

SWAC C&D Subcommittee Meeting
MassDEP – Bureau of Air & Waste – Solid Waste Management Division
Fall-2023 Webinar Series on C&D Materials Market Development (Wood, Shingles, Gypsum)
November 16, 2023; 9:00 AM to 11:15 AM (Virtual Meeting via Zoom webinar)

Meeting Notes: Recorded by Mike Elliott (MassDEP)

NOTE: Copies of the meeting notes and presentation slides are available on the MassDEP C&D Subcommittee webpage found at the following link: <https://www.mass.gov/service-details/massdep-construction-demolition-subcommittee>. Submit comments via email to michael.elliott@mass.gov.

Agenda for Webinar Series Meeting #2 of 3 re: Recycled Asphalt Shingle Markets

- Welcome/Introductions
- MassDEP Waste Characterization Data and Estimate of Asphalt Shingle Quantities
- Overview of asphalt shingle recycling markets:
 - Mr. Dan Horton, Founding Partner of ASR Systems
- MassDOT Research re: binder blending and recycled binder ratios
 - Dr. Walaa Mogawer, Ph.D., UMass-Dartmouth Commonwealth Professor, Director of Highway Sustainability Research Center, P.E.
- Open discussion
- Announcements/Industry updates

Welcome/Introductions

MassDEP welcomed participants to the webinar.

- The number of participants varied over the course of the meeting, 58 registered but there were about 30 on the call most of the time.
- Participants reflected a cross-section of stakeholders representing: Large C&D Handling Facilities; Material Recycling Processors; Recycling/Re-use End-Markets; Construction Management Firms; Waste Haulers; Trade Association Representatives; Industry Consultants; State/Municipal Officials.

MassDEP Waste Characterization Data and Estimate of Asphalt Shingle Quantities

A scanned PDF copy of the PowerPoint presentation that accompanied this portion of the meeting can be found at the MassDEP C&D webpage referenced at the top of these meeting notes.

One of the objectives of the C&D data analysis presented at this meeting was to estimate the asphalt shingle quantities that might potentially be recovered from the C&D and Bulky waste loads accepted by C&D processors across the State. This was estimated using the waste characterization compositional analysis data from the 2022 Statewide Bulky Waste Characterization Study (<https://www.mass.gov/doc/statewide-bulky-waste-characterization-study-june-2022/download>), and applying it to the quantities of C&D waste and Bulky waste tonnages accepted as reported in the CY2022 C&D annual facility reports (<https://www.mass.gov/doc/2022-annual-cd-report-data-summary/download>).

The analysis estimated that in CY2022, there was the potential to recover approximately 163,000 tons of asphalt shingles from the combined total of C&D and Bulky waste streams.

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Prior to the meeting, MassDEP inquired with the two existing markets for recycled asphalt shingles (RAS) operating in Massachusetts today – Patriot Recycling in Raynham and Rooftop Recycling in Boxborough. They reported recycling about 20-25,000 tons per year of RAS. This means that Massachusetts is only capturing about 12%-15% of the potential RAS available. Both recycling companies feel that state regulation and policy is the biggest challenge to growing their business (e.g., one pointed to MassDOT restrictions on the use of RAS; and the other pointed to MassDEP Asbestos Regulations).

Overview of asphalt shingle recycling markets – existing and potential future processing technologies

Mr. Dan Horton, founding partner of ASR Systems (<https://www.asrsystems.net/>) delivered this presentation. Please see the PDF copy of his slide deck on the MassDEP C&D webpage referenced at the top of these meeting notes. Highlights of this informative overview include:

- National RAS recycling rates and trends
- Processing RAS for use in roads – traditional methods used
- New HMA Solutions – use of RAS binder in Balanced Mixed Design road paving applications
- Emerging Technologies – processing technologies to recover valuable raw materials from RAS
- Increasing Recycling Rates – circularity initiatives, R&D of new market opportunities

In response to a question from Phil Goddard, municipal official with the Town of Bourne, who inquired if the possibility of asbestos contamination might complicate recycling uses for asphalt shingles, Dan replied that most major asphalt shingle manufacturers had removed asbestos from their products by 1977. Dan felt that asphalt shingle roof layers installed after 1985 could safely be considered asbestos free. Dan offered a link to the following website for supporting data: <https://www.asbestos-study.com/>.

MassDOT research re: binder blending and recycled binder ratios

Dr. Walaa Mogawer, P.E., UMass Dartmouth Commonwealth Professor in the Civil and Environmental Engineering Department, and Director of the Highway Sustainability Research Center, delivered this presentation. A PDF copy of Dr. Mogawer's presentation slides is found on the MassDEP C&D webpage referenced at the top of these meeting notes.

- It is possible to allow >15% by weight of Recycled Asphalt Pavement (RAP) in top course layers, but to do so, requires extreme care regarding binder ratios and the sourcing of the RAP and attention to the binder grade.
- Surface course mixtures with high RAP content (25-30%) can be produced and provide acceptable balanced performance in terms of rutting and cracking (intermediate and low temperature).
- Asphalt mixtures with high RAP content can be produced and provide an acceptable balanced performance for rutting, intermediate- and low- temperature cracking resistances.
- However, material characteristics should be rigorously validated during production to ensure that the approved mix design is obtained and adjusted if the material properties significantly change.
- The situation for RAS is more complicated. With RAS, it is difficult to extract and test a representative sample of the liquid asphalt binder to determine the product grade. Therefore, acceptable binder ratios cannot readily be determined.

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Open Discussion

Phil Goddard, a municipal official from the Town of Bourne, suggested that MassDEP should invite DCAMM and MassDOT to participate in a joint meeting to explore opportunities to increase recycling of asphalt shingles.

Announcements

CDRA Industry Updates: Mr. Bill Turley, Special Projects Director at the national C&D Recycling Association (<https://www.cdrecycling.org/>), provided an update on some of the national issues that the CDRA is following including:

- Notice of Intent (NOI) that CDRA is preparing to apply for the EPA Grant to support manufacturers of cleaner construction materials.
- CDRA concerns about the proposed OSHA Walk-Around regulation
- Annual C&D World meeting in Bonita Springs, FL (1/31-2/02/2024)

For more information, Bill can be reached at turley@cdrecycling.org.

EPA Grants: MassDEP shared the following announcement: **The Biden-Harris Administration Announces \$100 Million in Grants to Support Manufacturers of Cleaner Construction Materials as Part of Investing in America Agenda**

<https://www.epa.gov/newsreleases/biden-harris-administration-announces-100-million-grants-support-manufacturers-cleaner>.

- This [new grant program](#)—Reducing Embodied Greenhouse Gas Emissions for Construction Materials and Products—will **help businesses develop robust Environmental Product Declarations (EPDs)** which disclose environmental impacts across the life of a product. Embodied greenhouse gas (GHG) emissions—also called embodied carbon—refers to the amount of GHG emissions associated with the extraction, production, transport, and manufacturing stages of a product's life. EPDs facilitate the reliable tracking of emissions associated with construction materials and products to inform procurement decisions.
- EPA will **provide grants to businesses that manufacture, remanufacture, and refurbish construction materials** and products for developing and verifying EPDs, and to states, Tribes, and nonprofit organizations that will support such businesses. The EPDs generated through this grant program will make it easier for state and local governments—and other institutional buyers—to ensure the construction projects they fund are using low carbon construction materials.
- The deadline to apply to this grant competition is January 8, 2024. EPA requests the submittal of an optional Notice of Intent to apply by October 27, 2023, by sending an email to embodiedcarbon@epa.gov.
- Eligible entities include:
 - Businesses that manufacture, remanufacture, and refurbish construction materials and products, and
 - States, Tribes, and nonprofit organizations that will support such businesses.

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Job Opportunities: MassDEP announced that MassDEP is hiring!

- Consistent with a campaign pledge, the Healey-Driscoll Administration has allocated 1% of the state's operating budget for climate and the environment.
- This translates to close to 100 new vacancies at MassDEP across all programs
- Follow the MassCareers webpage if you are interested in starting a new career at MassDEP:
<https://massanf.taleo.net/careersection/ex/jobsearch.ftl>

Points of Contact

Mike Elliott's contact information is as follows:

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Speaker Contacts:

- Mr. Dan Horton, Founding Partner at ASR Systems: dan.horton@asrsystems.net
- Dr. Walaa Mogawer, Ph.D., P.E., UMass-Dartmouth, Civil & Environmental Engineering Professor, Director of Highway Sustainability Research Center: wmogawer@umassd.edu

END of Meeting Notes.