



Department of Environmental Protection

100 Cambridge Street 9th Floor Boston, MA 02114 • 617-292-5500

2030 Construction and Demolition (C&D) Materials Management Action Plan

Updated: March 2023

Background

Beginning in the early 2000s, MassDEP launched the Construction and Demolition (C&D) Subcommittee to work with C&D material management industry stakeholders to develop waste bans for C&D materials to promote greater reuse and recycling of such materials. Working in close collaboration with that stakeholder group to ensure the availability of viable markets, MassDEP promulgated its initial C&D material waste bans on ABC, wood and metal in 2006. That was followed by adding clean gypsum wallboard as a waste ban material in 2010.

In the first few years after implementation of the C&D waste bans, the C&D facility annual report data showed an improvement in the recovery rate of banned materials. Initially, the recovery rates as compared to the tonnage of inbound mixed C&D waste improved rapidly from 14% in 2008 to over 30% in 2010. The statewide average recovery rate plateaued between 2010 and 2013 to around 25% and 30%. Since then, the recovery rate steadily declined as wood markets contracted, and C&D waste volume increased as a function of increased C&D activity over the same time period.

From 2016-2019, MassDEP again worked with the C&D Subcommittee to improve the operational efficiency of the 30 large C&D Handling Facilities to increase recovery rates, send more separated material to reuse and recycling end markets, and reduce the volume of residuals sent for disposal. During CY2019, the process separation rate at C&D processors ranged from less than 1% to about 46%. Better performance correlated, for the most part, with facilities that had invested in mechanical processing equipment and that incurred the added operating expense of fully staffed picking lines.

To address the historic limitations and variability of the C&D handling facility performance, MassDEP launched the C&D Minimum Performance Standard (MPS) in 2020. The MPS established measurable performance criteria that all Large C&D Handling Facilities now need to meet. The intent of the MPS is to level the playing field and ensure that all C&D waste loads are being sent to an MPS-compliant C&D facility for processing, and thus successfully removing and recovering banned materials from all C&D materials as required by the waste ban regulations.

That said, the MPS is only one component of a comprehensive material management program to reduce the quantity of C&D materials being disposed. The C&D material management action plan establishes a range of tactical objectives to achieve MassDEP's C&D waste reduction goals.

C&D Waste Reduction Goal

In the 2030 Solid Waste Master Plan, MassDEP set a goal to reduce disposal of C&D materials by 260,000 tons by 2030, as compared to the CY2018 baseline. Priority materials include: wood, cardboard, gypsum, carpet.

Programs and Policies Supporting this Plan

The programs and policies that support this plan can be divided into four broad categories:

1. Regulations: In particular, the Solid Waste Disposal Ban regulations codified at 310 CMR 19.017 which includes certain C&D materials such as:
 - a. Asphalt pavement, Brick and Concrete (ABC)
 - b. Metal
 - c. Wood
 - d. Clean gypsum wallboard
2. Compliance Reporting and Enforcement: All permitted C&D Handling Facilities are required to submit an annual report on February 15 summarizing the operational performance for the prior calendar year. MassDEP analyzes the annual report data and conducts facility inspections to ensure compliance. MassDEP may exercise progressive enforcement if compliance is not achieved and maintained.
3. Technical Assistance: MassDEP provides free technical assistance through its technical consulting arm administered through RecyclingWorks in Massachusetts. Periodically, MassDEP also will engage the services of an independent consulting firm to conduct waste characterization and market studies.
4. Financial assistance: MassDEP provides loan and grant programs to encourage market development and improve separation of recoverable C&D materials for reuse and recycling.

Examples of these programs and policies include the following:

Massachusetts Waste Bans – MassDEP has waste disposal bans that ban the disposal of certain materials from landfill and/or waste-to-energy combustion facilities. The first C&D waste bans that regulated ABC, metal and wood were promulgated in 2006. Clean gypsum wallboard was added in 2010.

RecyclingWorks in Massachusetts – This is a free business assistance program funded by MassDEP and run under contract to MassDEP by the Center for EcoTechnology. RecyclingWorks in Massachusetts (RecyclingWorks) provides free assistance via email, phone, and in person, guidance and assistance via online resources, and educational workshops and networking forums to help businesses and institutions to reduce waste. Many of the program resources and tools are focused on technical assistance for C&D projects with emphasis on waste management plans and jobsite source separation.

Recycling Business Development Grants (RBDG) – MassDEP provides grants to businesses that accept and process recyclable or compostable materials through this program. Applications are typically posted on an annual basis. While these grants are limited to specified target materials, C&D waste has often been a target material in the RBDG program.

Recycling Loan Fund – This program is funded by MassDEP and administered under contract to MassDEP by BDC Capital. The Loan Fund provides loans for recycling, composting, and anaerobic digestion operations. Unlike the RBDG, businesses may apply at any time.

C&D Subcommittee – MassDEP has established a C&D Subcommittee that meets three to four times per year. The C&D Subcommittee is open to the public and generally includes a broad range of stakeholders from across the entire spectrum of the C&D materials management industry.

Action Plan Structure

As previously stated, the action plan establishes tactical objectives to achieve the C&D waste reduction goals. It is divided into four main sections:

1. Improve Jobsite Waste Management
2. Enhance Collection & Processing
3. Develop End Markets
4. Promote State Inter-agency Cooperation to Advance “Leading by Example”

Action No.	Proposal/Description	Comments/Updates
1.0	<u>Jobsite Waste Management</u> Promote waste re-use, reduction and separation at the job site	
1.1	Continue technical assistance programs through RecyclingWorks (RW)	Encourage and facilitate public and private demonstrations of successful material management practices and strategies (e.g., RW BMPs/Case Studies, etc.) RecyclingWorks webpage posted: 2 case studies; a C&D materials management best practices guide; and a training video on gypsum wallboard recycling at an actual jobsite in a densely populated commercial setting; also responded to several TA requests.

<p>1.2</p>	<p>Promote source separated diversion programs such as ceiling tiles, gypsum wallboard, etc.; pilot use of split boxes; support material re-use stores, etc.</p>	<p>Emphasis on Waste Management Plan; Promote waste management hierarchy: reduce, reuse, recycle, recover energy, dispose; Encourage separation at the jobsite of certain materials that are either hard for processors to separate, or contaminate C&D process by-products (e.g. pressure treated wood, gypsum, etc.) Collaborating with the newly formed MassDEP Deconstruction Work Group (Sep-2022) to promote jobsite source separation for improved material reuse and recycling. Collaborating with the NEWMOA/NERC C&D Work Group to promote improved gypsum wallboard recycling; assisted in planning the Jan-2023 webinar series on gypsum wallboard recycling covering the current status, obstacles and opportunities. (link to NEWMOA/NERC webinar series)</p>
<p>1.3</p>	<p>Encourage conformance to USGBC/LEED Green Building Standards</p>	<p>Support higher standards for C&D projects and improvements to materials-related elements of green building certification systems. Collaborating with architects, engineers, and construction professionals through the CLF-Boston/NE Reuse Work Group to promote deconstruction and jobsite source separation for material reuse and recycling.</p>

<p>Action No.</p>	<p>Proposal/Description</p>	<p>Comments/Updates</p>
<p>2.0</p>	<p><u>Enhance Collection & Processing</u> Improve C&D Facility Performance</p>	
<p>2.1</p>	<p>Establish Minimum Performance Standards (MPS) for C&D Processors</p>	<p>Require all Mixed C&D Waste loads to be processed at processors that meet MPS standard; Increase MPS criteria over time to improve performance Launched MPS 1/01/2020 with 15% PSR minimum threshold; posted MPS guidance and FAQ in CY2020; required MPS compliance plans from 16 facilities</p>

		in Aug-2021; by YE2022, all but 2 of 29 large C&D Handling facilities had achieved MPS compliance; remaining 2 recently installed new process lines to achieve compliance. MassDEP has required monthly MPS compliance progress reports from non-compliant facilities.
Posted 2.2	Provide financial investment to improve process efficiency and effectiveness (e.g. RLF, RBDG)	Encourage market development and equipment/technology improvements to recover highest and best use of C&D materials. Awarded grant to a newly constructed C&D Handling Facility in 2023 (“887Woburn LLC” in Wilmington)
2.3	Improve implementation of C&D waste bans: Clarify definitions and standards; improve enforcement of existing WB;s evaluate adding new WB materials	Ensure a level “playing field”; Increase facility inspection frequency. Published Status of facility compliance with MPS in Aug-2021 and May 2022; clarified MPS compliance for C&D transfer stations, and revised MPS FAQ in Oct-2021; added waste bans for textiles and mattresses in Oct-2021; commissioned a Bulky Waste Characterization Study and published report in Jun-2022.
Action Proposal/Description		
No.	Comments/Updates	
3.0	<u>Develop End Markets</u>	
3.1	Expand existing wood markets	Improve ability to recover wood that meets or exceeds specifications for current markets. During unplanned PRE biomass boiler plant outage (5/22-3/23), required C&D handling facilities who received WB waivers to actively search for alternative market outlets. Collaborating with the newly formed MassDEP Deconstruction Work Group (Sep-2022) to promote jobsite source separation for improved material reuse and recycling. Collaborating with the MassDEP Recycling Market Development Work Group (Jan-2022) to develop new

		markets for wood and other C&D material products.
3.2	Explore siting in-state energy generation facility that uses C&D biomass (either conventional technology or innovative technology)	Until able to demonstrate effective process of flawless recovery of clean wood, this is not a realistic objective. In near term, stay focused on refining methods to recover clean wood for existing markets. A pair of co-developers have proposed building a thermo-chemical conversion plant (e.g., gasification) to process painted/treated wood to produce synthetic biomass fuel (e.g., aviation fuel)
3.3	Develop common C&D materials product specifications (improve reliability for end-markets)	Support efforts to encourage the use of products made from recovered materials
3.4	Identify outlets for C&D Fines	
3.4.1	Identify other BUD material uses; Explore technologies to sort into constituent parts, recover useful fractions, minimize waste fractions; Explore cement stabilization technologies (e.g. Re-crete™); Evaluate disposal in fly-ash monofill landfills	Research what other uses have been approved in other states Engaged in initial discussions with a Canadian start-up, Sanexen, to explore viability of C&D fines separation process in Massachusetts
3.4.2	Identify shaping & grading material needs at future landfill closures	Develop master schedule of landfill closures throughout state and region
Action No.	Proposal/Description	Comments/Updates
4.0	<u>Optimize Regulatory/Policy Incentives</u>	
4.1	Develop generic BUD for coated concrete	In order to protect the most vulnerable land use anywhere in state, this would have to be very conservative; could render it impractical in most circumstances; site specific BUD approvals offer greater flexibility
4.2	Explore management standards for extended producer responsibility (take-back) programs (e.g. gypsum wallboard, carpet, etc.); promote optimal end-of-life re-use and product stewardship	Work with manufacturers and markets to determine environmental and other potential costs not reflected in prices (i.e. full cost of products). In 2023, US Gypsum announced the launch of take-back programs for ceiling tiles and gypsum wallboard (link to USG take-back programs)

		In 2022, Armstrong announced the launch of an expanded ceiling tile take-back program (link to Armstrong Ceiling Tile take-back program)
4.3	Promote interagency cooperation “leading by example”:	MassDEP is coordinating the state-wide Recycling Market Development Task Force with participation of all state agencies including DOT, DAR, DCAMM, OSD
4.3.1	Continue dialogue with MassDOT for use of RAS, PGA, etc.	Encourage greater use of sub-base borrow spec for PGA; Explore pilot of RAS in Reclaimed Asphalt
4.3.2	Re-engage with DCAMM to ensure adherence to design and construction project specifications	Work with DCAMM to assess and build upon existing sustainable procurement policies and materials management programs Engaged in initial discussion with DCAMM Director of Environmental Services ca. Dec-2022
4.3.3	Approach DPS about amending building code to recognize waste disposal bans	Promote source separation at the jobsite; direct contractors to transport mixed C&D waste loads to permitted C&D handling facilities