TOWN OF DURHAM
8 NEWMARKET ROAD
DURHAM, NH 03824
Tel: 603/868-5571
Fax: 603/868-1858

AGENDA

DURHAM TOWN COUNCIL
MONDAY, NOVEMBER 18, 2019
DURHAM TOWN HALL – COUNCIL CHAMBERS
7:00 PM

NOTE: ***The Town of Durham requires 48 hours notice if special communication aids are needed.***

I. Call to Order

II. Approval of Agenda

III. Special Announcements

IV. Public Comments (*)

V. Approval of Minutes – October 21 and November 4, 2019

VI. Councilor and Town Administrator Roundtable

VII. Report from the UNH Student Senate External Affairs Chair or Designee

VIII. Unanimous Consent Agenda *(Requires unanimous approval. Individual items may be removed by any councilor for separate discussion and vote)* – None

IX. Committee Appointments

Shall the Town Council appoint a representative to serve on a committee to establish a coastal resilience and economic development program in accordance with Senate Bill 285, CH 318:4?

X. Presentation Items

A. Receive annual report from the Conservation Commission in accordance with Section 11.1(I) of the Town Charter – Bart McDonough, Chair **(10 mins)**
B. Receive annual report from the Durham Energy Committee in accordance with Section 11.1(I) of the Town Charter – Mary Downes, Chair **(10 mins.)**
C. Receive annual report from the Historic District Commission in accordance with Section 11.1(I) of the Town Charter – Andrea Bodo, Vice Chair **(10 mins.)**

XI. Unfinished Business

A. **PUBLIC HEARING** on the Administrator's proposed FY 2020 Operating, Capital, and Special Fund Budgets

B. Continued discussion and deliberation of the Administrator's proposed FY 2020 Operating, Capital, and Special Fund Budgets and the 2020-2029 Capital Improvement Plan (AS TIME ALLOWS):

1. Assessor	5. Planning	9. Police
2. Economic Development	6. Town Clerk/Tax Collector	10. Fire
3. IT / DCAT	7. Zoning/Code Enforcement	11. Public Works
4. Parks & Recreation	8. Library	

C. **PUBLIC HEARING AND ACTION ON ORDINANCE #2019-03**, a Planning Board-initiated amendment to Chapter 175 "Zoning" of the Durham Town Code to rewrite Article XXI - Off Street Parking, and to modify other language in the Zoning Ordinance pertaining to parking

D. **CONTINUED DISCUSSION AND ACTION ON ORDINANCE #2019-02** creating a new chapter within the Durham Town Code, Chapter 145 "Tobacco Products", to increase the age for the sale and purchase of tobacco products, e-cigarettes, vaping products or liquid nicotine from 18 to 21 in the Town of Durham

E. Continued discussion on concept of a Pay As You Throw Program in Durham

XII. New Business

Other Business

XIII. Nonpublic Session (if required)

XIV. Extended Councilor and Town Administrator Roundtable (if required)

XV. Adjourn *(NLT 10:30 PM)*

(*) *The public comment portion of the Council meeting is to allow members of the public to address matters of public concern regarding town government for up to 5 minutes. Obscene, violent, disruptive, disorderly comments, or those likely to induce violence, disruption or disorder, are not permitted and will not be tolerated. Complaints regarding Town staff should be directed to the Administrator.*

TOWN OF DURHAM
8 NEWMARKET ROAD
DURHAM, NH 03824
Tel: 603/868-5571
Fax: 603/868-1858

AGENDA ITEM: # 5

DATE: November 18, 2019

COUNCIL COMMUNICATION

INITIATED BY: Durham Town Council

AGENDA ITEM: **APPROVE THE TOWN COUNCIL MEETING MINUTES FOR MONDAY, OCTOBER 21 AND MONDAY, NOVEMBER 4, 2019**

CC PREPARED BY: Jennie Berry, Administrative Assistant

PRESENTED BY: Todd I. Selig, Administrator

AGENDA DESCRIPTION:

Attached for the Council's review and approval are the minutes for the Town Council meetings held on Monday, October 21 and Monday, November 4, 2019. Please call or email Jennie Berry with any grammatical/spelling changes prior to the meeting. Discussion at Monday evening's meeting should be limited only to substantive changes.

LEGAL AUTHORITY:

RSA 91-A:2 (II) specifies what must be contained in minutes of public meetings: *"Minutes of all such meetings, including names of members, persons appearing before the bodies or agencies, and a brief description of the subject matter discussed and final decisions, shall be promptly recorded and open to public inspection not more than 5 business days after the public meeting, except as provided in RSA 91-A:6, and shall be treated as permanent records of any body or agency, or any subordinate body thereof, without exception."*

LEGAL OPINION:

N/A

FINANCIAL DETAILS:

N/A

SUGGESTED ACTION OR RECOMMENDATIONS:

MOTION 1:

The Durham Town Council does hereby approve Town Council meeting minutes for Monday, October 21, 2019 (as presented) (as amended).

MOTION 2:

The Durham Town Council does hereby approve Town Council meeting minutes for Monday, November 4, 2019 (as presented) (as amended).

TOWN OF DURHAM
8 NEWMARKET ROAD
DURHAM, NH 03824
Tel: 603/868-5571
Fax: 603/868-1858

AGENDA ITEM: # 9

DATE: November 18, 2019

COUNCIL COMMUNICATION

INITIATED BY: NH Senate Clerk's Office

AGENDA ITEM: **SHALL THE TOWN COUNCIL APPOINT A REPRESENTATIVE TO SERVE ON THE COMMITTEE ESTABLISHED BY SB 285, CH 318:4 ESTABLISHING A COASTAL RESILIENCE AND ECONOMIC DEVELOPMENT PROGRAM?**

CC PREPARED BY: Jennie Berry, Administrative Assistant

PRESENTED BY: Todd Selig, Administrator

AGENDA DESCRIPTION:
The Town has received notification from the NH Senate Clerk's Office that it is to appoint a representative to serve on the committee established by SB 285, CH 318:4 (attached), establishing a coastal resilience and economic development program. In accordance with the legislation, the town's appointment is as follows: (c) One representative of each town or city that borders the tidal waters of the Great Bay Estuary or Atlantic Ocean, appointed by that town or city's governing body. Councilor Wayne Burton has indicated his interest in serving on this committee.

LEGAL AUTHORITY:
Senate Bill 285, CH 318:4

LEGAL OPINION:
N/A

FINANCIAL DETAILS:
N/A

SUGGESTED ACTION OR RECOMMENDATIONS:
Hold discussion and determine a representative to be appointed to the above mentioned committee.

CHAPTER 318
SB 285-FN - FINAL VERSION

03/07/2019 0663s
8May2019... 1715h
5Jun2019... 2245h

2019 SESSION

19-1071
08/05

SENATE BILL ***285-FN***

AN ACT establishing a coastal resilience and economic development program.

SPONSORS: Sen. Watters, Dist 4; Sen. Sherman, Dist 24; Sen. Fuller Clark, Dist 21; Sen. Morgan, Dist 23; Sen. Kahn, Dist 10; Rep. Cushing, Rock. 21; Rep. Somssich, Rock. 27

COMMITTEE: Energy and Natural Resources

AMENDED ANALYSIS

This bill:

I. Allows municipalities to unify as a result of a climate change emergency.

II. Allows municipalities to create municipal development and revitalization districts as a result of a climate change emergency.

III. Creates coastal resilience and cultural and historic reserve districts.

IV. Creates a coastal resilience and cultural and historic reserve district fund.

V. Creates a coastal resilience and cultural and historic reserve commission.

Explanation: Matter added to current law appears in ***bold italics.***
Matter removed from current law appears ~~[in brackets and struckthrough.]~~
Matter which is either (a) all new or (b) repealed and reenacted appears in regular type.

CHAPTER 318
SB 285-FN - FINAL VERSION

03/07/2019 0663s
8May2019... 1715h
5Jun2019... 2245h

19-1071
08/05

STATE OF NEW HAMPSHIRE

In the Year of Our Lord Two Thousand Nineteen

AN ACT establishing a coastal resilience and economic development program.

Be it Enacted by the Senate and House of Representatives in General Court convened:

318:1 Findings. It is the policy of the state of New Hampshire to support municipalities in the coastal and Great Bay Estuary region to prepare for sea-level rise, storm surge, and flooding from extreme precipitation.

318:2 New Section; Climate Emergency Municipal Unification. Amend RSA 31 by inserting after section 9-c the following new section:

31:9-d Climate Emergency Municipality Unification.

I. As a result of sea-level rise, storm surge, and flooding from extreme precipitation events, or in anticipation of such events as projected by the Coastal Risk and Hazards Commission final report, "Preparing New Hampshire for Projected Storm Surge, Sea-Level Rise, and Extreme Precipitation," and subsequent science and technical advisory panel reports under RSA 483-B:22, the legislative body of a municipality may declare a climate emergency and engage in planning for municipal cooperation and for municipal boundary adjustment or unification with one or more other municipalities. Municipal boundary adjustment or unification may include (a) the alteration of existing municipal boundaries or (b) the creation of a new municipality incorporating the existing boundaries of such municipalities and the creation of new, unified legislative and governing bodies. During this process a municipality may discontinue public roads pursuant to RSA 231:43 or RSA 231:45.

II. A proposal for municipal boundary adjustment or unification shall be presented in a bill to the general court after approval by a majority vote of each of the governing bodies of the municipalities affected. Approval of the boundary adjustment or unification by the general court and the respective municipalities shall follow the process for alteration of town lines under RSA 51:9. A legislative enactment authorizing the unification of 2 or more municipalities shall establish the form of government for the resulting municipality and a process for electing or appointing all necessary municipal officers if the unification is approved as provided in RSA 51:9.

318:3 New Section; Joint Municipal Development and Revitalization Districts. Amend RSA 162-K by inserting after section 15 the following new section:

162-K:16 Joint Municipal Development and Revitalization Districts. Municipalities

may enter into an agreement under RSA 53-A to jointly establish a municipal development district that may include land within the several municipalities using the procedures in this chapter. Tax revenues and expenditures may be allocated as provided in the agreement.

318:4 New Subdivision; Coastal Resilience and Cultural and Historic Reserve Districts. Amend RSA 12-A by inserting after section 67 the following new subdivision:

Coastal Resilience and Cultural and Historic Reserve Districts

12-A:68 Coastal Resilience and Cultural and Historic Reserve Districts. Municipalities, regional planning commissions, the coastal resilience and cultural and historic reserve district commission, and state agencies may establish coastal resilience and cultural and historic reserve districts, which shall comprise lands suitable and eligible as a reserve of sufficient elevation and distance from tidal and riverine waters for historic properties and other historic and cultural resources, including historic burial grounds. The acquisition of land and the acquisition, removal, restoration, and placement of such resources by municipalities, the coastal resilience and cultural and historic reserve district commission, and state agencies may be funded by municipal funding, including bonding, private and non-profit donations, funding from the land and community heritage investment trust program established RSA 227-M:7, the conservation number plate fund established in RSA 261:97-b, and funding from the state and federal government. Such districts may be established as municipal or regional development districts under RSA 162-K. An existing local historic district, as defined in RSA 674:45-50, may, upon recommendation by a municipal governing body, be designated by the coastal resilience and cultural and historic reserve district commission as a coastal resilience and cultural and historic reserve district.

12-A:69 Coastal Resilience and Cultural and Historic Reserve District Fund. There is established a nonlapsing fund to be known as the coastal resilience and cultural and historic reserve district fund in the department of natural and cultural resources. The fund shall be used for assessing historic resource vulnerability, for implementing adaptation measures that protect endangered cultural and historic resources, for the acquisition of land and the acquisition, removal, restoration, and placement of historic properties and other historic and cultural resources including historic burial grounds in danger of flooding from tidal and riverine waters when other adaptation measures are insufficient. The fund shall be managed by the coastal resilience and cultural and historic reserve district commission established in RSA 12-A:70.

12-A:70 Commission Established.

I. The coastal resilience and cultural and historic reserve district commission is established. The members of the commission shall be as follows:

(a) One representative of the Rockingham planning commission, selected by its director.

(b) One representative of the Strafford regional planning commission, selected by its director.

(c) One representative of each town or city that borders the tidal waters of the Great Bay Estuary or Atlantic Ocean, appointed by that town or city's governing body.

(d) Two members of the senate, appointed by the president of the senate.

(e) Three members of the house of representatives, appointed by the speaker of the house of representatives.

(f) One representative of the New Hampshire Municipal Association, appointed by its executive director.

(g) A representative of the division of historic resources, appointed by its director.

(h) Three representatives of non-profits museums, historic properties, and historic associations in the seacoast and Great Bay Estuary regions, appointed by the governor.

(i) A representative of Historic New England, appointed by its president.

(j) A representative of the New Hampshire Old Graveyard Association, appointed by its president.

(k) A representative of the Southeastern Land Trust, appointed by its president.

(l) One representative of each local historic district in each municipality that borders the Great Bay or Atlantic Ocean, appointed by that district.

II. Legislative members of the commission shall receive mileage at the legislative rate when attending to the duties of the commission.

III. The commission shall:

(a) Identify suitable and eligible lands for coastal resilience and cultural and historic reserve districts.

(b) Adopt rules, procedures, and agreements, in consultation with municipalities, regional planning commissions, and state agencies for the creation and management of the districts.

(c) Solicit funding for and manage the coastal resilience and cultural and historic reserve district commission fund.

(d) Develop policies on assessing the vulnerability of cultural and historic resources, the implementation of adaptation measures to improve resilience, and governing the acquisition and removal of properties to the district and the ongoing

stewardship of such properties.

(e) Develop cooperative agreements with municipalities, local historic districts, regional planning commissions, and others, in the establishment of any related municipal or regional development district incorporating the coastal resilience and cultural and historic reserve district commission.

(f) Recommend any changes to state statutes, rules, and practices and, in consultation with municipalities, changes to local ordinances necessary for coastal resilience and cultural and historic reserve districts established.

IV. The terms of the elected members of the commission shall be coterminous with their terms in office; the terms of all other appointed members shall be 3 years. In the event of a vacancy, a new member shall be appointed for the unexpired term in the same manner as the original appointment.

V. The first meeting of the commission shall be called by the first-named senate member and shall be held within 90 days of the effective date of this section. The members of the commission shall elect a chairperson from among the members at the first meeting. Fifteen members of the commission shall constitute a quorum.

318:5 New Section; Regional Planning Commissions; Coastal Resilience Fund; Climate Resilience Cooperative Agreements. Amend RSA 36 by inserting after section 53 the following new section:

36:53-a Coastal Resilience Fund; Climate Resilience Cooperative Agreements.

I. The Strafford regional planning commission and the Rockingham planning commission either separately or jointly with participating municipalities may create climate resilience cooperative agreements forming an authority to plan for and address sea-level rise, storm surge, and flooding from extreme precipitation events or in anticipation of such events as projected by the Coastal Risk and Hazards Commission final report "Preparing New Hampshire for Projected Storm Surge, Sea-Level Rise, and Extreme Precipitation," and subsequent science and technical advisory panel reports under RSA 483-B:22.

II. Municipalities participating in a climate resilience cooperative agreement shall approve such agreement by a simple majority vote of the legislative body.

III. An authority formed by a climate resilience cooperative agreement may establish a coastal resilience fund, to be funded by contributions from participating parties or by bonds, to plan for and address current and future regional needs for projects such as, but not limited to, road projects, shared municipal facilities including wastewater treatment and wastewater systems, and other coastal mitigation and protection projects. If solid waste systems are proposed, such projects shall be governed by the provisions of RSA 53-B. If wastewater and waste treatment systems are proposed,

such projects shall be governed by the provisions of RSA 485. For the purposes of the coastal resilience fund, the agreement may establish a common bonding authority under RSA 33.

IV. The climate resilience cooperative agreement shall establish a governing authority and process to oversee the coastal resilience fund.

(a) For an agreement formed by one regional planning commission, the governing authority shall be composed of the regional planning commission director, an elected official of a participating municipality selected by agreement of the governing bodies of the participating municipalities, and the chair of the county delegation for the county that has the largest number of municipalities in the regional planning commission's coverage area.

(b) For an agreement formed by both regional planning commissions, the governing authority shall be composed of both regional planning commission directors, an elected official of a participating municipality from both Rockingham and Strafford counties, each selected by agreement of the governing bodies of the participating municipalities in such county and the chairs of the Rockingham and Strafford county delegations.

V. The business affairs and actions of a climate resilience cooperative agreement authority shall be conducted and governed pursuant to the terms, conditions, and provisions of its agreement. The agreement shall include, but not be limited to, the following:

(a) A list of municipalities included in the coastal resilience and historic reserve district.

(b) Except as provided otherwise by law, the powers, duties, and authorities of the climate resilience cooperative agreement authority.

(c) Provisions for the sharing of planning, construction, operating, maintenance, and closing costs of any facilities.

(d) A description of proposed activities and projects.

(e) The terms by which other municipalities may be admitted to the agreement.

(f) The terms by which a municipality may withdraw from the agreement before or after debt has been incurred.

(g) The method by which the agreement may be amended including conditions under which an amendment may be approved by the governing or legislative bodies of member municipalities.

(h) The procedure for dissolution of the authority before or after debt has been incurred.

(i) Provisions for varied levels of participation by member municipalities in multiple projects, if available.

(j) The procedure for the preparation and adoption of the annual budget, including the apportionment of authority expenses and a schedule of payments and other procedures relative to governing the authority's fiscal affairs.

(k) The remedies and penalties which the climate resilience cooperative agreement authority may assert against a member which defaults in its obligations to the authority, if any.

(l) Procedures to receive and disburse funds for any climate resilience cooperative agreement authority purpose.

(m) Procedures to incur temporary debt in anticipation of revenue to be received.

(n) Procedures to assess member municipalities for expenses of the climate resilience cooperative agreement authority.

(o) Power to receive any grants or gifts for the purposes of the climate resilience cooperative agreement authority.

(p) Procedures to engage legal counsel, accountants, engineers, contractors, consultants, agents, and other advisors.

(q) Procedures for entering into contracts with any person consistent with the climate resilience cooperative agreement authority.

(r) Bylaws and regulations relative to project management.

(s) Procedures for establishing payments to the authority from participating municipalities.

(t) Procedures for funding the coastal resilience fund, including authorization of bonding or incurring any debt, by the participating municipalities.

VI. The one year limitation on regional planning commissions' debt obligations under RSA 36:49 shall not apply to the bonding authority under this section.

318:6 New Subdivision; Coastal Risk and Hazards Preparedness. Amend RSA 228 by inserting after section 115 the following new subdivision:

Coastal Risk and Hazards Preparedness

228:116 Coastal Risk and Hazards Preparedness. If abandonment of any state highway is considered because of sea-level rise, storm surge, and extreme precipitation events, or in anticipation of such events as projected by the Coastal Risk and Hazards Commission final report, "Preparing New Hampshire for Projected Storm Surge, Sea-Level Rise, and Extreme Precipitation," and subsequent science and technical advisory panel reports under RSA 483-B:22, the department of transportation shall coordinate procedures with affected municipalities, the Rockingham planning commission, the

Strafford regional planning commission, the department of business and economic affairs, and with business, real estate, tourism, and other affected economic interests. The process shall also consider mitigation policies and potential funding for owners of affected properties served by such roadways and projected impacts to the environment and natural and cultural resources. The final approval for such projects and related funding shall be through the 10-year plan process and shall be included in the 10-year plan.

318:7 New Subparagraph; 10-Year Transportation Improvement Program. Amend RSA 240:3, VI by inserting after subparagraph (e) the following new subparagraph:

(f) For any project located in the coastal and Great Bay regions of the state, the project shall reference as guidance for all potentially affected activities in said regions the requirements regarding coastal resilience and economic development in RSA 483-B:22.

318:8 New Subparagraph; Coastal Resilience and Cultural and Historic Reserve District Fund. Amend RSA 6:12, I(b) by inserting after subparagraph (343) the following new subparagraph:

(344) Moneys deposited in the coastal resilience and cultural and historic reserve district fund established in RSA 12-A:69.

318:9 Effective Date. This act shall take effect 60 days after its passage.

Approved: Enacted in accordance with Part II, Article 44 of N.H. Constitution, without signature of governor, August 3, 2019
Effective Date: October 02, 2019

TOWN OF DURHAM
8 NEWMARKET ROAD
DURHAM, NH 03824
Tel: 603/868-5571
Fax: 603/868-1858

AGENDA ITEM: # 10A

DATE: November 18, 2019

COUNCIL COMMUNICATION

INITIATED BY: Durham Town Charter

AGENDA ITEM: **RECEIVE ANNUAL REPORT FROM THE CONSERVATION COMMISSION – BART MCDONOUGH, CHAIR**

CC PREPARED BY: Jennie Berry, Administrative Assistant

PRESENTED BY: Bart McDonough, Chair, Conservation Commission

AGENDA DESCRIPTION:

Section 11.1 (I) of the Durham Town Charter requires that the Town Council meet annually with all Chairpersons of standing Town committees to review significant actions taken by the committees, projects currently under discussion, and anticipated activities for the coming year.

Conservation Commission Chair Bart McDonough is scheduled to attend Monday night's meeting to provide a brief update to the Town Council regarding the committee's current activities.

LEGAL AUTHORITY:

Section 11.1 (I) of the Durham Town Charter.

LEGAL OPINION:

N/A

FINANCIAL DETAILS:

N/A

SUGGESTED ACTION OR RECOMMENDATIONS:

No formal action required. Receive presentation from Conservation Commission Chair Bart McDonough, and hold question and answer session if desired.

TOWN OF DURHAM
8 NEWMARKET ROAD
DURHAM, NH 03824
Tel: 603/868-5571
Fax: 603/868-1858

AGENDA ITEM: # 10B

DATE: November 18, 2019

COUNCIL COMMUNICATION

INITIATED BY: Durham Town Charter

AGENDA ITEM: **RECEIVE ANNUAL REPORT FROM THE DURHAM ENERGY COMMITTEE – MARY DOWNES, CHAIR**

CC PREPARED BY: Jennie Berry, Administrative Assistant

PRESENTED BY: Mary Downes, Chair, Durham Energy Committee

AGENDA DESCRIPTION:
Section 11.1 (I) of the Durham Town Charter requires that the Town Council meet annually with all Chairpersons of standing Town committees to review significant actions taken by the committees, projects currently under discussion, and anticipated activities for the coming year.

Attached is a report submitted by Durham Energy Committee Chair Mary Downes. Ms. Downes will be present at Monday night's meeting to provide a brief update to the Town Council regarding the committee's current activities.

LEGAL AUTHORITY:
Section 11.1 (I) of the Durham Town Charter.

LEGAL OPINION:
N/A

FINANCIAL DETAILS:
N/A

SUGGESTED ACTION OR RECOMMENDATIONS:
No formal action required. Receive presentation from Durham Energy Committee Chair Mary Downes, and hold question and answer session if desired.

Durham Energy Committee – 2019 Annual Report

Mary Downes, Chair

The activities of the Durham Energy Committee are guided by the Energy Chapter of Durham's Master Plan. The work of the committee is built upon three 'pillars': 1) Building Design and Land Use, 2) Transportation and 3) Alternative and Renewable Energy Sources. The Energy Committee works to further the vision that "the Town of Durham, along with commercial property owners and homeowners will continue to realize cost savings while reducing carbon emissions, thereby increasing the community's resiliency and sustainability relative to energy use."

2019 Accomplishments

Building Design and Land Use:

- A series of informational articles regarding the energy efficiency and renewable energy aspects of the proposed new **Oyster River Middle School Net Zero design/build** project was included on the Committee's webpage as well as excerpted in Friday Updates.
- Although the DEC's official role in helping to draft the Town's **Solar Energy Zoning Ordinance** concluded, the DEC chair and Planning Board representative continue to serve on a subcommittee with representatives of both the Planning Board and Town Council to finalize this critical ordinance.
- Resolution preserving the ability of towns such as Durham to go above and beyond **State Building Code** without legislative permission. Also supported by the Municipal Association, this exception was enacted into the state law adopting 2015 IEEC Building Code. Durham enforces the 2018 IEEC code, which contains stricter minimum standards for energy performance in new residential and commercial buildings than prior versions.

Transportation:

- The Committee continues to monitor the performance of the **electric vehicle charging stations** at Pettee Brook Lot and at the Town Library. The Pettee Brook charger has seen an increase in utilization over the past year, with a particularly large increase this fall. The Library charger has experienced a series of outages that caused it to be off-line. The committee facilitated a donation of a new unit from Siemens that should be installed before the end of the year, though modest maintenance fees will be incurred.

Alternative & Renewable Energy:

- Members of the DEC as well as Town staff have been participating in a collaboration with Eversource and UNH to investigate the feasibility of establishing an **electric microgrid** to serve part of UNH and the downtown core. Containing both electricity generation resources including solar and the University's co-generation plant, as well as system loads from campus and town facilities, the microgrid will be designed to increase resilience during regional grid outages as well as deliver energy and other benefits.

- DEC members participated in various self- and **public-education efforts around renewable energy**, including a tour with elementary school students to the Town's solar array in Lee in the spring, a tour of the microgrid on Appledore Island in August sponsored by Clean Energy NH, and several articles published in Friday Updates.

General Updates:

- The **Committee participated in the regional Seacoast Energy Hub**, which is a collaboration of several energy committees from communities in the region which have shared stories and priorities. Members Jim Dreher and Coleen Fuerst, hosted the group on behalf of the Committee at its May meeting.
- The Committee recommended that **Durham join Clean Energy New Hampshire** as a municipal member, which entitles the Town to send two members to the annual Local Energy Solutions Conference as well as support on energy-related matters and receive specific technical support.

Goals for 2020

Oyster River Middle Schoolers tour the Durham solar array with Revision Energy and DEC members.

- **Oyster River Middle School building project.** Expand efforts to educate Durham residents on issues related to sustainability and energy usage, using the ORMS building and Microgrid as case studies in the long-term benefits of investing in local and/or on-site generation of heat and electricity.

- **Renewable Energy / Resiliency Goals.** The DEC will continue to investigate the Global Covenant of Mayors, Ready for 100% and other climate and energy frameworks. Building upon the recommendations of the Sustainability Fellow intern who completed a "Climate Resilience Assessment" for the Town and UNH this past summer, the DEC will develop a set of goals, backed by a strategic action plan, for the Town Council to consider to achieve long-term, town-wide reductions in the use of fossil fuels and carbon emissions.

- **Municipal Aggregation for Electricity Supply.** The DEC will continue to review the opportunity provided by a recent change to New Hampshire law that allows local governments to procure electricity on behalf of residents. This is one potential strategy among many that can help communities to reduce electricity costs while meeting renewable energy and sustainability goals.

- **Durham's Solar Power Purchase Agreements ("PPA").** The DEC will continue to monitor the performance of the solar PV production and cost savings from PPA1 (at the Library, Police Department, and Churchill Rink) and PPA2 (Oyster River Solar Array) and advise the Town as needed on upcoming buy-out purchase decisions.

- **Microgrid.** Representatives from the DEC will continue to participate in conference calls and meetings around the research and design phases of the proposed Town-UNH-Eversource microgrid in order to further the Town's interests, keeping Town personnel apprised as appropriate.

- **Community Education and Engagement**. The DEC will continue to provide information to the community about issues related to energy, climate, transportation and resiliency through public meetings and forums, field trips, and regular contributions to Friday Updates and postings on the DEC website. We invite the public to attend our meetings, suggest guest speakers, and join in our efforts to make Durham more resilient and energy self-sufficient.

- **Sustainability Fellow.** The Town anticipates securing a graduate student intern to focus on energy and sustainability issues in the coming year. DEC will work closely with staff and the intern to help refine the Town's energy goals and pursue specific projects and activities to help achieve them.

DURHAM ENERGY COMMITTEE

ANNUAL REPORT TO THE TOWN COUNCIL – NOVEMBER 18, 2019

MARY DOWNES - CHAIR

DEC: GUIDED BY THE TOWN MASTER PLAN

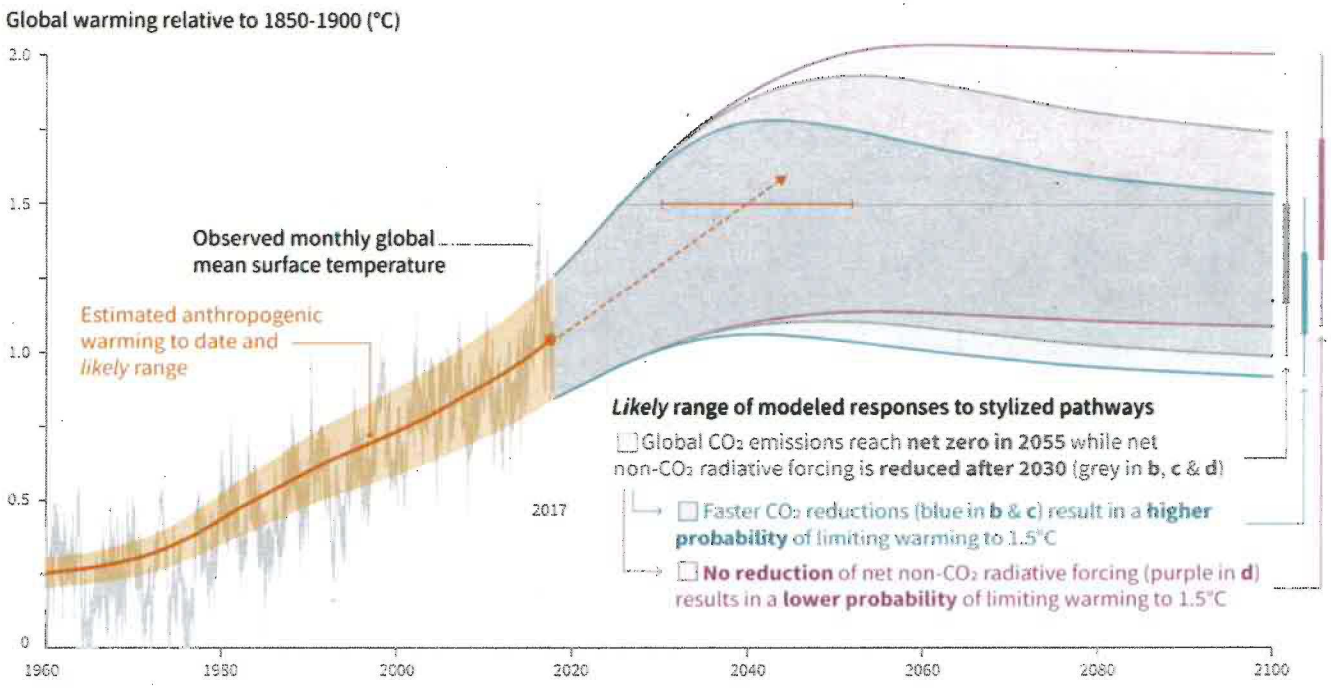
1. Building Design and Land Use
2. Transportation
3. Alternative and Renewable Energy Sources

Vision: "The Town of Durham, along with commercial property owners and homeowners will continue to realize cost savings while reducing carbon emissions, thereby increasing the community's resiliency and sustainability relative to energy use."

SPM

Cumulative emissions of CO_2 and future non-CO_2 radiative forcing determine the probability of limiting warming to 1.5°C

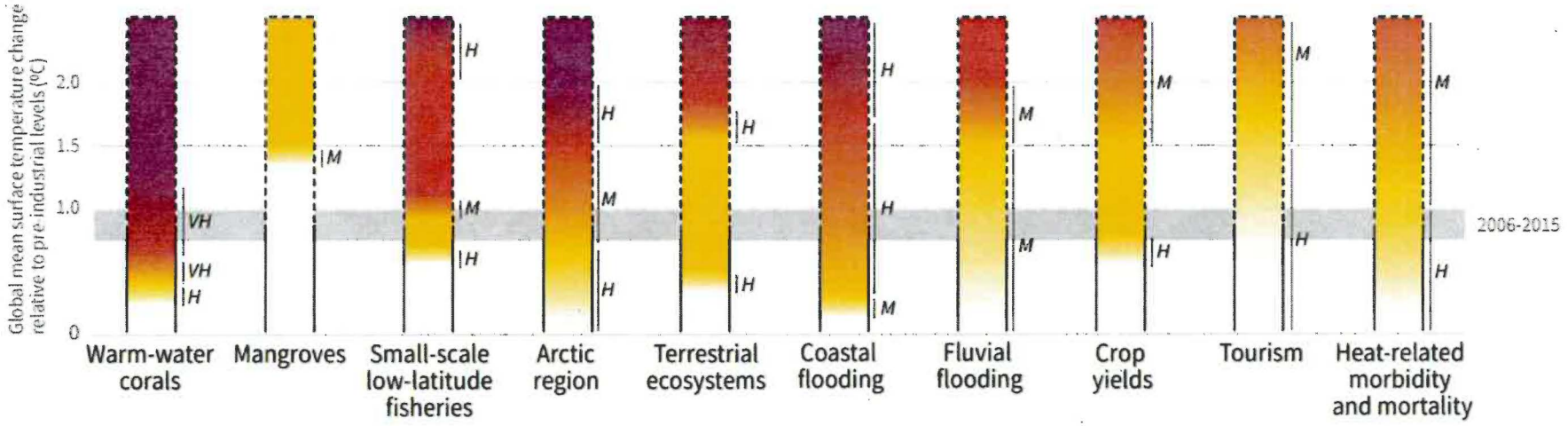
a) Observed global temperature change and modeled responses to stylized anthropogenic emission and forcing pathways



https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf

RISKS ASSOCIATED WITH BUSINESS AS USUAL EMISSIONS

Impacts and risks for selected natural, managed and human systems



Confidence level for transition: *L*=Low, *M*=Medium, *H*=High and *VH*=Very high

https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf

DEC: 2019 ACCOMPLISHMENTS

1. Building Design and Land Use:

- **Oyster River Middle School Net Zero Project.** Spearheaded by DEC member Nat Balch, the Committee has been carefully following the design phase of the proposed building and providing updates and explanations on the Committee's webpage as well as Friday Updates.
- **Solar Energy Zoning Ordinance.** The DEC chair (Mary Downes) and Planning Board representative (Barbara Dill) continue to serve on a subcommittee with representatives of both the Planning Board and Town Council to finalize an ordinance that will govern residential and commercial installations for years to come.
- **State Building / Energy Code.** The DEC was instrumental in ensuring that state law updating State building codes preserved the ability of municipalities to adopt and enforce more stringent Energy Code without first getting State permission. As a result, Durham can and does now require compliance with the 2018 International Energy Conservation Code.
- **Energy Checklist.** Beyond the building code, Durham asks developers to participate in a voluntary review of energy conserving or renewable energy promoting features for their site with the DEC.

DEC: 2019 ACCOMPLISHMENTS

2. Transportation:

- **Electric vehicle charging stations.** The Town maintains two chargers for residents and visitors. The DEC advocated for both stations and with leadership from member Jack Lannamann, we continue to monitor their performance.
  - **Pettee Brook Lot** – This charger has seen an increase in utilization over the past year, with a particularly large increase this fall. It has a modest positive cash-flow and is seen as a success that could be emulated elsewhere in Town.
  - **Town Library**. An older model, the EV charger at the Library has been less well-trafficked and has experienced a series of outages. This fall, the committee facilitated a donation of a new unit from Siemens (thanks to former DEC chair Harry Tobias). The new charger is expected to be up and running before the end of this year.

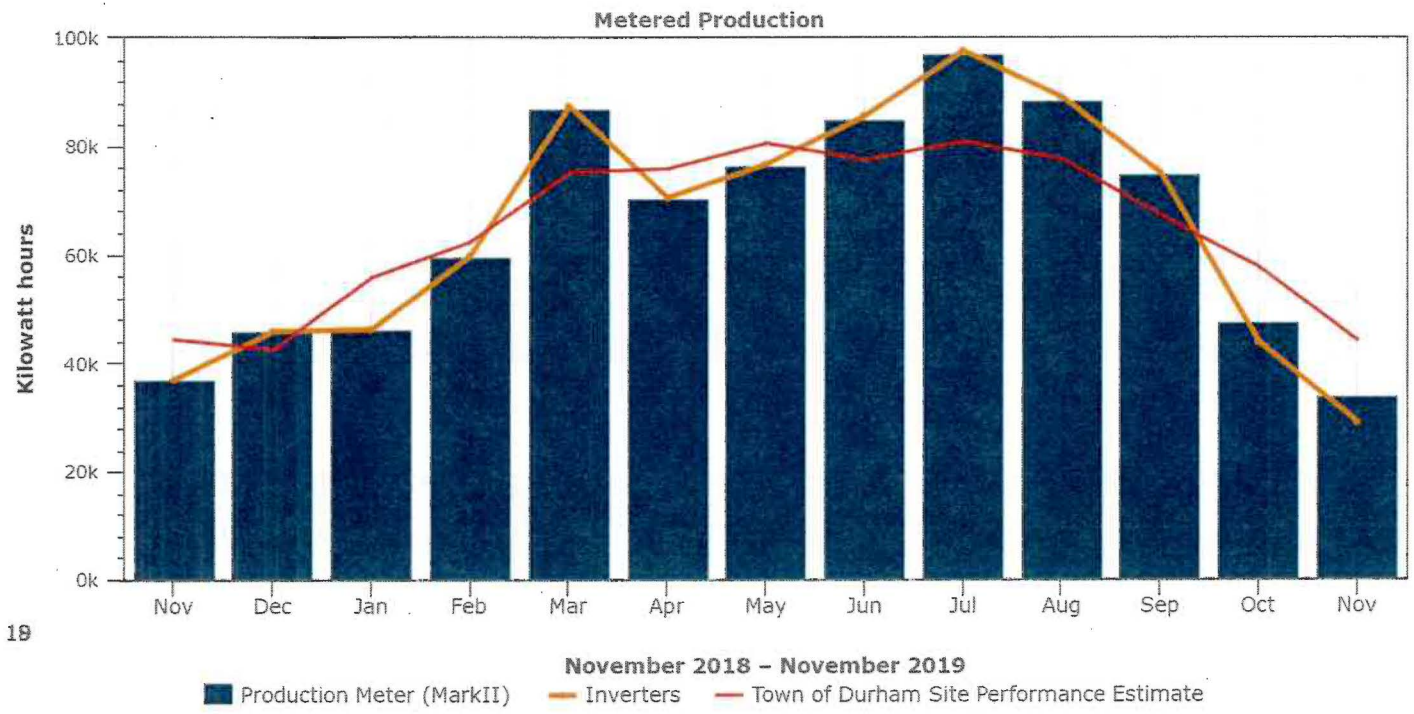
DEC: 2019 ACCOMPLISHMENTS

3. Renewable Energy:

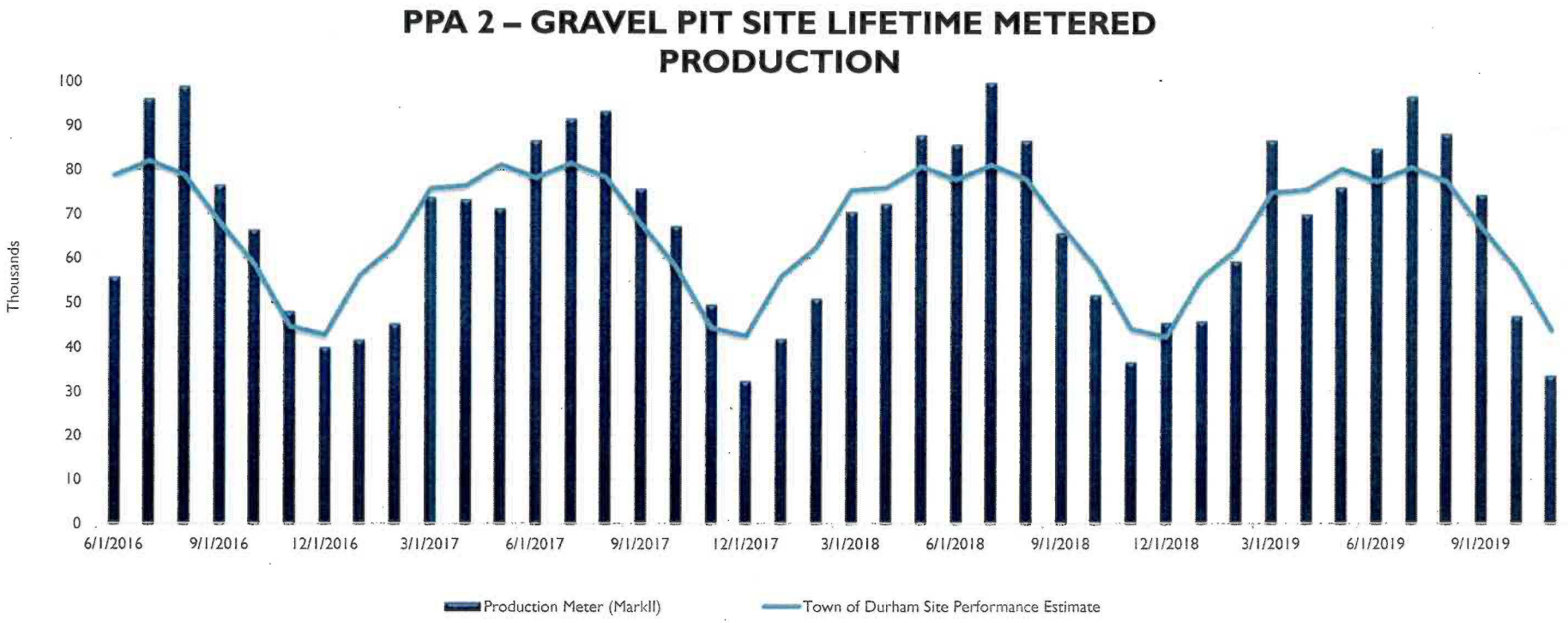
- **Electric Microgrid.** DEC members Coleen Fuerst, Jim Dreher and Mary Downes have joined the Town Manager Todd Selig in following the Eversource-UNH planned microgrid, intended to serve parts of the university and downtown core.
- **Solar Power Purchase Agreements.** DEC members have monitored the production of electric energy at the Gravel Pit site as well as at other sites in town: Library, Churchill Rink, Police Station.
- **Town Solar PPA2 (Gravel Pit)**
  - Produced 2.85 GWh of electricity (lifetime)
  - Avoided carbon emissions equivalent of what 50,000 trees would sequester
  - Avoided carbon emissions equivalent of 221k gallons of gasoline

DEC: 2019 ACCOMPLISHMENTS

PPA 2 – GRAVEL PIT SITE 2019 PRODUCTION



DEC: 2019 ACCOMPLISHMENTS



DEC: LOOKING AHEAD TO 2020

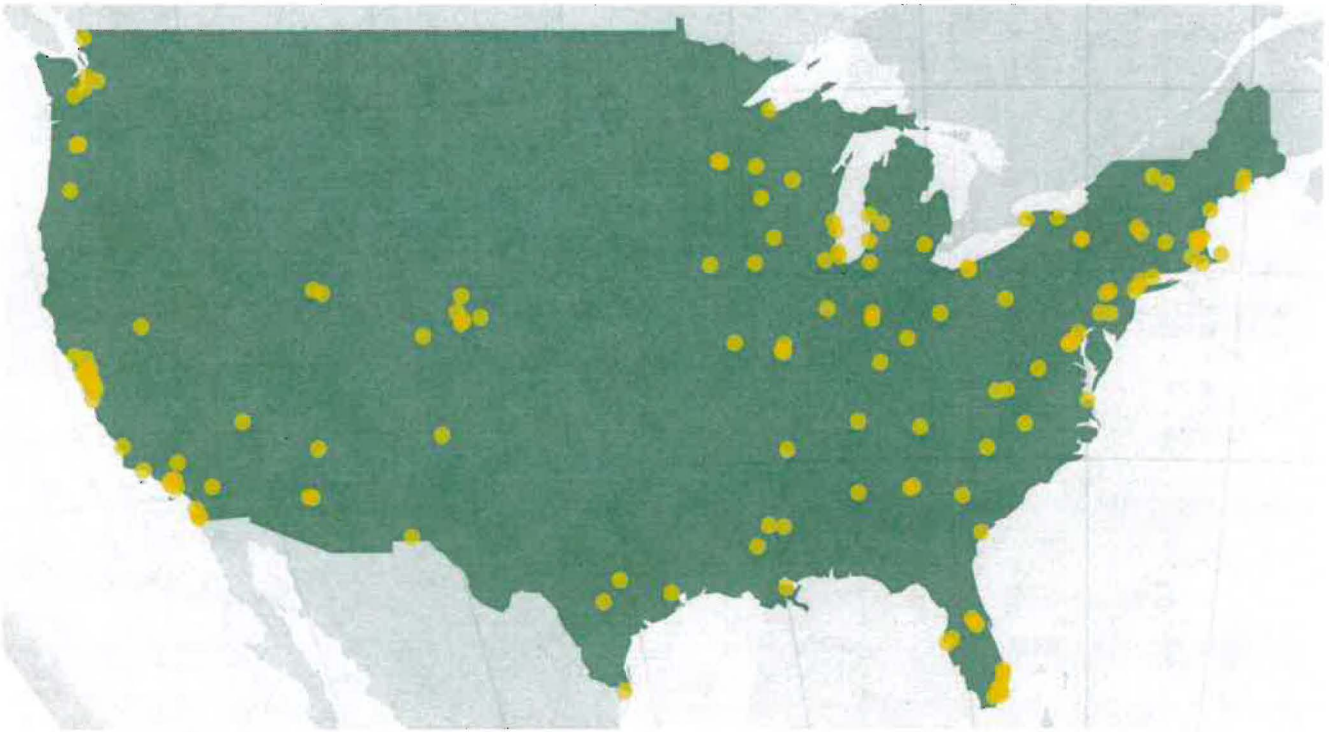
Collaboration:

1. UNH Sustainability Fellow
2. Town Staff and Committees
3. Eversource / UNH / Town of Durham Microgrid
4. Oyster River School District / Middle School
5. ReVision Energy
6. Explore Municipal Aggregation w/other Communities / Entities
7. Planning Board – Solar Ordinance
8. Seacoast Energy Hub

DEC: LOOKING AHEAD TO 2020

Global Covenant of Mayors for Climate & Energy

- DEC to investigate, engage the community & make recommendations to the Town Council



TOWN OF DURHAM
8 NEWMARKET ROAD
DURHAM, NH 03824
Tel: 603/868-5571
Fax: 603/868-1858

AGENDA ITEM: # 10C

DATE: November 18, 2019

COUNCIL COMMUNICATION

INITIATED BY: Durham Town Charter

AGENDA ITEM: **RECEIVE ANNUAL REPORT FROM THE HISTORIC DISTRICT COMMISSION/HERITAGE COMMISSION – ANDREA BODO, VICE CHAIR**

CC PREPARED BY: Jennie Berry, Administrative Assistant

PRESENTED BY: Andrea Bodo, Vice Chair, HDC / HC

AGENDA DESCRIPTION:
Section 11.1 (I) of the Durham Town Charter requires that the Town Council meet annually with all Chairpersons of standing Town committees to review significant actions taken by the committees, projects currently under discussion, and anticipated activities for the coming year.

Attached is a report submitted by Historic District Commission / Heritage Commission Chair Michael Bradley. Reverend Bradley is out of town and has asked Vice Chair, Andrea Bodo, to provide a brief update to the Town Council regarding the commission's current activities.

LEGAL AUTHORITY:
Section 11.1 (I) of the Durham Town Charter.

LEGAL OPINION:
N/A

FINANCIAL DETAILS:
N/A

SUGGESTED ACTION OR RECOMMENDATIONS:
No formal action required. Receive presentation from HDC /HC Vice Chair Andrea Bodo and hold question and answer session if desired.

Historic District Commission/Heritage Commission
2019 Annual Report to the Town of Durham

Overview The Historic District Commission/Heritage Commission ("the Commission") has a broad responsibility to preserve and promote the historic, cultural, educational, economic, and the general welfare of the Durham Historic District ('the District"). The District overlays the area beginning at the intersection of Main Street and Madbury Road and proceeds south easterly along Main Street to the intersection with and then along Newmarket Road to Laurel Lane. In addition to the powers and duties listed in the Zoning Ordinance, the Commission also serves, for property outside the District, as the Heritage Commission with broad duties and responsibilities outlined in New Hampshire Revised Statutes Annotated (RSA 674:44-b). I that capacity the Commission serves to advise and educate property owners, Town boards and commissions, and others on the important historical resources located through the entire community.

Members Michael Bradley; chair; Andrea Bodo vice chair, Larry Bricker Wood, resident; Carolyn Singer, resident; Zachary Fangman, UNH student representative; Bill McGowan, Planning Board representative; and Andrew Corrow, Town Council representative

Membership changes since the last Annual Report
Alan Bennett, Town Council Representative, complete his term in April and was thanked for his service at the April meeting.

Highlights of actions
The Commission heard 16 applications covering residential, commercial and non-profit properties. In addition to requests for renovations and repairs, applications and projects of special importance included:

23 Newmarket Road, for a new residence adjacent to the General Sullivan National Historic Landmark; applicant withdrew after the public hearing and comments from the HDC.

18 Main Street, expansion of existing parking lot for commercial use. HDC denied the application; the ZBA heard the applicant's appeal and reversed the denial.

Review and approval of the Route 4 sidewalk expansion plan by the University with regard to the relocation of the gravestone and the identification of the original burial site of Nancy Page.

Ordinance Changes and Other Matters
The HDC has proposed or will propose amendments to pertinent Town regulations:

to provide for alternates to serve on the HDC;
to create an application process for non-binding preliminary review;
to simplify existing application process for certificates of approval; and
to clarify process for demolition application review by HDC/HC

During the last year the HDC/HC provided:
Technical assistance and review for the Wagon Hill Handicap Ramp.

Approval to the Town for screening of the generator behind the Town Hall building.

Advice to the Traffic Safety Committee for trial use of pedestrian-borne flags at the crosswalk between the
Town Halls old and new; and for safety improvements at the crosswalk at the crest of Main Street
on Church Hill.

Composed and delivered a letter of concern to Eversource Energy regarding the line installation and tree trimming project on Durham Point Road.

Maintained a liaison representative, Andrea Bodo, between the HDC and the Land Stewardship Committee

Inspected the ancient foundations and cellar holes on Town Land.

Advised the Town regarding tree maintenance and removal at the General Sullivan Monument.

Supported the professional assessment of the Wagon Hill Farm house and the Old Brick Town Hall.

Accepted the award from the NH Preservation Alliance at its Annual Meeting in May on behalf of Carrie and Bill Salas for Restoration and Adaptive Reuse of the old Town Hall Building at 15 Newmarket Road.

Endorsed the Barn Preservation Program of the State of New Hampshire (RSA 79-D)

Solicited information on numerous projects from the Durham Historical Association including the UNH Sidewalk Enlargement Project/Nancy Page burial site and the NHDOT assessment of cultural and historic resources at the intersection of Madbury Road and Route 4

The Commission members volunteer many hours of service and I know I join the Town in thanking them for their hard work. The Durham Historical Association is also a rich resource of information for the Commission. A simple request for history, timelines or background – whatever we need, and in short order a wealth of information becomes available. We couldn't do our work without them.

It has been a privilege and a pleasure to have served the Town as a member and now outgoing chairperson of the Historic District/Heritage Commission. I trust that the valuable work of the Commission will continue as the Town grows and develops.

Respectfully submitted,

Michael L. Bradley

TOWN OF DURHAM
8 NEWMARKET ROAD
DURHAM, NH 03824
Tel: 603/868-5571
Fax: 603/868-1858

AGENDA ITEM: # 11A&B

DATE: November 18, 2019

COUNCIL COMMUNICATION

INITIATED BY: Durham Town Council

AGENDA ITEM: **PUBLIC HEARING ON THE ADMINISTRATOR'S PROPOSED FY 2020 OPERATING, CAPITAL, AND SPECIAL FUND BUDGETS**

CC PREPARED BY: Jennie Berry, Administrative Assistant

PRESENTED BY: Todd Selig, Administrator

AGENDA DESCRIPTION:

On November 4, 2019, the Council received a presentation of the Administrator's proposed FY 2020 Operating, Capital, and Special Fund budgets, and 2020-2029 Capital Improvement Plan.

Section 5.3 of the Durham Town Charter requires that the Town Council hold a public hearing at least fourteen (14) days prior to the adoption of the budget by the Town Council. The Council scheduled a Public Hearing on the proposed FY 2020 budget for Monday, December 2, 2019. A public hearing notice was published in the *Fosters Daily Democrat* on Thursday, November 8, 2018. The notice was also posted on the public bulletin board located outside of the Town Hall, the Department of Public Works public bulletin board, the Durham Public Library, and on the Town's website.

At the conclusion of the Public Hearing Monday evening, and as time allows, the Council will begin an interview session with each of the Department Heads listed below and start its initial discussion and deliberation on the proposed budgets and CIP.

1. Assessor
2. Economic Development
3. IT / DCAT
4. Parks & Recreation
5. Planning
6. Town Clerk-Tax Collector
7. Zoning/Code Enforcement
8. Library

9. Police
10. Fire
11. Public Works

LEGAL AUTHORITY:
Durham Town Charter, Article 5 "Finance", Sections 5.1 - 5.12.

LEGAL OPINION:
N/A

FINANCIAL DETAILS:
Please refer to the Administrator's proposed FY 2020 Operating, Capital, and Special Fund budgets.

SUGGESTED ACTION OR RECOMMENDATIONS:

MOTION 1:
The Durham Town Council hereby OPEN the public hearing on the Town Administrator's proposed FY 2020 Operating, Capital, and Special Fund budgets.

MOTION 2:
The Durham Town Council hereby CLOSE the public hearing on the Town Administrator's proposed FY 2020 Operating, Capital, and Special Fund budgets.

TOWN OF DURHAM
8 NEWMARKET ROAD
DURHAM, NH 03824
Tel: 603/868-5571
Fax: 603/868-1858

AGENDA ITEM: # 11C

DATE: November 18, 2019

COUNCIL COMMUNICATION

INITIATED BY: Durham Planning Board

AGENDA ITEM: **PUBLIC HEARING AND ACTION ON ORDINANCE #2019-03, A PLANNING BOARD-INITIATED AMENDMENT TO CHAPTER 175 "ZONING" OF THE DURHAM TOWN CODE TO REWRITE ARTICLE XXI – OFF STREET PARKING, AND TO MODIFY OTHER LANGUAGE IN THE ZONING ORDINANCE PERTAINING TO PARKING**

CC PREPARED BY: Michael Behrendt, Town Planner

PRESENTED BY: Michael Behrendt, Town Planner

AGENDA DESCRIPTION:

The Planning Board formally initiated the attached amendments at its meeting on October 16, 2019 (The vote was 6-1 with Michael Lambert voting against; see below).

In October 2017 extensive amendments to the Zoning Ordinance were adopted. They included significant changes to Article XXI regarding Parking. We moved most of the provisions out of zoning and re-placed them in the Site Plan Regulations because design issues like parking, landscaping, architecture, drainage, etc. should be located in the regulations rather than zoning (in part because deviating from zoning requires a variance whereas deviating from the site regulations requires only a waiver). Multifamily and commercial development is reviewed under the Site Plan Regulations but single family and duplex uses are not.

Part of the impetus for the current parking changes was a realization by Audrey Cline, April Talon, and me that several provisions that were removed in 2017 should apply to single family and thus should be placed back into the zoning ordinance. The three of us worked on a set of amendments which was presented to the Planning Board on December 12, 2018. The board held a public hearing on the amendments on April 10 and April 24, 2018; continued its discussion and made numerous changes in the draft over several meetings; and held a new public hearing on September 25 and October 16, 2018 before initiating them.

All of the documents and correspondence related to this item can be seen on the website at this link: https://www.ci.durham.nh.us/boc_planning/zoning-ordinance-amendments-parking

This packet also includes:

- The current Article XXI
- The old Article XXI prior to the October 2017 amendments

The provisions of Article XXI - Off Street Parking apply specifically to single family and duplex residences except in several places where the language states otherwise. The main changes in this amendment include the following:

- Consolidating various requirements from different districts (for all uses) into one place - Article XXI.
- Setting a maximum of 3 parking spaces per dwelling unit in the RA and RB zones.
- Requiring that parking areas be specifically delineated on the lot (so it is not located randomly on lawns and in dirt areas).
- Regulating more precisely where parking is allowed on lots.
- Regulating driveway width and access points.
- Specifying which permits are needed for parking areas and driveways.

The maximum number of vehicles on a lot - here proposed to be three under subsection A.2. on page 5 - was one of the more contested parts of the proposal. Some wanted a low number to minimize the expanse of parking and asphalt on a single family lot while others thought it would have an unfair impact on families with grown children and numerous vehicles. The provision allows for more than three vehicles if the owner demonstrates to the Code Administrator that the vehicles are owned by residents of the property. Michael Lambert voted against the proposal because he questioned requiring homeowners with more vehicles to go through an additional administrative process.

The issue of parking, even when focused on single family use, is complicated and challenging. I think the proposed amendments strike a good balance between protecting the neighborhoods and allowing for reasonable use without being overly restrictive.

On November 4, 2019, the Town Council reviewed and discussed the attached proposed ordinance, moved it on First Reading, and scheduled a second Public Hearing on the ordinance for November 18, 2019. A Public Hearing notice was published in the *Foster's/Seacoast Online* for Thursday, November 7, 2019. The notice was also posted on the outside bulletin board at Town Hall, as well as at the Durham Public Library and Department of Public Works.

LEGAL AUTHORITY:
RSA 674:16, 674:17, 674:21, and 675:2. Section 175-14 of the Zoning Ordinance.

LEGAL OPINION:
Not applicable. Consistent with common and well-established regulatory oversight of parking.

FINANCIAL DETAILS:
N/A

SUGGESTED ACTION OR RECOMMENDATIONS:

MOTION 1:
The Durham Town Council does hereby OPEN the Public Hearing on Ordinance #2019-03 a Planning Board-initiated amendment to Chapter 175 "Zoning" of the Durham Town Code to rewrite Article XXI - Off Street Parking, and to modify other language in the Zoning Ordinance pertaining to parking.

MOTION 2:
The Durham Town Council does hereby CLOSE the Public Hearing on Ordinance #2019-03 a Planning Board-initiated amendment to Chapter 175 "Zoning" of the Durham Town Code to rewrite Article XXI - Off Street Parking, and to modify other language in the Zoning Ordinance pertaining to parking.

MOTION 3:
The Durham Town Council does hereby ADOPT (as presented) (as amended) Ordinance #2019-03 a Planning Board-initiated amendment to Chapter 175 "Zoning" of the Durham Town Code to rewrite Article XXI - Off Street Parking, and to modify other language in the Zoning Ordinance pertaining to parking.

ORDINANCE #2019-03 OF DURHAM, NEW HAMPSHIRE

A PLANNING BOARD-INITIATED AMENDMENT TO CHAPTER 175 "ZONING" OF THE DURHAM TOWN CODE TO REWRITE ARTICLE XXI – OFF STREET PARKING AND TO MODIFY OTHER LANGUAGE IN THE ZONING ORDINANCE PERTAINING TO PARKING

WHEREAS, RSA 674:17 establishes the purpose of zoning ordinances; and

WHEREAS, Article XXI – Off Street Parking of the Zoning Ordinance addresses parking requirements but the current provisions are limited and inadequate to address numerous issues related to parking and driveways; and

WHEREAS, the Town of Durham relocated many requirements regarding parking from the Zoning Ordinance for placement into the Site Plan Regulations with a set of amendments that was adopted October 2, 2017 but staff realized later that some of those provisions should apply to single family and duplex residences which are not covered under the Site Plan Regulations and thus should be placed back into the Zoning Ordinance; and

WHEREAS, there are references to parking in numerous locations in the Zoning Ordinance and it would be efficient and helpful to consolidate the references in Article XXI; and

WHEREAS, requirements for parking areas located in the front of a lot are highly inconsistent across zoning districts within Article XII – Base Zoning Districts and it would be helpful to make those requirements more consistent and to relocate them in Article XXI; and

WHEREAS, it is important to establish a maximum number of allowed parking spaces on single family lots in the Residence A and Residence B districts, to establish setbacks for parking areas, and to establish other standards for parking areas and driveways on single family and duplex lots due to the strong negative impacts upon residential neighborhoods of those lots which contain numerous vehicles and vehicles which are situated all over the lot in a disorganized chaotic manner; and

WHEREAS, protecting the character of single family neighborhoods is a critical and central goal of the Town of Durham as expressed throughout the Master Plan; and

WHEREAS, the Durham Planning Board started discussing a set of proposed amendments on December 12, 2018; held a public hearing on the amendments on April 10 and April 24, 2018; continued its discussion and made numerous changes in the draft over several meetings; held a new public hearing on September 25 and October 16, 2018; and duly voted to initiate this amendment on October 16, 2018; and

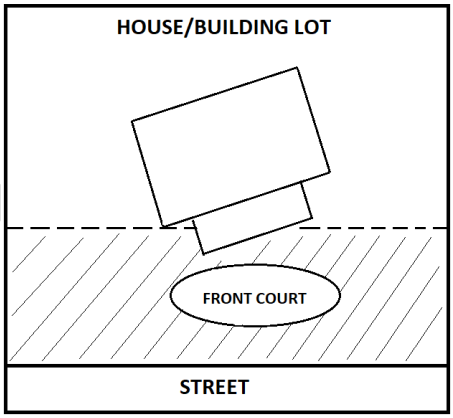
WHEREAS, the Durham Town Council held a duly noticed public hearing on _____,

NOW, THEREFORE BE IT RESOLVED that the Durham Town Council, the governing and legislative body of the Town of Durham, New Hampshire does hereby in accordance with Section 175-14(A) of the Durham Zoning Ordinance adopt Ordinance #2019-03, a Planning Board-initiated amendment to Chapter 175 "Zoning" of the Durham Town Code to rewrite Article XXI – Off Street Parking and to modify other language in the Zoning Ordinance pertaining to parking. Wording to be deleted is annotated with ~~strikeout~~ type. New wording is annotated with underscoring.

ARTICLE II – DEFINITIONS

175-7. Definitions.

FRONT COURT – The portion of a lot in front of a house or the principal building demarcated by the front lot line, a line parallel to the front lot line running through the fully enclosed part of the building located closest to the front lot line, and sections of the two side lot lines that connect these two lines.



SETBACK AREA – The section of the front, side, or rear of a lot corresponding to the area within which structures may not be placed in accordance with front, side, or rear setbacks, respectively.

YARD ~~*(OR "SETBACK AREA") - The section of the front, side, or rear of a lot corresponding to the area within which structures may not be placed in accordance with front, side, or rear setbacks, respectively.*~~ *- See "Setback Area."*

ARTICLE XII – BASE ZONING DISTRICTS

- Renumber the sections accordingly after deleting the sections in red.

175-39. Residence A District (RA).

B. ***Development Standards in the Residence A District.***

In addition to the dimensional standards, development in the Residence A District shall conform to the following additional requirements:

~~*3. No parking shall be permitted in the area between the front property line and the front wall of the principal building except on a driveway in conformance with the provisions of Article XXI.*~~

175-40. Residence B District (RB).

B. ***Development Standards in the Residence B District.***

In addition to the dimensional standards, development in the Residence B District shall conform to the following additional requirements:

~~***3. No parking shall be permitted in the area between the front property line and the front wall of the principal building except on a driveway in conformance with the provisions of Article XXI.***~~

175-42. Central Business District (CB)

B. ***Development Standards in the Central Business District***

In addition to the dimensional standards, development in the Central Business District shall conform to the following additional requirements:

~~***1. Parking – No new parking shall be located on the portion of the lot between the front wall of the principal building and the front property line. This restriction shall apply to the full width of the lot. For corner lots, this restriction shall apply to all frontages abutting a public street.***~~

175-43. Professional Office District (PO)

B. ***Development Standards in the Professional Office District***

In addition to the dimensional standards, development in the Professional Office District shall conform to the following additional requirements:

~~***1. Parking – No new parking shall be located on the portion of the lot between the front wall of the principal building and the front property line. This restriction shall apply to the full width of the lot. For corner lots, this restriction shall apply to all frontages abutting a public street.***~~

175-44. Church Hill District (CH)

B. Development Standards in the Church Hill District

In addition to the dimensional standards, development in the Church Hill District shall conform to the following additional requirements:

~~***1. Parking – New parking shall be located behind the building.***~~

175-45. Courthouse District (C)

B. ***Development Standards in the Courthouse District***

In addition to the dimensional standards, development in the Courthouse District shall conform to the following additional requirements:

~~2. Parking – New parking shall be located to the side or rear of the building unless the Planning Board allows parking between the front wall of the principal building and the front property line, including within the setback, as part of a site plan review application or conditional use application.~~

175-46. Coe's Corner District (CC)

B. ***Development Standards in the Coe's Corner District***

In addition to the dimensional standards, development in the Coe's Corner District shall conform to the following additional requirements:

~~1. Parking – Parking shall be located to the side or rear of the building. No parking shall be located on the portion of the lot between the front wall of the principal building and the front property line except on driveways in accordance with Article XXI. This restriction shall apply to the full width of the lot.~~

175-48. Office and Research District – Route 108 (OR)

B. ***Development Standards in the Office and Research District - Route 108***

In addition to the dimensional standards, development in the Office and Research District – Route 108 shall conform to the following additional requirements:

~~4. Parking – Parking shall be located to the side and rear of the building. No parking shall be located on the portion of the lot between the front wall of the building and the front property line. This restriction shall apply to the full width of the lot. The Planning Board may waive this requirement for lots which have a side or rear lot line that abuts Route 108 and the waiver is necessary to accomplish the Route 108 buffer provided for above. In granting the waiver, the Planning Board shall balance the desire to preserve the rural character of the Route 108 corridor and the appearance of the front of the building when seen from a public street.~~

175-50. Mixed Use and Office Research District (MUDOR)

B. ***Development Standards in the Mixed Use and Office Research District***

In addition to the dimensional standards, development in the Mixed Use and Office Research District shall conform to the following additional requirements:

~~1. Parking – Parking shall be located to the side or rear of the building. No parking shall be located on the portion of the lot between the front wall of the principal building and the front property line except on driveways in accordance with Article XXI. This restriction shall apply to the full width of the lot.~~

ARTICLE XII.1 – USE AND DIMENSIONAL STANDARDS

175-56. General Dimensional Standards.

~~*C. Permitted uses in required yards. No building or parking is permitted within the minimum yards required for the district, except as otherwise allowed below. All required minimum yards, except for driveways and walkways, shall be landscaped or left with natural vegetation, with the following exceptions:*~~

~~*1. Up to twenty-five (25) percent of the area of street yards of noncommercial residential lots may be used for accessory parking.*~~

~~*2. Structures accessory to residential uses shall occupy no more than thirty (30) percent of the required yard and be no closer than ten (10) feet to any lot line nor more than twenty (20) feet high.*~~

C. Permitted uses in setback areas.

1. No building is permitted within the setback areas specified for the zoning district. However, accessory structures (not including driveways and parking areas) for residential uses may occupy up to 30 percent of a front, side, or rear setback area provided they are set back at least 10 feet from any lot line and do not exceed 20 feet in height.

2. All setback areas, except for driveways, walkways, and permitted structures, shall be landscaped or left with natural vegetation.

ARTICLE XX – STANDARDS FOR SPECIFIC USES

175-109. Compliance Required.

K. Home Occupation. The criteria for home occupations are given in the Definitions article. Any person seeking to establish a home occupation shall submit an application to *the Zoning Administrator* ~~*Building Official*~~ who shall review the application for conformance with the criteria for home occupations. *The* ~~*Building Official*~~ *Zoning Administrator may specify adding parking space(s) to accommodate the home occupation at her/his reasonable discretion.*

ARTICLE XXI – OFF-STREET PARKING *AND DRIVEWAYS*

175-110. Applicability.

~~*This article applies to single-family dwellings, duplex/two-family dwellings, other sites and conditions that are not subject to site plan review, and exemptions in the Central Business District (See special provision below).*~~

The provisions in this article apply specifically to single-family and duplex residences except where reference is made to other specific uses or to all uses.

175-111. General Requirements.

~~*A. Storage. The parking or storage of any truck or truck trailer in excess of one (1) ton for more than twenty-four (24) hours in any three-day period shall not be allowed in the front or side yard setback.*~~

~~*B. Design Requirements*~~

~~*1. All parking areas and driveways shall have, at a minimum:*~~

~~*a. A smoothly graded stabilized dust-free gravel surface.*~~

~~*b. Adequate drainage to minimize runoff from flowing onto adjacent property, sidewalks and public roads. The infiltration of stormwater on site is strongly encouraged.*~~

~~*2. Parking serving single-family and duplex units will be permitted in the front yard setback for up to three (3) vehicles per household.*~~

A. Parking – General Provisions ~~*Spaces*~~*.*

1. ~~*A driveway shall be provided for each lot. Otherwise, there*~~ *There is no minimum parking requirement for single family and duplex residences. However, a driveway must be provided for each lot.*

2. *Number of vehicles – There shall be no more than 3 vehicles parked on a regular basis on a residential lot in the Residence A and Residence B Districts. However, more than 3 vehicles may be parked on the lot if the property owner demonstrates that they are for use by lawful occupants of the dwelling unit, as demonstrated by records acceptable to the Zoning Administrator.*

3. *Dimensions. Each parking space shall measure 9 feet x 18 feet. Adjustments may be made to this requirement appropriate for the site conditions as determined by the Zoning Administrator.*

4. *Delineation. Parking areas shall be clearly delineated on the site, as determined by the Zoning Administrator. (This provision does not include striping except in unusual cases where the Zoning Administrator determines that striping is needed to manage the number of vehicles.) All motor vehicles must be parked in delineated parking areas.*

5. Truck Parking. No box truck, truck trailer, or truck with an FHVA classification of 7 or higher may be parked or stored on a regular basis on any residential or vacant lot in the Residence A or Residence B district.

6. Impervious surface. See Table 15-54 Table of Dimensions which gives the maximum impervious surface ratio for all lots.

B. Setbacks and placement of parking Spaces.

1. The following setbacks apply to parking spaces and parking areas:

a) Front setback. Up to 3 vehicles per household are permitted in the front setback area.

b) Side setback. All vehicles must be set back at least 10 feet from side lot lines.

c) Rear setback. All vehicles must be set back from rear lot lines in accordance with the standard rear setbacks for the zoning district.

2. The parking requirements in 1., above, may be adjusted by special exception subject to:

a) a finding that it is not practical to restrict parking to the areas and setbacks specified;

b) a finding that allowing the parking to be situated as proposed will not have an adverse impact upon abutting properties nor upon the character of the streetscape; and

c) a finding that the proposed parking spaces will serve on–site dwelling units only.

3. For all uses other than single-family and duplex residences, in the Residence A and Residence B Districts no parking areas shall be permitted in the front court except as part of site plan or conditional use review with a finding by the Planning Board that it is not practical to place parking to the side or rear of the building.

4. For all uses other than single-family and duplex residences in all Commercial Core Districts, except the Central Business District, and in all Research-Industry Districts, no parking areas shall be located in the front court except as part of site plan or conditional use review with a finding by the Planning Board that it is not practical to place parking to the side or rear of the building.

5. For all uses, in the Central Business District no parking areas shall be located in the front court.

C. Driveways.

1. A driveway must be provided for each lot (except where the Planning Board approves an alternative access and parking arrangement).

2. Driveway width and setbacks

a. For all uses, within the Town right of way the driveway may not exceed 12 feet in width (excluding turning radii) unless approved by the Durham Public Works Department.

b. The driveway shall be single lane (i.e., with a maximum width of 10 feet) except as needed to provide access to parking areas and garages. A wider driveway may be allowed by special exception where warranted by site conditions.

c. There is no required setback for a single-lane driveway. A driveway that is wider than a single lane shall be set back a minimum of 10 feet from side lot lines and in accordance with the rear setback for the zoning district from rear lot lines.

3. Number of driveways.

a. For a single family residence there shall be no more than one driveway access point where the frontage is less than 200 feet. On lots with greater frontage, one additional driveway access point may be permitted by the Department of Public Works where site conditions warrant.

b. The Department of Public Works may approve a second driveway access point for a duplex residence as warranted.

c. The Department of Public Works may approve a circular driveway where conditions warrant, notwithstanding a, above.

D. WCOD and SPOD. See Article XIII – Wetland Conservation Overlay District and Article XIV – Shoreland Protection Overlay District for required setbacks for driveways and parking areas within these overlay districts.

E. Surface and drainage. The following shall be provided for parking areas and driveways:

1. A smooth paved surface or a smoothly graded stabilized dust-free surface using gravel, paving stones, turf blocks, or the equivalent.

2. Adequate drainage to minimize runoff from flowing onto adjacent property, sidewalks and public roads. The infiltration of stormwater on site is strongly encouraged.

175-112. Required Permits.

A. Building permit. A building permit is required to create, expand, pave, or repave a parking space, parking area, or driveway. (There is no fee for this application.)

B. Fire department. For all uses, in situations where three or more lots, houses, or dwelling units are or will be accessed, written approval from the Fire Department is required for any new driveway, shared driveway, or private road, or for any significant change to any existing driveway, shared driveway or private road.

C. Access to Town roads. For all uses, a written permit from the Durham Public Works Department is required prior to the construction or alteration, including paving and repaving, of any driveway, entrance, exit or approach within the limits of any right of way of the Durham roadway system.

D. Standards of construction. For all uses, any section of a driveway located within the right of way of the Durham roadway system shall be built in conformance with the requirements of the Durham Public Works Department. The latest Policy and Procedure for Driveways and Other Accesses to the State Highway System, as published by the New Hampshire Department of Transportation, will be used to guide the design.

E. Access onto State roads. For all uses, a written permit from the New Hampshire Department of Transportation is required prior to the construction or alteration of any driveway, entrance, exit or approach within the limits of any right of way of the State of New Hampshire roadway system.

175-~~112~~ *113*. Central Business District Special Conditions.

Exemptions. All proposed new development (including construction of new buildings and additions to existing buildings) may be exempt from the parking requirements for the number of spaces specified in the Site Plan Regulations within the Central Business District, provided that:

1. A one-time parking impact fee (as established in the Master Fee Schedule) is paid by the owner and/or developer for the number of spaces required less the number of on-site spaces provided.

2. The existing number of required parking spaces is not reduced by any proposed development unless approved as part of a property redevelopment plan by the Planning Board; and

3. The Planning Board waives the requirement for the number of parking spaces specified in the Site Plan Regulations, as part of the Site Plan Review based upon pertinent information provided by the applicant, Planning Department and any other interested party and an analysis of the parking demand of the use(s), parking capacity available from municipal parking and the parking capacity of other property owned by the applicant for the use(s). The parking demand of the use(s) may vary from the parking requirements specified in the Site Regulations. The waiver should be granted only if it is demonstrated

that adequate parking exists and the impact on municipal parking by the proposed uses(s) will not be materially detrimental to existing uses in the CB District.

~~***175-113. Required Parking. Two parking spaces shall be provided for a single-family residence and four parking spaces shall be provided for a duplex residence.***~~

PASSED AND ADOPTED by the Town Council of the Town of Durham this _____ day of _____, 2019 by _____ affirmative votes, _____ negative vote, and _____ abstentions.

_____
Katherine Marple, Chair
Durham Town Council

ATTEST:

_____
Lorrie Pitt, Town Clerk-Tax Collector

TOWN OF DURHAM
8 NEWMARKET ROAD
DURHAM, NH 03824
Tel: 603/868-5571
Fax: 603/868-1858

AGENDA ITEM: # 11D

DATE: November 18, 2019

COUNCIL COMMUNICATION

INITIATED BY: Kenny Rotner, Council Chair Pro Tem

AGENDA ITEM: **CONTINUED DISCUSSION AND ACTION ON ORDINANCE #2019-02 CREATING A NEW CHAPTER WITHIN THE DURHAM TOWN CODE, CHAPTER 145 "TOBACCO PRODUCTS", TO INCREASE THE AGE FOR THE SALE AND PURCHASE OF TOBACCO PRODUCTS, E-CIGARETTES, VAPING PRODUCTS OR LIQUID NICOTINE FROM 18 TO 21 IN THE TOWN OF DURHAM**

CC PREPARED BY: Kitty Marple, Council Chair
Kenny Rotner, Council Chair Pro Tem
Carden Welsh, Councilor

PRESENTED BY: Kenny Rotner, Council Chair Pro Tem

AGENDA DESCRIPTION:

Artificial cigarettes, otherwise known as vaping products, have been around since the mid 1960's. Their popularity has certainly spiked over the last decade as manufactures have promoted e-cigarettes as being a safe alternative to regular tobacco products. In that time, manufacturers have developed marketing schemes in order to make them both more mainstream and appealing to youth, including the adding of sweet and fruitlike flavors. As we are becoming increasingly aware of, young people have adopted the pastime, following the assumption that these products are safer than cigarettes and other tobacco products. Research has shown, however, that the nicotine delivered by these vaping products is as addicting as the nicotine delivered by conventional tobacco products. Moreover, it is becoming apparent that some of these products are causing serious health issues with hundreds hospitalized and at least nine fatalities reported in the past two months.

The Council was asked to ban the sale of vaping products in town to protect local young people from their harmful effects. By State law we do not have the authority to ban their sale outright, but we are able to place age restrictions on their purchase as is the case with alcohol. The resident who requested the outright ban would have

us approach the legislature and have that body enact legislation that would allow municipalities to outlaw purchase. A logical and worthy first step would be that we raise the age limit of purchase.

On October 7, 2019, when the Town Council first discussed this matter and reviewed the draft ordinance, there was language included relative to increasing the age for the purchase**, use, and possession** of tobacco products, e-cigarettes, vaping products or liquid nicotine from 18 to 21 in the Town of Durham. It was subsequently agreed that the ordinance would come back for first reading at a future meeting.

On October 21, 2019, the Town Council reviewed and discussed the proposed ordinance, moved it on First Reading, and scheduled a second Public Hearing on the ordinance for November 4, 2019. A Public Hearing notice was published in the *Foster's/Seacoast Online* for Thursday, October 24, 2019. The notice was also posted on the outside bulletin board at Town Hall, as well as at the Durham Public Library and Department of Public Works.

After the Council's First Reading on this proposed ordinance, Police Chief Kurz informed the Council that he had an opportunity to further review the ordinance language and to confer with Deputy Chief Rene Kelley and Captain David Holmstock. In his discussions with them, they collectively believed that "possession under 21" is virtually unenforceable and were deeply concerned that the first time the Durham Police were to bring charges forward in an already overwhelmed court system, it likely would be dismissed by the judge with the potential of a stern lecture regarding the department's priorities and the deminimis nature of the offense. Further, it was the Durham Police's opinion that the department would be on solid footing with the District Court were the Town to restrict sales to those under 21 with the department's focus being on the stores that sell rather than the possession. Therefore, it was recommended that the Town Council consider removing all references to "possession" within the ordinance.

On November 4, 2019, the Town Council held the public hearing on the proposed ordinance and subsequently closed the public hearing. After some discussion, the Council agreed to remove all language within the ordinance pertaining to both "use and possession" and to only keep wording relative to "purchase and sale". Councilor Welsh also provided additional language for inclusion, which has been incorporated into the attached revised ordinance. It is recommended that the Council continue its discussion at Monday night's meeting regarding the additional changes to the ordinance and take final action.

LEGAL AUTHORITY:

NH Revised Statutes Annotated, Chapter 126-K "Youth Access to and Use of Tobacco Products"

LEGAL OPINION:

N/A

FINANCIAL DETAILS:

N/A

SUGGESTED ACTION OR RECOMMENDATIONS:

MOTION:

The Durham Town Council does hereby ADOPT (as further amended) Ordinance #2019-02 creating a new chapter within the Durham Town Code, Chapter 145 "Tobacco Products" which establishes the age of 21 to be the minimum required age of any individual in the Town of Durham to purchase tobacco products, e-cigarettes, vaping products or liquid nicotine and requires Durham merchants to ensure this act by verifying legitimate identification at the time of purchase.

REVISED DRAFT – 11/18/19

Additional wording to be omitted is annotated with ~~double strikeout~~ type. Additional new wording is annotated with dash underscoring.

ORDINANCE #2019-02 OF DURHAM, NEW HAMPSHIRE

CREATING A NEW CHAPTER WITHIN THE DURHAM TOWN CODE, CHAPTER 145 "TOBACCO PRODUCTS", TO INCREASE THE AGE FOR THE SALE AND PURCHASE~~, USE, AND POSSESSION~~ OF TOBACCO PRODUCTS, E-CIGARETTES, VAPING PRODUCTS OR LIQUID NICOTINE FROM 18 TO 21 IN THE TOWN OF DURHAM

WHEREAS, increasing the ~~tobacco~~ age for purchasing tobacco and vaping products will significantly reduce the number of adolescents and young adults who start smoking; reduce smoking-caused deaths; and immediately improve the health of adolescents, young adults, including ~~and~~ young mothers who would be deterred from smoking, ~~as well as~~ thus benefitting their children; and

WHEREAS, national data show that about 95 percent of adult smokers begin smoking before they turn 21. The ages of 18 to 21 are a critical period when many smokers move from experimental smoking to regular, daily use. While less than half of adult smokers (46 percent) become daily smokers before age 18, four out of five do so before they turn 21; and

WHEREAS, nicotine is addictive, and adolescents and young adults are more susceptible to its effects because their brains are still developing. Delaying the age when young people first experiment with or begin using tobacco can reduce the risk that they will become addicted smokers; and

WHEREAS, tobacco companies intentionally market to ~~kids~~ teenagers and young adults to recruit "replacement smokers" and protect company profits. They know nearly all users become addicted before age 21. Increasing the tobacco age to 21 will help counter the efforts of the tobacco companies to target young people at a critical time when many move from experimenting with tobacco to regular smoking; and

WHEREAS, about 350 ~~kids~~ teenagers under the age of 18 become regular smokers each day – one in three will eventually die as result. We should do everything we can to prevent young people from smoking and save lives. Increasing the tobacco age to 21 will help achieve these goals; and

WHEREAS, the use of e-cigarettes has been promoted by the industry as being a safe alternative to conventional tobacco products; and,

WHEREAS, these e-cigarettes have been marketed to youth through the introduction of popular flavors and designing the delivery systems to resemble fancy pens or thumb drives; and

WHEREAS, the nicotine delivered by these devices results in comparable levels of addiction when compared to conventional tobacco products; and

WHEREAS, we are now seeing a surge in the use of e-cigarettes by teenagers nationwide with a high prevalence of use in the ORCSD; and

WHEREAS, in addition to nicotine addiction, over ~~500~~ 700 individuals have been hospitalized in the past two months and ~~at least 9~~ over 10 deaths have occurred as a result of the use of vaping products; and

WHEREAS, the State of New Hampshire does not permit localities to outright ban the sale of e-cigarettes and other vaping products, but does allow said localities to enact age restrictions on their sale; and

WHEREAS, acknowledging the concern that establishing restrictions can sometimes lead to non-traditional transactions, but strongly concluding that the benefit of an age restriction outweighs this concern,

NOW, THEREFORE BE IT RESOLVED that the Durham Town Council, the governing and legislative body of the Town of Durham, New Hampshire does hereby adopt Ordinance #2019-02 and does hereby create a new chapter (as indicated below) within the Durham Town Code, Chapter 145 "Tobacco Products" which establishes the age of 21 to be the minimum required age of any individual in the Town of Durham to purchase~~, use or possess~~ tobacco products, e-cigarettes, vaping products or liquid nicotine and requires Durham merchants to ensure this act by verifying legitimate identification at the time of purchase. Wording to be omitted is annotated with ~~strikeout~~ type. New wording is annotated with underscoring.

Chapter 145
TOBACCO PRODUCTS

145-1. Purpose

The purpose of this chapter is to establish the age of 21 to be the minimum required age of any individual in the Town of Durham to purchase~~, use or possess~~ tobacco products, e-cigarettes, vaping products or liquid nicotine and requires Durham merchants to ensure this act by verifying legitimate identification at the time of purchase.

145-2. Definitions

For the purposes of this ordinance, "tobacco product" shall include any product defined as a tobacco product in NH RSA 126-K as well as all

other definitions outlined in accordance with NH RSA 126-K.

145.3. Purchase~~, Use and Possession~~ of Tobacco Products.

A. No person under the age of 21 shall~~: 1. P~~purchase a tobacco product, e-cigarette, vaping product or liquid nicotine.
~~2. Use or possess of a tobacco product, e-cigarette, vaping product or liquid nicotine.~~

B. No person or business shall~~: S~~sell or provide a tobacco product, e-cigarette, vaping product or liquid nicotine to a person under the age of 21.

C. Any person violating the provisions of the Town ordinance shall be subject to a fine of up to fifty dollars ($50.00) for a first offense and up to one hundred dollars ($100.00) for a second or subsequent offense.

PASSED AND ADOPTED by the Town Council of the Town of Durham this **5th** day of **, 2019** by _____ affirmative votes, ____ negative vote, and _____abstentions.

_____
Kitty Marple, Chair
Durham Town Council

ATTEST:

_____
Lorrie Pitt, Town Clerk-Tax Collector

TOWN OF DURHAM
8 NEWMARKET ROAD
DURHAM, NH 03824
Tel: 603/868-5571
Fax: 603/868-1858

AGENDA ITEM: # 11E

DATE: November 18, 2019

COUNCIL COMMUNICATION

INITIATED BY: Durham Town Council

AGENDA ITEM: **CONTINUED DISCUSSION ON THE CONCEPT OF A PAY AS YOU THROW PROGRAM IN DURHAM**

CC PREPARED BY: Jennie Berry, Administrative Assistant
Al Howland, Councilor

PRESENTED BY: Todd I. Selig, Administrator

AGENDA DESCRIPTION:

At the October 21, 2019 Town Council meeting, Integrated Waste Management Advisory Committee (IWMAC) Chair, Nell Neal, Al Howland, and Doug Bullen gave a presentation to the Council regarding their efforts and the process they have initiated to date in educating Durham residents about Durham's solid waste program, how and why the town recycles, and how the town might manage its landfill waste and recyclables, with Pay As You Throw and composting as the primary focus.

Ms. Neal said they were there to propose that Durham adopt Pay As You Throw (PAYT) in order to more efficiently and sustainably manage the Town's landfill and recycling waste. Ms. Neal provided some history on how PAYT came to be considered for Durham. She described research and discussion on this approach back in 2014, and explained that the Committee had first recommended going from dual stream to single stream recycling in order to try to increase the percentage of waste in Durham that was recycled. She said the results were disappointing, with only about a 5% increase. She said the Committee went back to talking about PAYT, and did research on New Hampshire towns that had gone this route. She noted that there were now 34 New Hampshire towns that had PAYT programs.

Ms. Neal said the IWMAC would like the Council to schedule a public hearing on this issue as soon as possible, and to invite Steve Lisauskas of Waste Zero to provide a presentation on PAYT the same evening. She noted that Mr. Lisauskas had no financial commitment from Durham, and was a very knowledgeable professional on this subject.

With the exception of Councilor Waters, the Council indicated its interest in hearing from Mr. Lisauskas and in scheduling a public hearing on the issue at its first

meeting in November, as it was felt that Mr. Lisauskas would be able to answer a lot of the questions members of the community would have after his presentation.

A public hearing notice on this matter was published in the *Seacoast Online/Foster's* on Thursday, October 24, 2019. It was also posted on the Town Hall outside bulletin board, as well as at the Durham Public Library and the Department of Public Works.

The Integrated Waste Management Committee has spent much of 2019 working on the Town Council goal of moving Durham's solid waste program onto a more sustainable pathway. Members of the committee had a chance to visit Newmarket and talk with Dover about their solid waste programs. Steve Lisauskas from Waste Zero was invited to speak about how PAYT(pay as you throw) has impacted waste reduction. Over the last seven months, there have been three community information sessions about the future of Durham's solid waste program, a presentation to the Town Council, and a public hearing on PAYT. Lots of good questions were asked and collected.

Financial impacts of PAYT have been a major concern. Included in the Council packet is a financial impact study for PAYT versus non-PAYT for current and future solid waste disposal fees. Also included is the November 1, 2019 Report of the Committee to Study Recycling Streams and Solid Waste Management in New Hampshire. Hopefully, this information will help guide the Council on Durham's pathway forward.

At this time, the Council should continue its discussion and deliberation on the concept of Pay as You Throw and provide direction as necessary.

LEGAL AUTHORITY:
N/A

LEGAL OPINION:
N/A

FINANCIAL DETAILS:
N/A

SUGGESTED ACTION OR RECOMMENDATIONS:
The Town Council should continue to hold a discussion on the next steps regarding PAYT, as necessary.

OPTION 1:
The Council determines it no longer wishes to consider PAYT.

OPTION 2:
The Council requests the Integrated Waste Management Advisory Committee to continue to evaluate PAYT and bring forward a proposal for possible implementation for future action by the Council.

The Future of Durham Solid Waste

A goal adopted by the Town Council for 2019 was to develop a strategy to move Durham's solid waste program onto a more sustainable pathway. New Hampshire RSA-149Ms established a preferred hierarchy of waste management methods. The least preferred option is to send waste to a landfill, and source reduction and recycling are at the top. Despite years of educational outreach, participation in the program has remained stagnant. Complicating this strategy is the dramatic change in the cost of recycling.

Current Solid Waste Data Without PAYT

Category	Tonnage	Cost Per Ton	Total Cost
Municipal Solid Waste	1540	$76.66	$118,056.40
Co-Mingled	300	$35.99	$10,797.00
Single Stream	61	$100.00	$6,100.00
Mixed Paper	180	$135.00	$24,300.00
Cost to Town			$159,253.40

The table above provides the Town's current solid waste numbers. 1540 tons are sent to the landfill at a cost of $118,056.40. Our recycling programs collects 541 tons that are divided into three recycling streams. In the past, recycling was an attractive option because it provided revenue that helped offset the cost of the solid waste program. Unfortunately, the cost of recycling single stream and mixed paper now exceeds municipal solid waste tonnage fees and costs $11,924.94 more than sending it to a landfill. This pricing change has caused many communities to begin to examine their recycling programs. It has also complicated the picture when examining unit pricing or Pay-As-You-Throw (PAYT).

PAYT is a strategy used by over 10,000 communities to increase recycling and reduce overall solid waste. It uses the same pricing concept as electricity, water, propane, and heating oil. Currently, residents pay for solid waste based on the value of their homes. Unit pricing provides a more equitable solution by charging residents only for what they use. In this system, residents must purchase town-approved bags for trash to be collected during curbside pickup or brought to the transfer station. 15 gallon bags usually sell for around a dollar, and 33 gallon bags sell for around two dollars. Bags are priced to provide an incentive for recycling, reuse, and composting. A recent UNH study of 34 towns in New Hampshire using PAYT found solid waste disposal rates decreased 42 to 54 percent compared to towns that did not use PAYT. This system is currently used in Dover, Newmarket, and Exeter.

Solid Waste Data With PAYT			
Category	**Tonnage**	**Cost Per Ton**	**Total**
Municipal Solid Waste	1232	$76.66	$94,445.12
Co-Mingle	470.79	$35.99	$16,943.73
Single Stream	95.73	$100.00	$9573.00
Mixed Paper	284.48	$135.00	$38,404.80
Cost to Town			$159,366.65

The table above examines the impact of PAYT supposing a 20% increase in recycling. This would divert 308 tons of solid waste into the Durham three recycling streams, at an increased cost of $113.25.

All PAYT Reduction in MSW Ends Up in Recycling			
	TONNAGE	COST PER TON	TOTAL
MSW	924	$76.66	$70,833.84
C0-MINGLED (55.5%)	641.88	$35.99	$23,101.26
SINGLE STREAM (11.2%)	129.99	$100.00	$12,999.00
MIXED PAPER (33.3)	385.128	$135.00	$51,992.28
COST TO TOWN			$158,926.38

If we suppose a 40% reduction in waste, and that all of it ends up in recycling, 616 tons of trash would no longer go in the landfill, and the Town would save $327.02 (basically breaking even).

As we heard in the Waste Zero presentation, not all of the waste reduction resulting from PAYT ends up in traditional recycling programs. Some of the material ends up in other locations at organizations such as Goodwill, Savers, and Echo Thrift. It is sold and helps fund charities.

75% of PAYT **Reduction** in MSW Ends Up in Recycling			
	TONNAGE	COST PER TON	TOTAL
MSW	924	$76.66	$70,833.84
C0-MINGLED (55.5%)	556.41	$35.99	$20,025.20
SINGLE STREAM (11.2%)	112.744	$100.00	$11,274.40
MIXED PAPER (33.3)	333.846	$135.00	$45,069.21
COST TO TOWN			$147,202.65

The table above assumes that PAYT results in a 40 percent reduction in municipal solid waste (616 tons) and also causes 10 percent of total municipal solid waste (154 tons) to be diverted into other recycling sources like Goodwill. This would result in 75 percent of the PAYT recycling increase (462 tons) going into the Durham recycling program, and would generate a $12,050.75 saving versus the current nonPAYT system.

Estimated Revenue From PAYT

	Estimate Number of Bags	Cost Per Bag	Total
Sale of Bags	123,200	$2.50	$308,000.00
Cost of Bags		$0.30	($36,960.00)
Revenue from Bags			$271,040.00

The table above assumes that each 33 gallon bag holds 20 pounds of trash. This allows us to calculate the total number of bags used and the revenue generated. It should be noted that PAYT usually provides both a 15 gallon and 33 gallon option. Revenue generated from PAYT could offset the entire cost of Durham's waste and recycling, and the remainder could be rebated to residents. It would allow the Town to move away from a system based on resident's home value and to one based on usage.

The majority of the communities in the Seacoast are near the end of their current solid waste contracts and are beginning to negotiate their next one. Most expect an increase in municipal waste tipping fees, but the real issue is escalating recycling fees.

Change in Fees Based On November 2020 Rates

Catagory	Current Rate	Projected Rate in the Next Contract
Municipal Solid Waste	$76.77	$80.49
Co-Mingle	$35.99	$100.00
Single Stream	$100.00	$120.56
Mixed Paper	$135.00	$135.00

The most significant of these fee changes is for co-mingle recycling. Based on November 2020 rates it would increase nearly $64 per ton.

Future Solid Waste Costs Without PAYT

Category	Tonnage	Cost Per Ton	Total
Municipal Solid Waste	1540	$80.49	$123,954.60
Co-Mingle	300	$100.00	$30,000.00
Single Stream	61	$120.56	$7,354.16
Mixed Paper	180	$135.00	$24,300.00
Cost to Town			$185,608.76

If we do not implement PAYT and use the current tonnage rates and November 2020 market rates, the solid waste program's cost will increase $26,355.36.

20% Recycling Increase Using 2020 Market Rates

Categories	Tonnage	Price Per Ton	Total
Municipal Solid Waste	1232	$80.49	$99,163.68
Co-Mingle	470.94	$100.00	$47,094.00
Single Stream	95.50	$120.56	$11,513.48
Mixed Paper	282.56	$135.00	$50,349.76
Cost to Town			$208,120.92

If we repeat the calculation that assumes 20 percent would be removed from municipal solid waste and transferred to the recycling program, the impact of the co-mingle price increase becomes apparent.

40% Recycling Increase Using 2020 Market Rates

Categories	Tonnage	Price Per Ton	Total
Municipal Solid Waste	924	$80.49	$74,187.96
Co-Mingle	641.88	$100.00	$64,188.00
Single Stream	112.74	$120.56	$13,591.93
Mixed Paper	385.13	$135.00	$51,992.55
Cost to Town			203,960.44

The table above removes 40 percent from the municipal solid waste and diverts all of it into the Town's recycling program. This actually reduces the cost to the town compared to the 20 percent rate.

75% Of MSW Reduction To Recycling With 2020 Rates

Category	Tonnage	Price Per Ton	Total
Municipal Solid Waste	924	$80.49	$74,372.76
Co-Mingle	551.41	$100.00	$55,141.00
Single Stream	112.744	$120.56	$13,592.42
Mixed Paper	333.846	$135.00	$45,069.21
Cost to Town			$188,175.81

The final table repeats the 40 percent reduction of municipal solid waste with 10 percent of the total municipal solid waste going to recycling alternatives and applies the 2020 recycling rates. This scenario would result in a $2,567.05 difference between PAYT and nonPAYT.

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:[1]

- 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

[1] 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.

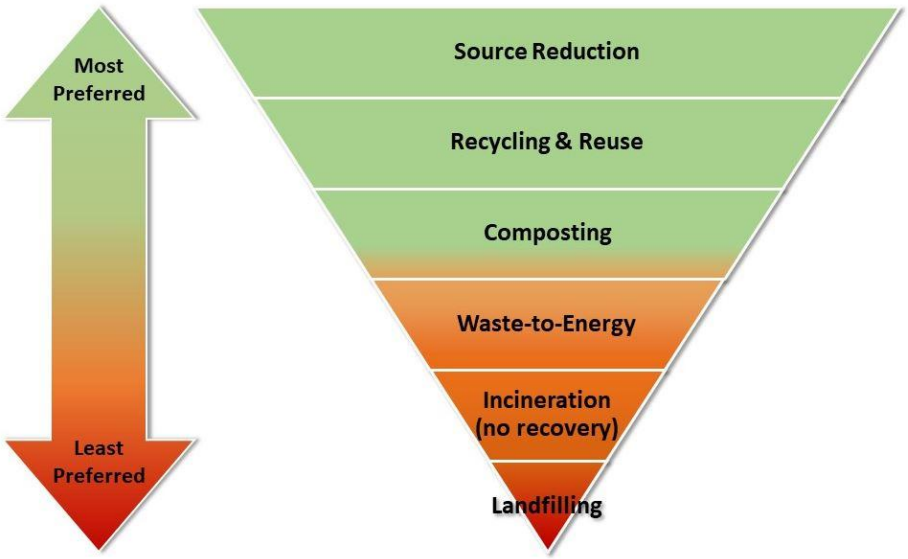
In the 1949 to 1955 time period, the Legislature established the basic bifurcation which exists to this day between municipal and state responsibilities for the management of solid waste in New Hampshire. Municipalities were required to provide and maintain public dumping facilities (aka landfills) for 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.[2] 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

[2] 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 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 (NRRA). 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.[3] 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

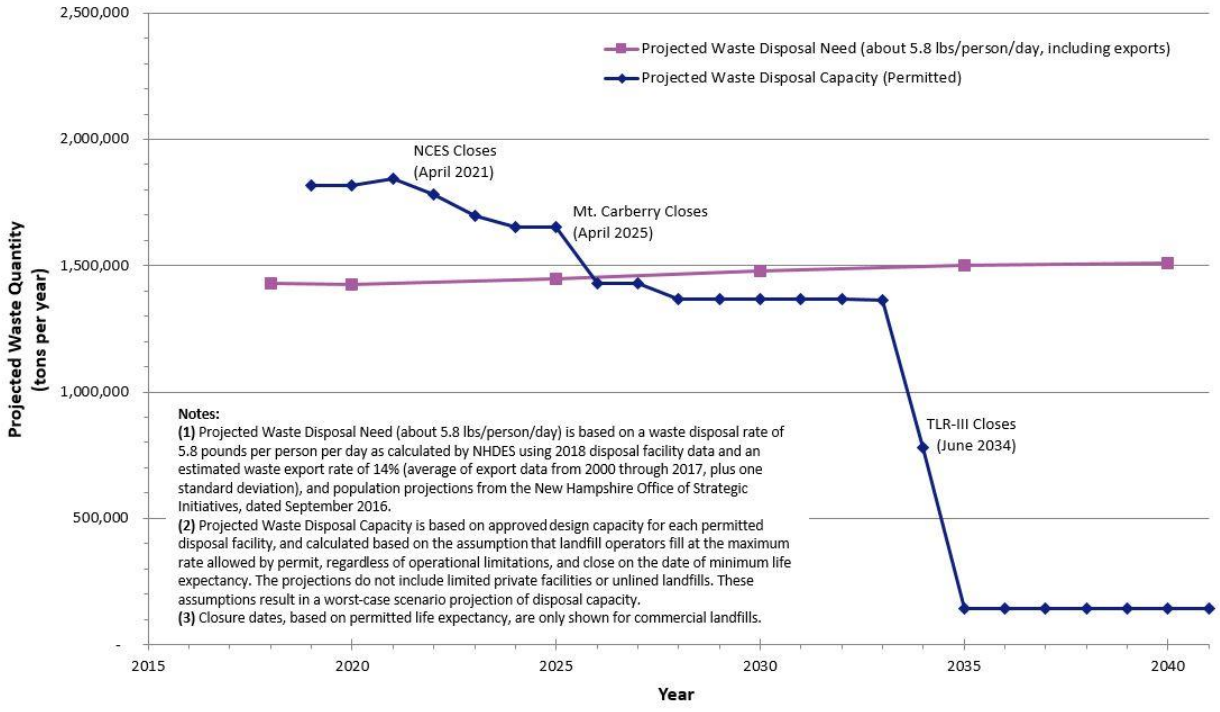
1. **Fundamental policies.** The basic policies mentioned earlier that form the framework of solid waste management in the state and were established by the Legislature nearly 30 years ago are still sound ones, at least in concept. They are: a) Solid waste should be managed using the preferred hierarchy 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

[3] 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.[4] About 50% of the solid waste disposed of in New Hampshire comes from out-of-state.[5] 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)



[4] See Biennial Solid Waste Report, October 2019, Department of Environmental Services, 6-7.
[5] 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.[6] 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
Landfills - Unlimited Service Area					
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
Total (Landfills - Unlimited Service Area)					
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**	**-**

[6] 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
Landfills - Limited Service Area					
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
Total (Landfills - Limited Service Area)					
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**	-
Incinerators - Unlimited Service Area					
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%	-	-
Total (All Disposal Facilities: Landfills & Incinerators - Unlimited & Limited Service Areas)					
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).

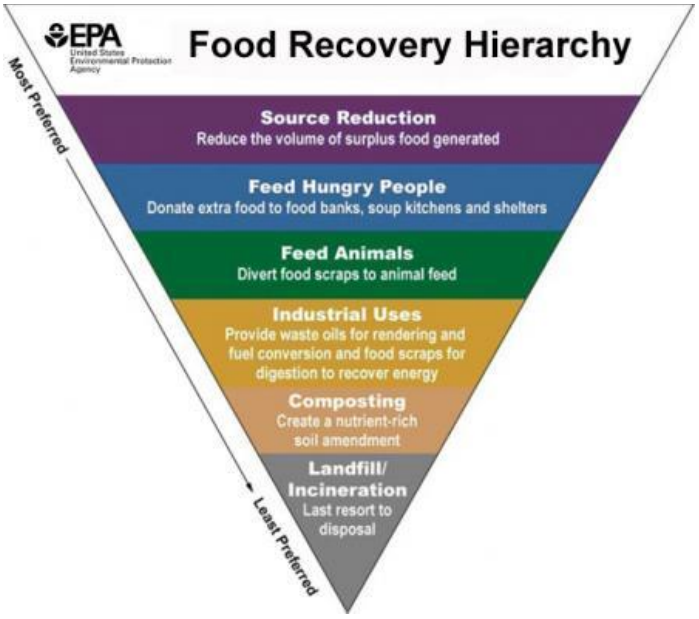
6. **Landfill leachate and gas.** Landfills generate leachate, including PFAS, which must be assiduously and carefully handled to protect the public health. During the study committee's visit to Turnkey, it learned that Waste Management (WM) processed approximately 100,000 gallons of leachate per day. 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[7] 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,[8] 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

[7] https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy
[8] 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.[9] 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.[10]

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,

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

[10] 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%20Operating%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"[11] 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.[12] 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

[11] American Chemistry Council plastics webpage, https://plastics.americanchemistry.com/recycling-and-recovery/
[12] 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.[13]

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.[14] 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

[13] 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_r1.pdf
[14] "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.[15]

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.[16]

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.[17] 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

[15] https://www.casella.com/about-casella/innovation
[16] Maine DEP to draft legislation designed to strengthen recycling, Recycling Times, https://www.recyclingtoday.com/article/maine-explores-epr-legislation-for-packaging/
[17] 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.[18]

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

[18] 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.[19]

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

[19] Somersworth Farm to School initiative, https://docs.google.com/presentation/d/12-wB86S0fpPmPmQJzBKsEr6BoTtoTOUg7DeZ7CIgSCk/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.[20] **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 HTPE 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

[20] 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 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

First Name	Last Name	Organization
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	Swanzey 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://nrra.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

Waste Management Position On Plastics
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/

BIENNIAL SOLID WASTE REPORT

OCTOBER 2019

Prepared by the New Hampshire Department of Environmental Services

R-WMD-19-02

State of New Hampshire
Department of Environmental Services

Robert R. Scott
Commissioner

Clark B. Freise
Assistant Commissioner

Michael J. Wimsatt, P.G.
Director, Waste Management Division

Contact
Waste Management Division
Solid Waste Management Bureau
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095
(603) 271-2925

www.des.nh.gov

Table of Contents

I. Introduction

This report has been prepared pursuant to NH RSA 149-M:29, II, which directs the New Hampshire Department of Environmental Services (NHDES) to prepare a report on New Hampshire's progress toward reaching the 40% solid waste diversion goal established in RSA 149-M:2, as well as proposed strategies for achieving the goal, proposed changes to the goal, and various other details, which are addressed in the body of this document.

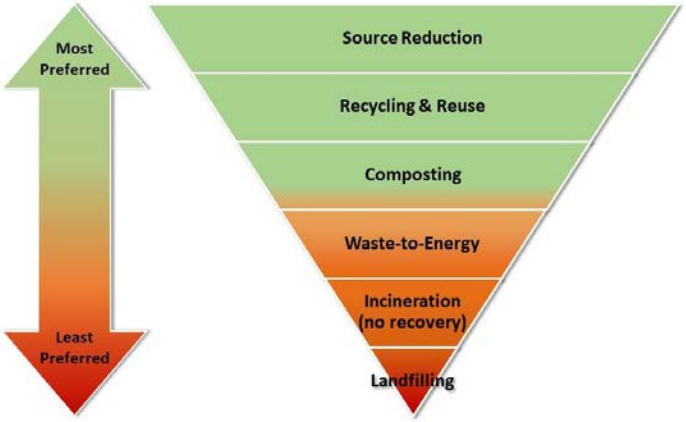
In 1990, RSA 149-M was amended to establish a Waste Reduction Goal, which has been subsequently revised over the years. The current version of this goal, established in 1999, sets a target to divert at least 40% of New Hampshire's solid waste from final disposal by the year 2000 in order to reduce the quantity of solid waste disposed in the state's landfills and incinerators, as measured on a per capita basis. As stated in RSA 149-M:2:

> *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 declares that the goal of the state, by the year 2000, is to achieve a 40 percent minimum weight diversion of solid waste landfilled or incinerated on a per capita basis. Diversion shall be measured with respect to changes in waste generated and subsequently landfilled or incinerated in New Hampshire. The goal of weight diversion may be achieved through source reduction, recycling, reuse, and composting, or any combination of such methods. The general court discourages the disposal of recyclable materials in landfills or processing of recyclable materials in incinerators. (RSA 149-M:2, I. – effective July 20, 1999)*

While the terminology used to express this goal emphasizes diversion, it is evident that the intention was to reduce the overall quantity of waste generated (via source reduction) while also diverting from disposal waste that cannot be reduced (via reuse, recycling, or composting). 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.

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

Figure 1. New Hampshire's Waste Management Hierarchy



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 is at the top of the hierarchy because such practices prevent a waste from being generated, which results in less waste needing end-of-life management, conserves resources and reduces overall environmental impact. When a waste is generated, managing it via reuse, recycling or composting is preferred because these methods recover and divert materials from disposal, thereby encouraging 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, reduce volume and weight, and in some cases may produce useful by-products.

As established by the General Court, the waste management hierarchy, in conjunction with the waste reduction goal, was envisioned to support an integrated waste management system in New Hampshire, combining 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. In this way, the hierarchy serves as a guiding principle not only for NHDES and the state at large, but also for municipalities, commercial and industrial waste generators, solid waste management companies, and the general public. However, it is worth noting that since the hierarchy was established in 1990, waste management infrastructure in New Hampshire has not significantly shifted from disposal (landfilling and incineration) toward more preferred management methods.

In preparing this report, NHDES used readily-available information to address the topic areas required by statute (RSA 149-M:29, II). However, NHDES acknowledges that some of the content contained herein may not meet the robust level of detail that was likely intended by the statute. This is partly due to data and resource limitations, in addition to a lack of statutory clarity. The conclusion of this report provides suggestions on how the waste reduction goal might be revised to enable NHDES to better measure and track progress toward attainment.

II. Generation of Solid Waste in New Hampshire

The term "generation" refers to the act of producing a waste, which is something that happens every day in New Hampshire as a result of the routine activities of residents, visitors, businesses, institutions and industry. RSA 149-M generally defines "solid waste" as any abandoned or discarded material, excluding hazardous waste, nuclear waste, sludge and septage, point source discharges of certain municipal and industrial wastewater, and yard waste. Given these broad boundaries, the category of solid waste encompasses a wide variety of potential materials, including household trash, recyclable materials, food waste, commercial and industrial waste, construction and demolition debris, electronic waste, asbestos waste, non-hazardous contaminated soils, end-of-life motor vehicles, animal carcasses, infectious waste, or anything else that qualifies as abandoned or discarded material.

For the purposes of this report, the concept of generation is intended to consider the entirety of solid waste produced in the state, not only wastes disposed in a landfill or incinerator, but also wastes that are diverted (for example, reused, recycled, composted). Estimating statewide generation of solid waste is complex. There are a variety of generators across various sectors in New Hampshire, but NHDES does not specifically track solid waste from the point of generation. Instead, NHDES regulates the management of solid waste at permitted solid waste facilities within the state. This only provides NHDES with data on wastes managed at these facilities and does not capture all solid waste actually generated within the state. For example, some industrial, commercial or institutional generators may use hauling services that directly transport refuse and recycling to destinations outside of New Hampshire. Further, there is an indeterminable quantity of waste that is generated but never reaches a permitted solid waste facility because it is managed at the site of generation, such as home composting, or is diverted directly to reuse (for instance, donation).

According to 2015 data from the United States Environmental Protection Agency (EPA), U.S. consumers generate an average 4.48 pounds of municipal solid waste (MSW) per person per day.[1] It is worth noting that this figure does not include generation of construction and demolition debris (C&D), industrial wastes, end-of-life motor vehicles, and contaminated soils.

Applying EPA's generation rate to New Hampshire's 2018 population[2] would suggest that just over 1.1 million tons of MSW were generated within the state in 2018. However, as noted above, there are broad categories of solid waste not included in this estimate. Because this figure only represents an estimate of MSW generation, we know that New Hampshire's actual generation rate for all solid waste is likely considerably higher. However, NHDES does not have data to support a definitive figure.

[1] United State Environmental Protection Agency. *National Overview: Facts and Figures on Materials, Wastes and Recycling*. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials#Generation

[2] According to NH Office of Strategic Initiatives, New Hampshire's population in 2018 was 1,365,458.

III. Disposal of Solid Waste in New Hampshire

The term "disposal," defined in RSA 149-M:4, VI, generally refers to the act of depositing waste in or on land or water. The term is most commonly used to refer to "final" management methods, including deposition in a landfill or combustion in an incinerator. As noted in the introduction, disposal methods such as incineration and landfilling are least-preferred on the waste management hierarchy established by RSA 149-M:3, while source reduction (reducing the quantity of waste generated at the source) and diversion (such as, reuse, recycling, composting) are at the top of the hierarchy. However, since the hierarchy was established, New Hampshire's waste management infrastructure has not significantly shifted from a reliance on disposal. With three commercial landfills, three limited-service public landfills, and one commercial waste-to-energy facility operating in New Hampshire, the state is somewhat unique among its neighboring states in terms of active disposal capacity.

Table 1 below illustrates total quantities of waste disposed over the last four years at New Hampshire's landfills and waste-to-energy facility. The data are broken down by waste received from in-state sources, as well as out-of-state sources. The vast majority of out-of-state waste disposed in New Hampshire is received by the three commercial landfills. As the table shows, disposal tonnages have increased incrementally over the last several years, while the ratio of in-state waste compared to out-of-state waste has hovered around 50%.

Table 1. New Hampshire Disposal Figures 2015 – 2018

Year	Total Tons Disposed	Tons from In-State Sources	Tons from Out-of-State Sources	Percentage In-State Sources
2015	1,973,561	1,053,130	920,431	53%
2016	2,076,656	1,082,138	994,518	52%
2017	2,329,946	1,225,366	1,104,580	53%
2018	2,388,877	1,228,819	1,160,058	51%

Table 2. Disposal of NH-generated Waste, Normalized Per-Capita

Year	NH Population*	Total Tons Disposed From In-State Sources	Tons Disposed per Capita
2015	1,330,608	1,053,130	0.79
2016	1,334,795	1,082,138	0.81
2017	1,342,795	1,225,366	0.91
2018	1,356,458	1,228,819	0.91

* Population estimates from New Hampshire Office of Strategic Initiatives
https://www.nh.gov/osi/data-center/population-estimates.htm

Table 2 shows disposal of waste generated in New Hampshire relative to the state's population. The data show an increase in per capita disposal from 2016 to 2017, with 0.81 tons disposed per person in 2016 to 0.91 tons disposed per person in 2017. While there is not enough information to conclusively

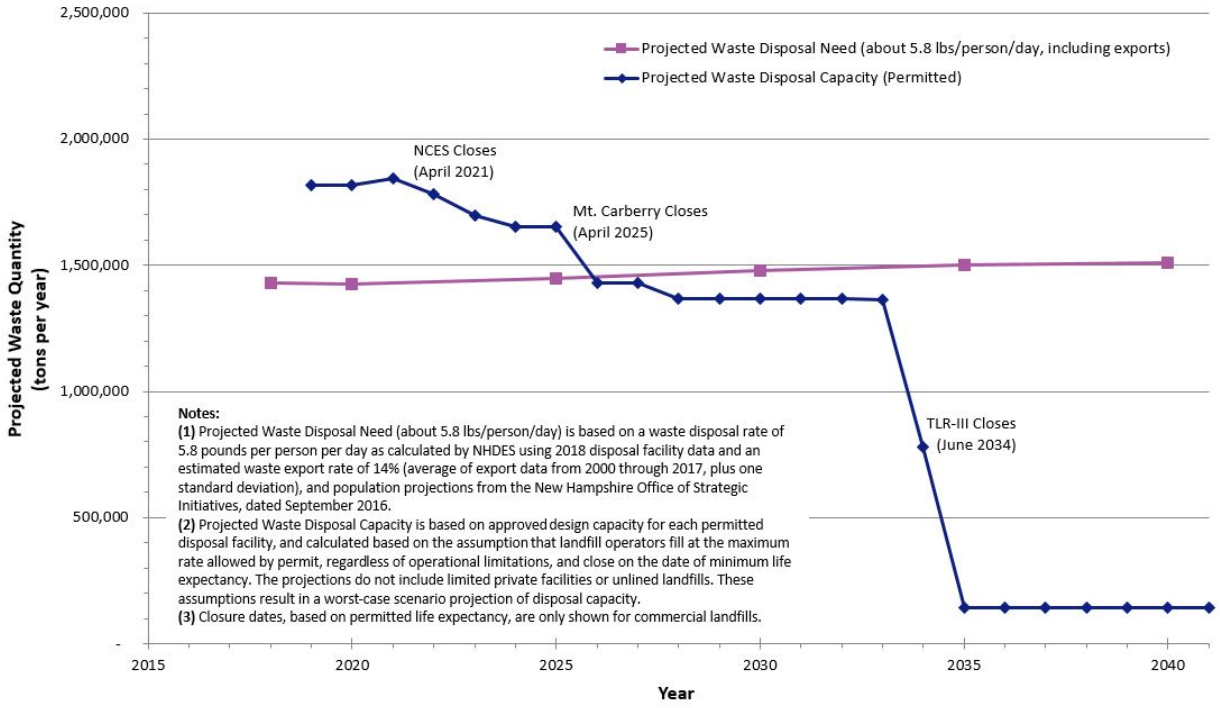
determine the cause for this increase, it is likely due to a number of factors, including increased waste generation resulting from increased economic activity. In addition, international recycling markets began to experience disruptions in the second half of 2017, and the situation worsened considerably in 2018. However, it is unclear to what degree this impacted per capita disposal rates, especially in light of the fact that the rate of 0.91 tons disposed per person did not change from 2017 to 2018, despite growing challenges for recycling markets over the same period.

Disposal is a metric that NHDES can definitively track and measure. However, relative to the hierarchy of preferred waste management methods, NHDES acknowledges that the agency has some blind spots in terms of tracking management trends higher on the hierarchy. Source reduction is something the agency does not track, and, even if it attempted to do so, it would be inherently difficult to estimate source reduction in a meaningful way. For example, source reduction is a common occurrence in today's consumer marketplace, where packaging manufacturers have been using increasingly thinner, lighter materials to produce product packaging, such as lighter weight plastic water bottles and flexible plastic pouches instead of paperboard. However, NHDES is not in a position to measure or quantify how this trend has been affecting New Hampshire's waste stream. Similarly, NHDES does not currently have reliable information on New Hampshire's recent recycling trends. Obtaining and analyzing data to produce meaningful statewide estimates is a complex task, and NHDES has been limited in terms of both its ability to obtain comprehensive data as well as the necessary program resources to allow the department to measure recycling trends, or other diversion trends, with a high degree of confidence.

IV. Projected Solid Waste Disposal Need and Disposal Capacity

Figure 2 illustrates NHDES' projections for the quantity of solid waste generated in New Hampshire needing disposal compared to available permitted disposal capacity at New Hampshire's landfills and incinerators. Further explanation of the figure and how NHDES derived these projections is provided below.

Figure 2. Projected Waste Disposal Need & Capacity for New Hampshire (2020 - 2040)



Projected Waste Disposal Need

For this report, NHDES projected New Hampshire's solid waste disposal need in accordance with RSA 149-M:11, V, which requires the department to consider disposal need over a 20-year planning period. There are numerous methods by which such disposal need projections might be made. NHDES based its projections on the following:

- Disposal tonnage reported by NH's operating landfills and incinerators in their 2018 annual facility reports (AFRs).
- Export data reported to NHDES from 2000 through 2017.
- Population projections made by the NH Office of Strategic Initiatives (NHOSI), dated September 2016, which are the most current population projections available for the 20-year planning period.
- The statutory requirement in RSA 149-M:11, V(a) that disposal projections account for all waste generated in New Hampshire (including waste exported to out-of-state disposal facilities).
- The assumption that New Hampshire's rate of disposal will remain constant over the 20-year planning period.
- The assumption that diversion rates will remain constant over the 20-year planning period.

NHDES estimated the disposal rate at New Hampshire landfills and incinerators for in-state generated solid waste in 2018 as about 5.0 pounds per person per day, and assumed this to be the baseline waste disposal need for New Hampshire. Consistent with RSA 149-M:11, NHDES attempted to account for all solid waste generated within New Hampshire destined for disposal by including the amount of solid waste generated in New Hampshire that is exported to out-of-state disposal facilities. NHDES estimates this disposal export rate at 14%, based on the average export rate from 2000 to 2017 plus one standard deviation (to account for variability and unreported exports).[3] Based on this estimate, waste exported for disposal outside of New Hampshire equates to approximately 0.8 pounds per person per day. Therefore, New Hampshire's total solid waste disposal rate, inclusive of exports, is estimated to be about 5.8 pounds per person per day. Because this estimate relates solely to disposal, it does not account for solid waste diverted from disposal by way of reuse, recycling or composting. The "Projected Waste Disposal Need" line depicted in Figure 2 represents 5.8 pounds per person per day multiplied by the population projections made on 5-year intervals by NHOSI. Changes in any of the factors and assumptions noted above may affect actual disposal need.

Projected Waste Disposal Capacity

Projected waste disposal capacity is based on a combination of factors, including specific conditions relative to operational lifespan contained in each disposal facility's permit. NHDES estimated the statewide "Projected Waste Disposal Capacity" line shown in Figure 2 based on the following:

- The total permitted capacity of New Hampshire solid waste disposal facilities, excluding unlined landfills pursuant to RSA 149-M:11, V(a) and limited private facilities, which are closed loop facilities that only serve the capacity needs of the generator who owns the facility and therefore do not provide disposal capacity for the general public.
- The assumption that landfill operators will fill at the maximum rate allowed by the facility's permit, regardless of operational limitations.
- The assumption that a facility will close on the minimum operational date required by permit, which NHDES considers the earliest anticipated closure date of a disposal facility.

These assumptions result in a slightly conservative but reasonable scenario for projected disposal capacity in New Hampshire. Note that Figure 2 shows the earliest anticipated closure dates for the state's commercial landfills, which accept the majority of New Hampshire's solid waste, and Table 3 below shows the earliest anticipated closure date of each disposal facility in New Hampshire, excluding unlined landfills and limited private facilities.

[3] The average export rate for solid waste during this 17-year period was about 10% and the standard deviation was about 4%.

Table 3. Active New Hampshire Disposal Facilities, Listed by Earliest Anticipated Closure Date

Facility Type	Facility Name	Location	Service Type / Service Area	Earliest Anticipated Closure Date
Waste-to-Energy Incinerator	Wheelabrator Concord Company L.P.	Concord, NH	Commercial / Unlimited	None
Incinerator (no resource recovery)	Hebron-Bridgewater Refuse District	Bridgewater, NH	Limited Public / Limited	None
Landfill	North Country Environmental Services, Inc.	Bethlehem, NH	Commercial / Unlimited	April 16, 2021[4]
	Four Hills Secure Landfill Expansion	Nashua, NH	Limited Public / Limited	April 15, 2023[5]
	Mount Carberry Secure Landfill	Success, NH	Commercial / Unlimited	April 29, 2025[6]
	Lebanon Regional Solid Waste Facility	Lebanon, NH	Limited Public / Limited	est. 2027[7]
	Lower Mount Washington Valley Secure Solid Waste Landfill	Conway, NH	Limited Public / Limited	est. 2033[8]
	TLR-III Refuse Disposal Facility	Rochester, NH	Commercial / Unlimited	June 30, 2034[9]

Assessment of Waste Disposal Need Relative to Waste Disposal Capacity

Based on a review of Figure 2, NHDES predicts a limited shortfall in disposal capacity between 2025 and 2034, ranging between about 20,000 and 120,000 tons per year. In 2034, assuming that TLR-III Refuse Disposal Facility in Rochester, NH closes, the Wheelabrator Concord Company L.P. waste-to-energy plant in Concord, NH remains operational, and there are no changes in current solid waste diversion rates, the state will experience a shortfall in disposal capacity of about 1.35 million tons per year thereafter. Although some landfills may have physical space to accommodate future expansions, NHDES' projections do not consider hypothetical capacity, but are based solely on permitted capacity as of the date of this report. As disposal facilities seek approvals for additional permitted capacity, the projections made herein are subject to change.

[4] North Country Environmental Services, Inc.: Condition (13)(a) of the permit modification effective August 15, 2014 stipulates that the permittee shall operate Stage V in a manner that provides 5.3 or more years of disposal capacity. The permittee began operations in Stage V on December 28, 2015.

[5] Four Hills Secure Landfill Expansion: Condition (7) of the facility's Standard Permit, effective June 26, 1995, stipulates that the permittee shall operate the facility in a manner that provides 20 or more years of disposal capacity. The permittee began operations in Phase I on April 15, 2003.

[6] Mount Carberry Secure Landfill: Condition (20)(b) of the permit modification effective February 25, 2019 stipulates that the permittee shall operate the facility through at least April 29, 2025.

[7] Lebanon Regional Solid Waste Facility: There is no minimum operating life expectancy in the facility permit. The anticipated closure date is estimated based on projected remaining capacity and life expectancy reported in the facility's 2018 Annual Facility Report.

[8] Lower Mount Washington Valley Secure Solid Waste Landfill: There is no minimum operating life expectancy in the facility permit. The anticipated closure date is estimated based on projected remaining capacity reported in the facility's 2018 Annual Facility Report, and a proposed fill rate in the initial facility permit application of 10,000 tons per year.

[9] TLR-III Refuse Disposal Facility (aka Turnkey Landfill): Condition (21)(b) of the permit modification effective June 11, 2018 stipulates that the permittee shall operate the facility through at least June 30, 2034.

V. State and Regional Trends in Solid Waste Management

Trends in New Hampshire

Landfill Expansions – Applications for landfill expansions constitute the vast majority of requests for new permitted solid waste management capacity received by NHDES. At the same time, there continues to be significant public opposition to expanding existing facilities or siting new disposal facilities.

Waste Imports – Out-of-state waste comprises roughly 50% of total waste disposed in New Hampshire facilities. Most of the out-of-state waste disposed in New Hampshire is received by three commercial landfills. Commercial disposal facilities in New Hampshire are permitted to receive waste from out-of-state sources, provided they also provide capacity for New Hampshire-generated waste. The Commerce Clause of the U.S. Constitution has commonly been interpreted to preempt a state from explicitly prohibiting or adopting protectionist policies against the acceptance and disposal of out-of-state waste.[10]

Legislative Attention to Waste Issues – There has been increased interest in issues related to solid waste within the last year, with several bills introduced during the 2019 legislative session focused on recycling and plastic waste reduction, including:

- HB 102 and HB 559 – both of these bills relate to enabling municipalities to ban or otherwise regulate the distribution of disposable, single-use plastic items such as plastic shopping bags, straws, and take-out food containers. Both of these bills were retained in committee.
- HB 558 – an act relative to restricting the distribution of plastic straws at food service businesses, unless a customer specifically requests one. The bill passed the House, but was deemed inexpedient to legislate by the Senate.
- HB 560 – initially introduced as an act relative to restricting the distribution of single-use carryout bags by retails stores and food service businesses, this bill passed the House. It was subsequently amended by the Senate, but the House did not concur with the Senate's amended version.
- HB 617 – an act establishing a committee to study recycling streams and solid waste management in New Hampshire. The bill passed the House and Senate, and was signed into law by Governor Sununu. The committee convened for the first time on August 28, 2019 and is required to produce a report of findings and recommendations by November 1, 2019.
- SB 79 – an act relative to required reporting on waste reduction. To help NHDES better assess achievement of the 40% diversion goal in RSA 149-M and further solid waste management planning efforts, the bill requires New Hampshire towns to report certain recycling and diversion information to NHDES. NHDES worked with the prime sponsor to amend the bill, which passed the Senate, but was retained in the House.

Organic Waste Diversion – In recent years, there has been rising interest among legislators, municipalities, regional organizations, commercial/institutional entities, and members of the general public in the topic of composting and organic waste diversion. Diverting organics is consistent with the hierarchy, recovers resources, reduces disposal need, and has the potential to reduce waste

[10] The 1978 Supreme Court Case, Philadelphia v. New Jersey, struck down a New Jersey law that prohibited the importation of waste into the state. For additional information, see: http://law2.umkc.edu/faculty/projects/ftrials/conlaw/statecommerce.htm

management costs. In an effort to encourage development of food waste composting infrastructure, NHDES convened a stakeholder workgroup in 2017-2018 to look at potential revisions to the New Hampshire Solid Waste Rules (see discussion of on-going efforts in Section VII. herein).

Regional Trends

Recycling Market Downturn – Regional (and international) recycling markets experienced a significant downturn starting in late 2017, spurred by China's National Sword Policy, which effectively banned that country's importation of certain recyclable commodities in response to contamination issues (such as unacceptable or non-recyclable items mixed with recyclables). Prior to this policy, China had been a leading importer of the world's secondary materials, which provided feedstock for China's manufacturing sector. The implementation of National Sword significantly lowered the value of recycled commodities worldwide. Mixed plastics and mixed paper were particularly affected, as these streams have traditionally been dependent on export markets and are commonly prone to higher contamination rates, especially when sourced from single stream recycling programs. With the world's largest consumer of secondary materials no longer available, recycling markets worsened through 2018 to present. As a result, municipal single stream recycling programs across the United States are experiencing rising costs as waste management companies that process and sort recyclables at material recovery facilities (MRFs) are facing depressed revenues and increased processing costs.[11] Municipalities that have not adopted single stream recycling have also been affected by depressed commodity revenues, but in many cases are faring slightly better overall. In response to this economic shift, some communities have decided to suspend recycling programs, either entirely or in part. Some New England states with mandatory recycling policies are reacting by temporarily lifting disposal bans for certain recycling streams that currently have no viable outlet. States like Massachusetts, Connecticut and Rhode Island are attempting to get at the root of the problem by addressing the issue of contamination and increasing outreach to educate the public about how to "recycle right." Waste management companies are investing in MRF upgrades to more effectively sort materials and meet market expectations for lower contamination. Meanwhile, the manufacturing industry in the U.S. is starting to respond by developing increased domestic capacity for use of recycled feedstocks—such as mixed paper or plastics—to produce new products and packaging.

Disposal Capacity Challenges – Over the last year, two commercial landfills in Massachusetts ceased operations. The closure of these facilities, one in Chicopee and the other in Southbridge, represents a loss in regional disposal capacity of approximately 500,000 tons per year. This development puts pressure on the region's remaining disposal infrastructure, and exports of waste from Massachusetts are expected to increase. As a result, there has been heightened interest in hauling waste by rail or truck to locations outside the Northeast that have ample disposal capacity, such as Pennsylvania or Ohio. Meanwhile, waste-to-energy facilities face economic pressures as they compete in a marketplace with

[11] A recent report published by the Northeast Recycling Council (NERC) surveyed 15 MRFs across 10 Northeast states to learn more about average value of material processed through these facilities, as well as the average composition of the recycling stream. The report indicates that, on average, roughly 12% of the material received by these facilities is considered "residue" (i.e. contaminants that can't be processed through the MRF's system). Rising contamination rates in recycling streams have been a growing challenge for MRFs in recent years (especially for those that process single stream), which in turn has affected processing costs for these facilities. The full report is available here: https://nerc.org/documents/Recycling%20Market%20Development/Blended_Commodity_Values_in_the_Northeast%20-%20August_2019.pdf

other electricity producers that use relatively inexpensive natural gas and have comparatively lower operational costs.

Organic Waste Disposal Bans – Several Northeast states have enacted laws banning the disposal of food waste in recent years. In 2014, Vermont enacted Act 148 (a.k.a. The Universal Recycling Law), which includes requirements for diversion of food scraps. Vermont Act 148 uses a phase-in approach, targeting the largest food waste generators first and incrementally decreasing the generation threshold until all generators will be required to divert food scraps, regardless of quantities generated. Vermont's approach has gained attention as the most aggressive statewide organics diversion policy. Connecticut, Massachusetts, Rhode Island and New York have taken a different approach by enacting food waste disposal bans that target large-scale generators. In most cases, these bans apply to commercial or institutional generators that produce a ton or more of food waste per week. States across the region have adopted these statutory requirements to reduce disposal need and spur development of infrastructure for composting and anaerobic digestion.

Extended Producer Responsibility – In order to encourage resource recovery and minimize the impacts to public health, safety and the environment from the use and disposal of consumer products, several Northeastern states have adopted extended producer responsibility (EPR) laws that require manufacturers to share responsibility for end-of-life management of the product(s) they produce. A long-standing example of one such policy in New Hampshire is the mercury thermostat take-back program established in 2008 (RSA 149-M:58-a). More recent examples of EPR programs in other states include:

- Paint take-back programs in Connecticut, Maine, Rhode Island, and Vermont.
- Electronic waste recycling programs in Connecticut, Maine, New York, Rhode Island, and Vermont.
- A battery recycling program in Vermont that targets single-use and rechargeable batteries.
- A recent initiative in Maine that seeks to assist municipal recycling programs by requiring manufacturers of packaging/containers to share in the costs of managing and recycling packaging products sold in the state. The Maine Legislature has charged MaineDEP with developing proposed legislation for this purpose, which is largely a response to the recent upheaval of recycling markets.

Bans on Single-use Products – in 2019, several Northeastern states passed laws restricting the distribution of single-use plastic consumer products, including:

- Connecticut, Maine and New York will restrict the distribution of plastic shopping bags.
- Maine will ban expanded polystyrene (EPS) foam food and beverage containers.
- Vermont has passed a comprehensive law targeting several single-use plastic products, including plastic bags, plastic straws, and polystyrene foam food and beverage containers.

VI. Congressional Actions and Court Rulings

NHDES is not aware of any recent federal legislation or court rulings that have affected the management of solid waste on a national level.

VII. NHDES' Solid Waste Programs and On-going Efforts

RSA 149-M grants NHDES authority to administer and enforce the provisions of RSA 149-M, and the Solid Waste Rules adopted pursuant to RSA 149-M. This work is carried out by the Solid Waste Management Bureau (Bureau) within NHDES' Waste Management Division. The Bureau ensures that management of solid waste in New Hampshire is protective of human health and the environment by regulating the facilities and practices associated with the collection, processing, treatment, recycling, re-use, and disposal of solid waste in New Hampshire. Examples of the types of facilities regulated by the Bureau include transfer stations, recycling centers, scrap yards, composting facilities, incinerators, and landfills. The Bureau oversees and assures compliance for approximately 260 active permitted solid waste facilities, 120 motor vehicle salvage yards, and 600+ closed, inactive solid waste disposal sites (consisting of inactive landfills and asbestos disposal sites).

NHDES' Solid Waste Programs

Although at one time NHDES had resources dedicated specifically to waste reduction through technical assistance, outreach and planning, those resources were incrementally lost over time due to general fund budget constraints. Unfortunately, the resultant deficiencies have not allowed the Bureau to pursue these program areas in recent years. Using its current resources, the Bureau focuses its efforts on two essential program areas:

1. *Permitting of solid waste facilities*:

   In accordance with RSA 149-M:6, III, the Bureau regulates solid waste facilities through the administration of a permit system. The Bureau's Permitting and Design Review Section is responsible for processing applications for facility permits, permit modifications, and other requests requiring approval by NHDES. The Permitting and Design Review Section also provides permitting technical assistance, inspects and monitors the operation, construction and closure of New Hampshire's active landfills and processing/treatment facilities, and reviews environmental monitoring data and proposed plans for corrective actions when problems are identified.

2. *Compliance assurance for solid waste facilities*:

   The Bureau's Compliance Assurance Section is responsible for assuring that solid waste facilities are operated and closed in compliance with permit requirements, the Solid Waste Rules (Env-Sw 100 et seq.) and RSA 149-M. This involves providing compliance technical assistance, reviewing reports, conducting facility inspections, investigating complaints, and pursuing enforcement when necessary. The Compliance Assurance Section also assures that facility owners maintain adequate funds to guarantee proper closure and post-closure care of facilities, and distributes grant money to reimburse municipalities for eligible costs for closure of old landfills and incinerators. In addition, and as required by RSA 149-M:6, XIII, the Bureau administers a training and certification program for solid waste facility operators, known as the Solid Waste Operator Training (SWOT) Program. Each year the Bureau hosts multiple 'Basic Training' SWOT workshops for new operators and also provides numerous continuing education opportunities (provided by NHDES staff and/or 3rd parties). The SWOT Program equips facility operators with an awareness of regulatory requirements, fosters a direct relationship between the Bureau and the regulated community, and promotes voluntary compliance. There are over 1,200 solid waste operators currently certified under this program.

On-going Program Efforts

On-going efforts by the Bureau include the following:

- The Permitting and Design Review Section has been working to streamline application processing procedures in response to recent changes to RSA 541-A:29 and the addition of RSA 541-A:29-a that imposed shortened application processing time limits and provisions for automatic approval should the agency fail to act within the prescribed time limits, respectively. These changes, which took effect on January 1, 2019, required the Bureau to devote intensive efforts to completing application reviews and avoiding automatic, default approvals. As a result, other program obligations could not be fulfilled. During the Spring 2019 legislative session, NHDES supported Senate Bill 163 to restore application processing time limits to those previously allowed by the Solid Waste Rules. Senate Bill 163 passed the House and Senate, was signed by Governor Sununu, and took effect September 17, 2019. Senate Bill 163 has provided some relief for application processing time limits; however, the default approval provision in RSA 541-A:29-a remains a significant concern. If program resource levels are not adequately maintained, default approvals may occur, and other important program functions will also suffer.
- The Compliance Assurance Section has put an emphasis on closed/inactive landfill monitoring and maintenance to ensure facility owners and permittees are aware of ongoing requirements. With over 300 closed landfills across the state, nearly every New Hampshire municipality is host to at least one such facility, the majority of which are unlined. Although perhaps not always considered part of the state's solid waste management infrastructure, these closed landfills continue to perform a critical function as waste containment systems. As these facilities age, it is important that they are properly monitored and maintained to minimize adverse impacts to public health, safety and the environment.

As resources allow, the Bureau has been also been working on the following:

- Updating the State's Solid Waste Management Plan, as required by RSA 149-M:29. The last plan was published in 2003.[12]
- Revising regulatory requirements for composting facilities in New Hampshire. In 2017-2018, under the direction of RSA 149-M:7, XV, NHDES convened a stakeholder workgroup to look at potential revisions to the current composting rules, which regulate the siting, design and operating requirements for composting facilities. The workgroup provided NHDES feedback on numerous aspects of the rules, especially with regard to composting of meat and dairy food scraps – an activity that is currently allowed in New Hampshire, but only under a standard permit, which involves a detailed application and review process. Stakeholders have expressed a desire to conduct meat and dairy composting under the more streamlined "permit-by-notification" provisions of the rules. NHDES intends to implement rule revisions to improve the permitting framework as soon as feasible. In the meantime, NHDES has been communicating with interested parties on potential pathways to accommodate development of meat and dairy composting operations under the current regulatory framework. Despite these efforts, NHDES has not received any applications for additional composting capacity to date.

[12] The 2003 New Hampshire Solid Waste Management Plan is available on NHDES' website: https://www.des.nh.gov/organization/commissioner/pip/publications/documents/r-wmd-03-2.pdf

- Identifying wastes that may warrant specific attention, such as street sweepings, contaminated soils and wastes containing per- and polyfluoroalkyl substances (PFAS), as well as considerations for management of landfill leachate that contains PFAS contamination.

Other Organizations Involved in Solid Waste Management

For a list of other organizations involved in solid waste issues in New Hampshire, see Appendix A. The list includes a brief description of each organization. Further details for each organization can be obtained by going to its website or contacting the organization directly.

VIII. Conclusions and Recommendations

As stated in RSA 149-M:29, II, one of the primary purposes of this report is to assess the level of achievement in reaching the 40% diversion goal established in RSA 149-M:2 (Waste Reduction Goal). Considering the information provided above, NHDES is not able to adequately assess the state's achievement of the 40% diversion goal. This is due in large part to the noted resource deficiencies within the Solid Waste Management Bureau, as well as difficulty obtaining and analyzing data. More importantly, NHDES notes that successive revisions to the Waste Reduction Goal have obscured the original intention of the goal, making it unclear what exactly the goal intends to measure or how diversion should be defined.

In light of this, and in consideration of the difficulties inherent in measuring solid waste generation, source reduction and diversion (as noted previously in this report), NHDES respectfully submits that the Waste Reduction Goal might be revised and restructured as a Disposal Reduction Goal. Because disposal tonnage is something that NHDES can definitively measure, NHDES believes it would be much more feasible to track changes in waste disposed over time than to track changes in waste generated.

It is worth noting that challenges with measuring waste generation, source reduction and diversion are not unique to New Hampshire. For example, in Massachusetts, the Department of Environmental Protection (MassDEP) has recently shifted from using a waste reduction/diversion target, to instead use a disposal reduction target as an indicator of overall waste reduction and diversion progress.[13] NHDES believes that adopting a similar practice for New Hampshire could provide a clear and measurable metric for tracking waste reduction and diversion in the state.

NHDES would suggest a Disposal Reduction Goal that defines a baseline year and sets a specific target to reduce annual tonnage disposed by X%, as compared to the baseline, within a specified time period. For example, MassDEP's 2010-2020 Solid Waste Master Plan sets 2008 as the baseline, with short- and long-term goals to reduce annual solid waste disposal 30% by 2030, and 80% by 2050. Annual disposal could also be measured on a per capita basis to account for changes in population over time.

In light of New Hampshire's continued reliance on disposal and limited progress toward advancing more preferable management methods identified in the Waste Management Hierarchy, it is clear that the Waste Reduction Goal in RSA 149-M:2 warrants reconsideration. No matter what course of action the General Court decides to take, NHDES would recommend a goal that is relevant, achievable, and measurable. Furthermore, if NHDES is directed to encourage, promote, and measure achievement of the goal, the agency will need to have clear statutory authority and the tools necessary to perform such functions.

As required by statute, the recommendations in this report are focused specifically on the Waste Reduction Goal. NHDES may provide additional recommendations related to broader solid waste management issues in other communications with the General Court. NHDES looks forward to its continuing work with the HB 617 Study Committee and the General Court at large with respect to vital solid waste policy issues, and NHDES will continue in its efforts to achieve the goals and mandates of RSA 149-M to the extent its resources allow.

[13] MassDEP, 2010-2020 Solid Waste Master Plan – p. 17, bottom: https://www.mass.gov/files/documents/2016/08/nw/swmp13f.pdf

Appendix A: Organizations Involved with Solid Waste Management

State/Local Organizations

Auto and Truck Recyclers Association of NH (ATRA)
Address: PO Box 2761, Concord, NH 03302-2761
Telephone: (603) 529-7211
Website: http://www.atranh.org/
Contact: David Wilusz, President, allied10@aol.com

The Auto and Truck Recyclers Association of New Hampshire (ATRA) promotes environmentally friendly business practices for facilities engaged in automobile and truck recycling, dismantling and salvage within the state of New Hampshire. ATRA encourages uniform commercial practices among its members and provides leadership in ensuring familiarity with local, state, and federal laws and regulations governing the conduct of such businesses. It represents the interests of its members before governing bodies, seeking to ensure recognition of the contributions of the vehicle recycling industry. ATRA seeks to work closely with regulatory bodies such as the Department of Environmental Services, the Department of Safety and the Department of Transportation, as well as organizations with similar goals, such as the New Hampshire Municipal Association, New Hampshire Auto Dealers Association, the New Hampshire Towing Association and many others.

Lakes Region Planning Commission (LRPC)
Address: Humiston Building, 103 Main Street, Suite 3, Meredith, NH 03253
Telephone: (603) 279-5341
Website: https://www.lakesrpc.org/
Contact: Dave Jeffers, Regional Planner, djeffers@lakesrpc.org

The Lakes Region Planning Commission (LRPC) is a unique association of local governments that provides comprehensive planning services to meet the diverse needs of New Hampshire's Lakes Region. Their mission is to provide effective planning, in order to achieve and sustain a quality environment, a dynamic economy, and local cultural values by supporting community efforts through leadership, education, technical assistance, information, advocacy, coordination and responsive representation. During the tenure of this report, the LRPC has developed a series of Solid Waste Roundtable events where they invite attendees to learn about solid waste issues in the region and offer solutions. Topics range from capped landfill maintenance, to disposal and use of glass, to food waste composting. In addition, they coordinate the household hazardous waste collection events for the Lakes Region.

New Hampshire the Beautiful
Address: 2101 Dover Road, Epsom, NH 03234
Telephone: 1-888-784-4442 Toll-Free in NH, (603) 736-4401
Website: http://www.nhthebeautiful.org/
Email: nhtb@nrra.net

New Hampshire the Beautiful, Inc. (NHtB) is a private, non-profit Charitable Trust established in 1983 and voluntarily funded by the soft drink distributors and bottlers, retail grocers, and the malt beverage industry. The Board of Directors of NHtB has awarded the Northeast Resource Recovery Association (NRRA) a contract to administer the grants and solid waste facility sign programs in addition to overseeing the distribution of litter bags for roadside cleanups across New Hampshire.

UNH Cooperative Extension
Address: Taylor Hall, 59 College Road, Durham, NH
Telephone: 1-800-735-2964 Toll-Free in NH, (603) 862-1520
Website: https://extension.unh.edu/

The Cooperative Extension Network provides information and outreach on a multitude of topics to the citizens of New Hampshire. For example, through their Master Gardeners Program, they provide information on backyard composting and community gardens. They also continue to provide information on the use of wood ash as an agricultural soil amendment and promote the reduction of marine debris through a project that recycles derelict fishing gear.

Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC)
Address: 10 Water Street, Suite 225, Lebanon, NH 03766
Telephone: (603) 448-1680
Website: https://www.uvlsrpc.org/
Contact:Vickie Davis, Planner, vdavis@uvlsrpc.org

The Upper Valley Lakes Sunapee Regional Planning Commission (UVLSRPC) has been providing professional planning assistance to municipal boards since 1963. UVLSRPC coordinates all aspects of planning, act as a liaison between local and state/federal governments and provide advisory technical assistance to the 27 communities and committees in its region who affect the future land use of the region. UVLSRPC has provided training to solid waste operators on implementing organics recycling at rural transfer stations, reduction of HHW in the waste stream and improper disposal of medicines. The group also worked with business owners who are small quantity generators of hazardous waste for better solutions for managing their waste.

Regional and National Organizations

Association of State and Territorial Solid Waste Management Officials (ASTSWMO)
Address: 1101 17th Street NW, Suite 707, Washington, DC 20036
Telephone: (202) 640-1060
Website: http://astswmo.org
Contact: Cathy Jamieson, Materials Management Subcommittee Chair, cathy.jamieson@vermont.gov

The Association of State and Territorial Solid Waste Management Officials (ASTSWMO) supports the environmental agencies of the States and trust territories. ASTSWMO focusses on the needs of State hazardous waste programs; non-hazardous municipal solid waste and industrial waste programs; recycling, waste minimization, and reduction programs; Superfund and State cleanup programs; waste management and cleanup activities at federal facilities, and underground storage tank and leaking underground storage tank programs. The association's mission is: "To Enhance and Promote Effective State and Territorial Waste Management Programs, and Affect National Waste Management Policies." The organization is structured to accomplish this two-part mission through both member committees and Association staff efforts.

Northeast Recycling Council (NERC)
Address: 139 Main Street, Suite 401, Brattleboro, VT 05301
Telephone: (802) 254-3636
Web Site: https://nerc.org
Contact:Lynn Rubinstein, Executive Director, lynn@nerc.org

The Northeast Recycling Council 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. In addition to providing a forum for the exchange of information between states and state agencies, NERC undertakes research and education projects that address regional recycling, market development and waste management issues.

Northeast Resource Recovery Association (NRRA)
Address: 2101 Dover Road, Epsom, NH 03234
Telephone: (603) 736-4401 or (800) 223-0150
Web Site: https://nrra.net
Contact:Reagan Bissonnette, Executive Director, rbissonnette@nrra.net

Founded in 1981 as a private, non-profit organization, NRRA provides technical, educational, and marketing support to New Hampshire municipal recycling programs. NRRA provides marketing and brokerage services for municipalities in New Hampshire, Massachusetts, Maine and Vermont. This cooperative approach combines materials from many communities to gain economies of scale in transportation and offers access to markets which would typically be denied to individual small communities. NRRA also provides extensive outreach and technical assistance to its member communities designed to strengthen and expand recycling and waste diversion activities.

Northeast Waste Management Officials' Association (NEWMOA)
Address: 89 South Street, Suite 600, Boston, MA 02111
Telephone: (617) 367-8558
Website: http://www.newmoa.org/
Contact:Jennifer Griffith, jgriffith@newmoa.org

The Northeast Waste Management Officials' Association (NEWMOA) is a non-profit, non-partisan, interstate association established in 1986 by the governors of the New England states as an official interstate regional organization. The membership is composed of state environmental agency directors of the hazardous waste, solid waste, waste site cleanup, pollution prevention and underground storage tank programs in Connecticut, Maine, Massachusetts, New Hampshire, New York, New Jersey, Rhode Island, and Vermont. NEWMOA's mission is to help states articulate, promote, and implement economically sound regional programs for the enhancement of environmental protection. The group fulfills this mission by providing a variety of support services that facilitate communication and cooperation among member states and between the states and EPA, and promoting the efficient sharing of state and federal program resources.

Solid Waste Association of North America (SWANA)
Address: 1100 Wayne Avenue, Suite 650, Silver Spring, MD 20910
Telephone: 1-800-GO-SWANA (1-800-467-9262)
Website: https://swana.org/
Contact: Meri Beth Wojtaszek, Deputy Executive Director

The Solid Waste Association of North America (SWANA) is the largest member-based solid waste association in the world with 45 Chapters, in the U.S., Canada and the Caribbean and over 10,000 members. SWANA is

the U.S. and Canadian National Member of the International Solid Waste Association (ISWA), and participates and supports ISWA events and programs. SWANA's conferences and training programs cover all aspects of integrated municipal solid waste management, and the Association is a policy and technical representative of solid waste management practitioners, executives, companies and government organizations.

The Composting Collaborative
Email: Info@compostingcollaborative.org
Website: www.compostingcollaborative.org

The Composting Collaborative is a project of the GreenBlue, BioCycle Magazine, and the U.S. Composting Council. Their mission is to accelerate composting access and infrastructure to improve soil health and divert compostable materials from landfills. As a collaborative, they are able to provide educational support to groups looking to implement composting in their community or business. Since 2017 The Composting Collaborative has focused on projects to gather better data on organics processing capacity, provide information about pretreatment and preprocessing technologies, and establish optimized soil sampling methodologies. They are presenting at three national conferences in 2019 and 2020 and have provided numerous webinars for anyone looking for information regarding composting.

The Recycling Partnership
Address: 125 Rowell Court, Falls Church, VA 22046
Website: https://recyclingpartnership.org/

The Recycling Partnership is a national nonprofit organization that is transforming recycling in towns, cities and states all across America. Their mission is to encourage recycling by offering a different perspective on the role of recycling in our society. They have created tools to enhance recycling that can be customized to specific needs of a town, city or organization or even a business. In the last five years, they have partnered with various stakeholders on recycling enhancement projects. The Recycling Partnership tracks each of these projects to create baseline data and case studies in order to train others on how to implement the tools they have created.

Toxics in Packaging Clearinghouse (TPCH)
Address: c/o NERC, 139 Main Street, Suite 401, Brattleboro, VT 05301
Telephone: (802) 254-8911
Email: info@toxicsinpackaging.org
Website: https://toxicsinpackaging.org/
Contact: Melissa Walsh Innes, Program Manager

In 1990, New Hampshire was the second state in the nation to adopt the toxics-in-packaging model legislation developed by the Coalition of Northeastern Governors (CONEG). Nineteen states have adopted a toxics-in-packaging law based on the CONEG model and the model has been used internationally. To ensure consistent and effective implementation of the laws, the Toxics in Packaging Clearinghouse (TPCH) was created in 1992 to simplify the law's administrative procedures, promote cooperation and information sharing between participating states, minimize procedural burdens on affected industries, and promote understanding and greater awareness of the law's objectives. TPCH is assisted in its mission by technical advisers from representatives of industry and public interest organizations.

The US Composting Council (USCC)
Address: 3801 Lake Boone Trail, Suite 190, Raleigh, NC 27607
Telephone: (301) 897-2715
Email: uscc@compostingcouncil.org
Website: https://www.compostingcouncil.org

The US Composting Council (USCC) was established in 1990 and is a national member-based organization dedicated to the development and promotion of the composting industry, including the manufacturing, marketing and utilization of compost. USCC members include compost manufacturers, compost marketers, equipment manufacturers, product suppliers, academic institutions, public agencies, nonprofit groups and consulting/engineering firms.

United States Department of Agriculture Rural Development
Grants Contact: Water & Environmental Programs National Office
Telephone: (202) 720-9583
Website: https://www.rd.usda.gov/programs-services/solid-waste-management-grants

NH Contact: Anthony Linardos, State Director
Address: 87 State Street, Suite 324, PO Box 249, Montpelier, VT 05601
Telephone: (802) 828-6080
Website: https://www.rd.usda.gov/nh

The United States Department of Agriculture Rural Development provides annual solid waste management grants. The goal is to reduce or eliminate pollution of water resources by providing funding for organizations that provide technical assistance or training to improve the planning and management of solid waste sites. This grant program has helped organizations in New Hampshire provide technical assistance where NHDES has been unable to.

United States Environmental Protection Agency (U.S. EPA) – Sustainable Materials Management
Address: Office of Resource Conservation and Recovery, 1200 Pennsylvania Ave., NW (5305P), Washington, DC 20460
Website: https://www.epa.gov/smm

The United States Environmental Protection Agency – Sustainable Materials Management Program (SMM) provides information to the regulated community as well as the public on managing materials from cradle-to-grave. It is a systematic approach to using and reusing materials over the entire life cycle by highlighting changes in how society thinks about natural resources and environmental protection. EPA's SMM program provides webinars and training free of charge on all things solid waste including food waste reduction, electronics recycling, C&D recovery, and partnership opportunities for communities. The SMM program has also gathered data from the states regarding solid waste management, created a waste reduction model (WARM) and other sustainable materials management tools for users.