SWAC C&D Subcommittee Meeting – May-2025
MassDEP – Bureau of Air & Waste – Solid Waste Management Division
May 8, 2025; 10:00 AM to 12:00 PM (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

- Welcome
- CY2024 C&D Facility Annual Report Data Analysis
- C&D Facility MPS Compliance Status Update, CY2024
- C&D Action Plan Mid-Course Assessment
- Discussion
- Announcements

Welcome/Introductions

MassDEP welcomed participants to the webinar.

- 54 individuals registered for the meeting.
- Registrants reflected a cross-section of the C&D industry including: Large C&D Handling Facilities; Recycling/Re-use End-Markets; Construction Management Firms; Waste Haulers; Trade Association Representatives; Industry Consultants; State/Municipal Officials; NGOs.
- The number of registrants in each stakeholder category was as follows:
    - C&D Facilities/waste facilities/waste haulers: 18
    - Recyclers: 5
    - Property owners/developers: 1
    - Construction/Demo Contractors: 4
    - Consultants/Architects/Designers: 3
    - Trade Associations: 2
    - Government Agencies: 13
    - NGOs/Academia: 8
- At the start of the meeting, there were 28 participants on the call.

CY2024 C&D Facility Annual Report Data Analysis

Slide 5: Massachusetts Large C&D Handling Facilities – Disposition of Materials Handled by Facility in 2024

The bar chart on this slide shows the categorical breakdown of quantities of C&D materials managed by the 28 Large C&D Handling Facilities operating across Massachusetts in CY2024.

Left side of chart: 18 C&D Handling Facilities operated as C&D processors that separate Waste Ban and recoverable materials for reuse/recycling.

Right side of chart: 10 facilities operated as C&D transfer stations that transfer unprocessed and partially processed C&D materials to MPS-compliant facilities for further processing.

Of the 1,873,300 tons of Total C&D Materials generated across the State in CY2024 (combination of: mixed C&D, source separated materials and bulky waste), the C&D Handling Facilities produced the following quantities of material categories:

- Recycled-Reused: 270,155 tons (Green-colored bars)

- Diverted material (sent and received as separated recyclable material to another processor; e.g., ABC, wood, gypsum): 33,572 tons (Yellow-colored bars)
- Transferred to MPS-compliant facility for further processing: 378,255 tons (Grey colored bars)
- Landfill Dependent Use Application materials (e.g., ADC, Roadbase, Shaping & Grading): 36,464 tons (Brown-colored bars)
- Disposed via landfill/combustion (less inbound C&D residuals; eliminates double counting of inbound residuals received at TSs): 1,264,549 tons (Red-colored bars)

Slide 6: Outbound/Inbound Material Trends compared to 2030 C&D Waste Reduction Goal
This line graph shows the "Outbound/Inbound Material Trends compared to 2030 C&D Waste Reduction Goal."
In 2024, the trend line for C&D waste disposed increased to 1,264K tons, the highest level since 2021. The trend line for recycled/reused showed an increase up to 270K tons, which is favorable, but not enough to produce a reduction in tonnage disposed.
The 2030 Solid Waste Master Plan (SWMP) establishes a 2030 waste reduction goal to reduce C&D waste disposal by 260,000 tons compared to the 2018 baseline (985,000 tons). That equates to a goal of no more than 725,000 TPY of C&D waste disposed by 2030.
To achieve this goal, the quantity of C&D waste disposed must drop over time, and the quantity of material recycled or reused must increase.

Slide 7: C&D Industry Recycling Rate/Process Separation Rate Trend Chart
This chart shows the historical C&D Industry recycle rate, and the more recent process separation rate (PSR) adopted in 2020. (Note: the PSR is very similar to the historic recycling rate calculation prior to 2016, thus the dashed line that connects them)
The "Recycle Rate/Process Separation Rate Trend Chart" shows that the PSR industry average increased to 19.0% in CY2024. This is a favorable improvement, the best performance industry-wide since the MPS went into effect, and a step in the right direction.

Slide 8: Wood Products Trend Chart 2018-2024
This bar graph shows the actual quantity of wood products produced annually since 2018: particle board wood chip (blue bar); biomass fuel feedstock (red bar); bulking agent (olive green bar) and total product produced (purple bar)
For comparison, the latter three years show the estimated quantity of A-wood and B-wood that could have potentially been recovered from the inbound C&D waste stream. (These quantities were estimated using the latest MassDEP waste characterization study compositional data from 2022)

- The quantity of potential A-wood is shown with green-stripe bars
- The quantity of potential B-wood (painted and treated) is show with orange stripe bars

Comparing the total products produced to the estimated quantity of A-wood potentially available shows that the processors are only recovering about 50% of what's available.

Slide 9: Clean Gypsum Wallboard Recycling Trend Chart 2018-2024
Looking at the trend chart of quantities of Clean Gypsum Wallboard separated for recycling by C&D processors, it has steadily declined since its peak in 2021. CY2024 has shown a little improvement over the previous year.

For comparison, the latter three years show the estimated quantity of Clean Gypsum Wallboard that could potentially be recovered from inbound C&D and Bulky waste streams. (Estimated using MassDEP's most recent waste characterization study compositional data from 2022.)
What is disappointing is that the C&D Processors are only recovering about 10% or less of the potential recoverable Clean Gypsum Wallboard that could otherwise be recycled. For this reason, when MassDEP conducts facility inspections, one of the areas we focus on is facility compliance with the 2013 gypsum wallboard guidance and their site-specific WBCP (i.e., separate gypsum from tipped loads prior to any mechanical processing or transfer to another processor)

Slide 10: Other materials separated in CY2024
We've seen an uptick in 2024 in the recovery of a couple of other C&D materials:

- Mattresses (newly added Waste Ban material in Nov-2022): 1000 tons separated by a combined 20 C&D Handling Facilities
- Asphalt Roofing Shingles (not a Waste Ban material): 6502 tons separated by a combined 7 C&D Handling Facilities

C&D Facility MPS Compliance Status Update, Based on CY2024 Annual Reports

Slide 12: MPS Compliance Status of C&D Processors
This slide contains a table summarizing the MPS Compliance Status of facilities operating as C&D Processors (i.e., required to meet both MPS performance criteria: #1 separate all 4 C&D waste ban materials; and #2 meet or exceed the 15% process separation rate minimum threshold in effect during CY2024).

15 Facilities operating as C&D processors achieved full compliance with both MPS performance criteria in CY2024.
Compared to CY2023:

- 9 facilities improved performance,
- However, 5 facilities declined in performance

3 facilities operating as C&D processors failed to comply with the MPS since they failed to achieve the 15% PSR minimum threshold, and one facility also failed to separate all four C&D waste ban materials.
Compared to CY2023:

- One facility showed a marginal improvement in performance (it permitted an RCC to accept more source separated materials in an attempt to improve the PSR)
- The other two facilities showed a decline in performance

Slide 13: MPS Compliance Status of C&D Transfer Stations
This slide contains a table summarizing the MPS Compliance Status of facilities operating as C&D Transfer Stations (i.e., transfer all C&D materials to an MPS compliant facility for further processing after first separating all zero-tolerance waste ban items and clean gypsum wallboard).

6 facilities operating as C&D TSs are in full compliance with the MPS.
4 facilities operating as C&D TSs failed to comply with the MPS since they did not report separation or diversion of any clean gypsum wallboard.

Slide 14: Enforcement for Failure to meet MPS

For facilities that fail to demonstrate full compliance with the MPS, MassDEP may take enforcement action following a progressive discipline model from NONs to HLE to encourage improvement.
In 2024, MassDEP exercised enforcement against 6 C&D facilities: 5 NONs and 1 HLE.
While MassDEP does not as a rule discuss any contemplated or active enforcement actions, it is safe to say that MassDEP will continue to pursue enforcement of the MPS and facility-specific WBCP requirements in 2025.

C&D Action Plan Mid-Course Assessment

Slide 16: Reason and Timeline for Mid-Course Assessment
This slide describes the connection of the C&D Action Plan as an element within the 2030 Solid Waste Master Plan (SWMP). Since the SWMP includes a commitment to conduct a mid-course assessment in 2025, the C&D Action Plan is being evaluated for recommended updates. The schedule is as follows:

- Spring/Summer 2025
  - Evaluate scope and progress of current C&D Action Plan
  - Solicit input and prepare draft updates
  - Conduct follow-up meetings as necessary
- Fall 2025
  - Finalize updated C&D Action Plan

Slide 17: C&D Action Plan
The C&D Action Plan is a dynamic planning tool incorporated into the 2030 SWMP.
Based on input from C&D Subcommittee stakeholders during 2016-2019, we established 4 main objectives to meet our C&D waste reduction goals.
1. Improve Jobsite Waste Management
2. Enhance Collection & Processing
3. Develop End Markets
4. Promote State Interagency Cooperation to Advance "Leading by Example"

The latest version of the C&D Action Plan can be found at the link shown on the slide (https://www.mass.gov/doc/cd-action-plan/download).

Slide 18: Objective 1: Improve Jobsite Waste Management
Some examples of progress toward this objective include:

1. Work by MassDEP's technical arm, RecyclingWorks, which has posted 2 cases studies on its webpage highlighting actual jobsite source separation; and a case study training video detailing actual means and methods to separate gypsum wallboard at a commercial jobsite in a densely populated urban area. (https://recyclingworksma.com/how-to/materials-guidance/construction-materials/)
2. MassDEP initiated the Deconstruction Work Group in 2021 that is working with architects, engineers and construction professionals to promote jobsite source separation and deconstruction. (https://www.mass.gov/lists/reduce-reuse-rr-working-group-deconstruction-workgroup-archive)
3. A work group within the C&D Subcommittee is in the process of redesigning the C&D Facility annual report form to improve accuracy and precision. When done, this could make it easier for LEED consultants to evaluate compliance with Green Building Standards.

Slide 19: Objective 2: Enhance Collection & Processing

The objective to "Enhance Collection and Processing" has been a key objective since this Subcommittee was formed in the early 2000s.

One of the ways this objective is advanced is by separating all waste ban materials to the greatest extent possible and by improving the Process Separation Rate over time, which of course corresponds exactly to the MPS performance requirements. (https://www.mass.gov/doc/minimum-performance-standard-for-construction-demolition-handling-facilities/download)

1. MassDEP launched the MPS in 2020 with an initial PSR minimum threshold of 15%. In July of 2024, MassDEP announced incremental increases to the PSR minimum threshold to achieve 25% by 2030. (These targets were based on empirical data from the MassDEP 2022 Waste Characterization Study conducted by MSW Consultants)
2. Financial Investment: Since 2016, MassDEP has awarded several RBDG grants worth ca. $860K to C&D processors to improve recovery of recyclable material.
3. In 2022, two new waste bans went into effect and the action threshold of a third waste ban material was lowered. The two new waste bans added textiles and mattresses, both of which regularly show up and must be separated by C&D facilities

Slide 20: Simplified PSR Sensitivity Analysis (for illustration only)

To understand how much of the C&D waste reduction goal can be achieved through application of the C&D Minimum Performance Standard, MassDEP performed a simplified PSR sensitivity analysis to estimate the tons of C&D materials disposed at increasing levels of PSR percentages.

For the purpose of the simplified sensitivity analysis, we assumed that all inbound material quantities in the PSR calculation remained constant with the CY2024 actual values (e.g., total inbound material, quantity of material transferred for further processing, etc.)

The only term that varied was the amount of material recycled/diverted. This value increased as a function of the assumed PSR increases. And logically, the quantity of material disposed decreased by a commensurate amount.

The most important take-away from this simple sensitivity analysis is that C&D processing alone will likely not be able to achieve the 2030 C&D waste reduction goal of 260k tons below the 2018 baseline, which equates to disposal of no more than 725K tons of C&D waste.

Even at the expected PSR minimum threshold of 25% by 2030, we will still be disposing of close to 1,200k tons of C&D Waste. We would need to separate over 50% of the inbound C&D materials to achieve the 2030 C&D waste reduction goals.

This leads to the obvious conclusion that MassDEP needs to pursue an "all-of-the-above" approach to meet our waste reduction goals. In addition to the C&D processing capabilities, which are and will remain an important part of our waste reduction strategy, we need to continue developing other capabilities, including jobsite source separation, deconstruction, design for reuse/recycling to reduce the total amount of C&D waste generated in the first place.

Slide 21: Objective 3. Develop End Markets

Developing new markets for recyclable materials is a complex and dynamic endeavor. Toward that end, MassDEP launched the Recycling Market Development (RMD) work group in January 2022. (https://www.mass.gov/info-details/massdep-recycling-market-development-workgroup)

After more than a year of conducting public meetings with stakeholder groups, the RMD work group developed an action plan divided into three broad categories:

1. Grant and assistance programs that provide direct support to Massachusetts recycling and reuse businesses, including launching a new Waste Reduction Innovations Grant program (more on that grant program in the announcements section below)
2. Education, outreach, and funding to encourage increased purchases of recycled products by state and local government, businesses, and the general public
3. Research and development initiatives to support the development and use of new products, equipment and technologies, including working with state colleges and universities

In parallel with the RMD work group efforts, the C&D Subcommittee conducted a series of monthly webinars in the Fall-2023 focusing on C&D material markets: specifically, wood, asphalt roofing shingles and gypsum wallboard. These highlighted several market opportunities worthy of further exploration including:

- Gasification of treated wood to generate a precursor for production of Sustainable Aviation Fuel
- Circularity technologies for asphalt shingles that take advantage of its constituent materials
- Partial replacement of cement in concrete with gypsum powder from waste drywall

The slide also highlights some of the other ideas we listed in the plan for consideration

Slide 22: Objective 4: Promote State Interagency Cooperation to Advance "Leading by Example"
In 2024, the Massachusetts legislature established the EPR Commission headed up by MassDEP. The initial products of concern will only have marginal impacts on the C&D industry, but over time, the commission could branch out to products that would be of much greater significance to the C&D industry. (e.g., such as treated wood, gypsum wallboard, asphalt roofing shingles, carpeting and the like) Over the years, several manufacturers initiated their own product take-back programs, and the list has grown in recent years. For example:

- Armstrong Ceiling Tile, https://www.armstrongceilings.com/commercial/en/performance/sustainable-building-design/ceiling-recycling-program.html
- US Gypsum Ceiling Tile and Gypsum Wallboard, https://www.usg.com/content/dam/USG_Marketing_Communications/united_states/product_promotional_materials/finished_assets/usg-takeback-recycle-program-en-SU325469.pdf
- Owens-Corning Asphalt Roofing Shingles, https://www.owenscorning.com/en-us/roofing/shingle-recycling

As for leading by example, one exciting development is the work of the MassDEP Deconstruction Work Group to team up with DCAMM on a pilot project to evaluate the comparative cost of deconstruction versus conventional demolition at a large development project underway in the western part of the State.

Slide 23: Discussion
One of the municipal officials on the call shared the following comments:

- Inquired whether MassDEP knew if there was still any interest from The Bruening Group, the broker in Germany looking to import C&D wood for use as biomass fuel. Recommended that MassDEP invite them back to address the group.
- Recommended reaching out to Trade Associations to encourage more jobsite source separation. Unions too: Local #327; Home - Laborers' International Union of North America
- Pursue opportunities with DCAMM for renovation contracts; make sure design specs include clause for reuse/recycling of construction materials

- Pursue opportunities with MassDOT for ABC recycling, PGA for Pozzolan
- Reach out to Melissa Hoffer, Commonwealth's Climate Chief, to encourage interagency cooperation; invite Chief Hoffer to a future Subcommittee meeting to establish more direct connection with C&D stakeholder community
- $2 billion Sagamore Bridge project represents a significant opportunity for use of recycled materials. Bourne Bridge to follow later. https://www.mass.gov/cape-cod-bridges-program
- Suggested reaching out to Vocational High Schools with an awareness effort to integrate diversion and recycling into the trades. Often these efforts come from the bottom up with younger generations.

After a comment from a representative of Boston Building Resources about initiatives underway at BBR to provide deconstruction services, a sustainability manager from one of the large construction firms added the following:

- This could be a cool event! Talk about innovative reuse of materials. Reuse In Action: Tour of New Affordable Housing Project with Boston Building Resources

The representative from the Gypsum Association described some of the EPR and Take-Back program initiatives underway among gypsum manufacturers. She also discussed barriers to recycling gypsum and stressed the need for education of laborers.

MassDEP reminded everyone on the call who might not have had a chance to formulate or articulate ideas to modify the C&D Action Plan that they should feel free to review the document and submit their suggestions to Mike Elliott whose contact information is found at the end of these notes. The C&D Action Plan can be found on the MassDEP webpage at the following link: https://www.mass.gov/doc/cd-action-plan/download.

Announcements

Slide 25: Reduce, Reuse, Repair Micro-Grant

This grant is for projects that reduce waste through reuse and repair (this includes donation, rescue, and sharing). Recycling and composting projects are not eligible.

These should be short-term projects that will take a year or less to complete. They must be based in Mass.

Application deadline ended on 5/15/2025 (one week after the May-2025 C&D Subcommittee meeting).

Slide 26: Waste Reduction Innovation Grant

This grant is intended to support new technology that expands recycling and reuse infrastructure in Massachusetts

Two categories of grants:

1. Start-up/Pilot projects: $50,000 - $100,000
2. Innovative capital investments: $500,000 - $2M

Please refer to the webpage for additional details and how to apply.

https://www.mass.gov/how-to/waste-reduction-innovation-grant

Application period runs from 4/15-7/15/2025

Questions must be submitted online before 6/02/2025

All responses to questions will be published online by 6/16/2025

Slide 27: Recycling & Reuse Business Development Grant

This grant is intended to expand recycling, reuse and composting infrastructure in Massachusetts.

The next round will go live later this year.
Two categories of grants:

1. Collection: $25,000 - $100,000 per project for truck, containers, equipment, software, etc.
2. Processing: $50,000 - $400,000 per project for capital equipment to enhance processing, manufacturing or reuse activities

Please refer to the webpage for additional details and how to apply. Apply for a Recycling & Reuse Business Development Grant | Mass.gov

Point of Contact

Mike Elliott's contact information is as follows:

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END of Meeting Notes.