

# State of New Hampshire

GENERAL COURT

CONCORD

## MEMORANDUM

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**DATE:** November 1, 2023

**TO:** Honorable Christopher T. Sununu, Governor  
Honorable Sherman Packard, Speaker of the House  
Honorable Jeb Bradley, President of the Senate  
Honorable Paul C. Smith, House Clerk  
Honorable Tammy L. Wright, Senate Clerk  
Michael York, State Librarian

**FROM:** Senator Kevin Avard, Chair

**SUBJECT:** Final Report of the Committee to Study Unlimited Service Area Permits for Landfills and Out of State Waste Coming Into New Hampshire (SB 159, Chapter 100:1, Laws of 2023)

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Pursuant to SB 159, Chapter 100:1, Laws of 2023, please find enclosed the final report of the Committee to Study Unlimited Service Area Permits for Landfills and Out of State Waste Coming into New Hampshire.

I would like to thank the members of the committee who were instrumental in this study. I would also like to acknowledge all those who testified before the committee and assisted the committee in our study.

Respectfully,

Senator Kevin Avard

*Enclosed: final report, meeting minutes, documents received.*

PDM

# **Committee to Study Unlimited Service Area Permits for Landfills and Out of State Waste Coming Into New Hampshire**

*SB 159, Chapter 100:1, Laws of 2023*

## **FINAL REPORT**

### **Charge of Committee**

**100:3 Duties:** The Committee shall study unlimited service area permits for landfills and out of state waste coming into New Hampshire.

### **Meetings**

**August 16<sup>th</sup>, 2023** – Organizational Meeting, LOB 305-307

*Meeting comprised of introductions, establishment of stakeholder contacts, and election of Chairman Senator Kevin Avar.*

**August 31<sup>st</sup>, 2023** – Regular Meeting, LOB 305-307

*Director Mike Wimsatt and Ms. Leah McKenna of the Waste Management Division of N.H DES appeared before the committee.*

**September 14<sup>th</sup>, 2023** – Regular Meeting, LOB 101

*Senior Assistant Attorney General K. Allen Brooks, Chief of the Environmental Protection Bureau, appeared before the committee.*

*Attorney Robert L. Best and Mr. Paul Schmidt, representatives for the Mt. Carberry Landfill, appeared before the committee.*

**October 5<sup>th</sup>, 2023** – Regular Meeting, LOB 101

*Representatives Karen Ebel and Judy Aron of the Solid Waste Working Group appeared before the committee.*

*Director Mike Wimsatt and Ms. Leah McKenna of the Waste Management Division of N.H DES appeared before the committee.*

**October 24<sup>th</sup>, 2023** – Regular Meeting, LOB 101

*Final discussion, recommendations, and review of draft report.*

**October 30<sup>th</sup>, 2023** – Regular Meeting, LOB 101

*Final Report reviewed and approved.*

## Findings

The Committee finds that:

- The Solid Waste Working Group's (SWWG) initial report from November of 2022 revealed that out of the 1.9m tons of solid waste in New Hampshire, 47%; or 913,833 tons, were from out-of-state sources in 2020.
- There are six double lined MSW landfills in New Hampshire which are currently operational.
- Half of New Hampshire's landfills have limited-service areas; North Country Environmental Services in Bethlehem, Mount Carberry Secure Landfill in Success, and the Turnkey Landfill in Rochester all have unlimited service areas.
- There is a paradoxical relationship between in-state waste reductions, and out-of-state waste reception. Unilateral refusal to utilize capacity enables further exploitation by others.
- According to the SWWG, discriminatory waste bans are largely non-existent. More implicit means are employed to reduce landfill utilization from external parties.
- The New Hampshire Department of Environmental Services (NHDES) cannot independently issue limited-service area permits for landfills. That is elective to the permit applicant.
- State-owned landfills in neighboring states, namely Rhode Island, act as market participants and exclusively receive in-state waste.
- If the role of market participant is assumed, as opposed to market regulator, the State may avoid complications with the interstate commerce clause. As a participant, the State may choose business partners akin to a private enterprise.
- Broad, materially based bans are non-discriminatory and do not violate the interstate commerce clause of the U.S Constitution.
- According to the Senior Assistant Attorney General, K. Allen Brooks, a non-discriminatory policy which affects interstate commerce evenly among states is non-conflicting with the interstate commerce clause of the U.S Constitution. The issue of non-compliance is only relevant to discriminatory actions, or actions in which the burden imposed is excessive compared to the local putative benefit.
- NHDES estimated the average municipal recycling rate to be 26% in 2020.
- Viability for recycling is largely dependent on market demand. Feasibility may be influenced by geography, regional logistical capabilities, the availability of suitable infrastructure and labor, and importantly, the volume and quantity of end-product. Revenues must surpass overhead costs for any viability.
- New Hampshire has one incinerator online: 20% of all waste, and 10% of landfill waste is incinerated at Penacook.
- Incineration can reduce solid waste to 1/3 of its initial mass.

## Recommendations

- 1.) The Committee to Study Unlimited Service Area Permits for Landfills and Out of State Waste Coming into New Hampshire recommends that a State-Owned Landfill be established.
- 2.) The Committee determined that said State-Owned Landfill should incorporate, in its operation, advanced recycling, incineration and a desalinization process.
- 3.) The Committee suggests the employment of incineration for the purposes of energy generation and waste reduction. The incineration plant will serve as an energy supplier for the desalinization system and its municipal hosts.
- 4.) Given the Committee's recommendations, the Committee also endorses Representative Peter Bixby's LSR 24-2131 for passage and adoption. Representative Bixby's legislation is enabling, and reflective of the Committee's recommendations.
  - o LSR 24-2131 would prohibit future landfills from being privately owned.
- 5.) Further, the Committee recommends that a moratorium be considered against the construction of new landfills. A moratorium may afford ample time for litigation, and completion of prerequisite, antecedent steps which must be taken to accommodate the new solid waste stream model and management plan.
- 6.) Finally, the State of New Hampshire ought to limit the amount of out-of-state waste as a proportion of in-state waste. The regime specifically must be in accordance with the criteria delineated by Mr. K. Allen Brooks to mitigate legal liabilities as they relate to the Interstate Commerce Clause.

Respectfully submitted,

*Sen. Kevin Avard (PDM)*

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Senator Kevin Avard  
Chairman, Senate District 12

*Rep. Jim Fedolfi (PDM)*

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Representative Jim Fedolfi  
Hillsborough County, District 30

*Rep. David Rochefort (PDM)*

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Representative David Rochefort  
Grafton County, District 1

*Rep. Nicholas Germana (PDM)*

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Representative Nicholas Germana  
Cheshire County, District 1

## Committee to Study Unlimited Service Area Permits for Landfills and Out of State Waste Coming Into New Hampshire

***\*\*\*Meeting Minutes – 8/16/23\*\*\****

### **Organizational Meeting:**

**LOB 305-307**

**Wednesday, August 16, 2023 – 9:30 am**

- All members of the committee were present.

### **Introduction of Committee Members:**

- Meeting began with members introducing themselves.
  - o Representative James Fedolfi introduced himself.
    - Rep. Fedolfi began by stating that he represents Hillsborough County 30.
    - Rep. Fedolfi said that New Hampshire cannot continue burying trash as a lot of the state is wetlands.
    - Rep. Fedolfi stated that in his ideal world, New Hampshire would not continue to bury any trash.
    - Rep. Fedolfi claimed that 54% of the waste in New Hampshire landfills is from other states.
    - Rep. Fedolfi recounted a story where his neighbor ran into issues during an excavation project that enforced his claim, that there is no good technology to determine where water is underground.
  - o Representative David Rochefort introduced himself.
    - Rep. Rochefort stated that he lives in Littleton.
    - Rep. Rochefort stated that he represents Grafton County 1.
    - Rep. Rochefort said that the topic of landfills and waste disposal is an interest to him, and a large concern of his constituents.
    - Rep. Rochefort stated that his goal for this committee is to be objective and collect as much information as possible from the stakeholders.
    - Rep. Rochefort said that as they are elected officials, the committee members are stewards of the environment.
  - o Representative Nicholas Germana introduced himself.
    - Rep. Germana stated that he represents Cheshire County 1.

- Rep. Germana stated that he is a member of the House Environment and Agriculture Committee.
- Rep. Germana said that he is a History Professor at Keene State College, and his specialty is in German History.
- Rep. Germana recounted how East Germany imported surrounding countries trash to strengthen their economy.
  - Rep. Germana added that he does not want to see New Hampshire become the East Germany of the Northeast.
- Senator Kevin Avard introduced himself.
  - Sen. Avard stated that he represents New Hampshire Senate District 12.
  - Sen. Avard stated that he is the chair of the Senate Energy and Natural Resources Committee.
  - Sen. Avard stated that he wants a clean state.
  - Sen. Avard stated that he would like the committee to make conclusions based on the facts presented and not outside forces.

#### **Chair of Committee Election:**

- Sen. Avard was elected chair of the committee.
  - Rep. Fedolfi nominated Sen. Avard.
  - Rep. Germana seconded the motion.
  - The committee voted unanimously to elect Sen. Avard as chair.

#### **Overview of Committee Duties as Established in the Legislation:**

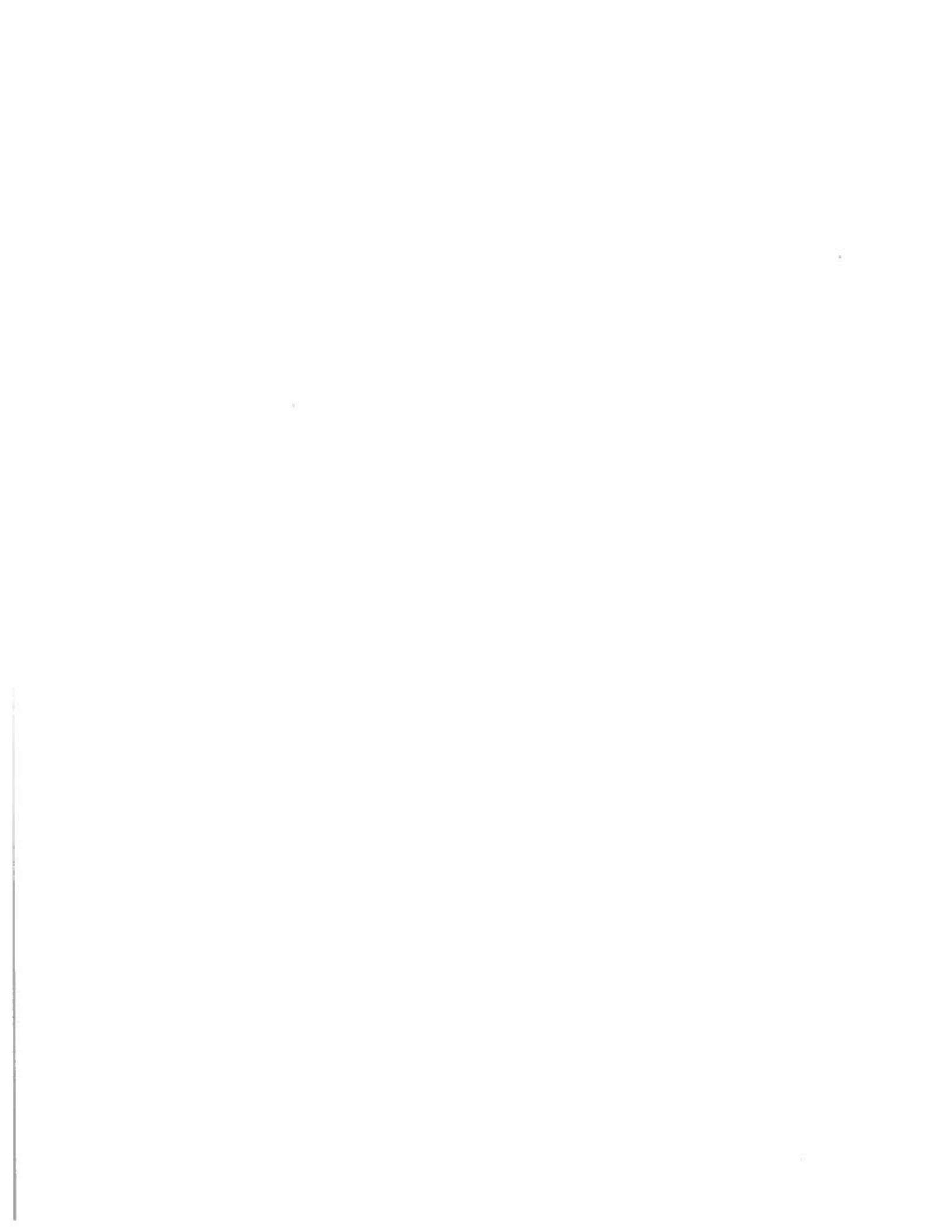
- Sen. Avard and the committee members read the enabling legislation – 2023 Senate Bill 159-FN
- Committee members brainstormed stakeholders and the questions they would like to ask, to further their understanding of the study committee's subject.
  - **Stakeholders:**
    - Representatives from the Department of Environmental Services – Waste Management Division
    - The Attorney General or a representative from the office
    - A Hydrologist
    - Solid Waste Working Group
    - Representatives from active New Hampshire Landfills
  - **Proposed Questions:**
    - Do trash collectors have to register with the state – and if so, a list of trash collectors?
    - How the Interstate Commerce Clause governs contracts concerning the importation of trash into New Hampshire landfills?
    - If the state owned the land that landfills are on, is that a way to stop out of state waste?
    - How do other states dictate and govern landfills?

- What is the lifespan of the current landfills in New Hampshire?
- What is the current technology to find water underground and how accurate is it?
- What is the difference between unlimited and limited-service area permits?
- How does a municipally owned landfill differ from a privately owned landfill?
  - How many of each are in the state?
- Information on the activities of the Manchester landfill and related data.
- An in-depth analysis of tipping fees and how they can be used to generate more revenue to fund recycling and other environmentally friendly facilities.
  - And the background of tipping fees – how other states utilize them.
- Information on desalination plants.
  - The logistics and their usefulness.
- The location of New Hampshire’s landfills and if any of them incinerate trash.
- **Notes and Remarks:**
  - Rep. Fedolfi mentioned that he believes the House Environment and Agriculture Committee should also study this subject.
  - Sen. Avard proposed that the Department of Environmental Services be invited to the next meeting to answer committee member’s questions.
    - The committee unanimously agreed.

**Future Meeting Dates:**

- The committee members agreed that Thursdays are the ideal day of the week for committee meetings.
- **Confirmed Dates and invited speakers:**
  - Thursday, August 31<sup>st</sup> – 10 am
    - Representatives from DES to answer questions.
  - Thursday, September 14<sup>th</sup> – 10 am
    - Committee members will decide at the previous meeting who they would like to invite.

**\*Meeting was adjourned\***





# **Committee to Study Unlimited Service Area Permits for Landfills and Out of State Waste Coming Into New Hampshire**

***\*\*\*Meeting Minutes – 8/31/23\*\*\****

## **Regular Meeting:**

**LOB 305-307**

**Thursday, August 31, 2023 – 10:00 am**

## **Introduction of Committee Members:**

- All members of the committee were present.

## **Review and Approval of Minutes from previous meeting:**

- Minutes for the 8/16/23 meeting were approved by the committee members.

## **Welcome and Introduction of Guests:**

- Leah McKenna and Mike Wimsatt – Department of Environmental Services (DES) – Waste Management Division

## **Discussion with Guests:**

- Representatives from DES provided the committee with a spreadsheet detailing the landfills in New Hampshire and their relevant information.
- Mr. Wimsatt explained that there are six landfills in New Hampshire.
  - o Three landfills are public.
  - o Three landfills are private.
- Senator Avard asked if it was correct that the landfill located in Bethlehem, New Hampshire, has three and a half years left on their permit.
  - o Mr. Wimsatt confirmed that that is the correct duration of the current permit.
- Senator Avard asked DES to explain the timeframe of a landfill application.
  - o Mr. Wimsatt stated that typically the application process is around a year.
  - o Mr. Wimsatt stated that a correctly filed application may take around 120 days to be approved.
  - o Mr. Wimsatt stated that an application fee is based on the capacity being requested.

- An average sized landfill will typically require a \$50,000 application fee.
- Representative Germana asked if there is a way to find out how much out of state trash is received by New Hampshire landfills.
  - Mr. Wimsatt stated that it is up to the landfill for how much out of state waste they accept.
    - This is because the landfill is the market participant so they can determine what they choose what to take.
- Representative Fedolfi asked how accepting out of state waste affects the longevity of our state's landfills.
  - Mr. Wimsatt stated that under its current permit, the Bethlehem landfill is allowed to operate until 2026.
- Mr. Wimsatt explained that one factor that limits a landfills ability to expand are the municipal where it's located zoning restrictions.
  - The Rochester landfill has the availability to expand and is permitted until 2034 under its current permit.
- Mr. Wimsatt explained that landfill is only allowed to accept a certain amount of waste each year, which is detailed in the permit.
  - During the permitting process, landfills must demonstrate that they will meet the "Public Benefit" requirement.
- Mr. Wimsatt stated that the Rochester Landfill accepts 50% of its waste from out of state and 50% of it's waste from in state.
- Mr. Wimsatt stated that the Nashua and Mt. Washington Landfills only accept in state waste.
  - Nashua only accepts waste from Nashua.
  - The Lebanon Landfill has a limited-service area permit and accepts waste from New Hampshire towns and nearby Vermont towns.
- Senator Avard asked DES to explain how the Nashua landfills is allowed to only accept waste from Nasua.
  - Mr. Wimsatt explained the city of Nashua owns and runs the landfills, which makes them the market participant. And as the market participant they are allowed to choose where they accept waste from.
    - The city of Nasua uses the landfill to mange the cities waste and not generate a revenue.
- Senator Avard asked if a municipal changed its zoning rules, would that affect a landfills capability.
  - Mr. Wimsatt responded that that would be a municipal issue.
- Representative Rochefort asked for clarification when talking about a landfill's life expectancy.
  - Mr. Wimsatt clarified that when talking about landfill life expectancy, they are talking about the landfill's permit and not the longevity of the landfill.
  - Mr. Wimsatt added that they do not compel applicants to detail plans for expansion but most usually do.
- Representative Rochefort asked if the Mt. Carberry landfill is only viable for 20 more years.
  - Mr. Wimsatt stated that DES can only speak to what was on the permit application.
- Representative Fedolfi asked if it is true that the city of Manchester accepts medical waste from Massachusetts and incinerates it.

- Mr. Wimsatt replied that, that is untrue, and DES does not have any knowledge or evidence of that occurring in Manchester.
- Ms. McKenna stated that she will share with the committee a list of licensed trash haulers in the state, she estimated that there are around 160 members.
  - Ms. McKenna added that the statute governing trash hauling registration is RSA 149-M:29.
- Representative Germana asked what controls there are to regulate the kinds of waste that is accepted.
  - Ms. McKenna stated that it is up to the landfill, but they can only accept waste that was listed on their permit application.
- Representative Fedolfi asked who reviews the permit application.
  - Ms. McKenna stated that DES denies or approves landfill applications.
- Representative Fedolfi asked if a landfill permit takes into consideration the ground water that could potentially be affected.
  - Mr. Wimsatt confirmed that potential ground water contamination is certainly considered, and that New Hampshire has very specific citing criteria.
    - The approval process also considers wetland setbacks and residential boundaries.
    - Hydrologists and geologists conduct ground and water studies throughout the approval process and continue to monitor landfill locations during their operation.
    - DES also has strict design requirements, the department follows the EPA's guidelines for hazardous waste management.
      - A double lined liner with leachate protection is required for every landfill.
      - Leachate must be pumped offsite.
      - A network of wells are monitored to look for ground water contamination.
      - Background ground water quality is pulled to compare to ground water tests post landfill construction and operation.
  - Mr. Wimsatt explained that if there is ground water contamination and a liner has a leak, then an investigation is triggered which involves strict and frequent monitoring – requires the facility to remedy the issue – all leaks to be fixed – if the landfill is near capacity, then it must be capped and vacated so that contaminants do not spread.
  - Representative Fedolfi asked if landfills accept burnt waste.
    - Mr. Wimsatt replied that landfills should only be accepting raw materials.
      - The ash produced by the one incinerator in the state is transported and disposed of in a landfill in Massachusetts.
      - The state's only incinerator is located in Penacook, New Hampshire.
  - Senator Avard asked how much waste our state exports to surrounding states.
    - Mr. Wimsatt replied that NH exports about 10% of our waste.
  - Representative Germana asked if DES is currently re-writing the setback rules since they are around 30 years old.

- Mr. Wimsatt confirmed that DES is currently in the process of evaluating and updating their set-back requirements.
- Senator Avard asked if it is in DES's purview to update their rules or would that require legislation.
  - Mr. Wimsatt stated that DES is allowed to update their rules as long as it does not contradict any current laws.
- Senator Avard asked DES to explain the current distance required in the set-back requirements.
  - Mr. Wimsatt replied that the current updating process is taking into effective set-back distances into account, and that protecting ground water is a major priority for DES.
- Representative Germana stated that he sits on the House Environment and Agriculture Committee, and they plan to introduce legislation that would dictate new set-back requirements.
  - Mr. Wimsatt replied that he only came prepared today to answer the committee's questions that were sent to him beforehand.
- Representative Fedolfi asked if the incinerator in NH has air scrubbers to combat air pollution.
  - Mr. Wimsatt replied that the facility is required to follow air pollution standards.

*--- DES began answering the committee members questions sent to them prior to this meeting ---*

**Representative Rochefort's questions:**

**Question 1:** Does the unlimited dumping of out of state trash put pressure on the state's ability to achieve these goals? - The goals established in the 2020-2021 Biennial Solid Waste Report

- Mr. Wimsatt stated that DES would work with the Legislature to advance policy to reduce waste.
  - This would primarily only concern in-state waste.
  - Massachusetts and New York have begun making arrangements to send their waste to landfills in Ohio.
  - The current demand for our landfills makes it harder to meet the states waste reduction goals.
  - The current goal only concerns certain kinds of waste – automobile scrap, infectious waste, asbestos waste, ash, sludge, and contaminated soil are all excluded from the state's waste reduction goals.

**Question 2:** What affect would removing the last line below have towards achieving the goal. If there was a "mandate" would NH have more ability to regulate out of state trash?

- Mr. Wimsatt stated that if the goal's language was changed to be more directive, it could work.
  - Mr. Wimsatt added that he is unsure however that a language change would increase our chances of meeting our waste reduction goals.
- Mr. Wimsatt stated that the Legislature could introduce legislation to regulate landfill capacity, but they could run into issues wit the Interstate Commerce Clause.

**Question 3:** In the permitting/approval process, are there limits or conditions that can be added to the permit? Also, are you aware of any states that limit the type of solid waste imported?

- Mr. Wimsatt confirmed that statutes governing DES allow them to impose criteria on landfills to ensure they work to meet the public benefit requirement.
- Mr. Wimsatt added that he is unaware of any state that entirely bans out of state waste from its landfills.

**Question 4:** In the permitting process, how is public benefit determined?

- Mr. Wimsatt stated that DES looks at the relevant statutes to determine public benefit.
  - o During the design approval process is when the applicant's plans are compared to the relevant statutes – RSA 149-M: 11
- Mr. Wimsatt listed the hierarchy of technology that is used to manage waste.
- Mr. Wimsatt mentioned the solid waste management plan that outlines 10-15 key goals and 70-80 actions to achieve these goals.
- Mr. Wimsatt added that due to ongoing cases before the NH Supreme Court, he is unable to talk about the shortfalls for permitted facilities if any of have been determined.

**Question 5:** Is it possible to limit the service area of landfills through permitting? If so, how would that work?

- Mr. Wimsatt replied that DES does issue limited-service area permits.
- Mr. Wimsatt added that DES cannot unilaterally make a decision like that.

#### **Representative Germana's questions:**

**Question 1:** How do NH rules regarding out-of-state trash compare with the states around us?

- Mr. Wimsatt stated that Ms. McKenna would provide links to what other states do to the committee.
  - o Rhode Island has one landfill that is state owned.
    - This facility only accepts in state waste.
  - o Vermont has one facility that is privately owned by Casella.
    - Vermont has a law that requires anyone disposing of waste to meet their solid waste goals, and they must have a state approved dumping plan – which applies to in-state and out of state.
  - o Maine has a state-owned facility – they contract out their operations to Casella.

**Question 2:** How common, at least in the states around us, is it for the state or municipalities to own the land on which landfills are sited? How does state/municipal ownership affect limitations that can be placed on trash brought in from other states?

- Mr. Wimsatt stated that he believes that he has already answered this question.
- Mr. Wimsatt stated that the land has to be owned by the applicant and the land cannot be leased.

**Question 3:** Even with our current model of private ownership of the land, are we able to exclude certain kinds of materials (I assume we are, e.g., toxic waste)? The Interstate Commerce Cause (ICC) prevents us from just excluding all out-of-state trash, but I don't think that means there can't be limitations.

- Mr. Wimsatt stated that almost anything can be banned from our landfills as long as it applies to in-state and out of state waste.

*--- The committee began asking questions based on the information that was just presented ---*

- Representative Germana asked if New Hampshire was the owner of all the in-state landfills, would that allow the state to impose waste exclusions.
  - o Mr. Wimsatt replied that if the state owned the landfills and contracted out their operations, then they would be allowed to pick their customers since they would be the market participant.
- Representative Germana asked why we exclude certain forms of waste excluded from the waste reduction calculation.
  - o Mr. Wimsatt explained that when the Legislature was drafting these goals, they heard from stakeholders who were concerned that certain forms of waste have no other kind of management so they should not count to out waste reduction goals.
    - DES was not the stakeholder who asked for these exclusions.
- Representative Rochefort stated that even if we met the waste reduction goals, we are not taking out of state waste into that calculation.
  - o Mr. Wimsatt stated that this is not true, a facility can determine how much waste they take in.
- Representative Rochefort asked if DES could tell a facility where to bring its waste.
  - o Mr. Wimsatt replied that DES does not have the authority to tell facilities where to take the waste.
- Representative Rochefort asked if the Legislature could develop a rule concerning landfill capacity.
  - o Mr. Wimsatt confirmed that, that is in the purview of the Legislature.

**Set Future Meeting Dates:**

- The committee decided to meet again on Thursday, September 14<sup>th</sup> at 10 am.
  - o The committee invited a representative from the Attorney General's office and representatives from some landfills to answer the committee members' questions.

**\*Meeting was adjourned\***

# **Committee to Study Unlimited Service Area Permits for Landfills and Out of State Waste Coming Into New Hampshire**

**\*\*\*Meeting Minutes – 9/14/23\*\*\***

## **Regular Meeting:**

**LOB 101**

**Thursday, September 14th, 2023 – 10:00 am**

## **Introduction of Committee Members:**

- All members of the committee were present.

## **Review and Approval of Minutes from previous meeting:**

- Minutes for the 8/31/23 meeting were approved by the committee members.

## **Welcome and Introduction of Guests:**

- Senior Assistant Attorney General, K. Allen Brooks - Chief, Environmental Protection Bureau
- Attorney Robert L. Best and Paul Schmidt – Representatives for the Mt. Carberry Landfill

## **Discussion with Guests:**

**Questions with Senior Assistant General, K. Allen Brooks.**

- The committee wanted to know of any exceptions to the Intertstate Commerce Clause.
  - o Mr. Brooks stated that there are no cases that are an exception to the ICC.
  - o Mr. Brooks stated that any legislation affecting interstate commerce passed by the legislature, will be scrutinized under the ICC.
  - o Mr. Brooks added that the ICC has a high level of scrutiny as it is a tool applied in our Constitution which grants Congress the power 'to Regulate Commerce with Foreign Nations and among the states'.
  - o Mr. Brooks noted that it is hard to pass a law that treats things that are out of state differently then in state.
  - o Mr. Brooks said that if the state owned the landfill and they are the market participant, then the state can decide what is accepted into its landfills.
- The committee wanted to know if New Hampshire can ban certain types of trash.

- Mr. Brooks stated that a ban has to be applied evenly to out of state and instate trash.
- Mr. Brooks stated that only banning certain kinds of out of state trash would be a high standard of scrutiny to overcome.
- The committee wanted to know if Massachusetts can ban certain kinds of trash, can New Hampshire do the same?
  - Mr. Brooks stated that he is not an expert on Massachusetts law, but he would be happy to look into that subject if the committee would like him to.
  - Mr. Brooks added that if Massachusetts was able to ban a certain kind of trash then he doesn't see why New Hampshire wouldn't be able to as well.
- The committee asked if Mr. Brooks was aware of any states that have been creative in how they manage waste.
  - Mr. Brooks said that Vermont for example is different geographically compared to our state, so they have to be creative with the developable land that they have.
  - Mr. Brooks reiterated that he is not an expert on other state's waste management laws.
- The committee asked Mr. Brooks what exactly the Interstate Commerce Clause prohibits.
  - Mr. Brooks stated that the ICC provides the Federal Government with the power to regulate interstate commerce.
  - Mr. Brooks added that states are still allowed to regulate their own commerce as long as it does not create an un-even playing field.
  - Mr. Brooks noted that there is no complete and absolute what you can and cannot do, any law you pass will be tested against an applicable level of scrutiny.
- The committee asked if there is a legal way to stop out of state trash from being disposed of in New Hampshire.
  - Mr. Brooks stated that any proposed law attempting to control the flow of trash whether in state or out of state, would have to show that there is a sufficient balance between protecting the instate resources versus the burden being placed on out of state businesses who rely on New Hampshire to dump their trash.

Committee questions with Senior Assistant General, K. Allen Brooks.

- Representative Fedolfi asked if the state were to take over ownership of all the landfills when their permit runs out, would that be a way for the state to control the flow of trash?
  - Mr. Brooks explained that New Hampshire has a lot of open space surrounded by states who have big populations, which is why New Hampshire is the location for other states to send some of their waste.
  - Mr. Brooks reminded the committee that the ICC creates a level playing field for in state and out of state businesses.
- Representative Germana stated that the committee has heard that when a landfill application is proposed, they must show the proposed landfill satisfies the public good benefit.
  - Mr. Brooks stated that if real world independent facts justify what an operation is doing and how they conduct business then there shouldn't be a problem.
- Representative Rochefort asked if the ICC applied across the board in creating a level playing field, then how can an out of state hunting license cost more than an instate hunting license.
  - Mr. Brooks stated that the price difference is justified by the burden felt on the in-state resources that are being taken away.



- Mr. Brooks added that there is a greater burden placed on New Hampshire than the out of state hunter who has to pay a larger fee.
- Representative Rochefort asked Mr. Brooks to explain what the greater burden would be.
  - Mr. Brooks explained that an out of state hunter doesn't pay New Hampshire taxes as an in-state hunter does, and as a taxpayer, they essentially pay for and own their state's resources which include the wildlife. So, an out of state hunter is paying a greater fee for the opportunity to hunt an animal that they do not have a vested interest in.
- Senator Avard posed the example, if the state said they were going to eliminate privately owned landfills, what would the outcome look like?
  - Mr. Brooks began first by stating he is going to refrain from saying anything is legal or illegal, as he does not want to look like he is providing legal advice to the committee.
  - Mr. Brooks stated that Senator Avard's example would fall under a taking problem, where the government takes a privately owned plot of land for governmental use. The DOT does this all the time.
  - Mr. Brooks added that if a state-owned landfill were to be created then certain kinds of waste or where it is accepted from would not be an issue.
- Senator Avard asked if Mr. Brooks was talking about eminent domain.
  - Mr. Brooks confirmed that he is talking about eminent domain.
- Representative Fedolfi asked if the state were to acquire a landfill that had environmental issues, who would inherit the responsibility to deal with these issues.
  - Mr. Brooks confirmed that the state would inherit these issues.
- Representative Germana asked if an applicant is seeking renewal for their permit, and the rules governing their landfill have been updated, would they be subject to the new rules or be grandfathered in?
  - Mr. Brooks replied that the committee should speak with their general counsel and look into vesting.
- Representative Germana asked if new rules were implemented, could an entity sue on the basis that they are vested in the original plans?
  - Mr. Brooks replied that the question is what risk you are undertaking by introducing new rules, and how that will be weighed against the people who are vested in future opportunities.

#### Questions with Attorney Robert Best and Paul Schmidt

- Attorney Best and Mr. Schmidt introduced themselves.
  - Robert Best is an attorney and represents AVRRD
  - Paul Schmidt is a consultant engineer for the district.
- The guests provided an overview of the Mt. Carberry Landfill and its operations.
  - Mt. Carberry was constructed as a double lined landfill in 1989.
  - It sits on 67 acres.
  - Has an operational life of until 2027 under the current permit.
  - Uses sand and wood chips as a buffer.
  - Uses automobile fluff and shredded residue as a cover that is imported from Massachusetts.

- In 2022 the trash collected was 85% from NH, less than 3% from VT, and 12% from ME
  - 2023 – VT is up to 4%
  - In 2022 – 16 municipalities contracted with Mt. Carberry for waste management.
  - The waste they take is a mix of residential, industrial and commercial waste allowed under the permit.
  - Private haulers are the main way waste is transported to the facility; haulers are required to say where the waste originated from.
  - Also accepts special wastes like paper mill waste, asbestos, waste water treatment sludge, contaminated soils.
- The landfill is municipally owned and permitted as an unlimited service area.
  - The current permit states that they can only utilize the space a certain number of cubic yards per year.
  - There is a three-year running average for the amount of total waste they can accept.
- Mr. Schmidt stated that he has been with the landfill for 15 years.
- The landfill serves the Androscoggin Valley
- Mr. Schmidt stated that the district owns the recycling facility and the landfill.
  - These two operations joined together to manage the district's solid waste.
- Mt. Carberry when it was created was privately owned and built to manage the waste from the surrounding pulp and paper mills.

Committee members posed questions to Attorney Best and Paul Schmidt

- Representative Germana referred to the 2020-2021 Solid Waste Report – why is there an increase of waste being dumped in our landfills between 2018 and 2020, specifically why is there an increase in contaminated soil being disposed of.
  - Mr. Schmidt replied that there is only limited option to dispose of soil in the state, so with more operations having to remove soil, that is why the numbers may have risen.
- Representative Germana asked if surrounding states limiting what can be disposed of in their landfills, would lead to the increase of landfill activity in NH.
  - Mr. Schmidt replied that Mt. Carberry only accepts certain kinds of contaminated soils, for example soil that has been affected from a petroleum spill.
- Senator Avard asked if it would be helpful if New Hampshire had more recycling facilities for oils and related materials.
  - Mr. Schmidt replied that some contaminated soil can actually be used as a landfill cover.
- Senator Avard asked if there would be a benefit in allowing more contaminated soil into NH to be used as landfill covers.
  - Mr. Schmidt replied that having more options for a cover would be a benefit.
- Senator Avard asked if Mt. Carberry has had any issues with PFAS contamination.
  - Mr. Schmidt replied that PFAS is in a lot of household products, and it is hard to segregate it.
  - Mr. Schmidt added that they measure the leachate's PFAS levels.

- Representative Rochefort recounted when he visited Mt. Carberry and asked how many acres the facility owns.
  - o Mr. Schmidt stated that the facility owns over 4,000 acres, but there are some residential and commercial zoning limitations and conservation limitations.
- Representative Rochefort asked if the fluff they use, is counted into the waste totals.
  - o Mr. Schmidt confirmed that it is counted in the calculations.
- Representative Rochefort asked if the mechanical fluff is the only waste that Mt. Carberry accepts from Massachusetts.
  - o Mr. Schmidt confirmed that, that is the only material Mt. Carberry accepts from Massachusetts.
- Representative Fedolfi asked who owns Mt. Carberry.
  - o Attorney Best replied that 10 municipalities all came together to own and operate the landfill.
  - o Attorney Best added that the landfill is not used to generate revenue, but to manage the districts waste and any additional revenue is used to offset costs and help with operations.
- Representative Fedolfi asked if Mt. Carberry burns any of its waste.
  - o Mr. Schmidt replied that they do not burn waste but accept waste from fires.
- Representative Fedolfi asked if Mt. Carberry accepts medical waste.
  - o Mr. Schmidt replied that they do not take regulated infectious waste, they only accept non-infectious waste from hospitals.
- Senator Avard asked how natural disasters affect the longevity and operations of a landfill.
  - o Mr. Schmidt said that to date, no natural disaster has significantly impacted the landfill, but it is always a possibility.
- Representative Germana asked if the Legislature were to ban all out of state waste, what would NH landfills use as buffers and covers.
  - o Mr. Schmidt stated that there are alternatives like using on site soil, there are alternatives, but they are more expensive.
- Representative Germana asked if banning out of state waste would increase the cost of operations.
  - o Mr. Schmidt confirmed that it would, as he is not aware of any NH facility that produces the fluff they import from MA.
- Senator Avard asked if it was viable to use the gas produced by landfills to power an incinerator plant or produce energy.
  - o Mr. Schmidt replied that waste energy plants are capital intensive and have significant challenges for siting facilities and their operations.
  - o Mr. Schmidt added that there has not been a new waste energy plant in New England for 20-30 years.

The committee invited Senior Assistant General, K. Allen Brooks back up for more questions.

- Representative Rochefort asked what the legal implications would be if the Legislature imposed stricter guidelines on out of state waste compared to instate waste.
  - o Mr. Brooks replied that any law passed would still have to pass a level of scrutiny.

- Mr. Brooks added that any law would be evaluated for the burden it places on out of state businesses versus the burden on in state resources and the state's benefit.
- Representative Rochefort stated that he sees stricter guidelines on out of state waste as an increase for the public benefit, and wouldn't the market adjust to new guidelines?
  - Mr. Brooks replied that he can see the financial benefit, but at the same time while there is an economic benefit for NH, there is an economic disadvantage for out of state businesses.
- Representative Germana asked if the Legislature were to impose a ban on certain kinds of substances, would that hold up in a court?
  - Mr. Brooks stated that banning anything for only out of state, is still discriminatory and will have to meet a higher threshold to hold up in a court.
- Mr. Brooks advised the committee to meet with the stakeholders and their general counsels and gather as many facts as possible before attempting to pass some legislation.

**Set Future Meeting Dates:**

- The committee decided to meet again on Thursday, October 5<sup>th</sup> at 10 am.
  - The committee invited representatives from the Solid Waste Working Group and from DES – Waste Management Division.

**\*Meeting was adjourned\***

# Committee to Study Unlimited Service Area Permits for Landfills and Out of State Waste Coming Into New Hampshire

## Meeting Minutes

Regular Meeting

Thursday, October 5<sup>th</sup>, 2023

L.O.B 101 – 10:00 a.m.

### **Introduction of Committee:**

- All Committee members were present.

### **Review and approval of prior meeting's minutes:**

- The minutes from 9/14 were reviewed and approved by the Committee.

### **Introduction of guests:**

- Representatives Karen Ebel & Judy Aron – *Solid Waste Working Group*
- Director Mike Wimsatt and Leah McKenna – *Waste Management Div. / N.H Dept. of Environmental Services*

### **Discussion with guests:**

#### **Solid Waste Working Group**

*Representative Karen Ebel was recognized by the Chairman, Senator Kevin Avard.*

- Rep. Ebel served as Chair of the Solid Waste Working Group (SWWG), the stakeholder group on solid waste.
- Rep. Ebel shared that she had sent over documentation yet had not prepared an official presentation.
- Rep. Ebel offered clarification on the group and what it did.

*Sen. Avard recognized Rep. Judy Aron, Chair of the House Environment and Agriculture Committee, and a member of the SWWG. Sen. Avard welcomed her to join Rep. Ebel at the stand.*

The Study Committee sought to understand the purpose of the SWWG, and the capacity to which it looked to limit out of state trash coming into New Hampshire.

- Rep. Ebel said in 2019, there was a Chinese policy being implemented by the name of 'National Sword', which mandated that plastics and mixed paper shall not be imported from the United States of America. Municipalities terminated recycling programs and contracts as a result; prices rose, and waste diversion presented itself as a problem.
- Subsequently, Rep. Ebel Introduced a study committee bill to analyze waste management.
- A Bipartisan committee comprised of four individuals was established.

- The Committee held 14 hearings in six weeks and took a deep dive into the solid waste crisis.
- The Committee quickly realized that the issue was global in nature and spared no individual or entity.
- A study report was compiled, and a link had been provided to the Study Committee for Unlimited Service Area Permits and Landfills.
- The report suggested that the long-range solid waste management plan be updated, as well as the solid waste diversion goals which were from the 1990s and had a due date of 2000.
- The report further prescribed the creation of a statewide taskforce to work with the Department of Environmental Services (*DES*) as a resource, and to provide a place for stakeholders to come to talk about solid waste. The process had gone well; the group came to be known as the SWWG.
- A new long-range waste management plan was issued in October of 2022. A link was provided to the committee.
- The SWWG began meeting a year ago, had filled all its seats, and met monthly.
- The Solid Waste Diversion goals were updated. Disposed waste was scheduled for a 25% reduction by 2030, and 45% by 2050. That standard applied to both in-state and out-of-state waste.
- Rep. Ebel believed it was critical that new long-range plans and goals were set. Implementation of said goals were underway.

Sen. Avard asked if rules were being made to be compliant with the aforementioned guidelines.

- Rep. Ebel said that landfill siting rules were being renewed.
- Rep. Ebel further shared that the solid waste management goals followed a ten-year plan, and that there were many actions for DES to take, many of which necessitate legislation.
- Considering the aforementioned, the SWWG was charged with concocting and submitting potential legislation to facilitate that process.
- The first interim report from the SWWG was sent to the committee, and Rep. Ebel announced that another would be issued in December.

Sen. Avard asked if it would be beneficial for New Hampshire to do more recycling, considering that the Chinese no longer recycled certain waste under their National Sword Policy.

- Rep. Ebel said more in-state recycling would be beneficial, and attested that many states' recycling efforts, particularly when it came to certain types of waste, were supported by state-run programs, which New Hampshire notably lacked.
- Rep. Ebel said it was very important to recognize that many towns had found that there were not adequate markets for recycled goods, therefore it would be beneficial to set certain standards for goods to be sold with recycled components. Work needed to be done to cultivate a market.

Sen. Avard shared that he had put forward enabling legislation for advanced recycling which did not pass in the preceding half of the biennium. Sen. Avard subsequently asked if advanced recycling would be preferably state-run, or privately organized, and if that was discussed within the SWWG.

- Rep. Ebel responded by saying that would be a part of the discussion regarding the solid waste management plan's implementation. DES had action items on the plan, and recycling was very much part of what was being discussed. Measures for success were being determined to gauge the efficacy of implementation.

Rep. Germana noted that capacity and permitting determinations were fixed on New Hampshire's generated waste, yet that was only half of the waste going into landfills. Rep. Germana wanted to know what conversations had been held regarding out-of-state waste and its impact on our landfill's capacities.

According to Rep. Germana, the preexisting regime was susceptible to exploitation, since other waste managers could simply occupy the vacuum created by decreasing in-state waste.

- Rep. Ebel indicated that although the issue was tricky, there was hope that the discussion would involve mitigating landfill usage, and further shared that the SWWG brought the Attorney's General Office into play to determine how an out-of-state waste ban would potentially conflict with the commerce clause of the U.S Constitution.
- Rep. Ebel suggested that it would be interesting to test the limits of the interstate commerce clause, believing it may be more malleable than supposed.
- In fact, NCSL had sought out clarification from Congress regarding the interstate commerce clause.
- Rep. Ebel said a waste ban had been a perennial problem. Public benefit defined the issue, and the state's leverage in implementation of an out-of-state waste ban.
- Rep. Ebel indicated that she was not fully versed in how unlimited service area permitting related to the interstate commerce clause.
- Vermont was renowned for its waste bans, meanwhile New Hampshire had virtually none according to Rep. Ebel.
- New Hampshire's tipping fees were much lower than adjoining states. Rep. Ebel suggested that N.H could benefit by disincentivizing disposal in-state via a tightening of controls on batteries and electronics (E-Waste).
- Rep. Ebel said that if the concern was limitation of out-of-state waste, broad policies which affected all parties, not just neighboring states, ought to be considered.

Rep. Fedolfi relied on his experience as an industrial designer to justify concern over landfill siting, and the downstream effects landfills had on the state's prolific waterways, and groundwater. Rep. Fedolfi implied that incineration may be an inevitability in avoiding further water-contamination.

- Rep. Ebel emphasized that the out-of-state waste was generally the worst of the worst, considering the state controls in the waste-producer's jurisdiction. Overtime, rain would induce landfill leeching, and there were no standing requirements for the leached water to be treated prior to going to a wastewater plant. Much of this untreated, untested waste would be converted to sludge, which would subsequently be returned to a landfill yet again. Rep. Ebel used her statement to communicate the reiterative cycle that was waste management, comprising of water treatment, landfill siting, and solid waste management. Each component was part of a larger machination, therefore a comprehensive approach was imperative.
- The SWWG had goals to reduce toxicity in the waste stream, and to prevent PFAS from being added. Rep. Ebel had a bill to initiate a targeted ban against many waste products, which was supported by the industry.

Rep. Rochefort reiterated the paradoxical relationship between in-state waste bans and the volume of out-of-state waste being received. Rep. Rochefort was curious if any states had seen success with out-of-state waste bans.

- Rep. Ebel stated that she lacked sufficient background to answer completely yet had not seen any successful waste-bans of such a capacity in her experience, despite being curious about the concept herself.
- Vermont had strict rules as to what could be landfilled and required municipalities and businesses to adopt plans reflective of the state's standards to use their landfills. Vermont didn't ban out of state waste, rather they cinched down what could be put in a landfill across the board. Rep. Ebel also emphasized locale; Vermont's landfill was far-north.
- Rep. Aron was concerned that N.H was becoming the northeast's dump and signaled that she would like to see technical solutions on how to deal with waste in the event it is received.
- Rep. Aron believed that there may be a technical way to clean the waste before landfilling it. In the past, waste operators had told legislators that N.H could be experts at recycling and waste diversion, significantly reducing waste going into the landfills.

Sen. Avard asked if there was a list of banned waste that N.H took from other states. Effectively, he wanted to know what we were taking that we could not send elsewhere.

- Rep. Aron said many states had banned mattresses and tires; therefore, they were sent to N.H.
- The House Environment and Agriculture Committee set forth in compliance with house rule 31(f).
- Rep. Aron paraphrased House Rule 31(f) as follows: *it shall be the duty of the committee to consider all issues related to agriculture such as land use, and protection of the state's environment other than air or water pollution, and other matters.*
- Considering the rule, Rep. Aron said that the House Committee on Resources, Recreation and Development dealt with air and water pollution. The House Environmental and Agriculture Committee didn't set goals like the SWWG, but bills were considered related to landfill issues namely permitting, and proposed waste item bans.

Rep. Rochefort believed technical solutions were a struggle. Rep. Rochefort asked if a moratorium on landfill permitting would be wise considering the bountiful capacity for in-state waste.

- Rep. Aron said it's always been a consideration to pause permitting, but since there was no issue with capacity, permitting and expansion was redundant because the existing supply could accommodate further growth as-is.
- Rep. Aron indicated that she would like to see more investigation into what kinds of technologies existed, or were being developed to deal with recycling, purification, and toxicity mitigation.
- Rep. Aron clarified that New Hampshire did in fact export trash as well. Rep. Aron believed that New Hampshire needed to determine what waste it was exporting, and how it was managed, to determine how to improve our own recycling to attract entrepreneurs and industry leaders in advanced recycling.

Rep. Fedolfi noted that the Germans were number one globally in recycling and specified that their system was fully mechanized. Considering that fact, Rep. Fedolfi believed such advanced recycling was unfeasible for New Hampshire.

Rep. Fedolfi pointed out that 60% of New Hampshire's drinking water came from wells and wondered what had been discussed regarding groundwater protection from out-of-state waste.



- Rep. Aron agreed with Rep. Fedolfi and said that the leeching of landfills was a large issue being discussed and said it would be wise to look at other country's waste management solutions as they related to pollution mitigation.
- Rep. Aron said lots of tech was coming from European countries that we as a state should tap into.
- For example, Scotland had private industries which collected trash for profit.

Rep. Germana said that the Attorney General's office and DES had both said that one legally permissible model would be having all new landfills under state-ownership, albeit with private subcontracted management. Rep. Germana asked Rep. Aron if that was a reasonable approach to maintain private industry whilst circumventing the interstate commerce clause.

- Rep. Aron said it was one approach of many and affirmed the belief that the state needed to consider having a diversified toolbox. Rep. Aron feared tying operators and the landowner's hands. They had property rights which we must respect. Health and Safety were prescient concerns, however, as were the implications those had on property rights.
- Rep. Aron affirmed that landfills needed to be managed as safely as possible. If that meant more testing of wells, or more liners, then that's what is necessary.

Rep. Germana identified three perceivable options:

1. *State owned and privately operated landfills*
2. *Testing of the interstate commerce clause*
3. *Generalized, broad-based bans on certain materials*

Rep. Germana asked if Rep. Aron could identify any other pathways not considered by the Study Committee.

- Rep. Aron confirmed that the options described encompassed her committee's considerations and discussions.
- Rep. Aron added that she would like to see landfill permitting up for consideration, and for technically innovative, waste management practices to be investigated further.
- Rep. Aron concluded by stating that New Hampshire was in a better position now compared to before the introduction of transfer stations. Now that we had these central stations, management and intake must be taken seriously and carefully.

## **Waste Management Division – N.H Department of Environmental Services**

*Director Mike Wimsatt and Ms. Leah McKenna were recognized by the Chair, Sen. Kevin Avarad.*

Sen. Avarad shared that some time ago, he had witnessed sludge being dumped directly next to a major river in the state. This was before PFAS' wide acknowledgement. Sen. Avarad asked if such practices were being maintained despite better knowledge.

- Mr. Wimsatt said that the site in question had stopped land application, and that sludge/biosolids industry was in a place of investigation and turmoil. Mr. Wimsatt believed that biosolids had done a lot of great work for soil fertility and was popular amongst farmers.

- Mr. Wimsatt clarified that the State of Maine had a much more severe problem, because many of the land application sites received short paper fiber sludge in addition to wastewater biosolids. The paper process had significantly higher levels of PFAS.
- Maine had struggled, especially with organic farming, considering how much of the state's arable land was contaminated from short paper fiber sludge.

Sen. Avard asked if the sites in question qualified for federal superfund cleanups.

- Mr. Wimsatt replied that it was unclear, however Maine had worked to provide mitigation funding internally.

Sen. Avard asked again if there was a reciprocating list of bans compared to other states.

- Mr. Wimsatt said no simple list existed yet offered further clarity: New Hampshire had banned yard waste, and there would be a coming food waste ban for those generating waste in excess of one ton per month. Additionally, if there was an alternative processing facility within 25 miles of the waste generator in question, they would be banned from putting said waste in a landfill.

Sen. Avard asked if there were any prohibitions on e-waste.

- Mr. Wimsatt said there were battery bans but was unfamiliar with them extemporaneously. Mr. Wimsatt suggested that generally, other states had much older, more developed, and stricter waste management regimes.
- Specifically, Vermont had effectively banned all food waste, and had decided that all such waste must be digested anaerobically or composted.
- Ms. Leah McKenna added further clarity and said that mercury containing devices were banned by statute. Ms. McKenna said there was an exhaustive list provided by the northeast recycling council detailing 15 state's waste bans. It was sent to the committee and may have information pertaining to Sen. Avard's question. The list was outdated and not reciprocal, but process of elimination could be applied to provide the sought-after information.

Rep. Rochefort said the Attorney General had provided criteria to circumnavigate the interstate commerce clause, and subsequently asked DES for comment.

- Mr. Wimsatt said he could speak to two of the three criteria and had consulted with the third. The last of which must be deferred to House or Senate legal counsel.
- Mr. Wimsatt said that an out-of-state trash ban would reduce out-of-state waste transport and would create more room for in-state generators as a putative benefit.
- Mr. Wimsatt also said that there were certainly other outlets for waste beyond N.H accepting out of state waste. Most northeast states export their waste to landfills in Ohio, New York, Pennsylvania and even the South. The bulk of the waste imported into N.H came from Massachusetts, or Vermont, and Connecticut to a lesser extent. New Jersey exported 4.5m tones of waste annually, presumably to Ohio or Pennsylvania. The Northeast was aware capacity was an issue and they were creating specific plants to export waste west by rail, according to Mr. Wimsatt.

Sen. Avard asked if we had the ability to incinerate the waste.

- Mr. Wimsatt said about 20% of all waste and 10% of landfill waste was incinerated at the Penacook biomass plant. The facility burned the waste to generate power for the grid.
- The Claremont incinerator closed and was not expected to open again.
- Incinerated waste would reduce the mass and volume of waste by 2/3rds. According to Mr. Wimsatt, the ash gets landfilled in an ash-monofil.
- Traditionally, the Penacook ash would go to the Franklin ash landfill. However, the landfill had since closed, and the ash generated today is directed to an out-of-state facility in Massachusetts.

Sen. Avard noted that the incinerator cloud used to be readily visible, and asked if there were scrubbers fitted to plants still operating.

- Mr. Wimsatt clarified that a lot of steam and moisture was emitted, so what was being seen was not always smog. Mr. Wimsatt shared that many in the waste industry believed we should incinerate for energy recovery.
- Mr. Wimsatt noted that emissions controls as they related to burning, even if done correctly, were not at all perfect. There were certainly greenhouse gasses still being emitted, even with the steam.
- Mr. Wimsatt added that landfills created methane overtime, which was burnt at recovery facilities, but there were small amounts being released through permeation.

Rep. Fedolfi referenced banned items and shared his observation that dump trucks routinely dumped whatever they wanted with impunity. Rep. Fedolfi sought clarification on how active enforcement measures were being conducted or implemented.

- Mr. Wimsatt said there was a system for waste collection that did have checks and balances.
- The first line of defense was safety education, and additionally there were transfer stations with household hazard waste drop offs to dilute the waste stream.
- Another line of defense was vendors who performed pick up, and their collection inspections. A single unacceptable waste item could disqualify an entire load, therefore there was incentive to enforce the standards.
- Finally, there were scale houses at the facilities where drivers must get clearance prior to ascension of the landfill.
- Mr. Wimsatt noted that despite these measures, impurities still existed.
- In terms of design and operation, the facilities in question were designed with the awareness that unacceptable waste would find a way in regardless.
- The landfills themselves had leech collectors in both liner layers. In most cases the leech was stored in tanks and would go through pretreatment before being sent to wastewater treatment plants.
- There were no technologies that existed to eliminate all risk. Some materials which were safe for landfill were not safe for incineration, and vice versa. Ash typically concentrated metals, so that was the primary concern at ash fills.

Rep. Germana asked how the state could justify restrictions on waste. Rep. Germana believed the resources affected by waste were in the public trust.

- Mr. Wimsatt stated that from the perspective of DES, it would be feasible for the legislature to say that out-of-state trash had an impact on shared public state

resources, and in the name of said public trust, the state could not take more than a certain proportion of out-of-state trash. The alternative would be the utilization of public shared resources for private, out-of-state beneficiaries.

- Mr. Wimsatt clarified that the question touched legal theory he could not comment on but had data on two-years' worth of out-of-state waste disposal in N.H.
- Mr. Wimsatt shared that in 2021, 56% of the nearly 2m tons of landfill were from within the state, and in 2022 it was 57%.
- Therefore, 43-44% of waste is from out-of-state, mainly from commercially operated facilities. However, it was important to note that the city of Lebanon operated a municipal landfill that had an extended service area which encompassed N.H and VT.
- The lion's share of out-of-state waste was managed at three commercial facilities – namely Rochester, NCS Bethlehem, and Mount Carberry in Success.
- Rochester took the most waste, which Mr. Wimsatt believed should not be surprising considering the location and geography.
- In 2022 the NCS facility took only 7% out-of-state waste. Mount Carberry was taking garbage from Maine and Vermont, meanwhile NCS Bethlehem took mostly garbage from Massachusetts and Vermont.
- Of all out-of-state waste being taken in at Rochester, 55% was from Massachusetts, 26,000 tones were from Connecticut, 30,000 tons were from Maine, and very small amounts were from Rhode Island and Vermont.

Rep. Germana said there was a dramatic increase in contaminated soil and asked what that was attributable to.

- Mr. Wimsatt said massive construction projects which had soils that couldn't be repurposed had to be exported and managed as solid waste.

Rep. Germana asked how the legislature could define public benefit in a capacity that would be useful for DES.

- Mr., Wimsatt said the topic of public benefit was being actively litigated in front of the New Hampshire Supreme Court. He noted that the single largest impact on capacity permitting was public benefit. Considering the concept of public benefit was a legislative construct, the extent that the legislature influenced capacity would be the best means for the legislature to control the situation. Given the current paradigm, public benefit had the most impact on capacity for construction.

Sen. Avard asked Mr. Wimsatt to weigh CO2 and Methane as they related to emissions.

- Mr. Wimsatt said if discussed in perfect terms, everything in the incinerator turned into CO2.
- Regarding landfills, they were more complicated. New Hampshire had tried to limit infiltration and leech production. Some carbon in the landfill would never escape, whether it be leech or gas. The carbon was likely converted into methane given the anerobic setting. All the methane produced by the landfill should be collected and burned by the gas collection system- if done properly. The collected, and combusted methane turns to CO2 following incineration.
- Mr. Wimsatt said there were experts in climate change determining which was better, burn or fill, but regardless a certain amount of carbon would stay in the landfill.

- Food waste bans would be putting less carbon in the landfills and would not be turned to CO2.

Sen. Avarad said incineration's 2/3rds reduction was undeniably attractive.

- Mr. Wimsatt said proponents would suggest it's easier to live next to an ash landfill than an MSW landfill. Less trucks, less stench, etc.

Sen. Avarad noted that incineration produced less water pollution compared to landfilling.

**Discussion with guests closed at 11:26 a.m.**

**Set future meeting date:**

*The next meeting will be Tuesday the 24<sup>th</sup> of October, at 10:00 am in L.O.B 101.*

**Meeting adjourned at 11:33 am.**



# **Committee to Study Unlimited Service Area Permits for Landfills and Out of State Waste Coming into New Hampshire**

*Regular meeting*

*Tuesday, October 24<sup>th</sup>, 2023*

*LOB 101 – 10:00 a.m.*

## **Introduction**

*All members of the Committee were present.*

## **Review and approval of last meeting's minutes.**

*The minutes were approved and adopted.*

## **Cumulative Committee discussion.**

- Rep. Germana reiterated his thoughts.
- According to Rep. Aron confirmed that there were three strategies to limit out of state trash:
  - Limit broadly on material.
  - Strategic challenge of interstate commerce clause – risky but worthy.
  - All future landfills be publicly owned by State or Subdivision. Private operation is maintained.
- If the State or subdivision owned the property, as the licensee they may put limitations on out-of-state waste despite allowing in-state disposal. Under the state-owned model, current landfills would operate as they do with their permitting status and private ownership.
- According to Rep. Germana, Rep. Peter Bixby has put in a placeholder bill to enable State ownership, without impacting preexisting landfills.
  
- Rep. Fedolfi shared his view that New Hampshire was the worst place in the world to bury intact trash given the state's water resources. Rep. Fedolfi personally discredited the protectiveness of liners by recognizing that once a landfill is at capacity and bull dozed, the liner is subsequently destroyed, and consequently ineffective. Rep. Fedolfi believed there needed to be substantial clay to mitigate seepage.
- Rep. Fedolfi promoted incineration as it would at least reduce mass while killing bacteria and attested that the state also needed better recycling. The practice of burying plastic was considered insane by Rep. Fedolfi considering the near-permanence and significant demand for plastics.
- Rep. Fedolfi concluded by stating that reductions in oil production will constrict the plastic supply, inflating demand as a result. Rep. Fedolfi suggested that would be further reason to expand recycling efforts. Incineration and recycling were a necessity, and incinerators could have scrubbers and diffusers fitted to mitigate pollution.
  
- Rep. Rochefort shared that the potential flexibility of the interstate commerce clause described by K. Allen Brooks piqued his interest.

- According to Rep. Rochefort, two out of the three criteria for avoiding non-compliance with the interstate commerce clause were easily proven, while the third was being actively determined.
- Considering that the discriminatory regulation of hunting and fishing licenses were able to stand up against the interstate commerce clause, Rep. Rochefort believed a strong argument could be made for waste regulation based on public water quality protection.
- Rep. Rochefort shared his support in moving to limit out of state trash, regarding acceptable waste and permissible quantities.
- Rep. Rochefort also promoted incineration. Considering advancements in carbon-capture and safety, incineration was evidently not as harmful as previously supposed.
- Rep. Rochefort clarified that whether legislation was put forward to study incineration, or whether legislation was introduced to challenge the commerce clause, it was going to require a long time. Rep. Rochefort therefore would support a moratorium against any new landfills until said decisions and legal challenges were finalized, to avoid being 'under the gun'.
- Rep. Germana, in reference to Rep. Fedolfi's recycling argument, stated that publicly owned landfills could price discriminate regarding in-state or out-of-state waste, and that ticket fees could provide sufficient revenue to promote advanced recycling.
  - Rep. Fedolfi stated that significant initial investment would be required to make such an industry feasible and competitive.
- Sen. Avard shared that he attended an energy conference in Utah, where advanced recycling was featured.
- New Hampshire was one of the only states to broadly oppose advanced recycling.
- Advanced recycling needed to be invited to New Hampshire according to Sen. Avard.
- Sen. Avard detailed how New Hampshire had some of the highest energy rates in the country. Vertical Integration of the energy market by the State was proven to be effective at controlling energy costs, and local generation and transportation in-state would improve affordability as well.
- Sen. Avard believed that in the event a state's aquifers and waterways were contaminated, a desalination plant powered by incinerated waste would be a full-circle solution.
- Sen. Avard also promoted incineration, yet said there would be air quality concerns, nonetheless.
- Sen. Avard identified the committee's shared goals of improved recycling and incineration.
- According to Sen. Avard, the world used 2.5 terawatts of energy, of which 75% emanated from fossil fuels.
- In the future, given technological advancement, the world may experience an exponential growth in the demand for energy, which renewables currently were incapable of accommodating.
- Sen. Avard believed that a state-owned model, if used to reduce out-of-state waste, was good, but could not be avoidant of incineration, especially considering the mass reduction and subsequent benefit for capacity.
- Rep. Germana had discussed with Duncan Watson, Head of the Keene transfer station, who revealed that #5 plastics (commonly seen in k-cups) needed to be recycled in mass quantities for economic viability.
- Rep. Germana believed an economic model needed to be accommodating for different types of recycled products. Therefore, advanced recycling should ideally be established with a central



- facility for municipalities to direct recycled waste streams towards, so there would be quantities sufficient for economic repurposing.
- A lack of a centralized recycling waste stream meant that on an individual level, waste management centers were unable to repurpose their plastic waste. However, a centralized reception point would combine the waste streams into one, significant, collective recycled waste facility.
    - Sen. Avard suggested that the state would need capital investment for such a property, and a subsequent study committee for a location if the initiative is deemed acceptable.
    - Ultimately, Sen. Avard supported consideration of a state-owned landfill, consideration towards incineration as an energy supplement for desalination and municipal use and suggested challenging the interstate commerce clause with waste-restrictions.
    - Sen. Avard believed there might be issues with a moratorium against new landfills. The Senator was concerned with preserving a business-friendly status.
  - Rep. Germana had shared that Rep. Peter Bixby put in a placeholder bill. The placeholder mandated all future landfills be publicly owned, with preexisting landfills being unaffected.
  - Rep. Germana asked for the committee to support Rep. Bixby's bill.
    - Sen. Avard shared that he would need to talk to Gov. Sununu regarding all future landfills being state owned and suggested that Rep. Bixby consider amending the bill to allow the state to initiate state ownership, as opposed to mandating all future projects across the board. Sen. Avard believed the term 'all' may open a pandoras box, endangering the committee's efforts.
  - Rep. Germana believed that Rep. Bixby's placeholder may not accommodate everything and suggested that perhaps Sen. Avard's legislation could be host to several of the committee's concepts as well.

### **Future Meeting Dates**

*The Committee determined that the next, and final meeting would be held on October 30<sup>th</sup>, at 9:30 a.m.*

***\*The meeting was adjourned\****



# TITLE X

## PUBLIC HEALTH

### CHAPTER 149-M

#### SOLID WASTE MANAGEMENT

##### Section 149-M:2

###### **149-M:2 Solid Waste Disposal Reduction Goal. –**

I. The general court declares its concern that there are environmental and economic issues pertaining to the disposal of solid waste in landfills and incinerators. It is important to reserve landfill and incinerator capacity for solid wastes which cannot be reduced, reused, recycled or composted. The general court discourages the disposal of recyclable materials in landfills or processing of recyclable materials in incinerators.

II. The general court further declares a goal to reduce the quantity by weight of solid waste disposed by 25 percent by the year 2030, and by 45 percent by the year 2050. For the purposes of this goal, disposal reduction targets shall apply, on a combined basis, to disposal of municipal solid waste and construction and demolition debris, and shall be measured against baseline quantities of these wastes disposed of in the year 2018. For the purposes of this goal only, municipal solid waste means solid waste generated at residences, commercial or industrial establishments, and institutions, but excludes automobile scrap and other motor vehicle waste, infectious waste, asbestos waste, contaminated soil and other absorbent media, sludge, industrial process waste, and ash other than ash from household stoves. Disposal reduction may be achieved through source reduction as well as diversion including but not limited to reuse, recycling, and composting. For the purposes of this section "goal" shall not establish a mandate.

III. In exercising any and all powers conferred upon the department under this chapter, the department shall use and consider criteria relevant to the disposal reduction goal and solid waste management hierarchy established in this section and RSA 149-M:3. The department shall not take any action relative to the reduction goal which causes the municipalities organized under RSA 53-A and 1986, 139 or RSA 53-B to violate or incur penalties under legal obligations existing on June 26, 1990.

**Source.** 1996, 251:2. 251:27; 261:2. 1999, 43:1, eff. July 20, 1999. 2021, 188:5, eff. Oct. 9, 2021.



## Inter-Agency Memorandum

To: Michael Nork, Materials Management, Education, & Planning Section Supervisor,  
SWMB, N.H. Dept. of Environmental Services

From: K. Allen Brooks, Senior Assistant Attorney General KAB

Date: December 14, 2021

RE: New Hampshire Solid Waste Working Group

You have asked that I provide some background material on the commerce clause and state preemption. The following may be shared with the working group.

### A. Commerce clause.

Pursuant to Article I, § 8, cl. 3, of the U.S. Constitution, Congress may regulate interstate commerce. The Constitution does not say that states cannot regulate commerce; however, courts have found that this authority constrains State action even when Congress is not actually using it – i.e., when this authority lay dormant.

The Commerce Clause empowers Congress to regulate commerce “among the several states.” Although the clause “do[es] not expressly restrain ‘the several states’ in any way, [the Supreme Court] ha[s] sensed a negative implication in the provision since the early days.” This negative implication, referred to as the dormant Commerce Clause, “prevents state and local governments from impeding the free flow of goods from one state to another” and “prohibits protectionist state regulation designed to benefit in-state economic interests by burdening out-of-state competitors.”

*Constr. Materials Recycling Ass’n Issues & Educ. Fund, Inc. v. Burack*, 686 F. Supp. 2d 162, 166–70 (D.N.H. 2010) (internal citations omitted); *see also Deere & Co. v. State*, 168 N.H. 460, 466 (2015) (wherein the N.H. Supreme Court provides a similar treatment of the commerce clause). Courts analyze laws to determine if they run afoul of the dormant commerce clause using various levels of scrutiny depending on the purpose and effect of the law.

Laws that discriminate against out-of-state interests are treated differently under the dormant Commerce Clause from laws that affect interstate commerce even-handedly. “A discriminatory law is virtually per se invalid ... and will survive only if it advances a legitimate local purpose that cannot be adequately served by reasonable non-discriminatory alternatives.” In contrast, a non-discriminatory law that nevertheless burdens interstate commerce “will be upheld unless the burden imposed on interstate commerce is clearly excessive in relation to the putative local benefits.”

In the context of a dormant Commerce Clause challenge, discrimination “means differential treatment of in-state and out-of-state economic interests that benefits the former and burdens the latter. Even a facially neutral law will be considered discriminatory if it is discriminatory in either its purpose or its effect. As the First

## Inter-Agency Memorandum

Circuit has recognized, however, “[i]ncidental purpose, like incidental effect, cannot suffice to trigger strict scrutiny under the dormant Commerce Clause.”

*Constr. Materials Recycling Ass’n*, 686 F. Supp. 2d at 166–70 (internal citations omitted). New Hampshire has first-hand experience with respect to application of the federal commerce clause to waste management. In 2007, the New Hampshire legislature placed restrictions on the burning of construction and demolition debris. National organizations in support of the reuse or burning of such debris filed suit in federal court. The plaintiffs agreed that the law was facially neutral but argued that it was motivated by protectionism. Plaintiffs cited to statements by proponents of the bill that they feared that “New Hampshire could become the ‘dumping ground’ for construction and demolition debris in the Northeast.” *Id.* The resulting U.S. District Court decision provides an excellent summary of the application of the commerce clause.

Although “the Supreme Court has not directly spoken to the question of what showing is required to prove discriminatory effect where ... a statute is evenhanded on its face and wholesome in its purpose,” the First Circuit has held that this showing must be “substantial.” A plaintiff, therefore, must “submit some probative evidence of adverse impact ... the mere fact that a statutory regime has a discriminatory *potential* is not enough to trigger strict scrutiny under the dormant commerce clause.” This burden cannot be met merely by showing that a statute favors one product over another. As I have noted, discrimination claims under the dormant Commerce Clause target “differential treatment of in-state and out-of-state economic interests that benefits the former and burdens the latter.” Thus, while the adversely affected products need not be entirely out of state and, conversely, the favored products need not be entirely in state, a statute ordinarily must predominately benefit in-state products at the expense of out-of-state products to support a discrimination claim based solely on the statute’s unintended discriminatory effect.

*Id.* (internal citations omitted). The Court found that the law was not discriminatory. However, excessively burdensome regulation also receives a more strict level of review. The court stated:

Having concluded that the C & D legislation is not discriminatory, I must next determine whether it “burdens commerce in a way that is clearly excessive in relation to the putative local benefits to be derived therefrom.” Under the *Pike* balancing test, “laws that regulate evenhandedly and only incidentally burden commerce are subjected to less searching scrutiny,” and are therefore upheld unless the burdens that they impose upon commerce “clearly outweigh” their state or local benefits. “If a legitimate local purpose is found, then the question becomes one of degree ... the extent of the burden that will be tolerated will [ ] depend on the nature of the local interest involved, and on whether it could be promoted as well with a lesser impact on interstate activities.”

*Id.* (internal citations omitted). The court then outlined how the balancing test described above must be applied.

## Inter-Agency Memorandum

The balancing of benefits and burdens required by *Pike* is accomplished in three steps. “First, we are to evaluate the nature of the putative local benefits advanced by the statute. Second, we must examine the burden the statute places on interstate commerce. Finally, we are to consider whether the burden is ‘clearly excessive’ as compared to the putative local benefits.” Courts must be careful not to second-guess reasonable legislative judgments when evaluating the local benefits of challenged legislation. Emphasizing that *Pike* mandates an inquiry only into the “putative” benefits of the challenged legislation, the First Circuit has observed in this regard that “it matters not whether these benefits actually come into being at the end of the day.”

*Id.* (internal citations omitted). Eventually, the court found that the law passed the relevant commerce clause tests.

The analysis above differs when the State is acting as a market participant providing that it is directing its own activities and not regulating the field.

At the threshold of its Commerce Clause analysis, the Supreme Court has drawn an important distinction between “regulation” of, and “participation” in, a market. When a state engages in market “participation”—that is, when it enters the open market as a buyer or seller on the same footing as private parties—there is less danger that the state’s activity will interfere with Congress’s plenary power to regulate the market. As the Court has explained, the Commerce Clause “restricts ‘state taxes and regulatory measures impeding free private trade in the national marketplace,’ but ‘[there] is no indication of a constitutional plan to limit the ability of the States themselves to operate freely in the free market.’” Pursuant to this doctrine—the “market participant” exception to the dormant Commerce Clause—states are permitted to enter a market with the same freedoms and subject to the same restrictions as a private party. To the extent that a state is acting as a market participant, it may pick and choose its business partners, its terms of doing business, and its business goals—just as if it were a private party.

*SSC Corp. v. Town of Smithtown*, 66 F.3d 502, 510 (2d Cir. 1995). Courts are divided on whether a similar rule applies when the State acts as a market participant through a subdivision such as a municipality. Compare *National Solid Waste Mgmt. Ass’n. v. Williams*, 146 F.3d 595, 597 (8th Cir. 1998) (finding “no compelling analytical difference between a local government unit and central state agencies”) with *W.C.M. Window Co. v. Bernardi*, 730 F.2d 486, 495 (7th Cir. 1984) (finding that a State directing local activities without funding is regulation and not participation). Recall that in New Hampshire, as noted below, the relationship between the State government and municipalities is more direct than some other jurisdictions.

### **B. State Preemption of Local Laws**

In New Hampshire, State law takes precedence over local laws. When analyzing the impact of local zoning on solid waste management in *Town of Pelham v. Browning Ferris Indus. of New Hampshire, Inc.*, the N.H. Supreme Court stated:

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Towns are merely subdivisions of the State and have only such powers as are expressly or impliedly granted to them by the legislature. Local regulation is repugnant to State law when it expressly contradicts a statute or is contrary to the legislative intent that underlies a statutory scheme. Any power that towns might have to regulate solid waste, cannot be exercised in a way that is inconsistent with State law.

*Town of Pelham v. Browning Ferris Indus. of New Hampshire, Inc.*, 141 N.H. 355, 357–64 (1996) (internal citations and quotations omitted).

Therefore, State laws will sometimes preempt local laws. Preemption may arise in a number of ways and is subject to various descriptions. The terms conflict preemption, field preemption, obstacle preemption, implied preemption, and express preemption all describe different aspects of the general concept.

Field preemption occurs when regulation of an entity with primacy, like the federal or State government, occupies the “entire field” of an issue such that, even if there is no direct conflict, such regulation leaves no “room” for others. Although RSA 149-M “constitutes a comprehensive and detailed regulatory” scheme that would normally be said to occupy the entire “field” of solid waste regulation, the statute itself allows for some municipal involvement. Similar provisions in federal law that preserve State authority that would otherwise be preempted are called “savings” clauses. This means that some aspects of local control survive. In *Town of Pelham*, the N.H. Supreme Court held that closure of a facility was exclusively within the control of the State; however, it also held that other ancillary local rules might still apply. The Court stated:

Nonexclusionary aspects of the town’s site plan review process, however, remain unaffected. [L]ocal regulations relating to such matters as traffic and roads, landscaping and building specifications, snow, garbage, and sewage removal, signs, and other related subjects, to which any industrial facility would be subjected and which are administered in good faith and without exclusionary effect, may validly be applied under the town’s site plan review process.

*Town of Pelham*, 141 N.H. at 357–64 (internal quotations and citations omitted).

Therefore, some aspects of local control like the building code applicable to structures or height restrictions are preempted whereas other aspects such as those quoted above or the general siting of a facility are not preempted.

Nevertheless, the extent of this savings clause must be interpreted narrowly. The N.H. Supreme Court has stated:

As required by the spirit and objectives of RSA chapter 149–M, State law preemption of local regulation of solid waste management facilities must be the norm, not the exception. Accordingly, when evaluating whether a particular local regulation conflicts with the State scheme, courts should err on the side of



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finding State law preemption, unless the local regulation concerns where, within a town, a facility may be located.

*N. Country Env't Servs., Inc. v. Town of Bethlehem*, 150 N.H. 606, 610–22 (2004).

### **C. Conclusion**

I hope this provides you with a framework for discussion of the commerce clause and State preemption.



# **Report of the Committee to Study Recycling Streams and Solid Waste Management in New Hampshire**

HB 617, Chapter 265, Laws of 2019

November 1, 2019

## **Membership**

Rep. Karen Ebel, Chair  
Rep. Megan Murray, Clerk  
Rep. John O'Connor

Senator David Watters

## **DUTIES**

The committee shall study:<sup>1</sup>

- The state of recycling programs in New Hampshire in light of changing market conditions.
- Challenges faced by the state and municipalities in running recycling programs and solid waste management.
- Such other related issues as the committee deems necessary, including potential legislation.

## **INTRODUCTION**

To say that the subject of solid waste is vast and complex is an understatement. As weeks of hearings passed, the study committee increasingly realized the extent to which the issue touches every aspect of our society. The generation of products, use of our resources and disposal of unwanted materials has ramifications for our towns, state, nation and world, with broad, important economic, public health and environmental impacts. The impacts require our immediate attention. Many are passionate about how we use our resources and how we dispose of the waste we generate. The study committee did its best to do justice to the magnitude of our state's solid waste challenges in the short time it had for review, holding 14 meetings and taking testimony from over 50 stakeholders. The committee greatly appreciates the support of those who assisted it in its work.

Based on testimony and research, the committee found that our state's solid waste management planning and education efforts have fallen far behind that of our neighboring states and nationally, primarily due to deep budget cuts at the New Hampshire Department of Environmental Services' Solid Waste Management Bureau. The inability of resource-strapped

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<sup>1</sup> Taken verbatim from bill.

DES to adequately perform its long-range planning and related responsibilities has left our state in a difficult predicament (some have termed it a developing waste emergency), born primarily by our municipalities and property taxpayers, as global recyclable markets roil, prices for recyclables fall, our solid waste disposal tonnage increases, our landfills fill and we continue to produce untold, arguably inexcusable, amounts of waste that is increasingly difficult and expensive to handle. Our state must adjust its laws and programs to reflect the new economic, environmental and public health realities of solid waste management. This will take commitment, foresight, collaboration and funding.

The study committee hopes the following findings and recommendations spotlight both the challenges and opportunities that lay ahead, enabling the state to do a better job in the future. Testimony submitted to the committee and related materials can be found at the committee's NH General Court website here: <http://gencourt.state.nh.us/statstudcomm/committees/1476/>

## **BACKGROUND**

The regulation of solid waste has a long history in New Hampshire, beginning in 1799 when the state imposed a fine of up to ten dollars upon any person who, in the Town of Portsmouth, "shall throw, place or leave ... any filth, garbage, putrid animal or vegetable substance, or any matter of an offensive nature ... injurious to the health of said inhabitants, in any highway, street, lane, or open alley, or on any common, or into any dock, or on any wharf, or in any shoal water in said town, where the tide will not remove and carry the same away ...". This law was the basis for solid waste management for the next 150 years with relatively minor modifications along the way. Over such time, this basic prohibition was expanded to the entire state.

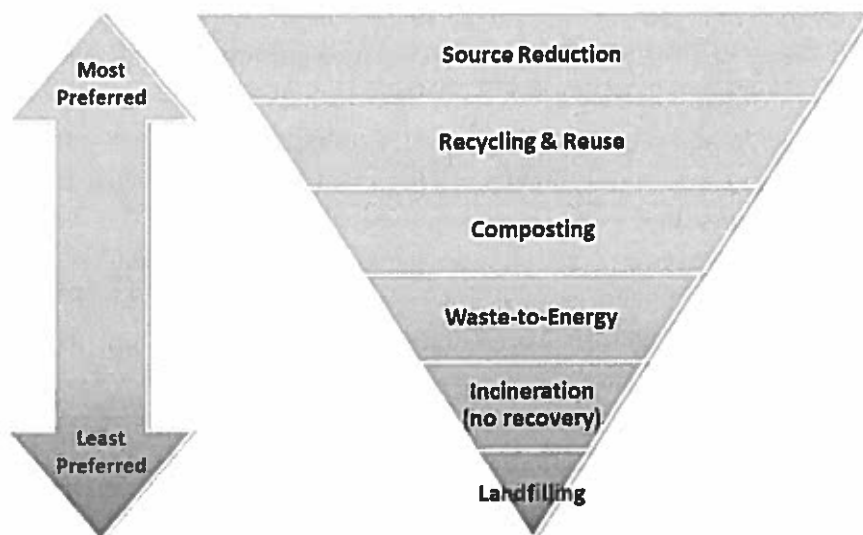
In the 1949 to 1955 time period, the Legislature established the basic bifurcation which exists to this day between municipal and state responsibilities for the management of solid waste in New Hampshire. Municipalities were required to provide and maintain public dumping facilities (aka landfills) for their residents, and the state was tasked with establishing the regulations for such facilities. Though most towns landfills are now closed because they were unlined and contaminating groundwater, RSA 149-M:17 still requires that "each town shall either provide a facility or assure access to another approved solid waste facility for its residents" and may make bylaws "governing the separation and collection of refuse within the municipality." The state, through the Department of Environmental Services (DES), remains responsible for adopting regulations for the operation of such facilities, which now includes not only landfills, but also transfer stations, recycling centers, scrap yards, composting facilities, and incinerators. DES manages this through a permit system and is responsible for enforcement.

The primary statutory laws governing solid waste management are found in RSA 149-M. The chapter's Statement of Purpose reads that "it is the declared purpose of the general court to protect human health, to preserve the natural environment, and to conserve precious and

dwindling natural resources through the proper and integrated management of solid waste.” Over the years, the Legislature has incorporated into RSA 149-M various provisions that are aimed at achieving this purpose. Some have focused on the state’s responsibility to prevent pollution from disposal facilities (landfills and incinerators), thereby protecting public health and the environment. Others are tailored toward the conservation of natural resources, which is accomplished upstream from the disposal facilities by municipalities, residents, and businesses taking action to reduce the waste they produce.

The New Hampshire Department of Environmental Services (“DES”) has used the authority granted to it to close all of the unlined landfills in the state that were opened prior to modern environmental standards. These unlined landfills, many of which were owned by municipalities, were contaminating groundwater and associated surface waters as water in the environment moved in an unrestricted manner through the refuse, carrying pollutants offsite. These landfills were capped with an impervious layer to keep precipitation out and monitoring wells were installed around the sites to periodically test for pollution migrating offsite. Much higher standards are now in place for the construction and operation of solid waste landfills and so groundwater contamination from landfills has been largely abated. In addition, significant methane emissions to the air from decaying waste are now either captured as an energy resource or else flared, which reduces the severity of greenhouse gas emissions.

In an effort to “conserve precious and dwindling natural resources” as stated in RSA 149-M’s purpose statement, the Legislature established two interdependent objectives in 1990. One was a preferred hierarchy of waste management methods, namely source reduction, recycling and reuse, composting, waste-to-energy technologies (including incineration), incineration without resource recovery, and landfilling.



The other objective was to achieve by the year 2000 “a 40 percent minimum weight diversion of solid waste landfilled or incinerated on a per capita basis” by means of source reduction, recycling, reuse, and composting. These are the more preferred methods listed in the hierarchy. Doing so would not only conserve natural resources used in the making and packaging of products, but also help accomplish another declaration made by the Legislature – that “it is important to reserve landfill and incinerator capacity for solid wastes which cannot be reduced, reused, recycled or composted.” The Legislature made clear the importance of these two interdependent objectives by requiring that “in exercising any and all powers conferred upon the department under this chapter, the department shall use and consider criteria relevant to the waste reduction goal and disposal hierarchy.”

Since these objectives were first established back in 1990, the focus of waste reduction/diversion has been on increasing recycling rates. Recycling has been popular with the public and many municipalities have done an admirable job at establishing well-run recycling programs within their communities. Most of the smaller municipalities (those without curbside collection) relied on residents sorting their own recyclables by material type such as glass, aluminum cans, metal cans, plastics by number (i.e., #1 - PETE, #2 – HDPE, etc.), newspaper, cardboard, and office paper, and then dropping it all off at the local landfill, transfer station, or recycling center. This resulted in a fairly clean product that required little further processing by the municipality beyond baling each commodity, as needed, and then storing it for later shipment into the recycled materials market.

Larger communities with curbside service could not readily pick up sorted materials because of the impracticality of having the necessary number of separate compartments on a truck. Some provided a recycling center to which residents could bring their sorted recyclables, but this was not ideal since the residents were accustomed to the ease of curbside collection. The development of materials recovery facilities (MRFs) that use sophisticated machinery and technology to separate co-mingled recyclables provided a solution to this problem. Residents only had to separate their recyclables into one bin, which would then be conveniently picked up at the curb along with their regular trash. In turn, municipalities needed to devote only one compartment on their trucks to recyclables.<sup>2</sup> The recyclables would subsequently be delivered to a MRF for further processing.

Single stream recycling is now widely used in larger communities in New Hampshire. It has even proven attractive to a few municipalities with traditional drop-off facilities because of its simplicity, low processing costs, and ease of use by residents. This includes municipalities

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<sup>2</sup> As opposed to single stream recycling as was being described, some communities engage in dual stream recycling in which the fiber products (paper and cardboard) are kept separate from the other recyclables. This makes the process of sorting at the MRF simpler, theoretically resulting in lower costs and better end-product materials. However, curbside collection becomes more costly as a two-compartment truck needs to make a separate run just to pick up recyclables.

with well-established programs, where residents did the sorting, that switched to single stream recycling. However, most municipalities without curbside pickup have stayed with source separation by their residents.

## ISSUE

MRFs do a remarkable job of separating out the various recyclable commodities from a co-mingled, single stream input, but it is inevitable that there will be some contamination in the end products. Much of this is due to consumers putting unacceptable materials into their recycling bins that the MRFs cannot entirely eliminate through processing. Oftentimes, consumers are confused as to what is acceptable due to the myriad assortment of items for disposal that do not always fit neatly into well defined recycling categories. Consumers can also suffer from a desire to recycle everything possible because it is the right thing to do, and therefore err on the side of throwing it into the recycling bin when in doubt (aka wish-cycling). There is also a financial incentive to put as much in the recycling bin as possible in those communities that charge for trash, but not for materials recycled by the resident. These are known as pay-as-you-throw programs which have become quite popular and are meant to encourage recycling.

The contamination in the end products produced by MRFs was not a problem as long as China, a world leader of importing recyclable materials for use in its own manufacturing economy, was willing to tolerate it. That was the case until late in 2017 when China decided to no longer accept the levels of contamination found in most MRF produced materials, in particular those found in mixed plastics and mixed paper, thereby effectively closing off this critical market for these materials. The repercussions from this decision by China have been profound. There is now a glut of certain recyclable materials on the world market causing prices to tumble. For example, the average price of mixed paper in the northeast has dropped from a high of \$85 per ton in March 2017 to below zero now according to the Northeast Resource Recovery Association (NRRRA). Both New Hampshire municipalities that source separate and those that rely upon single stream/MRF recycling have been hurt by this precipitous fall in price. Some communities with ongoing contracts involving MRFs are protected for now but will be negatively affected when contract renegotiations occur.

These financial challenges being faced by municipalities were the primary impetus for the creation of this study committee in the hopes of finding possible actions, including legislation, that might help with the situation. In the process of conducting this study, the committee has also explored other challenges concerning solid waste management that have seemingly lied dormant for many years, at least at the Legislature. The 40% waste diversion goal through source reduction, recycling, reuse, and composting was set by the Legislature back in 1990 and was supposed to be achieved by 2000. Has that been accomplished and are there adequate ways of measuring it? Has landfill and incinerator capacity been reserved to only those materials that cannot be otherwise diverted, as called for by the Legislature? If not, what can be

improved upon? Composting possibly? Is the state committing sufficient resources to the issue of solid waste management?

## PROCESS

The committee met a total of 14 times at which it took extensive testimony from various stakeholders, including municipal facility operators, private landfill and incinerator operators, conservation organizations, recycling organizations, state agencies, composters, regional planning commissions, a hospital, a grocery store, a product manufacturer, a plastic container manufacturer, middle school students, and concerned citizens.<sup>3</sup> The committee organized its meetings with each primarily focused on a different aspect of solid waste management. The committee also toured Turnkey Landfill in Rochester, NH and the MRF in Billerica, MA, both of which are owned and operated by Waste Management.

## FINDINGS

1. **Fundamental policies.** The basic policies mentioned earlier that form the framework of solid waste management in the state and were established by the Legislature nearly 30 years ago are still sound ones, at least in concept. They are: a) Solid waste should be managed using the preferred hierarchy of methods, namely source reduction, recycling and reuse, composting, waste-to-energy technologies (including incineration), incineration without resource recovery, and landfilling; b) The methods listed higher in the hierarchy (source reduction, recycling, reuse, and composting) should be used to divert, by weight and on a per capita basis, at least 40 percent of materials disposed of at landfills or incinerators; c) It is important to reserve landfill and incinerator capacity for solid wastes which cannot be otherwise reduced, reused, recycled or composted; and d) In exercising any and all powers conferred upon DES, the department shall use and consider criteria relevant to the waste reduction goal and disposal hierarchy.
2. **40% diversion standard.** DES has found that calculating the percentage of solid waste diverted is inherently difficult in that it includes source reduction which involves changes made in the manufacture of products. DES does not regulate at the point of manufacture, but rather at the solid waste facilities which it permits. It receives data from permitted facilities, but not manufacturers. DES does not know, in part due to this issue, what our current diversion rate is and so the level of success in achieving the 40 percent diversion goal is unknown.
3. **Landfills.** Landfills are the least favored method of solid waste disposal. Land used for disposal has other worthwhile uses. To ensure public health, landfills must be permanently

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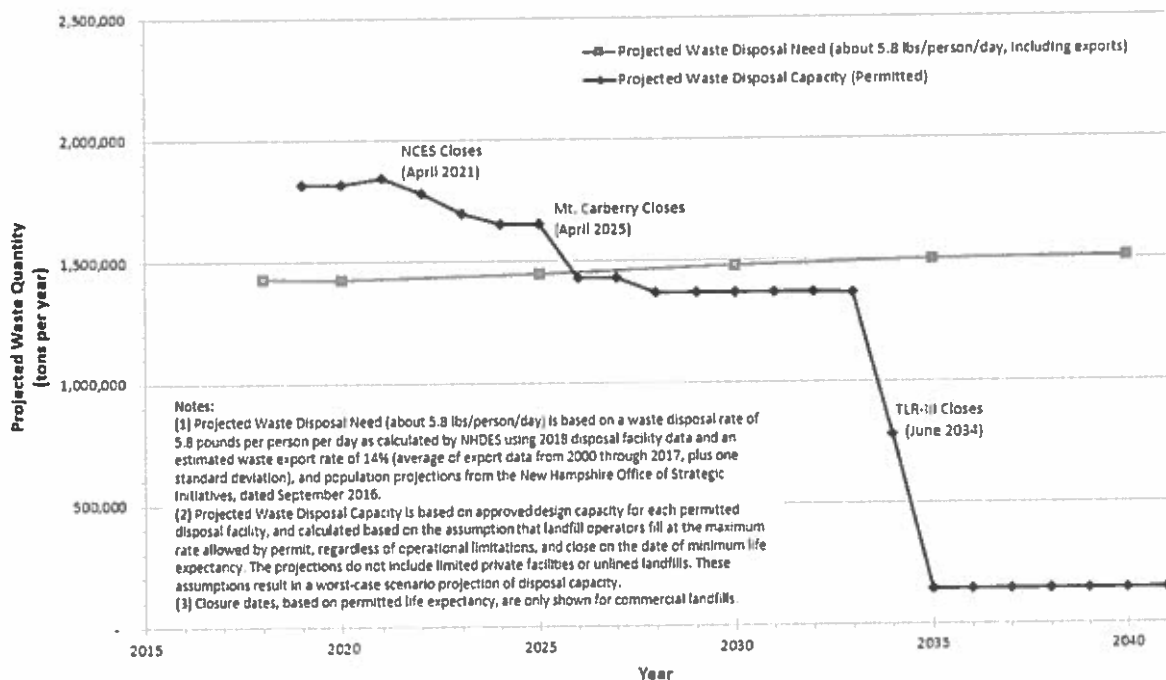
<sup>3</sup> All those who testified in front of the committee are listed in Appendix A. All materials provided to the committee can be found at: <http://www.gencourt.state.nh.us/statstudcomm/committees/1476/documents.html>



and securely sealed on both the bottom and top. While there is some decomposition of solid waste once it is landfilled (testimony indicated the volume of a landfill will decrease about 20% only), most solid waste, including much plastic, construction and demolition debris and innumerable other types of waste, remain entombed in perpetuity, requiring ongoing maintenance and always a potential threat without proper monitoring.

4. **Landfill capacity.** Landfill capacity in New Hampshire is currently provided by 3 public landfills that only accept waste from specific NH municipalities (plus some VT municipalities in the case of the Lebanon landfill), and 3 private landfills with unlimited service areas, including areas outside of New Hampshire. Landfills, or later expansions, are permitted by DES with specific waste disposal boundaries and height restrictions. The permit conditions for many of them, including all of the private ones, require that facilities operate for a specified minimum number of years. Based on these permit conditions, and assuming no further expansions of landfill capacity or changes in diversion rates, DES predicts a limited shortfall in disposal capacity between 2025 and 2034, and a significant shortfall after that.<sup>4</sup> About 50% of the solid waste disposed of in New Hampshire comes from out-of-state.<sup>5</sup> Landfill capacity in the region is becoming tighter as landfills close, causing an upward pressure in tipping fees.

Projected Waste Disposal Need & Capacity for New Hampshire (2020 - 2040)  
(Fig. 2 from DES Biennial Solid Waste Report, October 2019)



<sup>4</sup> See Biennial Solid Waste Report, October 2019, Department of Environmental Services, 6-7.

<sup>5</sup> *Ibid.* 9.

5. **New landfills and landfill expansion.** Our state's landfill capacity is rapidly dwindling. Permitting new landfills is difficult for a variety of reasons, including topographical siting hurdles and due to understandable public opposition. The Town of Bethlehem recently declined to permit expansion of a Casella-owned landfill. Area residents oppose attempts by Casella to place a landfill in Dalton adjoining Forest Lake State Park. The recent DES approval of Rochester's Turnkey landfill has been appealed to the Waste Management Council on a number of grounds. The appeal failed, but the Council's decision has again been appealed. Legislative efforts to protect New Hampshire's future landfill capacity can be accomplished if such laws do not unjustifiably discriminate against out-of-state waste as prohibited the Interstate Commerce Clause of the U.S. Constitution.<sup>6</sup> In permitting, the Bureau must assess the public benefit of the request pursuant to RSA 149-M to ensure no constitutional violations.

DES provided the following table to the study committee illustrating total amounts of waste disposed of from 2015-2018 at New Hampshire's landfills and one waste-to-energy facility. Disposal tonnage has increased, and the ratio of in-state compared to out-of-state waste is about 50%. But at Waste Management's Turnkey landfill in Rochester, for example, the percentage of in-state waste has been between 36% and 40%. The table shows only the currently permitted disposal capacity. It may increase in the future.

Year	In-State	Out-of-State	% In-State	Est. Remaining Capacity	
	tons	tons	%	Cubic Yards	Years
<b>Landfills - Unlimited Service Area</b>					
North Country Environmental Services (NCES) Bethlehem, NH					
Permitted life expectancy through at least April 2021					
2015	242,924	101,164	71%	-	-
2016	251,699	181,307	58%	1,335,000	4.3
2017	237,853	134,075	64%	916,000	3.3
2018	231,515	120,770	66%	599,000	2.0
TLR-III Refuse Disposal Facility (aka Waste Management, Turnkey) Rochester, NH					
Permitted life expectancy through at least June 2034					
2015	392,362	703,961	36%	-	-
2016	392,460	698,250	36%	9,494,000	7.3
2017	569,329	845,339	40%	8,134,000	6.3
2018	569,558	918,798	38%	6,987,000	5.4
Mt. Carberry Landfill Success, NH					
Permitted life expectancy through a least April 2025					
2015	120,447	95,680	56%	-	-
2016	148,466	96,023	61%	2,184,000	7.1
2017	138,129	93,621	60%	1,928,000	6.3
2018	145,222	90,209	62%	1,673,000	5.7
<b>Total (Landfills - Unlimited Service Area)</b>					
2015	755,733	900,805	46%	-	-
2016	792,624	975,580	45%	13,013,000	-
2017	945,311	1,073,035	47%	10,978,000	-
2018	946,295	1,129,777	46%	9,259,000	-

<sup>6</sup> U.S Supreme Court case, Philadelphia vs. New Jersey, 1978, <https://caselaw.findlaw.com/us-supreme-court/437/617.html>

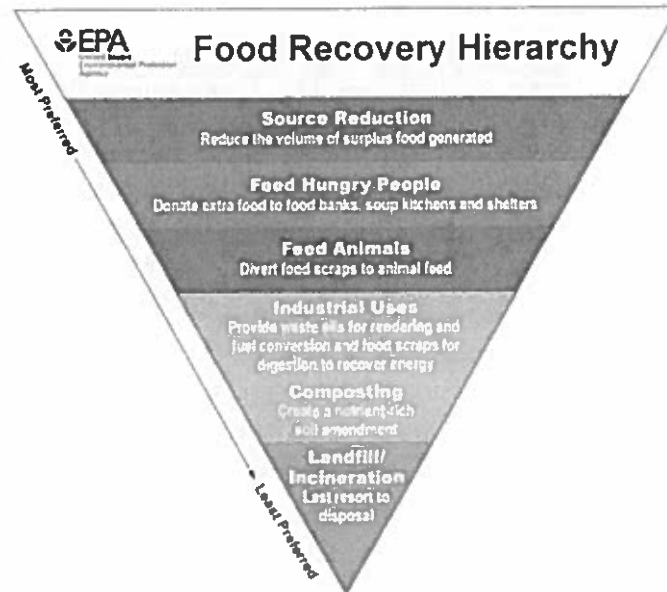
Year	In-State	Out-of-State	% In-State	Est. Remaining Capacity	
	tons	tons	%	Cubic Yards	Years
<b>Landfills - Limited Service Area</b>					
Lower Mount Washington Valley Secure Solid Waste Landfill Conway, NH					
No minimum permitted life expectancy					
2015	2,290	0	100%	-	-
2016	2,302	0	100%	262,000	20
2017	2,426	0	100%	249,000	19
2018	2,486	0	100%	238,000	18
Lebanon Regional Solid Waste Facility Lebanon, NH					
No minimum permitted life expectancy					
2015	31,150	12,031	72%	-	-
2016	29,007	11,547	72%	1,128,000	13
2017	27,518	11,312	71%	850,000	10
2018	28,394	11,625	71%	810,000	9
Four Hills Secure Landfill Expansion Nashua, NH					
Permitted life expectancy through at least April 2023					
2015	68,129	0	100%	-	-
2016	68,471	0	100%	794,116	9
2017	75,579	0	100%	687,054	7
2018	76,971	0	100%	553,172	4.5
<b>Total (Landfills - Limited Service Area)</b>					
2015	101,569	12,031	89%	-	-
2016	99,780	11,547	90%	2,184,116	-
2017	105,523	11,312	90%	1,786,054	-
2018	107,851	11,625	90%	1,601,172	-
<b>Incinerators - Unlimited Service Area</b>					
Wheelabrator Claremont Claremont, NH					
Stopped operating on 9/29/2013					
Wheelabrator Concord Penacook, NH					
2015	195,828	7,595	96%	-	-
2016	189,734	7,391	96%	-	-
2017	174,531	20,233	90%	-	-
2018	174,673	18,656	90%	-	-
<b>Total (All Disposal Facilities: Landfills &amp; Incinerators - Unlimited &amp; Limited Service Areas)</b>					
2015	1,053,130	920,431	53%	-	-
2016	1,082,138	994,518	52%	-	-
2017	1,225,366	1,104,580	53%	-	-
2018	1,228,819	1,160,058	51%	-	-

**Notes:**

1. All data from annual facility reports submitted to NHDES-SWMB. Some estimated remaining capacities noted herein may not include approved additional capacity.
2. Alternate Daily Cover (ADC) is not included in any of the amounts presented in this table.
3. WMNH-Turnkey expansion was approved on 6/11/2018 for an additional 15.9 million cubic yards; life expectancy through 2034.
4. Mt. Carberry reports additional remaining capacity for conceptual expansion (Phase III) of about 7,718,000 cubic yards or 32 years.
5. Mt. Carberry expansion application approved February 2019; about 2 years additional capacity to 2025.
6. Expansion application under review for NCES; application requests approximately 2 additional years of capacity.
7. Boscawen Corn Hill Road C&D Landfill and Epping Bulky Waste Disposal Area not included (small amounts relative to facilities included; operations expected to cease by 2025)
8. Merrimack Station Coal Ash Landfill, located in Bow, NH, not included (small amounts relative to facilities included; limited private facility)
9. Bridgewater incinerator not included (small amounts relative to facilities included).

6. **Landfill leachate and gas.** Landfills generate leachate, including PFAS, which must be assiduously and carefully handled to protect the public health. During the study committee's visit to Turnkey, it learned that Waste Management (WM) processed approximately 100,000 gallons of leachate per day. It has gone to great expense to process this leachate, but toxins removed are concentrated into a cake and then must be placed back in the landfill where it is secured. Landfills also generate landfill gas, about 50% of which is methane, a potent greenhouse gas and a contributor to climate change. Many landfills, including Turnkey, have equipment that creates electricity from the landfill gas, but many do not. It requires a large investment. In many cases, the gas is flared. An innovative, well-considered New Hampshire collaboration between Turnkey facility and UNH involves the piping of methane to the university for energy. Again, however, market forces play a major role. If fossil fuels are cheaper, electricity generated from landfill gas and waste-to-energy processes must be sold at a less profitable price. This undermines the economic use of these methodologies, making them less popular.
7. **Waste-to-energy.** Per the New Hampshire statutes, waste-to-energy plants are better alternatives for dealing with solid waste than landfills. Assuming air quality standards are met, waste-to-energy plants provide a good alternative energy source, and are a method used widely where there is little land available for landfills. Although the ash from these plants must be deposited in landfills, Wheelabrator testified that it is working on ways to reduce what is put in landfills, such as removing ferrous materials. This makes economic sense.
8. **Economics.** As long as the cost of recycling, composting, or other means of diversion is less expensive than the tipping fees charged by landfills and incinerators and associated hauling costs, then it makes economic sense to engage in those activities. However, the recent collapse in prices of certain recycled material commodities, caused by China enacting stricter contamination standards through its National Sword policy, has made the economic viability of recycling less clear to municipalities, especially those that rely on single stream recycling and MRF processing.
9. **Reducing contaminants in recyclables.** In general, recyclables that are not contaminated with non-recyclable materials have greater market value. MRFs that receive co-mingled, single stream materials that have less contamination will produce cleaner end products with greater value. Achieving a less contaminated single stream source requires educating those seeking to recycle as to what is acceptable to throw in the recycling bin.

10. **Food recovery hierarchy.** The following food recovery hierarchy developed by EPA<sup>7</sup> is an excellent policy guide for reducing the amount of food waste disposed of in landfills or incinerators.



11. **Food waste regulations.** Food waste represents an economic loss to the consumer who bought the food but did not eat it, or the store that purchased the food for resale, but was unable to do so. In some circumstances, it is also a lost opportunity to feed those struggling to put food on the table. Regulations of NH Department of Health and Human Services, in conjunction with federal regulations, sometimes make it difficult to share food that would otherwise become a waste product. Finding ways through education or needed regulatory reform of getting the food eaten rather than thrown away should have the highest priority.
12. **Composting preserves landfill capacity.** Composting is an excellent method of diverting organic materials from the waste stream and being landfilled or incinerators. Organics are the feedstock for the creation of methane in landfills, an energy source when captured but a potent greenhouse gas when released to the atmosphere. New Hampshire has already banned the disposal of leaf or yard waste in landfills and incinerators which has resulted in the materials being composted on-site or else collected and composted relatively inexpensively elsewhere. However, very little unused food, which constitutes 22% of discarded solid waste according to EPA,<sup>8</sup> is diverted for composting or other use. This constitutes a huge opportunity for additional diversion by various means. Municipalities could also save money in tipping fees by doing more composting.
13. **Challenges to decreasing food waste.** There are two primary obstacles hindering the more widespread composting of food waste. One is that it must be kept separate from the rest of the waste or recyclables, both by the generator and the collector. This constitutes more work

<sup>7</sup> <https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy>

<sup>8</sup> <https://www.epa.gov/sustainable-management-food/sustainable-management-food-basics>

by all involved and potentially greater transportation costs, especially if collected at the curb which requires a separate pickup. The other obstacle is that current DES rules prohibit the inclusion of meat and dairy from being composted at most facilities, unless the facility has obtained a standard permit for such composting. Obtaining a standard permit is a more complex and expensive process than the more commonly used permit-by-notification, and to date, no one has applied for a standard permit to allow composting of meat and dairy.

14. **Composting regulations.** In the hopes of making it easier for composting facilities to open and operate in New Hampshire, in particular smaller operations, the Legislature in 2015 required DES to adopt rules relative to “requirements and best practices for facilities that compost organics, including vegetable matter, meat, meat byproducts, dairy products, or dairy product derivatives.” DES held a series of stakeholder meetings in 2017 and 2018 to work on the issue, but has not yet proposed or adopted rules due to, among other factors, resource (staffing) deficiencies as stated by the department. The need for adopting such rules was a common refrain from those who testified before the committee, including from the farming community. In fact, farmers saw the ability to engage in commercial composting as a good way to augment their tight income streams. Farmers asserted that businesses and municipalities could use the farms for composting to dispose of collected food waste more economically than by landfilling. Until the regulations are amended, DES has offered to consider waiver requests from the meat and dairy prohibition under the permit-by-notification process.
15. **DES deficient due to lack of funding.** The State of New Hampshire is not doing nearly enough to prepare for an evolving solid waste emergency. Our landfill capacity is rapidly diminishing. Local communities have increasingly little inclination to host them and local land use ordinances control. Our waste management and planning statutes are out of date. Virtually everyone who testified bemoaned the troubling lack of forward-looking planning, technical assistance and education done by DES due to staff shortages. They convincingly asked the committee to find a way to increase financial support to the agency to enable it to better do its job. The Solid Waste Bureau now has two primary functions: permitting and compliance. Without additional funding, it is unclear what the future holds for our state and our municipalities as they deal with their solid waste disposal challenges.
16. **Former DES Planning and Community Assistance Section.** Over a decade ago, Solid Waste Management Bureau of DES’s Waste Management Division (the “Bureau”) had an active Planning and Community Assistance Section. It was composed of five individuals who operated in a non-regulatory fashion and assisted municipalities with solid waste management issues and promoted recycling and composting throughout the state. They also worked on updating the state’s Solid Waste Management Plan as required every 6 years by statute (the last update was in 2003.) Unfortunately, budget cuts over the years eliminated all of these positions except one, the Solid Waste Operator Training Coordinator. In addition, there used to exist a Recycling Market Development Coordinator within the former

Department of Resources and Economic Development, as well a Governor's Recycling Program, which focused on school recycling and outreach as a whole.

17. **New Hampshire falling behind.** The state's reduced support for solid waste management planning and assistance over the years has left it incapable of adequately responding to the various challenges that have arisen. Many municipalities feel they receive inadequate state direction and have to go it alone in a complex situation where they have minimal control. Other states are moving ahead with their recycling and composting programs, whereas New Hampshire, for instance, does not have an in-state MRF for single stream recycling or commercial composting facility permitted to take meat and dairy. The absence of such facilities makes it much more expensive to single stream recycle or compost food waste because of transportation costs. Surrounding states have also instituted certain disposal bans at landfills, such as on food waste and construction and demolition debris. The Northeast Resources Council provided a comprehensive, eye-opening list of regional disposal bans in its testimony.<sup>9</sup> This makes New Hampshire's commercial landfills, with no such bans, a more attractive disposal option for waste that has been banned in that state. Additionally, other states, such as Massachusetts, have closed landfills, making New Hampshire a cheaper, nearby alternative for landfill disposal. As tipping fees increase regionally, more pressure is put on NH's landfills. Other states have devoted significant funds to developing creative, effective solutions to enable better use of resources, recycling and composting to preserve landfill capacity.
18. **Disposal surcharges.** Testimony indicates that most states in the nation impose disposal surcharges on solid waste disposed of in their state. While the specific uses of these dedicated funds varies, funds provide vital support to state government for its long-range planning, education, rule-making, grant-making and technical assistance capabilities. New Hampshire stands almost alone by not charging a disposal surcharge. In our revenue-strapped state, it is unlikely the Bureau can be adequately funded with general funds to do its statutory responsibility. A dedicated fund financed by all who dispose of solid waste in our state or some other source of funding is necessary for the public health of our citizens.<sup>10</sup>
19. **DES Waste Management Council.** As further elucidated in the RSA 21-O:9, the Council is responsible for hearing all administrative appeals of DES decisions concerning waste management, advising the Director of the Waste Management Division on a broad range of long-range policy and planning issues, and reviewing proposed administrative rules. Members receive no compensation except for mileage and expenses. The council meets at least four times per year. A considerable amount of its time is devoted to hearing appeals,

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<sup>9</sup> Comments provided by the Northeast Recycling Council,  
<http://www.gencourt.state.nh.us/statstudcomm/committees/1476/documents/NERC%20comments.pdf>

<sup>10</sup> A chart of Solid Waste Disposal and Operating Fees in U.S. States generated by DES, 2013,  
<http://gencourt.state.nh.us/statstudcomm/committees/1476/documents/Solid%20Waste%20Disposal%20and%20Ope rating%20Fees%20-%20Comparison%20US%20States%20-%202013.pdf>

especially recently. The director provides an overview of Division activities on a regular basis. Proposed rules are also presented periodically.

20. **Solid Waste Management Plan update vital.** Pursuant to RSA 149-M, the Bureau is required to produce a solid waste management plan every six years. The last plan was issued in 2003. The Bureau testified that the primary reason for the continual delay is staffing and financial resource constraints. As indicated in the 2019 Biennial Solid Waste Plan (page 12), the Bureau now is basically only doing permitting and compliance work. It is impossible to adequately anticipate and plan for our myriad solid waste challenges without preparing a timely solid waste management plan. The bare bones Bureau staff is consistently pulled in multiple directions, including providing legislative support. It makes it extraordinarily difficult to produce a plan. One cannot overemphasize the importance of this document to our state's future with respect to solid waste. Our landfill capacity is plummeting. Approximately 50% of our landfill capacity goes to out-of-state waste. Forward-thinking, creative planning is vital.
21. **Glass and processed glass aggregate.** Glass presents another opportunity for improved management of a waste material. It is heavy, thereby making it expensive to haul any distance and expensive to dispose of at a landfill or incinerator where tipping fees are based on weight. It can also be a source of contamination when co-mingled with other recyclables and broken during handling and processing. Markets for recycling the material are limited and of low value, yet still require that the glass have little contamination. NRRA has a long-standing and simpler program for handling glass which is to crush it unsorted, along with other glass like materials (ceramics, Pyrex, etc.), which produces a processed glass aggregate (PGA) that may be used as a replacement for or as a mixture with construction aggregate (e.g. gravel and sand) in various projects, as long as it is not left exposed on the surface. Presently, the use of the material in private construction requires a professional engineer's or architect's approval, as required by DES's current Certified Waste Derived Product specification for the product. NRRA is working with DES to remove this requirement from the specification for NRRA's PGA in hopes of encouraging broader use of the product. In addition, the state Department of Transportation (DOT) requires that the product be more finely crushed (to 3/8 inch) before it can be used on a state road project. NRRA is unlikely to commit to having the material crushed to this dimension, as it is more costly, unless DOT makes a commitment to its use.
22. **Plastics.** Plastics are another major component of the waste stream that can be managed better. They have been increasingly used in the past few decades for packaging consumer products, such as food, into bottles, jars, packets, and bags of various shapes and sizes. They are also used as films to cover or encase foods such vegetables and meats to preserve freshness. Plastics are popular, versatile in application, relatively inexpensive, and are lighter than most other packaging materials, especially glass. This lightness results in lower transportation costs due to reduced energy (fuel) consumption, which also benefits the environment through lower greenhouse gas emissions. While others may disagree,



Stonyfield Farm's Director of Sustainability Innovation testified that the company's packaging research indicated that using plastic containers had the least impact from a climate change standpoint. Others asserted that the creation of plastics from fossil fuels and their manufacture can present significant health issues. Research also indicates an alarming increase in the pollution of our environment by plastic litter and microplastics. This is gravely concerning, given the lengthy lifespan of plastic materials.

23. **Recycling plastics.** Plastics are often marked with a numbered recycling logo (#1 - 7) indicating the type of resin they are made of, and can be either rigid or flexible. Though in theory, all of plastics may be recyclable, in reality it is very challenging to successfully do so. Consumers are often confused by all of the resin numbers and variations in form (rigid vs. flexible) that affect what can and cannot be recycled in their community. Mistakes are commonplace causing contamination that decreases value. Since plastics are so light, municipalities that process their own recyclables must have large storage areas to accumulate enough of a specific plastic to make a compressed bale of the material. The process is also labor intensive. In addition, viable or price-competitive markets may not be readily available either. China modified its acceptable levels of contamination to among the lowest levels worldwide. This has created a global supply glut of materials and this, along with the availability of low-cost virgin materials, depresses the value of recycled plastic. The fact that plastics are so light compared with other components found in solid waste means that there is less of an economic incentive to recycle them since disposal fees at landfills and incinerators are based on weight. In contrast, plastics take up considerable volume for their weight and thereby take up a disproportionate amount of landfill space.
24. **Circular economy for plastics needed.** The plastics industry is working towards "a circular economy for plastics"<sup>11</sup> with the aim of capturing the vast amounts of plastic packaging that is being landfilled, or worse, being released into the environment, and repurposing it. Research is underway into methods to collect and process more kinds of plastics, including flexible plastic packaging (ie, plastic film bags and shrink wrap), which has traditionally been considered a contaminant in single-stream, curbside recycling programs. Finding new and expanded markets for all types of used plastic once collected and processed is also being investigated. This is extremely important because of the on-going increase in the use of plastics due to their versatility and popularity, especially for single uses.
25. **Decrease single use plastics.** Plastics present singular, concerning environmental issues. Although certain types of plastics are highly recyclable, not enough is recycled. Testimony indicates that by some estimates 91% of all plastic ever produced has been disposed of in landfills or litters our land and seas.<sup>12</sup> Complicated plastic packaging is constantly evolving and is increasingly hard to recycle. Dart Container Corporation and the American Chemical Society testified that the industry is working hard in find recycling solutions, as many turn an

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<sup>11</sup> American Chemistry Council plastics webpage, <https://plastics.americanchemistry.com/recycling-and-recovery/>

<sup>12</sup> We Made Plastic. We Depend on It. Now We're Drowning in It. by National Geographic, <https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-waste-pollution-trash-crisis/>

increasingly critical eye toward plastics, but recycling alone is not the solution. Reduction of single use plastics in our waste stream is necessary. Other states in the region are taking action to decrease plastics. As noted in an earlier finding re: disposal bans by other states, this may mean more plastics being sent to New Hampshire for disposal. The committee appreciates the recent decision by waste management companies, including Waste Management, to stop sending plastics to poverty-stricken countries.<sup>13</sup>

26. **State procurement.** For recycling to work, all recyclables need good markets. The state of New Hampshire, through its procurement process, can help promote recycling by increasing its purchase of products with high recycled material content. This takes advantage of the significant purchasing power of state government and demonstrates leadership on this important issue. The state also needs to do what it can to incentivize increased use of recycled materials statewide.
27. **Aluminum and tin.** The markets for recycled tin and aluminum remain strong and are good sources of revenue for communities.
28. **Healthcare.** New Hampshire's hospitals and other medical facilities dispose of multiple tons of solid waste per day, much of it in landfills. Some hospitals are leading the effort to reduce their waste. Dartmouth-Hitchcock (D-H) has instituted aggressive programs to reduce its waste stream, by decreasing consumption where possible, recycling, and composting.<sup>14</sup> D-H also tries to identify possible closed loop systems where a waste product is repurposed or recycled into a product, which is then bought by the hospital. For example, D-H contracts with the Bradford-based company, Circular Blu, to recycle its sterilization wrap by reprocessing it and using the material to create tote bags that are provided or sold at the hospital to patients, employees, and visitors. Testimony by the New Hampshire Hospital Association indicates an awareness of the waste problem and a desire to seek ways to improve. Organizations like Practice GreenHealth and Health Care Without Harm are helping lead the way.
29. **Education on recyclability.** Recycling's success depends on consumers. There is a great deal of consumer confusion and frustration as to what can be recycled, and how and where to do it. Municipalities, large and small, businesses and residents all testified to the need for standardization of signage that could be used universally to clarify recycling opportunities. Standardization of recycling signage and uniform recycling guidelines should help increase recycling. Education regarding best recycling practices will also help those collecting and processing recycled materials to decrease the amount of contamination by non-recyclable materials, thereby facilitating the development of markets and increasing prices for recycled goods. This in turn should decrease costs for municipalities, directly effecting consumer

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<sup>13</sup> [https://www.huffpost.com/entry/waste-management-plastic-export\\_n\\_5da9ce43e4b0e0f0378ae647](https://www.huffpost.com/entry/waste-management-plastic-export_n_5da9ce43e4b0e0f0378ae647)  
[http://rorr.btownwebclients.com/wp-content/uploads/2019/09/wm\\_01080-Plastic-Export-Policy\\_rl.pdf](http://rorr.btownwebclients.com/wp-content/uploads/2019/09/wm_01080-Plastic-Export-Policy_rl.pdf)

<sup>14</sup> "Sustainability at Dartmouth Hitchcock Medical Center" in Green Energy Times.

costs. Many businesses are consulting to improve their solid waste challenges trying to do the right thing and save money, too. Casella, for instance, provides consulting services.<sup>15</sup>

30. **Coordination to promote recyclability.** The success of source reduction, reuse and recycling goods depends on consumers who face a blizzard of different sorts of products and packaging, from chip bags to toothpaste containers, juice boxes to single use applesauce containers. Many of these items end up at MRFs, as contamination, landfills or waste-to-energy plants. A much higher level of coordination is needed among those who make packaging, particularly plastics-based, businesses who design packaging for safe delivery and to attract sales, and those who must process the waste. If materials can be recycled, more cash can be generated which will decrease disposal costs, save landfill space and reduce litter. This will take a concerted national effort and much commitment. States are also taking action. Reacting to the large amount of unrecyclable packaging in its landfills, Maine has passed legislation seeking to promote extended producer responsibility.<sup>16</sup>
31. **Business opportunities.** The loss of the Chinese market for our mixed paper and plastics presents real, domestic economic opportunities that are beginning to evolve. In New Hampshire, we have a great deal of experience with paper processing that could be utilized to do more recycling. For instance, a Chinese company, Nine Dragons, has purchased US paper mills, including one in Rumford, Maine.<sup>17</sup> Domestic plastic recycling plants are also starting to come online. New Hampshire could work with entrepreneurs to develop such businesses and become an incubator for solid waste recycling and reduction innovation. The committee had insufficient time to research the University System's activities regarding sustainability, but the System could increase engagement on these issues. There are also opportunities related to the development of anaerobic digesters and better uses for biogas in the creation of electricity. Business opportunities also exist for developing and promoting sustainable packaging.
32. **Waste management industry.** Waste management companies play a significant role in our society. Society generates a vast amount of refuse of a mindboggling variety. Virtually everyone, directly or indirectly, pays for private or public waste management services to deal with their garbage. While many are critical of waste management companies and the fact that they bury or burn unrecycled trash, what would happen if they did not? Where would it go? Until such time as society can achieve the laudable goal of zero waste, solid waste will continue to exist. Many throw things away and are unaware of or care little about where their trash goes. The study committee members were at times, overwhelmed when witnessing the sheer magnitude of trash being handled by the Waste Management's Billerica MRF (100,000 tons/year) and the amount being buried at Turnkey (approximately 1,500,000 tons/year). Companies like Waste Management and Casella are doing the job they are expected to do for

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<sup>15</sup> <https://www.casella.com/about-casella/innovation>

<sup>16</sup> Maine DEP to draft legislation designed to strengthen recycling, Recycling Times, <https://www.recyclingtoday.com/article/maine-explores-epr-legislation-for-packaging/>

<sup>17</sup> Nines Dragon Paper website, <https://us.ndpaper.com/>

society, as regulated and overseen by our government. The study committee agrees that systems to decrease wasteful refuse generation must be developed and better methods of reuse and recycling must move ahead rapidly.

33. **Waste management industry adaptation.** Waste management companies recognize that to thrive as businesses, they, too, must work with all entities to better utilize materials that are banned from landfills (ie, food waste) or to recycle more materials. Economics will continue to drive these efforts. Casella, for example, is working to find alternative ways to handle waste it is called upon to dispose of through its sustainability program, described in great detail on its website.<sup>18</sup>
34. **Municipalities are islands.** NRRA works closely with municipalities to find markets for sorted recyclables. Municipalities rely heavily on their efforts to make recycling pay for itself, if not, to generate funds. This organization does an excellent job trying to facilitate better use of recyclable materials, but it is challenging work. Municipalities repeatedly asserted that they are on their own trying to figure out what to do with their solid waste and recyclables, negotiating individual contracts for solid waste hauling and disposal and recycling in a roiling global market with major fiscal pressures from property taxpayers. This is a tremendous burden for our cities and towns.
35. **Transportation costs.** One of the major expenses to municipalities is transportation of recycled goods. When municipalities were able to get a good return on recyclables, the transportation costs did not present such an obstacle. But now it can cost as much or more than what is paid for recyclables than the transportation costs. Many municipalities attempt to do the right thing and keep recycling, but for some, the economics do not work and they elect to throw items that they otherwise would recycle away. This uses up dwindling landfill capacity and is a waste of resources. The creation of an in-state MRF either through a private-public partnership or by private industry could decrease the transportation costs of recycled goods and promote more recycling. A regional recycling hauling system for smaller towns could ensure their recycling gets to market rather than to landfills.
36. **Regional Planning Commissions and Solid Waste Districts.** Regional planning commissions already play an important role in supporting the solid waste management efforts of New Hampshire's communities in a variety of ways, including acquisition of US Department of Agriculture Solid Waste Management grants, pilot programs, coordinating educational and recycling efforts and more. Additionally, RSA 53-B provides a mechanism whereby municipalities can join to form solid waste management districts. Somewhat unpopular in New Hampshire, these districts can help municipalities work collaboratively as they face the many hurdles of solid waste management in today's global turmoil.
37. **School districts.** School solid waste generation, recycling, food packaging, food waste and composting presents particular challenges. But as evidenced by the Somersworth Middle

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<sup>18</sup> Casella 2018 Sustainability Report, <https://www.casella.com/sites/default/files/pdfs/Casella-SustainabilityReport-2018.pdf>

School's impressive presentation, students in partnership with supportive school boards and administrations, can save money, accomplish much and learn a great deal working to better manage the solid waste generated. Their work could be a model for other school districts. One issue noted was that kitchen services are frequently contracted out and some private companies are slow to adopt composting and other beneficial efforts.<sup>19</sup>

38. **Sustainability efforts by private businesses.** It is encouraging that many businesses recognize the important of reducing their solid waste footprint. Here in New Hampshire, Hannaford, Stonyfield Farm, Hypertherm and Walmart are trying to become more sustainable. This is the right thing to do, but also companies are feeling public pressure to do more. Multistate businesses, especially large, multistate organizations, prefer predictability and uniformity in solid waste requirements. Hannaford testified as to its work with Maine on a statewide plastic bag ban bill because it had difficulty complying with multiple local ordinances. Casella testified as to the issues presented by varying state laws. In deciding whether to pursue more aggressive legislation to ensure source reduction and recycling, the legislature should understand that in doing so, it would join neighboring states and that businesses seeking uniformity could be supportive of these efforts. There are many organizations working on sustainability, such as the Sustainability Packaging Coalition members.
39. **Zero waste efforts.** Testimony indicates that our state and our world benefit from consistently pushing toward source reduction and reuse. The public, our municipalities, businesses and state agencies want to do the right thing. Many pathways to improvement to exist. We need to consistently strive to improve and be given the tools to do so. Zero waste is a worthy goal.

## RECOMMENDATIONS

1. The state must accept its statutory responsibility under RSA 149-M and resume its leadership role in long-range planning, technical assistance and public education to foster the better management of New Hampshire's solid waste challenges and recycling opportunities.
2. New Hampshire's solid waste management statutes and related programs must be updated to properly reflect current local, state, national and global conditions. They must also be updated to reflect our better understanding of the economic, environmental and public health costs of different types of solid waste and the effects of burying and incinerating our waste.  
**Legislation recommended to update solid waste management laws.**
3. DES Solid Waste Management Bureau must be provided with adequate funding to perform its vital, statutory long-range planning duty and, because general funds have proven to be an

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<sup>19</sup> Somersworth Farm to School initiative, [https://docs.google.com/presentation/d/12-wB86S0fpPmPmQJzBKsEr6BoTtoTOUg7DeZ7C1gSCK/edit#slide=id.g4bab56338b\\_1\\_0](https://docs.google.com/presentation/d/12-wB86S0fpPmPmQJzBKsEr6BoTtoTOUg7DeZ7C1gSCK/edit#slide=id.g4bab56338b_1_0)

unreliable funding source, a new method of funding must be developed. Like most other states, New Hampshire should create a dedicated fund to support the vital activities of the Bureau based on a per ton disposed surcharge. Such a surcharge should be based on all in-state and out-of-state solid waste tonnage delivered for disposal at any in-state landfill and waste-to-energy plant. The expenditure of these funds must first and foremost include financial support of the Solid Waste Bureau, so that it can perform its statutory duties and support our municipalities. DES should refine how these funds will be expended through rulemaking. **Legislation recommended to create a funding source through the institution of a dedicated fund based on per ton disposal surcharges on all waste landfilled or incinerated in New Hampshire. Such legislation would include a method of reimbursing surcharges paid by New Hampshire municipalities back to them for solid waste-related uses.**

4. To promote the state's solid waste hierarchy, as stated in RSA 149-M:3, and because misunderstanding leads to more solid waste disposal, the Bureau should take an active leadership role, including outreach, in education of residents, municipalities and businesses in developing simplified guidance on what is recyclable, and how and where to do it. The Bureau should continue to seek opportunities to work with and seek the support of stakeholders to educate on solid waste management-related subjects as they arise. **Legislation recommended.**
5. To assist the Bureau in the performance of its long-range planning responsibilities and other recommendations of this study committee, the Legislature should create a statutory commission, working group or similar entity that includes a variety of stakeholders. This entity should include at least one member of the DES's Waste Management Council, which also has long-range planning and public education responsibilities. The entity should have no more than a 5-year lifespan. **Legislation recommended to create a 5-year or less statutory commission, working group or similar entity, including at least one member of the Waste Management Council and other stakeholders, to work with DES to develop sound forward-looking, solid waste management policies, educational outreach and technical assistance programs and similar endeavors, as necessary.**
6. DES must put the necessary resources into updating the 2003 Solid Waste Management Plan no later than September 30, 2020. The Legislature should reconsider the requirement of revising the plan every 6 years with a view toward doing so every 10 years for better planning. **Legislation recommended to amend the 6-year requirement to 10 years and to require prompt completion of a new solid waste plan no later than September 30, 2020.**
7. The Legislature should revise RSA 149-M:29, II in accordance with the analysis, conclusions and recommendations of the DES's Biennial Solid Waste Report from a 40% waste diversion goal to a disposal reduction goal with specified targets and timelines to reduce annual tonnage disposal. **Legislation recommended to amend RSA 149-M:29, II to replace the 40% waste diversion goal with disposal reduction goals with specified targets and**

**timelines. The committee supported a minimum of 25% disposal reduction by 2030 and 45% disposal reduction by 2050.**

8. Like other states, NH should institute disposal bans of various types of waste over a carefully considered time frame and work to create markets and an infrastructure to accommodate the banned items. Such bans would prohibit identified waste from being disposed of in landfills or incinerators. Items to consider are food waste, any electric device with a cord, rechargeable batteries, various types of plastics, glass, and construction and demolition debris. Currently, NH bans leaf and yard waste and electronic waste, among other things, by statute. (RSA 149-M:27) The state should also closely assess the extent to which solid waste banned in other states is being disposed of here and whether that should be permitted.

**Legislation recommended to institute disposal bans.**

9. Because domestic recycling is a job creator and provides ample business opportunities, the state should incentivize and develop methods to support new and existing businesses that seek to engage in the production of new products from recycled goods, such as plastics and paper products, and ways to reduce and reuse solid waste. Similarly, the state and private entities should work to develop markets for recycled goods, working with groups such as the Northeast Recycling Council. The state should also promote the development of corporations producing sustainable packaging. **Legislation recommended.**

10. Because food waste takes up so much landfill capacity, drives methane release and would be far better consumed than wasted, the Department of Health and Human Services should create internally or the Legislature should create a task force to review and improve food safety regulations with a view to maximizing beneficial use of what is now viewed as waste. This regulatory review should include stakeholder input from food banks, food sellers, schools and restaurants. NH should join other states in their efforts to decrease food waste. **Legislation recommended to require DHHS to review and improve food waste-related regulations in an attempt to reduce food waste and feed the hungry.**

11. As funding becomes available, the Long-Range Planning and Community Assistance Section of the Bureau must promptly be reactivated, per Finding #16, to assist municipalities, non-profits and others with long-range planning, technical assistance with respect to their solid waste challenges (including finding recycling material outlets) and contract negotiations.

12. Based on testimony from a variety of stakeholders, municipalities should strongly consider instituting pay-as-you-throw programs to reduce property taxes and to decrease what is landfilled and incinerated, to encourage source reduction and to increase recycling.

13. The Department of Administrative Services should work with the Legislature to review and update state laws to reflect current solid waste challenges and opportunities and to coordinate disposal and recycling effects. Decentralized waste disposal policies should be reviewed and adapted to improve currently centralized recycling efforts. The state should be a leader in procurement of recycled products, waste reduction and recycling. This work should begin immediately and should include measures to comply with the Legislative Budget Assistant's

performance audit of DAS's Statewide Recycling Program, May 2015, to the extent the agency has not yet complied with the audit findings.<sup>20</sup> **Legislation recommended to update state procurement policies, reduce solid waste and improve recycling.**

14. Recognizing the staffing challenges this presents, the Legislature should require the Bureau to send proposed, revised composting rules to the Joint Legislative Committee on Administrative Rules (JLCAR) no later than September 30, 2020. These rules should be finalized promptly once approved by JLCAR. The state should also work to facilitate the creation of an infrastructure to promote commercial, municipal and other composting efforts. **Legislation recommended to require regulations to be promulgated by September 30, 2020.**
15. The state and private businesses should collaborate on ways to incentivize increased coordination between packaging designers, brand owners, manufacturers and waste management/recycling companies to enhance recyclability and reuse so as to reduce waste disposal, particularly with respect to plastics, including extended producer responsibility. **Legislation recommended.**
16. To assist municipalities in reducing costs associated with the management of recyclables, statewide efforts should be made to decrease related transportation costs and storage shortages for recycled materials by working to promote regional pickups and transport to recyclers, as well as the creation of an in-state MRF, perhaps through a private-public partnership. **Legislation recommended**
17. The state should try through legislation, procurement, education and otherwise to decrease the amount of plastic waste generated and disposed of in landfills, incinerators and left as litter. Every effort should be made to ensure that those plastics that are recyclable, such as HTPPE and PETE, be recycled, particularly as testimony indicates that certain types are more readily recycled. **Legislation recommended.**
18. The DOT should endeavor to use as much glass aggregate as possible in its projects, by creating a pilot project to do so, and subsequently to require a certain percentage of glass cullet to be used in state projects. The state and industry should work to create an adequate supply of PGA to ensure that the requirement is met. **Legislation recommended to require DOT to promote the use of PGA, including a pilot project, ultimately ensuring PGA to be used in state projects.**
19. State government and other private organizations should develop methods to recognize and encourage those entities that reduce, reuse and recycle products, thereby keeping them out of the waste stream.
20. Recognizing the value of single use plastics in certain contexts, such as healthcare, single use plastics should be regulated and reduced where possible. To promote recycling, organizations selling goods involving the use of flexible plastic film, such as single use plastic bags and

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<sup>20</sup> [http://www.gencourt.state.nh.us/LBA/AuditReports/PerformanceReports/DAS\\_2015.pdf](http://www.gencourt.state.nh.us/LBA/AuditReports/PerformanceReports/DAS_2015.pdf)



wraps, should provide opportunities for the collection of such plastics for recycling similar to the “return to retailer” program or WRAP (Wrap Recycling Action Program) described by the American Chemistry Council. Those that do must clarify for and educate consumers as to which of those items can be recycled, thereby decreasing contamination of the recycled items and to answer a desire of the public to recycle their flexible plastic film products.

**Legislation recommended.**

21. As major generators of various forms of solid waste, healthcare organizations should continue to seek ways to reduce consumption and increase recycling and composting. The state should work with healthcare organizations to accomplish this task, perhaps through incentivizing reduction.
22. Municipalities should continue to work with Regional Planning Commissions to develop better solid waste management tools. Municipalities should also consider the potential benefits of joining into solid waste districts.
23. School districts should consider the model used by the Somersworth Middle School to develop better systems to reduce, reuse, recycle and compost solid waste as a way of educating students, improving the environment and saving money. School districts should work with independent kitchen services organizations serving their cafeterias to reduce food waste and to operate more sustainably, including the use of reusable trays, dishes and silverware.

## **ACKNOWLEDGEMENTS**

While the study committee did extensive work to highlight the state’s increasing recycling and solid waste management challenges per its mandate, it had neither the expertise nor the time to adequately research and review this extraordinarily complex, multifaceted subject that touches every part of our society. The committee’s findings and recommendations show that much more work needs to be done and hopes that this report helps lead the way. The study committee would like to thank the many, many stakeholders who shared their time and knowledge over the course of the past several weeks. It is deeply appreciated. The study committee is grateful to Waste Management for providing an informative field trip to its Turnkey landfill and Billerica MRF. The study committee would like to extend special thanks to Michael Nork, DES, Reagan Bissonette, NRRA, and Joel Anderson, NH House Committee Services, for their continual, vital support and assistance.

## Appendix A

### List of Those Who Provided Testimony to the Committee

First Name	Last Name	Organization
Nancy	Amato	Town of Milford
Chris	Asbell	Somersworth Middle School - Science Teacher/Project Mentor
Deb	Augustine	NH Hospital Association
Jeanne	Beaudin	Town Administrator Town of Belmont
Heather	Billings	Center for Ecotechnology (Mass.)
Reagan	Bissonette	NRRA - N.E. Resource Recovery Assn
Steve	Brewer	Town of Raymond
Bob	Cappadona	Casella Resources
Bill	Cass	NH DOT
Christine	Cassidy	DART
Chip	Chesley	City of Concord
Bonnie	Christie	Hopkinton Recycling Committee
Adam	Clark	City of Concord
Zachary	Conaway	Dartmouth-Hitchcock Medical Center
Joan	Cudworth	Town of Hollis Solid Waste Supervisor
Lisa	Drake	Stonyfield Yogurt - Director of Sustainability
John	Early	Public Works New London
Patrick	Ellis	Casella Organics
Amy	Farnum	N.H. DAS State Recycling Coordinator
Alex	Freid	Post-Landfill Action Network - Dover NH
Mark	Gomez	City of Manchester Solid Waste Mgmt Council
Matt	Hughes	Wheelabrator
Bret	Ingold	Warner Public Market
Tom	Irwin	Conservation Law Foundation
Cheryl	Jensen	Resident Town of Bethlehem
Cordell	Johnston	NHMA
Lucas	K.	Somersworth Middle School
Aaron	Kerr	Rainbow Bridge Composting - Deerfield
Judy	Knapp	Hannaford - Government Relations Manager
Jeff	Lafleur	City of Nashua Solid Waste Supervisor
Katie	LaJoie	Resident - Charlestown, N.H.
John	LaRiviere	Wheelabrator
Chris	Lucarelle	Waste Management
Rebecca	McWilliams	Lewis Farm
Larry	Melanson	NH The Beautiful
Paula	Minnehan	NH Hospital Association
Marc	Morgan	City of Lebanon
Michael	Nork	NHDES Solid Waste Management Bureau
George	Parmenter	Hannaford - Sustainability Manager

<b>First Name</b>	<b>Last Name</b>	<b>Organization</b>
Adam	Peer	American Chemistry Council
Steve	Poggi	Waste Management
Lynn	Rubinstein	Northeast Recycling Council
Jessica	Saturely-Hall	Upper Valley Composting - Lebanon, NH
Kevin	Sheppard	City of Manchester - Public Works Director
Colleen	Smith	NH DHHS, Public Health Services, Food Protection
Solid Waste Advisory Board		Hillsborough, Deering, Windsor
Jon	Swan	Save Forest Lake
Eric	Thibodeau	N.H. DOT
John	Tuthill	Resident - Acworth, N.H.
Zack	W.	Somersworth Middle School
Ed	Walsh	Town of Rollinsford - Transfer Station
Duncan	Watson	City of Keene - Asst. Public Works Director
Josh	Whipple	Swanzy Solid Waste Manager
Paige	Wilson	Lakes Region RPC
Michael	Wimsatt	Director, Waste Management Division - NHDES
Barry	Zitser	Resident Bethlehem, N.H.

## Appendix B

### Internet Resources Related to Solid Waste Management

Casella Organics

<https://www.casella.com/casella-organics>

Casella Recycle Better

<https://www.casella.com/services/recycling/recycle-better>

Circular Blu

<http://www.circularblu.com/>

EPA: Food Recovery Challenge

<https://www.epa.gov/sustainable-management-food/food-recovery-challenge-frc>

DES Solid Waste Bureau

<https://www.des.nh.gov/organization/divisions/waste/swmb/index.htm>

Feeding America

<https://www.feedingamerica.org/>

How2Recycle

<https://how2recycle.info/>

Northeast Recycling Council

<https://nerc.org/>

Northeast Resource Recovery Association

<https://nrna.net/>

Northeast Waste Management Officials' Association

<http://www.newmoa.org/>

Post Landfill Action Network

<https://www.postlandfill.org/>

Practice Greenhealth

<https://practicegreenhealth.org/>

Sustainable Packaging Coalition

<https://sustainablepackaging.org/>

US Composting Council

<https://www.compostingcouncil.org/>

USDA: Food Loss and Waste  
<https://www.usda.gov/foodlossandwaste>

Maine Composting School  
<http://composting.org/>

New Hampshire The Beautiful  
<https://www.nhthebeautiful.org/>

Zero Waste Home  
<https://zerowastehome.com/>

Terracycle  
<https://www.terracycle.com/en-US/>

Lebanon solid waste and recycling  
<https://lebanonnh.gov/450/Solid-Waste-Recycling>

Hannaford sustainability  
<https://www.hannaford.com/about-us/sustainability>

Stonyfield sustainability  
<https://sustainablepackaging.org/>

Waste Management sustainability consulting  
<https://www.wm.com/us/en/services/business-services/sustainability-consulting>

America's Biggest Trash Hauler Stops Shipping Plastic To Poor Countries, Huffington Post article  
[https://www.huffpost.com/entry/waste-management-plastic-export\\_n\\_5da9ce43e4b0e0f0378ae647](https://www.huffpost.com/entry/waste-management-plastic-export_n_5da9ce43e4b0e0f0378ae647)

Waste Management Position On Plastics  
[http://rorr.btownwebclients.com/wp-content/uploads/2019/09/wm\\_01080-Plastic-Export-Policy\\_r1.pdf](http://rorr.btownwebclients.com/wp-content/uploads/2019/09/wm_01080-Plastic-Export-Policy_r1.pdf)

California legislature wraps session with unprecedented recycling action, WasteDive  
<https://www.wastedive.com/news/california-legislature-wraps-session-with-unprecedented-recycling-action/563136/>





# THE STATE OF NEW HAMPSHIRE

## Solid Waste Working Group

Karen Ebel, Chair

PO Box 95, 29 Hazen Drive, Concord, New Hampshire 03302-0095

Contact Email: [swwg@mailst2.nh.gov](mailto:swwg@mailst2.nh.gov)

Website: <https://www.des.nh.gov/about/boards-and-committees/new-hampshire-solid-waste-working-group>

### Initial Report of the New Hampshire Solid Waste Working Group

November 18, 2022

The New Hampshire Solid Waste Working Group (SWWG) is a statutory committee formed by HB 413 (2021) to assist the New Hampshire Department of Environmental Services (NHDES) with planning and policy initiatives related to solid waste management. Established for a period of five years (until November 1, 2026), the SWWG is comprised of members representing various public and private entities involved with solid waste management.

#### MEMBERSHIP

Name	Affiliation	Representing
Karen Ebel, Chair	NH House of Representatives	HB 617 Study Committee (2019)
Reagan Bissonnette	Northeast Resource Recovery Association	Same
Adam Clark	City of Concord, NH	Cities with Single Stream Recycling
James Gray	NH Senate	Energy & Natural Resources Committee
Ben Hoy (member beginning Oct. 2022)	Towns of Walpole & Alstead, NH	Rural Communities with Source-Separated Recycling
Matt Hughes	WIN Waste Innovations	Waste-to-Energy Facilities
Colin Kelly	Schnitzer Steel Industries	Scrap Metal Recyclers
Greg Leahey	Resource Waste Services	Construction & Demolition Waste Processors
Jim Malley	University System of NH	Expertise in SW Sustainability
Marc Morgan (member through early November 2022)	City of Lebanon, NH	Publicly-Owned Landfills
Freda Paris	Elliot Hospital	NH Healthcare Industry
Howard Pearl	NH House of Representatives	Environment & Agriculture Committee
Benjamin Piche (formerly Susannah Smith)	Coca-Cola Beverages Northeast	Companies that reprocess post-consumer waste
Steve Poggi	Waste Management, Inc.	Privately-Owned Landfills and Materials Recovery Facilities

Megan Fontes (formerly Lynn Rubinstein)	Northeast Recycling Council	Same
Eric Steinhauser	NH Waste Management Council	same
Duncan Watson	City of Keene, NH	Innovative Municipal Waste Management
Mike Wimsatt	NHDES	NHDES Commissioner
Brian Patnoe (Member through September 2022)	Town of Lancaster, NH	Rural Communities with Source-Separated Recycling
VACANT	NH Department of Business and Economic Affairs	Same
VACANT		Solid Waste Haulers

## DUTIES

As outlined in RSA 149-M:61, III and SB 380, the Solid Waste Working Group is charged with the following ten tasks:

1. Assist the department in long-range planning for and the development of creative, effective solutions to the state's solid waste management challenges.
2. Review and make recommendations for changes to the state's existing solid waste reduction, recycling, and management policies, programs, goals, and initiatives.
3. Review and make recommendations regarding the impact of regional solid waste management initiatives, including landfill waste disposal bans, on our state and our solid waste disposal landfill capacity.
4. Advise the department in the development of the solid waste management plan required by RSA 149-M:29.
5. Review and recommend methods to better provide technical assistance and educational outreach to municipalities, schools, businesses, and the public regarding solid waste reduction, recycling, and management policies.
6. Review and recommend ways to better implement the solid waste hierarchy under RSA 149-M:3, and solid waste reduction goals under RSA 149-M:2.
7. Review and make recommendations based on the 2019, 265 (HB 617) study committee report on recycling and solid waste management in New Hampshire.
8. Review such other matters as the working group deems necessary and to recommend any related legislation, policy, or rule changes.
9. Review and make recommendations regarding municipal solid waste plans and implementing the prohibition of any landfill in the state from accepting waste from a municipality that does not have a solid waste management plan.
10. Review and make recommendations regarding the development of a solid waste disposal site evaluation committee or better defining alternative site analysis in RSA 149-M:9.

## MEETINGS

The SWWG held ten meetings between October 2021 and November 2022. SWWG meetings included presentations by experts on a variety of topics relevant to solid waste management and



planning, including US Commerce Clause and State Preemption of Local Laws; Solid Waste Related Bills for 2022 Legislative Session; Maine, Massachusetts, and Vermont Solid Waste Management Plans; Recycling in New Hampshire; Municipal Contracting for Solid Waste Management; PFAS; and Landfills.

Meetings of the SWWG were livestreamed via GoTo Webinar to promote public participation. Agendas, minutes, recordings and presentations from the SWWG meetings are available on the SWWG website.

## **SOLID WASTE MANAGEMENT PLAN**

The key accomplishment of the SWWG during its first year was to advise NHDES on the development of the Solid Waste Management Plan required by RSA 149-M:29. The plan was last issued in 2003 and was due to be updated by October 1, 2022. In addition to full SWWG support, the SWWG formed the following three subcommittees designed to support NHDES in the development of the Solid Waste Management Plan.

- **Waste Reduction & Management of “Difficult” Wastes:** This subcommittee explored opportunities to advance source reduction, i.e., ‘waste avoidance,’ and investigated alternative outlets for difficult-to-manage wastes (wastes that currently have limited outlets besides disposal, like contaminated soils, bulky wastes, certain components of C&D, wastewater treatment sludge, etc.).
- **Recycling & Composting:** This subcommittee focused on opportunities to support the more traditional forms of diversion: recycling and composting. The group considered what New Hampshire needs to advance in these areas and the current gaps.
- **Alternate Waste Management Technologies:** This subcommittee explored opportunities to advance alternate technologies and methods for diversion, waste conversion, waste-to-energy, etc. This included technologies like anaerobic digestion, pyrolysis, gasification, etc.

NHDES developed an outline of the Solid Waste Management Plan, and with feedback from the SWWG, the outline was developed into a full plan. NHDES issued the new Solid Waste Management Plan on September 30, 2022. Therefore, the SWWG has completed one of its ten duties: “4. Advise the department in the development of the solid waste management plan required by RSA 149-M:29.”

## **FOCUS AREAS FOR UPCOMING YEAR**

With the updated Solid Waste Management Plan issued, the SWWG has identified the following priority areas to focus on and make recommendations regarding in the upcoming year.

- **Short-Term Implementation Plan:** NHDES plans to develop annual short-term implementation plans to prioritize actions, measure progress, and track timeframes for

completion of the Solid Waste Management Plan goals and priorities. The SWWG looks forward to providing input to NHDES on the development of its first short-term implementation plan.

- **Waste Characterization & Generation Studies:** The completion of waste characterization and generation studies, which is Action 4.5 of the Solid Waste Management Plan, are foundational to many other actions in the plan. The SWWG will support, as appropriate, NHDES in applying for funding anticipated to become available from the Environmental Protection Agency under the Bipartisan Infrastructure Law to fund these studies.
- **Funding:** Funding is an underlying issue that will determine the success in achieving almost all the goals identified in the Solid Waste Management Plan. Identifying reliable funding sources for NHDES' solid waste management program will be important to ensure meaningful progress can be achieved. The SWWG will discuss options for and make recommendations regarding ongoing funding sources. (See Goal 8 of the Solid Waste Management Plan).
- **Extended Producer Responsibility:** Consistent with Action 1.9 of the Solid Waste Management Plan, the SWWG will discuss and explore legislation, including extended producer responsibility (EPR) programs, that would require product brands and manufacturers to enhance the recyclability of their products and packaging, and minimize the use of unnecessary materials and single-use plastics. This could also include EPR for per- and polyfluoroalkyl substances (PFAS) and other toxic chemicals relative to Goal 2 of the Solid Waste Management Plan.
- **Out of State Waste:** In 2020, of the 1,956,789 tons of solid waste disposed of in New Hampshire's landfills and incinerators, 913,833 tons (about 47%) were generated outside New Hampshire. Legislators and members of the public have expressed significant concern about the receipt and disposal of out-of-state waste in New Hampshire. The SWWG will discuss ways to reduce the amount of out-of-state waste entering New Hampshire for disposal. This will include reviewing and making recommendations regarding municipal solid waste plans and implementing the prohibition of any landfill in the state from accepting waste from a municipality that does not have a solid waste management plan. (See also [SB 380](#))
- **Infrastructure:** Since the state's solid waste management hierarchy was established in 1990, waste management infrastructure in New Hampshire has not significantly shifted from disposal toward more preferred management methods. The Solid Waste Management Plan anticipates that achievement of the disposal reduction goal will ultimately require development and strengthening of diversion infrastructure within the state. Significant financial investments are required from the public and private sectors to build infrastructure that expands capacity for reuse, recycling, composting, and other diversion methods across New Hampshire. The SWWG will review and make recommendations regarding methods to increase such investment in solid waste diversion

infrastructure in New Hampshire.

- **Education:** Conducting robust outreach and education will ensure that messages are broadly disseminated to build public awareness and equip stakeholders with the best-available information to guide actions and decision-making. One of the five strategies to advance the goals of the Solid Waste Management Plan is “public outreach, education, and technical assistance.” The SWWG will review and make recommendations regarding ways to improve education regarding solid waste diversion. (See also RSA 149-M:61, III).
- **Food Waste & Waste Disposal Bans:** Efforts to reduce and divert waste should focus on high-volume and weight materials. The U.S. Environmental Protection Agency (EPA) estimates that in 2018 the largest component of municipal solid waste disposed in landfills nationwide was food waste at 24.14%. While this figure is not New Hampshire-specific, it serves as a general point of reference supporting the need to increase diversion of food waste from disposal. The SWWG will review and make recommendations regarding ways to increase diversion of food waste in New Hampshire, including legislation related to waste disposal bans for food waste. SWWG will also consider landfilling bans on other solid waste materials. (See also RSA 149-M:61, III)
- **Toxicity:** Consistent with Goal 2 of the Solid Waste Management Plan, the SWWG will discuss and make recommendations relative to ways to reduce the toxicity of the waste stream, such as PFAS, through source reduction, including legislation.

## RECOMMENDATIONS

The SWWG encourages the adoption of legislation related to the Focus Areas identified above and in support of the state’s Solid Waste Management Plan and solid waste diversion goals.





The State of New Hampshire  
**Department of Environmental Services**

Robert R. Scott, Commissioner



September 30, 2022

Dear Solid Waste Stakeholders:

The New Hampshire Department of Environmental Services (NHDES) is pleased to present the 2022 update of the New Hampshire Solid Waste Management Plan. The plan, which has been prepared pursuant to RSA 149-M:29, sets out goals, strategies and actions for improving solid waste management in the state over the coming ten years. How we manage solid waste affects every citizen and visitor to our state, and is a topic of keen interest. With the publication of this plan, we are excited to get to work implementing the strategies and actions that it sets forth.

In preparing the plan, NHDES obtained input from the Solid Waste Working Group established under RSA 149-M:61 and made the draft plan available for public comment. The public comment period began on August 2, 2022 and concluded August 26, 2022. We received comments from 74 individuals and organizations. NHDES appreciates the high level of interest and attention given to the draft plan, which confirms that the public is engaged and concerned about solid waste management in New Hampshire. NHDES staff carefully read and considered each comment with the goal of incorporating as many of the suggestions as appropriate into the finalized plan. The resulting edits significantly strengthened the plan.

We did not incorporate certain categories of suggestions into the plan. We did not modify the plan to address comments urging NHDES to take a more direct role in advancing specific legislation and commit to implementing new policies that are not yet authorized in law. NHDES does play an active role in the legislative process, including requesting specific legislation, providing technical support and information to the legislature on proposed legislation, and where appropriate, testifying in support of or opposition to specific bills. However, the agency does not act in this regard unilaterally, or without consideration of changing circumstances and new data. Therefore, it would be imprudent to commit to specific law changes, or policies not currently authorized by law.

A number of comments called for more specificity in the plan, but in many cases, specificity will only be possible after completing other actions included in the plan. For example, completion of waste characterization and generation studies, Action 4.5 of the plan, are foundational to many of the other actions in the plan. Only after analyzing the data from these studies can details be provided for actions such as identifying which waste types should be prioritized for waste reduction and diversion, and what facility infrastructure will be necessary to facilitate diversion.

Commenters also requested that the document be modified to describe how the plan will be implemented, including detailing tasks, assignments, deadlines and metrics. It would not be prudent or useful to predict the details of ten years of implementation, because the actions in the plan are dependent on each other and a multitude of changes affecting implementation will take place over the ten-year period. In lieu of providing details of implementation, the plan establishes a framework to guide New

[www.des.nh.gov](http://www.des.nh.gov)

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(603) 271-3503 • Fax: 271-2867 • TDD Access: Relay NH 1-800-735-2964

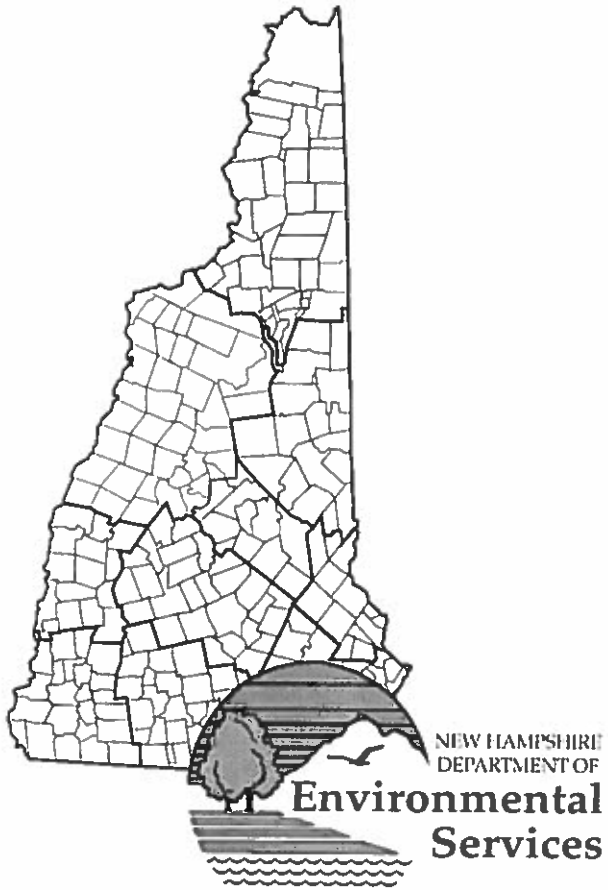
Hampshire's solid waste management for the next ten years. Under this framework, NHDES will use short-term implementation plans to prioritize actions, measure progress, and track timeframes for completion. As activities are completed, the results will be documented and evaluated to inform new short-term implementation plans. Only through this process of adaptive management can our work be responsive to information obtained, actions taken, and changing circumstances in the solid waste management industry over the ten-year period. Every two years, the Biennial Solid Waste Report will document our progress on employing the strategies of the plan to complete actions that advance the plan's goals.

NHDES appreciates the engagement that the public has shown through the public comments on the plan. Although we did not incorporate edits to address every suggestion we received, we are confident that the plan, as published, provides an essential framework for the next ten years of solid waste management planning activities in the state. The level of attention and concern demonstrated through these comments bodes well for New Hampshire's success in achieving the plan's goals, because success will depend upon active participation from everyone. Thanks to all who have participated in this process – we look forward to working with you toward a better, more sustainable solid waste management system for New Hampshire!

Sincerely,

A handwritten signature in black ink, appearing to read "Robert R. Scott", with a long horizontal flourish extending to the right.

Robert R. Scott  
Commissioner



# NEW HAMPSHIRE

## SOLID WASTE MANAGEMENT PLAN

SEPTEMBER 30, 2022

Prepared by the New Hampshire Department of  
Environmental Services

# State of New Hampshire Department of Environmental Services

**Robert R. Scott**  
*Commissioner*

**Mark A. Sanborn**  
*Assistant Commissioner*

**Michael J. Wimsatt**  
*Director, Waste Management Division*

## **Contact**

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## Executive Summary

This Solid Waste Management Plan provides a framework for reducing and managing solid waste that is generated, reused, recycled, or disposed in New Hampshire. This 2022 plan outlines eight goals:

1. Reduce the quantity of solid waste generated.
2. Reduce the toxicity of the solid waste stream.
3. Maximize the diversion of residential, commercial and industrial solid waste from disposal.
4. Ensure adequate capacity for management of New Hampshire-generated waste.
5. Develop local markets for waste diversion.
6. Encourage solid waste infrastructure and practices that support State and Federal climate change initiatives.
7. Ensure that solid waste policies and regulations support State and Federal environmental justice initiatives.
8. Ensure sustainable funding source(s) to support solid waste management initiatives.

The plan provides strategies for achieving each of these goals. Supporting actions are then described and grouped by strategy type. This is a ten-year plan to be carried out by the New Hampshire Department of Environmental Services (NHDES), public and private stakeholders, as well as the general public.

The majority of goals and actions in this plan are intended to achieve the state's overarching disposal reduction goal established in RSA 149-M:2 – which aims to reduce disposal of municipal solid waste (MSW) and construction and demolition debris (C&D) by 25% by 2030 and by 45% by 2050. This overarching goal applies to all MSW and C&D disposed in New Hampshire's landfills and incinerators, regardless of the source or state of origin. Reducing disposal rates requires investments in source reduction and diversion methods consistent with the New Hampshire Waste Management Hierarchy as established in RSA 149-M:3. Source reduction, also known as "waste reduction," involves preventing waste from being generated. Diversion involves recycling, composting, anaerobic digestion, and other methods that avoid disposal of waste in landfills or incinerators.

Reaching our state's disposal reduction goal requires a collective effort from residents, businesses, and other stakeholders engaged in solid waste management. While it will be necessary to maintain safe disposal options for wastes that cannot be reduced or diverted, significant financial investments are required from the public and private sectors to build infrastructure that expands capacity for reuse, recycling, composting, and other diversion methods across New Hampshire. Additionally, statewide waste characterization and generation studies are needed to inform what waste types should be prioritized for waste reduction and diversion, as well as what facility infrastructure will be necessary to facilitate diversion.

Achieving these goals will also require public and private partners to engage in more regional, cooperative efforts. Stakeholders should explore partnerships in their neighboring areas to find ways to share resources/information and collaborate on mutual objectives. Efforts that help improve public access to more waste reduction, reuse, and diversion opportunities will have both local and widespread benefits. Those benefits include conserving limited resources, protecting public health, fostering a "greener" economy, and mitigating climate change.

As it executes this plan, NHDES will use an adaptive management approach to assess, adjust and focus the plan's implementation based on new or developing information and lessons learned. This will provide flexibility to adapt as circumstances change over the ten-year period.

The appendices at the end of this document provide additional resources and context for this plan.

## I. Introduction

The New Hampshire Department of Environmental Services (NHDES) prepared this plan in accordance with the Solid Waste Management Act, RSA 149-M<sup>1</sup>, which was established to protect human health, preserve the natural environment, and conserve precious and dwindling natural resources through the proper and integrated management of solid waste. Solid waste management is a topic that touches every person and every aspect of society. The way that we manage solid waste has implications for public health, safety, the environment, natural resource consumption, energy use and greenhouse gas emissions. Given this context, it is critical that we manage our waste to minimize negative consequences while reducing, recycling and recovering to the greatest extent practicable. To date, solid waste management in New Hampshire has heavily relied on disposal in landfills as the primary management method and has lacked consistent state-level guidance and planning. This plan establishes a framework to guide New Hampshire's solid waste management for the next ten years. The goals, strategies and actions contained in this plan are intended to inform actions and decision-making by NHDES as well as the regulated solid waste industry, municipalities, the New Hampshire General Court, businesses, non-governmental organizations and the general public.

As mandated under RSA 149-M:29, the purpose of this plan is to set out goals, strategies and actions to:

- Reduce generation of solid waste through source reduction.
- Increase diversion of waste from disposal.
- Achieve the state's solid waste disposal reduction goal established in RSA 149-M:2.
- Support the state's solid waste management hierarchy established in RSA 149-M:3.
- Maintain and ensure adequate disposal capacity for management of waste generated in New Hampshire.

## II. Current Status of Solid Waste Management in New Hampshire

### *Waste Reduction Goal and Waste Management Hierarchy*

In 1990, the General Court amended RSA 149-M to establish a waste reduction goal, which has been subsequently revised over the years. The current version of this goal, codified in RSA 149-M:2, establishes a goal to reduce disposal of municipal solid waste (MSW) and construction and demolition debris (C&D) by 25% by 2030 and by 45% by 2050. These reduction targets are to be measured on a combined basis against baseline quantities of these waste types disposed in 2018. This goal applies to all MSW and C&D disposed in New Hampshire, regardless of the source; meaning it applies to both in- and out-of-state waste.

In 2018, a total of 1,500,668 tons of MSW and C&D were disposed in New Hampshire's landfills and incinerators (1,202,916 tons of MSW and 297,751 tons of C&D). The disposal reduction goal aims to cut this baseline total by approximately 375,000 tons by 2030 (25% reduction), and by approximately 675,000 tons by 2050 (45% reduction). Achieving these targets will require robust efforts to simultaneously reduce the quantities of waste generated while also maximizing diversion from disposal through reuse, recycling, composting, or other means. Although RSA 149-M:2 discourages the disposal of recyclable materials, it does not establish recycling, composting, or other forms of waste diversion as mandatory. Meeting plan goals will require the voluntary participation of New Hampshire citizens, public and private entities, and other stakeholders.

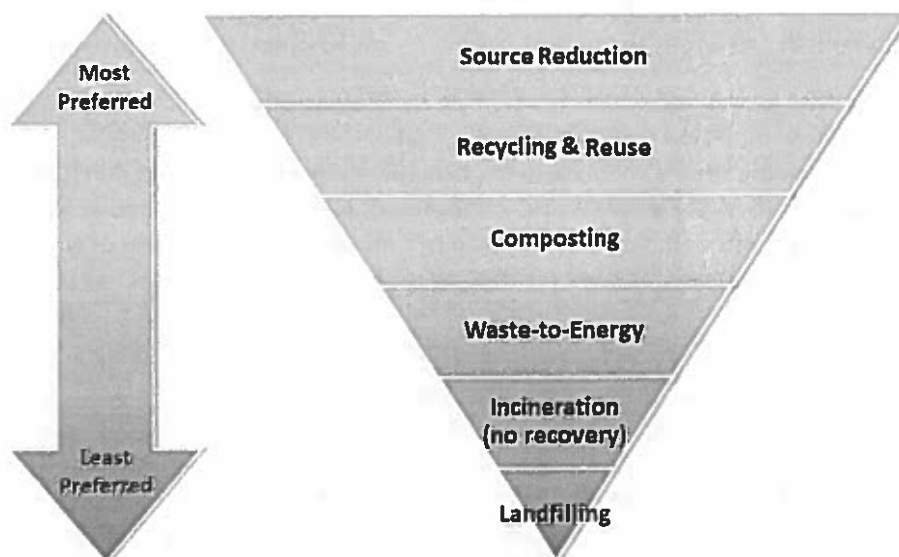
To promote achievement of the disposal reduction goal, the General Court also established a hierarchy of waste management methods to be used in New Hampshire (see Figure 1). Codified in RSA 149-M:3,

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<sup>1</sup>[New Hampshire RSA 149-M](#)

this hierarchy provides a standard of preference for management of solid waste in the state, with priority placed on methods that reduce the generation of waste or divert recoverable materials from disposal. Source reduction, also known as “waste reduction,” is at the top of the hierarchy because it prevents waste from being generated. Waste reduction has multiple benefits, including conserving resources, reducing environmental impacts, and reducing the amount of waste needing end-of-life management. When we generate waste, reuse, recycling, or composting are preferred management methods because they recover and divert materials from disposal and encourage circular use of resources. Waste-to-energy technologies include incineration with energy recovery, anaerobic digestion, and emerging conversion processes that turn waste into fuel. These technologies are preferable to outright disposal in a traditional incinerator or a landfill because they recover energy and reduce volume and weight.

Figure 1. New Hampshire’s Waste Management Hierarchy



As established by the General Court, the waste management hierarchy and the disposal reduction goal are intended to encourage an integrated waste management system in New Hampshire. An integrated system combines a variety of approaches to reduce the quantity of waste generated while managing the waste that is generated in the most environmentally responsible manner available. The hierarchy serves as a guiding principle not only for NHDES and the state at large, but also for municipal, commercial, and industrial waste generators, solid waste management companies, and the general public. However, since the hierarchy was established in 1990, waste management infrastructure in New Hampshire has not significantly shifted from disposal toward more preferred management methods. While recognizing that disposal via landfilling and incineration is a necessary component of New Hampshire’s waste management infrastructure, this plan also anticipates that achievement of the disposal reduction goal will ultimately require development and strengthening of diversion infrastructure within the state. In addition, although landfills and incinerators do not have the practical or legal ability to fulfill, or require others to fulfill, all of the goals in this plan, such facilities need to integrate source reduction and

diversion methods into their waste management system to the extent practicable to reach the disposal reduction goal.

### *What is Solid Waste?*

For the purposes of this plan, it is important to understand what is regulated as “solid waste” in New Hampshire. The term solid waste is defined in RSA 149-M:4, XXII, and encompasses any discarded or abandoned material, including “solid, liquid, semisolid or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities.” As such, the category of solid waste covers a broad range of discarded or abandoned materials, including:

- Refuse generated at residential, institutional, commercial, and industrial establishments.
- Recyclable materials.
- Construction and demolition debris (C&D).
- Bulky waste (e.g., furniture, mattresses).
- White goods (e.g., household appliances such as clothes washers/dryers, stoves, refrigerators).
- Electronics (except for items considered universal waste, such as cathode ray tubes, which are subject to regulation as a hazardous waste).
- Vehicles, tires, and associated parts.
- Food waste.
- Agricultural wastes including manure and animal carcasses.
- Asbestos-containing wastes.
- Ash from utility-scale fuel combustion.
- Contaminated soils excavated during remedial projects, property development, street sweepings, catch basin cleanouts, and roadway construction.
- Infectious wastes.
- Other unique commercial and industrial wastes such as foundry sand, grease and grit.

When discussing the regulatory scope of solid waste in New Hampshire, it is perhaps just as important to understand what does not fall under the State’s definition of solid waste. While the following items may be classified as “wastes,” they are not regulated as solid waste in New Hampshire:

- Hazardous waste.
- Leaf and yard waste – including buried stumps, provided they are not located within 75 feet of any drinking water supply well.
- Solid or dissolved materials in irrigation return flows.
- Point-source discharges subject to Federal pollution control regulation.
- Nuclear material subject to regulation under the Atomic Energy Act.
- Septage or sludge not disposed at solid waste facilities permitted under RSA 149-M.
- Bodies of deceased persons.
- Waste-derived products certified for distribution and use (e.g., finished compost, processed glass aggregate, consumer goods with recycled content).

### *NHDES’ Role in Regulating Solid Waste*

Under RSA 149-M, NHDES is charged with regulating the facilities and practices associated with the collection, processing, treatment, recycling and disposal of solid waste in New Hampshire. As directed by the statute, NHDES regulates solid waste facilities through a permit system, and oversees the management of solid waste through a combination of training and compliance assurance programs. To help the department fulfill its various responsibilities under RSA 149-M, NHDES has adopted a set of

Solid Waste Rules (Env-Sw 100 et seq.), which are administered and enforced by NHDES' Solid Waste Management Bureau.

#### *Overview of New Hampshire's Solid Waste Management Infrastructure*

Under NHDES' solid waste permitting and regulatory system, solid waste facilities are grouped into three main categories:

- Collection, storage, and transfer facilities (e.g., transfer stations, recycling centers, scrap yards).
- Processing and treatment facilities (e.g., incinerators, anaerobic digesters, composting facilities).
- Landfills (e.g., active and closed landfills, inactive asbestos disposal sites).

Collection, storage, and transfer (C/S/T) facilities form the majority of New Hampshire's solid waste management infrastructure. As of the publication of this document, there are 239 active C/S/T facilities in New Hampshire, 174 of which are publicly-owned municipal transfer stations that function as drop off centers for generators of trash and recycling within the facility's service area. The other 65 are primarily privately-owned commercial transfer stations or scrap metal recycling facilities. In addition to the above-noted C/S/Ts, there are also approximately 150 motor vehicle recycling facilities in New Hampshire, which help to divert automotive waste to recycling and reuse. New Hampshire does not have any materials recovery facilities (MRFs) equipped to sort single-stream recycling, although some C/S/T facilities do sort certain commingled recyclables on a limited scale.

New Hampshire has 17 active processing and treatment (P/T) facilities. This includes nine operating composting facilities holding solid waste permits. Facilities dedicated to the composting of leaf and yard waste do not require a solid waste permit; therefore, NHDES lacks definitive data on how many leaf and yard waste composting operations exist in the state. The other P/T facilities in New Hampshire include one large-scale commercial waste-to-energy facility with an unlimited service area, and one small-scale municipal incinerator with a limited service area. In addition, there is one contaminated soils treatment facility and four C&D/wood processing facilities. Currently, there are no permitted solid waste anaerobic digesters in New Hampshire.

There are six operating double-lined MSW landfills in New Hampshire. Three of these landfills have limited service areas: the Lebanon Regional Solid Waste Facility in Lebanon, the Lower Mount Washington Valley Secure Landfill in Conway, and the Four Hills Secure Landfill Expansion in Nashua. The other three landfills are commercial facilities authorized to receive waste from an unlimited service area: North Country Environmental Services (NCES) in Bethlehem, the Mount Carberry Secure Landfill in Success, and the TLR-III Refuse Disposal Facility (aka Turnkey Landfill) in Rochester. There are also three operating non-MSW landfills: the Merrimack Station Coal Ash Landfill in Bow, the Corn Hill Road C&D Landfill in Boscaawen, and the Epping Bulky Waste Disposal Area in Epping. Even though landfilling represents the least preferred method on the waste management hierarchy, landfills comprise a significant portion of New Hampshire's overall waste management capacity.

New Hampshire also has more than 300 closed/inactive landfills, the majority of which are unlined former municipal "dumps." Although perhaps not always considered part of the state's solid waste management infrastructure, these facilities perform a critical function as waste containment systems. As such, these landfills require ongoing monitoring and maintenance to assure protection of human health and the environment. In addition to these inactive landfills, there are approximately 360 documented asbestos disposal sites in New Hampshire. Most of these sites are in the Nashua/Hudson area where, up until the late 1970s, many properties were filled with material containing asbestos waste distributed by the Johns-Manville Corporation. The sites include residential, commercial, industrial, and public lands, both developed and undeveloped, as well as areas beneath roads and along riverbanks.

### *Disposal and Diversion Figures*

In 2020, 1,956,789 tons of solid waste were disposed of in New Hampshire's landfills and incinerators. Of this total, 1,042,957 tons (about 53%) were generated within New Hampshire. The other 913,833 tons (about 47%) were generated in other states. Legislators and members of the public have expressed significant concern about the receipt and disposal of out-of-state waste in New Hampshire. Table 1 below shows total quantities of solid waste disposed from 2018 through 2020, based on data reported by New Hampshire's disposal facilities. The vast majority of the out-of-state waste disposed in New Hampshire is received by the three commercial landfills. Commercial disposal facilities in New Hampshire are permitted to receive waste from both in-state and out-of-state sources. The Commerce Clause of the U.S. Constitution has commonly been interpreted to preempt a state from explicitly prohibiting or adopting policies that would restrict a commercial solid waste facility from accepting and disposing of out-of-state waste.<sup>2</sup>

*Table 1. Solid Waste Disposed in New Hampshire 2018 – 2020*

Year	Total Tons Disposed	Tons from In-State Sources	Tons from Out-of-State Sources	Percentage In-State Sources
2018	1,980,328	1,091,510	888,818	55%
2019	2,002,947	1,119,118	883,830	56%
2020	1,956,789	1,042,957	913,833	53%

Of the 1,956,789 total tons disposed in 2020, 1,181,749 tons (60%) were MSW, and 264,777 tons (14%) were C&D. The remainder consisted of non-hazardous contaminated soils (11%), wastes from industrial processes (6%), asbestos-containing waste (5%), and sludge from wastewater treatment facilities (3%).<sup>3</sup> MSW and C&D collectively comprise the biggest proportion of total waste disposed in NH (roughly 75%), and are also the categories targeted by the disposal reduction goal.

Compared to disposal figures, recycling and other types of diversion have been harder to measure due to gaps and limitations in existing data. For the purposes of estimating a statewide recycling rate, NHDES used recycling data reported by municipal transfer stations as a general indicator of statewide recycling activities. For 2020, NHDES estimated an average municipal recycling rate of 26%. NHDES acknowledges that recycling data reported by municipal facilities only represents a subset of all recycling activities across the state. However, in the absence of more refined data, NHDES presumed the municipal data to be a suitable proxy for statewide recycling.

<sup>2</sup> The 1978 Supreme Court Case, *Philadelphia v. New Jersey*, struck down a New Jersey law that prohibited the importation of waste into the state.

<sup>3</sup> The sum of the percentages presented here do not equal 100% due to rounding.



### III. Overarching Themes in This Plan

NHDES has identified several overarching themes that will be key to achieving the goals of this plan and contribute to a sustainable solid waste management system that balances social, economic and environmental factors:

- **Reducing and diverting waste.** Efforts should focus on high-volume and weight materials, as well as single-use products and packaging. The U.S. Environmental Protection Agency (EPA) estimates that in 2018 the largest components of MSW disposed in landfills nationwide were: food waste (24.14%), plastics (18.46%), paper and paperboard (11.78%), metals (9.53%), wood (8.32%) and textiles (7.73%).<sup>4</sup> While these figures are not New Hampshire-specific, they serve as general points of reference.
- **Developing infrastructure.** Additional infrastructure and more efficient waste management practices in accordance with the waste management hierarchy will support waste reduction and diversion for New Hampshire-generated wastes.
- **Developing and improving local recycling markets.** In many cases, whether something is “recyclable” depends on whether there is an economically viable market for the item. In turn, markets are highly dependent on available infrastructure capable of diverting, processing and recovering materials. Keeping markets as local as possible will also minimize transportation costs and associated greenhouse gas emissions.
- **Conducting robust outreach and education** will ensure that messages are broadly disseminated to build public awareness and equip stakeholders with the best-available information to guide actions and decision-making.
- **Compiling comprehensive data** will be necessary to make informed decisions and plan next steps. For example, conducting a statewide waste characterization study would help establish New Hampshire-specific baseline data and identify which waste streams should be prioritized for waste reduction/diversion efforts. Additionally, it will be important for solid waste facilities, haulers and generators to have standardized tracking tools to document their progress and identify areas for improvement.
- **Exploring opportunities for regional cooperation/improved planning.** Municipalities and other stakeholders with mutual program objectives are encouraged to build partnerships to reduce duplicative efforts, maximize economies of scale and ensure best use of limited funding/resources. Cooperative efforts may include sharing information, personnel, funding and equipment/infrastructure.
- **Addressing climate change and environmental justice.** Solid waste management programs and policies implemented by state, local and private entities should align with state and federal climate change and environmental justice initiatives. This will help ensure that New Hampshire’s solid waste management system mitigates and adapts to worsening impacts from climate change and addresses environmental justice issues.
- **Establishing reliable funding sources.** Funding is an underlying issue that will determine success in achieving almost all of the goals identified in this plan. For many years, NHDES’ solid waste management program has faced resource constraints that have challenged the department’s ability to engage in many of the issues central to this plan. The same is true for many New

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<sup>4</sup>See [EPA 2018 Facts and Figures](#). It is worth noting that the figure cited here for disposal of plastic includes a wide variety of plastic items, including durable items (e.g., plastic furniture, toys, building materials) that do not have consistent recycling markets.



Hampshire municipalities and solid waste management districts. Therefore, identifying additional funding sources will be important to ensure meaningful progress can be achieved.

#### IV. Goals, Strategies & Actions

RSA 149-M:29, I requires that the state's solid waste plan contain, at a minimum, the following elements:

*(a) Goals, strategies, and actions to reduce solid waste generation through source reduction, to increase diversion through methods such as reuse, recycling, and composting, and to achieve the state's solid waste disposal reduction goal, with such efforts incorporating the principles of the solid waste management hierarchy established in RSA 149-M:3.*

*(b) Discussion of opportunities to reduce solid waste generation through source reduction and increase diversion through methods such as recycling and composting.*

*(c) Goals, strategies, and actions necessary to maintain and ensure adequate disposal capacity for management of waste generated in New Hampshire.*

In consideration of the above elements, this plan incorporates the following goals:

- 1) Reduce the quantity of solid waste generated.
- 2) Reduce the toxicity of the solid waste stream.
- 3) Maximize the diversion of residential, commercial, and industrial solid waste from disposal.
- 4) Ensure adequate capacity for management of New Hampshire-generated waste.
- 5) Develop local markets for waste diversion.
- 6) Encourage solid waste infrastructure and practices that support State and Federal climate change initiatives.
- 7) Ensure that solid waste policies and regulations support State and Federal environmental justice initiatives.
- 8) Ensure sustainable funding source(s) to support solid waste management initiatives.

Achievement of the goals outlined above will help address the state's overarching disposal reduction goal in RSA 149-M:2 and support other important statewide environmental initiatives. To achieve these goals, NHDES and other partners will execute a series of specific actions which employ a set of five key strategies.

The five strategies are:

- 1) Public Outreach, Education and Technical Assistance.
- 2) Incentive Programs (e.g., grants, tax write-offs, public recognition, "green" certification).
- 3) Data Collection and Research.
- 4) Regulations and Permitting (by NHDES or other state agencies).
- 5) Legislation.

The remainder of this section describes the eight goals of this plan in further detail with the actions that will be taken toward achieving each goal. Each action employs one of the five strategies listed above. The actions also incorporate recommendations from the New Hampshire Solid Waste Working Group established in 2021,<sup>5</sup> and the final report published by the 2019 Committee to Study Recycling Streams

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<sup>5</sup> [New Hampshire Solid Waste Working Group](#)

and Solid Waste Management in New Hampshire.<sup>6</sup> The goals described in this plan are intended to be addressed concurrently over the ten-year period with multiple strategies and actions occurring at the same time.

### GOAL 1: REDUCE THE QUANTITY OF SOLID WASTE GENERATED

Source reduction, also known as “waste reduction,” involves “upstream” approaches that prevent waste from being generated in the first place. Reducing waste at the source leads to social, environmental, and economic benefits by decreasing the quantity of waste needing end-of-life management, which conserves resources, avoids costs and relieves pressure on waste management infrastructure. Waste reduction often includes reducing or eliminating use of certain products and materials. For example, a manufacturer may change the way it makes products or packaging to use less material. Likewise, an individual consumer can practice waste reduction by changing their purchasing habits, or by using reusable products in place of single-use items. Reuse through donation and repair can also play an important role in reducing waste, and can also help with community building, skill-building, and increased access to affordable goods.

#### *Strategy - Public Outreach, Education and Technical Assistance*

Action 1.1 – Develop educational materials, including online resources, to educate residents, municipalities, and businesses about the waste management hierarchy and source reduction.

Topics may include:

- Modifying consumer practices to promote waste reduction and reuse, including proper food storage, buying in bulk, purchase planning, avoiding single-use items, and purchasing used items.
- Encouraging reuse of consumer goods and packaging such as use of refillable beverage containers and reusable shopping bags.
- Providing information about community-wide actions to encourage source reduction and reuse through yard sales, swap events and repair clinics.
- Providing information about reuse and donation of textiles, tools, equipment, bulky wastes, and other durable goods.

Action 1.2 – Use the EPA Food Recovery Hierarchy<sup>7</sup> to promote food rescue and donation to address food insecurity, support local farmers, and reduce food waste. Put quality, edible food to its highest and best use. Promotion may involve using the Harvard Food Law & Policy Clinic fact sheets<sup>8</sup> about food donation, date labels, feeding food scraps to animals, and tax incentives.

Action 1.3 – Coordinate with the New Hampshire Department of Health and Human Services to evaluate food safety regulations to support more food recovery and reduce food waste (for example, to enable wider use of school “share tables” for edible but uneaten cafeteria foods).

Action 1.4 – Collaborate with the New Hampshire Department of Administrative Services Procurement and Support Services team to increase awareness and use of the State Surplus Program<sup>9</sup> available to state agencies, municipalities and the public (in support of RSA 9-C<sup>10</sup>).

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<sup>6</sup> 2019 Final Report from HB617 Study Committee

<sup>7</sup> EPA Food Recovery Hierarchy

<sup>8</sup> Harvard Law State Food Waste Fact Sheets

<sup>9</sup> NHDAS coordinates the State Surplus Program located at “White Farm”

<sup>10</sup> New Hampshire RSA 9-C relates to state government waste reduction, recycling and purchase of recycled products

Action 1.5 – Research and compile a directory of organizations that facilitate reuse of surplus items generated by businesses and institutions, such as IRN: The Reuse Network, Habitat for Humanity, etc.

Action 1.6 – Assist schools, universities, businesses, and manufacturing facilities with waste audits to help identify possible opportunities for waste reduction and cost savings. Audits may be conducted by a procured consultant, service provider, or the NHDES Solid Waste, Pollution Prevention (P2), and Small Business Technical Assistance programs.

Action 1.7 – Use resources published by the EPA on sustainable management of construction and demolition materials<sup>11</sup> to share best practices, promote reuse, and encourage “deconstruction” of structures as a way to reduce generation of construction and demolition debris (C&D).

*Strategy – Regulations and Permitting*

Action 1.8 – Include in disposal facility permits provision for permittees to assist and educate their customers and the general public in maximizing waste reduction.

*Strategy - Legislation*

Action 1.9 – Explore legislation, including extended producer responsibility (EPR) programs, that would require product brands and manufacturers to enhance the recyclability of their products and packaging, and minimize the use of unnecessary materials and single-use plastics.

**GOAL 2: REDUCE THE TOXICITY OF THE SOLID WASTE STREAM**

Reducing the toxicity of the solid waste stream requires source reduction and diversion of household hazardous wastes (HHW) and materials containing toxic chemicals, such as per- and polyfluoroalkyl substances (PFAS). Approaches may include implementing producer responsibility policies and ensuring that end-of-life management options are convenient and protective of public health, safety and the environment.

*Strategy - Public Outreach, Education and Technical Assistance*

Action 2.1 – Coordinate with the NHDES HHW program to develop public outreach and education about HHW, including household-generated universal wastes, that addresses:

- Safe and proper storage.
- Safe reuse, recycling and disposal options.
- Alternative non-hazardous products and Do-It-Yourself (DIY) options.

Action 2.2 - Develop educational resources about toxic chemicals, such as PFAS, in common consumer goods to facilitate informed purchasing decisions.

Action 2.3 – Increase options for safe disposal of sharps and unwanted pharmaceuticals by promoting the safest, most cost-effective and most convenient collection systems. This action may be accomplished through collaboration between state agencies and other stakeholders such as Regional Planning Commissions, police departments and healthcare facilities.

*Strategy - Incentives*

Action 2.4 – Explore incentive programs to support efforts by municipalities and organizations that engage in direct outreach and education to limit the use and disposal of toxic household

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<sup>11</sup> [EPA Sustainable Materials Management C&D Resources](#)

products. Mitigating the use of toxic household products may reduce the likelihood of illegal dumping where the costs then fall to the municipality.

Action 2.5 – Identify funding options to support regional HHW collections and the establishment of more permanent regional HHW drop-off facilities.

*Strategy - Data Collection and Research*

Action 2.6 – Identify collection strategies for household-generated hazardous items including batteries, paint, antifreeze, small gas cylinders, mercury-containing devices, and e-cigarettes/vaporizers. Assess how these items are currently being collected (for example, drop-off events, year-round collections at a facility or retail location, manufacturer take-back programs), identify who is involved, how collections are funded, and gaps in collection options and service areas.

*Strategy – Regulations and Permitting*

Action 2.7 – Identify regulatory barriers that pose challenges for safe disposal of sharps and unused pharmaceuticals for the public, schools and non-traditional healthcare facilities such as group homes. Consider regulatory changes as needed.

Action 2.8 – Pursue rulemaking to require permitted disposal facilities (incinerators and landfills) to host or sponsor at least one annual HHW collection day for New Hampshire households within the facility's service area.

Action 2.9 - Include in disposal facility permits provision for permittees to assist and educate their customers and the general public in reducing the toxicity of their wastes.

*Strategy - Legislation*

Action 2.10 – Explore legislation that would establish waste disposal bans and EPR for items such as rechargeable batteries, electronic devices, paint and sharps.

Action 2.11 – Explore legislation addressing the use of toxic chemicals in products, such as use of PFAS in carpeting, clothing, upholstery and food packaging.

**GOAL 3: MAXIMIZE THE DIVERSION OF RESIDENTIAL, COMMERCIAL AND INDUSTRIAL SOLID WASTE FROM DISPOSAL**

When waste is generated, it should be diverted from disposal whenever possible. Diversion involves “downstream” approaches such as recycling, composting, or other methods that avoid disposal in landfills and incinerators. Investments should be directed towards new and existing facility infrastructure that supports diversion in accordance with the Waste Management Hierarchy. In addition, municipalities, solid waste districts, solid waste facilities and haulers should provide clear information about available diversion programs and what is acceptable or not acceptable in those programs.

*Strategy - Public Outreach, Education and Technical Assistance*

Action 3.1 – Increase composting of organic wastes (food scraps, leaf/yard waste, manures, clean wood) through technical assistance, educational workshops, facts sheets and guidance documents to ensure stakeholders are equipped with the latest information.

Action 3.2 – Develop outreach and education materials, including fact sheets and online resources, about New Hampshire's current waste disposal bans.

Action 3.3 – Develop best management practices for negotiating municipal recycling contracts with case study examples of effective contract strategies that support transparency and informed decision-making about projected costs/revenue.

Action 3.4 – Develop uniform educational resources and provide technical assistance to citizens, businesses and municipalities to support best practices for recycling and increase local awareness about what is recyclable in their area.

- All solid waste management entities, including public/private solid waste facilities, haulers and large waste generators, will be encouraged to share these educational resources on their websites to ensure consistent messaging about waste reduction, reuse, recycling, and other methods of diversion.
- Messaging should include information about the negative impacts of “wish-cycling,” which occurs when misinformed recyclers put items in the wrong waste stream resulting in increased processing expenses and less diversion overall.
- Technical assistance may be provided through site visits, trainings and sharing informational resources.

Action 3.5 – Assist schools, universities, businesses and manufacturing facilities with recycling programs, food scrap diversion and waste audits.

Action 3.6 – Promote unit-based pricing (also commonly called Pay-as-You-Throw, or PAYT) and “bag checks” as methods for increasing participation in municipal recycling programs. This may be accomplished through the NHDES Solid Waste Operator Training (SWOT) program, technical assistance to municipalities, and/or partnering with the New Hampshire Municipal Association and the Northeast Resource Recovery Association to reach local decision makers.

Action 3.7 – Integrate additional waste reduction and diversion topics into NHDES SWOT workshops.

Action 3.8 – Increase education and training for solid waste operators and local decision makers about how to regionalize waste management practices.

#### *Strategy - Incentives*

Action 3.9 – Explore incentives for municipalities that enact regional waste management strategies to increase diversion (such as cooperative hauling/marketing, sharing equipment, building regional facilities, forming solid waste districts per RSA 53-A<sup>12</sup> or RSA 53-B<sup>13</sup>) as well as projects targeting diversion of specific materials/waste types (for example, developing programs for recycling polypropylene, film plastics, and diverting food waste).

Action 3.10 – Explore incentive/recognition programs for businesses and institutions that make significant efforts to divert their own solid waste (similar to Maine’s Green Business/Environmental Leader Certification Program).

#### *Strategy - Data Collection and Research*

Action 3.11 – Determine reoccurring issues and challenges with contamination (that is, unwanted or nonconforming items) in recycling and composting waste streams. Explore educational campaigns and/or regulatory changes as needed.

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<sup>12</sup> [New Hampshire RSA 53-A](#)

<sup>13</sup> [New Hampshire RSA 53-B](#)

Action 3.12 – Establish guidance for uniform measurement and tracking of waste diversion data for public/private generators, solid waste management facilities and haulers. Consider existing measurement models and tools from the EPA and other entities.

Action 3.13 – Evaluate and identify waste disposal bans, mandatory recycling laws, and/or EPR programs that have potential to significantly improve diversion in New Hampshire. Prospective bans should be prioritized based on potential to reduce overall disposal (as indicated by data from waste characterizations – described in Goal 4). Depending on availability of processing infrastructure and/or end-markets, certain disposal bans and/or recycling requirements may need to be phased in over time using generation rate and/or proximity to receiving facilities to establish compliance thresholds. For example, some states have implemented food waste disposal bans that target large commercial food waste generators first, with smaller generators becoming subject to the ban over time. Such approaches help to build demand incrementally, allowing markets/infrastructure time to develop.

*Strategy – Regulations and Permitting*

Action 3.14 – Review the list of waste-derived products that are certified by rule in Env-Sw 1503 and pursue updates if warranted.

Action 3.15 - Consider regulatory changes to make it easier for communities to share facilities, equipment and other solid waste management resources.

Action 3.16 - Include in disposal facility permits provision for permittees to assist and educate their customers and the general public in maximizing waste diversion.

*Strategy - Legislation*

Action 3.17 – Based on the results of Action 3.13, explore legislation to implement disposal bans and/or mandatory recycling requirements for wastes such as food waste, clean wood, mattresses, textiles and/or select recyclables such as paper, cardboard, and plastic and metal containers.

Action 3.18 – Based on the results of Action 3.13, explore Product Stewardship and EPR programs to encourage recycling of certain items, including plastics, rechargeable batteries, electronic devices, paint, difficult-to-recycle packaging materials, bulky wastes such as mattresses, and beverage containers (e.g., a beverage container deposit law).

Action 3.19 – Explore legislation requiring a certain percentage of C&D by weight to be diverted from disposal if a C&D processing facility is located within a certain distance to where the waste is generated/collected.

Action 3.20 – Explore legislation requiring haulers to provide recycling collection for businesses and residents in their service area.

**GOAL 4: ENSURE ADEQUATE CAPACITY FOR MANAGEMENT OF NEW HAMPSHIRE-GENERATED WASTE**

Maintaining adequate capacity for management of New Hampshire's waste will necessitate an integrated solid waste management system with facility infrastructure encompassing all levels of the waste management hierarchy. This integrated system needs to prioritize capacity for diversion as much as possible, reserving disposal capacity for wastes that have limited or no other management options. Achieving a truly integrated system will require development of new and expanded solid waste management infrastructure, with capital investments from public and private waste management

entities at all levels. It is vitally important to shift away from New Hampshire's reliance on landfills and bolster capacity for recycling and other forms of diversion. It will also be critical to compile comprehensive data to ensure that waste management infrastructure is developed to meet New Hampshire's projected solid waste management needs while supporting the goals of this plan. A waste characterization study will be a foundational step to inform the implementation of this plan.

***Strategy - Public Outreach, Education and Technical Assistance***

Action 4.1 – Engage with public and private entities to explore options for developing alternative technologies and centralized processing facilities that increase waste management capacity consistent with preferred methods in the New Hampshire Waste Management Hierarchy. This may include exploring options for:

- A state-of-the-art materials recovery facility (MRF) for processing single-stream recycling.
- Composting and anaerobic digestion facilities for processing organic solid wastes.
- C&D processing facilities for separating and diverting components of C&D.
- Systems that employ a variety of novel technologies enabling wastes to be locally and efficiently sorted, processed, reused, recycled or formed into new products.

Action 4.2 – Engage with the New Hampshire Solid Waste Working Group as they review and make recommendations regarding New Hampshire's solid waste management policies, programs, goals and initiatives, including the following topics assigned to the group by SB 380 (2022):

- Consideration of municipal solid waste management plans and implementing a prohibition on New Hampshire landfills from accepting waste from a municipality that does not have such a plan; and
- Consideration of the development of a solid waste disposal site evaluation committee or defining requirements for "alternative site analysis" in RSA 149-M:9.

Action 4.3 – Provide regulatory and permitting guidance to facility applicants, as needed.

***Strategy - Data Collection and Research***

Action 4.4 – Explore additional data collection methods in addition to annual facility and hauler reports. This may include voluntary surveys and sourcing solid waste data from industry partners.

Action 4.5 – Conduct statewide waste studies to better understand New Hampshire's waste stream and identify priorities for action. Studies may include:

- A waste characterization study to determine the average composition of waste streams disposed and recycled in New Hampshire.
- A waste generation study to estimate the total quantity and types of waste being generated statewide.

Action 4.6 - Using waste characterization and generation data from Action 4.5, identify the types and distribution of facility infrastructure needed to advance the RSA 149-M:2 disposal reduction goal.

***Strategy – Regulations and Permitting***

Action 4.7 – Evaluate annual reporting requirements for solid waste facilities and haulers and identify what data is necessary to inform statewide solid waste management planning. Adjust annual reporting requirements, as necessary.

Action 4.8 – Review current permitting requirements for research and development projects and make rule changes as necessary to encourage more solid waste management entities to engage in thoughtful experimentation that spurs innovative technologies for management of solid waste.

Action 4.9 - Ensure that permit decisions for all types of facilities consider a facility's ability to provide capacity for management of NH-generated waste, and, to the extent practicable and allowed under law, that facility permits include provision for assuring capacity for New Hampshire-generated waste.

***Strategy – Legislation***

Action 4.10 – Review RSA 149-M:23-25 relative to local solid waste management planning and formation of solid waste districts to evaluate whether amendments are necessary to assure that local planning efforts are relevant to local solid waste management needs and consistent with the state Solid Waste Management Plan.

**GOAL 5: DEVELOP LOCAL MARKETS FOR WASTE DIVERSION**

Markets for recycling and diversion should be developed and bolstered across New Hampshire and New England to minimize disposal need and ensure a more circular economy. Such activities not only benefit the overall waste management system, but also present economic opportunities that will benefit New Hampshire's economy at large, such as job creation. NHDES will collaborate with public and private stakeholders to explore opportunities for expanding local and regional diversion markets. Because markets are highly dependent on available infrastructure, achievement of this goal will track closely with Goal 4 to ensure that facilities are developed to provide adequate capacity for diversion. Markets also rely on clear sorting guidelines and quality specifications to help waste generators and solid waste facilities understand what and how to recycle. More participation and conscious recycling efforts by consumers consistent with Goal 3 will result in higher recovery rates and ensure that recycling markets have a consistent, high-quality supply of recyclable feedstocks.

***Strategy - Public Outreach, Education and Technical Assistance***

Action 5.1 – Participate in local, regional and national discussions about materials management and share pertinent information with stakeholders to help improve recycling markets.

Action 5.2 – Work with other state agencies to update state procurement and Request for Proposal (RFP) policies to give preference to use of recycled content and certified waste-derived products (CWDPs) for certain activities or projects (for example, compost, crushed glass). CWDPs should be used if it is economically and logistically feasible for the specific application.

Action 5.3 – Compile and share educational materials to create awareness about how recyclables are used/what products they are commonly turned into, the benefits of buying recycled-content products, as well as the greater economic impacts of recycling.

Action 5.4 – Compile information on reuse businesses and solid waste facilities that provide diversion outlets; and develop online resources, such as interactive maps, to visualize opportunities for reuse, recycling, donation, repair, etc.



Action 5.5 – Explore the reestablishment of the State Recycling Market Development Coordinator position to facilitate efforts to develop and strengthen recycling markets in New Hampshire.

*Strategy - Incentives*

Action 5.6 – Develop incentives for New Hampshire businesses that produce products with post-consumer recycled content and compostable packaging to build demand for recycled materials.

*Strategy - Data Collection and Research*

Action 5.7 – Work with multi-state organizations such as the Northeast Resource Recovery Association (NRRRA), Northeast Recycling Council (NERC), Northeast Waste Management Officials Association (NEWMOA), as well as the University System of New Hampshire, and the Department of Business and Economic Affairs (DBEA) to research business opportunities with entrepreneurs to develop regional market strategies that support diversion.

Action 5.8 – Develop a Recycling Market Development stakeholder committee to explore options for diversion of difficult-to-recycle materials including C&D, bulky waste (furniture, carpeting, mattresses), glass, plastic film and emerging consumer products/packaging that currently have limited diversion options.

*Strategy – Regulations and Permitting*

Action 5.9 – Evaluate barriers to the use of crushed glass in construction projects. Consider regulatory updates to codify acceptable uses in low risk, low impact applications including underlayment for parking lots, walkways, and sidewalks, and as backfill for pipes and culverts.

Action 5.10 – Ensure that facility permit decisions and facility permits, to the extent practicable and allowed under law, consider and support development of local and regional recycling and diversion markets.

*Strategy - Legislation*

Action 5.11 – Explore legislation requiring updates to State agency procurement policies to reduce solid waste and increase demand for recycled content. Policies should require product purchases with high post-consumer recycled content to drive market development.

## **GOAL 6: ENCOURAGE SOLID WASTE INFRASTRUCTURE AND PRACTICES THAT SUPPORT STATE AND FEDERAL CLIMATE CHANGE INITIATIVES**

Concerns and measures to address climate change will continue to increase in coming years. This plan has included the measures in this section to ensure that it accounts for climate change and, thereby, remains viable and effective during the plan's ten-year period.

All stakeholders involved in solid waste management should consider climate change in planning and decision-making, emphasizing strategies that mitigate climate impacts and facilitate adaptation. According to the EPA, landfills are the third-largest source of methane emissions in the U.S., after agriculture and the oil and gas industry. Although methane only accounts for 11% of all U.S. greenhouse gas (GHG) emissions from human activities, it traps 25 times more heat in the atmosphere than carbon dioxide does.<sup>14</sup> As New Hampshire works toward achieving many of the other goals outlined in this plan, there will be direct and indirect benefits related to water and resource conservation, improved energy efficiency, and a reduction in GHG emissions. For example, increasing recycling practices reduces the

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<sup>14</sup> [EPA Overview of Greenhouse Gases](#)

need to extract virgin materials, thus avoiding energy use and associated GHG emissions. Similarly, diverting organic wastes like food, wood, paper, and leaf litter, can help reduce methane emissions that would otherwise result from decomposition of these materials in landfills. Additionally, development of more local diversion markets can minimize transportation costs and reduce emissions by eliminating the need to transport waste long distances. Below are additional actions that can further help to address the impacts of climate change.

***Strategy - Public Outreach, Education and Technical Assistance***

Action 6.1 – Develop guidance for installation of solar photovoltaic panels on closed, inactive landfills. Consider whether adjustments to solid waste permitting requirements may encourage such installations.

Action 6.2 – Collaborate with New Hampshire Department of Transportation and other stakeholders to update the State’s disaster debris management plan. Consider whether regulatory updates are needed.

Action 6.3 – Share case studies and information about opportunities for landfill reclamation to recover resources from closed, inactive landfills.

***Strategy - Data Collection and Research***

Action 6.4 – Explore options to generate energy from waste using landfill gas, as well as alternative technologies such as anaerobic digestion and pyrolysis.

***Strategy – Regulations and Permitting***

Action 6.5 - Ensure that facility permit decisions and facility permits, to the extent practicable and allowed under law, support state and federal climate change initiatives.

**GOAL 7: ENSURE THAT SOLID WASTE POLICIES AND REGULATIONS SUPPORT STATE AND FEDERAL ENVIRONMENTAL JUSTICE INITIATIVES**

The EPA’s principles of Environmental Justice (EJ) promote fair treatment and meaningful involvement of all people regardless of race, color, national origin, education, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EJ typically centers on communities that have historically been marginalized and/or adversely impacted by application of environmental laws, regulations and policies. In New Hampshire, both urban and rural communities can experience negative impacts associated with solid waste management. To align with state and federal efforts, NHDES will work to ensure fair and equitable treatment of, and engagement with, individuals impacted by solid waste management activities in the state.

Concerns and measures to address environmental justice will continue to increase in coming years. This plan has included the measures in this section to ensure that it accounts for and addresses environmental justice concerns and, thereby, remains viable and effective during the plan’s ten-year period.

***Strategy - Public Outreach, Education, and Technical Assistance***

Action 7.1 – Align solid waste program efforts with NHDES’ environmental justice plans and policies.<sup>15</sup>

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<sup>15</sup> The NHDES Civil Rights and Nondiscrimination Implementation Plan is in draft at the time of this document’s release and is anticipated to be published before December 31, 2022

Action 7.2 – Identify resources to help with translating outreach materials, program information and workshop presentations, to ensure equitable access for all people.

Action 7.3 – Work with solid waste management facilities, haulers and local governments to promote equitable access to reuse and diversion opportunities.

*Strategy - Incentives*

Action 7.4 – Explore grant funding opportunities to support diversion programs that meet the needs of communities with EJ concerns.

*Strategy – Regulations and Permitting*

Action 7.5 – Ensure that facility permit decisions and facility permits, to the extent practicable and allowed under law, support state and federal environmental justice initiatives.

**GOAL 8: ENSURE SUSTAINABLE FUNDING SOURCE(S) TO SUPPORT SOLID WASTE MANAGEMENT INITIATIVES**

NHDES and stakeholders across the solid waste management system need sufficient resources, staffing and oversight to carry out the actions presented in this plan. As such, sustainable funding is a foundational piece to its successful implementation. In New Hampshire, funding to support NHDES' solid waste management program has historically been limited and insufficient to support state grant or loan programs that could incentivize the efforts of local governments and the private sector to advance statutory goals. To ensure that adequate funding is available to support implementation of this plan, it will be important to consider opportunities for additional funding to bolster existing resources.

*Strategy - Public Outreach, Education and Technical Assistance*

Action 8.1 – Compile information about federal and state grant and loan programs that support solid waste management practices and share this information with interested public and private entities.

Action 8.2 – Assist non-profits and municipalities in seeking funding opportunities that help meet the goals of this plan. Assistance may involve writing letters of support and reviewing proposals.

*Strategy - Incentives*

Action 8.3 – Pursue opportunities for funding to establish a grant program as authorized by RSA 149-R<sup>16</sup> to support waste reduction and diversion efforts by New Hampshire businesses and municipalities. Grant programs may be used to support infrastructure, as well as outreach and technical assistance programs.

Action 8.4 – Apply for federal Bipartisan Infrastructure Law<sup>17</sup> funding to support implementation of the goals and actions in this plan.

*Strategy - Legislation*

Action 8.5 – Explore legislative opportunities for establishing a dedicated funding source to support state, local and private sector solid waste initiatives that advance the goals of this plan.

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<sup>16</sup> RSA 149-R was established by [SB379](#) during the 2022 legislative session

<sup>17</sup> Preliminary information about solid waste funding opportunities through the [Bipartisan Infrastructure Law](#)

## V. Ongoing Plan Implementation and Evaluation

As required by RSA 149-M:29, this is a ten-year plan, and its goals, strategies and actions will be addressed over that period of time. To implement the plan, NHDES will use an adaptive management approach which involves an iterative process including creation of short-term implementation plans. NHDES will use these short-term implementation plans to prioritize actions, measure progress, and track timeframes for completion. As activities are completed, their results will be documented and evaluated to inform the creation of new short-term implementation plans. This process will allow implementation to be responsive to information obtained, actions taken, and changing circumstances in the solid waste management industry over the ten-year period.

Achieving the goals in this plan will require a collaborative effort. While NHDES will be involved in carrying out all the actions within this plan, the department may not always be the primary, lead entity. For instance, enacting new laws and legislative mandates will require action by the New Hampshire General Court. While some actions in this plan mention specific entities, NHDES recognizes that other partners can help achieve many of the actions. Examples of relevant stakeholders to help implement this plan are provided in Appendix A.

NHDES will track progress in achieving the goals of this plan using a variety of data and information sources including, but not limited to, annual solid waste facility and hauler reports, workshop participation, legislative hearings, published outreach materials, and examples of technical assistance provided. NHDES staff will seek information from municipalities, solid waste districts, regional organizations, and other stakeholders to learn about successful initiatives and challenges encountered. Additionally, NHDES' Biennial Solid Waste Reports will provide opportunities to report on progress toward achieving the State's disposal reduction goal and the goals in this Plan.

## VI. Summary

A more sustainable waste management system requires systemic changes in how we produce, distribute, and use products and services in New Hampshire. These changes will require New Hampshire to move toward policies and practices that support higher diversion rates for wastes that are reusable, recyclable, or compostable, while also reducing waste generation by minimizing or eliminating the use of unnecessary, toxic and difficult to manage materials. With such outcomes in mind, this plan sets out eight key goals:

- 1) Reduce the quantity of solid waste generated.
- 2) Reduce the toxicity of the solid waste stream.
- 3) Maximize the diversion of residential, commercial and industrial solid waste from disposal.
- 4) Ensure adequate capacity for management of New Hampshire-generated waste.
- 5) Develop local markets for waste diversion.
- 6) Encourage solid waste infrastructure and practices that support State and Federal climate change initiatives.
- 7) Ensure that solid waste policies and regulations support State and Federal environmental justice initiatives.
- 8) Ensure sustainable funding sources to support solid waste management initiatives.

As outlined in this plan, a variety of strategies will need to be employed to support these goals, including education and outreach, incentives, data collection and research, regulations and permitting, and legislation. Advancing this plan and achieving the disposal reduction goal established in RSA 149-M:2 will require active participation from everyone who uses and is involved in New Hampshire's solid waste management system. NHDES, the regulated solid waste industry, municipalities, the New Hampshire General Court, businesses, non-governmental organizations, and the general public must work together to uphold the goals and hierarchy in RSA 149-M:2-3 and support the statute's vision for proper and integrated management of solid waste.

## Appendix A: Potential Partners and Other Resources

### POTENTIAL PARTNERS

Implementing and achieving the goals in this plan will require a collaborative effort. While NHDES will be involved in carrying out all the actions within this plan, the department may not always be the primary, lead entity. There are many partners and stakeholder groups who can help accomplish the actions in this plan including, but not limited to:

#### FOOD RESCUE NETWORKS

*New Hampshire Food Bank* – assists with hunger relief and food insecurity by soliciting and distributing grocery products and perishable foods to more than 400 partner agencies including food pantries, homeless shelters, children’s programs, senior centers and more.

*New Hampshire Gleans* – a network of regional organizations that recover fresh produce from farms, gardens, and orchards and distribute it through community agencies to conserve resources, avoid waste, and increase access to healthy food.

#### FUNDING ORGANIZATIONS

*New Hampshire Community Development Finance Authority (CDFA)* – offers funding opportunities to non-profits, municipalities, businesses, and microenterprises in order to build the social, economic, and environmental capacity of New Hampshire communities.

*U.S Environmental Protection Agency (EPA)* – the EPA is charged with disbursing funding allocated by the Bipartisan Infrastructure Law to support waste prevention, reuse, and recycling programs.

*U.S Department of Agriculture (USDA)* – the USDA provides Solid Waste Management Grants for governments and organizations to provide technical assistance and training to improve the planning and management of solid waste in rural areas.

#### LEGISLATORS AND STATUTORY COMMITTEES

*New Hampshire Solid Waste Working Group* – a statutory committee formed by HB 413 (2021) to assist NHDES with planning and policy initiatives related to solid waste management.

#### MUNICIPAL ORGANIZATIONS

*New Hampshire Municipal Association (NHMA)* – a non-profit association that works to strengthen New Hampshire cities and towns and enhance their ability to serve the public. NHMA promotes effective municipal government by providing education, training, advocacy, and legal services.

#### NEW HAMPSHIRE REGIONAL PLANNING COMMISSIONS (RPC)

*New Hampshire Association of Regional Planning Commissions* – the affiliation that coordinates the activities of the nine RPCs on a statewide basis.

- 1) *Central New Hampshire RPC*
- 2) *Lakes Region Planning Commission*
- 3) *Nashua RPC*
- 4) *North Country Council*
- 5) *Rockingham Planning Commission*

- 6) Southern New Hampshire Planning Commission
- 7) Southwest RPC
- 8) Strafford RPC
- 9) Upper Valley Lake Sunapee RPC

#### NEW HAMPSHIRE STATE AGENCIES

Department of Administrative Services (NHDAS) – NHDAS' mission is to provide leadership and quality statewide management services and support for efficient and cost-effective state government. NHDAS coordinates the State Surplus program housed at "White Farm," which serves as a repurposing center for state and federal surplus property.

Department of Business and Economic Affairs (NHDBEA) – the Division of Economic Development and Division of Travel and Tourism Development are dedicated to enhancing the economic vitality of New Hampshire and promoting it as a destination for domestic and international visitors.

Department of Health and Human Services (NHDHHS) – helps support and protect the health and welfare of New Hampshire citizens by administering programs and services related to mental health, developmental disability, substance misuse, and public health.

Department of Transportation (NHDOT) – assists in planning, developing, and maintaining the state transportation network for safe and convenient movement of people and goods throughout the state by means of air service, highways, railroads, bicycle/pedestrian paths, and other public transportation modes.

Office of Strategic Initiatives (NHOSI) – provides information, data, and guidance to assist decision-makers on issues pertaining to development, land protection, energy use and community planning.

#### REGIONAL SOLID WASTE ORGANIZATIONS

Northeast Recycling Council (NERC) – provides technical assistance, information access, research, and networking opportunities on recycling market development for state and regional programs in the six New England states as well as New York, New Jersey, Pennsylvania, and Delaware. NERC undertakes research and education projects that address regional recycling, market development and waste management issues.

Northeast Resource Recovery Association (NRRRA) – a non-profit organization that provides technical, educational, and marketing support to municipal recycling programs. NRRRA provides material marketing and brokerage services for municipalities in New Hampshire, Massachusetts, Maine, and Vermont.

Northeast Waste Management Officials Association (NEWMOA) – a regional non-profit, non-partisan, interstate association that works to address environmental challenges in Connecticut, Maine, Massachusetts, New Hampshire, New York, New Jersey, Rhode Island, and Vermont. NEWMOA provides a variety of support services to help states articulate, promote, and implement economically sound regional programs to enhance environmental protection.

#### REUSE/SURPLUS NETWORKS

Habitat for Humanity – Habitat ReStores accept donations and sell high-quality merchandise to the public at a fraction of the retail price, while diverting reusable household items and building

materials from landfills. Sales of donated items help Habitat for Humanity partner with local facilities to build, rehabilitate, and repair safe and affordable homes.

IRN: The Reuse Network – IRN works with a network of non-profits to match unneeded furniture and equipment from schools, universities, corporations, and healthcare facilities around the U.S., with communities in need around the world.

## SCHOOLS AND EDUCATIONAL INSTITUTIONS

University System of New Hampshire – includes six institutions in New Hampshire offering postsecondary educational opportunities.

UNH Cooperative Extension – provides information and outreach on a multitude of topics to the citizens of New Hampshire including agriculture and gardening, economic development, health and well-being, and natural resource management.

## OTHER POTENTIAL PARTNERS

The above list is not all-inclusive. Additional partners may be identified during ongoing implementation of the plan, including:

- Advocacy groups, ad-hoc community groups, and grassroots organizations
- Businesses, institutions, manufacturers, and hospitality/food service providers
- Medical/healthcare facilities
- Municipalities, including municipal officials and committees
- Schools and educational institutions
- Thrift stores and consignment shops
- Solid waste management entities, including facilities, haulers, and districts

## ADDITIONAL RESOURCES

2019 Report from HB617 Study Committee – Final Report of the statutory Committee to Study Recycling Streams and Solid Waste Management in New Hampshire.

EPA 2018 Facts and Figures – EPA data that looks at generation, recycling, composting, combustion with energy recovery, and landfilling for a variety of materials and products found in municipal solid waste.

EPA Food Recovery Hierarchy – prioritizes actions that organizations can take to prevent and divert food waste. Each tier focuses on different management strategies for wasted food.

EPA Overview of U.S Greenhouse Gas Emissions

EPA Sustainable Materials Management (SMM) Program – a systematic approach to using and reusing materials more productively over their entire life cycles.

Harvard Food Law and Policy Clinic Food Waste Fact Sheets – state specific, legal fact sheets created by the Harvard Law School's Food Law and Policy Clinic about tax incentives, date labels, liability protections, and feeding food scraps to animals.

NHDES Household Hazardous Waste (HHW) Program – provides resources and education for New Hampshire residents on the purchase, use and disposal of hazardous products and also by helping municipalities to fund HHW collection events across the state.



NHDES Planning Prevention and Assistance, Pollution Prevention (P2) Program – assists businesses, municipalities, public agencies, organizations and residents with reducing or eliminating waste at the source.

NHDES Solid Waste Operator Training (SWOT) Program – state law requires operators of permitted solid waste facilities in New Hampshire to be certified through NHDES.

New Hampshire Solid Waste Rules (Env-Sw 100 et seq.) - all of NHDES' administrative rules for regulating solid waste management in New Hampshire are housed in this searchable library.

New Hampshire RSA 9-C – State Government Waste Reduction, Recycling, and Recycled Products Purchasing Law.

New Hampshire RSA 53-A – enables towns, cities, village districts, and unincorporated places to establish inter-municipal cooperative agreements.

New Hampshire RSA 53-B – specific to forming solid waste management districts in towns, cities, village districts, and unincorporated places.

New Hampshire RSA 149-M – Solid Waste Management Act

New Hampshire RSA 149-R – Solid Waste Management Fund established by SB 379 (2022). Although established without an initial appropriation or other funding source, this fund is intended to receive monies that may be identified in the future. Once funded, it will enable the Department of Environmental Services to provide grants to advance waste reduction and diversion in New Hampshire.

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## Appendix B: Considerations for Municipal Management of Solid Waste

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This appendix was developed in collaboration with the Northeast Resource Recovery Association (NRRRA) to provide a snapshot of typical costs, revenues, and logistical considerations that New Hampshire municipalities must consider when managing our solid waste. These considerations are associated with separating, collecting, processing, and marketing or disposing of municipal solid waste (MSW). The term 'MSW' technically includes solid waste sent for disposal in landfills or incinerators, as well as waste separated for recycling. However, in common usage, 'MSW' is typically used to refer to waste sent for disposal, while 'recyclables' is used to refer to materials diverted from disposal. Use of these terms in this document is intended to reflect their common usage. This document does not specifically address management of construction and demolition debris (C&D), although many of the same considerations discussed below would apply.

RSA 146-M:17, I states that "each town shall either provide a facility or assure access to another approved solid waste facility for its residents." Many New Hampshire municipalities fulfill this provision by operating their own solid waste facilities. In some cases, a municipality may rely on a facility owned by another municipality, a solid waste district, or a private solid waste management company. *Figure 5* at the end of this document provides a visual of potential pathways for diverting and disposing of solid waste in New Hampshire. Regardless of the specific arrangement, there are costs associated with management of solid waste produced by the municipality and its residents.

The overall cost is determined by a number of factors, including the amount of waste generated, collection costs, facility operational costs, transportation fees, disposal fees, and the cost or revenue associated with recycled materials. Several of these factors are influenced by local, regional and global market forces that cause costs and revenues to fluctuate over time. In many cases, municipalities can avoid high disposal costs through recycling and composting.

### COLLECTION & OPERATIONS

MSW and recyclables are collected from residents and businesses in a variety of ways, including:

- Drop-off facilities,
- Curbside collection by private haulers contracted by a household or municipality, and
- Municipally-provided curbside collection.

Use of these collection methods may vary from community to community. Typically, more rural municipalities will rely on drop-off facilities (for example, transfer stations) where residents deliver their MSW, while more densely populated communities will provide curbside collection. Some municipalities will provide a drop-off facility in addition to curbside collection to facilitate collection of other wastes not typically collected via curbside.

Running a drop-off facility involves costs for operation and maintenance. This includes staff time spent on sorting and baling recyclables, coordinating pickups for outbound loads of recyclables/MSW, as well as costs for equipment and facility upkeep. There are also cost variables with curbside programs, including frequency of pickups, route density, truck maintenance, and collection bins.

### TRANSPORTATION

Transportation costs are influenced by several factors, including the terms of contracts with waste haulers (as applicable), the distance between facilities, fluctuations in fuel prices, and the type of waste

and how it is being transported. For municipalities with drop-off facilities, hauling fees are typically a separate expense item, while with curbside collection, the cost to haul collected wastes to a facility may be included in the total costs of collection. Because hauling fees are commonly charged per trip regardless of load weight, facilities will often attempt to load as much MSW or recyclables as possible in one shipment to minimize the number of loads and associated hauling fees. *Table 1* below, in the section on disposal, shows average hauling fees for a sample of New Hampshire communities related to disposal of MSW.

## RECYCLING

Recycling programs vary by municipality, but operate using similar components: separation, collection, processing, and marketing. Recycling programs can be categorized into three main types:

- 1) Source separation – residents sort recyclables individually at a local drop-off location (e.g., town transfer station),
- 2) Dual stream – fibers (paper products) are separated from recyclable plastic, metal & glass containers, and
- 3) Single stream – fibers and recyclable containers are mixed into one bin.

Most municipal recycling programs in New Hampshire currently use either source separation or single stream. In 2019, NRRRA estimated that 71% of communities in New Hampshire used source separation – however, those communities only encompassed 43% of the population at that time. This is because single stream recycling is widely used in larger communities with higher populations. Dual stream has become a less common practice in recent years due to wider adoption of single stream programs. The mechanics of source separated recycling and single stream recycling vary considerably. A municipality with a source separation program needs space (containers or bunkers) to hold collected materials and, ideally, machinery (balers) to compact commodities into rectangular bales and secure them with wire or strapping. Covered storage space is also needed to keep baled commodities clean and dry until they can be sold in the market. Communities using single stream recycling typically do not need the same space and equipment as a source separating community. Single stream programs rely on regional, Materials Recovery Facilities (MRF) to separate co-mingled recyclables. Currently, all single stream MRFs are located out-of-state.

Any recycling program is subject to risk of contamination from “wish-cycling,” inadequate preparation of recyclables, and misinformation about what items are accepted. The issue of contamination has been especially challenging for single stream programs because more contamination results in higher costs to sort the mixed recyclables and yields lower value commodities for market. As a result, many municipalities and waste management companies that provide single stream programs have recently made efforts to educate the public about what items are acceptable and how to prepare and sort recyclables.

While RSA 149:M-2 discourages the disposal of recyclable materials in landfills and incinerators, New Hampshire does not have a statewide mandatory recycling requirement. According to a 2018 update to NERC’s Disposal Bans & Mandatory Recycling report<sup>18</sup>, 117 of New Hampshire’s 234 municipalities have voluntarily adopted some type of mandatory recycling ordinance. Many recyclables (e.g., aluminum, cardboard, some plastics) are valued commodities that can be sold into market to generate revenue for a municipality. Revenue from the sale of recyclables can help offset transportation and processing expenses. Source separation programs tend to have lower processing costs, as compared to single

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<sup>18</sup> [NERC Disposal Bans & Mandatory Recycling in the United States](#)

stream programs, because sorting is largely accomplished by individual generators. Single stream processing is outsourced to waste management companies, which adds additional cost to the municipality. Oftentimes, waste diversion helps avoid higher costs of MSW disposal, because landfilled waste does not have any value.

It is important to note that recycling markets constantly change with product supply and demand. Municipalities make program decisions based on what is logistically and economically feasible given current market conditions. By weight, over half of the municipal recycling stream typically consists of fibers (cardboard and paper), which means that fibers pricing strongly influences the overall value of the average ton of municipal recycling. Commodities separated into distinct subcategories typically have a higher value at market than the subcategories being mixed together. For example, mixed paper is different types of paper mixed together (e.g., newspaper, magazines, junk mail, office paper). If a community separates out office paper or newspaper separately from its mixed paper, it can receive much higher value for those commodities versus just mixed paper.

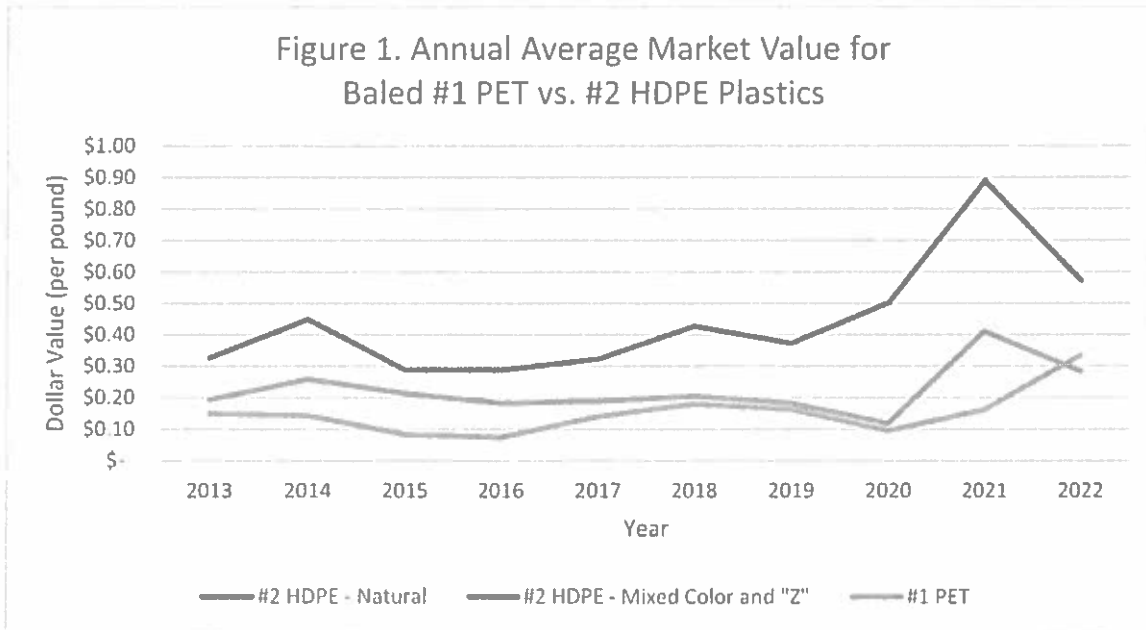
The graphs below provide an overview of historic market variability for different recyclable commodities. Specifically, the graphs depict the annual average market pricing<sup>19</sup> over a ten-year period, from August 2013 to August 2022, for:

- #1 PET & #2 HDPE plastics,
- Aluminum cans (used beverage containers),
- Mixed paper & corrugated cardboard (OCC), and
- Scrap metal & steel cans

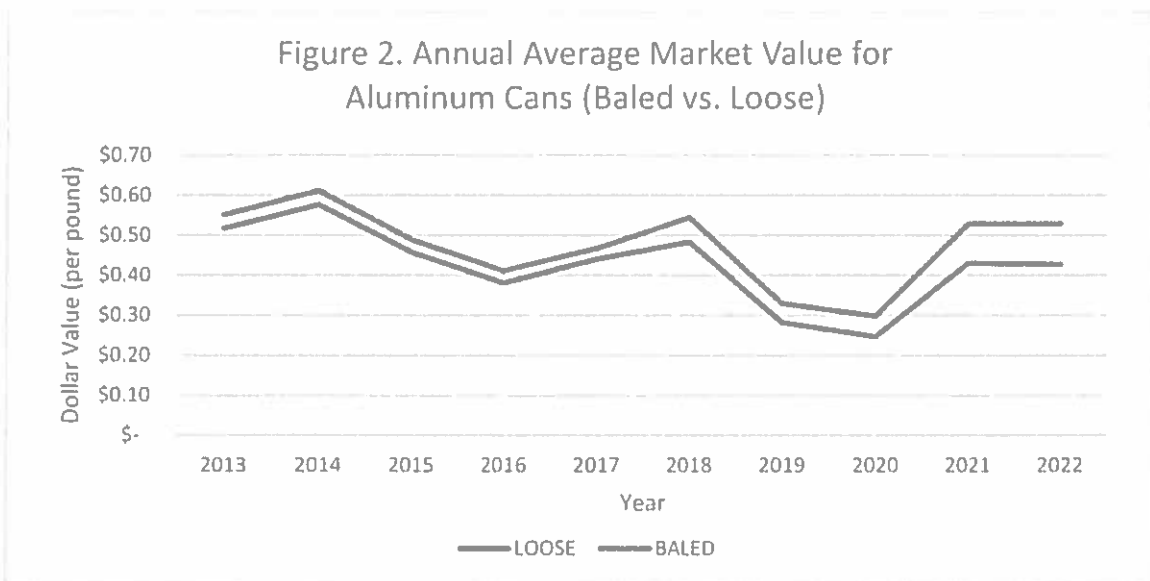
Most of the pricing shown in the graphs below represent prices paid for full truckloads of baled commodities shipped to vendors that NRRRA works with across the Northeastern United States and Canada.

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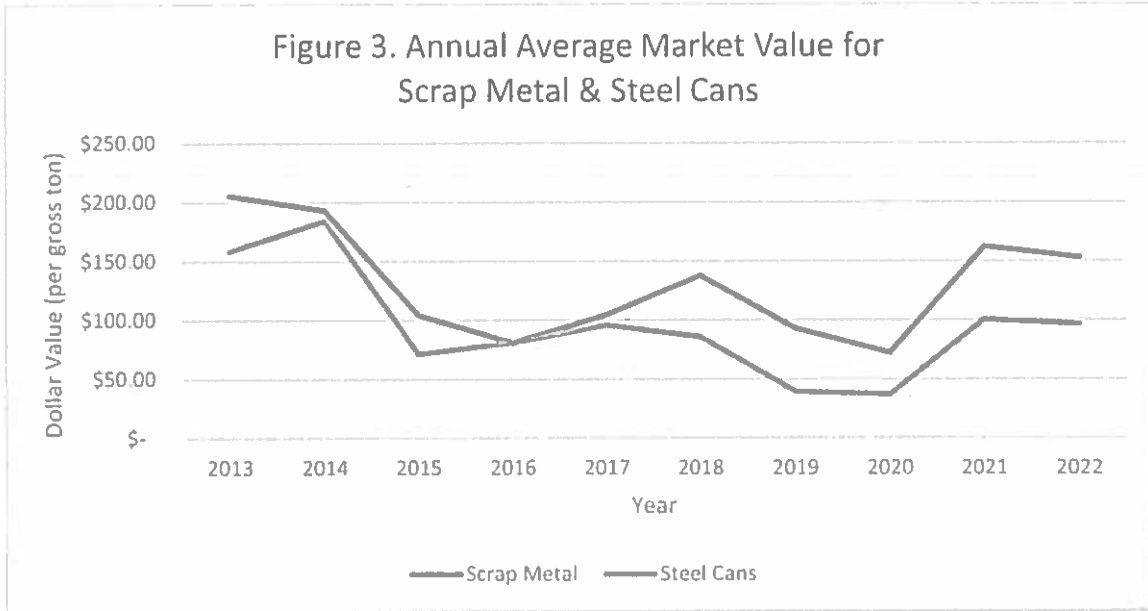
<sup>19</sup> The pricing presented is based on annualized averages of monthly material market values from various NRRRA vendors.



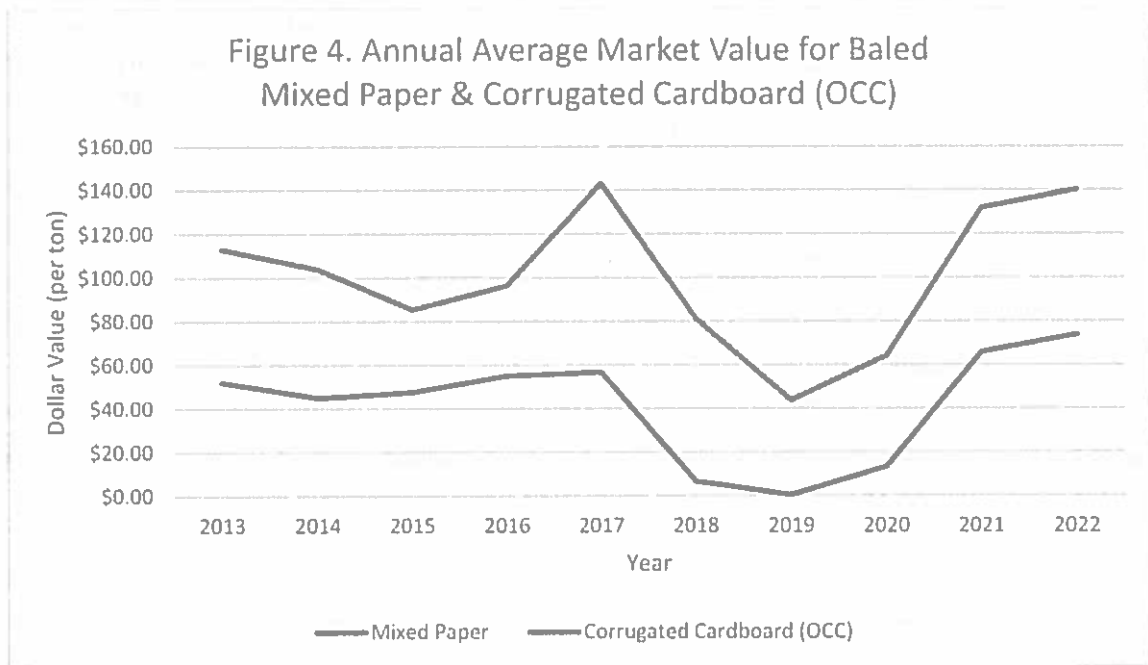
**Figure 1. Plastics** – Historically, #1 PET (polyethylene terephthalate) and #2HDPE (high density polyethylene) plastics have the most reliable recycling markets because of their wide use in the consumer marketplace. PET is commonly used for soda and water bottles. HDPE comes in two primary forms: “natural” (translucent HDPE commonly used for milk and juice jugs), and “colored” (opaque, pigmented HDPE typically used for shampoo and detergent bottles). While it is common for natural and colored HDPE to be baled separately, sometimes natural and colored HDPE are baled together – also known as “Z” bales.



**Figure 2. Aluminum Cans** – The dollar value for aluminum cans depends on whether the material is condensed into large, rectangular bales or shipped loose in roll-off containers to be baled at another location. Historically, aluminum cans that are baled and ready for market have a higher value.



**Figure 3. Scrap Metal & Steel Cans** – As with aluminum cans, the value of steel cans depends on whether the material is baled or loose. Scrap metal, however, is commonly shipped loose in roll-off containers. Scrap metal is often a significant source of revenue for New Hampshire municipalities.



**Figure 4. Mixed Paper & Corrugated Cardboard (OCC)** – Mixed paper includes newspaper, magazines, junk mail, paperboard, catalogs, and office paper. Historically, pricing for baled mixed paper will track closely with pricing for baled corrugated cardboard (also known as “old corrugated containers,” or OCC), although OCC typically has a higher market value than baled mixed paper.

### **Recycling and Available Markets**

Whether or not something actually gets recycled depends on whether there is a market for the item. Since markets vary by location, it may not be economically feasible for a municipality to recycle a certain item, even if that item may be recyclable in other areas. Economic feasibility depends on distance to a buyer, transportation costs, and whether a town or facility has the necessary storage space, equipment, and personnel to collect and process the material. It also depends on whether the material is generated in sufficient quantities and has high enough value to offset processing or transportation costs or the cost of disposal. Therefore, in some cases, just because an item is labelled “recyclable,” does not mean it is locally “processable.” The staff at your municipal transfer station can answer any questions about what is processed at the facility.

### **ORGANICS DIVERSION**

Across New England, organic materials (food scraps, leaf and yard waste, paper products) are often diverted through composting or anaerobic digestion. As of the date of this document’s publication, there are currently no anaerobic digestion facilities in New Hampshire permitted to process solid wastes, such as food scraps. New Hampshire does have nine (9) operating composting facilities permitted to compost food scraps. Composting is a diversion method that turns organic material into a soil amendment that can be used to improve soil structure, plant health, and water retention. Diverting food and yard waste through composting can save landfill space and municipal disposal costs. For example, the City of Lebanon reported a 30% cost savings from composting over landfilling food scraps.<sup>20</sup> There are many logistical components that influence the overall cost of running a municipal composting program. To start, a municipality must determine if it is more economically feasible to operate their own composting facility, or contract with a hauler to pick up the food scraps and transport them to a separate facility for processing. Other considerations include:

- Establishing a feasible collection method,
- Purchasing any necessary equipment or collection bins,
- Educating the public about the program,
- Training staff,
- Identifying markets to process raw organics or purchase the finished compost product, and
- Complying with local ordinances and state regulations.

Currently, only a few New Hampshire municipalities have food scrap composting programs in place<sup>21</sup>. Some are composting food scraps at their own municipally-owned composting facility, while others collect food scraps and transfer them to a third-party facility for processing.

It is more common for municipalities to compost leaf and yard waste because New Hampshire state law bans the disposal of such items in landfills and incinerators. Many municipalities operate their own yard waste composting facility, while others may send their yard waste to a third-party composting facility (yet others may manage yard waste by chipping or burning as authorized by the local Fire Department). It is worth noting that facilities solely dedicated to composting of leaf and yard waste do not require a solid waste permit.

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<sup>20</sup> [NRRA news post: Municipal Compost Conversation Stirs Interest](#)

<sup>21</sup> [Sample of NRRA Municipalities with Composting Programs \(NH, VT\)](#)

## DISPOSAL

Disposal in landfills and incinerators without energy recovery have the lowest preference on the New Hampshire Waste Management Hierarchy. These methods should be reserved for wastes that have limited-to-no recycling options and therefore need to be disposed in a landfill or incinerated.

Disposal facilities typically charge disposal (tipping) fees for the waste that they receive. These fees are commonly charged per ton, unlike hauling fees as discussed above. This means that the more MSW a municipality sends for disposal, the more it will pay to the disposal facility. Tipping fees are largely market-driven and a disposal facility may set different rates for long-term contracts versus uncontracted loads (also known as “spot market”). According to Waste Business Journal<sup>22</sup>, the U.S Northeast has some of the highest tipping fees in the country, compared to the National average. This is, in part, due to our dwindling capacity of existing landfills and limited space to build new landfills. Table 1 below compares the average tipping fees, hauling fees, and total cost per ton for five New Hampshire communities with a population under 4,000.

Table 1. Average MSW Disposal Costs for 2020-2022<sup>23</sup>

Year	Average Tipping Fee (per ton)	Average Hauling Fee (per truckload)	Average Total Cost Per Ton (tipping & hauling fees)
2020	\$79.70	\$260.00	\$105.54
2021	\$85.00	\$270.00	\$109.30
2022	\$104.30	\$285.00	\$133.58

### Cost Recovery by Municipalities

Oftentimes, municipal facilities will charge residents a fee to help recover the costs associated with disposing or recycling specialized wastes including tires, propane tanks, electronics, refrigerant-containing appliances, C&D, etc. Municipalities will typically structure such fees based on what they pay for disposing or recycling a given waste type, including staff time involved in managing the waste. In many cases, fees will be a fixed price per item. However, for some wastes, such as C&D and electronics, facilities may use a truck or floor scale to weigh incoming waste and charge a weight-based fee. Facilities without a scale may set volume-based fees based on truck-bed dimensions or rely on a staff member to estimate incoming load sizes. Scales provide an advantage where municipalities can charge a precise cost that covers most of the actual disposal costs. For example, after completing a cost assessment in 2020, the Town of Gilford found that only 55% of their costs for C&D disposal were covered by their volume-based fees.<sup>24</sup> The town was spending nearly \$40,000 annually beyond the fees received. The town used this data to support purchasing a truck scale to move to a weight-based fee system to enable more precise cost recovery.

Pay-As-You-Throw (PAYT), or unit-based pricing, is another fee mechanism that allows municipalities to recover some, or all of their costs associated with MSW disposal. Traditionally, a town or city will pay for

<sup>22</sup> Waste Business Journal

<sup>23</sup> Based on annual data from a sample of five NRRRA member communities with a population under 4,000

<sup>24</sup> NRRRA “Increasing Waste Diversion” presentation



disposal of municipal solid waste through local property taxes. Residents can throw away as much as they like, and the entire cost is covered by taxpayers regardless of how much waste they generate. This means residents who throw away less trash subsidize those who throw away greater amounts of trash. PAYT is an alternative system by which individuals and businesses pay only for the trash they discard, not that of others. This is a similar model to how public utilities charge users based on how much they use the service. PAYT programs commonly use special collection bags or bag tags that residents purchase for their own waste. PAYT bags or tags will typically be required for disposal of wastes, but not for recycling. This provides an economic incentive for individuals to separate out recyclables and reduce the amount of trash they dispose of. Municipalities can use proceeds from bag sales to cover disposal costs and invest in their local waste management infrastructure without affecting property taxes.

Out of the 234 municipalities in New Hampshire, 39 are participating in some form of a PAYT system<sup>25</sup>. Many of these municipalities have reported a decrease in their total disposal tonnage after instituting PAYT. For example, the City of Concord has reported that their total MSW tonnage has decreased by 40% since introducing PAYT in 2009.<sup>26</sup>

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<sup>25</sup> [Pay-As-You-Throw programs in New Hampshire](#)

<sup>26</sup> [City of Concord Trash Disposal Information](#)

Figure 5. Solid Waste Flow Schematic

Prepared by NHDES per Waste Management Council Request

May 1, 2019

This flow chart shows potential pathways for managing solid waste. Not all municipal programs use each management method.

