	Avg. %		Avg. %	
	Mixt		Mixt	ures
Average % for DOT Mixtures ¹	21.3%	25.0%		
Average % for Other Agency Mixtures ¹	18.0%	25.0%		
Average % for Commercial & Residential Mixtures ¹	16.3%	26.7%	12.201	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	OII D		18.8%	25.7%
0/ O	Other Repo			
% Companies Reporting Using RAP	100%	66%		
% of RAP Fractionated	0%	17%		
% of RAP Mixtures Using Softer Binders	0%	17%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th			ousands
Unprocessed Shingles Accepted	0.0	1.2	0.0	6.0
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 as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	3.3	4.4	17.7	22.0
	Avg. % Mixto		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	0.00%	0.00%	IVIIXL	ures
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.0070	0.0070	0.00%	0.00%
Otate / Wordge / In Mixtures Based Off To to Tonis Osed In Thin William	Other Rep	orted Data	0.0070	0.0070
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total		Tone	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OI 10tal	TOGGCION		0.9
Total Tons Produced With WMA Technology at HMA Temperatures [†]			0.0	1.2
DOT	0%	81%	0.0	1.2
Other Agency	0%	55%	0.0	0.5
Commercial & Residential	0%	74%	0.0	0.4
WMA Technologies	Other Rep		0.0	5.1
Chemical Additive, % of Market	0%	100%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	0%	0%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies 1 Average percent based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector is adjusted based on contractor is adjusted based on contractor is adjusted based on contractor is adjusted by the contracto	0%	67%		

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
NEVADA	Reported	l Values	Estimate	d Values
TEVADA	2017	2018	2017	2018
ons of HMA/WMA Produced	Tons, N	Millions	Tons, I	Millions
Total	1.3	*	3.4	3.6
DOT	0.4	*	1.1	*
Other Agency	0.2	*	0.5	*
Commercial & Residential	0.7	*	1.8	*
No. of Companies Reporting	3	*		
RAP	Tons, N	Millions	Tons I	Millions
Accepted	0.2	*	0.4	*
Used in HMA/WMA Mixtures	0.2	*	0.4	*
Used as 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	0.05	*	0.12	*
7-140 1-311-3-1-3 1 -1-3	Avg. % I	Jsed in		Used in
	Mixtu	ıres	Mixt	
Average % for DOT Mixtures ¹	8.0%	*		
Average % for Other Agency Mixtures ¹	11.3%	*		
Average % for Commercial & Residential Mixtures ¹	14.7%	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			12.0%	*
	Other Repo	orted Data		
% Companies Reporting Using RAP	100%	*		
% of RAP Fractionated	33%	*		
% of RAP Mixtures Using Softer Binders	17%	*		
% of RAP Mixtures Using Rejuvenators	0%	*		
RAS	Tons, The	ousands	Tons, Th	ousands
Unprocessed Shingles Accepted	0.2	*	0.5	*
Processed Shingles Accepted	0.0	*	0.0	*
Used in HMA/WMA Mixtures	0.0	*	0.0	*
Used as Aggregate	0.0	*	0.0	*
Used in Cold-Mix Asphalt	0.0	*	0.0	*
Used in Other	0.0	*	0.0	*
Landfilled	0.0	*	0.0	*
Total Tons of RAS Stockpiled at Year-End	0.2	*	0.4	*
	Avg. % l	Jsed in	Avg. %	Used in
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	0.00%	*		
Average % for Other Agency Mixtures ¹	0.00%	*		
Average % for Commercial & Residential Mixtures ¹	0.00%	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.00%	*
	Other Repo	orted Data		
% Companies Reporting Using RAS	33%	*		
% of RAS Mixtures Using Softer Binders	0%	*		
% of RAS Mixtures Using Rejuvenators	0%	*		
WMA	% of Total I	Production	Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			0.3	*
Total Tons Produced With WMA Technology at HMA Temperatures [†]				*
DOT	0%	*	0.0	*
Other Agency	0%	*	0.0	*
Commercial & Residential	14%	*	0.3	*
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	0%	*		
Additive Foaming, % of Market	0%	*		
Plant Foaming, % of Market	100%	*		
		*		
Organic Additive, % of Market	0%	*		
% Companies Reporting Using WMA Technologies Average percent based on contractor's reported percentage for each sector, adjusted based on contractor of the contract of the c	66%			

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	may not add	up exactly due	to rounding
NEW HAMPSHIRE	Reported	l Values	Estimate	d Values
NEW HAMI OFFICE	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	Millions	Tons, I	Millions
Total	2.5	1.7	3.0	1.7
DOT	0.6	0.5	0.7	0.5
Other Agency	0.6	0.3	0.8	0.3
Commercial & Residential	1.2	0.9	1.5	0.9
No. of Companies Reporting	4	4		
RAP	Tons, N	Millions	Tons, I	Millions
Accepted	0.5	0.3	0.6	0.3
Used in HMA/WMA Mixtures	0.5	0.3	0.7	0.3
Used as 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	1.01	0.15	1.23	0.15
	Avg. %		Avg. %	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	25.8%	20.8%		
Average % for Other Agency Mixtures ¹	17.0%	13.0%		
Average % for Commercial & Residential Mixtures ¹	23.0%	18.5%	22.42/	1= 00/
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	OII D		22.1%	17.6%
0/ O : D /: H: DAD	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	0%	0%		
% of RAP Mixtures Using Softer Binders	0%	0%		
% of RAP Mixtures Using Rejuvenators	25%	0%		
RAS	Tons, The			ousands
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	3.1	1.4	3.8	1.4
Used in HMA/WMA Mixtures	3.1	1.4	3.7	1.4
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	0.0	0.0	0.0	0.0
	Avg. % ! Mixtu		Avg. % Used Mixtures	
Average % for DOT Mixtures ¹	0.00%	0.00%	IVIIAL	uies
Average % for Other Agency Mixtures ¹	0.30%	0.10%		
Average % for Commercial & Residential Mixtures ¹	0.30%	0.10%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.0070	0.1070	0.12%	0.08%
	Other Repo	orted Data		
% Companies Reporting Using RAS	50%	50%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total I	Production	Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]				0.1
Total Tons Produced With WMA Technology at HMA Temperatures [†]			1.3	0.9
DOT	52%	86%	0.4	0.4
Other Agency	17%	67%	0.1	0.2
Commercial & Residential	50%	44%	0.8	0.4
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	33%	11%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	29%	69%		
Organic Additive, % of Market	38%	20%		
	75%	75%		
% Companies Reporting Using WMA Technologies 1 Average percent based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector repo				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
NEW JERSEY	Reported	l Values	Estimate	d Values
NEW JEKOET	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	Millions	Tons I	Millions
Total	4.0	4.0	10.2	10.2
DOT	0.5	0.4	1.3	1.0
Other Agency	2.1	2.3	5.4	5.9
Commercial & Residential	1.4	1.3	3.5	3.3
No. of Companies Reporting	3	3	0.0	0.0
RAP		-	Tono	Milliono
Accepted	Tons, N 1.2	1.5	3.2	Millions 3.8
Used in HMA/WMA Mixtures	0.8	0.7	2.0	1.8
Used as Aggregate	0.0	0.2	0.1	0.6
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	5.91	4.24	15.05	10.81
	Avg. % l			Used in
Access to 0/ for DOT Minture of	Mixtu		MIXI	ures
Average % for DOT Mixtures ¹	10.8%	13.3%		
Average % for Other Agency Mixtures ¹	16.7%	17.7%		
Average % for Commercial & Residential Mixtures ¹	26.2%	25.0%	40.00/	47.50/
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	011 - 12		19.3%	17.5%
0/0 : 5 : 11: 545	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	12%	0%		
% of RAP Mixtures Using Softer Binders	0%	2%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, The	ousands	Tons, Th	ousands
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 as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	0.0	0.0	0.0	0.0
	Avg. % l	Jsed in	Avg. %	Used in
	Mixtu		Mixtures	
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.00%	0.00%
	Other Repo	orted Data		
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total I		Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OF TOTAL	TOGGGGGGG		0.0
Total Tons Produced With WMA Technology at HMA Temperatures [†]			0.3	5.4
DOT	0%	46%	0.0	0.5
Other Agency	3%	61%	0.0	3.6
Commercial & Residential	3%	40%	0.2	1.3
			0.1	1.0
WMA Technologies	Other Repo			
Chemical Additive, % of Market	55%	0%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	45%	100%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	67%	67%		
Average percent based on contractor's reported percentage for each sector, adjusted based Average percent based on contractor's reported percentage for each sector, adjusted based on the contractor's reported percentage for each sector.				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	may not add	up exactly due	to rounding
NEW MEXICO	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	Millions	Tons, I	Millions
Total	0.9	0.7	3.0	3.8
DOT	0.2	0.1	0.5	0.5
Other Agency	0.3	0.3	1.0	1.6
Commercial & Residential	0.4	0.3	1.4	1.6
No. of Companies Reporting	3	3		
RAP	Tons, N	/lillions	Tons, I	Millions
Accepted	0.3	0.2	0.8	1.3
Used in HMA/WMA Mixtures	0.2	0.1	0.6	0.7
Used as Aggregate	0.0	0.0	0.0	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.10	0.14	0.31	0.78
	Avg. %	Used in	Avg. %	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	17.7%	14.7%		
Average % for Other Agency Mixtures ¹	19.4%	17.0%		
Average % for Commercial & Residential Mixtures ¹	22.7%	19.7%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			20.6%	18.6%
	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	37%	40%		
% of RAP Mixtures Using Softer Binders	8%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th	ousands	Tons, Th	ousands
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	5.0	0.0	16.0	0.0
Used in HMA/WMA Mixtures	3.1	0.0	9.9	0.0
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	1.8	0.0	5.8	0.0
	Avg. %		Avg. % Used in	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.70%	0.00%	0.000/	0.000/
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	OII D		0.33%	0.00%
0/ O-man ania a Dan artin m Hairan DAO	Other Repo			
% Companies Reporting Using RAS	33%	0%		
% of RAS Mixtures Using Softer Binders	50%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total	Production	Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature†			0.1	0.5
Total Tons Produced With WMA Technology at HMA Temperatures [†]				0.1
DOT	2%	31%	0.0	0.2
Other Agency	5%	26%	0.0	0.4
Commercial & Residential	5%	1%	0.0	0.0
WMA Technologies	Other Repo			
Chemical Additive, % of Market	17%	16%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	83%	84%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	67%	67%		
Average percent based on contractor's reported percentage for each sector, adjusted bas				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		s may not add			
NEW YORK	Reported	d Values	Estimate	ed Values	
	2017	2018	2017	2018	
ons of HMA/WMA Produced	Tons, N	Millions	Tons.	Millions	
Total	7.3	5.8	16.5	17.0	
DOT	2.5	2.0	5.6	5.9	
Other Agency	2.6	2.1	5.8	6.2	
Commercial & Residential	2.3	1.7	5.1	5.0	
No. of Companies Reporting	11	12	0.1	0.0	
RAP	Tons, N		Tone	Millions	
Accepted	1.0	0.7	2.3	2.1	
Used in HMA/WMA Mixtures	1.2	1.0	2.7	2.1	
	0.0	0.0	0.0	0.1	
Used as Aggregate					
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	1.07	2.02	2.40	5.92	
	Avg. % Mixt			Used in tures	
Average % for DOT Mixtures ¹	15.6%	17.7%			
Average % for Other Agency Mixtures ¹	16.0%	16.6%			
Average % for Commercial & Residential Mixtures ¹	17.3%	18.0%			
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			16.2%	17.2%	
· ·	Other Rep	orted Data			
% Companies Reporting Using RAP	100%	92%			
% of RAP Fractionated	14%	20%			
% of RAP Mixtures Using Softer Binders	4%	2%			
% of RAP Mixtures Using Rejuvenators	9%	8%			
RAS	-	L	Tono Ti		
	Tons, Th			nousands	
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0	
Processed Shingles Accepted	0.1	0.0	0.1	0.0	
Used in HMA/WMA Mixtures	0.0	0.0	0.0	0.0	
Used as Aggregate	0.0	0.0	0.0	0.0	
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0	
Used in Other	0.0	0.0	0.0	0.0	
Landfilled	0.0	0.0	0.0	0.0	
Total Tons of RAS Stockpiled at Year-End	0.0	0.0	0.0	0.0	
	Avg. % Mixt		Avg. % Used in Mixtures		
Average % for DOT Mixtures ¹	0.00%	0.00%			
Average % for Other Agency Mixtures ¹	0.00%	0.00%			
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%			
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	2.0070		0.00%	0.00%	
	Other Rep	orted Data			
% Companies Reporting Using RAS	9%	0%			
% of RAS Mixtures Using Softer Binders	0%	0%			
% of RAS Mixtures Using Rejuvenators	0%	0%			
WMA	% of Total		Tons,	Millions	
Total Tons Produced With WMA Technology at Reduced Temperature [†]			0.5	2.9	
Total Tons Produced With WMA Technology at HMA Temperatures [†]			2.5	3.4	
DOT	18%	45%	1.0	2.6	
Other Agency	11%	44%	0.6	2.7	
Commercial & Residential	16%	18%	0.8	0.9	
WMA Technologies	Other Rep				
Chemical Additive, % of Market	40%	23%			
Additive Foaming, % of Market	0%	3%			
Plant Foaming, % of Market	60%	74%			
Organic Additive, % of Market % Companies Reporting Using WMA Technologies	0%	0%			

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
NORTH CAROLINA	Reported	Values	Estimate	d Values
NORTH-OAROLINA	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, M	lillions	Tons	Millions
Total	6.4	7.2	16.0	20.0
DOT	4.3	4.9	10.8	13.6
Other Agency	0.6	0.8	1.5	2.2
Commercial & Residential	1.5	1.5	3.8	4.2
No. of Companies Reporting	7	7	0.0	7.2
RAP	-	•	Tana	Milliana
	Tons, M			Millions
Accepted Used in HMA/WMA Mixtures	1.3	2.2	3.3 2.8	6.1 5.3
		1.9		
Used as 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	1.02	1.14	2.55	3.17
	Avg. % l Mixtu			Used in tures
Average % for DOT Mixtures ¹	17.8%	26.8		
Average % for Other Agency Mixtures ¹	13.6%	25.4		
Average % for Commercial & Residential Mixtures ¹	19.0%	25.9		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			17.8%	26.4
	Other Repo	rted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	29%	21%		
% of RAP Mixtures Using Softer Binders	44%	19%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Tho	nueande	Tone Th	nousands
Unprocessed Shingles Accepted	74.0	75.0	185.6	208.3
Processed Shingles Accepted	9.4	30.8	23.5	85.6
Used in HMA/WMA Mixtures	82.0	59.0	205.8	163.9
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	75.2	131.3	188.6	364.7
Total Toris of RAS Stockpiled at Fear-End	Avg. % l			
	Avg. % to		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	1.40%	1.00%		
Average % for Other Agency Mixtures ¹	0.90%	0.70%		
Average % for Commercial & Residential Mixtures ¹	0.90%	0.70%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			1.29%	0.82%
	Other Repo	rted Data		
% Companies Reporting Using RAS	57%	43%		
% of RAS Mixtures Using Softer Binders	60%	100%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total F	Production	Tons	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 51 TOTAL T	1344341011		0.4
Total Tons Produced With WMA Technology at HMA Temperatures [†]			5.9	2.1
DOT	55%	13%	5.9	1.8
Other Agency	0%	25%	0.0	0.6
Commercial & Residential	0%	5%	0.0	0.0
			0.0	U.Z
WMA Technologies	Other Repo			
	4000/			
Chemical Additive, % of Market	100%	100%		
Chemical Additive, % of Market Additive Foaming, % of Market	0%	0%		
Chemical Additive, % of Market				
Chemical Additive, % of Market Additive Foaming, % of Market	0%	0%		

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due		
NORTH DAKOTA	Reported			d Values	
	2017	2018	2017	2018	
Tons of HMA/WMA Produced	Tons, N	Millions	Tons. I	Millions	
Total	1.2	*	2.7	2.8	
DOT	0.7	*	1.5	*	
Other Agency	0.3	*	0.8	*	
Commercial & Residential	0.2	*	0.4	*	
No. of Companies Reporting	3	*		,	
RAP	Tons, N	Millions	Tons	Millions	
Accepted	0.2	*	0.4	*	
Used in HMA/WMA Mixtures	0.1	*	0.3	*	
Used as Aggregate	0.1	*	0.2	*	
Used in Cold-Mix Asphalt	0.0	*	0.0	*	
Used in Other	0.0	*	0.0	*	
Landfilled	0.0	*	0.0	*	
Total Tons of RAP Stockpiled at Year-End	0.0	*	0.0	*	
Total Totis of KAP Stockpiled at Tear-Eliu	Avg. %	lead in		Used in	
	Avg. % Mixtu			tures	
Average % for DOT Mixtures ¹	11.8%	*			
Average % for Other Agency Mixtures ¹	11.8%	*			
Average % for Commercial & Residential Mixtures ¹	12.8%	*			
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			11.9%	*	
	Other Repo	orted Data			
% Companies Reporting Using RAP	67%	*			
% of RAP Fractionated	0%	*			
% of RAP Mixtures Using Softer Binders	3%	*			
% of RAP Mixtures Using Rejuvenators	0%	*			
RAS	Tons, Th	oueande	Tone 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 as Aggregate	0.0	*	0.0	*	
Used in Cold-Mix Asphalt	0.0	*	0.0	*	
Used in Other	0.0	*	0.0	*	
Landfilled	0.0	*	0.0	*	
Total Tons of RAS Stockpiled at Year-End	0.0	*	0.0	*	
Total Totis of NAS Stockpiled at Teal-Elid	Avg. %	lead in		Llood in	
	Mixtu		Avg. % Used in Mixtures		
Average % for DOT Mixtures ¹	0.00%	*			
Average % for Other Agency Mixtures ¹	0.00%	*			
Average % for Commercial & Residential Mixtures ¹	0.00%	*			
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.00%	*	
	Other Repo	orted Data			
% Companies Reporting Using RAS	0%	*			
	0%	*			
% of RAS Mixtures Using Rejuvenators	0%	*			
WMA	% of Total	Production	Tons, I	Millions	
Total Tons Produced With WMA Technology at Reduced Temperature [†]				*	
Total Tons Produced With WMA Technology at HMA Temperatures [†]			0.2	*	
DOT	8%	*	0.1	*	
Other Agency	5%	*	0.0	*	
Commercial & Residential	10%	*	0.0	*	
	Other Repo	orted Data			
		*			
		*			
% Companies Reporting Using WMA Technologies					
% of RAS Mixtures Using Softer Binders % of RAS Mixtures Using Rejuvenators WMA Total Tons Produced With WMA Technology at Reduced Temperature† Total Tons Produced With WMA Technology at HMA Temperatures† DOT Other Agency	0% 0% 0% % of Total 8% 5% 10% Other Repo 87% 0% 13% 0%	* Production * * * priced Data * * * * *	0.2 0.1 0.0	* * *	

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		may not add			
NORTHERN MARIANA ISLANDS	Reported	l Values	Estimate	d Values	
TORTHERN WARIANA IOLANDO	2017	2018	2017	2018	
Tons of HMA/WMA Produced	Tons, N			Millions	
Total	NCR	NCR	0.03	0.03	
DOT	NCR	NCR	NCR	NCR	
Other Agency	NCR	NCR	NCR	NCR	
Commercial & Residential	NCR	NCR	NCR	NCR	
No. of Companies Reporting	NCR	NCR	NOR	NOIN	
RAP			Tana	Milliono	
	Tons, N NCR		NCR	Millions	
Accepted		NCR		NCR	
Used in HMA/WMA Mixtures	NCR	NCR	NCR	NCR	
Used as 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 tures	
Average % for DOT Mixtures ¹	NCR	NCR	IVIIX		
Average % for Other Agency Mixtures ¹	NCR	NCR			
Average % for Commercial & Residential Mixtures ¹	NCR	NCR			
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			NCR	NCR	
	Other Repo	orted Data			
% Companies Reporting Using RAP	NCR	NCR			
% of RAP Fractionated	NCR	NCR			
% of RAP Mixtures Using Softer Binders	NCR	NCR			
% of RAP Mixtures Using Rejuvenators	NCR	NCR			
RAS	Tons, The	nueande	Tone 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 as Aggregate	NCR	NCR	NCR	NCR	
Used in Cold-Mix Asphalt	NCR	NCR	NCR	NCR	
Used in Other	NCR	NCR	NCR	NCR	
Landfilled	NCR	NCR	NCR	NCR	
Total Tons of RAS Stockpiled at Year-End	NCR	NCR	NCR	NCR	
Total Totis of two otockplied at Tear-End	Avg. %				
	Mixtu		Avg. % Used in Mixtures		
Average % for DOT Mixtures ¹	NCR	NCR			
Average % for Other Agency Mixtures ¹	NCR	NCR			
Average % for Commercial & Residential Mixtures ¹	NCR	NCR			
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			NCR	NCR	
	Other Repo	orted Data			
% Companies Reporting Using RAS	NCR	NCR			
% of RAS Mixtures Using Softer Binders	NCR	NCR			
% of RAS Mixtures Using Rejuvenators	NCR	NCR			
WMA	% of Total I	Production	Tons,	Millions	
Total Tons Produced With WMA Technology at Reduced Temperature [†]				NCR	
Total Tons Produced With WMA Technology at HMA Temperatures [†]			NCR	NCR	
DOT	NCR	NCR	NCR	NCR	
Other Agency	NCR	NCR	NCR	NCR	
Commercial & Residential	NCR	NCR	NCR	NCR	
WMA Technologies	Other Repo				
Chemical Additive, % of Market	NCR	NCR			
Additive Foaming, % of Market	NCR	NCR			
Plant Foaming, % of Market	NCR	NCR			
Organic Additive, % of Market	NCR	NCR			
% Companies Reporting Using WMA Technologies	NCR	NCR			

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		s may not add		
OHIO	Reported	d Values	Estimate	d Values
	2017	2018	2017	2018
Fons of HMA/WMA Produced	Tons, N	L		Millions
Total	11.6	12.3	14.8	16.9
DOT	4.4	4.3	5.7	5.9
Other Agency	3.4	4.4	4.3	6.1
Commercial & Residential	3.8	3.6	4.8	4.9
No. of Companies Reporting	7	9	4.0	₩.5
			т	N 4:11:
RAP	Tons, N			Millions
Accepted	2.9	3.4	3.7	4.7
Used in HMA/WMA Mixtures	3.2	3.4	4.1	4.7
Used as Aggregate	0.0	0.1	0.1	0.1
Used in Cold-Mix Asphalt	0.1	0.0	0.1	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	3.58	8.15	4.58	11.20
	Avg. % Mixt			Used in tures
Average % for DOT Mixtures ¹	26.6%	27.3%		
Average % for Other Agency Mixtures ¹	27.0%	27.1%		
Average % for Commercial & Residential Mixtures ¹	29.4%	30.4%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			27.6%	28.0%
	Other Rep	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	25%	7%		
% of RAP Mixtures Using Softer Binders	30%	33%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
	_			
RAS	Tons, Th			nousands
Unprocessed Shingles Accepted	7.3	9.8	9.4	13.5
Processed Shingles Accepted	0.0	5.0	0.0	6.9
Used in HMA/WMA Mixtures	4.9	15.9	6.3	21.8
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	55.7	30.2	71.2	41.5
	Avg. % Mixt		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	0.10%	0.09%	IVIIA	
Average % for Other Agency Mixtures ¹	0.00%	0.03%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.17%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.0070	0.1070	0.04%	0.13%
Clate / Wordge / All Minitares Based of the Torio Osca III There will	Other Rep	orted Data	J.U-7/0	J. 1J /U
% Companies Reporting Using RAS	29%	44%		
% of RAS Mixtures Using Softer Binders	33%	71%		
		0%		
% of RAS Mixtures Using Rejuvenators WMA	0% % of Total		Tons.	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]				7.0
			8.2	3.2
Total Tons Produced With WMA Technology at HMA Temperatures [⊤]				4.3
Total Tons Produced With WMA Technology at HMA Temperatures [†] DOT	50%	72%	2.8	
DOT	50% 57%	72% 54%	2.8 2.5	
DOT Other Agency	57%	54%	2.5	3.3
DOT Other Agency Commercial & Residential	57% 60%	54% 53%		
DOT Other Agency Commercial & Residential WMA Technologies	57% 60% Other Rep	54% 53% orted Data	2.5	3.3
DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market	57% 60% Other Rep	54% 53% orted Data 0%	2.5	3.3
DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	57% 60% Other Rep 0% 0%	54% 53% orted Data 0% 0%	2.5	3.3
DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market	57% 60% Other Rep	54% 53% orted Data 0%	2.5	3.3
DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	57% 60% Other Rep 0% 0%	54% 53% orted Data 0% 0%	2.5	3.3

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

	Numbers	may not add	up exactly due	to rounding
OKLAHOMA	Reported	l Values	Estimate	d Values
TORLAHOMA	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	/illions	Tons. I	Millions
Total	2.4	2.2	4.8	4.7
DOT	1.1	1.2	2.1	2.6
Other Agency	0.5	0.3	0.9	0.6
Commercial & Residential	0.9	0.7	1.8	1.5
No. of Companies Reporting	5	6		
RAP	Tons, N	/lillions	Tons, I	Millions
Accepted	0.6	0.4	1.3	0.9
Used in HMA/WMA Mixtures	0.4	0.4	0.7	0.8
Used as Aggregate	0.1	0.0	0.2	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	0.36	0.36	0.72	0.77
	Avg. %	Used in	Avg. %	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	13.7%	17.0%		
Average % for Other Agency Mixtures ¹	13.3%	17.9%		
Average % for Commercial & Residential Mixtures ¹	16.3%	17.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	13.7%		14.6%	17.3%
	Other Repo			
% Companies Reporting Using RAP	100%	83%		
% of RAP Fractionated	65%	52%		
% of RAP Mixtures Using Softer Binders	19%	7%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th	ousands	Tons, Th	ousands
Unprocessed Shingles Accepted	52.0	6.3	103.1	13.5
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	9.1	0.8	18.0	1.7
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	8.2	52.5	16.3	112.2
		Avg. % Used in		Used in
Average 0/ for DOT Mistured	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹ Average % for Other Agency Mixtures ¹	0.00%	0.00% 0.05%		
Average % for Commercial & Residential Mixtures ¹	1.00%	0.05%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	1.00 /6	0.0576	0.37%	0.04%
Otate Average All Mixtures based of TAO Toris Osed III TIMA/WIMA	Other Repo	orted Data	0.57 70	0.0470
% Companies Reporting Using RAS	40%	33%		
% of RAS Mixtures Using Softer Binders	50%	63%		
% of RAS Mixtures Using Rejuvenators	0%	13%		
WMA	% of Total		Tone	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OI TOTAL	TOUUCION		2.0
Total Tons Produced With WMA Technology at Neduced Temperatures [†]			4.0	0.4
DOT	75%	44%	1.6	1.1
Other Agency	83%	74%	0.8	0.5
Commercial & Residential	91%	54%	1.6	0.8
WMA Technologies	Other Repo			
Chemical Additive, % of Market	2%	17%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	98%	32%		
Organic Additive, % of Market	0%	51%		
% Companies Reporting Using WMA Technologies	60%	50%		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
OREGON	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, M	Millions	Tons	Millions
Total	1.4	2.2	5.4	5.2
DOT	0.3	0.4	1.1	0.9
Other Agency	0.7	0.7	2.8	1.7
Commercial & Residential	0.4	1.1	1.5	2.6
No. of Companies Reporting	4	4	1.0	2.0
RAP	-	•	Topo	Millions
	Tons, M			
Accepted	0.4	0.5	1.4 1.0	1.2
Used in HMA/WMA Mixtures	0.3	0.6		1.4
Used as 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	0.21	0.35	0.78	0.83
	Avg. % l Mixtu	ıres		Used in ures
Average % for DOT Mixtures ¹	16.8%	25.0%		
Average % for Other Agency Mixtures ¹	17.6%	26.3%		
Average % for Commercial & Residential Mixtures ¹	19.6%	27.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			18.0%	26.8%
	Other Repo	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	3%	11%		
% of RAP Mixtures Using Softer Binders	0%	3%		
% of RAP Mixtures Using Rejuvenators	0%	3%		
RAS	Tons, The		Tono Th	nousands
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.0	11.0	0.0	26.0
Used in HMA/WMA Mixtures Used as Aggregate	0.1	9.3	0.3	22.0
	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	3.2	1.9	12.3	4.5
	Avg. % l Mixtu		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	0.00%	0.10%		
Average % for Other Agency Mixtures ¹	0.00%	0.35%		
Average % for Commercial & Residential Mixtures ¹	0.10%	0.60%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.01%	0.42%
	Other Repo	orted Data		
% Companies Reporting Using RAS	50%	25%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	25%	100%		
WMA	% of Total F	Production	Tons	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OI 10tal I	. Judgulon		0.5
Total Tons Produced With WMA Technology at HMA Temperatures [†]			0.4	0.8
DOT	0%	28%	0.0	0.4
Other Agency	7%	32%	0.0	0.4
Commercial & Residential	11%	17%	0.2	0.3
			0.2	U. T
WMA Technologies	Other Repo			
Chemical Additive, % of Market	0%	1%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	100%	99%		
	100% 0%	99%		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		s may not add		
PENNSYLVANIA	Reported	d Values	Estimate	ed Values
ENTOTEVANIA	2017	2018	2017	2018
ons of HMA/WMA Produced	Tons, N	Millions	Tons	Millions
Total	7.7	6.3	19.8	20.0
DOT	3.7	3.1	9.6	9.8
Other Agency	1.3	1.3	3.3	4.2
Commercial & Residential	2.7	1.9	7.0	6.0
No. of Companies Reporting	10	8	7.0	0.0
RAP	Tons, N	_	Tono	Millions
Accepted	1.8	1.0	4.5	3.2
Used in HMA/WMA Mixtures	1.0	1.0	2.9	3.2
Used as Aggregate	0.0	0.0	0.0	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	2.71	0.93	7.01	2.95
	Avg. % Mixt			Used in tures
Average % for DOT Mixtures ¹	13.8%	15.1%		
Average % for Other Agency Mixtures ¹	14.5%	15.0%		
Average % for Commercial & Residential Mixtures ¹	16.1%	16.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			14.7%	15.9%
	Other Rep	orted Data		
% Companies Reporting Using RAP	100%	88%		
% of RAP Fractionated	5%	13%		
% of RAP Mixtures Using Softer Binders	3%	13%		
% of RAP Mixtures Using Rejuvenators	8%	3%		
RAS	Tons, Th	L	Tono Th	nousands
	23.8		61.3	
Unprocessed Shingles Accepted Processed Shingles Accepted	9.6	35.0 0.0	24.9	111.1 0.0
Used in HMA/WMA Mixtures	36.3	49.2 0.0	93.7 0.0	156.2
Used as Aggregate	0.0			0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	69.5	33.9	179.4	107.6
	Avg. % Mixt		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	0.60%	0.78%		
Average % for Other Agency Mixtures ¹	0.40%	0.78%		
Average % for Commercial & Residential Mixtures ¹	0.40%	0.78%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²		,	0.47%	0.78%
	Other Rep	orted Data		
% Companies Reporting Using RAS	40%	13%		
% of RAS Mixtures Using Softer Binders	10%	0%		
% of RAS Mixtures Using Rejuvenators	11%	0%		
WMA	% of Total		Tons,	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			1E 7	8.6
Total Tons Produced With WMA Technology at HMA Temperatures [†]			15.7	4.6
DOT	94%	73%	9.0	7.2
Other Agency	74%	83%	2.4	3.5
Commercial & Residential	62%	42%	4.3	2.5
WMA Technologies	Other Rep			
Chemical Additive, % of Market	55%	18%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	45%	82%		
Organic Additive, % of Market % Companies Reporting Using WMA Technologies	0% 100%	0% 75%		

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		may not add		
PUERTO RICO	Reported	l Values	Estimate	ed Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N			Millions
Total	NCR	NCR	1.6	1.7
DOT	NCR	NCR	NCR	NCR
Other Agency	NCR	NCR	NCR	NCR
Commercial & Residential	NCR	NCR	NCR	NCR
No. of Companies Reporting	NCR	NCR	NOR	NOIN
RAP			Tana	Millions
	Tons, NCR			Millions
Accepted		NCR	NCR	NCR
Used in HMA/WMA Mixtures	NCR	NCR	NCR	NCR
Used as 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. % Mixto			Used in tures
Average % for DOT Mixtures ¹	NCR	NCR	IVIIX	
Average % for Other Agency Mixtures ¹	NCR	NCR		
Average % for Commercial & Residential Mixtures ¹	NCR	NCR		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	11011	.10.1	NCR	NCR
State / tverage / til tvilktares based off to til Toris osed in this vivint	Other Rep	orted Data	NOR	NOIN
% 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			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 as Aggregate	NCR	NCR	NCR	NCR
Used in Cold-Mix Asphalt	NCR	NCR	NCR	NCR
Used in Other	NCR	NCR	NCR	NCR
Landfilled	NCR	NCR	NCR	NCR
Total Tons of RAS Stockpiled at Year-End	NCR	NCR	NCR	NCR
	Avg. % Mixti		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	NCR	NCR	IVIIA	
Average % for Other Agency Mixtures ¹	NCR	NCR		
Average % for Commercial & Residential Mixtures ¹	NCR	NCR		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	NUIN	NOR	NCR	NCR
State Average All Mixtures based of TAS Toris Osed III TIMA/WIMA	Other Rep	orted Data	NOI	NOIN
% Companies Reporting Using RAS	NCR	NCR		
% of RAS Mixtures Using Softer Binders	NCR NCR	NCR		
% of RAS Mixtures Using Rejuvenators WMA	NCR % of Total	NCR Production	Tone	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OF TOTAL	roddollori	10113,	NCR
Total Tons Produced With WMA Technology at Neduced Temperatures [†]			NCR	NCR
DOT	NCR	NCR	NCR	NCR
Other Agency	NCR	NCR	NCR	NCR
A MUCH GUICHLAV	1 11/1/17		NCR	NCR
		NICE		NOR
Commercial & Residential	NCR	NCR	NOIX	
Commercial & Residential WMA Technologies	NCR Other Rep	orted Data	Non	
Commercial & Residential WMA Technologies Chemical Additive, % of Market	NCR Other Repo	orted Data NCR	NOIX	
Commercial & Residential WMA Technologies	NCR Other Rep	orted Data	NON	
Commercial & Residential WMA Technologies Chemical Additive, % of Market	NCR Other Repo	orted Data NCR	Non	
Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	NCR Other Repo	orted Data NCR NCR	Nert	

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	`	
RHODE ISLAND	Reported	l Values	Estimate	d Values	
MIODE IOLAND	2017	2018	2017	2018	
Tons of HMA/WMA Produced	Tons, N	Millions	Tons, N	/lillions	
Total	*	*	2.0	2.1	
DOT	*	*	*	*	
Other Agency	*	*	*	*	
Commercial & Residential	*	*	*	*	
No. of Companies Reporting	*	*			
RAP	Tons, N	Millions	Tons, N	/lillions	
Accepted	*	*	*	*	
Used in HMA/WMA Mixtures	*	*	*	*	
Used as Aggregate	*	*	*	*	
Used in Cold-Mix Asphalt	*	*	*	*	
Used in Other	*	*	*	*	
Landfilled	*	*	*	*	
Total Tons of RAP Stockpiled at Year-End	*	*	*	*	
	Avg. %	Jsed in	Avg. %	Used in	
	Mixtu		Mixto		
Average % for DOT Mixtures ¹	*	*			
Average % for Other Agency Mixtures ¹	*	*			
Average % for Commercial & Residential Mixtures ¹	*	*			
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			*	*	
	Other Repo	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 as Aggregate	*	*	*	*	
Used in Cold-Mix Asphalt	*	*	*	*	
Used in Other	*	*	*	*	
Landfilled	*	*	*	*	
Total Tons of RAS Stockpiled at Year-End	*	*	*	*	
	Avg. % I		Avg. % Used in Mixtures		
Average % for DOT Mixtures ¹	*	*			
Average % for Other Agency Mixtures ¹	*	*			
Average % for Commercial & Residential Mixtures ¹	*	*			
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			*	*	
	Other Repo	orted Data			
% Companies Reporting Using RAS	*	*			
% of RAS Mixtures Using Softer Binders	*	*			
% of RAS Mixtures Using Rejuvenators	*	*			
WMA	% of Total I	Production	Tons, N	/lillions	
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OF TOTAL 1	Toddottori		*	
Total Tons Produced With WMA Technology at HMA Temperatures [†]			*	*	
DOT	*	*	*	*	
Other Agency	*	*	*	*	
Commercial & Residential	*	*	*	*	
WMA Technologies	Other Repo	orted Data			
Chemical Additive, % of Market	*	*			
	*	*			
Additive Foaming, % of Market					
Plant Foaming, % of Market	*	*			
Organic Additive, % of Market	*	*			
	*	*			

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

		s may not add		
SOUTH CAROLINA	Reported	d Values	Estimate	d Values
	2017	2018	2017	2018
Fons of HMA/WMA Produced	Tons, I	Millions		Millions
Total	3.9	4.1	7.6	7.5
DOT	2.5	2.5	4.9	4.6
Other Agency	0.8	0.7	1.6	1.3
Commercial & Residential	0.5	0.9	1.0	1.6
No. of Companies Reporting	7	6	1.0	1.0
RAP			Tons	Millions
Accepted	Tons, N 0.8	0.9	1.5	Millions
				1.6
Used in HMA/WMA Mixtures	0.8	0.9	1.6	1.7
Used as 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	0.89	1.09	1.74	1.99
	Avg. % Mixt			Used in tures
Average % for DOT Mixtures ¹	20.4%	21.9%		
Average % for Other Agency Mixtures ¹	20.7%	23.2%		
Average % for Commercial & Residential Mixtures ¹	21.5%	23.2%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			20.7%	22.4%
· ·	Other Rep	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	50%	61%		
% of RAP Mixtures Using Softer Binders	0%	29%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, Th		Tone Th	nousands
Unprocessed Shingles Accepted	0.0	0.8	0.0	1.5
Processed Shingles Accepted 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 as Aggregate		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
	0.0	2.5		4.6
Total Tons of RAS Stockpiled at Year-End			0.0	
	Avg. % Mixt		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.00%	0.00%
	Other Rep	orted Data		
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total		Tons,	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			1.5	1.0
Total Tons Produced With WMA Technology at HMA Temperatures [†]			1.5	0.6
DOT	23%	26%	1.1	1.1
Other Agency	15%	22%	0.2	0.3
Commercial & Residential	15%	13%	0.2	0.2
WMA Technologies	Other Rep			
Chemical Additive, % of Market	75%	66%		
Additive Foaming, % of Market	0%	34%		
Plant Foaming, % of Market	25%	0%		
Organic Additive, % of Market % Companies Reporting Using WMA Technologies	0% 71%	0% 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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due		
SOUTH DAKOTA	Reported	l Values	Estimate	d Values	
OCCITI DARCIA	2017	2018	2017	2018	
Tons of HMA/WMA Produced	Tons, M	1illions	Tons.	Millions	
Total	*	NCR	2.0	2.2	
DOT	*	NCR	*	NCR	
Other Agency	*	NCR	*	NCR	
Commercial & Residential	*	NCR	*	NCR	
No. of Companies Reporting	*	NCR			
RAP	Tons, M	Millions	Tons	Millions	
Accepted	*	NCR	*	NCR	
Used in HMA/WMA Mixtures	*	NCR	*	NCR	
Used as 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	
Total Total City ti Otoonpilod at Todi Elia	Avg. % l		Ava %	Used in	
	Mixtu			ures	
Average % for DOT Mixtures ¹	*	NCR			
Average % for Other Agency Mixtures ¹	*	NCR			
Average % for Commercial & Residential Mixtures ¹	*	NCR			
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			*	NCR	
J. Control of the con	Other Repo	orted Data			
% Companies Reporting Using RAP	*	NCR			
% of RAP Fractionated	*	NCR			
% of RAP Mixtures Using Softer Binders	*	NCR			
% of RAP Mixtures Using Rejuvenators	*	NCR			
RAS	Tons, The	nusands	Tons Th	ousands	
Unprocessed Shingles Accepted	*	NCR	*	NCR	
Processed Shingles Accepted	*	NCR	*	NCR	
Used in HMA/WMA Mixtures	*	NCR	*	NCR	
Used as Aggregate	*	NCR	*	NCR	
Used in Cold-Mix Asphalt	*	NCR	*	NCR	
Used in Other	*	NCR	*	NCR	
Landfilled	*	NCR	*	NCR	
Total Tons of RAS Stockpiled at Year-End	*	NCR	*	NCR	
Total Total Strate Stockplied at Todi Elia	Avg. % l		Ava %	Used in	
	Mixtu		Mixtures		
Average % for DOT Mixtures ¹	*	NCR			
Average % for Other Agency Mixtures ¹	*	NCR			
Average % for Commercial & Residential Mixtures ¹	*	NCR			
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			*		
	Other Repo	orted Data			
% Companies Reporting Using RAS	*	NCR			
% of RAS Mixtures Using Softer Binders	*	NCR			
% of RAS Mixtures Using Rejuvenators	*	NCR			
WMA	% of Total F	Production	Tons	Millions	
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 01 10(411	roudottori		NCR	
Total Tons Produced With WMA Technology at HMA Temperatures [†]			*	NCR	
DOT	*	NCR	*	NCR	
Other Agency	*	NCR	*	NCR	
Commercial & Residential	*	NCR	*	NCR	
WMA Technologies	Other Repo				
Chemical Additive, % of Market	*	NCR			
	*				
Additive Foaming, % of Market	*	NCR			
Plant Foaming, % of Market		NCR			
Organic Additive, % of Market	*	NCR			
% Companies Reporting Using WMA Technologies	*	NCR			

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
TENNESSEE	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N			Millions
Total	2.5	5.7	9.2	8.9
DOT	0.7	3.6	2.5	5.6
Other Agency	0.4	0.7	1.4	1.1
Commercial & Residential	1.4	1.4	5.2	2.2
No. of Companies Reporting	5	5	0.2	2.2
RAP		-	Tono	Milliono
Accepted	Tons, N	0.6	2.5	Millions
Used in HMA/WMA Mixtures	0.7	1.0	2.5	0.9 1.6
Used as Aggregate	0.1	0.1	0.2	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.87	1.39	3.16	2.17
	Avg. % I			Used in
Access to 0/ for DOT Minture of	Mixtu		IVIIXI	ures
Average % for DOT Mixtures ¹	18.6%	16.6%		
Average % for Other Agency Mixtures ¹	23.8%	17.8%		
Average % for Commercial & Residential Mixtures ¹	24.7%	19.5%	00.00/	47.50/
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	011 D		22.8%	17.5%
0/0 : 5 : 11: 545	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	55%	22%		
% of RAP Mixtures Using Softer Binders	0%	5%		
% of RAP Mixtures Using Rejuvenators	22%	2%		
RAS	Tons, The	ousands	Tons, Th	nousands
Unprocessed Shingles Accepted	20.0	13.1	72.7	20.5
Processed Shingles Accepted	0.0	0.0	0.0	0.0
Used in HMA/WMA Mixtures	15.3	21.1	55.8	32.9
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	54.6	9.6	198.3	15.0
·	Avg. % l	Jsed in	Avg. %	Used in
	Mixtu			ures
Average % for DOT Mixtures ¹	0.60%	0.35%		
Average % for Other Agency Mixtures ¹	0.60%	0.35%		
Average % for Commercial & Residential Mixtures ¹	0.60%	0.40%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.61%	0.37%
	Other Repo	orted Data		
% Companies Reporting Using RAS	40%	40%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	33%	0%		
WMA	% of Total I	Production	Tons	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OF TOTAL I	. Judgulon		1.0
Total Tons Produced With WMA Technology at HMA Temperatures [†]			9.2	1.2
DOT	100%	21%	2.5	1.2
Other Agency	100%	40%	1.4	0.5
Commercial & Residential	100%	24%	5.2	0.5
WMA Technologies	Other Repo		0.2	0.0
Chemical Additive, % of Market	20%	82%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	80%	18%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	60%	40%		
¹ Average percent based on contractor's reported percentage for each sector, adjusted has				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
TEXAS	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	Millions	Tons	Millions
Total	7.9	7.2	20.0	17.2
DOT	5.4	3.7	13.7	8.8
Other Agency	1.3	2.0	3.2	4.8
Commercial & Residential	1.2	1.5	3.1	3.6
No. of Companies Reporting	7	6	0.1	0.0
RAP		•	Tono	Milliona
Accepted	Tons, N		2.4	Millions 2.6
Used in HMA/WMA Mixtures	1.2	1.1 1.2	3.0	2.0
Used as 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	2.00	1.68	5.04	4.01
	Avg. % l			Used in
A 0/ 5 DOTA: 1 1	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	14.8%	18.9%		
Average % for Other Agency Mixtures ¹	14.8%	15.6%		
Average % for Commercial & Residential Mixtures ¹	15.1%	18.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			14.9%	17.1%
	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	39%	63%		
% of RAP Mixtures Using Softer Binders	31%	38%		
% of RAP Mixtures Using Rejuvenators	0%	8%		
RAS	Tons, The	ousands	Tons. Th	nousands
Unprocessed Shingles Accepted	88.8	48.8	223.9	116.6
Processed Shingles Accepted	28.1	17.6	70.9	42.0
Used in HMA/WMA Mixtures	78.8	55.0	198.8	131.4
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	22.6	15.0	57.1	77.9
Total Folio of the Octobalists at Four Elia	Avg. % I			Used in
	Mixtu			ures
Average % for DOT Mixtures ¹	0.80%		TVIIX	
Average % for Other Agency Mixtures ¹	1.00%			
Average % for Commercial & Residential Mixtures ¹	1.40%			
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	1.1070		0.99%	
Clate / troings / til mixtares Europe sir i tre Foris Cook in Film (Trim)	Other Repo	orted Data	0.0070	
% Companies Reporting Using RAS	100%	83%		
% of RAS Mixtures Using Softer Binders	35%	70%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
			T	Millions
WMA Tatal Tana Dashugad With WMA Tashuglasu at Daducad Tanananaturat	% of Total I	roduction	i ons, l	Millions
Total Tons Produced With WMA Technology at Reduced Temperature†			9.2	3.6
Total Tons Produced With WMA Technology at HMA Temperatures [†]	500/	040/		6.1
DOT	50%	61%	6.9	5.4
Other Agency	35%	52%	1.1	2.5
Commercial & Residential	38%	51%	1.2	1.8
WMA Technologies	Other Repo			
Chemical Additive, % of Market	85%	97%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	15%	3%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	86%	100%		
Normanies Reporting Using WMA Technologies Average percent based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on the contractor of the contractor				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

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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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
UTAH	Reported	l Values	Estimate	d Values
OTAN	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	Millions	Tons	Millions
Total	3.5	3.7	4.0	4.0
DOT	1.1	1.4	1.2	1.5
Other Agency	0.4	0.9	0.4	1.0
Commercial & Residential	2.1	1.4	2.4	1.5
No. of Companies Reporting	9	9	2.7	1.5
			Т	A:II:
RAP	Tons, N			Millions
Accepted	0.6	0.8	0.7	0.9
Used in HMA/WMA Mixtures	0.8	1.0	0.9	1.1
Used as 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	1.42	1.43	1.62	1.55
	Avg. % l			Used in
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	15.0%	23.1%		
Average % for Other Agency Mixtures ¹	15.0%	20.2%		
Average % for Commercial & Residential Mixtures ¹	26.7%	33.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			21.9%	27.0%
	Other Repo	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	8%	29%		
% of RAP Mixtures Using Softer Binders	48%	40%		
% of RAP Mixtures Using Rejuvenators	0%	12%		
RAS	Tons, The	oueande	Tone Th	ousands
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 as 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
				0.0
Total Tons of RAS Stockpiled at Year-End	0.0	0.0	0.0	
	Avg. % I			Used in
A	Mixtu		IVIIXI	ures
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%	-	
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%	0.000/	0.000/
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0 II D		0.00%	0.00%
0/ 0	Other Repo			
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total I	Production	Tons, I	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]				1.6
Total Tons Produced With WMA Technology at HMA Temperatures [†]			3.4	1.9
DOT	84%	94%	1.0	1.4
Other Agency	81%	77%	0.3	0.7
Commercial & Residential	88%	87%	2.1	1.3
WMA Technologies [‡]	Other Repo			
Chemical Additive, % of Market	34%	16%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	66%	84%		
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	89%	78%		
¹ Average percent based on contractor's reported percentage for each sector, adjusted has				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
VERMONT	Reported	l Values	Estimate	d Values
	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	Millions	Tons, N	Millions
Total	*	*	1.9	1.9
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
No. of Companies Reporting	*	*		
RAP	Tons, N	Millions	Tons, N	Millions
Accepted	*	*	*	*
Used in HMA/WMA Mixtures	*	*	*	*
Used as Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAP Stockpiled at Year-End	*	*	*	*
	Avg. %	Jsed in	Avg. %	Used in
	Mixtu	ıres	Mixt	
Average % for DOT Mixtures ¹	*	*		
Average % for Other Agency Mixtures ¹	*	*		
Average % for Commercial & Residential Mixtures ¹	*	*		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			*	*
	Other Repo	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 as Aggregate	*	*	*	*
Used in Cold-Mix Asphalt	*	*	*	*
Used in Other	*	*	*	*
Landfilled	*	*	*	*
Total Tons of RAS Stockpiled at Year-End	*	*	*	*
	Avg. % Mixtu		Avg. % Used in Mixtures	
Average % for DOT Mixtures ¹	*	*		
Average % for Other Agency Mixtures ¹	*	*		
Average % for Commercial & Residential Mixtures ¹	*	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			*	*
	Other Repo	orted Data		
% Companies Reporting Using RAS	*	*		
% of RAS Mixtures Using Softer Binders	*	*		
% of RAS Mixtures Using Rejuvenators	*	*		
WMA	% of Total I	Production	Tons, N	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]			*	*
Total Tons Produced With WMA Technology at HMA Temperatures [†]			Î	*
DOT	*	*	*	*
Other Agency	*	*	*	*
Commercial & Residential	*	*	*	*
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	*	*		
Additive Foaming, % of Market	*	*		
Plant Foaming, % of Market	*	*		
	*	*		
Organic Additive, % of Market	*	*		
% Companies Reporting Using WMA Technologies Average percent based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector.				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly du	
VIRGINIA	Reported	Values	Estimate	d Values
VIITOIMIA	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, M	lillions	Tons.	Millions
Total	4.9	5.1	12.0	11.0
DOT	2.1	2.2	5.2	4.7
Other Agency	0.8	1.1	2.1	2.4
Commercial & Residential	2.0	1.8	4.8	3.9
No. of Companies Reporting	5	7		
RAP	Tons, M	lillions	Tons	Millions
Accepted	1.5	1.7	3.7	3.7
Used in HMA/WMA Mixtures	1.6	1.4	3.9	3.0
Used as Aggregate	0.1	0.1	0.1	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	1.47	1.81	3.58	3.90
Total Totis of twal Stockplied at Teal-Elid	Avg. % l			Used in
	Mixtu			tures
Average % for DOT Mixtures ¹	31.9%	26.5%	IVIIX	
Average % for Other Agency Mixtures ¹	32.3%	26.0%		
Average % for Commercial & Residential Mixtures ¹	33.1%	29.0%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	00.170	20.070	32.4%	27.5%
	Other Repo	orted Data	02.170	2
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	36%	26%		
% of RAP Mixtures Using Softer Binders	14%	5%		
% of RAP Mixtures Using Rejuvenators	4%	1%		
RAS			Tono Th	
	Tons, Tho			nousands
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
Processed Shingles Accepted	0.0	0.0	0.0	0.1
Used in HMA/WMA Mixtures	0.0	0.0	0.0	0.0
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	2.0	0.0	4.9	
	Avg. % l Mixtu			Used in tures
Average % for DOT Mixtures ¹	0.00%	0.00%	IVIIX	ures
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%	-	
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.00%	0.00 /6	0.00%	0.00%
State Average All Mixtures based of two Tons osed in ThinA WinA	Other Repo	orted Data	0.0070	0.0070
% Companies Reporting Using RAS	0%	14%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
			-	N 4:11: -
WMA	% of Total F	roduction	Tons,	Millions
Total Tons Produced With WMA Technology at Reduced Temperature†			7.7	3.6
Total Tons Produced With WMA Technology at HMA Temperatures [†]				3.0
	000/	000/		3.3
DOT	69%	69%	3.6	4 4
DOT Other Agency	52%	46%	1.1	1.1
DOT Other Agency Commercial & Residential	52% 64%	46% 58%		1.1 2.3
DOT Other Agency Commercial & Residential WMA Technologies	52% 64% Other Repo	46% 58% orted Data	1.1	
DOT Other Agency Commercial & Residential	52% 64%	46% 58%	1.1	
DOT Other Agency Commercial & Residential WMA Technologies	52% 64% Other Repo	46% 58% orted Data	1.1	
DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market Additive Foaming, % of Market	52% 64% Other Repo	46% 58% orted Data 47%	1.1	
DOT Other Agency Commercial & Residential WMA Technologies Chemical Additive, % of Market	52% 64% Other Repo 27% 0%	46% 58% orted Data 47% 0%	1.1	

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
WASHINGTON	Reported	l Values	Estimate	d Values
WASHINGTON -	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N			Millions
Total	4.5	5.5	6.0	5.9
DOT	0.9	0.9	1.2	1.0
Other Agency	1.6	1.9	2.2	2.0
Commercial & Residential	1.9	2.7	2.6	2.9
No. of Companies Reporting	7	9	2.0	2.0
RAP	Tons, N	•	Tone	Millions
Accepted Used in HMA/WMA Mixtures	0.9	1.2 1.3	1.3 1.2	1.3 1.4
	0.9			
Used as Aggregate	0.0	0.1	0.1	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	0.87	1.02	1.18	1.09
	Avg. % l			Used in
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	17.0%	20.1%		
Average % for Other Agency Mixtures ¹	18.4%	18.7%		
Average % for Commercial & Residential Mixtures ¹	22.4%	25.8%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			19.9%	23.6%
	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	14%	12%		
% of RAP Mixtures Using Softer Binders	16%	19%		
% of RAP Mixtures Using Rejuvenators	7%	9%		
RAS	Tons, The	ousands	Tons. Th	ousands
Unprocessed Shingles Accepted	7.8	14.7	10.5	15.8
Processed Shingles Accepted	2.8	0.0	3.8	0.0
Used in HMA/WMA Mixtures	11.9	14.5	16.0	15.6
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	2.9	7.2	3.9	7.7
Total Total Of Taxo Otookpiica at Tear-Elia	Avg. % I			Used in
	Mixtu		Mixt	
Average % for DOT Mixtures ¹	0.00%	0.19%	IVIIXU	uics
Average % for Other Agency Mixtures ¹	0.00%	0.19%		
Average % for Commercial & Residential Mixtures ¹	0.60%	0.36%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.00 /0	0.50 /0	0.27%	0.26%
Otate Average All Minimizes based of TAO Tolls Osed III TIMA/WIMA	Other Repo	orted Data	0.21/0	0.2070
% Companies Reporting Using RAS	43%	33%		
% Companies Reporting Using RAS % of RAS Mixtures Using Softer Binders	17%	33%		
% of RAS Mixtures Using Soller Binders % of RAS Mixtures Using Rejuvenators	17%	7%		
WMA	% of Total I	roduction	Tons, I	
Total Tons Produced With WMA Technology at Reduced Temperature†			1.0	0.4
Total Tons Produced With WMA Technology at HMA Temperatures [†]				1.1
DOT	5%	14%	0.1	0.1
Other Agency	19%	23%	0.4	0.5
Commercial & Residential	22%	33%	0.6	0.9
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	42%	5%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	58%	95%		
_				
Organic Additive, % of Market	0%	0%		
% Companies Reporting Using WMA Technologies	86%	56%		
¹ Average percent based on contractor's reported percentage for each sector, adjusted has	ed upon reported to	nnage		

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly du	
WEST VIRGINIA	Reported	l Values	Estimate	ed Values
WEST VIKSIMIA	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, M	Millions	Tons	Millions
Total	1.5	2.5	2.6	3.5
DOT	1.2	2.2	2.0	3.1
Other Agency	0.1	0.2	0.1	0.3
Commercial & Residential	0.3	0.1	0.5	0.1
No. of Companies Reporting	4	3	0.0	0.1
RAP	-	•	Tama	Millions
	Tons, M			
Accepted Used in HMA/WMA Mixtures	0.3	1.1	0.5	1.5
	0.3	0.5	0.5	0.7
Used as 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	0.32	0.56	0.55	0.78
	Avg. % l Mixtu			Used in tures
Average % for DOT Mixtures ¹	17.5%	20.0%		
Average % for Other Agency Mixtures ¹	15.5%	20.0%		
Average % for Commercial & Residential Mixtures ¹	18.0%	20.0%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			17.6%	20.0%
	Other Repo	orted Data		
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	4%	0%		
% of RAP Mixtures Using Softer Binders	3%	0%		
% of RAP Mixtures Using Rejuvenators	0%	0%		
RAS	Tons, The		Tono Th	nousands
Unprocessed Shingles Accepted	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
Processed Shingles Accepted				
Used in HMA/WMA Mixtures Used as Aggregate	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	0.0	0.0	0.0	0.0
	Avg. % l Mixtu			Used in tures
Average % for DOT Mixtures ¹	0.00%	0.00%		
Average % for Other Agency Mixtures ¹	0.00%	0.00%		
Average % for Commercial & Residential Mixtures ¹	0.00%	0.00%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²			0.00%	0.00%
	Other Repo	orted Data		
% Companies Reporting Using RAS	0%	0%		
% of RAS Mixtures Using Softer Binders	0%	0%		
% of RAS Mixtures Using Rejuvenators	0%	0%		
WMA	% of Total F		Tone	Millions
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OI TOLAIT	Toduction	10115,	0.0
Total Tons Produced With WMA Technology at HMA Temperatures [†]			0.0	0.0
DOT	0%	0%	0.0	0.0
Other Agency	0%	0%	0.0	0.0
Commercial & Residential	0%	0%	0.0	0.0
			0.0	0.0
WMA Technologies	Other Repo			
Chemical Additive, % of Market	0%	0%		
		00/		
Additive Foaming, % of Market	0%	0%		
	0% 0%	0%		
Additive Foaming, % of Market				

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.

[†] For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	
WISCONSIN	Reported	l Values	Estimate	d Values
WIGOONOIN	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, M	Millions	Tons I	Millions
Total	8.7	9.2	12.0	12.5
DOT	5.3	4.2	7.2	5.7
Other Agency	1.5	2.2	2.0	3.0
Commercial & Residential	2.0	2.8	2.8	3.8
No. of Companies Reporting	4	6	2.0	0.0
RAP	-	•	Tono	Millions
Accepted	Tons, M 1.5	1.3	2.1	
Used in HMA/WMA Mixtures	1.4	1.6	1.9	1.8 2.2
Used as Aggregate	0.0	0.1	0.0	0.1
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAP Stockpiled at Year-End	1.16	1.87	1.60	2.54
	Avg. % l			Used in
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	15.6%	14.2%		
Average % for Other Agency Mixtures ¹	16.3%	19.5%		
Average % for Commercial & Residential Mixtures ¹	17.3%	19.3%		
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²			16.1%	17.4%
	Other Repo			
% Companies Reporting Using RAP	100%	100%		
% of RAP Fractionated	4%	5%		
% of RAP Mixtures Using Softer Binders	19%	21%		
% of RAP Mixtures Using Rejuvenators	5%	3%		
RAS	Tons, The	ousands	Tons. Th	ousands
Unprocessed Shingles Accepted	52.0	80.4	71.4	109.2
Processed Shingles Accepted	16.8	15.8	23.1	21.5
Used in HMA/WMA Mixtures	66.2	59.9	90.8	81.4
Used as Aggregate	0.0	0.0	0.0	0.0
Used in Cold-Mix Asphalt	0.0	0.0	0.0	0.0
Used in Other	0.0	0.0	0.0	0.0
Landfilled	0.0	0.0	0.0	0.0
Total Tons of RAS Stockpiled at Year-End	45.7	129.4	62.7	175.8
Total Total Of Taxe Clockpilou at Tour End	Avg. % l			Used in
	Mixtu			
Average % for DOT Mixtures ¹	0.90%	0.50%	TVIIXC	
Average % for Other Agency Mixtures ¹	1.50%	0.73%		
Average % for Commercial & Residential Mixtures ¹	0.30%	0.73%		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.0070	0.1070	0.76%	0.65%
Otate //verage / in whitares based on to to tons esed in this / vviii/	Other Repo	orted Data	0.7070	0.0070
% Companies Reporting Using RAS	100%	100%		
% of RAS Mixtures Using Softer Binders	53%	55%		
% of RAS Mixtures Using Rejuvenators	10%	7%		
			_	A:II:
WMA	% of Total F	roduction	Tons, I	
Total Tons Produced With WMA Technology at Reduced Temperature†			0.6	2.4
Total Tons Produced With WMA Technology at HMA Temperatures [†]				1.0
DOT	3%	41%	0.2	2.3
Other Agency	11%	17%	0.2	0.6
Commercial & Residential	5%	13%	0.1	0.5
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	100%	100%		
Additive Foaming, % of Market	0%	0%		
Plant Foaming, % of Market	0%	0%		
Organic Additive, % of Market	0%	0%		
-	100%	67%		
% Companies Reporting Using WMA Technologies 1 Average percent based on contractor's reported percentage for each sector, adjusted base				

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.

			up exactly due	to rounding
WYOMING	Reported	l Values	Estimate	d Values
TV TOMINO	2017	2018	2017	2018
Tons of HMA/WMA Produced	Tons, N	/lillions	Tons, I	Millions
Total	0.1	*	2.5	2.5
DOT	0.1	*	1.0	*
Other Agency	0.0	*	0.5	*
Commercial & Residential	0.1	*	1.0	*
No. of Companies Reporting	3	*		
RAP	Tons, N	/lillions	Tons, N	Millions
Accepted	0.0	*	0.4	*
Used in HMA/WMA Mixtures	0.0	*	0.3	*
Used as 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	0.02	*	0.40	*
	Avg. %	Used in	Avg. %	
	Mixtu		Mixt	ures
Average % for DOT Mixtures ¹	2.5%	*		
Average % for Other Agency Mixtures ¹	17.5%	*		
Average % for Commercial & Residential Mixtures ¹	17.5%	*	= 0 .	
State Average All Mixtures Based on RAP Tons Used in HMA/WMA ²	011 5		11.7%	*
N.O	Other Repo	orted Data		
% Companies Reporting Using RAP	67%	*		
% of RAP Fractionated	50%	*		
% of RAP Mixtures Using Softer Binders	0%	*		
% of RAP Mixtures Using Rejuvenators	0%			
RAS	Tons, The	ousands		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 as Aggregate	0.0	*	0.0	*
Used in Cold-Mix Asphalt	0.0	*	0.0	*
Used in Other	0.0	*	0.0	*
Landfilled	0.0	*	0.0	*
Total Tons of RAS Stockpiled at Year-End	0.0		0.0	
	Avg. % ! Mixtu		Avg. % Mixt	
Average % for DOT Mixtures ¹	0.00%	*	IVIIXL	uies
Average % for Other Agency Mixtures ¹	0.00%	*		
Average % for Commercial & Residential Mixtures ¹	0.00%	*		
State Average All Mixtures Based on RAS Tons Used in HMA/WMA ²	0.0070		0.00%	*
Otate / Werage / III Wintares Basea of 177 to 15/15 Osea III 1 III/I V VVIII/	Other Repo	orted Data	0.0070	
% Companies Reporting Using RAS	0%	*		
% of RAS Mixtures Using Softer Binders	0%	*		
% of RAS Mixtures Using Rejuvenators	0%	*		
WMA	% of Total I	Production	Tons, I	Millione
Total Tons Produced With WMA Technology at Reduced Temperature [†]	70 OF TOTAL I	TOUUCION		*
Total Tons Produced With WMA Technology at Neduced Temperatures [†]			1.6	*
DOT	10%	*	0.1	*
Other Agency	95%	*	0.5	*
Commercial & Residential	100%	*	1.0	*
WMA Technologies	Other Repo	orted Data		
Chemical Additive, % of Market	5%	*		
		*		
Additive Foaming, % of Market	0%	*		
Plant Foaming, % of Market	95%			
Organic Additive, % of Market	0%	*		
% Companies Reporting Using WMA Technologies Average percent based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector, adjusted based on contractor's reported percentage for each sector report	67%	*		

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.

† For the 2018 construction season, respondents were specifically asked to disaggregate use of WMA technology at HMA temperatures.



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