



Department of Environmental Protection

Mattress Waste Disposal Ban & Recycling Guidance for Municipalities

Table of Contents

Mattress Waste Ban	2
Municipal Mattress Management Options	2
Acceptance Criteria	5
Bed Bug Identification	6
Mattress Recycling Vendors	6
Collection Containers	7
Mattress Collection and Storage Instructions	8
Loading Instructions	8
Tracking	9
Hauling & Transportation	9
Estimating Mattress Generation	9
Fees	10
Additional Resources	10

The purpose of this guidance document is to assist municipalities with implementing a **Mattress Recycling Program** for their residents and to be prepared for MassDEP’s new regulation that bans the disposal of mattresses and box springs effective November 1, 2022. Reduce is the first in the waste management hierarchy and municipalities can encourage their residents to take advantage of retail programs when applicable (e.g., when purchasing a new mattress, check to see whether the company will take the old one back for recycling), thereby reducing the need to recycle or dispose of their old mattresses through the city or town program. Reuse and donation also remain a priority. High quality mattresses that are in good condition may be donated through non-profit outlets such as local charities and furniture banks. For more information, visit:

<https://furniturebanks.org>.

More information, including presentations, fact sheets, case studies, and links to document references throughout this guidance manual, can be found on MassDEP’s Mattress Recycling webpage at: <https://www.mass.gov/service-details/mattress-recycling>.

Mattress Waste Ban

The Massachusetts Department of Environmental Protection (MassDEP)'s 2030 Solid Waste Master Plan (<https://www.mass.gov/guides/solid-waste-master-plan>) establishes goals to reduce trash disposal statewide by 30 percent (from 5.7 million tons in 2018 to 4 million tons in 2030) over the next decade. Among its strategies for reaching these objectives, MassDEP will expand its current waste disposal bans (<https://www.mass.gov/guides/massdep-waste-disposal-bans>) by adding mattresses to the list of materials banned from disposal or transport for disposal in Massachusetts, effective November 1, 2022. See 310 CMR 19.000 Solid Waste Management Facility Regulations (<https://www.mass.gov/regulations/310-CMR-19000-solid-waste-facility-regulations>) for more information.

Mattresses are defined in the regulations as *“any resilient material or combination of materials that is enclosed by ticking, used alone or in combination with other products, and that is intended for sleeping upon, except for mattresses that are contaminated with mold, bodily fluids, insects, oil, or hazardous substances. Mattress includes any foundation or box spring. Mattress does not include any mattress pad, mattress topper, sleeping bag, pillow, car bed, carriage, basket, dressing table, stroller, playpen, infant carrier, lounge pad, crib bumper, liquid or gaseous filled ticking, including any waterbed and any air mattress that does not contain upholstery material between the ticking and the mattress core, and mattresses in futons and sofa beds.”*

All sizes of mattresses are included under the ban: California king, king, queen, full, twin XL, twin, and crib mattresses. It covers traditional mattresses constructed of metal, textiles, wood, and foam; as well as latex, full-foam mattresses, and/or “mattresses in a box”.

Municipal Mattress Management Options

There are many options available to municipalities to help them comply with the mattress waste ban. Considerations include the type of trash/recycling service currently offered by the municipality, population size, geographic area and proximity to mattress recycling vendors, and funding mechanisms.

Curbside Collection Options

Separate Collection of Mattresses Only – this could be on a regular schedule or by appointment and could be set up with the municipality's existing solid waste hauler or a new hauler (e.g., mattress recycler, junk hauler, other waste hauler), either of whom would transport the mattresses directly to a mattress recycler.



Collection by Municipal Staff – this option is similar to the above but would use municipal staff resources to collect the mattresses, which could then be transported to a central collection site within the municipality for future pick-up from a mattress vendor OR transported directly to the mattress recycling facility by municipal staff.



Co-collection with Bulky Waste – municipalities that have a “dry collection” of bulky items, where large/bulky items are collected separately from MSW (either on certain days or by appointment), could include mattresses in this collection. The bulky items would be delivered to a receiving facility, such as a C&D facility, where the mattresses would be separated and then sent for recycling under an agreement with the receiving facility.

Co-collection with Appliances or White Goods – same process as described above but combined with appliance or white good collection rather than general bulky items.

Agreement with a Preferred Hauler or Vendor – several municipalities in the state have established a “preferred vendor” program for food waste subscription collection services. A similar agreement could be set between a municipality and a specific mattress vendor or hauler, so that residents may receive service directly from this entity at a pre-negotiated price paid directly by the resident.

No Collection / Use Private Service Providers – while this option is likely not preferred, there is no requirement that municipalities provide mattress collection or recycling to their residents. In this instance, a municipality would simply prohibit mattresses from being collected with regular trash and refer residents to private service providers. Unlike the above option, a municipality would not have a preferred vendor agreement in place.

Drop-off Options

Collection at a Municipal Drop-off Center – this option is ideal for municipalities that have a transfer station or recycling center accessible to residents and have the space for a mattress collection container. When the container becomes full, the municipality would contact a vendor recycler (see State Contract FAC90) to transport the mattresses back to their facility. Depending

on the mattress vendor and the municipality's needs, the vendor would either empty the contents of the container into their own truck, or pick-up and transport the entire container, swapping it out with an empty one. Some mattress vendors also offer the option for a container rental.



Regional Collection Center for Multiple Municipalities – a central collection location that can be used by residents of multiple municipalities within a specific geographic region. One municipality would take on the role of “host” and locate the collection container in their city/town but allow residents of other designated cities and towns to utilize it.



Regional “Milk Run” Collection Schedule – in this instance, municipalities would partner together not for the collection, but the transport. Municipalities would each have their own collection container/storage area and contract with a mattress recycler that would coordinate pick-ups at each location on a single route (referred to as a “milk run”). This option would be ideal for municipalities that are not expected to generate enough mattresses to fill a larger container often.

One Day Collection Event – similar to a one-day household hazardous waste (HHW) collection event, a municipality could contract with a mattress recycler to drop a container at a temporary location and collect mattresses from residents during a special one-day event, or a few specific days throughout the year. Fees may be charged or a municipality may choose to cover the cost of

recycling the mattresses. Placing a limit on the number of mattresses accepted per person is also an option.

Acceptance Criteria

If your municipality chooses to collect mattresses from residents at a drop-off site, that site should be attended by staff who are trained to examine incoming mattresses and box springs to determine their suitability for recycling. Items that don't meet the acceptance criteria may be disposed of as trash without being non-compliant with the waste ban.

If mattresses are to be collected at the curb, the municipality will need to have an arrangement with the vendor picking up the mattress as to what protocol should be followed in the event that a resident leaves an unacceptable item. For example, the vendor can leave the mattress at the curb and notify the municipality for trash pickup; or the vendor can accept the unsuitable mattress and take care of disposal themselves, in which instance they are likely to issue a surcharge. Some municipalities and vendors, require that residents place their mattress in a plastic bag before leaving it on the curb. This helps to keep the mattress clean and dry in the event of rain or snow.

Under the waste ban regulation, municipalities must ensure that mattresses are separated from trash and are stored in a dry location to ensure they remain suitable for recycling. Mattresses that are deemed unsuitable for recycling (and therefore may not be sent to mattress recyclers) include:

- Excessively torn, punctured, soiled or moldy items
- Twisted or crushed mattresses or broken box springs
- Wet or frozen mattresses or box springs
- Mattresses or box springs infested with bed bugs or other pests
- Futon mattresses, fold-out sofa beds
- Mattress pads or toppers
- Infant sleeping pads; air or water beds; any other furniture or textiles

If a municipality receives mattresses that are not recyclable because they are wet, moldy, or infested with bed bugs (*note: this is typically a very small percentage of mattresses*), the municipality should document and track the number of mattresses, the condition of each and how they have been stored and managed to prevent contamination. For example, it is not acceptable to store mattresses uncovered outside and then send them for disposal because they are wet. This, along with any intentional contamination of waste ban materials, would be considered a violation of MassDEP's waste ban regulations. However, as long as materials are stored and managed properly and this documentation is maintained and provided to MassDEP upon request, unrecyclable mattresses can be sent for disposal without requiring a MassDEP waste ban waiver.



Mattresses that are slightly discolored or worn mattresses that are not wet are acceptable. The mattress recycling vendor may refuse to take the unacceptable items at pick-up. If unacceptable items are delivered to their facility, they may issue a surcharge to the municipality in order to cover the additional disposal costs. In the latter scenario, the recycling vendor should provide documentation to the municipality as to why the mattresses are unrecyclable and include photographs of the unacceptable item(s) received at the recycling facility.

Bed Bug Identification

The rate of encountering mattresses infested with bed bugs is extremely low; however, as a best practice collection facility staff should inspect incoming mattresses and box springs for evidence of bed bugs. Mattresses infested with bed bugs or other pests should not be accepted for recycling. Infested mattresses should be disposed of as solid waste. DO NOT include in the recycling collection program.

Bed bugs are small flat, oval shaped insects about the size of an apple seed (1/4"). They are tan to brown in color but may be reddish-brown as well. Young bed bugs (nymphs) are about the size of a sesame seed when they hatch. Bed bug eggs are tiny, white, and barrel shaped.



Look along tufts and corners of mattresses for clusters of small black spots or smeared black spots. In addition to insects, shed skins, eggs, and these smears (fecal spots) may be apparent on infested mattresses. Note that bed bugs ARE NOT harmful, and they do not transmit any disease. But just like anything municipal staff might encounter at a transfer station, it is a best practice to wear gloves and use proper hygiene.

Mattress Recycling Vendors

State Contract FAC90 provides mattress recycling services for any state agency, municipality, or political sub-division as defined in the contract. There are currently four vendors on this contract.

Services include mattress processing (aka recycling), transportation from a central collection site, regional “milk run” pick-ups, curbside collection, and one-time collection events. For more information, please see the User Guide for this contract at: <https://tinyurl.com/mattguid>. While it is likely that the state contract will be the best option, municipalities are not required to utilize state contracted vendors.

If a municipality wants to consider other mattress recyclers, one option is to search for recycling service providers for mattresses (or for any material) through the Recycling Works “Find a Recycler” tool at: <https://www.recyclingworksma.com>. Recycling Works is a free business assistance program run under contract to MassDEP by the Center for EcoTechnology (CET).

Collection Containers

The type of collection container will depend on the municipality. A municipality should take into consideration the size of the collection site, as well as the accessibility – both for residents to drop-off and for mattress recycling vendors to pick-up. Bottom line is that the mattresses sent for recycling need to be kept clean and dry

Closed-top Roll Off – roll-offs are one option for mattress collection and storage. They are ideal for municipalities that will be hauling their full container to a central collection site for aggregation or hauling directly to the mattress recycling facility.

Sea Container or Intermodal Container – for most municipalities with a fixed collection point, where a mattress vendor will unload the units into a trailer or box truck, a stationary container such as a sea container or intermodal container is the best option. These containers can also be used in situations where the vendor is picking up a full container and swapping it out with an empty one.



Transfer Trailer – in rare cases, a municipality may utilize a 48- or 53-foot transfer trailer. These trailers are a way to move a large number of mattresses to a distant mattress recycling facility. These units may also be used by mattress recycling vendors when picking up from a site where they expect to transport a large number of mattresses.

Other Options – for some municipalities, the above container options are not suitable – either because they do not have the space or because the number of mattresses collected is so few. An alternative collection container, such as a storage shed may be considered for this purpose. The main requirement is that it needs to keep the mattresses clean and dry and be easily accessible – both for residents dropping off their mattresses and for the vendors collecting them.

Mattress Collection and Storage Instructions

To maintain recyclability, mattresses and box springs must be protected from the elements and stay relatively clean and dry. Mattresses should be loaded into weatherproof containers or otherwise protected from the elements immediately upon acceptance. Do not compact, shred, or otherwise damage the mattresses. Note that shredding mattresses to recover metal and wood is not considered compliant with the waste bans. Mattresses should go to a mattress recycler that can recover all mattress components for recycling.

Municipal staff should provide oversight to keep unacceptable items out of collection containers. They should remove any non-approved materials from collection containers before sending the mattresses for recycling.

Loading Instructions

Municipalities should efficiently stack mattresses to maximize the number of pieces in each load hauled. For example, a 20-foot sea container or 40-yard roll off should be able to hold 40-50 mattresses. Mattress recyclers often require a minimum number of mattresses per load. They may surcharge a municipality that calls for a pick-up but has inefficiently loaded mattresses in the container, resulting in a smaller pick-up than the container is designed for.

The table below indicates the number of mattresses expected to fit in a variety of container sizes.

Container Type	Number of Mattress Pieces
20-foot sea container (40-yard roll-off)	40-50+
40-foot sea container	80-100+
48-foot trailer	110-180+
53-foot trailer	120-190+
Other container	Approximately 1 piece/cubic yard of capacity

An example of vertical mattress stacking in a container (below left); this method is preferred when residents will be stacking their own mattresses. However, it is less efficient than horizontal stacking when well executed, as (below right).



Tracking

Mattresses received at a collection site should be tracked as they come in. Recycling vendors may have their own tracking system, or a municipality may consider using the Bill of Lading (BOL) template created by MassDEP. This form should be used whenever a full load is sent to or picked up by the mattress recycler; retain a copy for your records and submit the original to the vendor. They will also count and confirm as they unload the mattresses at their facility and will reflect the final count on the invoice sent to the municipality. If the vendor rejects any mattresses as noted above, they should document the reasoning to the municipality and adjust the invoice as such. This ensures minimal discrepancies.

Hauling & Transportation

Municipalities should contact their mattress recycling vendor at least 48 hours in advance to schedule a pick-up, though some vendors may need as much advance notice as a week. As the program progresses, it will be easier to predict the approximate rate of collection and provide advance notice accordingly.

The mattress recycler will pick up the full container and drop an empty container at the same time OR off-load the mattresses from the municipal container into a box truck or trailer. The collection container should be readily accessible and full on the arranged collection day.

At the time of each haul, municipal staff should be available provide to the hauler the tracking sheet or Bill of Lading with the top portion completed, and the bottom portion to be completed by the recycling vendor when the load is accepted, and the count confirmed.

Estimating Mattress Generation

If you have data on mattress collection as a bulky waste from previous years, that is the best bet for estimating the number of residential mattresses generated in your municipality. If you do not

have previous data, a general guideline is to assume that 5% of the households served through the municipal program will generate one mattress each year. If all households in a municipality will ultimately have access to the program (e.g., multi-family units, apartments, or condos), an alternative is to estimate 4% of the total population will generate one mattress each year.

Once you have calculated the estimated number of pieces per year, you can calculate the number of hauls per year by dividing by 40 units for each haul. This is likely a conservative estimate as a 20-foot sea container can usually fit 40-50 mattresses and the larger containers can fit even more.

Fees

MassDEP recommends that municipalities set a fee that is appropriate to fund the program on an ongoing basis. Statewide, the average costs to the municipality for recycling a mattress is about \$25 to \$30 per piece – this is based on a vendor picking up a full container and hauling it to their facility. However, the fees range greatly depending on the distance to the facility and number of mattresses in each load. MassDEP has documented pricing of anywhere from \$15 to \$50 per mattress. Curbside collection fees would be an additional cost.

Many municipalities already charge residents a fee for disposal of bulky items including mattresses. Moving that fee from disposal to recycling will be an easier change. For municipalities that currently offer free bulky waste management, they may need to consider imposing a recycling fee. However, municipalities will often find that mattress recycling fees remain cost competitive or even lower than current surcharges at trash disposal facilities, which can exceed \$70.

In addition to charging their residents fees, municipalities may offset the costs of their mattress recycling program by utilizing Recycling Dividends Program (RDP) grant funds (<https://www.mass.gov/how-to/apply-for-smrp-recycling-dividends-program-funds>). All municipalities in Massachusetts are eligible for this grant, which is awarded through the Sustainable Materials Recovery Program (SMRP) on a yearly basis. Municipalities may accumulate the funds and carry them over year to year.

Additional Resources

State Contract FAC86 – Use this contract to access mattress transportation services with waste haulers. There are also options to purchase new and used collection containers or other equipment off of this contract. See: <https://www.mass.gov/doc/fac86/download>.

State Contract FAC90 – Use this contract to access pricing for a variety of mattress recycling services, including collection from a central drop-off location, regional milk run, curbside collection, and one-day collection events. Container rentals are included on this contract as well.

Though off-contract, some mattress recycling vendors will sell 20-foot sea containers to their municipal customers. See <https://www.mass.gov/doc/fac90designateddep/download>.

State Contract FAC113 – Use this contract to access pricing for 30- and 40-foot roll offs available from Waste Equip. See: <https://www.mass.gov/doc/fac113designateddep/download>.

SMRP Grant Mattress Recycling Incentive – The Mattress Recycling Incentive (MRI) grant awards up to \$10,000 for municipalities to purchase a dedicated mattress collection container. See: <https://www.mass.gov/doc/details-mattress-recycling-incentive-program/download>.

RDP Approved Spending List – Costs related to mattress recycling (including processing and transportation) are pre-approved for municipal spending under the Recycling Dividends Program (RDP). RDP funds accumulate over time and may be rolled over into subsequent years. See <https://www.mass.gov/doc/rdp-small-scale-initiative-approved-spending-categories/download>.

Recycling Works “Find a Recycler” Tool – Visit this website when looking for private haulers to collect mattresses. The list includes mattress recyclers (both those on FAC90 and others), junk haulers, and other waste haulers. See <https://recyclingworksma.com/>.

Beyond the Bin Recycling Directory – This website includes donation and reuse options for mattresses in excellent or very good condition. Residents should be advised to always call the donation facility before dropping off a mattress. See <https://recyclesearch.com/profile/ma>.

Additional Guidance on Waste Disposal Bans – This web page includes more guidance on the waste disposal bans. See <https://www.mass.gov/guides/massdep-waste-disposal-bans#-generator,-hauler-&-municipal-compliance-assistance->.