# Annual Asphalt Pavement Industry Survey on

Recycled Materials and Warm-Mix Asphalt Usage: 2009–2012

Appendix B

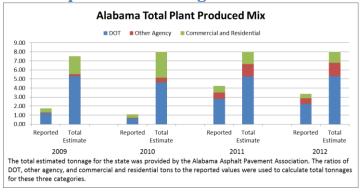
State-by-State Use of Recycled Materials, WMA and HMA

# Alabama

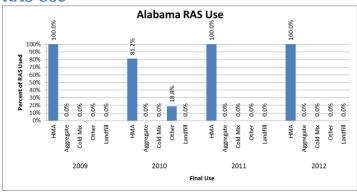
Table B1 summarizes the results received from asphalt mix producers in Alabama. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 3 for 2009 & 2010, 5 for 2011, 4 for 2012

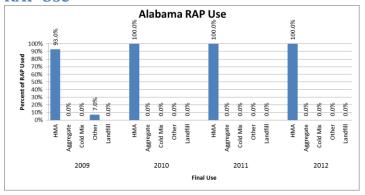
# **Total Asphalt Mix Tonnage**



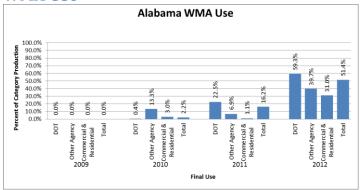
#### **RAS Use**



## **RAP Use**



#### **WMA Use**



# **Other Recycled Material**

(			
Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Steel Slag	3	625,000	133,441
Blast Furnace Slag	2	100,000	10,100

No. Companies Reporting  HMA/WMA			
many was	Reported	Total Estimated <sup>1</sup>	
	2012	2012	
Total DOT Tonnage	2,245,000	5,323,267	
Total Other Agency Tonnage	607,000	1,439,298	
Total Commercial & Residential Tonnage	521,868	1,237,435	
Total Tonnage		8,000,000	
Reclaimed Asphalt Pavement	3,373,868 (PAD)	6,000,000	
Reclaimed Aspiralt Pavement	Reported	Total Estimated	
	2012	2012	
Percent Companies using RAP	100%	2012	
RAP Tons Received	715,000	1,695,383	
RAP Tons used in HMA/WMA	748,722	1,775,344	
RAP Tons used as Aggregate	710,722	1,773,5TT -	
RAP Tons used in Cold Mix	-	-	
RAP Tons used as Other	-		
RAP Tons Landfilled	-	-	
Average % RAP in DOT Mixes	23%		
Average % RAP in Other Agency Mixes	22%		
Average % RAP in Commercial & Residential Mixes	32%		
Reclaimed Asphalt Shingles	(RAS)		
	Reported	Total Estimated	
	2012	2012	
Percent Companies using RAS	100%		
RAS Tons Received	111,500	264,385	
RAS Tons used in HMA/WMA	107,936	255,934	
RAS Tons used as Aggregate	-	-	
RAS Tons used in Cold Mix	-	-	
RAS Tons used as Other	-	-	
RAS Tons Landfilled	-	-	
Average % RAS in DOT Mixes	3.4%		
Average % RAS in Other Agency Mixes	1.2%		
Average % RAS in Commercial & Residential Mixes	3.7%		
Warm-Mix Asphalt			
	Reported	Total Estimated	
	2012	2012	
Percent Companies using WMA	100%		
WMA DOT Tonnage	1,331,000	3,156,022	
WMA Other Agency Tonnage	241,000	571,451	
WMA Commercial & Residential Tonnage	161,910	383,916	
Total WMA Tonnage	1,733,910	4,111,389	
Percent WMA Tons using Chemical Additives	33.2%		
Percent WMA Tons using Additive Foaming	0.0%		
Percent WMA Tons using Plant Foaming	66.8%		
Percent WMA Tons using Organic Additive	0.0%		

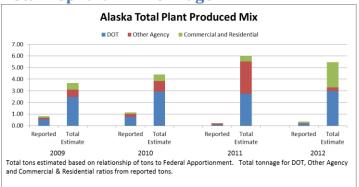
<sup>1.</sup> Total tonnage provided by Alabama Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# Alaska

Table B2 summarizes the results received from asphalt mix producers in Alaska. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 3 for 2009 & 2010, 2 for 2011 & 2012

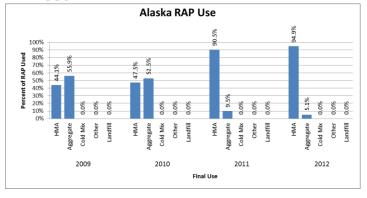
# **Total Asphalt Mix Tonnage**



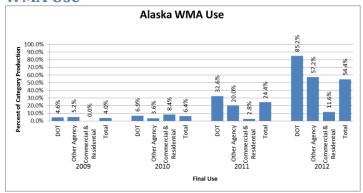
## **RAS Use**

No companies reported using RAS in 2009, 2010, 2011, or 2012.

# **RAP Use**



# **WMA Use**



2

No. Companies Reporting  HMA/WM	IΔ	
HPIA/WP	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	193,000	2,987,399
Total Other Agency Tonnage	20,000	309,575
Total Commercial & Residential Tonnage	140,000	2,167,025
Total Tonnage	353,000	5,464,000
Reclaimed Asphalt Pa		3, 10 1,000
Recidifica Aspirate Fu	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	2012
RAP Tons Received	10,105	156,413
RAP Tons used in HMA/WMA	27,528	426,099
RAP Tons used as Aggregate	1,500	23,218
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	20%	
Average % RAP in Other Agency Mixes	29%	
Average % RAP in Commercial & Residential Mixes	21%	
Reclaimed Asphalt Si		
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	0%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	-	-
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix As	sphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	100%	
WMA DOT Tonnage	164,410	2,544,862
WMA Other Agency Tonnage	11,440	177,077
WMA Commercial & Residential Tonnage	16,170	250,291
Total WMA Tonnage	192,020	2,972,230
Percent WMA Tons using Chemical Additives	0.0%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	

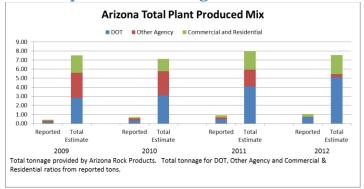
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Arizona**

Table B3 summarizes the results received from asphalt mix producers in Arizona. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 2 for 2009 & 2010, 4 for 2011 & 2012

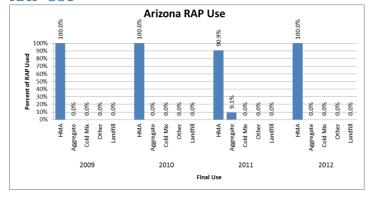
# **Total Asphalt Mix Tonnage**



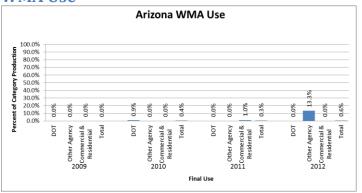
## **RAS Use**

No companies reported using RAS in 2009,2010 or 2011.

# **RAP Use**



# **WMA Use**



# **Other Recycled Material**

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Ground Tire Rubber	2	33,590	532

Companies Reporting  HMA/WM	1A	4
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	703,230	5,117,713
Total Other Agency Tonnage	46,688	339,769
Total Commercial & Residential Tonnage	287,535	2,092,518
Total Tonnage	1,037,453	7,550,000
Reclaimed Asphalt Pa		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Toolain and Toolai	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	2012
RAP Tons Received	128,070	932,021
RAP Tons used in HMA/WMA	147,635	1,074,406
RAP Tons used as Aggregate	-	-
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	17%	
Average % RAP in Other Agency Mixes	13%	
Average % RAP in Commercial & Residential Mixes	15%	
Reclaimed Asphalt S	hingles (RAS)	
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	0%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	-	-
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix As	sphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	25%	
WMA DOT Tonnage		-
WMA Other Agency Tonnage	6,209	45,186
WMA Commercial & Residential Tonnage	-	<u>-</u>
Total WMA Tonnage	6,209	45,186
Percent WMA Tons using Chemical Additives	100.0%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	0.0%	
Percent WMA Tons using Organic Additive	0.0%	

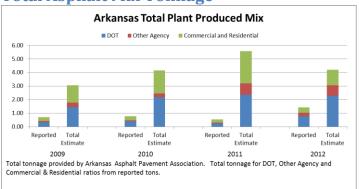
 $<sup>1.\</sup> Total\ tonnage\ provided\ by\ Arizona\ Rock\ Products.\ Total\ tonnage\ for\ DOT,\ Other\ Agency\ and\ Commercial\ \&\ Residential\ ratios\ from\ reported\ tons.$ 

# **Arkansas**

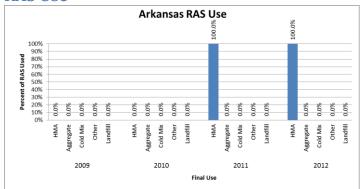
Table B4 summarizes the results received from asphalt mix producers in Arkansas.

Companies responding: 3 for 2009 & 2010, 2 for 2011, 5 for 2012

# **Total Asphalt Mix Tonnage**

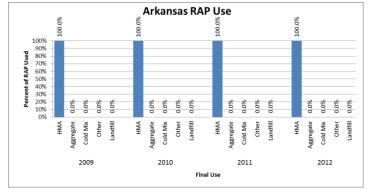


## **RAS Use**

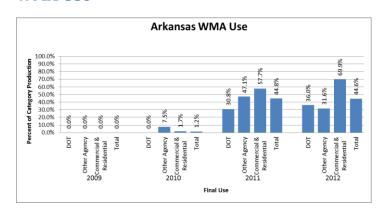


One company reported receiving RAS in 2010; however, no RAS was used in any mixes in 2009 & 2010.

# **RAP Use**



## **WMA Use**



# **Other Recycled Material**

	•	· ,	, ,
Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Steel Slag	1	120,000	12,000

5

HMA/WMA			
	Reported	Total Estimated <sup>1</sup>	
	2012	2012	
Total DOT Tonnage	772,170	2,294,595	
Total Other Agency Tonnage	251,475	747,288	
Total Commercial & Residential Tonnage	389,726	1,158,117	
Total Tonnage	1,413,371	4,200,000	
Reclaimed Asphalt Pave		, ,	
•	Reported	Total Estimated	
	2012	2012	
Percent Companies using RAP	80%		
RAP Tons Received	83,755	248,888	
RAP Tons used in HMA/WMA	143,121	425,301	
RAP Tons used as Aggregate	-	-	
RAP Tons used in Cold Mix	-	-	
RAP Tons used as Other	-	-	
RAP Tons Landfilled	-	-	
Average % RAP in DOT Mixes	11%		
Average % RAP in Other Agency Mixes	26%		
Average % RAP in Commercial & Residential Mixes	21%		
Reclaimed Asphalt Shin	gles (RAS)		
	Reported	Total Estimated	
	2012	2012	
Percent Companies using RAS	60%		
RAS Tons Received	14,202	42,203	
RAS Tons used in HMA/WMA	7,722	22,947	
RAS Tons used as Aggregate	-	-	
RAS Tons used in Cold Mix	-	-	
RAS Tons used as Other	-	-	
RAS Tons Landfilled	-	-	
Average % RAS in DOT Mixes	0%		
Average % RAS in Other Agency Mixes	1%		
Average % RAS in Commercial & Residential Mixes	2%		
Warm-Mix Asph			
	Reported	Total Estimated	
	2012	2012	
Percent Companies using WMA	80%		
WMA DOT Tonnage	278,248	826,847	
WMA Other Agency Tonnage	79,440	236,065	
WMA Commercial & Residential Tonnage	272,242	809,001	
Total WMA Tonnage	629,930	1,871,913	
Percent WMA Tons using Chemical Additives	16.5%		
Percent WMA Tons using Additive Foaming	0.0%		
Percent WMA Tons using Plant Foaming	83.5%		
Percent WMA Tons using Organic Additive	0.0%		

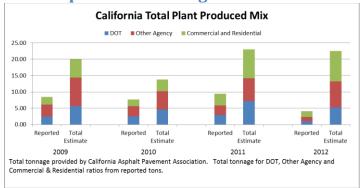
<sup>1.</sup> Total tonnage provided by Arkansas Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **California**

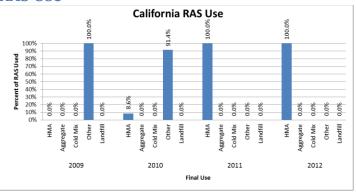
Table B5 summarizes the results received from asphalt mix producers in California. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 6 for 2009 & 2010, 4 for 2011 and 2012

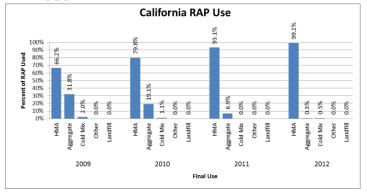
# **Total Asphalt Mix Tonnage**



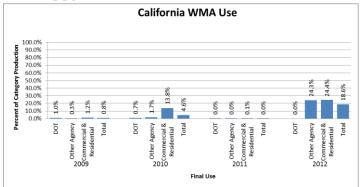
#### **RAS Use**



## **RAP Use**



#### **WMA Use**



# **Other Recycled Material**

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Ground Tire Rubber	2	101,000	7,983

Companies Penerting		1
Companies Reporting  HMA/WMA		4
TIPIN, WPIN	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	950,000	5,260,412
Total Other Agency Tonnage	1,430,000	7,918,304
Total Commercial & Residential Tonnage	1,683,370	9,321,284
Total Tonnage	4,063,370	22,500,000
Reclaimed Asphalt Paveme	<u> </u>	,
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	75%	2012
RAP Tons Received	366,000	2,026,643
RAP Tons used in HMA/WMA	648,000	3,588,155
RAP Tons used as Aggregate	2,000	11,075
RAP Tons used in Cold Mix	3,400	18,827
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	13%	
Average % RAP in Other Agency Mixes	14%	
Average % RAP in Commercial & Residential Mixes	19%	
Reclaimed Asphalt Shingle	es (RAS)	
	Reported	Total Estimated
	2012	2012
	2012	2012
Percent Companies using RAS	25%	2012
Percent Companies using RAS RAS Tons Received		2012 986
	25%	
RAS Tons Received	25% 178	986
RAS Tons Received RAS Tons used in HMA/WMA	25% 178	986
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other	25% 178 2,008	986 11,119 -
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled	25% 178 2,008 - - - -	986 11,119 -
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes	25% 178 2,008 0%	986 11,119 -
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes	25% 178 2,008 0% 2%	986 11,119 -
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes	25% 178 2,008 0%	986 11,119 -
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes	25% 178 2,008 0% 2% 3%	986 11,119 - - - -
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes	25% 178 2,008 0% 2% 3% t Reported	986 11,119 -
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Asphale	25% 178 2,008 0% 2% 3%	986 11,119 - - - -
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Asphale  Percent Companies using WMA	25% 178 2,008 0% 2% 3% t Reported	986 11,119 Total Estimated
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Asphale  Percent Companies using WMA WMA DOT Tonnage	25% 178 2,008 0% 2% 3%  t  Reported 2012 75%	986 11,119 Total Estimated 2012
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Asphal  Percent Companies using WMA WMA DOT Tonnage WMA Other Agency Tonnage	25% 178 2,008 0% 2% 3%  t  Reported 2012 75% - 347,480	986 11,119 Total Estimated 2012 - 1,924,093
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Asphal  Percent Companies using WMA WMA DOT Tonnage WMA Other Agency Tonnage WMA Commercial & Residential Tonnage	25% 178 2,008 0% 2% 3%  t  Reported 2012 75% - 347,480 410,364	986 11,119 Total Estimated 2012 - 1,924,093 2,272,297
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Asphale  Percent Companies using WMA WMA DOT Tonnage WMA Other Agency Tonnage WMA Commercial & Residential Tonnage Total WMA Tonnage	25% 178 2,008 0% 2% 3%  t  Reported 2012 75% - 347,480 410,364 757,844	986 11,119 Total Estimated 2012 - 1,924,093
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Asphal  Percent Companies using WMA WMA DOT Tonnage WMA Other Agency Tonnage WMA Commercial & Residential Tonnage Total WMA Tonnage Percent WMA Tons using Chemical Additives	25% 178 2,008 0% 2% 3%  t  Reported 2012 75% - 347,480 410,364 757,844 0.3%	986 11,119 Total Estimated 2012 - 1,924,093 2,272,297
RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Asphale  Percent Companies using WMA WMA DOT Tonnage WMA Other Agency Tonnage WMA Commercial & Residential Tonnage Total WMA Tonnage	25% 178 2,008 0% 2% 3%  t  Reported 2012 75% - 347,480 410,364 757,844	986 11,119 Total Estimated 2012 - 1,924,093 2,272,297

<sup>1.</sup> Total tonnage provided by California Asphalt Pavement Association. Total tonnage for Other Agency and Commercial & Residential ratios from reported tons.

0.0%

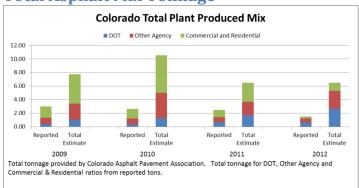
Percent WMA Tons using Organic Additive

# **Colorado**

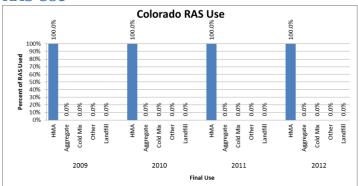
Table B6 summarizes the results received from asphalt mix producers in Colorado. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 8 for 2009 & 2010, 7 for 2011, 5 for 2012

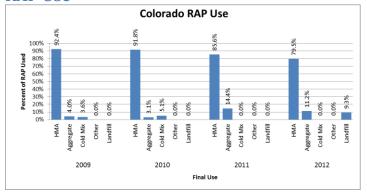
# **Total Asphalt Mix Tonnage**



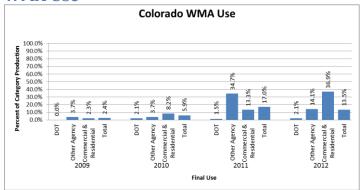
## **RAS Use**



# **RAP Use**



# **WMA Use**



HMA/WMA			
	Reported	Total Estimated <sup>1</sup>	
	2012	2012	
Total DOT Tonnage	608,221	2,675,409	
Total Other Agency Tonnage	591,460	2,601,682	
Total Commercial & Residential Tonnage	278,013	1,222,908	
Total Tonnage	1,477,694	6,500,000	
Reclaimed Asphalt Pave	ement (RAP)	,	
•	Reported	Total Estimated	
	2012	2012	
Percent Companies using RAP	100%		
RAP Tons Received	495,000	2,177,379	
RAP Tons used in HMA/WMA	427,925	1,882,333	
RAP Tons used as Aggregate	60,000	263,925	
RAP Tons used in Cold Mix	-	-	
RAP Tons used as Other		-	
RAP Tons Landfilled	50,000	219,937	
Average % RAP in DOT Mixes	18%		
Average % RAP in Other Agency Mixes	20%		
Average % RAP in Commercial & Residential Mixes	21%		
Reclaimed Asphalt Shi	ngles (RAS)		
	Reported	Total Estimated	
	2012	2012	
Percent Companies using RAS	40%		
RAS Tons Received	329	1,447	
RAS Tons used in HMA/WMA	10,329	45,435	
RAS Tons used as Aggregate	-	-	
RAS Tons used in Cold Mix	-	-	
RAS Tons used as Other	-	-	
RAS Tons Landfilled	-	-	
Average % RAS in DOT Mixes	0%		
Average % RAS in Other Agency Mixes	0%		
Average % RAS in Commercial & Residential Mixes	1%		
Warm-Mix Asp	halt		
	Reported	Total Estimated	
	2012	2012	
Percent Companies using WMA	100%		
WMA DOT Tonnage	12,653	55,655	
WMA Other Agency Tonnage	83,663	368,014	
WMA Commercial & Residential Tonnage	102,711	451,800	
Total WMA Tonnage	199,027	875,469	
Percent WMA Tons using Chemical Additives	4.6%		
Percent WMA Tons using Additive Foaming	0.0%		
Percent WMA Tons using Plant Foaming	95.4%		
Percent WMA Tons using Organic Additive	0.0%		

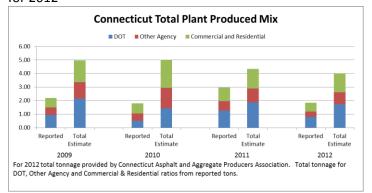
 $<sup>1. \ \, \</sup>text{Total tonnage provided by Colorado Asphalt Pavement Association. Total tonnage for Other Agency and Commercial \& Residential ratios from reported tons.}$ 

# **Connecticut**

Table B7 summarizes the results received from asphalt mix producers in Connecticut. The charts are used to summarize statistics calculated from information provided by the survey respondents.

# **Total Asphalt Mix Tonnage**

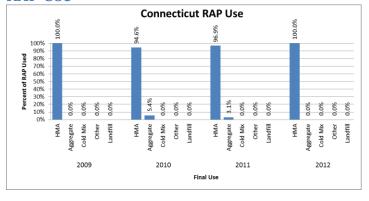
Companies responding: 2 for 2009 & 2010, 3 for 2011, 1 for 2012



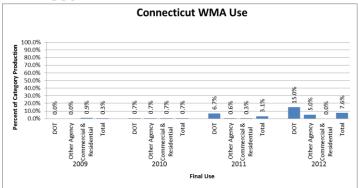
#### **RAS Use**

No contractors reported using RAS in 2009, 2010, 2011, or 2012.

# **RAP Use**



## **WMA Use**



HMA/WMA			
,	Reported	Total Estimated <sup>1</sup>	
	2012	2012	
Total DOT Tonnage	800,000	1,737,242	
Total Other Agency Tonnage	400,000	868,621	
Total Commercial & Residential Tonnage	642,000	1,394,137	
Total Tonnage	1,842,000	4,000,000	
Reclaimed Asphalt Pav		1,000,000	
	Reported	Total Estimated	
	2012	2012	
Percent Companies using RAP	100%		
RAP Tons Received	400,000	868,621	
RAP Tons used in HMA/WMA	393,585	854,691	
RAP Tons used as Aggregate	-	-	
RAP Tons used in Cold Mix	-	-	
RAP Tons used as Other	-	-	
RAP Tons Landfilled	-	-	
Average % RAP in DOT Mixes	18%		
Average % RAP in Other Agency Mixes	22%		
Average % RAP in Commercial & Residential Mixes	25%		
Reclaimed Asphalt Sh	ingles (RAS)		
•	Reported	Total Estimated	
	2012	2012	
Percent Companies using RAS	0%		
RAS Tons Received	-	-	
RAS Tons used in HMA/WMA	-	-	
RAS Tons used as Aggregate	-	-	
RAS Tons used in Cold Mix	-	-	
RAS Tons used as Other	-	-	
RAS Tons Landfilled	-	-	
Average % RAS in DOT Mixes	0%		
Average % RAS in Other Agency Mixes	0%		
Average % RAS in Commercial & Residential Mixes	0%		
Warm-Mix As	ohalt		
	Reported	Total Estimated	
	2012	2012	
Percent Companies using WMA	100%		
WMA DOT Tonnage	120,000	260,586	
WMA Other Agency Tonnage	20,000	43,431	
WMA Commercial & Residential Tonnage	-	-	
Total WMA Tonnage	140,000	304,017	
Percent WMA Tons using Chemical Additives	0.0%		
Percent WMA Tons using Additive Foaming	0.0%		
Percent WMA Tons using Plant Foaming	100.0%		
Percent WMA Tons using Organic Additive	0.0%		

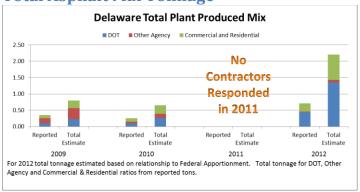
<sup>1.</sup> Total tonnage provided by Connecticut Asphalt and Aggregate Producers Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **Delaware**

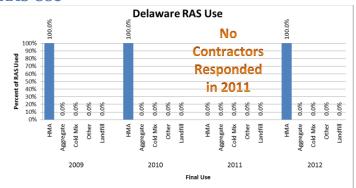
Table B8 summarizes the results received from asphalt mix producers in Delaware. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 1 for 2009 and 2010. No data reported for 2011, 3 for 2012

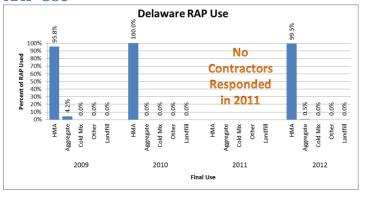
# **Total Asphalt Mix Tonnage**



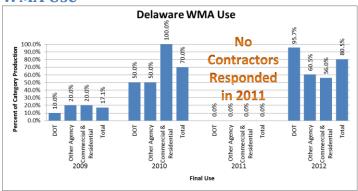
## **RAS Use**



## **RAP Use**



#### **WMA Use**



HMA/WMA			
	Reported	Total Estimated <sup>1</sup>	
	2012	2012	
Total DOT Tonnage	433,835	1,348,559	
Total Other Agency Tonnage	25,000	77,712	
Total Commercial & Residential Tonnage	249,876	776,730	
Total Tonnage	708,711	2,203,000	
Reclaimed Asphalt Pa		2/203/000	
	Reported	Total Estimated	
	2012	2012	
Percent Companies using RAP	100%		
RAP Tons Received	186,340	579,230	
RAP Tons used in HMA/WMA	200,073	621,919	
RAP Tons used as Aggregate	1,000	3,108	
RAP Tons used in Cold Mix	, -	-	
RAP Tons used as Other	-	-	
RAP Tons Landfilled	-	-	
Average % RAP in DOT Mixes	30%		
Average % RAP in Other Agency Mixes	35%		
Average % RAP in Commercial & Residential Mixes	34%		
Reclaimed Asphalt SI	ningles (RAS)		
•	Reported	Total Estimated	
	2012	2012	
Percent Companies using RAS	67%		
RAS Tons Received	20,000	62,169	
RAS Tons used in HMA/WMA	10,500	32,639	
RAS Tons used as Aggregate	-	-	
RAS Tons used in Cold Mix	-	-	
RAS Tons used as Other	-	-	
RAS Tons Landfilled	-	-	
Average % RAS in DOT Mixes	3%		
Average % RAS in Other Agency Mixes	4%		
Average % RAS in Commercial & Residential Mixes	4%		
Warm-Mix As	sphalt		
	Reported	Total Estimated	
	2012	2012	
Percent Companies using WMA	100%		
WMA DOT Tonnage	415,393	1,291,233	
WMA Other Agency Tonnage	15,125	47,015	
WMA Commercial & Residential Tonnage	139,872	434,786	
Total WMA Tonnage	570,390	1,773,035	
Percent WMA Tons using Chemical Additives	8.3%		
Percent WMA Tons using Additive Foaming	25.6%		
Percent WMA Tons using Plant Foaming	66.1%		
Percent WMA Tons using Organic Additive	0.0%		

<sup>1.</sup> Total tonnage estimated based on relationship to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **District of Columbia**

No contractors submitted data for the District of Columbia for 2009, 2010, 2011, or 2012. Total tons were estimated based on a relationship of tons to federal apportionment. Because RAP use is prevalent in all areas of the US it was estimated that RAP use in the District followed a national average. Table B9 summarizes this data.

**Table B9: Summary of District of Columbia Data for 2012** 

Companies Reporting

Companies Reporting		
HMA/WMA		
	Reported	Total Estimated <sup>1</sup>
	2011	2011
Total DOT Tonnage		
Total Other Agency Tonnage		
Total Commercial & Residential Tonnage		
Total Tonnage		1,850,000
Reclaimed Asphalt Pave	ment (RAP)	
	Reported	Total Estimated
	2011	2011
Percent Companies using RAP		
RAP Tons Received		365,286
RAP Tons used in HMA/WMA		350,252
RAP Tons used as Aggregate		18,751
RAP Tons used in Cold Mix		1,084
RAP Tons used as Other		1,259
RAP Tons Landfilled		1,253
Average % RAP in DOT Mixes		_
Average % RAP in Other Agency Mixes		
Average % RAP in Commercial & Residential Mixes		

- 1. Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.
- 2. Total estimated RAP tonnages based on national average for RAP since no tons reported for Washington, DC.

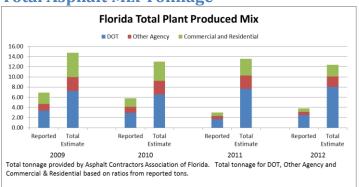
0

# **Florida**

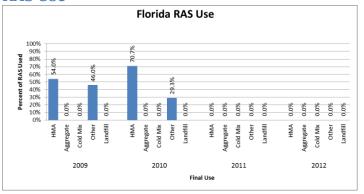
Table B10 summarizes the results received from asphalt mix producers in Florida. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 6 for 2009 & 2010, 4 for 2011, 5 for 2012

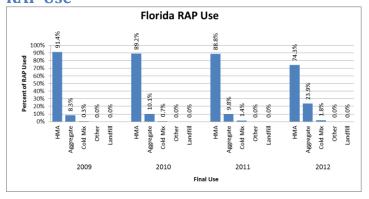
# **Total Asphalt Mix Tonnage**



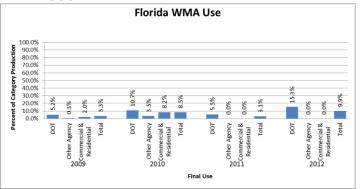
## **RAS Use**



## **RAP Use**



## **WMA Use**



# **Other Recycled Material**

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Ground Tire Rubber	1	86,441	195

Companies Reporting		5
HMA/W	/MA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	2,470,087	8,011,519
Total Other Agency Tonnage	642,949	2,085,351
Total Commercial & Residential Tonnage	703,311	2,281,130
Total Tonnage	3,816,347	12,378,000
Reclaimed Asphalt F	, ,	, ,
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	1,369,900	4,443,155
RAP Tons used in HMA/WMA	1,027,990	3,334,199
RAP Tons used as Aggregate	330,182	1,070,918
RAP Tons used in Cold Mix	25,398	82,376
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	25%	
Average % RAP in Other Agency Mixes	30%	
Average % RAP in Commercial & Residential Mixes	38%	
Reclaimed Asphalt	Shingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	0%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	-	-
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix A	Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	60%	
WMA DOT Tonnage	376,715	1,221,844
WMA Other Agency Tonnage	-	-
WMA Commercial & Residential Tonnage	-	-
Total WMA Tonnage	376,715	1,221,844
Percent WMA Tons using Chemical Additives	2.2%	
Percent WMA Tons using Additive Foaming	80.9%	
Percent WMA Tons using Plant Foaming	16.9%	
Percent WMA Tons using Organic Additive	0.0%	

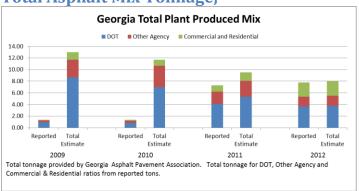
<sup>1.</sup> Total tonnage provided by Florida Asphalt Pavement Association. Total tonnage for DOT, Other Agency and

Commercial & Residential ratios from reported tons.

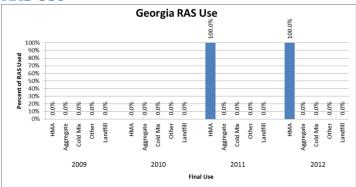
# Georgia

Table B11 summarizes the results received from asphalt mix producers in Georgia. The charts are used to summarize statistics calculated from information provided by the survey respondents. Companies responding: 2 for 2009 & 2010, 6 for 2011 and 2012

# **Total Asphalt Mix Tonnage,**

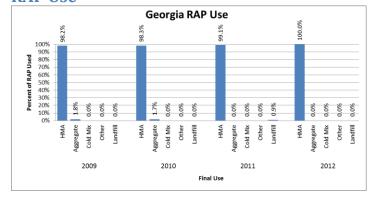


## **RAS Use**

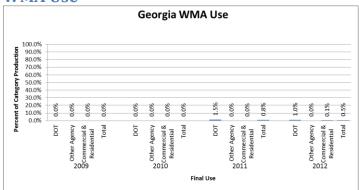


No contractor reported using RAS in Georgia in 2009 and 2010.

## **RAP Use**



## **WMA Use**



No contractors reported using WMA in Georgia in 2009 and 2010.

# **Other Recycled Material**

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Ground Tire Rubber	2	281,958	195

HMA/	WMA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	3,663,768	3,767,643
Total Other Agency Tonnage	1,678,514	1,726,103
Total Commercial & Residential Tonnage	2,437,156	2,506,254
Total Tonnage	7,779,438	8,000,000
Reclaimed Asphal		-,,
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	1,957,798	2,013,305
RAP Tons used in HMA/WMA	1,820,749	1,872,371
RAP Tons used as Aggregate	-	-
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	22%	
Average % RAP in Other Agency Mixes	23%	
Average % RAP in Commercial & Residential Mixes	24%	
Reclaimed Aspha	It Shingles (RAS)	
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	17%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	369	379
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mi	x Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	33%	
WMA DOT Tonnage	36,395	37,427
WMA Other Agency Tonnage	-	-
WMA Commercial & Residential Tonnage	2,401	2,469
Total WMA Tonnage	38,796	39,896
Percent WMA Tons using Chemical Additives	0.0%	·
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	

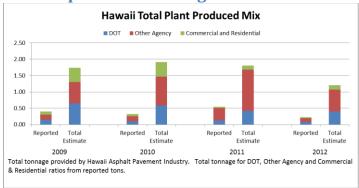
<sup>1.</sup> Total tonnage provided by Georgia Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# Hawaii

Table B12 summarizes the results received from asphalt mix producers in Hawaii. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 1 for 2009, 2010, 2011, and 2012

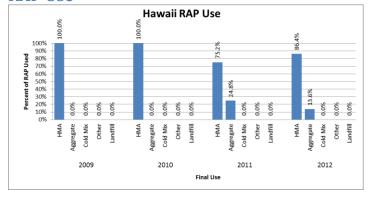
# **Total Asphalt Mix Tonnage**



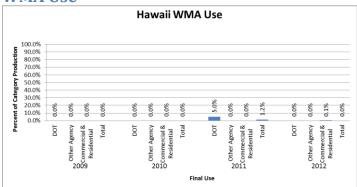
## **RAS Use**

No contractor reported accepting or using RAS in 2009 through 2012.

## **RAP Use**



## **WMA Use**



The contractor did not report using WMA in 2009 and 2010.

HMA/WM	4	
,	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	75,000	400,000
Total Other Agency Tonnage	125,000	666,667
Total Commercial & Residential Tonnage	25,000	133,333
Total Tonnage	225,000	1,200,000
Reclaimed Asphalt Pav		1/200/000
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	38,000	202,667
RAP Tons used in HMA/WMA	32,250	172,000
RAP Tons used as Aggregate	5,000	26,667
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	
RAP Tons Landfilled		<u> </u>
Average % RAP in DOT Mixes	20%	
Average % RAP in Other Agency Mixes	10%	
Average % RAP in Commercial & Residential Mixes	20%	
Reclaimed Asphalt Sh	ingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	0%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	-	-
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix As	phalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	100%	
WMA DOT Tonnage	-	-
WMA Other Agency Tonnage	-	-
WMA Commercial & Residential Tonnage	25	133
Total WMA Tonnage	25	133
Percent WMA Tons using Chemical Additives	0.0%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	

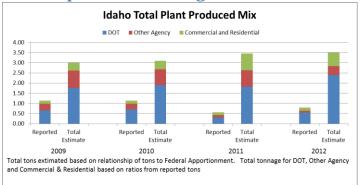
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Idaho**

Table B13 summarizes the results received from asphalt mix producers in Idaho. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 5 for 2009 & 2010, 3 for 2011 and 2012

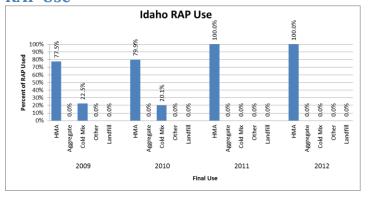
# **Total Asphalt Mix Tonnage**



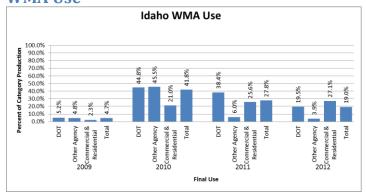
## **RAS Use**

No contractors reported using RAS in 2009, 2010, 2011, and 2012.

# **RAP Use**



# **WMA Use**



Companies Reporting  HMA/	/WMA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	541,301	2,396,604
Total Other Agency Tonnage	96,297	426,354
Total Commercial & Residential Tonnage	151,111	669,042
Total Tonnage	788,709	3,492,000
<u> </u>	t Pavement (RAP)	5/152/000
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	2012
RAP Tons Received	250,000	1,106,872
RAP Tons used in HMA/WMA	222,417	984,749
RAP Tons used as Aggregate	-	-
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	30%	
Average % RAP in Other Agency Mixes	23%	
Average % RAP in Commercial & Residential Mixes	24%	
	lt Shingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	0%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	-	-
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
	ix Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	67%	
WMA DOT Tonnage	105,376	466,550
WMA Other Agency Tonnage	3,754	16,622
WMA Commercial & Residential Tonnage	40,986	181,466
Total WMA Tonnage	150,116	664,638
Percent WMA Tons using Chemical Additives	0.0%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	

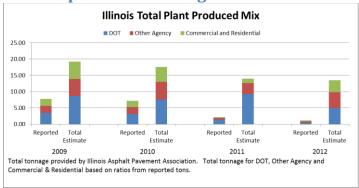
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Illinois**

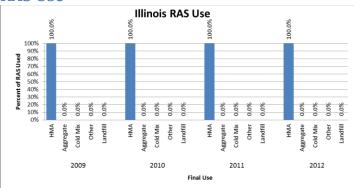
Table B14 summarizes the results received from asphalt mix producers in Illinois. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 16 for 2009 & 2010, 7 for 2011, 5 for 2012

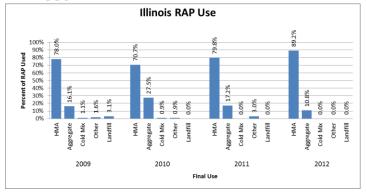
# **Total Asphalt Mix Tonnage**



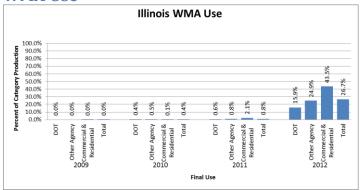
#### **RAS Use**



## **RAP Use**



## **WMA Use**



## **Other Recycled Material**

	•	· ,	, ,
Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Steel Slag	1	23,000	8,000

Companies Reporting  HMA/	WMA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	427,982	4,969,665
Total Other Agency Tonnage	418,773	4,862,731
Total Commercial & Residential Tonnage	315,850	3,667,604
Total Tonnage	1,162,605	13,500,000
Reclaimed Asphal		13/300/000
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	2012
RAP Tons Received	307,200	3,567,162
RAP Tons used in HMA/WMA	347,632	4,036,652
RAP Tons used as Aggregate	42,000	487,698
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	28%	
Average % RAP in Other Agency Mixes	28%	
Average % RAP in Commercial & Residential Mixes	36%	
Reclaimed Aspha		
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	60%	2012
RAS Tons Received	7,000	81,283
RAS Tons used in HMA/WMA	9,875	114,667
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	3%	
Average % RAS in Other Agency Mixes	1%	
Average % RAS in Commercial & Residential Mixes	4%	
	x Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	80%	
WMA DOT Tonnage	68,192	791,837
WMA Other Agency Tonnage	104,468	1,213,067
WMA Commercial & Residential Tonnage	137,515	1,596,804
Total WMA Tonnage	310,175	3,601,708
Percent WMA Tons using Chemical Additives	2.3%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	97.7%	
Percent WMA Tons using Organic Additive	0.0%	

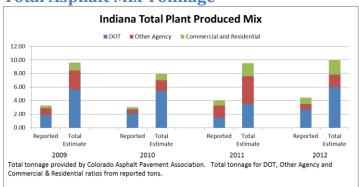
<sup>1.</sup> Total tonnage provided by Illinois Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Indiana**

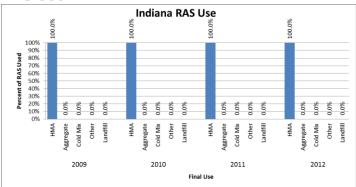
Table B15 summarizes the results received from asphalt mix producers in Indiana. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 3 for 2009 & 2010, 4 for 2011, 5 for 2012

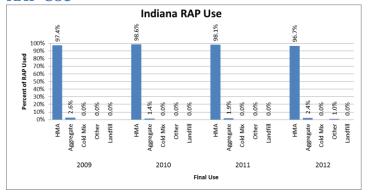
# **Total Asphalt Mix Tonnage**



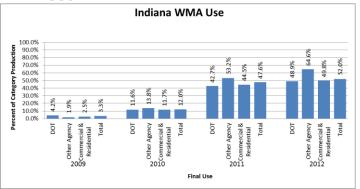
## **RAS Use**



## **RAP Use**



## **WMA Use**



# **Other Recycled Material**

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Steel Slag	2	70,000	44,000
Blast Furnace Slag	3	1,487,000	304,000

HMA/WMA	1	
,	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	2,669,515	6,010,125
Total Other Agency Tonnage	813,754	1,832,079
Total Commercial & Residential Tonnage	958,427	2,157,795
Total Tonnage	4,441,696	10,000,000
Reclaimed Asphalt Pav		
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	1,100,000	2,476,531
RAP Tons used in HMA/WMA	1,013,352	2,281,453
RAP Tons used as Aggregate	25,000	56,285
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	10,000	22,514
RAP Tons Landfilled	-	1
Average % RAP in DOT Mixes	23%	
Average % RAP in Other Agency Mixes	30%	
Average % RAP in Commercial & Residential Mixes	31%	
Reclaimed Asphalt Shi	ingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	80%	
RAS Tons Received	29,500	66,416
RAS Tons used in HMA/WMA	35,000	78,799
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	<del>-</del>	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	3%	
Average % RAS in Other Agency Mixes	3%	
Average % RAS in Commercial & Residential Mixes	3%	
Warm-Mix Asp		
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	80%	
WMA DOT Tonnage	1,305,000	2,938,067
WMA Other Agency Tonnage	526,000	1,184,232
WMA Commercial & Residential Tonnage	477,000	1,073,914
Total WMA Tonnage	2,308,000	5,196,213
Percent WMA Tons using Chemical Additives	0.0%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	

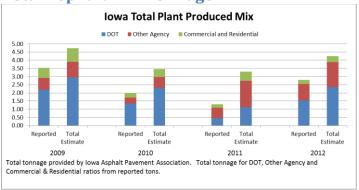
<sup>1.</sup> Total tonnage provided by Indiana Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## Iowa

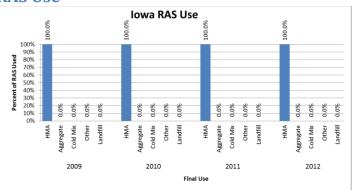
Table B16 summarizes the results received from asphalt mix producers in Iowa. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 7 for 2009 & 2010, 6 for 2011, 10 for 2012

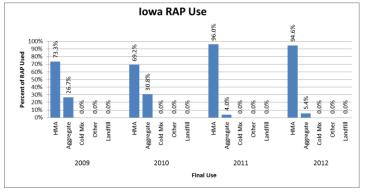
# **Total Asphalt Mix Tonnage**



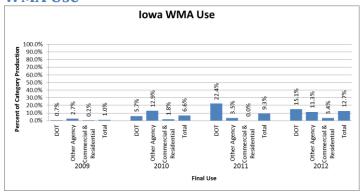
#### **RAS Use**



## **RAP Use**



## **WMA Use**



# **Other Recycled Material**

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Steel Slag	1	20,000	Not Reported

Companies Reporting		10
HMA/	WMA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	1,541,000	2,347,036
Total Other Agency Tonnage	1,002,000	1,526,107
Total Commercial & Residential Tonnage	254,000	386,857
Total Tonnage	2,797,000	4,260,000
Reclaimed Asphalt	: Pavement (RAP)	
·	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	422,920	644,133
RAP Tons used in HMA/WMA	433,259	659,880
RAP Tons used as Aggregate	25,000	38,077
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	17%	
Average % RAP in Other Agency Mixes	18%	
Average % RAP in Commercial & Residential Mixes	19%	
Reclaimed Asphal	t Shingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	70%	
RAS Tons Received	10,200	15,535
RAS Tons used in HMA/WMA	13,303	20,261
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	1%	
Average % RAS in Other Agency Mixes	2%	
Average % RAS in Commercial & Residential Mixes	1%	
Warm-Mix	k Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	40%	
WMA DOT Tonnage	232,750	354,492
WMA Other Agency Tonnage	113,660	173,111
WMA Commercial & Residential Tonnage	8,630	13,144
Total WMA Tonnage	355,040	540,747
Percent WMA Tons using Chemical Additives	0.4%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	99.6%	
Percent WMA Tons using Organic Additive	0.0%	

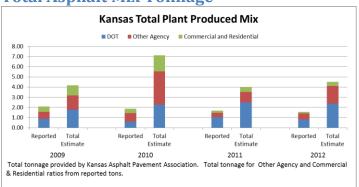
<sup>1.</sup> Total tonnage provided by Iowa Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Kansas**

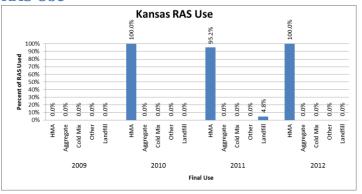
Table B17 summarizes the results received from asphalt mix producers in Kansas. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 6 for 2009 & 2010, 4 for 2011, 3 for 2012

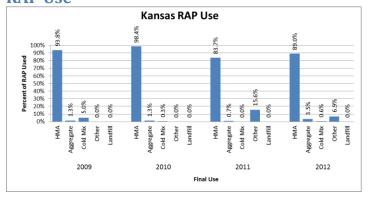
# **Total Asphalt Mix Tonnage**



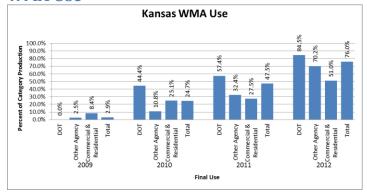
# **RAS** Use



## **RAP Use**



## **WMA Use**



3 HMA/WMA Total Estimated<sup>1</sup> Reported 2012 2012 Total DOT Tonnage 815,668 2,367,613 1,721,282 Total Other Agency Tonnage 593,000 Total Commercial & Residential Tonnage 141,630 411,105 **Total Tonnage** 1,550,298 4,500,000 Reclaimed Asphalt Pavement (RAP) Total Estimated Reported 2012 2012 100% Percent Companies using RAP **RAP Tons Received** 370,000 1,073,987 RAP Tons used in HMA/WMA 310,579 901,508 12,000 RAP Tons used as Aggregate 34,832 RAP Tons used in Cold Mix 2,000 5,805 RAP Tons used as Other 24,000 69,664 RAP Tons Landfilled Average % RAP in DOT Mixes 25% Average % RAP in Other Agency Mixes 29% Average % RAP in Commercial & Residential Mixes 25% **Reclaimed Asphalt Shingles (RAS)** Reported **Total Estimated** 2012 2012 Percent Companies using RAS 67% RAS Tons Received 10,000 29,027 RAS Tons used in HMA/WMA 3,252 9,439 RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other **RAS Tons Landfilled** Average % RAS in DOT Mixes 0% Average % RAS in Other Agency Mixes 3% Average % RAS in Commercial & Residential Mixes 0% Warm-Mix Asphalt Reported Total Estimated 2012 2012 Percent Companies using WMA 100% WMA DOT Tonnage 689,518 2,001,442 WMA Other Agency Tonnage 416,250 1,208,235 WMA Commercial & Residential Tonnage 72,250 209,718 Total WMA Tonnage 1,178,018 3,419,395 Percent WMA Tons using Chemical Additives 23.9% Percent WMA Tons using Additive Foaming 0.0% Percent WMA Tons using Plant Foaming 76.1% Percent WMA Tons using Organic Additive 0.0%

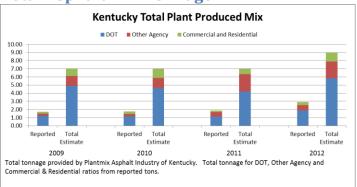
<sup>1.</sup> Total tonnage provided by Kansas Asphalt Pavement Association. Total tonnage for Other Agency and Commercial & Residential ratios from reported tons.

# **Kentucky**

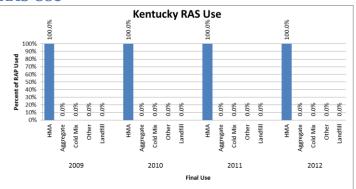
Table B18 summarizes the results received from asphalt mix producers in Kentucky. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 3 for 2009 & 2010, 4 for 2011, 5 for 2012

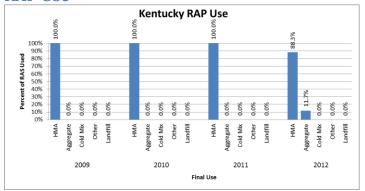
# **Total Asphalt Mix Tonnage**



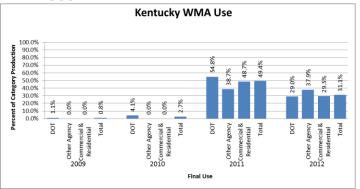
## **RAS Use**



## **RAP Use**



## **WMA Use**



# **Other Recycled Material**

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Steel Slag	1	5,714	800

Companies Reporting		5			
HMA/W	MA				
	Reported	Total Estimated <sup>1</sup>			
	2012	2012			
Total DOT Tonnage	1,878,387	5,835,433			
Total Other Agency Tonnage	662,032	2,056,681			
Total Commercial & Residential Tonnage	356,621	1,107,886			
Total Tonnage	2,897,040	9,000,000			
Reclaimed Asphalt Pavement (RAP)					
·	Reported	Total Estimated			
	2012	2012			
Percent Companies using RAP	100%				
RAP Tons Received	281,480	874,451			
RAP Tons used in HMA/WMA	300,724	934,235			
RAP Tons used as Aggregate	39,803	123,653			
RAP Tons used in Cold Mix	-	-			
RAP Tons used as Other	-	-			
RAP Tons Landfilled	-	-			
Average % RAP in DOT Mixes	34%				
Average % RAP in Other Agency Mixes	11%				
Average % RAP in Commercial & Residential Mixes	8%				
Reclaimed Asphalt	Shingles (RAS)				
	Reported	Total Estimated			
	2012	2012			
Percent Companies using RAS	60%				
RAS Tons Received	46,164	143,414			
RAS Tons used in HMA/WMA	46,164	143,414			
RAS Tons used as Aggregate	-	-			
RAS Tons used in Cold Mix	-	-			
RAS Tons used as Other	-	-			
RAS Tons Landfilled	-	-			
Average % RAS in DOT Mixes	2%				
Average % RAS in Other Agency Mixes	1%				
Average % RAS in Commercial & Residential Mixes	1%				
Warm-Mix Asphalt					
	Reported	Total Estimated			
	2012	2012			
Percent Companies using WMA	80%				
WMA DOT Tonnage	544,077	1,690,241			
WMA Other Agency Tonnage	250,970	779,669			
WMA Commercial & Residential Tonnage	105,046	326,339			
Total WMA Tonnage	900,094	2,796,249			
Percent WMA Tons using Chemical Additives	0.0%				
Percent WMA Tons using Additive Foaming	0.0%				
Percent WMA Tons using Plant Foaming	100.0%				
Percent WMA Tons using Organic Additive	0.0%				

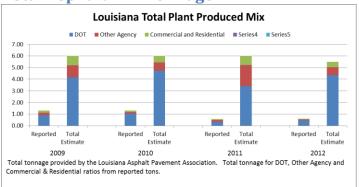
<sup>1.</sup> Total tonnage provided by Plantmix Asphalt Industry of Kentucky. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## Louisiana

Table B19 summarizes the results received from asphalt mix producers in Louisiana. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 2 for 2009, 2010, 2011 and 2012

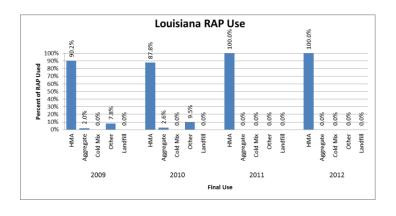
## **Total Asphalt Mix Tonnage**



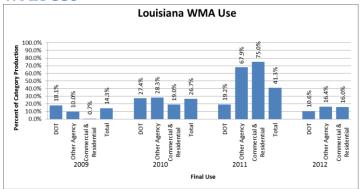
### **RAS Use**

No contractors reported using RAS in 2009, 2010, 2011 or 2012.

#### **RAP Use**



#### **WMA Use**



## **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state )

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Ground Tire Rubber	1	25,000	Not Reported

Percent WMA Tons using Organic Additive

Companies Reporting 2 HMA/WMA Total Estimated<sup>1</sup> Reported 2011 2011 Total DOT Tonnage 470,000 4,359,191 Total Other Agency Tonnage 73,000 677,066 Total Commercial & Residential Tonnage 463,744 50,000 **Total Tonnage** 593,000 5,500,000 Reclaimed Asphalt Pavement (RAP) Reported **Total Estimated** 2012 2012 100% Percent Companies using RAP **RAP Tons Received** 125,000 1,159,359 RAP Tons used in HMA/WMA 110,000 1,020,236 RAP Tons used as Aggregate RAP Tons used in Cold Mix RAP Tons used as Other RAP Tons Landfilled Average % RAP in DOT Mixes 18% Average % RAP in Other Agency Mixes 20% Average % RAP in Commercial & Residential Mixes 20% **Reclaimed Asphalt Shingles (RAS)** Reported **Total Estimated** 2012 2012 Percent Companies using RAS 0% RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other **RAS Tons Landfilled** Average % RAS in DOT Mixes 0% Average % RAS in Other Agency Mixes 0% Average % RAS in Commercial & Residential Mixes 0% Warm-Mix Asphalt Reported Total Estimated 2012 2012 Percent Companies using WMA 50% WMA DOT Tonnage 50,000 463,744 WMA Other Agency Tonnage 12,000 111,298 WMA Commercial & Residential Tonnage 8,000 74,199 Total WMA Tonnage 70,000 649,241 Percent WMA Tons using Chemical Additives 0.0% Percent WMA Tons using Additive Foaming 0.0% Percent WMA Tons using Plant Foaming 100.0%

0.0%

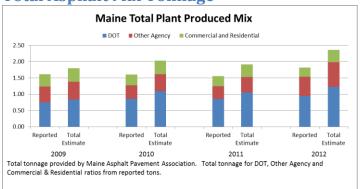
<sup>1.</sup> Total tonnage provided by the Louisiana Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **Maine**

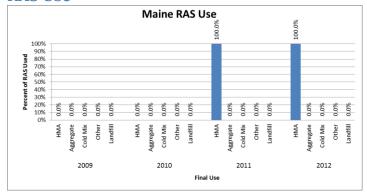
Table B20 summarizes the results received from asphalt mix producers in Maine. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 2 for 2009, 2010, 2011 and 2012

## **Total Asphalt Mix Tonnage**

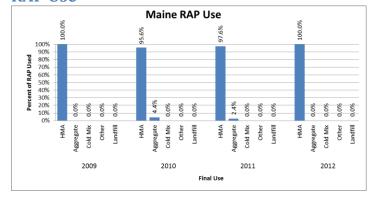


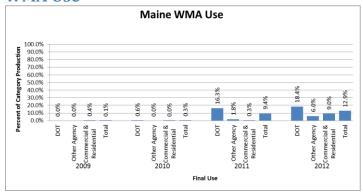
### **RAS Use**



No contractors reported using RAS in 2009 and 2010.

## **RAP Use**





Companies Reporting		2
HMA/WMA		
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	941,955	1,221,909
Total Other Agency Tonnage	587,969	762,717
Total Commercial & Residential Tonnage	289,371	375,374
Total Tonnage	1,819,295	2,360,000
Reclaimed Asphalt Pavem	nent (RAP)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	243,094	315,343
RAP Tons used in HMA/WMA	267,032	346,395
RAP Tons used as Aggregate	370	480
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	•
Average % RAP in DOT Mixes	15%	
Average % RAP in Other Agency Mixes	15%	
Average % RAP in Commercial & Residential Mixes	17%	
Reclaimed Asphalt Shing	les (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	100%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	23,399	30,353
RAS Tons used as Aggregate	-	•
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	5%	
Average % RAS in Other Agency Mixes	4%	
Average % RAS in Commercial & Residential Mixes	3%	
Warm-Mix Aspha	ilt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	100%	
WMA DOT Tonnage	173,756	225,397
WMA Other Agency Tonnage	35,506	46,059
WMA Commercial & Residential Tonnage	26,123	33,887
Total WMA Tonnage	235,385	305,343
Percent WMA Tons using Chemical Additives	37.2%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	62.8%	
Percent WMA Tons using Organic Additive	0.0%	

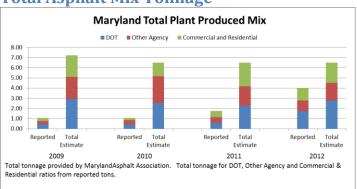
<sup>1.</sup> Total tonnage provided by Maine Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Maryland**

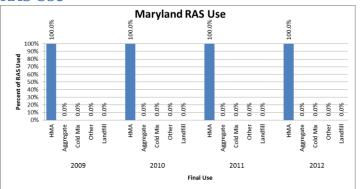
Table B21 summarizes the results received from asphalt mix producers in Maryland. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 4 for 2009, 2010 & 2011, 7 for 2012

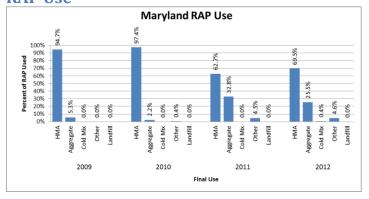
# **Total Asphalt Mix Tonnage**

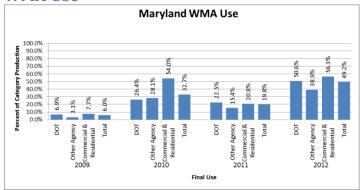


### **RAS** Use



### **RAP Use**





Companies Reporting  HMA/	WMΔ	/
пма	Reported	Total Estimated <sup>1</sup>
	1	
Total DOT Tannaga	2012	2012
Total DOT Tonnage	1,702,450	2,762,923
Total Other Agency Tonnage	1,071,750	1,739,354
Total Commercial & Residential Tonnage	1,232,800	2,000,723
Total Tonnage	4,007,000	6,503,000
Reclaimed Asphalt		
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	1,710,000	2,775,176
RAP Tons used in HMA/WMA	872,000	1,415,177
RAP Tons used as Aggregate	320,000	519,331
RAP Tons used in Cold Mix	5,000	8,115
RAP Tons used as Other	57,000	92,506
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	21%	
Average % RAP in Other Agency Mixes	23%	
Average % RAP in Commercial & Residential Mixes	27%	
Reclaimed Asphal	t Shingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	29%	
RAS Tons Received	20,000	32,458
RAS Tons used in HMA/WMA	16,000	25,967
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	1%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	1%	
Warm-Mix		
***************************************	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	100%	2012
WMA DOT Tonnage	861,035	1,397,382
WMA Other Agency Tonnage	417,025	676,794
WMA Commercial & Residential Tonnage	694,340	1,126,851
Total WMA Tonnage	1,972,400	3,201,028
Percent WMA Tons using Chemical Additives	1,972,400	J <sub>1</sub> ∠U1 <sub>1</sub> U∠U
Percent WMA Tons using Chemical Additives  Percent WMA Tons using Additive Foaming	0.0%	
	91.5%	
Percent WMA Tons using Plant Foaming		
Percent WMA Tons using Organic Additive	0.0%	

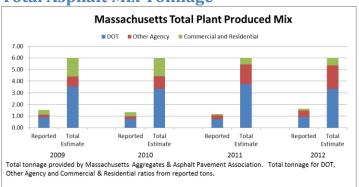
<sup>1.</sup> Total tonnage provided by the Maryland Asphalt Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **Massachusetts**

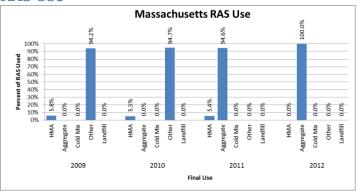
Table B22 summarizes the results received from asphalt mix producers in Massachusetts. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 2 for 2009, 2010 & 2011, 3 for 2012

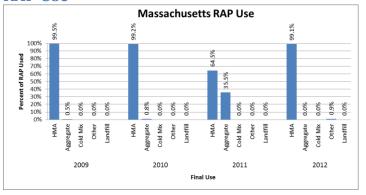
# **Total Asphalt Mix Tonnage**

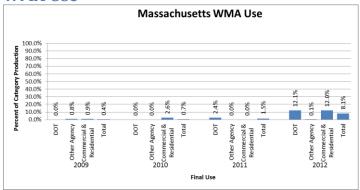


## **RAS Use**



#### **RAP Use**





Companies Reporting		
HMA/WMA		
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	914,427	3,352,302
Total Other Agency Tonnage	542,689	1,989,505
Total Commercial & Residential Tonnage	179,539	658,192
Total Tonnage	1,636,655	6,000,000
Reclaimed Asphalt Pave	ement (RAP)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	233,000	854,181
RAP Tons used in HMA/WMA	257,663	944,596
RAP Tons used as Aggregate	-	-
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	2,400	8,798
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	16%	
Average % RAP in Other Agency Mixes	13%	
Average % RAP in Commercial & Residential Mixes	14%	
Reclaimed Asphalt Shir	ngles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	0%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	-	-
RAS Tons used as Aggregate	22.222	
	20,000	73,320
RAS Tons used in Cold Mix	20,000	73,320 -
RAS Tons used in Cold Mix RAS Tons used as Other	i i	73,320 - -
	i i	73,320 - - -
RAS Tons used as Other		73,320 - - -
RAS Tons used as Other RAS Tons Landfilled		73,320 - - -
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes	- - - - 0%	73,320 - - -
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes	- - - 0% 0% 0%	73,320 - - -
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes	- - - 0% 0% 0%	73,320 - - - Total Estimated
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes	- - - 0% 0% 0% halt	- - -
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes		- - - Total Estimated
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Aspl		- - - Total Estimated
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Aspl	- 0% - 0% - 0% - 0% - 0% - 100%	Total Estimated
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Aspl  Percent Companies using WMA WMA DOT Tonnage	0% - 0% - 0% - 0% - 0% - 100% - 110,592	- - - Total Estimated 2012 405,432
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Aspl  Percent Companies using WMA WMA DOT Tonnage WMA Other Agency Tonnage		Total Estimated 2012 405,432 2,090
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Aspl  Percent Companies using WMA WMA DOT Tonnage WMA Other Agency Tonnage WMA Commercial & Residential Tonnage	- 0% 0% 0% 0% 0% halt Reported 2012 100% 110,592 570 21,631	Total Estimated 2012 405,432 2,090 79,300
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Aspl  Percent Companies using WMA WMA DOT Tonnage WMA Other Agency Tonnage WMA Commercial & Residential Tonnage Total WMA Tonnage	- 0% 0% 0% 0% 0% halt Reported 2012 100% 110,592 570 21,631 132,793	Total Estimated 2012 405,432 2,090 79,300
RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Aspl  Percent Companies using WMA WMA DOT Tonnage WMA Other Agency Tonnage WMA Commercial & Residential Tonnage Total WMA Tonnage Percent WMA Tons using Chemical Additives	- 0% 0% 0% 0% 0%  halt  Reported 2012 100% 110,592 570 21,631 132,793 55.6%	Total Estimated 2012 405,432 2,090 79,300

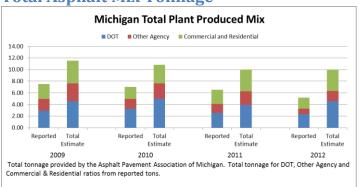
<sup>1.</sup> Total tonnage provided by the Massachusetts Aggregate & Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Michigan**

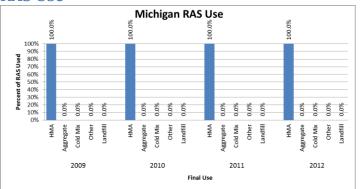
Table B23 summarizes the results received from asphalt mix producers in Michigan. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 8 for 2009 & 2010, 6 for 2011, 4 for 2012

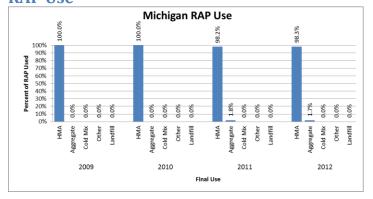
# **Total Asphalt Mix Tonnage**



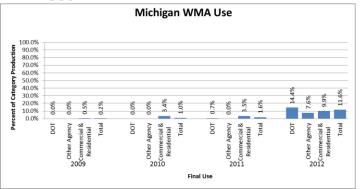
### **RAS** Use



### **RAP Use**



#### **WMA Use**



## **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state)

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Ground Tire Rubber	1	2,400	20
Blast Furnace Slag	3	500,000	50,000

Companies Reporting  HMA/W	ΙΜΔ	4
nma/w		Total Cationate d1
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	2,358,516	4,568,296
Total Other Agency Tonnage	909,530	1,761,702
Total Commercial & Residential Tonnage	1,894,746	3,670,003
Total Tonnage	5,162,792	10,000,000
Reclaimed Asphalt F	Pavement (RAP)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	1,938,068	3,753,915
RAP Tons used in HMA/WMA	1,731,009	3,352,854
RAP Tons used as Aggregate	30,000	58,108
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	23%	
Average % RAP in Other Agency Mixes	28%	
Average % RAP in Commercial & Residential Mixes	38%	
Reclaimed Asphalt	Shingles (RAS)	
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	25%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	16,311	31,593
RAS Tons used as Aggregate		-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	1%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix	Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	100%	
WMA DOT Tonnage	340,011	658,580
WMA Other Agency Tonnage	69,113	133,867
WMA Commercial & Residential Tonnage	188,473	365,060
Total WMA Tonnage	597,597	1,157,507
Percent WMA Tons using Chemical Additives	0.0%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	
	010 70	

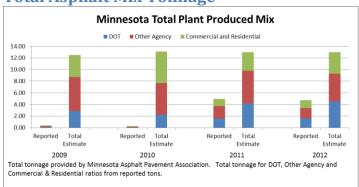
<sup>1.</sup> Total tonnage provided by the Asphalt Pavement Association of Michigan. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **Minnesota**

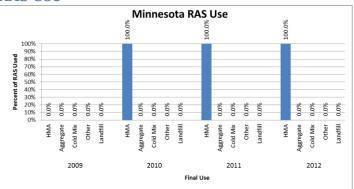
Table B23 summarizes the results received from asphalt mix producers in Minnesota. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 2 for 2009 & 2010, 6 for 2011, 4 for 2012

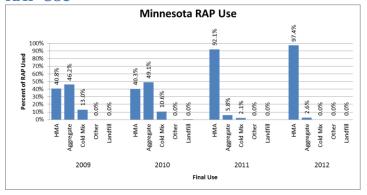
# **Total Asphalt Mix Tonnage**



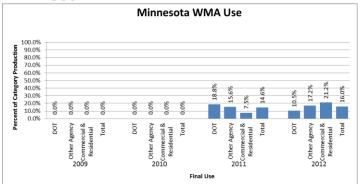
### **RAS Use**



#### **RAP Use**



#### **WMA Use**



No contractors reported using WMA in 2009 or 2010.

## **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state)

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Steel Slag	1	145,500	21,8000

Companies Reporting		4
HMA/W	/MA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	1,650,000	4,532,967
Total Other Agency Tonnage	1,740,000	4,780,220
Total Commercial & Residential Tonnage	1,342,000	3,686,813
Total Tonnage	4,732,000	13,000,000
Reclaimed Asphalt F	Pavement (RAP)	
-	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	915,000	2,513,736
RAP Tons used in HMA/WMA	943,678	2,592,522
RAP Tons used as Aggregate	25,000	68,681
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	20%	
Average % RAP in Other Agency Mixes	21%	
Average % RAP in Commercial & Residential Mixes	22%	
Reclaimed Asphalt		
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	100%	2012
RAS Tons Received	22,500	61,813
RAS Tons used in HMA/WMA	34,304	94,242
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	_	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	4%	
Average % RAS in Other Agency Mixes	5%	
Average % RAS in Commercial & Residential Mixes	5%	
Warm-Mix		
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	75%	
WMA DOT Tonnage	172,500	473,901
WMA Other Agency Tonnage	299,000	821,429
WMA Commercial & Residential Tonnage	285,000	782,967
Total WMA Tonnage	756,500	2,078,297
Percent WMA Tons using Chemical Additives	13.5%	_, _, _, _,
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	86.5%	
Percent WMA Tons using Organic Additive	0.0%	
1. S. S. S. T. T. T. T. T. O. I.S. G. S. G. G. T. G.	0.070	

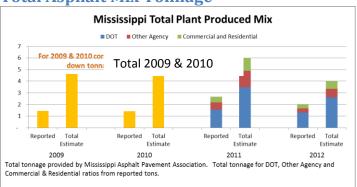
<sup>1.</sup> Total tonnage provided by the Minnesota Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **Mississippi**

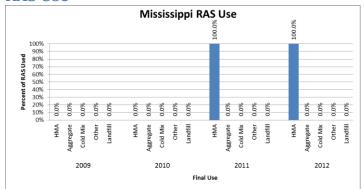
Table B25 summarizes the results received from asphalt mix producers in Mississippi. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 1 for 2009 & 2010, 4 for 2011, 3 for 2012

## **Total Asphalt Mix Tonnage**

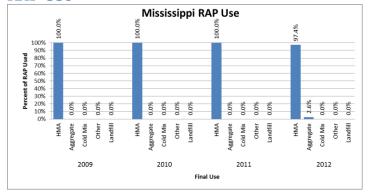


#### **RAS Use**

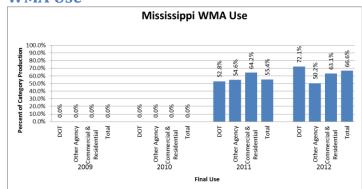


The contractor did not report any RAS use in 2009 or 2010.

#### **RAP Use**



#### **WMA Use**



The contractor did not report an WMA use in 2009 or 2010.

# **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state)

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Fly Ash	1	50,000	2,400
Cellulose Fiber	1	76,000	250

Companies Reporting 3				
HMA/WMA				
	Reported	Total Estimated <sup>1</sup>		
	2012	2012		
Total DOT Tonnage	1,296,360	2,613,082		
Total Other Agency Tonnage	367,150	740,067		
Total Commercial & Residential Tonnage	320,905	646,851		
Total Tonnage	1,984,415	4,000,000		
Reclaimed Asphalt Pavement (RAP)				
	2012	2012		
	2011	2011		
Percent Companies using RAP	100%			
RAP Tons Received	370,499	746,818		
RAP Tons used in HMA/WMA	372,549	750,950		
RAP Tons used as Aggregate	10,000	20,157		
RAP Tons used in Cold Mix	-	-		
RAP Tons used as Other	-	-		
RAP Tons Landfilled	-	-		
Average % RAP in DOT Mixes	18%			
Average % RAP in Other Agency Mixes	15%			
Average % RAP in Commercial & Residential Mixes	22%			
Reclaimed Asphalt SI	ningles (RAS)			
	Reported	Total Estimated		
	2012	2012		
Percent Companies using RAS	33%			
RAS Tons Received	1,600	3,225		
RAS Tons used in HMA/WMA	1,455	2,933		
RAS Tons used as Aggregate	-	-		
RAS Tons used in Cold Mix	-	-		
RAS Tons used as Other	-	-		
RAS Tons Landfilled	-	-		
Average % RAS in DOT Mixes	0%			
Average % RAS in Other Agency Mixes	0%			
Average % RAS in Commercial & Residential Mixes	4%			
Warm-Mix As	phalt			
	Reported	Total Estimated		
	2012	2012		
Percent Companies using WMA	100%			
WMA DOT Tonnage	934,654	1,883,990		
WMA Other Agency Tonnage	184,450	371,797		
WMA Commercial & Residential Tonnage	202,405	407,989		
Total WMA Tonnage	1,321,509	2,663,776		
Percent WMA Tons using Chemical Additives	0.0%			
Percent WMA Tons using Additive Foaming	0.0%			
Percent WMA Tons using Additive Foaming Percent WMA Tons using Plant Foaming Percent WMA Tons using Organic Additive	0.0% 100.0%			

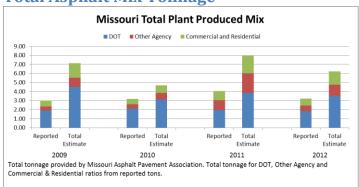
<sup>1.</sup> Total tonnage provided by Mississippi Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **Missouri**

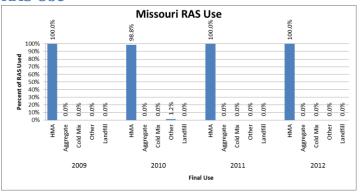
Table B25 summarizes the results received from asphalt mix producers in Missouri. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 6 for 2009 & 2010, 7 for 2011, 5 for 2012

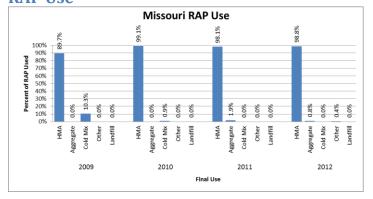
**Total Asphalt Mix Tonnage** 



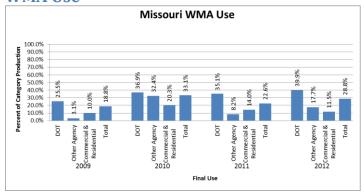
### **RAS** Use



### **RAP Use**



## **WMA Use**



## **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state)

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Ground Tire Rubber	1	100,000	300
Foundry Sand	1	5,000	500

Table B25: Summary of Missouri Data for 2012 **Companies Reporting** 5 HMA/WMA Total Estimated<sup>1</sup> Reported 2012 2012 Total DOT Tonnage 1,826,855 3,530,545 Total Other Agency Tonnage 629,962 1,217,452 Total Commercial & Residential Tonnage 769,439 1,487,003 **Total Tonnage** 3,226,256 6,235,000 **Reclaimed Asphalt Pavement (RAP)** 2012 2012 2011 2011 100% Percent Companies using RAP **RAP Tons Received** 530,965 1,026,133 RAP Tons used in HMA/WMA 627,334 1,212,374 RAP Tons used as Aggregate 5,000 9,663 RAP Tons used in Cold Mix RAP Tons used as Other 2,500 4,831 RAP Tons Landfilled Average % RAP in DOT Mixes 18% Average % RAP in Other Agency Mixes 26% Average % RAP in Commercial & Residential Mixes 22% **Reclaimed Asphalt Shingles (RAS)** Reported **Total Estimated** 2012 2012 Percent Companies using RAS 100% RAS Tons Received 66,911 129,311 RAS Tons used in HMA/WMA 82,336 159,121 RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other **RAS Tons Landfilled** Average % RAS in DOT Mixes 3% Average % RAS in Other Agency Mixes 3% Average % RAS in Commercial & Residential Mixes 2%

Warm-Mix Asphalt			
	Reported	Total Estimated	
	2012	2012	
Percent Companies using WMA	100%		
WMA DOT Tonnage	729,191	1,409,221	
WMA Other Agency Tonnage	111,472	215,428	
WMA Commercial & Residential Tonnage	88,415	170,869	
Total WMA Tonnage	929,078	1,795,518	
Percent WMA Tons using Chemical Additives	7.7%		
Percent WMA Tons using Additive Foaming	0.0%		
Percent WMA Tons using Plant Foaming	92.3%		
Percent WMA Tons using Organic Additive	0.0%		

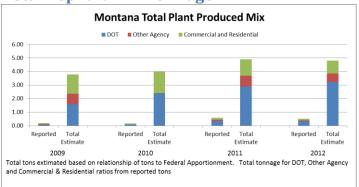
<sup>1.</sup> Total tonnage provided by Missouri Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **Montana**

Table B27 summarizes the results received from asphalt mix producers in Montana. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 2 for 2009 and 2010, 4 for 2011 and 2012

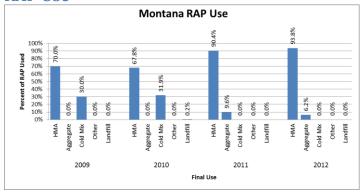
# **Total Asphalt Mix Tonnage**

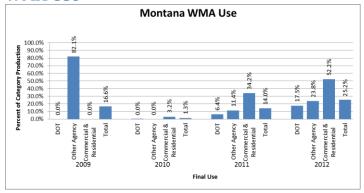


#### **RAS Use**

No contractors reported using RAS in 2009, 2010, 2011 or 2012.

#### **RAP Use**





HMA/	WMA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	340,098	3,225,351
Total Other Agency Tonnage	65,520	621,365
Total Commercial & Residential Tonnage	100,941	957,283
Total Tonnage	506,559	4,804,000
Reclaimed Asphalt		, , , , , , , ,
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	75%	
RAP Tons Received	43,000	407,795
RAP Tons used in HMA/WMA	48,221	457,308
RAP Tons used as Aggregate	3,184	30,196
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	14%	
Average % RAP in Other Agency Mixes	16%	
Average % RAP in Commercial & Residential Mixes	18%	
Reclaimed Aspha	It Shingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	25%	
RAS Tons Received	85	806
RAS Tons used in HMA/WMA	-	-
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mi	x Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	50%	
WMA DOT Tonnage	59,600	565,222
WMA Other Agency Tonnage	15,568	147,643
WMA Commercial & Residential Tonnage	52,688	499,667
Total WMA Tonnage	127,856	1,212,532
Percent WMA Tons using Chemical Additives	0.0%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	

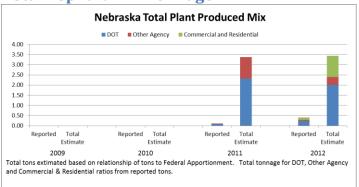
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **Nebraska**

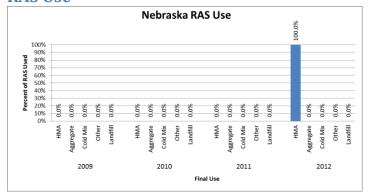
No contractors submitted data for the Nebraska for 2009 and 2010. One contractor submitted data for 2011 and 2012. Total tons were estimated based on a relationship tons to federal apportionment. Table B28 summarizes this data.

No contractors responded in 2009 or 2010, 1 contractor responded in 2011 & 2012

## **Total Asphalt Mix Tonnage**

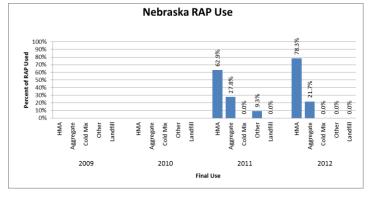


### **RAS Use**

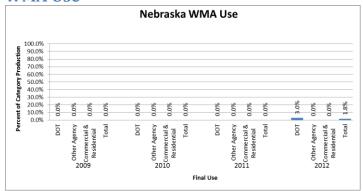


No companies in Nebraska responded to the 2009 and 2010 survey. No RAS use was reported in 2011

#### **RAP Use**



#### **WMA Use**



No companies in Nebraska responded to the 2009 and 2010 survey. No WMA use was reported in 2011

Companies Reporting  HMA/WM	Δ	
TIPIA/ WPI	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tannaga		
Total DOT Tonnage	235,000	2,008,918
Total Other Agency Tonnage	45,000	384,686
Total Commercial & Residential Tonnage	120,768	1,032,396
Total Tonnage	400,768	3,426,000
Reclaimed Asphalt Pa		
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	113,000	965,990
RAP Tons used in HMA/WMA	90,136	770,535
RAP Tons used as Aggregate	25,000	213,715
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	30%	
Average % RAP in Other Agency Mixes	25%	
Average % RAP in Commercial & Residential Mixes	20%	
Reclaimed Asphalt Sh	ningles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	100%	
RAS Tons Received	4,000	34,194
RAS Tons used in HMA/WMA	945	8,078
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	3%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix As	phalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	100%	
WMA DOT Tonnage	7,050	60,268
WMA Other Agency Tonnage		-
WMA Commercial & Residential Tonnage	_	-
Total WMA Tonnage	7,050	60,268
Percent WMA Tons using Chemical Additives	100.0%	00,200
Percent WMA Tons using Additive Foaming	0.0%	
Toront With Toris using Additive Foathing	0.070	
Percent WMA Tons using Plant Foaming	0.0%	

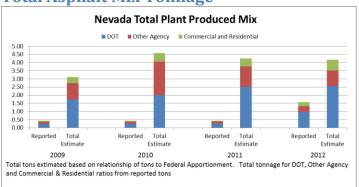
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## Nevada

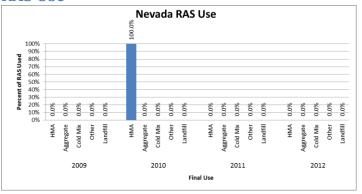
Table B29 summarizes the results received from asphalt mix producers in Nevada. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 2 for 2009, 2010 & 2011, 3 for 2012

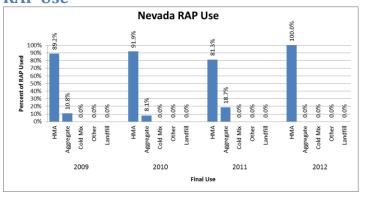
# **Total Asphalt Mix Tonnage**

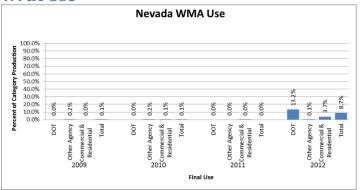


## **RAS Use**



## **RAP Use**





Companies Reporting		3
HMA/W	MA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	967,482	2,564,420
Total Other Agency Tonnage	355,322	941,821
Total Commercial & Residential Tonnage	255,322	676,760
Total Tonnage	1,578,126	4,183,000
Reclaimed Asphalt F	Pavement (RAP)	
·	2012	2012
	2011	2011
Percent Companies using RAP	100%	
RAP Tons Received	186,728	494,944
RAP Tons used in HMA/WMA	178,565	473,307
RAP Tons used as Aggregate	-	-
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	14%	
Average % RAP in Other Agency Mixes	15%	
Average % RAP in Commercial & Residential Mixes	15%	
Reclaimed Asphalt	Shingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	0%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	-	-
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix	Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	67%	
WMA DOT Tonnage	127,872	338,940
WMA Other Agency Tonnage	520	1,378
WMA Commercial & Residential Tonnage	9,466	25,091
Total WMA Tonnage	137,858	365,409
Percent WMA Tons using Chemical Additives	9.6%	
Percent WMA Tons using Additive Foaming	9.6%	
Percent WMA Tons using Plant Foaming	80.8%	
Percent WMA Tons using Organic Additive	0.0%	

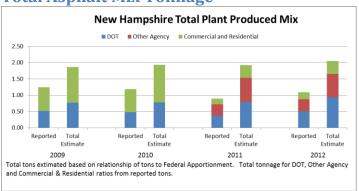
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **New Hampshire**

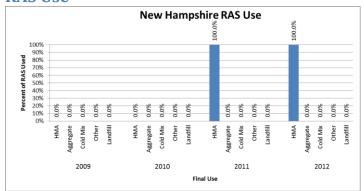
Table B30 summarizes the results received from asphalt mix producers in New Hampshire. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 1 for 2009, 2010 & 2011, 3 for 2012

# **Total Asphalt Mix Tonnage**

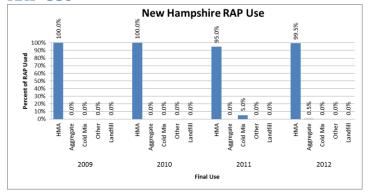


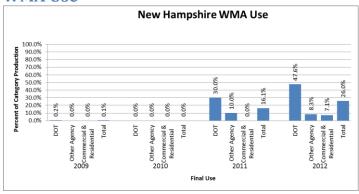
### **RAS Use**



No contractors reported using RAS in 2009 or 2010.

#### **RAP Use**





Companies Reporting		3
HMA/WM	IA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	494,215	932,062
Total Other Agency Tonnage	382,792	721,925
Total Commercial & Residential Tonnage	209,451	395,013
Total Tonnage	1,086,458	2,049,000
Reclaimed Asphalt Pa	vement (RAP)	· · · · · · · · · · · · · · · · · · ·
	Reported	Total Estimated
	2012	2102
Percent Companies using RAP	100%	
RAP Tons Received	288,884	544,819
RAP Tons used in HMA/WMA	209,584	395,264
RAP Tons used as Aggregate	1,000	1,886
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	21%	
Average % RAP in Other Agency Mixes	19%	
Average % RAP in Commercial & Residential Mixes	19%	
Reclaimed Asphalt Sl	hingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	33%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	4,300	8,110
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	3%	
Average % RAS in Commercial & Residential Mixes	2%	
Warm-Mix As	sphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	67%	
WMA DOT Tonnage	235,477	444,096
WMA Other Agency Tonnage	31,953	60,261
WMA Commercial & Residential Tonnage	14,922	28,142
Total WMA Tonnage	282,351	532,499
Percent WMA Tons using Chemical Additives	0.1%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	99.9%	
Percent WMA Tons using Organic Additive	0.0%	

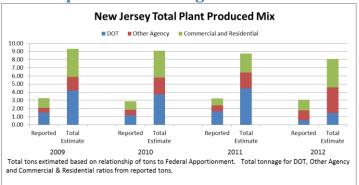
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **New Jersey**

Table B31 summarizes the results received from asphalt mix producers in New Jersey. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 2 for 2009 & 2010, 3 for 2011, 2 for 2012

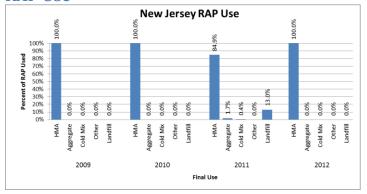
# **Total Asphalt Mix Tonnage**

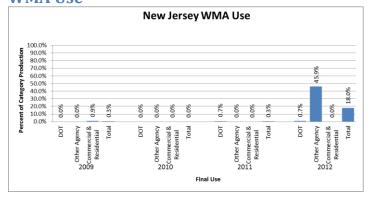


### **RAS Use**

No contractors reporte using RAS in 2009, 2010, 2011, or 2012.

#### **RAP Use**





Percent WMA Tons using Organic Additive

Companies Reporting 2 HMA/WMA Total Estimated<sup>1</sup> Reported 2012 2012 Total DOT Tonnage 551,802 1,447,602 Total Other Agency Tonnage 1,202,847 3,155,559 Total Commercial & Residential Tonnage 1,328,744 3,485,839 **Total Tonnage** 3,083,393 8,089,000 Reclaimed Asphalt Pavement (RAP) **Total Estimated** Reported 2012 2012 Percent Companies using RAP 100% **RAP Tons Received** 991,747 2,601,758 RAP Tons used in HMA/WMA 481,475 1,263,106 RAP Tons used as Aggregate RAP Tons used in Cold Mix RAP Tons used as Other RAP Tons Landfilled Average % RAP in DOT Mixes 15% Average % RAP in Other Agency Mixes 13% Average % RAP in Commercial & Residential Mixes 20% **Reclaimed Asphalt Shingles (RAS)** Reported **Total Estimated** 2012 2012 Percent Companies using RAS 0% RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other **RAS Tons Landfilled** Average % RAS in DOT Mixes 0% Average % RAS in Other Agency Mixes 0% Average % RAS in Commercial & Residential Mixes 0% **Warm-Mix Asphalt** Reported Total Estimated 2012 2012 Percent Companies using WMA 100% WMA DOT Tonnage 4,011 10,522 WMA Other Agency Tonnage 552,612 1,449,727 WMA Commercial & Residential Tonnage Total WMA Tonnage 556,623 1,460,249 Percent WMA Tons using Chemical Additives 99.3% Percent WMA Tons using Additive Foaming 0.0% Percent WMA Tons using Plant Foaming 0.7%

0.0%

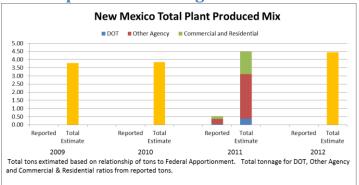
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **New Mexico**

No contractors submitted data for the New Mexico for 2009, 2010, and 2012. One contractor submitted data for 2011. Total tons were estimated based on a relationship tons to federal apportionment. Table B28 summarizes this data.

Companies responding: 0 for 2009 & 2010, 1 for 2011, 0 for 2012

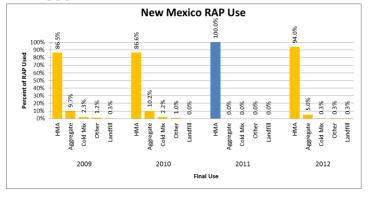
# **Total Asphalt Mix Tonnage**

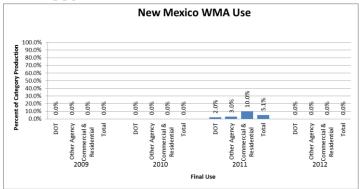


### **RAS Use**

No companies in New Mexico responded to the 2009, 2010 and 2012 survey. No RAS use was reported in 2011.

## **RAP Use**





0

Companies Reporting		0
HMA/W	/MA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage		
Total Other Agency Tonnage		
Total Commercial & Residential Tonnage		
Total Tonnage		4,444,000
Reclaimed Asphalt I	Pavement (RAP)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP		
RAP Tons Received		877,477
RAP Tons used in HMA/WMA		841,363
RAP Tons used as Aggregate		45,042
RAP Tons used in Cold Mix		2,605
RAP Tons used as Other		3,025
RAP Tons Landfilled		3,009
Average % RAP in DOT Mixes		
Average % RAP in Other Agency Mixes		
Average % RAP in Commercial & Residential Mixes		

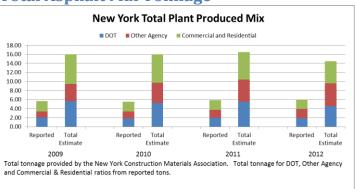
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **New York**

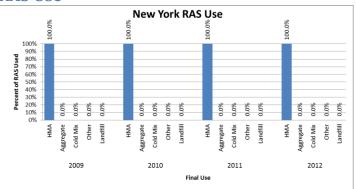
Table B33 summarizes the results received from asphalt mix producers in New York. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 13 for 2009 & 2010, 11 for 2011 and 2012

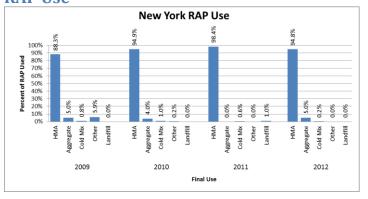
## **Total Asphalt Mix Tonnage**

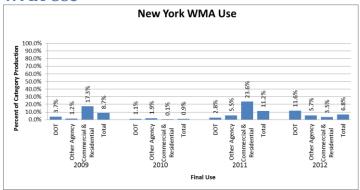


### **RAS Use**



### **RAP Use**





Companies Reporting		11
HMA/N		
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	1,871,928	4,521,204
Total Other Agency Tonnage	2,080,332	5,024,555
Total Commercial & Residential Tonnage	2,051,220	4,954,242
Total Tonnage	6,003,480	14,500,000
Reclaimed Asphalt	Pavement (RAP)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	91%	
RAP Tons Received	729,000	1,760,729
RAP Tons used in HMA/WMA	797,437	1,926,022
RAP Tons used as Aggregate	41,728	100,784
RAP Tons used in Cold Mix	1,500	3,623
RAP Tons used as Other	5	12
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	16%	
Average % RAP in Other Agency Mixes	15%	
Average % RAP in Commercial & Residential Mixes	18%	
Reclaimed Asphal	t Shingles (RAS)	
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	18%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	3,175	7,668
RAS Tons used as Aggregate	, -	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix	x Asphalt	
-	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	73%	
WMA DOT Tonnage	217,137	524,444
WMA Other Agency Tonnage	117,732	284,355
WMA Commercial & Residential Tonnage	72,406	174,879
Total WMA Tonnage	407,275	983,678
Percent WMA Tons using Chemical Additives	13.1%	,
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	86.9%	
Percent WMA Tons using Organic Additive	0.0%	
<u> </u>		

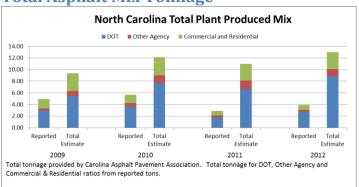
<sup>1.</sup> Total tonnage provided by the New York Construction Materials Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **North Carolina**

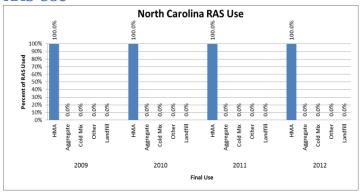
Table B34 summarizes the results received from asphalt mix producers in North Carolina. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 6 for 2009 & 2010, 5 for 2011, 6 for 2012

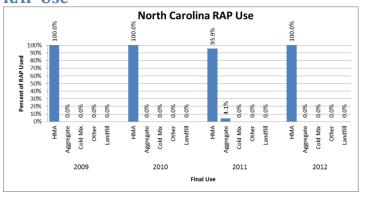
# **Total Asphalt Mix Tonnage**

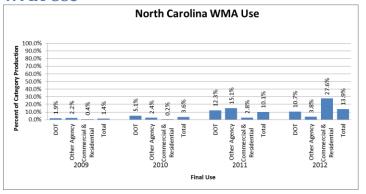


#### **RAS Use**



## **RAP Use**





HMA/V	VMA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	2,671,493	8,847,629
Total Other Agency Tonnage	366,141	1,212,611
Total Commercial & Residential Tonnage	887,644	2,939,760
Total Tonnage	3,925,278	13,000,000
Reclaimed Asphalt		, ,
-	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	495,935	1,642,471
RAP Tons used in HMA/WMA	582,515	1,929,212
RAP Tons used as Aggregate	-	-
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	<u> </u>
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	23%	
Average % RAP in Other Agency Mixes	24%	
Average % RAP in Commercial & Residential Mixes	24%	
Reclaimed Asphalt	t Shingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	33%	
RAS Tons Received	7,436	24,627
RAS Tons used in HMA/WMA	5,294	17,533
RAS Tons used as Aggregate	-	<u> </u>
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	3%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix	Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	83%	
WMA DOT Tonnage	284,560	942,425
WMA Other Agency Tonnage	13,807	45,726
WMA Commercial & Residential Tonnage	245,365	812,617
Total WMA Tonnage	543,732	1,800,768
Percent WMA Tons using Chemical Additives	32.6%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	67.4%	
	0.0%	

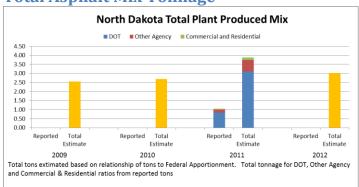
<sup>1.</sup> Total tonnage provided by Carolina Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## **North Dakota**

No contractors submitted data for the North Dakota for 2009, 2010 and 2012. Three contractors submitted data for 2011. Table B28 summarizes data for 2012.

Companies responding: 0 for 2009 & 2010, 3 for 2011, 0 for 2012

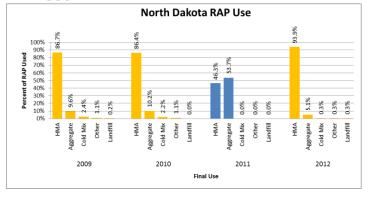
**Total Asphalt Mix Tonnage** 

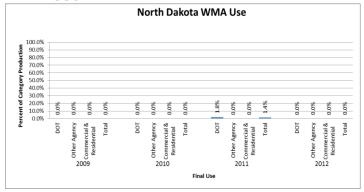


## **RAS Use**

No companies in North Dakota responded to the 2009, 2010, and 2011 surveys. No RAS use was reported in 2012.

## **RAP Use**





0

Companies Reporting		U
HMA/WM	A	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	-	ı
Total Other Agency Tonnage	-	-
Total Commercial & Residential Tonnage	-	NA )
Total Tonnage	-	3,029,000
Reclaimed Asphalt Pav	vement (RAP)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	NA	
RAP Tons Received	-	598,082
RAP Tons used in HMA/WMA	)	573,467
RAP Tons used as Aggregate	-	30,700
RAP Tons used in Cold Mix	-	1,775
RAP Tons used as Other	-	2,062
RAP Tons Landfilled	-	2,051
Average % RAP in DOT Mixes	0%	
Average % RAP in Other Agency Mixes	0%	
Average % RAP in Commercial & Residential Mixes	0%	

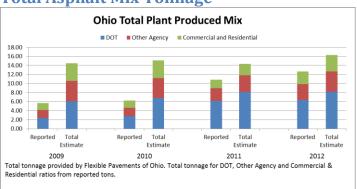
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

## Ohio

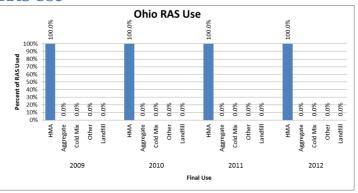
Table B36 summarizes the results received from asphalt mix producers in Ohio. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 5 for 2009, 2010 & 2011, 6 for 2012

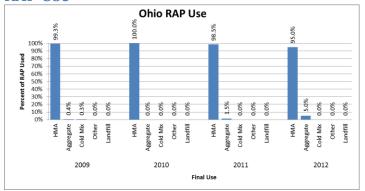
## **Total Asphalt Mix Tonnage**



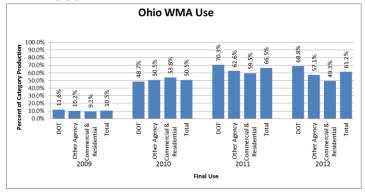
### **RAS** Use



#### **RAP Use**



#### **WMA Use**



## **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state )

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Ground Tire Rubber	2	36,200	1,170
Steel Slag	2	150,000	42,030
Blast Furnace Slag	3	208,028	72,400

Companies Reporting		6
HMA/		
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	6,355,695	8,170,499
Total Other Agency Tonnage	3,488,579	4,484,707
Total Commercial & Residential Tonnage	2,835,225	3,644,794
Total Tonnage	12,679,499	16,300,000
Reclaimed Asphalt	Pavement (RAP)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	3,011,495	3,871,397
RAP Tons used in HMA/WMA	3,020,942	3,883,541
RAP Tons used as Aggregate	158,226	203,406
RAP Tons used in Cold Mix	-	<b>-</b>
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	23%	
Average % RAP in Other Agency Mixes	21%	
Average % RAP in Commercial & Residential Mixes	25%	
Reclaimed Asphal		
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	50%	
RAS Tons Received	5,000	6,428
RAS Tons used in HMA/WMA	28,512	36,653
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	2%	
Average % RAS in Other Agency Mixes	2%	
Average % RAS in Commercial & Residential Mixes	4%	
Warm-Mix	( Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	100%	
WMA DOT Tonnage	4,372,239	5,620,687
WMA Other Agency Tonnage	1,993,274	2,562,434
WMA Commercial & Residential Tonnage	1,397,441	1,796,466
Total WMA Tonnage	7,762,954	9,979,586
Percent WMA Tons using Chemical Additives	0.0%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	
<u> </u>		

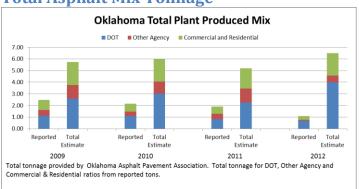
<sup>1.</sup> Total tonnage provided by Flexible Pavements of Ohio. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Oklahoma**

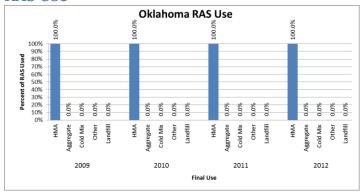
Table B37 summarizes the results received from asphalt mix producers in Oklahoma. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 4 for 2009 & 2010, 3 for 2011 and 2012

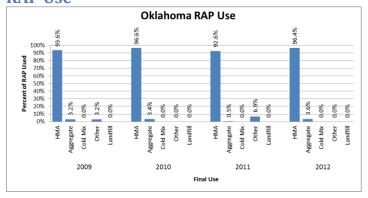
# **Total Asphalt Mix Tonnage**



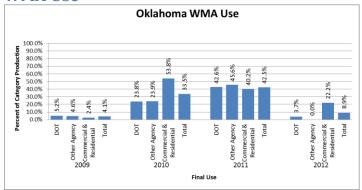
### **RAS Use**



# **RAP Use**



### **WMA Use**



Companies Reporting  HMA/	WMA	3
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	670,000	3,991,751
Total Other Agency Tonnage	95,000	565,995
Total Commercial & Residential Tonnage	326,000	1,942,255
Total Tonnage	1,091,000	6,500,000
Reclaimed Asphal		0,000,000
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	75,000	446,838
RAP Tons used in HMA/WMA	134,588	801,853
RAP Tons used as Aggregate	5,000	29,789
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	15%	
Average % RAP in Other Agency Mixes	14%	
Average % RAP in Commercial & Residential Mixes	20%	
Reclaimed Aspha		
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	67%	
RAS Tons Received	17,000	101,283
RAS Tons used in HMA/WMA	16,268	96,922
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	2%	
Average % RAS in Commercial & Residential Mixes	3%	
Warm-Mi	x Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	33%	
WMA DOT Tonnage	25,000	148,946
WMA Other Agency Tonnage		-
WMA Commercial & Residential Tonnage	72,500	431,943
Total WMA Tonnage	97,500	580,889
Percent WMA Tons using Chemical Additives	0.0%	· 
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	

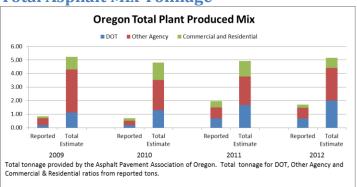
<sup>1.</sup> Total tonnage provided by Oklahoma Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Oregon**

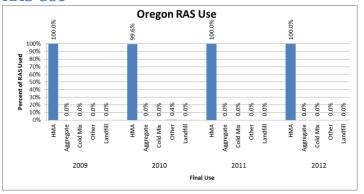
Table B38 summarizes the results received from asphalt mix producers in Oregon. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 6 for 2009, 2010, 2011, and 2012

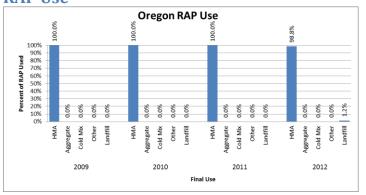
# **Total Asphalt Mix Tonnage**



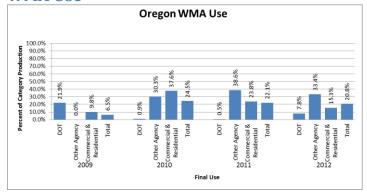
### **RAS Use**



### **RAP Use**



# **WMA Use**



Companies Reporting		6
HMA/V	MMA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	669,238	2,014,395
Total Other Agency Tonnage	795,000	2,392,936
Total Commercial & Residential Tonnage	243,413	732,669
Total Tonnage	1,707,651	5,140,000
Reclaimed Asphalt	Pavement (RAP)	
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	470,000	1,414,692
RAP Tons used in HMA/WMA	417,660	1,257,149
RAP Tons used as Aggregate	-	, , -
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	5,000	15,050
Average % RAP in DOT Mixes	24%	
Average % RAP in Other Agency Mixes	25%	
Average % RAP in Commercial & Residential Mixes	26%	
Reclaimed Asphalt	t Shingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	50%	
RAS Tons Received	3,000	9,030
RAS Tons used in HMA/WMA	6,943	20,898
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	1%	
Average % RAS in Other Agency Mixes	2%	
Average % RAS in Commercial & Residential Mixes	3%	
Warm-Mix	Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	83%	
WMA DOT Tonnage	52,490	157,994
WMA Other Agency Tonnage	265,300	798,548
WMA Commercial & Residential Tonnage	37,261	112,154
Total WMA Tonnage	355,051	1,068,696
Percent WMA Tons using Chemical Additives	0.0%	. ,
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	

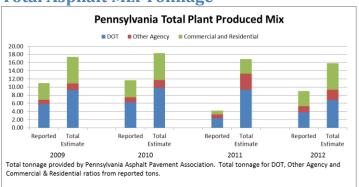
<sup>1.</sup> Total tonnage provided by the Asphalt Pavement Association of Oregon. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# Pennsylvania

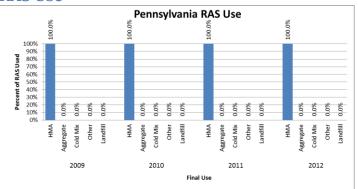
Table B38 summarizes the results received from asphalt mix producers in Pennsylvania. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 17 for 2009 & 2010, 7 for 2011, 15 for 2012

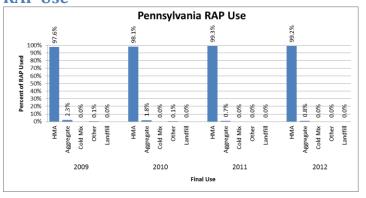
# **Total Asphalt Mix Tonnage**



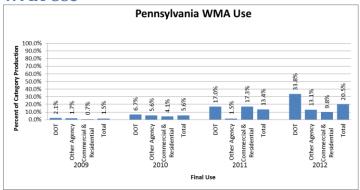
### **RAS Use**



# **RAP Use**



# **WMA Use**



Companies Reporting		15
HMA/	WMA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	3,851,772	6,765,507
Total Other Agency Tonnage	1,441,312	2,531,616
Total Commercial & Residential Tonnage	3,738,118	6,565,877
Total Tonnage	9,031,202	15,863,000
Reclaimed Asphal	t Pavement (RAP)	
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	1,134,743	1,993,138
RAP Tons used in HMA/WMA	1,404,717	2,467,338
RAP Tons used as Aggregate	11,396	20,017
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	16%	
Average % RAP in Other Agency Mixes	15%	
Average % RAP in Commercial & Residential Mixes	19%	
Reclaimed Aspha	It Shingles (RAS)	
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	27%	
RAS Tons Received	43,042	75,602
RAS Tons used in HMA/WMA	55,800	98,011
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	1%	
Average % RAS in Other Agency Mixes	1%	
Average % RAS in Commercial & Residential Mixes	1%	
Warm-Mi	x Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	93%	
WMA DOT Tonnage	1,300,918	2,285,018
WMA Other Agency Tonnage	188,913	331,820
WMA Commercial & Residential Tonnage	364,468	640,175
Total WMA Tonnage	1,854,299	3,257,012
Percent WMA Tons using Chemical Additives	18.3%	, ,
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	81.7%	
Percent WMA Tons using Organic Additive	0.0%	

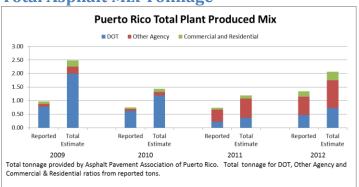
<sup>1.</sup> Total tonnage provided by the Pennsylvania Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Puerto Rico**

Table B40 summarizes the results received from asphalt mix producers in Puerto Rico. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 1 for 2009, 2010, 2011, and 2012

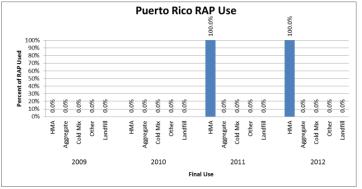
# **Total Asphalt Mix Tonnage**



### **RAS Use**

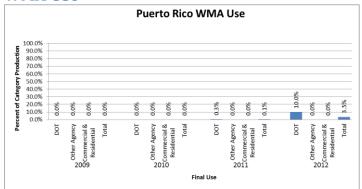
No contractors reported using RAS in Puerto Rico for 2009, 2010, 2011 or 2012.

### **RAP Use**



No contractors reported using RAP in Puerto Rico for 2009 and 2010.

### **WMA Use**



No contractors reported using WMA in Puerto Rico for 2009 and 2010.

Companies Reporting		1
HMA/WN	MA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	468,890	720,986
Total Other Agency Tonnage	669,856	1,030,000
Total Commercial & Residential Tonnage	200,966	309,014
Total Tonnage	1,339,712	2,060,000
Reclaimed Asphalt Pa	avement (RAP)	
•	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	13,350	20,528
RAP Tons used in HMA/WMA	267,000	410,551
RAP Tons used as Aggregate	-	-
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	5%	
Average % RAP in Other Agency Mixes	5%	
Average % RAP in Commercial & Residential Mixes	5%	
Reclaimed Asphalt S	Shingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	0%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	-	-
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix A	sphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	100%	
WMA DOT Tonnage	46,889	72,099
WMA Other Agency Tonnage	-	-
WMA Commercial & Residential Tonnage	-	-
Total WMA Tonnage	46,889	72,099
Percent WMA Tons using Chemical Additives	0.0%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	0.0%	
Percent WMA Tons using Organic Additive	100.0%	

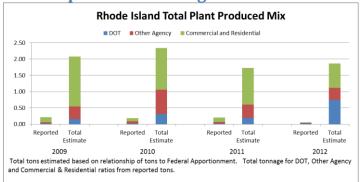
<sup>1.</sup> Total tonnage provided by Asphalt Pavement Association of Puerto Rico. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Rhode Island**

Table B41 summarizes the results received from asphalt mix producers in Rhode Island. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 2 for 2009, 2010 & 2011, 1 for 2012

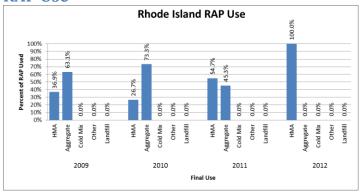
**Total Asphalt Mix Tonnage** 



### **RAS Use**

No contractors reported using RAS in Rhode Isand for 2009, 2010, 2011, or 2012.

### **RAP Use**



### **WMA Use**

No contractors reported using WMA in Rhode Isand for 2009, 2010, 2011, or 2012.

Name	Companies Reporting	1.4	1
20122   2012   2012   2012   2010   746,400	HMA/WM		
Total DOT Tonnage		•	
Total Other Agency Tonnage			
Total Commercial & Residential Tonnage	<u>-</u>		
Reclaimed Asphalt Pavement (RAP)   Reported   Total Estimated   2012   2012     Percent Companies using RAP   100%     RAP Tons Received   3,974   118,648     RAP Tons used in HMA/WMA   1,050   31,349     RAP Tons used as Aggregate   -   -   -     RAP Tons used in Cold Mix   -   -     RAP Tons used as Other   -   -   -     RAP Tons Landfilled   -   -   -     Average % RAP in DOTh Mixes   0%     Average % RAP in Other Agency Mixes   0%     Average % RAP in Commercial & Residential Mixes   4%     Reclaimed Asphalt Shingles (RAS)     Percent Companies using RAS   0%     RAS Tons used as Aggregate   -   -   -     RAS Tons used as Aggregate   -   -     RAS Tons used as Aggregate   -   -     RAS Tons used in HMA/WMA   -   -     RAS Tons used in HMA/WMA   -   -     RAS Tons used as Aggregate   -   -   -     RAS Tons used as Aggregate   -   -   -     RAS Tons used as Other   -   -   -     RAS Tons used in Cold Mix   -   -   -     RAS Tons used as Other   -   -   -     RAS Tons used used using the Residential Mixes   0%     Average % RAS in DOTh Mixes   0%     Average % RAS in Commercial & Residential Mixes   0%     Average % RAS in Commercial & Residential Mixes   0%     Average % RAS in Commercial & Residential Mixes   0%     Average % RAS in Commercial & Residential Mixes   0%     Warm-Mix Asphalt			•
Reclaimed Asphalt Pavement (RAP)   Reported	Total Commercial & Residential Tonnage		746,400
Reported   Total Estimated   2012   2012   2012	Total Tonnage	62,500	1,866,000
Reported Companies using RAP   100%   118,648   RAP Tons Received   3,974   118,648   RAP Tons used in HMA/WMA   1,050   31,349   RAP Tons used as Aggregate   -   -   -   -   -   -   -     -	Reclaimed Asphalt Pa	vement (RAP)	
Percent Companies using RAP		Reported	Total Estimated
RAP Tons Received   3,974   118,648   RAP Tons used in HMA/WMA   1,050   31,349   RAP Tons used as Aggregate         -   -   -     RAP Tons used in Cold Mix     -   -   -   -     -		2012	2012
RAP Tons used in HMA/WMA         1,050         31,349           RAP Tons used as Aggregate         -         -           RAP Tons used as Other         -         -           RAP Tons Landfilled         -         -           Average % RAP in DOT Mixes         0%         Average % RAP in Other Agency Mixes         0%           Average % RAP in Commercial & Residential Mixes         4%         Total Estimated           Reclaimed Asphalt Shingles (RAS)           Reported         Total Estimated           2012         2012           Percent Companies using RAS         0%           RAS Tons Received         -         -           RAS Tons used in HMA/WMA         -         -           RAS Tons used in HMA/WMA         -         -           RAS Tons used as Aggregate         -         -           RAS Tons used as Other         -         -           RAS Tons used as Other         -         -           RAS Tons Landfilled         -         -           Average % RAS in Other Agency Mixes         0%           Average % RAS in Other Agency Mixes         0%           Average % RAS in Other Agency Mixes         0%           Average % RAS in Other Agency Ton	Percent Companies using RAP	100%	
RAP Tons used as Aggregate   -   -   -     -	RAP Tons Received	3,974	118,648
RAP Tons used in Cold Mix         -         -         RAP Tons used as Other         -         -         RAP Tons Landfilled         -	RAP Tons used in HMA/WMA	1,050	31,349
RAP Tons used as Other         -		-	-
RAP Tons Landfilled			
Average % RAP in DOT Mixes         0%           Average % RAP in Other Agency Mixes         0%           Average % RAP in Commercial & Residential Mixes         4%           Percent Companies using RAS         Reported         Total Estimated           RAS Tons Received         -           RAS Tons sused in HMA/WMA         -           RAS Tons used as Aggregate         -           RAS Tons used in Cold Mix         -           RAS Tons used as Other         -           RAS Tons Landfilled         -           Average % RAS in DOT Mixes         0%           Average % RAS in Other Agency Mixes         0%           Average % RAS in Other Agency Mixes         0%           Average % RAS in Commercial & Residential Mixes         0%           Varm-Mix Asphalt         Total Estimated           2012         2012           Percent Companies using WMA         0%           WMA DOT Tonnage         -         -           WMA Other Agency Tonnage         -         -           WMA Commercial & Residential Tonnage         -         -           WMA Tons using Chemical Additives         0.0%           Percent WMA Tons using Plant Foaming         0.0%	RAP Tons used as Other	-	-
Average % RAP in Other Agency Mixes         0%           Average % RAP in Commercial & Residential Mixes         4%           Reclaimed Asphalt Shingles (RAS)           Reported         Total Estimated           2012         2012           Percent Companies using RAS         0%           RAS Tons Received         -         -           RAS Tons used in HMA/WMA         -         -           RAS Tons used as Aggregate         -         -           RAS Tons used in Cold Mix         -         -           RAS Tons used as Other         -         -           RAS Tons Landfilled         -         -           Average % RAS in DOT Mixes         0%         -           Average % RAS in Other Agency Mixes         0%         -           Average % RAS in Commercial & Residential Mixes         0%         -           Warm-Mix Asphalt           Reported         Total Estimated           2012         2012         2012           Percent Companies using WMA         0%         -           WMA DOT Tonnage         -         -           WMA Other Agency Tonnage         -         -           WMA Commercial & Residential Tonnage         - <td>RAP Tons Landfilled</td> <td>-</td> <td></td>	RAP Tons Landfilled	-	
Average % RAP in Commercial & Residential Mixes  Reclaimed Asphalt Shingles (RAS)  Reported 2012 2012 2012  Percent Companies using RAS  RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used so Other RAS Tons used as Other RAS Tons used so Other RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons used as Other RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons used as Other RAS Tons used as Other RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons used as Other RAS Tons used in Cold Mix RAS Tons used in HMA/WMA Reported Reported Reported Reported Reported Reported Reported Reported Reported Rotal Estimated 2012 2012 Percent Companies using WMA 0% WMA DOT Tonnage	Average % RAP in DOT Mixes	0%	
Reclaimed Asphalt Shingles (RAS)           Reported         Total Estimated           2012         2012           Percent Companies using RAS         0%           RAS Tons Received         -           RAS Tons used in HMA/WMA         -           RAS Tons used as Aggregate         -           RAS Tons used in Cold Mix         -           RAS Tons used as Other         -           RAS Tons Landfilled         -           Average % RAS in DOT Mixes         0%           Average % RAS in Other Agency Mixes         0%           Average % RAS in Commercial & Residential Mixes         0%           Warm-Mix Asphalt         Reported         Total Estimated           2012         2012           Percent Companies using WMA         0%         0%           WMA DOT Tonnage         -         -           WMA DOT Tonnage         -         -           WMA Commercial & Residential Tonnage         -         -           Total WMA Tonnage         -         -           Percent WMA Tons using Chemical Additives         0.0%           Percent WMA Tons using Plant Foaming         0.0%	Average % RAP in Other Agency Mixes	0%	
Reported         Total Estimated           2012         2012           Percent Companies using RAS         0%           RAS Tons Received         -         -           RAS Tons used in HMA/WMA         -         -           RAS Tons used as Aggregate         -         -           RAS Tons used in Cold Mix         -         -           RAS Tons used as Other         -         -           RAS Tons Landfilled         -         -           Average % RAS in DOT Mixes         0%         -           Average % RAS in Other Agency Mixes         0%         -           Average % RAS in Commercial & Residential Mixes         0%         -           Warm-Mix Asphalt         -         Total Estimated           2012         2012         2012           Percent Companies using WMA         0%         -           WMA DOT Tonnage         -         -           WMA Other Agency Tonnage         -         -           WMA Commercial & Residential Tonnage         -         -           Percent WMA Tons using Chemical Additives         0.0%           Percent WMA Tons using Additive Foaming         0.0%	Average % RAP in Commercial & Residential Mixes	4%	
Reported         Total Estimated           2012         2012           Percent Companies using RAS         0%           RAS Tons Received         -         -           RAS Tons used in HMA/WMA         -         -           RAS Tons used as Aggregate         -         -           RAS Tons used in Cold Mix         -         -           RAS Tons used as Other         -         -           RAS Tons Landfilled         -         -           Average % RAS in DOT Mixes         0%         -           Average % RAS in Other Agency Mixes         0%         -           Average % RAS in Commercial & Residential Mixes         0%         -           Warm-Mix Asphalt         -         Total Estimated           2012         2012         2012           Percent Companies using WMA         0%         -           WMA DOT Tonnage         -         -           WMA Other Agency Tonnage         -         -           WMA Commercial & Residential Tonnage         -         -           Percent WMA Tons using Chemical Additives         0.0%           Percent WMA Tons using Additive Foaming         0.0%	Reclaimed Asphalt S	hingles (RAS)	
Percent Companies using RAS         2012         2012           RAS Tons Received         -         -           RAS Tons used in HMA/WMA         -         -           RAS Tons used as Aggregate         -         -           RAS Tons used in Cold Mix         -         -           RAS Tons used as Other         -         -           RAS Tons Landfilled         -         -           Average % RAS in DOT Mixes         0%         -           Average % RAS in Other Agency Mixes         0%         -           Average % RAS in Commercial & Residential Mixes         0%         -           Warm-Mix Asphalt         -         -           Percent Companies using WMA         0%         -           WMA DOT Tonnage         -         -           WMA Other Agency Tonnage         -         -           WMA Commercial & Residential Tonnage         -         -           Total WMA Tonnage         -         -           Percent WMA Tons using Chemical Additives         0.0%           Percent WMA Tons using Plant Foaming         0.0%	•		Total Estimated
Percent Companies using RAS RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons used as Other RAS Tons Landfilled RAS Tons used as Other RAS Tons used as Other RAS Tons used as Other RAS Tons using WMA RAS Tons using WMA REported REported Total Estimated 2012 2012 Percent Companies using WMA RAS Tonnage RAS Tons using Chemical Additives Percent WMA Tons using Chemical Additives Percent WMA Tons using Additive Foaming Percent WMA Tons using Plant Foaming ROS COUNTY ON TO		·	2012
RAS Tons Received         -         -           RAS Tons used in HMA/WMA         -         -           RAS Tons used as Aggregate         -         -           RAS Tons used in Cold Mix         -         -           RAS Tons used as Other         -         -           RAS Tons Landfilled         -         -           Average % RAS in DOT Mixes         0%         -           Average % RAS in Other Agency Mixes         0%         -           Average % RAS in Commercial & Residential Mixes         0%         -           Warm-Mix Asphalt           Reported         Total Estimated           2012         2012         2012           Percent Companies using WMA         0%         -           WMA DOT Tonnage         -         -           WMA Other Agency Tonnage         -         -           WMA Commercial & Residential Tonnage         -         -           Total WMA Tonnage         -         -           Percent WMA Tons using Chemical Additives         0.0%           Percent WMA Tons using Plant Foaming         0.0%	Percent Companies using RAS		
RAS Tons used as Aggregate       -       -         RAS Tons used in Cold Mix       -       -         RAS Tons used as Other       -       -         RAS Tons Landfilled       -       -         Average % RAS in DOT Mixes       0%       -         Average % RAS in Other Agency Mixes       0%       -         Average % RAS in Commercial & Residential Mixes       0%       -         Warm-Mix Asphalt         Reported       Total Estimated         2012       2012         Percent Companies using WMA       0%         WMA DOT Tonnage       -       -         WMA Other Agency Tonnage       -       -         WMA Commercial & Residential Tonnage       -       -         Total WMA Tonnage       -       -         Percent WMA Tons using Chemical Additives       0.0%         Percent WMA Tons using Additive Foaming       0.0%         Percent WMA Tons using Plant Foaming       0.0%			-
RAS Tons used as Aggregate       -       -         RAS Tons used in Cold Mix       -       -         RAS Tons used as Other       -       -         RAS Tons Landfilled       -       -         Average % RAS in DOT Mixes       0%       -         Average % RAS in Other Agency Mixes       0%       -         Average % RAS in Commercial & Residential Mixes       0%       -         Warm-Mix Asphalt         Reported       Total Estimated         2012       2012         Percent Companies using WMA       0%         WMA DOT Tonnage       -       -         WMA Other Agency Tonnage       -       -         WMA Commercial & Residential Tonnage       -       -         Total WMA Tonnage       -       -         Percent WMA Tons using Chemical Additives       0.0%         Percent WMA Tons using Additive Foaming       0.0%         Percent WMA Tons using Plant Foaming       0.0%	RAS Tons used in HMA/WMA	-	-
RAS Tons used as Other       -       -         RAS Tons Landfilled       -       -         Average % RAS in DOT Mixes       0%       -         Average % RAS in Other Agency Mixes       0%       -         Warm-Mix Asphalt         Reported       Total Estimated         2012       2012       2012         Percent Companies using WMA       0%         WMA DOT Tonnage       -       -         WMA Other Agency Tonnage       -       -         WMA Commercial & Residential Tonnage       -       -         Total WMA Tonnage       -       -         Percent WMA Tons using Chemical Additives       0.0%         Percent WMA Tons using Additive Foaming       0.0%         Percent WMA Tons using Plant Foaming       0.0%	RAS Tons used as Aggregate	-	-
RAS Tons Landfilled	RAS Tons used in Cold Mix	-	-
Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes  Warm-Mix Asphalt  Reported 2012 2012  Percent Companies using WMA WMA DOT Tonnage WMA Other Agency Tonnage WMA Commercial & Residential Tonnage Total WMA Tonnage Percent WMA Tons using Chemical Additives Percent WMA Tons using Additive Foaming Percent WMA Tons using Plant Foaming  Average % RAS in Other Agency Mixes  Warm-Mix Asphalt  Reported 2012  Are Apported 2012 2012	RAS Tons used as Other	-	-
Average % RAS in Other Agency Mixes  Average % RAS in Commercial & Residential Mixes  Warm-Mix Asphalt  Reported Total Estimated 2012 2012  Percent Companies using WMA 0%  WMA DOT Tonnage  WMA Other Agency Tonnage  WMA Commercial & Residential Tonnage  Total WMA Tonnage  Percent WMA Tons using Chemical Additives 0.0%  Percent WMA Tons using Additive Foaming 0.0%  Percent WMA Tons using Plant Foaming 0.0%	RAS Tons Landfilled	-	-
Average % RAS in Commercial & Residential Mixes  Warm-Mix Asphalt  Reported Total Estimated 2012 2012  Percent Companies using WMA  WMA DOT Tonnage  WMA Other Agency Tonnage  WMA Commercial & Residential Tonnage  Total WMA Tonnage  Percent WMA Tons using Chemical Additives  Percent WMA Tons using Additive Foaming 0.0%  Percent WMA Tons using Plant Foaming 0.0%	Average % RAS in DOT Mixes	0%	
Warm-Mix AsphaltReportedTotal Estimated20122012Percent Companies using WMA0%WMA DOT Tonnage-WMA Other Agency Tonnage-WMA Commercial & Residential Tonnage-Total WMA Tonnage-Percent WMA Tons using Chemical Additives0.0%Percent WMA Tons using Additive Foaming0.0%Percent WMA Tons using Plant Foaming0.0%	Average % RAS in Other Agency Mixes	0%	
ReportedTotal Estimated20122012Percent Companies using WMA0%WMA DOT Tonnage-WMA Other Agency Tonnage-WMA Commercial & Residential Tonnage-Total WMA Tonnage-Percent WMA Tons using Chemical Additives0.0%Percent WMA Tons using Additive Foaming0.0%Percent WMA Tons using Plant Foaming0.0%	Average % RAS in Commercial & Residential Mixes	0%	
Percent Companies using WMA  WMA DOT Tonnage  WMA Other Agency Tonnage  WMA Commercial & Residential Tonnage  Total WMA Tonnage  Percent WMA Tons using Chemical Additives  Percent WMA Tons using Additive Foaming  Percent WMA Tons using Plant Foaming  O.0%	Warm-Mix As	sphalt	
Percent Companies using WMA  WMA DOT Tonnage  WMA Other Agency Tonnage  WMA Commercial & Residential Tonnage  Total WMA Tonnage  Percent WMA Tons using Chemical Additives  Percent WMA Tons using Additive Foaming  Percent WMA Tons using Plant Foaming  O.0%			Total Estimated
WMA DOT Tonnage		2012	2012
WMA DOT Tonnage	Percent Companies using WMA		
WMA Other Agency Tonnage  WMA Commercial & Residential Tonnage  Total WMA Tonnage  Percent WMA Tons using Chemical Additives  Percent WMA Tons using Additive Foaming  Percent WMA Tons using Plant Foaming  O.0%			-
WMA Commercial & Residential Tonnage		-	-
Total WMA Tonnage		-	-
Percent WMA Tons using Chemical Additives 0.0% Percent WMA Tons using Additive Foaming 0.0% Percent WMA Tons using Plant Foaming 0.0%		-	-
Percent WMA Tons using Plant Foaming 0.0%	Percent WMA Tons using Chemical Additives	0.0%	
Percent WMA Tons using Plant Foaming 0.0%			
<u> </u>		0.0%	

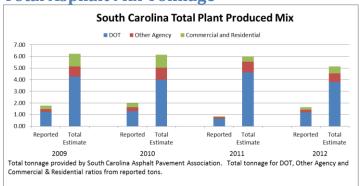
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **South Carolina**

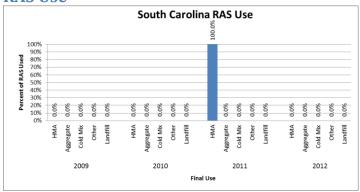
Table B42 summarizes the results received from asphalt mix producers in South Carolina. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 4 for 2009 & 2010, 3 for 2011, 4 for 2012

**Total Asphalt Mix Tonnage** 

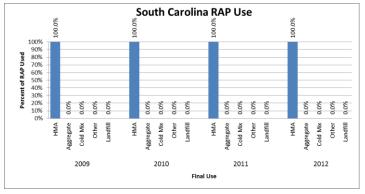


### **RAS Use**

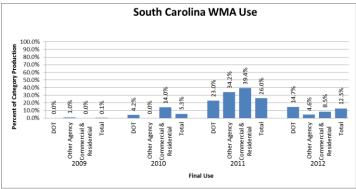


No contractos reported using RAS in South Carolina for 2009 or 2010.

### **RAP Use**



#### **WMA Use**



Companies Reporting		4
HMA/V	VMA	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	1,201,842	3,816,564
Total Other Agency Tonnage	226,313	718,679
Total Commercial & Residential Tonnage	193,588	614,757
Total Tonnage	1,621,743	5,150,000
Reclaimed Asphalt	Pavement (RAP)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	434,120	1,378,590
RAP Tons used in HMA/WMA	384,496	1,221,004
RAP Tons used as Aggregate	-	-
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	24%	
Average % RAP in Other Agency Mixes	24%	
Average % RAP in Commercial & Residential Mixes	24%	
Reclaimed Asphalt	Shingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	0%	2012
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	-	-
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix	Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	25%	
WMA DOT Tonnage	176,357	560,039
WMA Other Agency Tonnage	10,451	33,188
WMA Commercial & Residential Tonnage	16,485	52,350
Total WMA Tonnage	203,293	645,577
Percent WMA Tons using Chemical Additives	0.0%	- 1 -
Percent WMA Tons using Additive Foaming		
refeelt which rolls using Additive Foathing	0.0%	
Percent WMA Tons using Plant Foaming	0.0%	

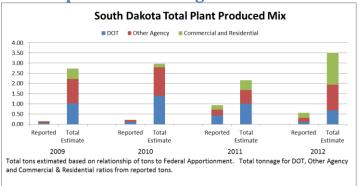
<sup>1.</sup> Total tonnage provided by South Carolina Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **South Dakota**

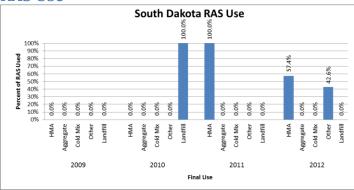
Table B43 summarizes the results received from asphalt mix producers in South Dakota. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 1 for 2009 & 2010, 3 for 2011 and 2012

**Total Asphalt Mix Tonnage** 

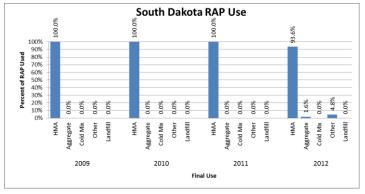


### **RAS Use**

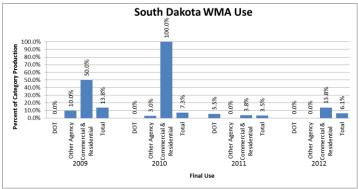


No contractors reported using RAS in South Dakota in 2009 or 2010.

#### **RAP Use**



### **WMA Use**



# **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state)

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Bottom Ash	1	52,000	4,280

HMA/\	WMA	
,	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	110,625	690,680
Total Other Agency Tonnage	201,635	1,258,895
Total Commercial & Residential Tonnage	249,450	1,557,425
Total Tonnage	561,710	3,507,000
Reclaimed Asphalt		2,521,525
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	123,000	767,943
RAP Tons used in HMA/WMA	115,064	718,395
RAP Tons used as Aggregate	2,000	12,487
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	6,000	37,461
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	14%	
Average % RAP in Other Agency Mixes	18%	
Average % RAP in Commercial & Residential Mixes	20%	
Reclaimed Asphal		
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	67%	2012
RAS Tons Received	4,400	27,471
RAS Tons used in HMA/WMA	1,349	8,422
RAS Tons used as Aggregate	, -	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	1,000	6,243
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	1%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix	Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	33%	
WMA DOT Tonnage	-	-
WMA Other Agency Tonnage	-	-
WMA Commercial & Residential Tonnage	34,450	215,086
Total WMA Tonnage	34,450	215,086
Percent WMA Tons using Chemical Additives	0.0%	· 
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	

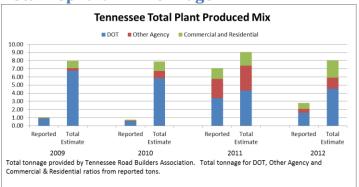
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

### **Tennessee**

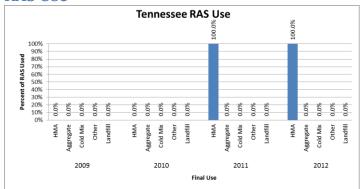
Table B44 summarizes the results received from asphalt mix producers in Tennessee. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 2 for 2009 & 2010, 7 for 2011, 5 for 2012

# **Total Asphalt Mix Tonnage**

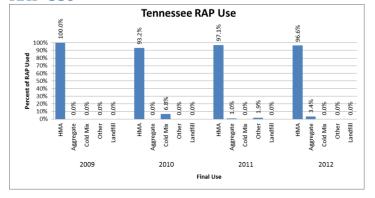


### **RAS Use**

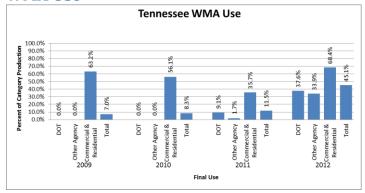


No contractors reported using RAS in 2009 or 2010.

### **RAP Use**



### **WMA Use**



# **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state )

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Steel Slag	1	30,000	6,000

Companies Reporting  HMA/	WMA	5
THIA!	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	1,585,046	4,541,129
Total Other Agency Tonnage	471,962	1,352,163
Total Commercial & Residential Tonnage	735,330	2,106,708
Total Tonnage	2,792,338	8,000,000
Reclaimed Asphali		0,000,000
Reclaimed Aspiral	Reported	Total Estimated
	2012	2012
Parcent Companies using DAD		2012
Percent Companies using RAP RAP Tons Received	100%	1 026 701
	672,500	1,926,701
RAP Tons used in HMA/WMA RAP Tons used as Aggregate	560,606 20,000	1,606,126 57,300
RAP Tons used as Aggregate  RAP Tons used in Cold Mix	20,000	37,300
RAP Tons used in Cold Mix  RAP Tons used as Other		
RAP Tons Landfilled	-	
Average % RAP in DOT Mixes	20%	
Average % RAP in Other Agency Mixes	23%	
Average % RAP in Commercial & Residential Mixes	22%	
Reclaimed Aspha		
Reciainieu Aspiia	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	40%	2012
RAS Tons Received	1,500	4,297
RAS Tons used in HMA/WMA	1,534	4,395
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	1%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	1%	
Warm-Mi		
·	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	80%	
WMA DOT Tonnage	596,523	1,709,028
WMA Other Agency Tonnage	160,000	458,397
WMA Commercial & Residential Tonnage	502,780	1,440,456
Total WMA Tonnage	1,259,303	3,607,881
Percent WMA Tons using Chemical Additives	1.1%	, ,
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	98.9%	
Percent WMA Tons using Organic Additive	0.0%	

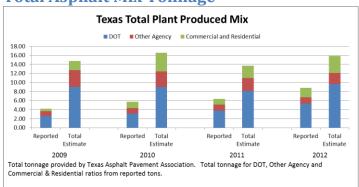
<sup>1.</sup> Total tonnage provided by Tennessee Road Builders Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons..

# **Texas**

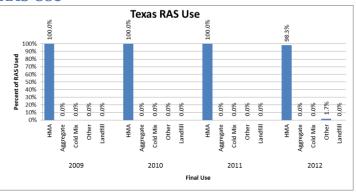
Table B45 summarizes the results received from asphalt mix producers in Texas. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 7 for 2009 & 2010, 9 for 2011, 10 for 2012

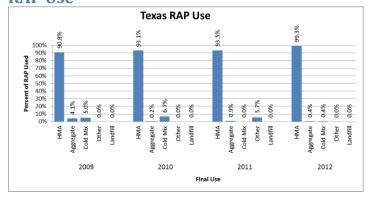
# **Total Asphalt Mix Tonnage**



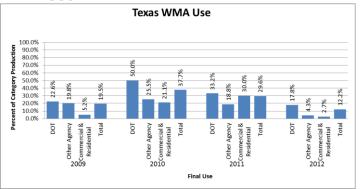
### **RAS Use**



### **RAP Use**



### **WMA Use**



# **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state )

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Ground Tire Rubber	1	25,000	2,500
Fly Ash	1	18,000	1,200

HMA/\	WMA	
·	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	5,346,326	9,635,333
Total Other Agency Tonnage	1,374,735	2,477,595
Total Commercial & Residential Tonnage	2,073,577	3,737,072
Total Tonnage	8,794,638	15,850,000
Reclaimed Asphalt		15/050/000
1.00.00.00.00.00.00.00.00.00.00.00.00.00	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	2012
RAP Tons Received	1,196,220	2,155,869
RAP Tons used in HMA/WMA	1,368,511	2,466,378
RAP Tons used as Aggregate	5,000	9,011
RAP Tons used in Cold Mix	5,000	9,011
RAP Tons used in Cold Mix  RAP Tons used as Other		
RAP Tons daded day other	_	
Average % RAP in DOT Mixes	20%	
Average % RAP in Other Agency Mixes	17%	
Average % RAP in Commercial & Residential Mixes	23%	
Reclaimed Asphal		
Reciainled Aspiral		Total Estimated
	Reported	Total Estimated
Davisant Communication DAC	2012	2012
Percent Companies using RAS	70%	241 276
RAS Tons Received	189,418	341,376
RAS Tons used in HMA/WMA	168,888	304,376
RAS Tons used as Aggregate	-	<del>-</del>
RAS Tons used in Cold Mix	2,000	- - -
RAS Tons used as Other	3,000	5,407
RAS Tons Landfilled	- 20/	-
Average % RAS in DOT Mixes	3%	
Average % RAS in Other Agency Mixes		
Average % RAS in Commercial & Residential Mixes	3%	
Warm-Mix	<u> </u>	Tabal Cationata d
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	60%	
WMA DOT Tonnage	954,262	1,719,804
WMA Other Agency Tonnage	59,400	107,053
WMA Commercial & Residential Tonnage	55,523	100,065
Total WMA Tonnage	1,069,185	1,926,922
Percent WMA Tons using Chemical Additives	10.3%	
Percent WMA Tons using Additive Foaming	12.1%	
Percent WMA Tons using Plant Foaming	77.7%	
Percent WMA Tons using Organic Additive	0.0%	

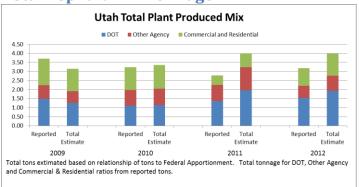
<sup>1.</sup> Total tonnage provided by Texas Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# Utah

Table B46 summarizes the results received from asphalt mix producers in Utah. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 5 for 2009 & 2010, 6 for 2011 and 2012

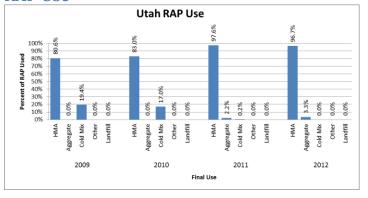
# **Total Asphalt Mix Tonnage**



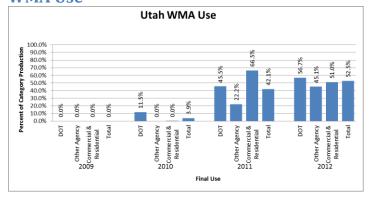
### **RAS Use**

No contractors reported using RAS in 2009, 2010, 2011 or 2012.

### **RAP Use**



# **WMA Use**



Companies Reporting  HMA/W	MA	6
,	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	1,536,364	1,922,530
Total Other Agency Tonnage	671,469	840,243
Total Commercial & Residential Tonnage	978,325	1,224,227
Total Tonnage	3,186,158	3,987,000
Reclaimed Asphalt P	, ,	2,001,000
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	662,375	828,863
RAP Tons used in HMA/WMA	590,784	739,278
RAP Tons used as Aggregate	20,000	25,027
RAP Tons used in Cold Mix	-	,
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	23%	
Average % RAP in Other Agency Mixes	24%	
Average % RAP in Commercial & Residential Mixes	31%	
Reclaimed Asphalt S		
-	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	0%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	-	-
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	0%	
Warm-Mix A	Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	67%	
WMA DOT Tonnage	871,859	1,091,001
WMA Other Agency Tonnage	302,795	378,903
WMA Commercial & Residential Tonnage	498,737	624,094
Total WMA Tonnage	1,673,391	2,093,998
Percent WMA Tons using Chemical Additives	0.0%	·
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	

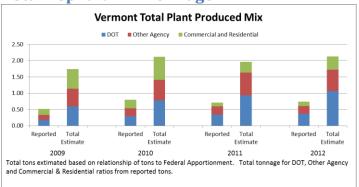
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Vermont**

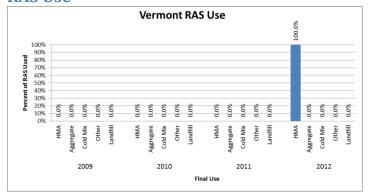
Table B47 summarizes the results received from asphalt mix producers in Vermont. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 1 for 2009, 2010, 2011, and 2012

# **Total Asphalt Mix Tonnage**

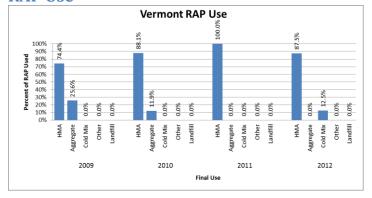


### **RAS Use**



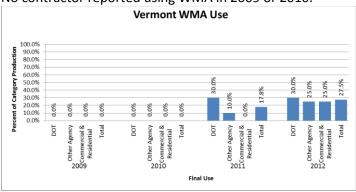
No contractor reported using RAS in 2009, 2010 or 2011.

# **RAP Use**



#### **WMA Use**

No contractor reported using WMA in 2009 or 2010.



Companies Reporting		1
HMA/WMA	i	
	Reported	Total Estimated <sup>1</sup>
	2012	2012
Total DOT Tonnage	370,620	1,059,373
Total Other Agency Tonnage	230,143	657,836
Total Commercial & Residential Tonnage	142,665	407,791
Total Tonnage	743,428	2,125,000
Reclaimed Asphalt Pave	ement (RAP)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	231,791	662,547
RAP Tons used in HMA/WMA	174,274	498,141
RAP Tons used as Aggregate	-	-
RAP Tons used in Cold Mix	25,000	71,460
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	22%	
Average % RAP in Other Agency Mixes	22%	
Average % RAP in Commercial & Residential Mixes	24%	
Reclaimed Asphalt Shi	ngles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	100%	
RAS Tons Received	-	-
RAS Tons used in HMA/WMA	300	858
RAS Tons used as Aggregate	-	-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	0%	
Average % RAS in Other Agency Mixes	0%	
Average % RAS in Commercial & Residential Mixes	5%	
Warm-Mix Asp		
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	100%	
WMA DOT Tonnage	111,186	317,812
WMA Other Agency Tonnage	57,536	164,459
WMA Commercial & Residential Tonnage	35,666	101,948
Total WMA Tonnage	204,388	584,219
Percent WMA Tons using Chemical Additives	0.0%	
Percent WMA Tons using Additive Foaming	0.0%	
Percent WMA Tons using Plant Foaming	100.0%	
Percent WMA Tons using Organic Additive	0.0%	

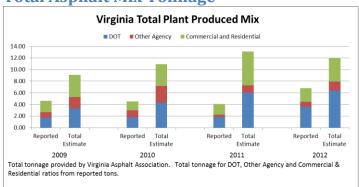
<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# Virginia

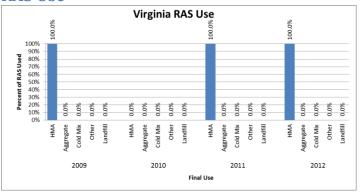
Table B48 summarizes the results received from asphalt mix producers in Virginia. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 5 for 2009 & 2010, 7 for 2011, 8 for 2012

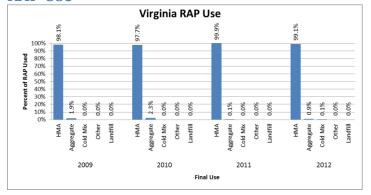
**Total Asphalt Mix Tonnage** 



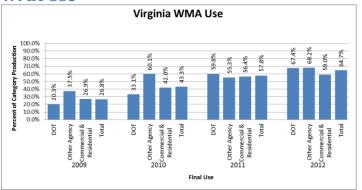
### **RAS** Use



### **RAP Use**



### **WMA Use**



# **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state)

•	•	' '	
Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Blast Furnace Slag	1	54,521	16,358
Recycled Glass	1	173	34

8 Companies Reporting HMA/WMA Total Estimated<sup>1</sup> Reported 2012 2012 Total DOT Tonnage 3,583,712 6,343,880 Total Other Agency Tonnage 890,807 1,576,905 Total Commercial & Residential Tonnage 4,079,215 2,304,383 Total Tonnage 6,778,902 12,000,000 **Reclaimed Asphalt Pavement (RAP) Total Estimated** Reported 2012 2012 100% Percent Companies using RAP RAP Tons Received 2,202,149 3,898,240 RAP Tons used in HMA/WMA 1,745,016 3,089,024 RAP Tons used as Aggregate 15,000 26,553 RAP Tons used in Cold Mix 864 1,529 RAP Tons used as Other 12 RAP Tons Landfilled 75 133 Average % RAP in DOT Mixes 27% Average % RAP in Other Agency Mixes 27% Average % RAP in Commercial & Residential Mixes 31% **Reclaimed Asphalt Shingles (RAS) Total Estimated** Reported 2012 2012 Percent Companies using RAS 38% RAS Tons Received RAS Tons used in HMA/WMA 12,665 22,420 RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled 0% Average % RAS in DOT Mixes 0% Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes 2% **Warm-Mix Asphalt** Reported Total Estimated 2012 2012 Percent Companies using WMA 88% 2,417,024 WMA DOT Tonnage 4,278,611 WMA Other Agency Tonnage 607,305 1,075,050 WMA Commercial & Residential Tonnage 1,359,614 2,406,787 Total WMA Tonnage 4,383,943 7,760,448 2.7% Percent WMA Tons using Chemical Additives Percent WMA Tons using Additive Foaming 0.0% Percent WMA Tons using Plant Foaming 97.0% Percent WMA Tons using Organic Additive 0.3%

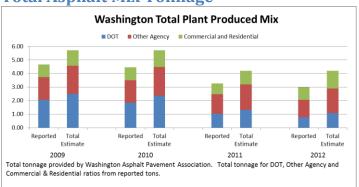
<sup>1.</sup> Total tonnage provided by the Virginia Asphalt Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# Washington

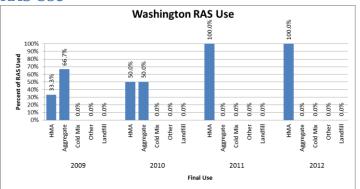
Table B49 summarizes the results received from asphalt mix producers in Washington. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 6 for 2009 & 2010, 4 for 2011 & 2012

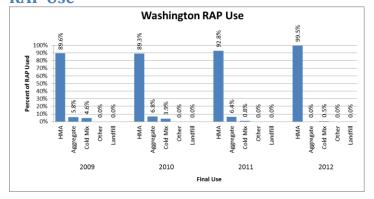
# **Total Asphalt Mix Tonnage**



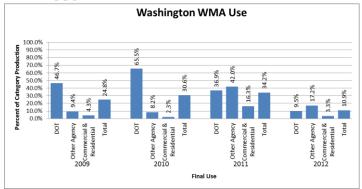
### **RAS** Use



### **RAP Use**



### **WMA Use**



# **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state )

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Steel Slag	1	450,000	80,000

Companies Reporting HMA/WMA Total Estimated<sup>1</sup> Reported 2012 2012 Total DOT Tonnage 767,991 1,080,415 Total Other Agency Tonnage 1,279,614 1,800,170 Total Commercial & Residential Tonnage 937,879 1,319,415 Total Tonnage 2,985,485 4,200,000 **Reclaimed Asphalt Pavement (RAP) Total Estimated** Reported 2012 2012 100% Percent Companies using RAP RAP Tons Received 515,276 724,893 RAP Tons used in HMA/WMA 434,498 611,255 RAP Tons used as Aggregate RAP Tons used in Cold Mix 2,000 2,814 RAP Tons used as Other RAP Tons Landfilled Average % RAP in DOT Mixes 21% Average % RAP in Other Agency Mixes 19% Average % RAP in Commercial & Residential Mixes 20% **Reclaimed Asphalt Shingles (RAS) Total Estimated** Reported 2012 2012 Percent Companies using RAS 50% RAS Tons Received RAS Tons used in HMA/WMA 1,998 2,811 RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled 0% Average % RAS in DOT Mixes Average % RAS in Other Agency Mixes 0% Average % RAS in Commercial & Residential Mixes 1% **Warm-Mix Asphalt** Reported **Total Estimated** 2012 2012 Percent Companies using WMA 100% WMA DOT Tonnage 73,341 103,177 WMA Other Agency Tonnage 220,264 309,869 WMA Commercial & Residential Tonnage 31,380 44,146 Total WMA Tonnage 324,986 457,192 Percent WMA Tons using Chemical Additives 0.0% 0.0% Percent WMA Tons using Additive Foaming Percent WMA Tons using Plant Foaming 100.0% Percent WMA Tons using Organic Additive 0.0%

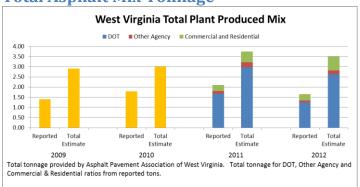
<sup>1.</sup> Total tonnage provided by the Washington Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **West Virginia**

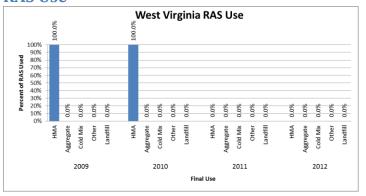
Table B50 summarizes the results received from asphalt mix producers in West Virginia. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 8 for 2009 & 2010, 3 for 2011 & 2012

# **Total Asphalt Mix Tonnage**

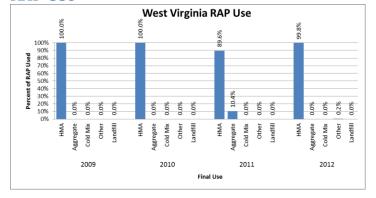


### **RAS Use**

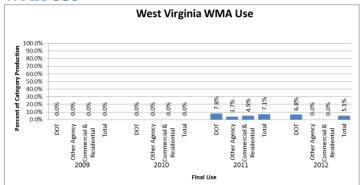


No companies reported using RAS in 2011

### **RAP Use**



### **WMA Use**



No contractor reported usin WMA in 2009 or 2010.

# **Other Recycled Material**

(Tons are reported values and do not represent estimates of the total quantity of these materials by state )

Material	No. Contractors Reporting	Tons of Mix Produced Using Material	Tons of Material Used
Blast Furnace Slag	3	588,120	180,308

Percent WMA Tons using Organic Additive

Companies Reporting 3 **HMA/WMA** Total Estimated<sup>1</sup> Reported 2012 2012 Total DOT Tonnage 1,240,462 2,625,732 Total Other Agency Tonnage 90,271 191,080 Total Commercial & Residential Tonnage 683,188 322,755 3,500,000 Total Tonnage 1,653,488 Reclaimed Asphalt Pavement (RAP) Reported **Total Estimated** 2012 2012 100% Percent Companies using RAP RAP Tons Received 254,506 538,722 RAP Tons used in HMA/WMA 190,679 403,617 RAP Tons used as Aggregate RAP Tons used in Cold Mix RAP Tons used as Other 273 578 RAP Tons Landfilled Average % RAP in DOT Mixes 13% Average % RAP in Other Agency Mixes 3% Average % RAP in Commercial & Residential Mixes 7% **Reclaimed Asphalt Shingles (RAS)** Reported **Total Estimated** 2012 2012 Percent Companies using RAS 0% RAS Tons Received RAS Tons used in HMA/WMA RAS Tons used as Aggregate RAS Tons used in Cold Mix RAS Tons used as Other RAS Tons Landfilled Average % RAS in DOT Mixes 0% 0% Average % RAS in Other Agency Mixes Average % RAS in Commercial & Residential Mixes 0% **Warm-Mix Asphalt** Reported Total Estimated 2012 2012 Percent Companies using WMA 67% WMA DOT Tonnage 83,918 177,631 WMA Other Agency Tonnage WMA Commercial & Residential Tonnage Total WMA Tonnage 83,918 177,631 Percent WMA Tons using Chemical Additives 0.0% 0.0% Percent WMA Tons using Additive Foaming Percent WMA Tons using Plant Foaming 100.0%

0.0%

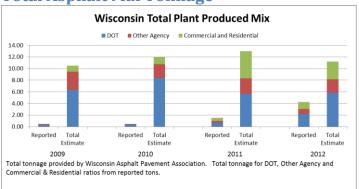
<sup>1.</sup> Total tonnage provided by the Asphalt Pavement Association of West Virginia. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Wisconsin**

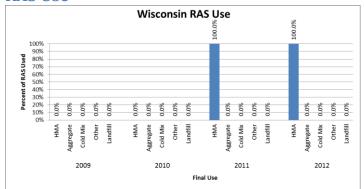
Table B51 summarizes the results received from asphalt mix producers in Wisconsin. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 1 for 2009 & 2010, 3 for 2011 & 2012

# **Total Asphalt Mix Tonnage**

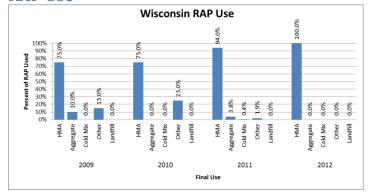


### **RAS Use**

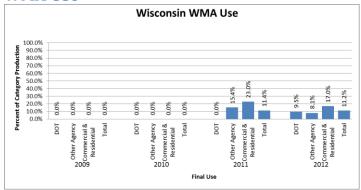


The contractor did not report any RAS use in 2009 or 2010.

# **RAP Use**



### **WMA Use**



The contractor did not report any WMA use in 2009 or 2010.

Companies Reporting HMA/	WMA	
TIMA		Total Estimated <sup>1</sup>
	Reported	
Total DOT Tannaga	2012	2012
Total Other Agency Tennage	2,189,934	5,808,780
Total Other Agency Tonnage	880,173	2,334,651
Total Commercial & Residential Tonnage	1,151,585	3,054,569
Total Tonnage	4,221,692	11,198,000
Reclaimed Asphalt		T. 15
	Reported	Total Estimated
	2012	2012
Percent Companies using RAP	100%	
RAP Tons Received	694,000	1,840,829
RAP Tons used in HMA/WMA	585,242	1,552,349
RAP Tons used as Aggregate	-	-
RAP Tons used in Cold Mix	-	-
RAP Tons used as Other	-	-
RAP Tons Landfilled	-	-
Average % RAP in DOT Mixes	18%	
Average % RAP in Other Agency Mixes	19%	
Average % RAP in Commercial & Residential Mixes	25%	
Reclaimed Aspha	lt Shingles (RAS)	
	Reported	Total Estimated
	2012	2012
Percent Companies using RAS	100%	
RAS Tons Received	56,200	149,070
RAS Tons used in HMA/WMA	55,200	146,418
RAS Tons used as Aggregate		-
RAS Tons used in Cold Mix	-	-
RAS Tons used as Other	-	-
RAS Tons Landfilled	-	-
Average % RAS in DOT Mixes	2%	
Average % RAS in Other Agency Mixes	2%	
Average % RAS in Commercial & Residential Mixes	2%	
Warm-Mi	x Asphalt	
	Reported	Total Estimated
	2012	2012
Percent Companies using WMA	33%	
WMA DOT Tonnage	207,000	549,066
WMA Other Agency Tonnage	71,600	189,918
WMA Commercial & Residential Tonnage	196,200	520,419
Total WMA Tonnage	474,800	1,259,403
Percent WMA Tons using Chemical Additives	75.0%	
Percent WMA Tons using Additive Foaming	4.0%	
Percent WMA Tons using Plant Foaming	20.0%	
. c. cont in in rone doing ridine rounning	20.070	

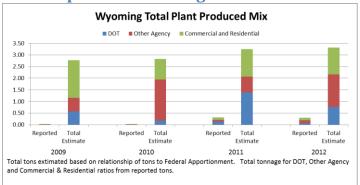
<sup>1.</sup> Total tonnage provided by the Wisconsin Asphalt Pavement Association. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.

# **Wyoming**

Table B52 summarizes the results received from asphalt mix producers in Wyoming. The charts are used to summarize statistics calculated from information provided by the survey respondents.

Companies responding: 2 for 2009 & 2010, 3 for 2011 & 2012

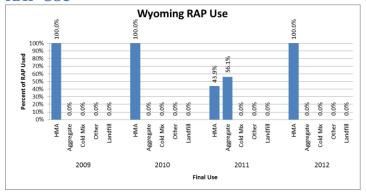
# **Total Asphalt Mix Tonnage**



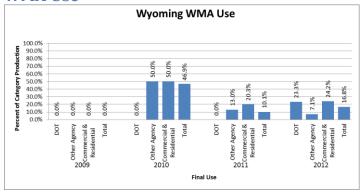
#### **RAS Use**

No contractor reported using RAS in 2009. 2010, 2011 or 2012. One company reported receiving RAS in 2011 but did not report its use.

### **RAP Use**



### **WMA Use**



Companies Reporting 3				
HMA/WM				
	Reported	Total Estimated <sup>1</sup>		
	2012	2012		
Total DOT Tonnage	69,723	762,119		
Total Other Agency Tonnage	127,593	1,394,677		
Total Commercial & Residential Tonnage	106,325	1,162,204		
Total Tonnage	303,641	3,319,000		
Reclaimed Asphalt Pav	rement (RAP)			
	Reported	Total Estimated		
	2012	2012		
Percent Companies using RAP	67%			
RAP Tons Received	20,053	219,193		
RAP Tons used in HMA/WMA	5,076	55,484		
RAP Tons used as Aggregate	16	175		
RAP Tons used in Cold Mix	-	-		
RAP Tons used as Other	-	-		
RAP Tons Landfilled	-	-		
Average % RAP in DOT Mixes	0%			
Average % RAP in Other Agency Mixes	0%			
Average % RAP in Commercial & Residential Mixes	14%			
Reclaimed Asphalt Sh	ingles (RAS)			
•	Reported	Total Estimated		
	2012	2012		
Percent Companies using RAS	33%			
RAS Tons Received	1,500	16,396		
RAS Tons used in HMA/WMA	-	-		
RAS Tons used as Aggregate	-	-		
RAS Tons used in Cold Mix	-	-		
RAS Tons used as Other	-	-		
RAS Tons Landfilled	-	-		
Average % RAS in DOT Mixes	0%			
Average % RAS in Other Agency Mixes	0%			
Average % RAS in Commercial & Residential Mixes	0%			
Warm-Mix Asphalt				
	Reported	Total Estimated		
	2012	2012		
Percent Companies using WMA	100%			
WMA DOT Tonnage	16,255	177,673		
WMA Other Agency Tonnage	9,000	98,376		
WMA Commercial & Residential Tonnage	25,694	280,850		
Total WMA Tonnage	50,948	556,899		
Percent WMA Tons using Chemical Additives	0.0%			
Percent WMA Tons using Additive Foaming	0.0%			
Percent WMA Tons using Plant Foaming	100.0%			
Percent WMA Tons using Organic Additive	0.0%			
i create the folio doing organic Additive	0.070			

<sup>1.</sup> Total tons estimated based on relationship of tons to Federal Apportionment. Total tonnage for DOT, Other Agency and Commercial & Residential ratios from reported tons.