north country ENVIRONMENTAL SERVICES
A Casella Company

1855 Route 100 • Hyde Park, VT 05655 p. 802.223.7045

March 20, 2020

NHDES, Waste Management Division
Solid Waste Management Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

RE: North Country Environmental Services, Inc.
Landfill Facility – Bethlehem, NH
NHDES Permit # DES-SW-SP-03-002
2019 Annual Facility Report

Dear NHDES Waste Management Division:

Consistent with Env-Sw 1105.07(b) of the New Hampshire Department of Environmental Services Solid Waste Rules, North Country Environmental Services, Inc. writes to provide the 2019 Annual Facility Report (attached) for our facility located in Bethlehem, New Hampshire.

We are also providing a revised monthly origin material report for February 2019. We found a tonnage discrepancy from the original report and apologize for the error. Should you have any questions please do not hesitate to contact me at 802.651.5454.

Sincerely,

NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.

J. Gay

John Gay, E.I.
Permits, Compliance & Engineering

Enclosures

c. Kevin Roy, North Country Environmental Services, Inc. {via email}
Annette Marquis, North Country Environmental Services, Inc. {via email}

RpOrgWs.rpt

Origin: All
Material: All

Correct Report 3-20-2020

NORTH COUNTRY ENVIRONMENTAL SERVICES INC

Origin/Material Report

Transactions from 02/01/2019 through 02/28/2019
Inbound Tickets Only
Third Party and Intercompany Customers
Recycle and Disposal Material
Material Summary

	Cubic Yards	Tons	Est Tons	Tax
MA - MASSACHUSETTS				
CD - CONSTRUCTION DEBRIS *13 tickets and 13 transactions*	0.00	337.58	0.00	$0.00
ICMS - IC MSW *22 tickets and 22 transactions*	0.00	645.64	0.00	$0.00
ICSW - IC SLUDGE *59 tickets and 59 transactions*	0.00	1,971.61	0.00	$0.00
IN - INDUSTRIAL WASTE *1 ticket and 1 transaction*	0.00	1.47	0.00	$0.00
KS - CONTAMINATED SOIL FOR DISPOSAL *1 ticket and 1 transaction*	0.00	22.04	0.00	$0.00
MC - COVER MATERIAL *50 tickets and 50 transactions*	0.00	1,416.61	0.00	$0.00
RB - ROAD BASE *1 ticket and 1 transaction*	0.00	22.93	0.00	$0.00
MA - MASSACHUSETTS	0.00	4,417.88	0.00	$0.00
NH - NEW HAMPSHIRE				
FS - FOUNDRY SAND *11 tickets and 11 transactions*	0.00	102.05	0.00	$0.00
ICCB - IC CONT CONCRETE BLOCKS *3 tickets and 3 transactions*	0.00	57.46	0.00	$0.00
ICCD - IC CONSTRUCTION AND DEMO *161 tickets and 161 transactions*	0.00	3,958.44	0.00	$0.00
ICFS - IC FOUNDRY SAND *2 tickets and 2 transactions*	0.00	57.77	0.00	$0.00
ICIN - IC INDUSTRIAL WASTE *1 ticket and 1 transaction*	0.00	7.92	0.00	$0.00
ICMC - IC COVER MATERIAL *33 tickets and 33 transactions*	0.00	617.67	0.00	$0.00
ICMS - IC MSW	0.00	5,174.36	0.00	$0.00

234 tickets and 234 transactions				
ICMX - IC MIXED MSW *46 tickets and 46 transactions*	0.00	1,363.90	0.00	$0.00
IDBT - BULKY BY TON - NH ONLY *2 tickets and 2 transactions*	0.00	1.40	0.00	$0.00
IDCD - ID C & D - NH ONLY *102 tickets and 102 transactions*	0.00	626.48	0.00	$0.00
IDMS - ID MSW - NH ONLY *166 tickets and 166 transactions*	0.00	1,451.90	0.00	$0.00
IN - INDUSTRIAL WASTE *7 tickets and 7 transactions*	0.00	64.10	0.00	$0.00
MC - COVER MATERIAL *35 tickets and 35 transactions*	0.00	612.70	0.00	$0.00
RB - ROAD BASE *21 tickets and 21 transactions*	0.00	666.75	0.00	$0.00
NH - NEW HAMPSHIRE	0.00	14,762.90	0.00	$0.00
VT - VERMONT				
ICCD - IC CONSTRUCTION AND DEMO *1 ticket and 1 transaction*	0.00	5.65	0.00	$0.00
ICMS - IC MSW *29 tickets and 29 transactions*	0.00	218.17	0.00	$0.00
MS - MSW OUTSIDE OF NH *6 tickets and 6 transactions*	0.00	112.00	0.00	$0.00
VT - VERMONT	0.00	335.82	0.00	$0.00
Report Grand Totals	0.00	19,516.60	0.00	$0.00

End of Report

NHDES-S-05-056

ANNUAL FACILITY REPORT
Active Solid Waste Facilities
Reporting Year 2019

Complete and return this form by ***MARCH 31*** to:

NHDES, Waste Management Division, SWMB
PO Box 95, Concord, NH 03302-0095
(603) 271-2925 or solidwasteinfo@des.nh.gov
https://www.des.nh.gov

RSA 149-M/Env-Sw 1105.07

1. Facility Identification (Env-Sw 1105.13(a))

Facility Name NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.	
Physical Street Address 581 TRUDEAU ROAD	
Town/City BETHLEHEM	Permit Number DES-SW-SP-03-002

2. Permittee Information (Env-Sw 1105.13(b))

Name NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.		
Mailing Address P.O. BOX 9		
Town/City BETHLEHEM	State NH	ZIP Code 03574
Email Address kevin.roy@casella.com	Daytime Phone Number (603) 869-3366	

3. Contact Person

Name JOHN GAY	Job Title ENGINEER
Affiliation EMPLOYEE	
Email Address joe.gay@casella.com	Daytime Phone Number (802) 223-5973

4. Facility Status (Env-Sw 1105.13(d))

- ☒ Operated the entire calendar year.
- ☐ Did not operate in the calendar year.
- ☐ Operated part of the calendar year only.
  Started operating on ____/____/2019 (Month / Day) Stopped operating on ____/____/2019 (Month / Day)

5. Facility Status – *Operating Landfills Only* (Env-Sw 1105.13(d))

Estimated remaining life (in years). as of March 31, 2020 +/- 1 year
Estimated remaining permitted capacity (in cubic yards) as of 12/31/2019. +/- 331,000 cy
Attach a brief summary of facility inspection and maintenance activities in accordance with Env-Sw 806.08(j).

6. Facility Operator Information (Env-Sw 1105.13(c))

Name	Certificate Number	Expiration Date	Still Working at Facility as of December 31?
1. See attached		/ /	☐ Yes ☐ No
2.		/ /	☐ Yes ☐ No
3.		/ /	☐ Yes ☐ No
4.		/ /	☐ Yes ☐ No
5.		/ /	☐ Yes ☐ No

☒ Additional Facility Operator Information is attached to this Annual Facility Report.

7. Waste and Recyclables Received & Shipped (Env-Sw 1105.13(e), Env-Sw 1105.13(f))

Type of Waste

Note: Universal Wastes and Used Oil are included in Section 11, so do not enter them here.

☒	Ash	☐	Electronic Waste	☒	Scrap Metal
☐	Asbestos	☐	Food Waste	☐	White Goods
☒	Bulky Waste	☐	Infectious Waste	☒	Other: Approved Special Waste
☒	C&D Debris	☒	Municipal Solid Waste	☒	Other:
☒	Contaminated Soil	☐	Recyclable Materials	☒	Other:

Quantity of Waste

Quantity of Waste Received			Quantity of Waste Shipped	
Non-Recyclable Waste Received:			Non-Recyclable Waste Shipped:	
From NH Sources	233487.63 tons		To NH Destinations	0 tons
From Out-of-State Sources	113345.11 tons		To Out-of-State Destinations	0 tons
Total Received	346832.74 tons		Total Shipped	0 tons
Recyclables Received:			Recyclables Shipped:	
From NH Sources	59.96 tons		To NH Destinations	tons
From Out-of-State Sources	tons		To Out-of-State Destinations	56.57 tons
Total Received	59.96 tons		Total Shipped	tons

8. Estimated Quantity of Waste Stored at the Facility as of December 31, 2019 (Env-Sw 1105.13(i))

Type of Waste	Quantity Onsite as of Dec. 31		Type of Waste	Quantity Onsite as of Dec. 31
Ash	tons		Municipal Solid Waste	tons
Asbestos	tons		Recyclable Materials	tons
Bulky Waste	tons		Scrap Metal	5.39 tons
C&D Debris	tons		White Goods	tons
Contaminated Soil	tons		Other:	
Electronic Waste	tons		Other:	
Food Waste	tons		Other:	
Infectious Waste	tons		Other:	

9. Bypass and Residual Waste (Env-Sw 1105.13(g))

Note: Please refer to the instructions for definitions of bypass waste and residual waste.

Waste	Total Quantity Generated	Quantity Shipped to NH Destination(s)	Quantity Shipped to Out-of-State Destination(s)
Bypass Waste	tons	tons	tons
Residual Waste	tons	tons	tons
Leachate	8190236 gallons	7992895 gallons	97174 gallons

10. Facilities Producing Certified Waste-Derived Products (Env-Sw 1105.13(h))

Type of Waste-Derived Product Produced	Quantity Produced	Quantity Distributed for Use	Estimated Quantity Stored at Facility as of December 31
	tons	tons	tons
	tons	tons	tons
	tons	tons	tons
	tons	tons	tons

☒ I certify that all waste-derived products distributed by the facility for use met the applicable standards for distribution and use pursuant to Env-Sw 1500.

OR

☐ I CAN NOT certify that all waste-derived products distributed by the facility for use met the applicable standards for distribution and use pursuant to Env-Sw 1500, and have attached a detailed explanation of the situation and actions taken or being taken to remedy the problem.

11. Other Activities Taking Place at the Facility

☐	Burn Pile	☐	Refrigerant Removal	☐	Swap Shop
☐	Food Waste Composting	☐	Leaf & Yard Waste Composting	☐	Other:
☐	Used Oil Collection	☐	Sharps Collection	☐	Other:
☐	Used Oil Burner: EPA ID No. NHD				
Universal Waste Collection					
☐	Antifreeze	☐	Batteries (Rechargeable)	☐	Fluorescent Lamps
☐	Batteries (Automotive)	☐	Cathode Ray Tubes (CRTs)	☐	Mercury-Containing Devices

12. Summary and Assessment of Environmental Monitoring (Env-Sw 1105.13(j))

☐ None required and none undertaken.

☐ None required, but environmental monitoring was undertaken voluntarily. A summary and assessment of the environmental monitoring is attached.

☒ Environmental monitoring is required by this facility's permit and/or the Solid Waste Rules. A summary is:

- ☐ Attached to this report; or
- ☒ Provided in the following documents previously submitted to NHDES as indicated below:

Date Submitted **Title of Document** **Type of Monitoring**

13. Public Benefit Discussion (Env-Sw 1105.13(k))

☐ Permit does not include a public benefit condition. No discussion is required.

☒ Permit includes a public benefit condition. A discussion is attached to this report.

14. Compliance Certification (Env-Sw 1105.13(l) or Env-Sw 1105.13(m))

I certify that the facility is in compliance with the requirements of the following:

Yes	No	N/A	
☒	☐		The facility's current operating plan.
☒	☐		All terms and conditions of the facility's permit.
☒	☐	☐	Env-Sw 900 for asbestos, ash, contaminated soils, infectious waste, and/or tires.
☐	☐	☐	Env-Hw 1100 for the management of Universal Wastes.
☐	☐	☐	Env-Hw 807 for the management of Used Oil.
☐	☐	☐	Env-A 1000 for the operation of a burn pile.

If you checked "No" to any of the above, attach an explanation and proposed schedule for achieving compliance.

15. Signature (Env-Sw 1105.13(o))

By signing below, I affirm that the material and information submitted in this report is correct and complete to the best of my knowledge and belief, and that I am the permittee or a person duly authorized to sign for the permittee.

J. GAY — Signature of Permittee or Duly Authorized Individual

3/20/20 — Date

JOHN GAY — Printed Name

ENGINEER — Title

This report contains 59 attached pages.

Facility Name: NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.

2019 ANNUAL FACILITY REPORT

6. Operator Information (Env-Sw 1105.13 (c)

Name:	Certification #:	Expiration Date:	Still Working at Facility as of Dec. 31st?
Stephen Allen	003076	5/10/2020	☒ No
Don Dunn	000513	3/15/2020	☒ Yes
John Gay	004082	9/4/2020	☒ Yes
Bruce Grover	005278	1/20/2021	☒ Yes
Linda Holley	005990	5/3/2020	☒ Yes
Nathan Huntington	004554	1/11/2021	☒ Yes
Thomas Jeffries	003060	10/3/2020	☒ Yes
Sherri Lincoln	005059	4/19/2020	☒ Yes
Annette L Marquis	003489	11/30/2020	☒ Yes
Paul J Moroney	002944	11/16/2020	☒ Yes
Jonathan Reed	005982	8/8/2020	☒ Yes
Kevin A Roy	002543	6/2/2020	☒ Yes
Daniel Smith	005283	1/29/2021	☒ Yes
Scott Stevenson	005966	5/3/2020	☒ Yes
Aldis Wright	004949	12/14/2020	☒ Yes
Terence Wright	004699	9/29/2020	☒ Yes

NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.
2019 ANNUAL FACILITY REPORT

SECTION 5 Summary of Facility Operations and Maintenance Activities.

North Country Environmental Services has conducted environmental monitoring and inspections according to the rules and regulations of the State of New Hampshire and the Facility Operating Plan throughout the year. These include but are not limited to;

1. Tri Annual Groundwater Monitoring
2. Quarterly & Annual compliance with our Multi Sector General Permit,
3. Monthly Spill Prevention Control & Countermeasures Plan inspections
4. Quarterly gas probe sampling,
5. Title V Quarterly and Annual compliance reporting,
6. Monthly NHDES Solid Waste Management Operational Reports,
7. Random Load Inspections,
8. Odor Complaint Logs,
9. Leachate Disposal reporting requirements for the Vermont Agency of Natural Resources, City of Plattsburgh NY, Cities of Franklin and Concord NH,
10. Tri-annual NHDES Leachate Reporting
11. Safety Inspections & Training,
12. Landfill gas well tuning,
13. Landfill Surface Emission scans,
14. Landfill Cover Integrity Inspections.

SECTION VII

PUBLIC BENEFIT DEMONSTRATION
Proposed Stage VI Landfill
North Country Environmental Services, Inc.
Bethlehem, New Hampshire

1.0 INTRODUCTION

By statute, an applicant seeking approval for a solid waste facility must establish that the proposed facility will provide a substantial public benefit to the State of New Hampshire. The criteria for this determination are set forth in RSA 149-M:11, III(a)-(c).

North Country Environmental Services, Inc. (NCES) sought approval for the proposed Stage VI of the NCES facility in Bethlehem in an application submitted to DES on January 14, 2019 (the "2019 Application"). The 2019 Application demonstrated that the capacity provided by Stage VI would satisfy the public benefit criteria in the same manner as NCES had on prior occasions successfully made that demonstration. Approximately one year after receiving the 2019 application, and after determining the application was complete and holding a public hearing, DES notified NCES that it had concluded that the demonstration of public benefit in the 2019 Application did not meet the statutory criteria. While NCES firmly disagreed with DES's conclusion, it recognized that DES would not approve the 2019 Application as submitted. Accordingly, NCES withdrew that application and now submits a new application that includes the following demonstration of public benefit that refines and adds information to meet the alleged deficiencies in the 2019 Application.

NCES expressly reserves, and does not waive, its rights arising from DES's determination that the 2019 Application did not establish that Stage VI will provide a substantial public benefit. The following demonstration supplements and reframes the public benefit showing in the 2019 Application but preserves all of the analytical framework in that application for judicial review if it becomes necessary.

2.0 STATUTORY PUBLIC BENEFIT CRITERIA

RSA 149-M:11, III(a)-(c) prescribes the criteria by which public benefit is to be assessed. These criteria are:

(a) The short- and long-term need for a solid waste facility of the proposed type, size, and location to provide capacity to accommodate solid waste generated within the borders of New Hampshire, which capacity need shall be identified as provided in paragraph V.

(b) The ability of the proposed facility to assist the state in achieving the implementation of the hierarchy and goals under RSA 149-M:2 and RSA 149-M:3.

(c) The ability of the proposed facility to assist in achieving the goals of the state solid waste management plan, and one or more solid waste management plans submitted to and approved by the department under RSA 149-M:24 and RSA 149-M:25.

3.0 CAPACITY NEED (RSA 149-M:11, III(a))

3.1 Role of Capacity in Determining Public Benefit

In enacting the public benefit requirement, the general court declared as its purpose ensuring "that adequate capacity exists within the state to accommodate the solid waste generated within the borders of the state." RSA 149-M:11, I(b). Ensuring adequate capacity is quite different, however, from restricting capacity to accommodate only in-state waste. Nothing in RSA ch. 149-M directs the department to use the public benefit requirement to permit waste disposal facilities only to the extent necessary to meet New Hampshire's capacity needs.

As a result, if a proposed facility assists the state in providing adequate capacity for New Hampshire waste and otherwise meets the public benefit criteria, the facility's public benefit is established. The statute therefore passes constitutional muster in that it does not discriminate against out-of-state waste.[1] A public benefit scheme that restricted permitted capacity to in-state requirements would violate the commerce clause of the United States Constitution. As the United States Supreme Court has held:

> Even assuming that landfill space is a "natural resource," "a State may not accord its own inhabitants a preferred right of access over consumers in other States to natural resources within its borders." . . . However serious the shortage of landfill space may be, . . . "[n]o State may attempt to isolate itself from a problem common to the several States by raising barriers to the free flow of interstate trade."

Oregon Waste Systems, Inc. v. Department of Environmental Quality of the State of Oregon, 511 U.S. 93, 107 (1994), *quoting City of Philadelphia v. New Jersey*, 437 U.S. 617, 627 (1978). *See also Fort Gratiot Landfill v. Michigan Dep't. of Natural Resources*, 504 U.S. 353, 367 (1992) ("no valid health and safety reason for limiting the amount of waste that a landfill operator may accept from outside the State but not the amount that the operator may accept from inside the State."); *C&A Carbone, Inc. v. Town of Clarkston*, 511 U.S. 383, 394 (1994); *but see United Haulers Assoc., Inc. v. Oneida-Herkimer Solid Waste Management Authority*, 504 U.S. 353 (2007) (under some circumstances municipalities *owning* waste management facilities may impose flow control over waste generated within their municipal boundaries to those facilities).

---

[1] NCES notes, however, that to the extent that the premise of DES's January 2020 interpretation of the public benefit requirement is that Stage VI does not satisfy the requirement because New Hampshire waste that would have been deposited in Stage VI will displace out-of-state waste accepted at other facilities, it would amount to discrimination against imported waste. Until now, DES has avoided any interpretation of RSA ch. 149-M that would result in such discrimination, even to the point of not implementing the requirements of RSA 149-M:6, XI.

3.2 Statutory Methodology for Determination of Capacity Need for N.H. Waste

RSA 149-M:11, III(a) specifies the methodology the department must employ to determine the "capacity [needed] to accommodate solid waste generated within the borders of New Hampshire." That determination is to be made pursuant to RSA 149-M:11, V, which requires the department to:

(a) Project, as necessary, the amount of solid waste which will be generated within the borders of New Hampshire for a 20-year planning period. In making these projections the department shall assume that all unlined capacity within the state is no longer available to receive solid waste.

(b) Identify the types of solid waste which can be managed according to each of the methods listed under RSA 149-M:3 and determine which such types will be received by the proposed facility.

(c) Identify, according to type of solid waste received, all permitted facilities operating in the state on the date a determination is made under this section.

(d) Identify any shortfall in the capacity of existing facilities to accommodate the type of solid waste to be received at the proposed facility for 20 years from the date a determination is made under this section. If such a shortfall is identified, a capacity need for the proposed type of facility shall be deemed to exist to the extent that the proposed facility satisfies that need.

3.2.1 Waste Generation and Diversion for the 20-Year Planning Period (RSA 149-M:11, V(a) and (b)).

New Hampshire's waste disposal needs for the requisite 20-year period may be derived from waste generation and diversion data provided by the New Hampshire Department of Environmental Services-Permitting and Design Review Section (NHDES-P&DRS) and population data projections developed by the New Hampshire Office of Energy and Planning (OE&P). RSA 149-M:11, V(d) provides that the 20-year planning period begins on "the date a determination is made under this section." For purposes of this public benefit demonstration, NCES assumes that, in accordance with RSA 541-A:29 and N.H. Code Admin. R. 305.02(a), the department will render a decision on its application no later than September of 2020. For the sake of simplicity, then, NCES has assumed that the 20-year planning period commences on September 1, 2020 and runs through August 31, 2040.

The NHDES-P&DRS waste generation data are obtained from annual facility reports submitted by each disposal and processing facility handling New Hampshire-generated solid waste. 2018 is the most recent year with complete data from all relevant facilities and therefore serves as the baseline year for projecting waste quantities. The 2018 New Hampshire-generated waste quantities and types of waste are shown in Table 1 for each disposal and processing facility.

Data on file with NHDES-P&DRS indicate that a total of 1,076,598 tons of municipal solid waste (MSW) were generated in New Hampshire in 2018 from residential, commercial, and industrial sources. Of this total, NHDES-P&DRS estimated 358,169 tons of MSW, or about 33.3 percent of the waste stream, were recycled.[2] NHDES-P&DRS also estimated that 115,002 tons of MSW were exported for disposal. Including the exported tons, there were 718,429 tons of MSW generated in New Hampshire in 2018 requiring disposal.[3] Table 1.

According to data on file with NHDES-P&DRS, New Hampshire generated 296,031 tons of construction and demolition debris (C&D) in 2018 requiring disposal; an additional 118,216 tons were diverted through recycling at Environmental Resource Return Corp (ERRCO) and LL&S, Inc., yielding a 28.5 percent recycling rate for C&D, and a total of 414,247 of C&D to be disposed of in the state. Table 1.

Finally, in-state generation of non-hazardous special waste as documented in records on file with NHDES-P&DRS totaled 283,110 tons. Incinerator ash generated by the Waste-to-Energy facility in Concord is hauled to an out-of-state facility so there is no need to take ash generation and disposal into account in this analysis.[4]

NCES projected waste quantities during the 20-year planning period using New Hampshire population projections in a document entitled "County Population Projections, 2016 by Age and Sex" prepared by the OE&P and released in September 2016. The OE&P projects a population increase of 8.8 percent from 2010 to 2040 in New Hampshire. OE&P estimated population at five-year intervals, with larger projected population increases for the 2020 and 2025 intervals and less growth in earlier and later years. For the purposes of these waste projections, NCES linearly interpolated between each five-year projection provided by OE&P to estimate population projections for each year of the planning period.

The OE&P estimated the New Hampshire population for 2018 to have been 1,356,458.[5] Using the waste generation data in Table 1, the average per capita generation rate of waste requiring disposal in New Hampshire solid waste facilities is 0.53 tons per year for MSW after recycling and exports; 0.22 tons per year for C&D after recycling; and 0.21 tons per year for non-hazardous special wastes. Applying these per capita generation rates to the projected population yields the projected waste quantities requiring disposal over the planning period. The population estimates and waste projection by year and waste type are presented in Table 2. The projected quantity of

---

[2] RSA 149-M:2, I, set a goal for the state to achieve, by the year 2000, "40 percent minimum weight diversion of solid waste landfilled or incinerated on a per capita basis." By its own terms, this goal expired twenty years ago. (For a more detailed discussion see section 4.1, *post.*) Consequently, NCES uses the most recent actual recycling rates produced by the department in this analysis.

[3] RSA 149-M:11, V(a) requires DES to take into account all waste generated in the state. NCES has been unable to find export data for C&D or non-hazardous special waste, so the additional quantities of those waste types are unknown.

[4] Because this ash is disposed at an out-of-state facility, it is included in the "Exported Waste" total in Table 1.

[5] 2018 Population Estimates of New Hampshire Cities and Towns, prepared by the New Hampshire Office of Strategic Initiatives, Published August 2019.

New Hampshire waste requiring disposal over the planning period is 27,050,000 tons. See Table 2 n.6.

3.2.2 Types of Waste Received at the NCES Facility (RSA 149-M:11, V(b))

The following types of waste will be received by NCES during the life of the facility: MSW from residential, commercial and industrial sources, C&D, ash residuals from a municipal solid waste incinerator (H-B Refuse District), wood ash, foundry sand, industrial special waste, contaminated soil, and treatment plant sludge/grit. Wastes authorized for disposal at the facility are described in more detail in Section 2.1 of the Facility Operating Plan included with the Stage VI application.

3.2.3 Permitted Disposal Capacity (RSA 149-M:11, V(c))

RSA 149-M:11, V(c) requires the department to identify "according to type of solid waste received, all permitted facilities operating in the state" as of the time of the public benefit determination. RSA 149-M:11, V(d) provides that the permitted disposal capacity for each facility must be identified for a 20-year period to determine whether a capacity shortfall exists.

Permitted waste disposal facilities in New Hampshire include six lined landfills and one waste-to-energy (WTE) plant. In addition, there are two C&D processing facilities in southern New Hampshire, LL&S in Salem and ERRCO in Epping. Any C&D processed at these facilities that is not recycled is landfilled and is captured in the receiving facility's AFP, but they'll&S and ERRCO are not themselves disposal facilities. C&D cannot be processed in a WTE facility. The capacity provided by the C&D processing facilities, unlined landfills (*see* RSA 149-M:11, V(a)) and incinerators without waste-to-energy was not included in the evaluation of permitted disposal capacity in New Hampshire.

Table 3 identifies authorized waste types for each of the six lined landfills in New Hampshire.

As a preliminary matter, the department must determine what the general court meant by "permitted facilities" in RSA 149-M:11, V(c). While the statute does not define "permitted facilities," the Solid Waste Rules of the Waste Management Division define "permitted facility" as "a facility with a valid permit issued pursuant to RSA 149-M and the solid waste rules." Env-Sw 104.05. A "permit" is "an authorization from the department for the construction and operation of a facility." Env-Sw 104.01; RSA 149-M:4, XIV. A standard permit or a Type I-A permit modification authorizes only the "future construction and operation" of new landfill capacity.[6] *See, e.g.,* Type I-A Record of Permit Modification Issued to NCES (8-15-14) §III(2). Such approvals typically include as a condition that the permittee seek and obtain a separate approval to construct any of the new capacity (*id.* at §IV(5); Env-Sw 1104.01), and by rule the permittee must notify the department that it intends to operate new capacity and cannot commence operation until the department has stamped and returned the notice of intent. Env-Sw 1105.01-.03. Thus, even if a landfill facility has a permit for a specific design footprint, only those cells for which an applicant

[6] In theory an applicant can seek and obtain construction approval simultaneously with the standard permit or Type I-A modification. In such a situation, the permittee still cannot operate the facility under Env-Sw 1105.01-.03 until it has submitted a notice of intent to operate and received a stamped copy from DES.

has received construction and operating approvals from the department may be considered "permitted facilities" for purposes of determining public benefit.

This is confirmed by the language of RSA 149-M:11, V(c) which requires the department to assess the amount of disposal capacity in the state by identifying "all permitted facilities *operating* in the state" (emphasis supplied) in connection with its public-benefit analysis. Only a landfill cell with construction and operating approvals may "operate" in the State of New Hampshire. *See* Env-Sw 305.05 (b); Env-Sw 1105.03. It would be speculation to assume that all capacity for which DES has granted design approval will also eventually receive construction or operating approval.

Historically, however, DES has projected capacity on the basis of the design approved by standard permits or, in some cases, by Type I-A permit modifications. Table 4 therefore provides totals for the 20-year planning period of both the capacity for which DES has issued a permit for operating approval and the capacity for which DES has issued only design approval. It is important to recognize that to the extent the department includes capacity that has only received design approval, it overstates capacity for purposes of applying the public-benefit criteria.

NHDES's latest estimates of the life of the state's remaining landfill capacity, updated by NCES to January 1, 2019 utilizing each facility's 2018 annual facility report, based on *design* approvals are: TLR-III (17.7 years or through August 2035), Lebanon (6.4 years or through mid-2026), Mt. Carberry (5 years or through April 2025)[7], and NCES (1 year into 2021).[8] Design approvals for Nashua and Conway are in excess of the 20-year planning period. Table 4 also updates NHDES's estimates of remaining design capacity to September 1, 2020, because an as-yet unknown amount of such capacity will be consumed in 2020 before NHDES issues a public benefit finding, and providing an update to September 1, 2020, enables NHDES to gauge how much capacity remains at any given time in 2020. Capacity projections from 2019 to 2020 assume that capacity is fully consumed at the end of a facility's permitted life expectancy even if the AFR for that facility projects capacity beyond this life expectancy.

The fill rates utilized in Table 4 for each landfill are: 1,090,000 TPY (TLR-III), 62,000 TPY (Nashua), 50,000 TPY (Lebanon), 250,000 TPY (Mt. Carberry), 2,500 TPY (Conway), and 183,000 TPY (NCES).[9]

The total estimated landfill capacity with design approval for the 20-year planning period is the sum of the products of each facility's annual fill rate and the number of years of its remaining lifespan, up to 20 years. This equates to about 24,040,117 tons of capacity with design approval over a 20-year planning period commencing September 1, 2020. Note that this tonnage is slightly less than the total available capacity over the planning period because the Mt. Washington/Conway

---

[7] The Mt. Carberry facility is uniquely situated because it has received design approval for capacity that has not been shown to provide a public benefit. See Table 4 n.7. The remaining design capacity figure given in the text represents the design capacity for which Mt. Carberry *has* satisfied the public benefit requirement. The remaining capacity set forth in this paragraph reflects the recent approval of Mt. Carberry's Stage 12 expansion, which requires that it be operated through April 2025.

[8] At NCES's diminished projected acceptance rates, it expects the capacity of Stage V to last into 2021.

[9] NCES's fill rate is the projected fill rate for 2020.

Landfill and the Nashua Four Hills Landfill are not projected to utilize their full capacity over the planning period, while the other landfills are. See Table 4.

The estimates of the life of the state's remaining landfill capacity (as set forth in each facility's 2018 annual facility report) updated by NCES to September 1, 2020, for which *operating approval* has been granted produce a substantially different result. Those estimates are: TLR-III (2.8 years or through March 2023), Nashua (1.9 years or midway through 2023), Lebanon (6.4 years in Phase 2 or through mid-2026), Mt. Carberry (2.6 years in Phase 2 or through 2022), Conway (47.4 years in Phase 3 or through 2067), and NCES (1 year in Stage V or through April 2021). For the reasons described in the preceding paragraph, NCES has also updated to September 1, 2020, the estimate of remaining capacity for which NHDES has granted permitted operating approval. See Table 4. Using the fill rates also set forth in Section 3.2.1, the total estimated landfill capacity with operating approval for the 20-year planning period as of September 1, 2020, is about 6,833,458 tons. See Table 4.

The permitted nominal disposal capacity of the Concord waste-to-energy facility is 575 tons per day (TPD) (209,875 TPY). Its actual acceptance rate in 2018 was 193,329 tons, which is consistent with typical years, and the facility generally does not exceed 200,000 TPY. Incineration, again, does not "dispose" of waste; rather, it reduces its weight by two-thirds by exporting ash to out-of-state facilities.[10] As a result, the actual disposal capacity of the Concord facility is 140,000 TPY. Table 4.

3.2.4 Range of Capacity Shortfall (RSA 149-M:11, V(d))

Under RSA 149-M:11, V(d), DES is required to "[i]dentify *any* shortfall in the capacity of existing facilities to accommodate the type of solid waste to be received at the proposed facility *for 20 years from the date a determination is made* under this section. If *such* a shortfall is identified, a capacity need for the proposed type of facility shall be deemed to exist to the extent that the proposed facility satisfies that need." Emphasis supplied. RSA 149-M:11, V(d).

By its express terms, then, the statute requires DES to determine whether there is *any* shortfall *over the 20-year planning period.* If there is any *such* shortfall, the proposed capacity is "deemed" to provide a public benefit so long as the applicant provides that capacity during the planning period. Accordingly, in seeking approval for Stage VI in the 2019 Application, NCES employed the same analysis that it had applied successfully[11] to demonstrate public benefit in the Stage V application. In the 2019 Application, NCES established that the waste disposal capacity through the planning period is the sum of projected landfill capacity (4,001,000 to 21,113,000 tons) and the capacity of the Concord waste-to-energy facility (2019 Application, Public Benefit Demonstration at Table 3). Accordingly, the total statewide permitted waste disposal capacity as

---

[10] See n.4, *ante*.

[11] See August 15, 2014 letter of decision from NHDES to NCES granting the requested modification and waiver for Stage V at page 4 of 5; see also NHDES's August 15, 2014 Responses to Public Comment at pages 10-11 (recognizing that proposed Stage V "will be used for disposal of New Hampshire generated waste well within, rather than beyond, the statutory 20-year planning period") and page 12 ("Statewide, the remaining permitted landfill capacity in New Hampshire at the beginning of 2014 was approximately 20,452,430 cubic yards").

of January 1, 2020, for the planning period was estimated to be 6,801,000 to 23,913,000 tons assuming 20 operating years of the Concord facility. The capacity from the state's projected waste generation less diversion (*id.* at Table 2) produced an estimated 20-year shortfall of 3,800,000 to 21,000,000 tons. All of the Stage VI capacity would be used during the planning period, and the amount of that capacity is less than the shortfall. For these reasons, and consistent with the conclusions drawn in the Stage V application and permit approval, the applicant concluded in its 2019 Application that Stage VI provides a public benefit.

Late in its review of the 2019 Application, however, DES formulated[12] a different analysis to determine whether the proposed facility would provide a substantial public benefit. Rather than assessing whether there will be a shortfall during the 20-year planning period, DES added a second temporal element and examined the capacity need and disposal capacity in the planning period to determine *when* the shortfall would occur. Based on its assumptions and calculations, DES estimated that the state will have excess disposal capacity until the shortfall occurs in 2025. In the 2019 Application NCES proposed that Stage VI would provide 2.3 years of capacity that would be exhausted before 2025. DES determined that Stage VI would not provide a public benefit because it "would not provide disposal capacity during a time period that the data show the state has a disposal capacity shortfall."[13] DES therefore concluded that the 2019 Application did not meet the criterion in RSA 149-M:11, III(a).[14]

NCES has updated its shortfall calculations to reflect the most recent available data. The waste disposal capacity through the planning period is the sum of projected landfill capacity and the capacity of the Concord waste-to-energy facility as of September 1, 2020 (as set forth in Table 4). As of September 1, 2020, New Hampshire will have operating capacity of 6,833,458 tons and design capacity of 21,240,117 tons at its landfills, and the Concord facility will have 2.8 million tons of available capacity during the planning period. The range of total statewide permitted capacity as of September 1, 2020, for the planning period is 9,633,458 to 24,040,117 tons. Deducting this range of capacity from the state's projected waste generation less diversion (Table 2) 27,050,000 tons produces an estimated 20-year shortfall of 3,009,883 (design capacity) to 17,416,542 (operating capacity) tons.

Even using the assumptions DES employed in its analysis of the public benefit demonstration in the 2019 Application – assumptions that significantly overstate New Hampshire's remaining disposal capacity available for in-state waste – NCES can satisfy this new element of DES's analysis by operating Stage VI through 2026 at an average fill rate of 175,000 TPY.

3.3 Need for the Stage VI Facility (RSA 149-M:11, III(a))

As noted above, "capacity need" contemplated in RSA 149-M:11, III(a) is to be determined in accordance with RSA 149-M:11, V. The law identifies other factors DES is to consider in deciding the need for a proposed facility. These factors include the short-term and long-term impact of the

---

[12] The legislature did not amend RSA 149-M:11 and DES did not undertake a rulemaking revising its application review criteria as a predicate for a new interpretation of the public benefit requirement. Nor has DES articulated how an applicant can bring itself into compliance with the agency's new interpretation.
[13] Application Review Summary (2/12/2020) at 33.
[14] Application Review Summary (2/12/2020) at 35.

facility on the state's management of its solid waste as well as the proposed type, size, and location of the facility. RSA 149-M:11, III(a). These factors also militate in favor of a finding that Stage VI will provide a substantial public benefit.

3.3.1 Short-Term and Long-Term Impact

RSA 149-M:11, III(a) requires DES to consider the "short- and long-term need" for a proposed facility as part of the public benefit analysis. This requirement serves the purpose of enabling DES to take into account the sufficiency of the state's disposal capacity in more comprehensive terms.

For example, RSA 149-M:11, V, is designed to ensure that there is – at least notionally – adequate disposal capacity in the state over the 20-year planning period for waste generated in the state. RSA 149-M:11, III(a), however, gives DES the authority to account for the effect of New Hampshire's net importation of solid waste for disposal. DES can only assess the short-term and long-term need for new capacity if it considers how much New Hampshire capacity will actually be consumed by imported waste.

The Biennial Solid Waste Report prepared by NHDES in October 2019 indicates that approximately 1,160,000 tons of solid waste were imported from out-of-state sources. Of that amount, approximately 80%, or 918,798 tons, were received by the TLR-III facility.[15] According to the Biennial Solid Waste Report, approximately 51% of the solid waste received at New Hampshire landfills comes from out of state. Assuming that net imports remain at 2019 levels over the 20-year planning period, imported waste will consume over 23,200,000 tons of New Hampshire capacity over that period. This increases the capacity shortfall calculated under RSA 149-M:11, V, for the planning period from a range of 3,009,883 to 17,416,542 tons to a range of 26,209,883 to 40,616,542 tons. It is fair to describe an impending shortfall of this magnitude as a crisis. Any disposal capacity provided during the planning period mitigates this crisis.

Another shortcoming of the analysis performed under RSA 149-M:11, V, is that it assumes implicitly that all disposal capacity in the state is fungible and, consequently, if a disposal facility ceases operations the remaining facilities will accept the volume of New Hampshire waste previously accepted at the closed facility. Each permitted facility, however, has a limit on the average tonnage of waste it can accept each year. WTE facilities have finite throughput capacities, municipal landfills have limited service territories, and commercial landfills have permit conditions setting average annual acceptance rates. The Concord WTE facility has historically operated at or near capacity, the municipal landfills cannot accept waste generated outside their boundaries, and the commercial landfills ordinarily accept *at least* their annual permitted average. As a consequence, closure of a WTE or commercial landfill facility could conceivably result in a situation in which waste generated in New Hampshire cannot be disposed of in the state. Even if the remaining facilities could accommodate the volume of waste previously accepted at the closed facility, moreover, the consumption of their remaining capacity would obviously be accelerated, hastening a statewide capacity shortfall.

Long-term planning for solid waste disposal capacity should also contemplate natural disasters and similar unforeseeable events. The State Emergency Operations Plan (SEOP) includes multiple

[15] 2018 Annual Facility Report of TLR-III Refuse Disposal Facility.

provisions requiring DES to coordinate the disposal of hazardous waste and other debris generated during a disaster. One such incident can dramatically affect the amount of the staset's disposal capacity, and DES should take such contingencies into account in assessing the need for Stage VI.

RSA 149-M:11, III(a), authorizes DES to consider the overall impact upon the state's waste management and disposal resources of any decision on an application for new capacity in the state. Continued operation of the NCES facility through 2026 will help the state to ameliorate the effects of net waste imports on its long-range capacity planning and will avoid the stepped-up depletion of the state's disposal capacity if NCES were to cease operations in 2021. These considerations support the conclusion that Stage VI will assist in meeting both a short-term and long-term need for waste disposal in New Hampshire.

3.3.2 Type, Size, and Location of Stage VI

3.3.2.1 Type and Size of the Facility

The estimated disposal capacity provided by Stage VI is 1,241,000 cubic yards. At an estimated waste density of 1,520 pounds per cubic yard, Stage VI provides capacity for about 943,000 tons of waste. The estimated total of Stage VI capacity would provide about 5.3 years of capacity at the projected fill rate of 175,000 TPY through 2026. If the Stage VI capacity is permitted, NCES can commit to operating the facility through at least December 31, 2026 and will make capacity available for New Hampshire generated solid waste throughout the entire operating life of the Stage VI facility.

3.3.2.2 Location of the Facility and the NCES "Wasteshed"

The NCES landfill is located in the north central portion of the state. The landfill is accessed through nearby U.S. Routes 2, 3, and 302, and Interstate Routes 93 and 91. These major roadways provide efficient transportation of waste generated in the region and state to NCES. Table 5 presents a list of waste quantities received by the NCES landfill from various points of origin in the state since 2016. Figure 1 shows the locations of these towns, many of which are in northern or central portions of the state.

On average, NCES has had first party contracts with 21 New Hampshire municipalities per year over the last ten years. The following 24 municipalities sent their waste directly to NCES for disposal through curbside programs in 2018, utilizing either with their own transportation vehicles, Casella Waste Systems, Inc. ("CWS") affiliate hauling services, or third party haulers.

Ashland	Dorchester	Hebron-Bridgewater Regional District	Plymouth
Bath	Easton	Lincoln/Woodstock	Rumney
Bethlehem	Ellsworth	Lisbon	Sugar Hill
Campton	Franconia	Littleton	Sunapee
Charlestown	Goffstown	Manchester (sludge)	Thornton
Dalton	Groton	Nashua (sludge)	Waterville Valley

NCES is a subsidiary of CWS and is part of an integrated waste management company. Among the other CWS subsidiaries operating in New Hampshire are Gobin Disposal Systems in Newport, All Waste C&D Transfer Station in Lebanon, Bestway Disposal Services in Belmont and Raymond, and the CWS Allenstown Transfer Station. White River Junction, Vermont Hauling also removes waste from New Hampshire communities. NCES operates a transfer station to serve its host community, Bethlehem, and surrounding towns on the NCES site. Table 6 identifies the New Hampshire municipalities served by each of these CWS transfer stations directing waste to NCES; Figure 2 depicts these facilities and the municipalities in southern New Hampshire that they serve.

Through its hauling operations and transfer station, Gobin and White River Junction collected and transferred municipal solid waste and construction and demolition debris from 39 New Hampshire towns in 2018. Approximately two-thirds of the waste collected and transferred by Gobin was disposed of at NCES. Gobin manages tonnage that had previously been disposed of at the Wheelabrator Claremont waste-to-energy facility, which closed in September 2013. The New Hampshire towns served by Gobin and White River Junction in 2018 are listed in Table 7 and on the state map presented in Figure 2.

Casella Waste Management of Massachusetts, Inc. includes the hauling operations and transfer stations in Salem, Raymond, Allenstown, Concord, and Belmont, New Hampshire. In 2019, four CWS transfer stations managed municipal solid waste (MSW), construction and demolition (C&D), and recyclables that originated from 159 municipalities within New Hampshire. Over 25,000 tons of recycling was transferred at these facilities and moved to processing facilities in Massachusetts and Maine. In 2020, CWS anticipates sending over 38,000 tons of C&D to a processing facility in Maine and nearly 20,000 tons of MSW to waste to energy facilities in New Hampshire and Massachusetts.

NCES also has a business relationship with Monadnock Disposal Services (MDS) in Jaffrey, which is a private hauler and transfer station operator not affiliated with CWS. The MDS transfer station serves 58 communities in the south-central portion of the state. NCES is one of four disposal facilities used by MDS. The municipalities serviced by MDS are shown on Figure 3 and are listed in Table 8.

The NCES service area therefore encompasses large areas of the state. A total of 154 towns and cities out of a total of 234 utilize the disposal services of NCES, either directly or through affiliated or unaffiliated intermediaries. The locations of these towns are shown on Figure 4.

Other facilities theoretically available to accept waste from the NCES service area are limited to the Mt. Carberry Landfill and TLR-III. The public landfills in Lebanon, Nashua, and Conway cannot accept waste from towns or cities outside of their districts. The Mt. Carberry Landfill is located approximately 40 miles northeast of NCES in a sparsely populated area of the state. Of the 271,484 tons of waste Mt. Carberry received in 2018 approximately 79,000 tons were residential and commercial/industrial MSW from in-state sources and about 58,243 tons were C&D from New Hampshire.[16] The potential for Mt. Carberry to serve large portions of the NCES service area to the south is also limited by transportation costs, and the fact that waste originating

[16] 2018 Annual Facility Report of AVRRDD-Mt. Carberry Landfill.

in the North Country is typically hauled by packer truck or in rolloffs, making all-in disposal pricing particularly sensitive to increased transportation costs.

The Concord WTE facility is typically run at or near full capacity. In 2018, the facility accepted just under 200,000 tons of waste.[17] The location of TLR-III limits the potential to accept waste from NCES service areas in the northern and western portions of the state due to transportation costs. Waste Management's haulers in the northern portion of its service area already dispose of MSW at NCES rather than at TLR-III, likely due to transportation costs to Rochester and increased tipping fees.

3.3.2.3 Bethlehem Host Community Services

NCES operates a transfer station on the landfill site for the Town of Bethlehem and surrounding communities. The transfer station accepts universal wastes, used oil, and CFC appliances. Leaf and yard waste is composted on site. Municipal solid waste single stream recycling is provided at the site for Bethlehem residents and various other local communities serviced by NCES, CWS affiliates, and third parties. Propane tanks, scrap metal, and tires are also collected for recycling at the transfer station.

As part of the host community agreement between NCES and the Town of Bethlehem, NCES provides roadside collection and disposal of municipal solid waste and curbside pickup of comingled recyclables to more than 1,000 households within the town at no charge to the town or its residents. NCES accepts at the transfer station all wastes as permitted by the State that are generated by residents of the town at no charge to the town or its residents with the exception of C&D. In 2018, NCES managed 1,884,580 pounds (or over 942 tons) of single stream recyclables that were ultimately diverted from the landfill; most of these materials originated in Bethlehem and its surrounding communities.

Collectively, then, NCES's location and its role in an integrated waste and recycling management company enable it to provide cost-effective disposal capacity to the lightly-populated northwestern part of the state. RSA 149-M:11, III (a), requires DES to take account of the advantages created by NCES's location in making its public benefit determination. This factor also supports a finding of substantial public benefit.

4.0 IMPLEMENTATION OF STATE HIERARCHY AND GOALS (RSA 149-M:11, III(b))

This portion of the application demonstrates that the Stage VI expansion to the NCES facility will assist the State in achieving the implementation of the hierarchy and goals under RSA 149-M:2 and M:3, as required by RSA 149-M:11, III(b).

[17] Wheelabrator Concord Company filed an Annual Facility Report documenting the waste received at the facility in 2018. Of the 193,329 tons of non-recyclable waste received, 174,673 tons were generated in New Hampshire.

4.1 Pertinent New Hampshire Statutes

RSA 149-M:2 provides:

> I. The general court declares its concern that there are environmental and economic issues pertaining to the disposal of solid waste in landfills and incinerators. It is important to reserve landfill and incinerator capacity for solid wastes which cannot be reduced, reused, recycled or composted. The general court 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.
>
> II. 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 established in RSA 149-M:2 and 149-M:3. The department shall not take any action relative to the 40 percent weight reduction goal which causes the municipalities organized under RSA 53-A and 1986, 139 or RSA 53-B to violate or incur penalties under legal obligations existing on June 26, 1990.

RSA 149-M:2 was enacted in 1996 and amended in 1999. The statute does not specify a period over which the "weight diversion goal" was to be achieved. The 1996 version of RSA 149-M:2 set a 40% "weight reduction goal" for "the period 1990-2000." Given that the 1999 amendment of RSA ch. 149-M:2 became effective in July of 1999, however, the general court evidently intended the 40% weight *diversion* goal to be accomplished between 1999 and 2000.

Read literally, the language of RSA 149-M:2 establishing the 40% goal seems to measure its achievement simply through calculating the tonnage of waste disposed of in 1999 by incineration and landfilling and comparing it to the tonnage disposed of in 2000 by the same methods.[18] However the statute is construed, though, it is clear that the 40% goal expired in 2000, and there is therefore no longer anything a proposed facility can do to assist the state in implementing this goal.

There is nonetheless an explicit statutory policy of "reserv[ing] landfill and incinerator capacity for solid wastes which cannot be reduced, reused, recycled or composted." RSA 149-M:2, I. This preference for diversion is reflected in the "hierarchy" found in RSA 149-M:3:

---

[18] The statute also requires adjusting these calculations to account for changes in population. RSA 149-M:2, I ("on a per capita basis.").

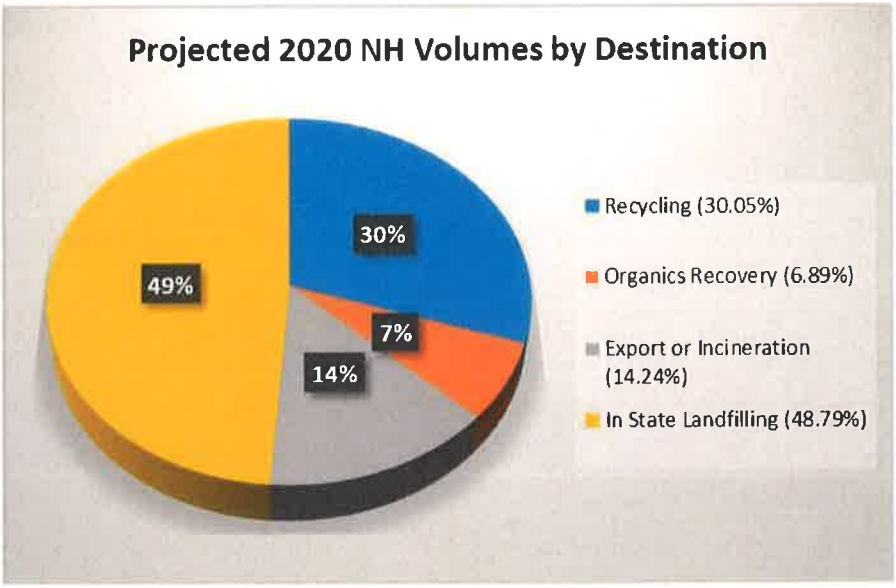
> The general court supports integrated solid waste disposal solutions which are environmentally safe and economically sound. The general court endorses, in order of preference, the following waste management methods:
>
> I. Source reduction.
> II. Recycling and reuse.
> III. Composting.
> IV. Waste-to-energy technology (including incineration).
> V. Incineration without resource recovery.
> VI. Landfilling.

This aspect of the public benefit analysis therefore consists of two inquiries: (1) whether the proposed facility is part of an integrated set of solid waste disposal solutions providing safe and economical waste management and (2) whether the integrated set of solutions of which the facility is a part is consistent with the hierarchy.

It would be contrary to the statutory scheme to consider NCES's public benefit demonstration outside of the context of the integrated set of solutions in which it participates. Indeed, to do so would be to ignore the first sentence of RSA 149-M:3. The legislature's support of integrated solutions recognizes that the widespread availability of waste diversion options at the top of the hierarchy depends upon the infrastructure, economies of scale, and cross-subsidies produced by vertical integration of management of the waste stream. For purposes of applying the hierarchy, there is a vast difference between permitting a stand-alone landfill like the Mt. Carberry facility and permitting a landfill that takes the waste left after the owner and its affiliates have deployed multiple strategies to reduce waste production and to recycle, reuse, and compost substantial portions of the waste stream.

While the state has not yet reached its goal of 40% diversion, CWS has exceeded that objective, as it projects[19] that more than 51% of the New Hampshire waste it will collect in 2020 will be diverted to recycling or other alternatives to landfilling:

[19] These projections are based on 2019 tonnages for New Hampshire solid waste collection across the four categories reflected in the chart.



4.2 Implementation of the Solid Waste Hierarchy

This section details how NCES and its affiliates advance the preferred solid waste management methods listed in RSA 149-M:3.

4.2.1 Source Reduction and Interception

NCES and its CWS affiliates comprise an integrated system of resource management facilities located throughout New Hampshire and the region. They also manage waste collected by unaffiliated companies, enabling them to "plug into" the integrated system. Among the more recent examples of the accomplishments of NCES and its affiliates in reducing or intercepting waste from the source are the following:

- NCES operates a transfer station in Bethlehem that diverts solid waste streams that are not allowed to be landfilled and promotes recycling practices in the region.
- CWS's All-Waste C&D Transfer Station in Lebanon received a Type I-B permit modification to remove wood from the waste stream and process it into wood chips to be utilized at the Lebanon landfill to stabilize internal landfill roads and working areas.[20] These efforts reduce the amount of C&D to be disposed in the landfill and put materials that would otherwise be discarded to an alternate, productive use. In 2019, All-Waste C&D diverted more than 300 tons of wood out of the waste stream for chipping pursuant to this permit. CWS's Gobin transfer station also diverted 52 tons of wood out of the waste stream for similar processing last year.
- CWS reduced the volume of the waste stream by diverting 690 tons of food waste to sustainable uses in 2019. CWS provides food waste collection services for New Hampshire institutions including Dartmouth College, Southern New Hampshire

[20] *See* Permit No. DES-SW-SP-00-002; permit modification approved September 10, 2018.

University ("SNHU"), Phillips Exeter Academy, and Dartmouth-Hitchcock Medical Center. In 2020, CWS will launch its first Grind2Energy facility in New Hampshire at St. Paul's School. Grind2Energy has been successfully utilized by CWS customers in Massachusetts to divert food waste from landfills. This technology grinds food waste into an energy-rich slurry from which methane can be extracted for energy production. The biosolid byproduct can be used as fertilizer. Food waste from St. Paul's School will soon be eliminated from trash cans, rolloffs, and landfill deliveries and instead converted into energy and fertilizer. This advances two key environmental objectives: source reduction and renewable energy production.

- CWS collaborates with SNHU and Phillips Exeter Academy for "green move-out" events at the end of each school year to promote the reuse and donation of furniture and other goods as students leave campus. CWS typically provides roll-off containers, transportation services, and signage to encourage participation in this program. CWS conducted two of these events in New Hampshire in 2019 and successfully diverted 1.5 tons of waste from disposal. The company also coordinates the donation of large materials to organizations like Goodwill, ensuring that such items remain in use and out of the waste stream, and organizes staff and volunteers to manage these green logistics on the date when students move off of campus. Participation in "green move-outs" has diverted approximately 100 tons of goods and products to donation and reuse in recent years. CWS also collaborates with Goodwill NNE to promote the donation and reuse of furniture, textiles, and other goods throughout the region. Posters prepared by CWS to promote these activities and other campus recycling initiatives are appended to this application in Figure 5.
- CWS has cultivated a strong and growing partnership with Goodwill NNE since 2011 in which CWS optimizes recycling at Goodwill NNE facilities and arranges for the organization to provide reuse/donation services to CWS customers. In 2019, Goodwill diverted more than 350 tons of material out of the waste stream with CWS's ZeroSort recycling program.
- Wood ash is diverted from the waste stream to agriculture, animal bedding, and composting. Casella diverts approximately 8,500 tons of wood ash per year from the Granite Shore Power Schiller Station. This diversion is performed through CWS's Casella Organics Group affiliate.[21]

4.2.2 Recycling and Reuse

NCES and its affiliates are innovators in recycling. NCES participates in CWS's single stream recycling program, Zero-Sort® recycling. Through this program, CWS accepts commingled clean and broken-down recyclable material such as cardboard, glass, metal, paper, and plastic. The Zero-Sort® process separates these materials using state-of-the-art technology, and the materials are then sold and recycled. Zero-Sort® makes recycling easier for the customer; from 2005 to 2015, when New Hampshire municipalities began incorporating Zero-Sort® collection into their waste plans, the volume of recyclables increased by an average of 15%. Casella recycled more than 36,000 tons of New Hampshire waste at its various materials recovery facilities in 2019.

[21] In 2019, CWS diverted approximately 2,000 tons of ash from Whitefield Power and 3,000 tons from Springfield Power, but both of these facilities closed in the summer of 2019. CWS still holds these contracts if the facilities reopen and wish to resume this diversion effort with the company.

Among the specific measures NCES has implemented to promote recycling and reuse are the following:

- In 2019, NCES received and diverted more than 56,000 tons of clean wood, contaminated soils, and other materials from the waste stream at the site. These materials were diverted from the landfill and put to alternate beneficial use at the site.
- Providing the Town of Bethlehem with town-wide, free curbside services for ZeroSort® single stream recycling, which in turn promotes recycling by making it free and convenient to local residents. More than 1,000 households in Bethlehem receive this service from NCES. The facility processed more than 900 tons of single stream recyclables in 2019, including volumes processed at the local transfer station in Bethlehem and leaf and yard waste processed at the site for residential and beneficial use. Continued operation of NCES with the Stage VI expansion means these residents will continue to receive this service; if Stage VI is not approved, and the facility closes in 2021 Bethlehem residents will have to obtain different curbside pickup services if they can. The expense of these services will be substantial and will likely diminish townwide recycling.
- In addition to Bethlehem, five other New Hampshire towns send their recycling directly to NCES for processing: Littleton, Lincoln, Franconia, Monroe, and the Bretton Woods area of Carroll. NCES thus provides a local and affordable resource to those towns for their recycling initiatives. The approval of Stage VI is necessary to continuation of these services.
- Extracting C&D wood and scrap metal from the waste stream at NCES for recycling as practicable. For example, NCES receives wood pallets that are then ground up and de-nailed for use on landfill roads in bad weather. In the last three months of 2019, NCES received and diverted 78 tons of this material from the landfill with this practice. NCES also receives glass that is crushed and utilized in gas trenches and road bases, rather than being deposited in the landfill. NCES also removed more than 115 tons of scrap metal from the waste stream for recycling in 2019.
- Coordinating the recycling for potentially hazardous materials such as used oil, CFC-containing appliances, compact and full size fluorescent lamps, and mercury-containing devices, antifreeze, auto and rechargeable batteries, cathode ray tubes and video screens. In 2019, NCES recycled more than 115 tons of scrap metal and 38 tons of tires. NCES also diverted 7,000 pints of paint, pesticides, and flammable material from the landfill in 2019 through its annual hazardous waste collection event.
- Accepting for proper recycling scrap metal, propane tanks, tires, and other electronics. In 2019, NCES recycled approximately 900 gallons of used oil that were reused in the furnace for the facility's on-site maintenance shop. NCES also recycled 50 gallons of antifreeze gathered from local residents. The following table summarizes some of the materials gathered by NCES and the Bethlehem Transfer Station for recycling in 2019:

Item to Be Recycled	Amount Collected in 2019 (pounds)
4' Fluorescent Lamps	310
8' Fluorescent Lamps	43
Alkaline Batteries	32
Coated 4' Fluorescent Lamps	4
Coated 8' Fluorescent Lamp	1
Compact Fluorescent Lamps	300
Computers and Laptops	2,236
Dehumidifiers	1
Halogen Lamps	15
Incandescent Lamps	68
Lamps and Lighting Fixtures	2
Lead Acid Batteries	129
Lithium Ion Batteries	40
Miscellaneous Electronics	6,346
Monitors	85
NiCD, Dry Batteries	81
Non-PCB Ballast (must say "NO PCB's")	43
PCB Ballasts	56
Smoke Detectors	24
Televisions	21,113
TOTAL	**30,929 lbs.**

- Conducting an annual household hazardous waste collection day at no cost to the citizens of Bethlehem. NCES also provides financial support to the Pemi-Baker District to support its hazardous waste collection day efforts.

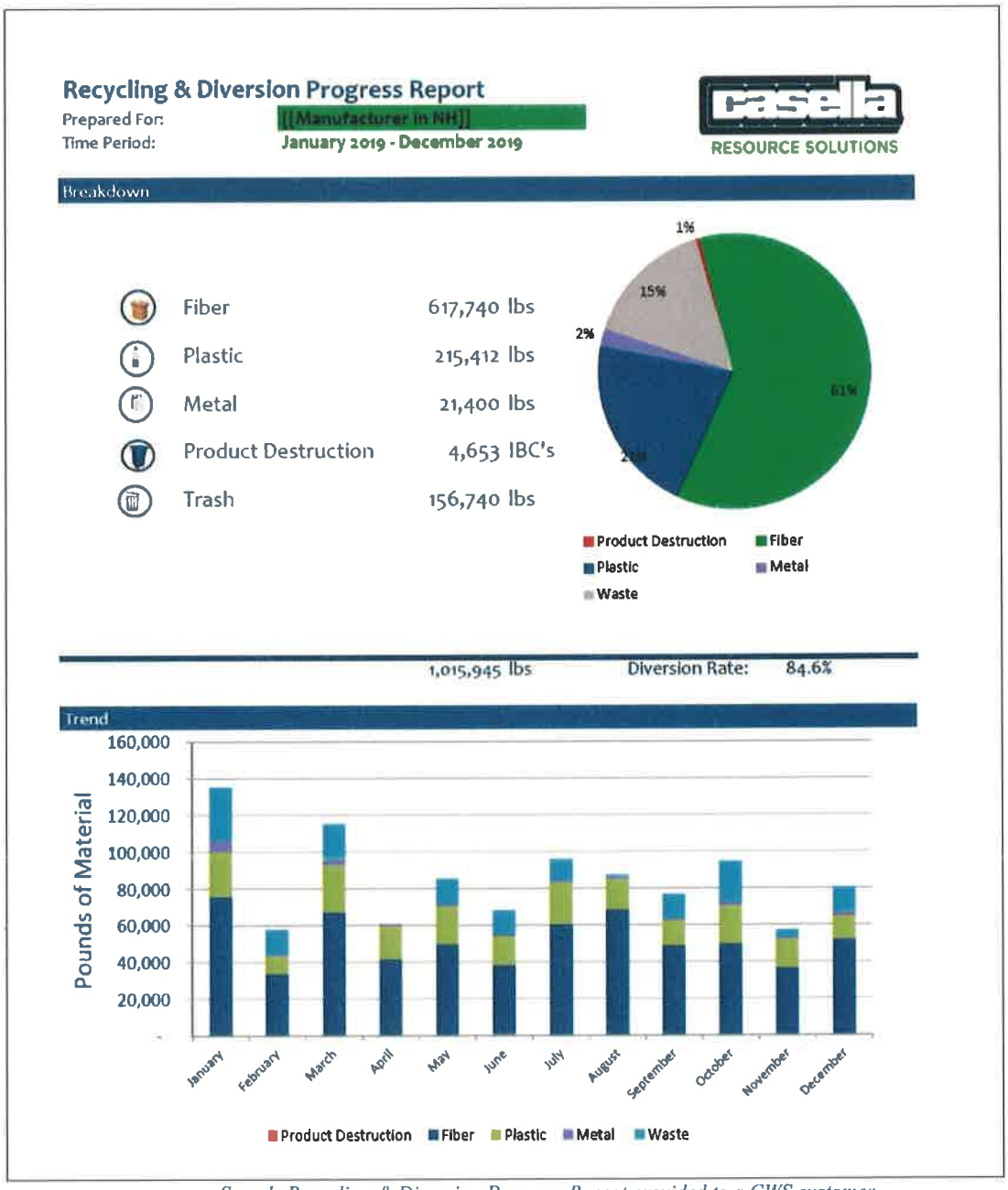
NCES will continue assisting at least ten New Hampshire solid waste generators with establishing or improving programs to promote recycling and other solid waste disposal method listed in the hierarchy. NCES already does this with its current in-state customers by providing recycling services, promoting composting, and facilitating the safe disposal of hazardous waste.

CWS diverts solid waste from disposal in the NCES landfill and other landfills in the state with the following recycling services:

- In 2019, CWS diverted 36,000 tons of New Hampshire recyclables to Casella's ZeroSort® MRFs. A snapshot of the company's 2019 recycling efforts in the state follows:
    - Collection of approximately 3,101 tons of recyclables from commercial recycling containers

- Collection of approximately 1,500 tons of recyclables from individual residential customers (excluding contracts with municipalities)
- Collection of nearly 600 tons of recyclables from New Hampshire communities by CWS's division in Montpelier
- Collection of approximately 2,300 tons of recyclables from twenty-three permanent commercial accounts in New Hampshire. Five of these commercial accounts diverted significant volumes of waste to recycling:
    - Dartmouth-Hitchcock Medical Center: Approximately 500 tons
    - Dartmouth College: Approximately 490 tons
    - EL Harvey & Sons: Approximately 470 tons
    - Gobin Disposal Systems: Approximately 160 tons
    - Town of Lyme: Approximately 130 tons

  CWS recently contracted with Coca-Cola in Londonderry and Belmont to divert industrial recyclables out of the waste stream. In 2019, the Londonderry facility recycled more than 400 tons of industrial recyclables at a diversion rate of 84%, while the Belmont facility diverted 77 tons of metals to achieve a 99% diversion rate.
- Goffstown and Nashua recently re-signed direct contracts with the Charlestown, Massachusetts, MRF, which has implemented an inbound audit procedure for tonnage received at the facility. These municipalities have received audit results over recent years confirming that the material received at the MRF is clean for processing.
- CWS encourages these accounts to continue improving their recycling practices by providing periodic Recycling & Diversion Progress Reports, which describe the type and quantities of materials diverted from a customer's facility and provide insight into diversion practices over time. This report keeps customers informed about the productivity of their recycling and diversion efforts and thus encourages continued adherence to these practices. An anonymized exemplar of this report is set forth below.



Sample Recycling & Diversion Progress Report provided to a CWS customer

- Hypertherm, Inc. generates industrial waste in Hanover that is difficult to recycle through conventional means. Each month, the facility processes over 50 tons of loose, baled, supersacked or ground film plastics, rigid plastics, plastic tubing and hosing, plastic and wooden reels, label backing, cardboard, metal, and other unique and hard-to-recycle items. CWS worked with Hypertherm to establish an innovative recycling program called an Aggregation and Recovery Collaborative (ARC), which, in conjunction with Zero-Sort recycling, has helped to double Hypertherm's recycling rate for these materials from 43% during a ten-year period. Other companies in the region are also

participating in the ARC. This partnership has made it easier for Hypertherm to recycle these items and substantially reduce the waste it sends to disposal facilities. This partnership received the 2016 New Hampshire Governor's Award for Innovative Partnership. In 2019, Hypertherm diverted more than 467 tons of industrial recyclables out of the waste stream, achieving a diversion rate of 61% that increases to nearly 90% when metals are taken into account.

  - CWS also successfully renewed or won the bid process for the following municipal contracts to manage large volumes of recyclables:
    - Town of Newmarket: Approximately 800 annual tons
    - Town of Stratham: Approximately 850 annual tons
    - Town of Brentwood: Approximately 340 annual tons
    - Town of Danville: Approximately 425 annual tons

- CWS affiliates facilitate the recycling of C&D and natural materials. In 2019, CWS diverted the following volumes out of the waste stream and into recycling facilities:
  - 2,100 tons of metal materials
  - 400 tons of wood materials
  - 40,700 tons of C&D debris
  - 60 tons of e-waste materials (*e.g.* cell phones, laptop computers, televisions)
- Casella's brokerage division provides recyclables marketing services for many towns in New Hampshire and leverages its professional knowledge of commodity markets to help these municipalities receive the best possible prices for the recycled commodities that they collect and process from local customers. The brokerage division at Casella coordinates direct shipment of these materials to domestic mills which then use the recycled commodities as raw material. In 2019 alone, Casella brokered 13,000 tons of recycled commodities for New Hampshire municipalities and businesses and diverted those materials from the waste stream. This is an increase in 3,000 tons compared to 2017. The brokerage division works with customers in Wolfeboro, Ossipee, Thornton, Peterborough, and Conway to educate them on ways to "clean up" their plastics so they can be processed and directed to final end sites.
- Casella Waste Management of Massachusetts, Inc. manages waste for notable industrial businesses within New Hampshire. For example, Rochester companies Albany International and Safran Aerospace combined to divert 85 tons of mixed recyclables, 27 tons of metal, and 50 tons of C&D.
- CWS operates waste and recycling transfer stations in Allenstown, Raymond, Concord, Newport, Lebanon, and Belmont, which are available to New Hampshire residents and businesses for disposal of both recyclables and other difficult to manage materials such as e-waste, tires, and waste oils, in addition to MSW and C&D. These transfer stations also accept municipal recycling collected curbside by Casella haulers from Danville, Laconia, Concord, Hebron, and Belmont and third-party haulers traveling from other towns and cities. CWS provides hauling and transfer services for recyclables from other municipally operated transfer stations in towns like Pembroke, Sanbornton, and Alton. Casella then delivers these recyclables to materials recovery facilities for processing. The convenience of these services encourages additional recycling, therefore diverting more waste from the waste stream, and provides logistical support to municipalities to help them provide recycling services to local residents.

CWS and NCES proactively engage with the public to educate people about the importance of recycling and sustainable disposal measures. Both companies routinely hold events to inform the public about the efficacy and benefits of recycling and reuse. NCES holds informational events at its Bethlehem facility, including "open houses," school field trips, and tours for members of the public. In 2019, the facility hosted an "open house" for 375 attendees and nine separate site tours. NCES also operates a greenhouse on site that is utilized by students from Bethlehem Elementary School for growing produce and flowers for local gardens. The greenhouse is integrated into classroom instruction to educate students on the benefits of composting and the science of geothermal heating.

Engineer Joe Gay educates a group of students from Haverhill Cooperative Middle School on sustainability initiatives during a site visit at NCES.

CWS estimates that its employees spend more than 1,400 hours per year performing recycling outreach and education events with local administrators, officials, and members of the public. These events include conversations with town recycling coordinators, working with customers to improve signage, and speaking at local government meetings about diversion practices. The company recently held events to promote recycling awareness at local school systems in Auburn, Derry, Stratham, Newfields, East Kingston, and Allenstown. CWS also sponsors an annual calendar art contest for students in New Hampshire and other Casella service areas. Students can submit artwork related to the environment, recycling, re-use of materials, reduction of waste, or landfills and recycling trucks for consideration in the company's annual calendar. Students must create their artwork in the classroom, and teachers have incorporated this contest into their curricula with conversations about reducing waste in the waste stream and reusing and recycling materials to benefit the environment. These programs inculcate awareness of the reasons for waste diversion among children and can instill lifelong commitment to diversion.

CWS has generated a library of posters, flyers, and video materials to support recycling. One example is the "Truth About Recycling" flyer that addresses common misconceptions about recycling.[22] Figure 6, below. This flyer has been shared with large institutional accounts like SNHU, St. Paul's School, and Phillips Exeter Academy to promote recycling for those customers. A similar flyer was also distributed to every individual resident in the towns and cities serviced by CWS in Vermont and New Hampshire, ensuring broad distribution of these educational materials that promote recycling and inform the public about reduction of the waste stream.

The collapse of foreign recycling markets has temporarily made municipal recycling programs uneconomic, leading some New Hampshire towns to begin dismantling their programs. CWS has counseled against this reaction. It has informed municipal customers considering a cessation of

[22] These materials are available on demand online at https://www.casella.com/services/recycling/recycle-better

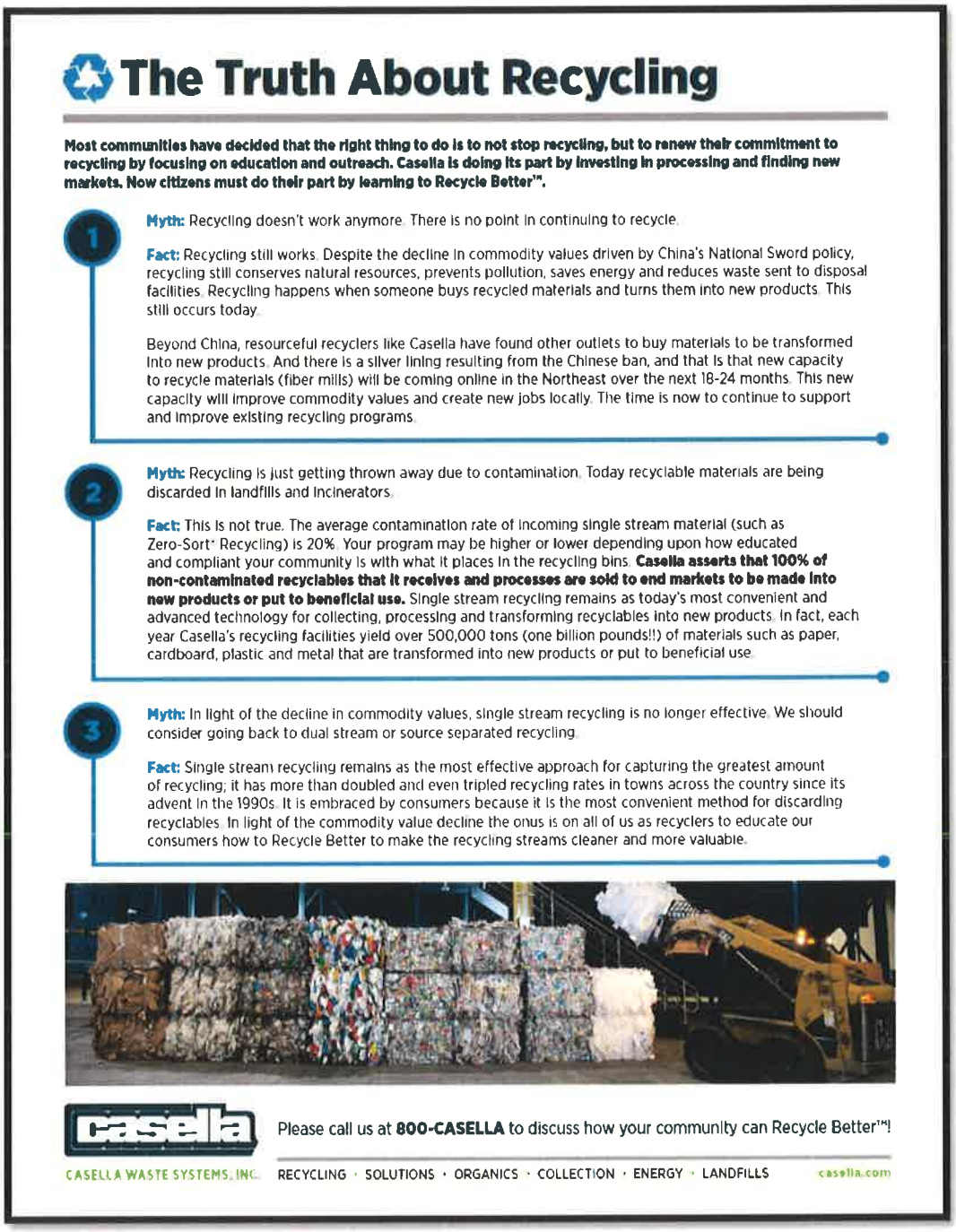
recycling that facilities are being developed in North America to replace the capacity formerly provided in Asia and through its Recycle Better™ initiative it has disseminated guidance to the public on how to avoid contamination of recyclables and which wastes are in fact recyclable. It has also taken steps to assist New Hampshire municipalities to improve their recycling practices, thereby avoiding some of the impact of the downturn in the market. For example:

- Laconia faced economic pressures because it had multiple recycling drop-off locations in the city that attracted highly contaminated material. CWS collaborated with Laconia to install centralized compaction equipment in a location easily monitored by local officials, ensuring the continued practice of recycling in the city, improved quality of the recycled materials, and reduced hauling costs for the city.
- CWS worked with the City of Concord to install specialized container lids to prevent the contamination of recyclables collected in the downtown district; this effort allowed downtown businesses to continue productively recycling and diverting materials out of the waste stream.
- Hebron faced significant cost increases for its curbside recycling program. CWS implemented the use of a split-body collection truck that allowed the company to collect MSW and recycling in a single truck, reducing collection costs in a manner that offset the majority of the town's increased recycling costs.
- The Town of Enfield approached CWS in 2013 to inquire about adding curbside recycling services without increasing its curbside trash collection costs. CWS was able to offer this service at no additional cost and will continue offering this service through a contract that expires in 2023. CWS also held a community event in Enfield that was attended by 60 people to educate them about recycling and its benefits.
- In Hanover and Plainfield, processing costs for recyclables have significantly increased. In 2016, these communities paid $61.17 per ton and $0 per ton, respectively, but as of this summer those amounts will increase to $135 per ton and $130 per ton. Despite these increases, with encouragement from CWS these towns are continuing their recycling programs, and CWS is maintaining open communication with them to explain commodity processing fee declines and the manner in which reduced contamination rates cause processing fees to change. CWS has had similar conversations with Dartmouth College and will soon have the final extension term for waste collection services with that institution. In 2016, the school paid $3.37 per ton for recyclables processing, and that figure will increase to $130 per ton. Despite this increase in cost, Casella was able to persuade Dartmouth College in contract negotiations to continue its recycling program.

Materials prepared by CWS have been utilized by New Hampshire communities seeking to promote recycling and reuse. For example, the General Services Department for the City of Concord utilized an excerpt from the CWS flyer on its official Twitter account (Figure 7, below) and included a link to the "Truth About Recycling" flyer on its website to better educate the public

on recycling.[23] The Public Works Division for the City of Nashua also provides this flyer on its website to promote recycling.[24]

[23] City of Concord, Concord General Services, http://concordnh.gov/912/Recycling (last visited February 25, 2020).
[24] City of Nashua, Nashua Solid Waste Department, https://www.nashuanh.gov/435/Recycling (last visited February 25, 2020).



The Truth About Recycling

Most communities have decided that the right thing to do is to not stop recycling, but to renew their commitment to recycling by focusing on education and outreach. Casella is doing its part by investing in processing and finding new markets. Now citizens must do their part by learning to Recycle Better™.

1

Myth: Recycling doesn't work anymore. There is no point in continuing to recycle.

Fact: Recycling still works. Despite the decline in commodity values driven by China's National Sword policy, recycling still conserves natural resources, prevents pollution, saves energy and reduces waste sent to disposal facilities. Recycling happens when someone buys recycled materials and turns them into new products. This still occurs today.

Beyond China, resourceful recyclers like Casella have found other outlets to buy materials to be transformed into new products. And there is a silver lining resulting from the Chinese ban, and that is that new capacity to recycle materials (fiber mills) will be coming online in the Northeast over the next 18-24 months. This new capacity will improve commodity values and create new jobs locally. The time is now to continue to support and improve existing recycling programs.

2

Myth: Recycling is just getting thrown away due to contamination. Today recyclable materials are being discarded in landfills and incinerators.

Fact: This is not true. The average contamination rate of incoming single stream material (such as Zero-Sort® Recycling) is 20%. Your program may be higher or lower depending upon how educated and compliant your community is with what it places in the recycling bins. **Casella asserts that 100% of non-contaminated recyclables that it receives and processes are sold to end markets to be made into new products or put to beneficial use.** Single stream recycling remains as today's most convenient and advanced technology for collecting, processing and transforming recyclables into new products. In fact, each year Casella's recycling facilities yield over 500,000 tons (one billion pounds!!) of materials such as paper, cardboard, plastic and metal that are transformed into new products or put to beneficial use.

3

Myth: In light of the decline in commodity values, single stream recycling is no longer effective. We should consider going back to dual stream or source separated recycling.

Fact: Single stream recycling remains as the most effective approach for capturing the greatest amount of recycling; it has more than doubled and even tripled recycling rates in towns across the country since its advent in the 1990s. It is embraced by consumers because it is the most convenient method for discarding recyclables. In light of the commodity value decline the onus is on all of us as recyclers to educate our consumers how to Recycle Better to make the recycling streams cleaner and more valuable.

Figure 6 - Marketing materials distributed to local communities to encourage continued participation in recycling programs.

Figure 7 - Tweet by Concord General Services (@ConcordNHGS) at 3:55 p.m. on February 19, 2020

Educational opportunities do not always involve face to face conversations. CWS uses "Oops tags" at the curb to educate customers about materials in their disposal bin that could have been set aside for recycling. Figure 8. CWS also promotes recycling and sustainability initiatives on its social media page. CWS and its affiliates routinely invest time and resources to conduct extensive auditing, outreach, and education initiatives to help customers throughout the state address contamination in their recycling streams to ensure the ongoing sustainability of recycling in the state.

4.2.3 Composting

In 2019, NCES received twelve tons of leaf and yard waste on site at its Bethlehem facility. It ground those materials together for residential use and beneficial uses at the NCES landfill site, thus diverting it from the landfill itself. It also distributed 60 cubic yards of nutrient-rich biosolids generated by Casella Organics to local community members.

CWS also promotes composting in New Hampshire. The Casella Organics Group diverts biosolids to composting in Newington (300 tons per year), Seabrook (1,800 tons per year), and Nashua (7,900 tons per year to land application). CWS has diverted more than 2,100 tons of biosolids from municipal wastewater plants to composting and 13,500 tons of wood ash from biomass power plants to soil uses.

4.2.4 Waste-to-energy technologies (including incineration)

CWS has partnered with RUDARPA, Inc. to develop a plant that would convert methane generated by the landfill into a clean and renewable form of natural gas. RUDARPA received its temporary permit from the DES Air Resources Division on January 24, 2020 for the emission unit that will

convert landfill gas generated by the NCES landfill into renewable natural gas.[25] Landfill gas generated in the proposed Stage VI expansion will be processed through the RUDARPA project and converted to renewable energy. Upon full implementation of the RUDARPA project the NCES facility will make substantial progress toward zero emissions from the landfill. This will complete the evolution during CWS's ownership of NCES from passive venting of landfill gas to increasingly efficient extraction and destruction or beneficial use of the gas.

CWS also engages in waste-to-energy projects like Grind2Energy and other technologies for food waste recovery that convert food scraps into an energy sources. *See* Section 4.2.1, above. In 2019, Casella diverted 450 tons of glycerin from biodiesel production and 690 tons of food waste from commercial and industrial uses to energy sources with anaerobic digestion technologies. CWS also diverted 4,300 tons of municipal solid waste from the waste stream to WTE facilities in New Hampshire and more than 13,000 tons of New Hampshire waste to energy recovery facilities in Massachusetts.

4.2.5 Incineration without resource recovery

NCES does not conduct any incineration of solid waste at its facility and does not propose to incorporate this solid waste disposal method into its proposed Stage VI development.

4.2.6 Landfilling

Although landfilling sits at the bottom of the hierarchy that does not mean that development of landfill capacity is to be discouraged by DES. The need for landfill capacity is driven by many factors, including federal, state, and local policy decisions, economic costs associated with the alternatives to landfilling, the state of technology, and the willingness of individuals to make the effort to reduce, reuse, and recycle. However, landfills are a necessary component of an integrated system of waste management used to dispose of wastes that are not or cannot be managed with the more preferred methods listed in the hierarchy. Waste types disposed at NCES's facility include municipal solid waste from residential, commercial and industrial sources; C&D; ash residuals from a municipal solid waste incinerator; wood ash; foundry sand; industrial special waste; contaminated soil; and treatment plant sludge/grit. Properly viewed, landfilling is an essential element of the hierarchy, not a disfavored alternative. Even if the state meets the target diversion rate of 40% set forth in RSA 149-M:2, disposal capacity will still be needed for at least 60% of the waste stream. Incineration does not dispose of waste but reduces its quantity and creates ash residuals that must be landfilled. The NCES facility, then, plays an indispensable role in the state's waste management scheme.

5.0 RSA 149-M:11, III(c) - ASSIST IN ACHIEVING GOALS OF STATE AND DISTRICT SOLID WASTE PLANS

To the extent possible, this Section 5.0 demonstrates how the proposed Stage VI will be consistent with state and district solid waste management plans, and assist in achieving their goals. RSA 149-M:11, III(c) provides that DES is to consider the following factor in determining public benefit:

[25] Permit No. TP-0255, issued January 24, 2020.

> The ability of the proposed facility to assist in achieving the goals of the state solid waste management plan, and one or more solid waste management plans submitted to and approved by the department under RSA 149-M:24 and RSA 149-M:25.

As a preliminary matter, this requirement has to a large extent been mooted by the passage of time. The most recent state solid waste plan was published in April 2003 and is entitled "State of New Hampshire Solid Waste Plan." The NCES facility is located in the planned but never formed Upper Grafton Lancaster Area Solid Waste District. The district was to consist of the Towns of Bethlehem, Dalton, and Lancaster, and has long been inactive. This is consistent with the statewide trend over the last 25 years away from regional districts and from the preparation and approval of formal solid waste plans.

5.1 State Solid Waste Management Plan

The State Solid Waste Management Plans Goals are stated below, along with a discussion of how NCES will assist the state in meeting these goals.

5.1.1 Goal 1: Reduce the Volume of the Solid Waste Stream

Reduction of volume takes place before waste reaches the working face, and as detailed in Section 4.2, CWS engages in extensive reduction, recycling, and other diversion throughout its service territory. If Stage VI is not approved and the NCES facility closes upon exhaustion of Stage V capacity, NCES's efforts to reduce the volume of the solid waste stream will conclude, as well. Following the closure of its only landfill in New Hampshire, CWS would expect a reduction in its waste diversion volumes in the state as it would no longer be servicing as many customers.

The proposed Stage VI facility will advance NCES's efforts to assist the State in meeting Goal 1. Continued operations at NCES will maintain the diversion of clean wood and C&D from the waste stream for alternate uses, including alternative daily cover. NCES will continue to operate its transfer station and provide recycling and composting services. Further, NCES and CWS will continue developing waste-derived products from power plant wood ash used for agricultural and animal bedding purposes.

In addition to the purple Pay-as-You-Throw bags familiar to residents in towns like Concord, CWS also offers other services that encourage customers to be mindful of the amount of waste they deposit in the waste stream. In dozens of New Hampshire towns, individual residences or businesses sign up for collection services from CWS. These customers can select the size of their waste receptacle and the frequency of waste collection pickup; smaller receptacles and less frequent collection times are offered at the cheapest price, incentivizing waste reduction and disposal through other methods, such as recycling and composting. If a household needs to dispose of more waste than the receptacle can hold, the customer must pay for the disposal, either by purchasing bags from local stores or placing a sticker on the waste to indicate that the customer has paid for the collection. This is another iteration of Pay-as-You-Throw programs that encourages customers to be mindful of the volumes of waste they generate while also incentivizing reduction of the waste that ultimately reaches the landfill.

5.1.2 Goal 2: Reduce the Toxicity of the Solid Waste Stream

NCES operates a transfer station on site for the Town of Bethlehem and surrounding communities. NCES affiliates operate five additional transfer stations in New Hampshire. These transfer stations aid the state in achieving its goal of reducing the toxicity of the waste stream by providing residents and businesses with a convenient alternative to landfill disposal for universal and other wastes prohibited from being landfilled. These include wastes such as antifreeze, auto and rechargeable batteries, cathode ray tubes and video screens, compact and full-size fluorescent lamps, mercury-containing devices, used oil, and CFC-containing appliances. Approval of Stage VI will prolong NCES's management of these wastes.

NCES also hosts, at no cost to residents, an annual household hazardous waste disposal event at the facility, and CWS does the same for the Pemi-Baker Solid Waste District. These types of programs are often the only opportunity for residents to properly dispose of household hazardous wastes such as paint and petroleum products; herbicides, insecticides and pesticides; household cleaners; and other hazardous household products. These events are a proactive step to ensure that these hazardous materials are properly disposed of and do not end up in a landfill for disposal. If NCES is no longer operational, these toxic wastes will no longer be collected and destroyed by NCES or CWS in these communities.

5.1.3 Goal 3: "Maximize" Diversion of Residential and Commercial/Industrial Solid Wastes

As described in Section 4.2.2, the majority of the towns that dispose of municipal solid waste at NCES have active recycling programs, as documented in historical AFRs for municipalities (DES is no longer tracking individual recycling commodities from AFRs for municipal recycling, making it difficult to determine the degree to which the state is maximizing diversion). Specific measures taken by NCES and its affiliates to maximize waste diversion and aid the state in meeting this goal are detailed in Section 4 of this analysis and include:

- Providing the Town of Bethlehem with town-wide, free residential curbside services for ZeroSort® single stream recycling.
- Recycling 36,000 tons of New Hampshire waste in 2019 via Casella materials recovery facilities as part of the Zero-Sort® curbside recycling program.
- Collecting leaf and yard waste on the NCES site that is then ground up for residential use and beneficial use on site.
- Collecting scrap metals, tires, propane tanks, and electronics at the NCES transfer station for recycling.
- Providing recyclables marketing services for many towns in New Hampshire, ensuring the best possible prices for commodities in towns choosing to process recyclables.
- Providing transportation services to towns and businesses for transportation of recyclables to processing facilities and markets.
- Conversion of biosolids to beneficial use:
  - Newington: 300 tons per year to composting
  - Seabrook: 1,500 tons per year to composting

- Nashua: 7,900 tons per year to land application

CWS operates a series of six transfer stations that include management of recyclables, serving broad regions of New Hampshire. These facilities recycle about 15,000 tons of other solid wastes per year. A summary of recycling tonnages and types at the transfer stations is included in Table 9.

5.1.4 Goal 4: Assure Disposal Capacity for New Hampshire

The capacity analysis presented in Section 3.2 and 3.3 of this public benefit demonstration identifies a shortfall in disposal capacity for New Hampshire waste. For the 20-year planning period, landfill design disposal capacity is 21,240,114 tons, and the Concord WTE facility provides another 2,800,000 tons of capacity. Projected quantities of New Hampshire waste total 27,050,000 tons over the same period, as described on Table 2. Permitting NCES Stage VI will add about 943,000 tons of capacity during the planning period over 70% of which will be used to accommodate New Hampshire waste. It will therefore assist the state in ensuring adequate disposal capacity for New Hampshire waste. Indeed, even with the Stage VI capacity approved, New Hampshire is facing a shortfall of *at least* 2,066,883 tons over the 20-year planning period.[26] If DES takes into account only the capacity for which operating approval has been granted and assumes waste imports continue at 2019 levels, the shortfall over the 20-year period, even *with* the Stage VI capacity, would be about 39,673,542 tons.[27] Given that the state will confront a shortfall over the next twenty years of modest to massive proportions, DES should approve Stage VI because it provides disposal capacity for in-state waste generated during the planning period, over which there will be a capacity shortfall. Stage VI thus directly advances Goal 4 of the state's solid waste management plan.

5.1.5 Goal 5: Assure that Solid Waste Management Activities are Conducted in a Manner Protective of Human Health and the Environment

The proposed Stage VI Landfill is designed to meet or exceed regulatory requirements, to be operated responsibly by trained personnel, and to be monitored in accordance with relevant regulations. The proposed modification would have no change in effect on the environment, public health, and public safety. Stage VI would be operated in accordance with all applicable permits issued by state and federal authorities, and NCES would continue submitting public benefit reports to DES as it performs regulatory oversight on the facility.

In addition, NCES has been responsible for remediating conditions at the site that predate Casella's acquisition. Its cleanup of the unlined landfill has transformed downgradient groundwater such that it is now almost entirely below AGQS, surface water contamination at the seep has been fully remediated, and NCES also performed an aesthetic cleanup of the seep and channel to remove oxidized metals sediments caused by contamination from the unlined landfill. NCES has also developed an efficient active gas management system at the landfill and when CWS acquired the

---

[26] 2,066,883 tons is the remainder after Stage VI capacity (943,000 tons) is deducted from the low end range of the capacity shortfall (3,009,883 tons). See section 3.2.4 *ante*.

[27] 39,673,542 tons is the remainder after Stage VI capacity (943,000 tons) is deducted from the high end of the range of capacity shortfall (40,616,542 tons). See Section 3.3.1 *ante*.

facility the gas was venting passively to the atmosphere. Thus, not only has the environmental protection infrastructure constructed by NCES successfully prevented contamination of the environment, NCES has dramatically mitigated the environmental impacts that existed at the site when CWS acquired it. Accordingly, NCES's stewardship of the environment at the landfill site has substantially exceeded the objectives of Goal 5.[28]

5.2 District Solid Waste Plans

The formation of solid waste districts in New Hampshire was prompted by the federal Resource Conservation and Recovery Act (RCRA). Among other things, RCRA required states to encourage regional efforts to manage solid waste.[29] One of the ways New Hampshire responded to this requirement was by enacting statutes mandating participation in regional districts. The state backed away from this mandate in what is now RSA 149-M:24 and :25. Those sections of the solid waste act provide for the formation of single- or multi-member solid waste districts, and require each town or district to adopt a solid waste management plan approved by the department.

While numerous solid waste districts were formed in the 1980s, most have since disbanded and strict adherence to RSA 149-M:24 and :25 has waned. In fact, there are currently no approved district solid waste plans on file with DES.[30] Notwithstanding the lack of approved plans, municipalities are nonetheless making planning decisions about solid waste issues. These plans are sometimes reduced to writing and contained in, for example, municipal master plans. Whether contained in a formal document or not, however, the conduct of many municipalities evidences that they are planning ahead for the solid waste disposal needs of their citizens with an emphasis on recycling and on the economical disposal of waste that is not recycled. For example, nineteen municipalities now belong to one of the largest and most active solid waste districts, the Pemi-Baker Solid Waste District (P-BSWD), the principal purpose of which has been to take advantage of economies of scale to provide cost-effective waste management for its member municipalities, including negotiation of contracts for long-term services. Whether through a multi-member solid waste district or as individual municipalities, however, many New Hampshire cities and towns have entered into long-term contracts for disposal of their solid waste, evidencing that they have planned how to manage their solid waste disposal needs.[31]

The importance of NCES's landfill in Bethlehem to the solid waste management planning of New Hampshire municipalities and solid waste districts is manifested in at least two ways. First, whether pursuant to a long-term contract or not, NCES receives solid waste originating in a large majority of New Hampshire's municipalities, showing that the facility is important to the

---

[28] CWS was able to take similar remedial actions at the Colebrook unlined landfill in connection with contamination for which it bore no responsibility.

[29] 42 U.S.C.A. § 6946.

[30] NCES contacted NHDES to determine whether any towns or districts had submitted district solid waste plans pursuant to RSA ch. 149-M. In an email dated March 12, 2020, the department reported that no waste management plans prepared pursuant to these statutes had been submitted to or approved by NHDES. E-mail from J. Colby (3/12/2020).

[31] Strictly speaking, the contracts and other arrangements made by these communities are not the kinds of plans contemplated by the statute. Given that such plans are now rare, contracts and other arrangements for waste disposal provide the best approximation of a plan available.

management of solid waste statewide. Some of the waste is transported directly by municipal sanitation departments (e.g., Sunapee), some through the waste-hauling and transfer station operations of NCES's affiliates (see Tables 6 and 7 and Figure 2), and some through unaffiliated third parties (see Table 8 and Figure 3). The full geographic breadth of the New Hampshire wasteshed served by NCES is shown on Figure 4.

Many New Hampshire municipalities, moreover, have entered into long-term contracts, either directly or through a multi-member solid waste district to provide for the disposal of their solid waste at NCES's facility on favorable terms into the foreseeable future. The following is a list of municipalities with contracts, either directly with NCES or an affiliated waste hauler, under which their solid waste is sent to NCES's landfill in Bethlehem.

Communities	**Solid Waste District**
Ashland	Pemi-Baker Solid Waste District
Campton	Pemi-Baker Solid Waste District
Dorchester	Pemi-Baker Solid Waste District
Easton	Pemi-Baker Solid Waste District
Ellsworth	Pemi-Baker Solid Waste District
Franconia	Pemi-Baker Solid Waste District
Groton	Pemi-Baker Solid Waste District
Landaff	Pemi-Baker Solid Waste District
Lisbon	Pemi-Baker Solid Waste District
Littleton	Pemi-Baker Solid Waste District
Lyman	Pemi-Baker Solid Waste District
Plymouth	Pemi-Baker Solid Waste District
Rumney	Pemi-Baker Solid Waste District
Sugar Hill	Pemi-Baker Solid Waste District
Thornton	Pemi-Baker Solid Waste District
Waterville	Pemi-Baker Solid Waste District
Wentworth	Pemi-Baker Solid Waste District
Alstead	Single Town District
Bedford	Single Town District
Carroll	Single Town District
Croydon	Single Town District
Dalton	Single Town District
Goffstown	Single Town District
Grantham	Single Town District
Sunapee (includes Springfield)	Single Town District
Unity	Single Town District
Marlow	Single Town District
Newport	Single Town District

In some cases, NCES's municipal contracts extend for as long as ten years. In the aggregate, the terms currently under contract total nearly 200 years. Thus, the landfill is an integral part of the

long-term planning of numerous New Hampshire municipalities and solid waste districts. A representative sampling of these municipalities and their plans follows.

5.2.1 Pemi-Baker Solid Waste District

The P-BSWD has negotiated a master agreement with NCES on behalf of its member towns. Each town then individually decides whether to accept the negotiated terms with NCES or to seek other providers. The district has nineteen member towns. All but two of them decided to take advantage of the district's master agreement and send their non-recyclable MSW, C&D and bulky waste to the NCES facility in Bethlehem to minimize costs. Three of these towns also deliver their recyclables to NCES for processing. Rumney's master plan specifically calls for the disposal of its solid waste at NCES's landfill.[32] Thus, NCES serves seventeen towns within P-BSWD, which is up from nine less than a decade ago. Additionally, NCES's parent company, Casella Waste Systems, Inc., provides annual household hazardous waste disposal at drop-off locations to the member towns.

5.2.2 Town of Bethlehem

Pursuant to the Settlement Agreement between NCES and the Town of Bethlehem dated November 22, 2011, NCES provides roadside pickup and disposal of residential MSW and comingled recyclables within Bethlehem. Additionally, NCES operates the Trudeau Road Transfer Station for at least twenty-five hours per week including from 8:00 A.M. to 12:00 P.M. on Saturdays. The curbside pickup service and operation of the transfer station is provided at no cost to the Town or its residents. This agreement continues until the landfill's capacity has been exhausted. If the Stage VI expansion is not approved and the NCES landfill closes when Stage V is complete, then Bethlehem will have to negotiate and obtain other solutions – likely at a significant cost – for the collection and disposal of MSW, recyclables, and other wastes.

5.2.3 Sunapee Solid Waste District

Sunapee operates a transfer station receiving MSW and recyclables. Residents of Springfield also use the transfer station through an agreement under which Springfield pays part of the transfer station's operational costs. MSW collected at the Sunapee transfer station is transported to the NCES facility in Bethlehem for disposal pursuant to a long-term contract.

5.2.4 Town of Monroe

According to Monroe's 2011 Master Plan, curbside rubbish removal is provided as a town service, and the solid waste is to be disposed of at the NCES facility in Bethlehem. An updated recycling program was implemented in 2010, expanding the types of recyclable material accepted. Monroe Master Plan (2011) §1 at 1 and §4.5 at 35.

5.2.5 City of Concord

[32] Rumney Master Plan (2012) at 2 and 48.

Concord offers curbside pickup for recycling and waste through NCES's affiliate, Bestway. The city uses a Pay-As-You-Throw system for waste. The increased cost of trash bags coupled with Casella's Zero-Sort® recycling program have dramatically increased recycling rates within the city. Bestway has transported Concord waste to the NCES facility in Bethlehem since January 2015.

5.2.6 Town of Pembroke

Like Concord, Pembroke is under contract with NCES's affiliate, Bestway, and its solid waste has been sent to Bethlehem for disposal since 2015.

5.2.7 Towns of Allenstown and Belmont

Long-term contracts have been negotiated with Allenstown and Belmont. Beginning in 2015 the waste from these municipalities has been delivered to NCES's facility in Bethlehem.

Accordingly, the NCES facility is integral to the planning undertaken by multiple New Hampshire municipalities for the management of their solid waste, including that of its host municipality. NCES's Stage VI capacity therefore satisfies the requirements of RSA 149-M:11, III(c).[33]

6.0 CONCLUSION

Stage VI capacity provides a public benefit because there is a shortfall over the 20-year planning period and Stage VI does not extend beyond the planning period. By restructuring the fill rate as described in Section 3.3.2.1, the Stage VI capacity will last through 2026, over a year beyond when, by DES's calculations, the state will experience a capacity shortfall. Accordingly, with this restructuring Stage VI will provide disposal capacity for New Hampshire waste during the projected shortfall, thereby satisfying DES's January 2020 construction of capacity need.

The actual shortfall in disposal capacity, as opposed to the calculation required by RSA 149-M:11, V, poses a substantially more dire threat to New Hampshire. If the state continues to dispose of more waste generated in other states than in New Hampshire – and at current rates – the state will need over 23,000,000 more tons of capacity than DES's calculations assume. In the best case, this will result in a capacity shortfall over the planning period of about 29,000,000 tons. If only that capacity that is actually permitted is taken into account in the calculations the shortfall soars to over 43,000,000 tons. Against this backdrop, finding that Stage VI does not provide a public benefit is unsustainable both as a legal and as a policy matter. That is particularly true given that DES's methodology assumes that all of the capacity at the Turnkey facility is available for disposal of New Hampshire waste when it is incontestable that over 70% of the waste taken by Turnkey originates out of state.

---

[33] While the solid waste management plans of these municipalities have not been explicitly approved by DES, in light of DES's discretionary enforcement authority under RSA 149-M:15, I, and its evident election not to enforce RSA 149-M:24, IV, it is reasonable to conclude that DES implicitly approves of the less formal solid waste management planning of the municipalities discussed above as well as that of the other towns, cities, and districts in the state.

To the extent that DES's January 2020 interpretation of capacity need is driven by the belief that reducing landfill capacity will force higher recycling rates and reduce waste importation, it is taking a very significant risk with New Hampshire's economy, standard of living, and environment. To begin with, DES is not equipped to determine the dislocations and other repercussions of such a policy shift. That is the purview of the general court. Furthermore, restricting landfill capacity does nothing to make wastes recyclable or displace imported waste. Restricting capacity will increase tipping fees, and those commercial facilities that do have capacity will provide it to customers paying the highest rate. If generators of imported waste will pay higher rates, it is New Hampshire waste that will get displaced. If one commercial facility is singled out to bear the burden of the contraction of capacity and shuts down as a result, moreover, the diminution in competition will also push disposal rates higher. Increasing disposal rates are a drag on the economy and cut into household income in a regressive manner. They also incentivize illegal dumping, with obvious environmental consequences.

In addition to demonstrating that Stage VI meets a portion of New Hampshire's capacity need, the other factors DES takes into account in determining public benefit also support NCES's application:

- The location of the NCES facility minimizes transportation costs for the many municipalities in the vicinity whose waste is transported by packer truck or rolloff.
- CWS's network of transfer stations makes transportation of waste from more distant parts of the state by tractor trailer economically viable.
- The role the NCES facility plays in CWS's integrated waste management system and as a destination for waste collected by unaffiliated companies and municipalities advances the overall objective of the hierarchy which is to promote integrated "disposal solutions which are environmentally safe and economically sound."
- In 2019 NCES and CWS were responsible for *at least* 160,000 tons of waste reduction, recycling, and reuse in New Hampshire as detailed in Sections 4.2.1 through 4.2.3. Over the same period, NCES disposed of 346,833 tons of waste, of which 233,488 tons were from New Hampshire sources. This means that, of the roughly 393,500 tons of New Hampshire waste CWS managed in 2019, conservatively over 40% was diverted.
- CWS does not simply passively participate in diversion. It actively promotes it through advocacy, education, and innovative programs to make it successful. *Ante* at 20-23.
- NCES and CWS divert toxic wastes through drop off at transfer stations and household hazardous waste programs.
- NCES has both prevented contamination of the environment from the landfill and remediated contamination on the site caused by previous operators.
- NCS provides disposal capacity to dozens of New Hampshire communities which reflects the waste management planning of those communities.

Hence, approval of Stage VI is consistent with the purpose of the hierarchy, promotes the goals of the state solid waste plan, and accords with the waste management plans of dozens of New Hampshire towns and cities.

Accordingly, Stage VI will provide a substantial public benefit.

Table 1
2018 Documented NH Solid Waste Generation[1]

Facility Accepting NH Waste [1]	MSW In-State Tons	C&D In-State Tons	Non-Hazardous Special Waste Tons	Total, Tons
Lower Mount Washington Solid Waste Landfill	2,486	0	0	2,486
Lebanon Secure Solid Waste Landfill[2]	17,888	1,420	9,086	28,394
AVRRDD Mt. Carberry Landfill	79,064	53,742	17,727[3]	150,533
Nashua Four Hills Landfill[4]	66,580	8,390	2,001	76,971
North Country Environmental Services	82,122	126,640	22,753	231,515
TLR-III Refuse Disposal Facility ("TLR-III")	236,678	75,827	231,542	544,047
Hebron-Bridgewater Refuse District	219	0	0	219
Wheelabrator Concord Company[5]	118,390	0	0	174,673
2018 NH Solid Waste In-State Disposal	**603,427**	**296,031**	**283,110**	**1,182,568**
Exported Waste	115,002[7]	–	–	115,002
Recycled Waste	358,169[6]	118,216[6]	–	476,385
2018 Documented NH Solid Waste Generation	**1,076,598**	**414,247**	**283,110**	**1,773,955**
Documented Recycling Rate	**33.3%**	**28.5%**	**0%**	

[1] Except as otherwise noted, all data were obtained from 2018 Annual Facility Reports ("AFR") on file with NHDES-P&DRS.
[2] Lebanon Landfill tonnage is estimated based on the tonnage data in facility AFR and breakdowns of MSW, C&D and non-hazardous special waste from their quarterly reports.
[3] Includes primarily paper mill sludge, C&D fines, ground wood per the 2018 AFR.
[4] The breakdown of MSW/C&D/Special Waste for Nashua was not provided in the 2018 AFR and is assumed based on the information reported in the 2017 Facility Summary for the landfill. The summary references a breakdown by percent (based on the 2014 AFR) of 86.5% MSW, 10.9% C&D, and 2.6% Special Waste (asbestos and WWTP grit/grease). These percentages have been applied to Nashua's reported tonnage of 76,971 tons of "Non-Recyclable Waste Received from NH Sources" in their 2018 AFR.
[5] Wheelabrator's reported 174,673 tons of MSW received from NH sources at the facility in 2018 according to their AFR. The AFR also lists 7,778 tons of metals removed and 48,535 tons of ash were shipped out of state. These tonnages are removed from the in-state tonnage for the above table (also see note 7 below)
[6] Recyclable tonnage reported by NH municipalities in their 2018 AFRs and compiled by NHDES. The C&D column includes C&D recycling from ERRCO and LL&S.
[7] From NHDES AFR data reported by New Hampshire municipalities. Exported waste also includes 48,535 tons of ash from the Wheelabrator facility (see note 5 above).

Table 2 - Waste Projections for September 1, 2020 to August 31, 2020

Year	Annual Population Rate Increase	Estimated State Population[1]	MSW/Year[2] (tons)	C&D/Year[3] (tons)	Other Waste[4] (tons)	Recycling[5] (tons)	TOTAL (tons)	Waste Requiring Disposal[6] (tons)
2018 [7]	0.292%	1,356,458	718,429	296,031	283,110	476,384	1,773,954	1,297,570
2019	0.292%	1,360,415	720,525	296,895	283,936	477,774	1,779,129	1,301,355
2020 (thru Aug)	0.292%	1,364,384	481,751	198,507	189,843	319,445	1,189,546	870,101
2020 (after Aug)	0.292%	1,364,384	240,876	99,254	94,921	159,723	**594,773**	**435,051**
2021	0.367%	1,369,396	725,281	298,855	285,810	480,928	**1,790,874**	**1,309,946**
2022	0.367%	1,374,426	727,946	299,952	286,860	482,694	**1,797,452**	**1,314,758**
2023	0.367%	1,379,475	730,620	301,054	287,914	484,468	**1,804,055**	**1,319,588**
2024	0.367%	1,384,542	733,304	302,160	288,972	486,247	**1,810,682**	**1,324,435**
2025	0.367%	1,389,628	735,997	303,270	290,033	488,033	**1,817,334**	**1,329,300**
2026	0.410%	1,395,325	739,014	304,513	291,222	490,034	**1,824,783**	**1,334,750**
2027	0.410%	1,401,045	742,044	305,761	292,416	492,043	**1,832,264**	**1,340,221**
2028	0.410%	1,406,788	745,085	307,015	293,614	494,060	**1,839,774**	**1,345,715**
2029	0.410%	1,412,554	748,140	308,273	294,818	496,085	**1,847,316**	**1,351,231**
2030	0.410%	1,418,345	751,207	309,537	296,027	498,118	**1,854,889**	**1,356,770**
2031	0.280%	1,422,319	753,311	310,404	296,856	499,514	**1,860,085**	**1,360,571**
2032	0.280%	1,426,303	755,422	311,274	297,688	500,914	**1,865,297**	**1,364,383**
2033	0.280%	1,430,299	757,538	312,146	298,522	502,317	**1,870,523**	**1,368,206**
2034	0.280%	1,434,307	759,660	313,021	299,358	503,724	**1,875,763**	**1,372,039**
2035	0.280%	1,438,325	761,789	313,898	300,197	505,136	**1,881,019**	**1,375,883**
2036	0.143%	1,440,388	762,881	314,348	300,627	505,860	**1,883,716**	**1,377,856**
2037	0.143%	1,442,453	763,975	314,798	301,058	506,585	**1,886,417**	**1,379,832**
2038	0.143%	1,444,522	765,071	315,250	301,490	507,312	**1,889,123**	**1,381,811**
2039	0.143%	1,446,594	766,168	315,702	301,922	508,039	**1,891,832**	**1,383,792**
2040 (thru Aug)	0.143%	1,448,668	511,511	210,770	201,570	339,179	**1,263,030**	**923,851**
					PLANNING PERIOD TOTAL		**36,981,000**	**27,050,000**

Note: The total aggregate projection of waste requiring disposal for the planning period of 9/1/20 through 8/31/40 (sum of the figures in bold text) is 36,981,000 tons. [8]

Table 2 - Waste Projections for September 1, 2020 to August 31, 2020

Notes:

1. Based on projections from State of New Hampshire, Office of Energy and Planning Regional Planning Commissions-County Population Projections, 2016 by Age and Sex-Table 1: Summary of Projected Total Population. Estimated populations are given in five-year intervals for years 2015, 2020, 2025, 2030, 2035, and 2040. 2018 population estimate taken from NHOEP 2018 Population Estimates of New Hampshire Cities and Towns, dated August 2019. The rate of population increase from the NHOEP data for the years listed above was applied to the 2018 data point to estimate population over the planning period. NCES linearly interpolated populations for other years between the provided estimates.
2. Projected waste generation calculated using a rate of 0.53 tons per capita.
3. Projected waste generation calculated using a rate of 0.22 tons per capita.
4. Projected waste generation calculated using a rate of 0.21 tons per capita.
5. Projected waste generation calculated using a rate of 0.35 tons per capita.
6. Waste requiring disposal is the total NH generated waste minus recycling. Over the planning period, this quantity totals 27,050,000 tons.
7. Quantities for 2018 are the 2018 NH Solid Waste In-State Disposal quantities from Table 1, including exported waste.
8. Under RSA 149-M:11, V(d), the twenty-year planning period commences upon NHDES's public benefit determination. That determination is more likely to occur late summer 2020. To avoid speculation about when in 2020 to commence the twenty-year period, NCES has assumed a planning period beginning on September 1, 2020.

Table 3 - Authorized Waste Types by Facility

Landfill	Location	Service Type	Authorized Waste Types
TLR-III Refuse Disposal Facility	Rochester, NH	Unlimited	MSW, C&D, bulky waste, bottom and fly ash, asbestos, infectious waste, sludge and septage solids, industrial waste, waste from pollution control devices, residue from non-hasardous chemical spills, contaminated residuals, off-specification commercial products, industrial process demo, contaminated soils, bulked liquid waste (1).
North Country Environmental Services, Inc. (NCES)	Bethlehem, NH	Unlimited	MSW, C&D, Pre-approved special wastes (e.g., industrial processes waste including WWTP sludge and APC wastes, remediation wastes, contaminated soils and media, off-specification materials, incinerator ash)(2,3)
Lower Mount Washington Valley Secure Solid Waste Landfill	Conway, NH	Limited	Solid waste,(4) WWTP sludge from N. Conway Water Precinct (5), MSW, C&D(6)
Lebanon Regional Solid Waste Facility	Lebanon, NH	Limited	MSW, C&D, Bulky waste (7), WWTP sludge from Lebanon (8), WWTP grit/grease/screenings (9), Treated infectious waste (10)
Four Hills Secure Landfill Expansion	Nashua, NH	Limited	MSW, C&D, asbestos (11), bulky waste, street sweepings, WWTP sludge/grit/grease (12,13)
Mount Carberry Secure Landfill	Success, NH	Unlimited	MSW, C&D, asbestos, incinerator ash, contaminated soils and media (14), mill wastes (i.e., MSW, ash, grit,lime, WWTP sludge) (15), bulky waste, auto shredder and metal shredder residue (16)

1 NHDES. Solid Waste Management Facility Standard Permit, Permit No. DES-SW-95-001, Approved June 11, 2018.
2 NHDES. Solid Waste Management Facility Standard Permit. Approved March 13, 2003.
3 NCES Facility Operating Plan: North Country Environmental Services, Inc. Dated July 2014.
4 NHDES. Authorization to Manage Solid Waste, Permit No. DES-SW-90-028. Approved October 22, 1990.
5 NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved July 12, 1995.
6 CMA Engineers, Inc. Lower Mount Washington Valley Secure Solid Waste Landfill: Facility Operating Plan. Dated November 2012.
7 NHDES. Solid Waste Management Facility Standard Permit. Approved March 19, 1999.
8 NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved August 9, 2000.
9 NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved December 20, 1999.
10 City of Lebanon. Operating Plan: Phase II Secure Expansion. Revised April 2013.
11 NHDES. Solid Waste Management Facility Standard Permit. Approved June 26, 1995.
12 City of Nashua. Operating Plan: Phase II Secure Landfill Expansion. Revised June 2013.
13 NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved February 7, 2003.
14 NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved March 7, 2003.
15 NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved August 12, 2002.
16 NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved February 25, 2019.

Table 4

Range of Disposal Capacity Available for New Hampshire Waste for Twenty-Year Planning Period

This table illustrates the disparity between permitted operating capacity and design capacity for solid waste disposal facilities in New Hampshire. "Permitted operating capacity" refers to capacity for which a permittee has received design, construction, and operating approval. "Design capacity" refers to capacity for which the applicant has received approval for the landfill capacity and envelope but has not yet received construction and operation approval.

Landfill	Permitted Operating Capacity Remaining as of January 1, 2019 (Tons)	Permitted Operating Capacity Remaining as of September 1, 2020 (Tons)	Design Capacity Remaining as of January 1, 2019 (Tons)	Design Capacity Remaining as of September 1, 2020 (Tons)
NCES	N/A	131,500	N/A	131,500
TLR-III	5,897,028	4,084,238	19,316,628	17,495,276
Mt. Carberry	1,372,697	1,955,717	1,372,697	1,955,717
Nashua	387,220	244,379	1,240,000	1,240,000
Lebanon	450,765	367,624	450,765	367,624
Mt. Washington/Conway	50,000	50,000	50,000	50,000
Landfill Total (Tons)	8,157,710	6,833,458	22,430,090	21,240,117

	Range of Disposal Capacity for Waste-to-Energy Facilities			
Waste-to-Energy Facility (WTE)	**Annual Disposal Capacity (TPY)**	**20-Year Disposal Capacity (TPY)**	**Annual Disposal Capacity (TPY)**	**20-Year Disposal Capacity (TPY)**
Wheelabrator Concord Co.	140,000	2,800,000	140,000	2,800,000

	Total Disposal Capacity	
	Permitted Operating Capacity as of January 1, 2020 Through 2039	**Design Capacity as of January 1, 2020 Through 2039**
Landfills and WTE	9,633,458	24,040,117

Notes

1. For the purposes of this analysis, the applicant assumes that the twenty-year planning period contemplated by RSA 149-M:11, V(a) commences on September 1, 2020.

2. Projections in this Table 4 are provided in tons and generally generated from each facility's annual facility report ("AFR") for 2018. The AFRs provide each facility's estimated remaining capacity in cubic yards ("cy"). Unless indicated otherwise, the applicant converted this amount into tons by first dividing the facility's in-place density (in cubic yards per pound) by 2,000 pounds per ton. The applicant then multiplied that quotient by the estimated remaining operating capacity in cubic yards set forth in the 2018 AFR for each facility.

Estimated remaining permitted capacity in cy as of 12/31/18, as reported in the 2018 AFR	*x*	*(In-place density in cy / 2000 lbs. per ton)*	=	*Capacity in Tons as of January 1, 2019*

3. Where noted, the applicant utilized from each facility's 2018 AFR to convert the reported cubic yards into tons. The applicant also utilized in-place densities obtained from facility summary reports prepared by NHDES as of 2017. The applicant requested more recent summary reports but understands the department has not updated those documents since the applicant originally received that data in 2017.

4. The applicant projected the estimated remaining capacity of each facility as of September 1, 2020. Unless otherwise indicated, the applicant calculated this value by multiplying each facility's average annual fill rate by 1.66 years (the difference from January 1, 2019 to September 1, 2020). That product was then deducted from the January 1, 2019 capacity in tons.

Capacity in Tons as of January 1, 2019	-	*Facility's Annual Fill Rate*	=	*Capacity in Tons as of September 1, 2020*

5. The applicant utilized its internal data to generate NCES's estimated remaining capacity as of September 1, 2020. Based on the remaining permitted capacity that will be reported in its 2019 AFR, the applicant calculated the estimated tons it expects to receive for disposal each month from the commencement of the planning period in September 2020 until Stage V capacity is exhausted in 2021. The sum of those monthly amounts is approximately 131,500 tons. NCES does not have available design capacity that has not yet been permitted, so the values for both capacity projections in Table 4 as of September 1, 2020 are identical.

6. The permitted operating capacities set forth in Table 4 for TLR-III are generated with the formulas described in Notes 2 and 4. In its 2018 AFR, TLR-III reported that it had 6,987,000 cy of remaining capacity as of December 31, 2018, and 5.4 years of remaining life. In 2017, TLR-IIII had an in-place density of 1,688 lb/cy. In June 2018, NHDES approved a 15.9 million cy expansion that will provide capacity for Stages 15-17 until June 30, 2034. This expansion has received design approval, but not permitted operating approval, and is thus only incorporated into the design capacity calculations in Table 4. To calculate the design capacity as of January 1, 2019, the applicant converted the 15.9 million cy expansion into tons using the formula described in Note 2 (the "expansion tonnage") and added it to the

permitted operating capacity as of January 1, 2019. To calculate the design capacity remaining as of September 1, 2020, the applicant converted the annual fill rate reported in TLR-III's recent permit application, 1,300,000 cy/year, into tons using the in-place design density of 1,688 lb/year. That value was then multiplied by 1.66 (the difference from January 1, 2019 to September 1, 2020) and deducted from the design capacity remaining as of January 1, 2019.

7. Mt. Carberry received a standard permit in two parts in 1988 and 1989. Although the standard permit approved the design of Phase I, II, and III of the landfill, regulations in force at that time did not require the then-owner of the facility, James River Corporation, to demonstrate that the approved capacity satisfied public benefit requirements. AVRRDD, the current owner, converted the landfill to a commercial facility in 2003. At that time AVRRDD demonstrated that the capacity afforded by Phase II would provide a public benefit. Because none of the Phase III capacity has yet been shown to satisfy the public benefit requirement, none of the Phase III capacity is included in the calculations of available capacity set forth in Table 4. AVRRDD has operating approval through Phase 2. In this Table 4, the applicant estimated Mt. Carberry's remaining permitted capacity utilizing the formulas described in Notes 2 and 4. In its 2018 AFR, AVRRDD reported that it had 1,673,000 cy of remaining capacity as of December 31, 2018, and 5.72 years of remaining life. In 2017, AVRRDD had an in-place density of 1,641 lb/cy. However, Mt. Carberry also has approval for its 711,000 cy Stage 12 expansion, which is also considered in the Table 4 calculations. This capacity was permitted on February 25, 2019. To calculate the remaining capacity as of September 1, 2020, with the Stage 12 expansion, the applicant converted 711,000 cy Stage 12 expansion into tons using its in-place density of 1,641 lb/cy; this conversion yielded 583,020 tons of Stage 12 capacity. That value was then added to the permitted volume remaining as of January 1, 2019, to generate the value set forth in Table 4 for permitted capacity remaining as of September 1, 2020.

8. In its 2018 AFR, Nashua reported that it had 553,172 cy of remaining capacity as of June 31, 2018, and 4.5 years of remaining life. In 2017, Nashua had an in-place density of 1,260 lb/cy. The applicant estimated the operating capacity as of January 1, 2019, by calculating the amount of the estimated remaining operating capacity attributable to a half year and adding it to the value obtained with the formula described in Note 2. The applicant utilized the following formula to calculate the operating capacity as of January 1, 2019:

Capacity in Tons as of January 1, 2019 + *(.5 x ((553,172 cy as of 6/31/18 / 4.5 years remaining) x (1260 in-place density / 2000 lbs. per ton)))* = *Nashua operating capacity as of 1/1/19 in tons*

Nashua's design capacity, including Phase III, allows for filling beyond the 20-year planning period; accordingly, to calculate the design capacity for both 2019 and 2020, the applicant multiplied the facility's 62,000 TPY fill rate by 20 years.

9. In its 2018 AFR, Lebanon reported that it had 810,000 cy of remaining capacity as of December 31, 2018, and 9 years of remaining life. In 2017, Lebanon had an in-place density of 1,113 lb/cy. To calculate the figures set forth in Table 4, the applicant utilized the formulas described in Notes 2 and 4.

10. NHDES has not provided an estimated in-place density for Mt. Washington/Conway, so the applicant assumes it to be approximately 1,000 lb/cy. While the landfill's AFR reports that it has approximately 238,000 cy of approved operating and design capacity remaining

and 18 years of life remaining, it will not be filled within the 20-year planning period at the current estimated filling rate of 2,500 tons per year. Therefore, the projections assume 50,000 tons over the 20-year planning period for all capacity calculations.

11. Wheelabrator-Concord reported receiving 193,329 tons of non-recyclable waste in its 2018 AFR. 174,673 tons of that waste was generated in New Hampshire. Between 60,000 to 70,000 tons of this material becomes ash each year that is then transported to an out-of-state facility for disposal. It is therefore not included in this table to show Wheelabrator's remaining capacity. This table assumes an annual disposal capacity of 140,000 tons per year, which is calculated by rounding New Hampshire's share of the waste to 175,000 and deducting the maximum expected volume of ash from that amount. That amount (140,000 tons) is then multiplied by 20 to calculate the capacity projections for 2020.

Table 5
Summary of NCES Waste Quantities by Source Location (2003 - 2019)

Origin	2016	2017	2018	2019	TOTAL	%	
Allenstown & Surrounding Towns	68,388	66,499	53,182	69,700	*451,318*	15.68%	
Alstead, Town of	0	0	0	0	*3,110*	0.11%	
Ashland, Town of	531	568	625	229	*9,505*	0.33%	
Bartlett, Town of	0	0	0	0	*3,691*	0.13%	
Bath, Town of	0	73	23	0	*4,756*	0.17%	
Bedford, Town of	0	0	0	0	*84,247*	2.93%	
Belmont Transfer & surrounding towns	39,066	51,536	52,220	51,519	*154,330*	5.36%	
Bethlehem, Town of	895	1,467	1,644	1,262	*9,328*	0.32%	
Candia, Town of	0	0	0	104	*669*	0.02%	
Carroll, Town of	331	1,001	996	1,041	*9,370*	0.33%	
Colebrook, Town of	0	0	0	0	*1,707*	0.06%	
Charlestown, Town of	1,098	1,263	1,462	1,425	*16,349*	0.57%	
Columbia, Town of	0	0	0	0	*97*	0.00%	
Dalton, Town of	191	217	202	215	*3,118*	0.11%	
Franconia, Town of[1]	765	881	872	843	*14,076*	0.49%	
Goffstown, Town of	5,198	5,345	5,494	5,635	*36,846*	1.28%	
Groton, Town of	211	242	269	288	*4,254*	0.15%	
Hebron-Bridgewater Regional District	17	19	14	179	*887*	0.03%	
Henniker, Town of	0	0	63	0	*63*	0.00%	
Jackson, Town of	0	0	21	0	*3,173*	0.11%	
Jefferson	0	163	246	182	*591*	0.02%	
Keene, City of	0	0	0	0	*53,507*	1.86%	
Lancaster, Town of	0	86	89	94	*4,569*	0.16%	
Lincoln/Woodstock, Town of	0	1,895	2,188	2,847	*10,310*	0.36%	
Lisbon, Town of	669	685	915	843	*11,651*	0.40%	
Litchfield, Town of	0	0	0	0	*502*	0.02%	
Littleton, Town of	1,470	1,857	2082.94	2,497	*18,571*	0.65%	
Manchester, City of	0	0	10	3,109	*4,511*	0.16%	
Meredith, Town of	0	0	0	0	*4,882*	0.17%	
Milford, Town of	0	0	499	674	*1,273*	0.04%	
Monroe, Town of	0	25	0	18	*1,007*	0.03%	
Nashua, City of	0	1,095	4,746	0	*7,026*	0.24%	
Northumberland, Town of	0	0	0	0	*416*	0.01%	
Plymouth, Town of	1,137	1,255	1,260	1,316	*18,405*	0.64%	
Raymond and Surrounding Towns	27,075	23,127	25,434	21,877	*152,602*	5.30%	
Rindge, Town of	0	0	0	0	*3,293*	0.11%	
Rumney, Town of[2]	613	586	596	605	*10,313*	0.36%	
Sanbornton, Town of	276	273	0	0	*9,551*	0.33%	
Sunapee, Town of	1,580	1,612	1,648	1,696	*25,924*	0.90%	
Thornton, Town of[3]	1,983	2,155	2,189	2,337	*31,509*	1.09%	
Waterville Valley, Town of	771	909	1,032	889	*15,144*	0.53%	
Whitefield, Town of	0	230	312	285	*937*	0.03%	
Wentworth, Town of	65	0	0	0	*4,776*	0.17%	
Wolfeboro, Town of	0	0	0	0	*152*	0.01%	
Affiliates and Third Parties	33,168	55,491	57,234	48,051	*1,147,914*	39.89%	160,333.95
Beneficial Use Materials	33,100	17,296	13,947	13,729	*272,060*		
SUBTOTAL	*218,598*	*237,853*	*231,515*	*233,488*	*2,622,290*		

Table 5
Summary of NCES Waste Quantities by Source Location (2003 - 2019)

Origin	2016	2017	2018	2019	TOTAL	%
CONNECTICUT	19,418	6,493	12	71	26,180	0.91%
MAINE	25	61	20	1,407	74,674	2.59%
MASSACHUSETTS	144,784	113,389	114,951	106,521	748,833	26.02%
NEW JERSEY	0	0	0	12	12	0.00%
NEW YORK	0	0	0	0	205	0.01%
RHODE ISLAND	9,935	7,187	626	59	20,754	0.72%
VERMONT	7,146	6,946	5,161	5,277	130,153	4.52%
SUBTOTAL	*181,307*	*134,075*	*120,770*	*113,345*	*873,216*	
TOTAL	**399,905**	**371,928**	**352,285**	**346,833**	**3,149,933**	

1. Tri-Town Transfer Station in Franconia services the Towns of Franconia, Sugar Hill and Easton

Table 6

Municipalities Directing Waste to NCES through CWS Transfer Stations in Southern New Hampshire [1]

Allenstown Transfer

Allenstown
Amherst
Antrim
Auburn
Barrington
Bedford
Bow
Candia
Chester
Chichester
Danville
Deerfield
Derry
Dover
Dunbarton
Durham
Epping
Epsom
Farmington
Greenfield
Hooksett
Hudson
Lee
Litchfield
Londonderry
Manchester
Merrimack
Middleton
Milford
Nashua
New Boston
New Castle
New Durham
Northwood
Nottingham
Pelham
Salem
Strafford
Weare
Windham

Belmont Transfer

Alexandria
Alton
Andover
Ashland
Barnstead
Belmont
Boscawen
Bridgewater
Bristol
Brookfield
Campton
Canterbury
Center Harbor
Concord
Danbury
Effingham
Franklin
Freedom
Gilford
Gilmanton
Groton
Hebron
Henniker
Hill
Hillsborough
Holderness
Hopkinton
Laconia
Lincoln
Loudon
Madison
Meredith
Moultonborough
New Hampton
Northfield
Ossipee
Pembroke
Pittsfield
Plymouth
Rumney
Salisbury
Sanbornton
Sandwich
Tamworth
Thornton
Tilton
Tuftonboro
Wakefield
Warren
Waterville Valley

Raymond Transfer

Atkinson
Brentwood
East Kingston
Exeter
Fremont
Greenland
Hampstead & E
Hampstead
Hampton
Hampton Falls
Hollis
Kensington
Kingston
Madbury
Newfields
Newington
Newmarket
Newton
North Hampton
Plaistow
Portsmouth
Raymond
Rochester
Rollinsford
Rye
Sandown
Seabrook
Somersworth
South Hampton
Stratham

(1) Based on information provided on inbound loads and third-party haulers: as well as Raymond and Salem Hauling. Hauling data collected at time of service.

(2) Data from inbound loads directly scaled at NCES.

Table 7

Municipalities Served by Gobin Disposal Services (GDS) and White River Junction in 2018[1]

Municipality	MSW, tons[2]	C&D, tons[2]	Other[3]	
Acworth	0.00	15.61	0.00	
Alstead	0.38	99.54	0.00	
Andover	0.00	8.24	0.00	
Bradford	0.00	9.80	0.00	
Canaan	0.64	0.00	0.00	
Charlestown	1,088.42	528.26	0.00	
Claremont	6,778.61	2,148.74	0.00	
Cornish	541.85	156.25	0.00	
Croydon	283.18	96.10	0.00	
Elkins	0.00	0.00	0.00	
Enfield	0.85	10.81	0.00	
Georges Mills (Sunapee)	0.00	11.78	0.00	
Gilsom	0.00	0.69	0.00	
Goffstown	0.00	0.00	0.00	
Goshen	32.26	30.87	0.00	
Grantham	1,157.21	626.33	0.00	
Hanover	0.00	1.62	0.00	
Henniker	0.00	6.31	0.00	
Hillsborough	0.00	4.92	0.00	
Hopkinton	0.00	1.62	0.00	
Keene	0.00	3.38	0.00	
Langdon	0.00	24.47	0.00	
Lebanon	53.80	20.73	15.74	
Lempster	175.80	513.28	0.00	
Lyme	8.13	0.95	0.00	
Manchester	21.09	0.00	0.00	
Marlow	75.45	24.24	0.00	
Newbury	6.32	430.68	0.00	
Newport	4,250.06	1,411.48	845.73	
New London	92.60	344.80	0.00	
Plainfield	0.00	6.71	0.00	
Salem	9.90	0.00	0.00	
Springfield	0.00	172.99	0.00	
Stoddard	0.00	0.00	0.00	
Sunapee	339.98	299.21	0.00	
Sutton	0.00	7.14	0.00	
Swansey	0.00	0.00	0.00	
Unity	270.23	99.95	0.00	
Walpole	757.92	120.12	0.00	
Warner	0.00	52.99	0.00	
Washington	0.38	71.21	0.00	
Wilmot	0.00	20.80	0.00	
Vermont	9,596.96	3,548.16	0.00	**TOTAL**
TOTAL	25,542.02	10,930.78	861.47	**37,334.27**

Table 7

Municipalities Served by Gobin Disposal Services (GDS) and White River Junction in 2018[1]

Notes:

1. The data is taken from GDS's 2018 Annual Facility Report submitted to NHDES-P&RDS. It includes municipalities where waste is hauled to NCES's landfill pursuant to private contracts with the residential or commercial waste generator.

2. The GDS AFR indicates that of the tonnages above, 23,433.70 tons of MSW and C&D were disposed at the NCES landfill while 12,807.15 tons of MSW and C&D were disposed at the NEWSVT landfill in Coventry, Vermont. These tonnages assume MSW and C&D mixed together. There is a discrepancy of 231.95 tons between the sum of tonnages listed for disposal at NCES (23,433.70) or NEWSVT (12,807.15) and the sum of tonnages from the individual municipalities presented in this table.

3. Other reported waste includes 845.73 tons of foundry dust generated in Newport, of which, 805.17 tons were disposed at the NCES Landfill. Additionally, other reported waste includes 15.74 tons of industrial waste generated in Lebanon, all of which was didposed of at the NCES Landfill.

4. In addition to the waste streams described above, GDS also managed the following, as reported in their 2018 AFR: (1) 16.08 tons of tires (sent to Evergreen Recycling in Wilder, VT), (2) 14.37 tons of video display devices (sent to North Coast in Dover, NH), (3) 144.08 tons of scrap metal, including freon containing devices (sent to All Metals in Hartwick, VT), and (4) 165.35 tons of single stream recycling (sent to Northeast Waste in White River Junction, VT).

Table 8
Municipalities Served by Monadnock Disposal Services ("MDS")
Transporting Waste to NCES

Acworth	Hillsborough	Richmond
Alstead	Hinsdale	Rindge
East Alstead	Hollis	Roxbury
Amherst	Hopkinton	Sharon
Antrim	Jaffrey	Stoddard
Ashuelot	Keene	Sullivan
Bennington	Lyndeborough	Surry
Bradford	Langdon	Swanzey
Brookline	Marlborough	West Swanzey
Chesterfield	Marlow	Temple
West Chesterfield	Mason	Troy
Deering	Merrimack	Walpole
Dublin	Milford	Washington
Francestown	Mont Vernon	Westmoreland
Gilsum	Munsonville	Wilton
Greenfield	Nashua	Winchester
Greenville	Nelson	Windsor
Hancock	New Boston	Weare
Harrisville	New Ipswich	
Henniker	Peterborough	

1. This list is obtained directly from MDS in March 2020.
2. NCES is one of four disposal facilities listed for use by MDS.

Table 9
CWS Recycling Transfer Stations

IN TONS UNLESS OTHERWISE NOTED

FACILITY	RECYCLING SINGLE/MULTIPLE STREAM	CRTs/VIDEO SCREENS	SCRAP METAL	TIRES	ELECTRONICS/OTHER	OTHER (I.E. PROPANE TANKS, CONCRETE RUBBLE)
NCES BETHLEHEM [1]	973.71	16.24	52.88	55.88	-	
BESTWAY RAYMOND[2]	118.32	64.79	381.61	21.40		
BESTWAY BELMONT[2]	6,900.62	1.89	83.35	14.64		
GOBIN DISPOSAL SERVICES[3]	1,438.15		52.57	24.74		
CONCORD[2]	295.43	43.82	333.59	20.00		
ALLENSTOWN TRANSFER STATION[2]	19,137.26			3.24		
NH WASTE @ WHITE RIVER JCT., VT[3]	3,925.96		406.83	19.45		93.06 - CONCRETE
SUBTOTAL	32,789.45	126.74	1,310.83	159.35	-	N/A

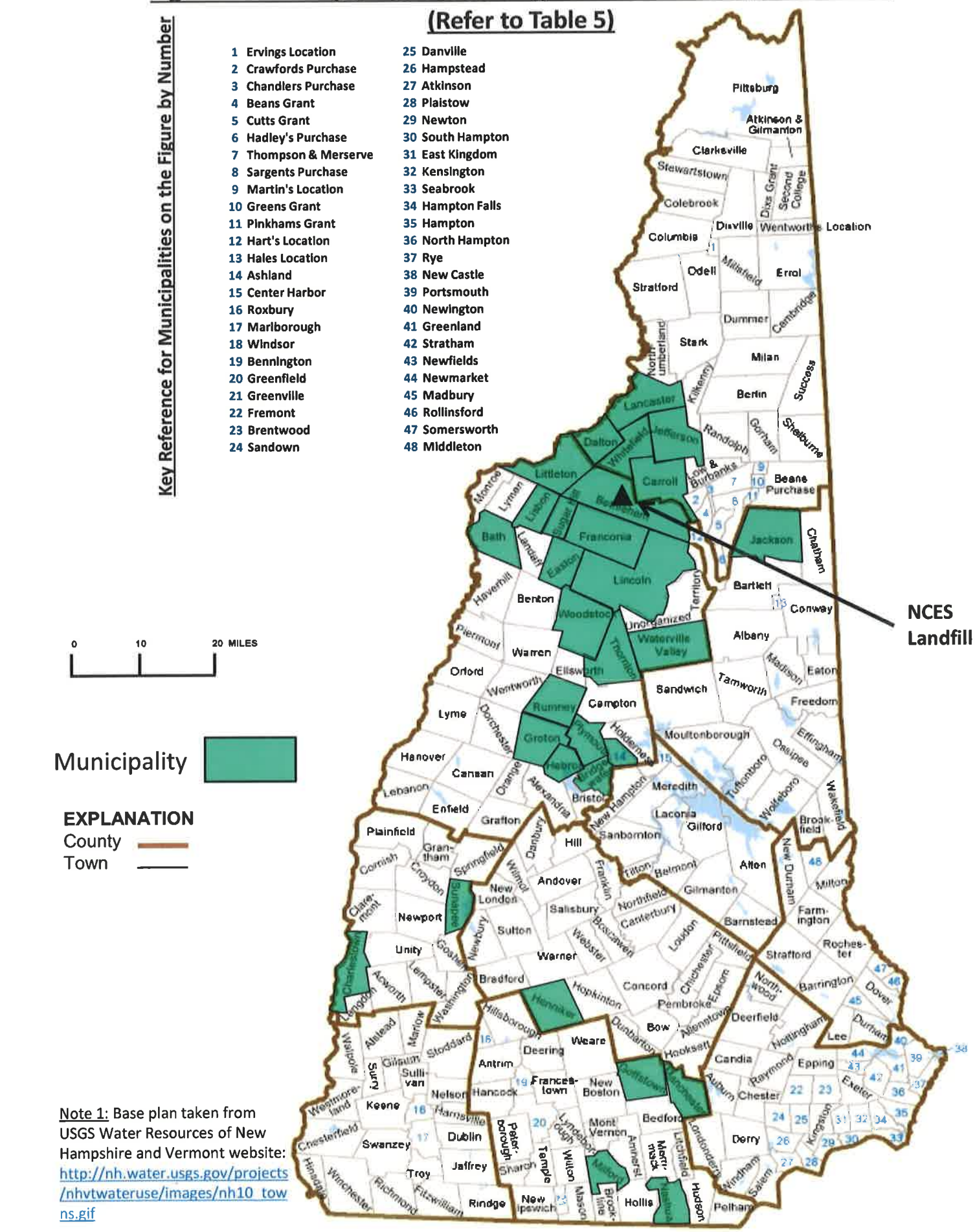
[1] Data taken from from 2018 NH AFR.
[2] Data taken from on site out bound tonnage information.
[3] Data taken from billing data of services provided in NH.

Figure 1 - Municipalities Contracting With NCES for Disposal in 2018

(Refer to Table 5)

Key Reference for Municipalities on the Figure by Number

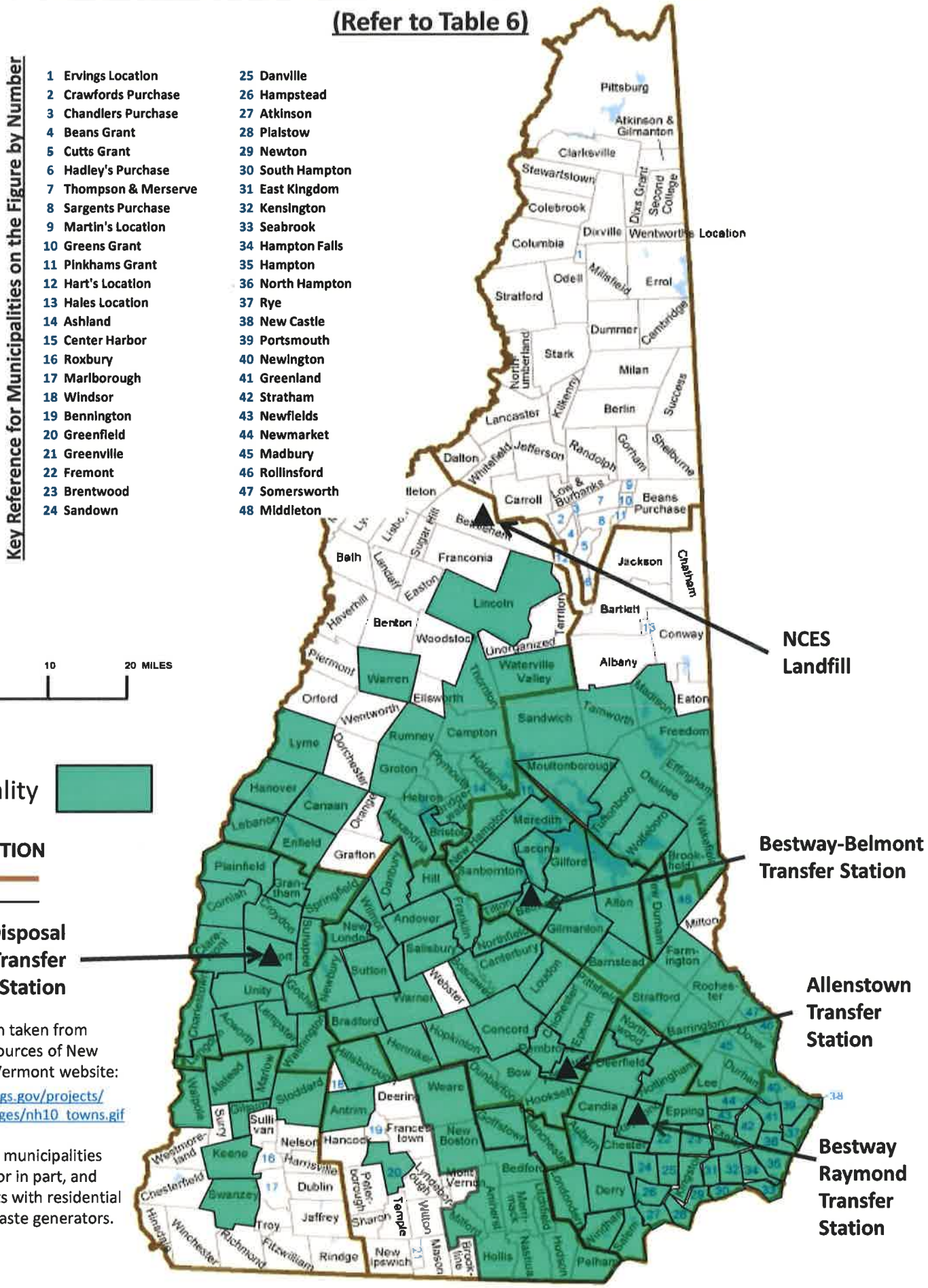
1	Ervings Location	25	Danville
2	Crawfords Purchase	26	Hampstead
3	Chandlers Purchase	27	Atkinson
4	Beans Grant	28	Plaistow
5	Cutts Grant	29	Newton
6	Hadley's Purchase	30	South Hampton
7	Thompson & Merserve	31	East Kingdom
8	Sargents Purchase	32	Kensington
9	Martin's Location	33	Seabrook
10	Greens Grant	34	Hampton Falls
11	Pinkhams Grant	35	Hampton
12	Hart's Location	36	North Hampton
13	Hales Location	37	Rye
14	Ashland	38	New Castle
15	Center Harbor	39	Portsmouth
16	Roxbury	40	Newington
17	Marlborough	41	Greenland
18	Windsor	42	Stratham
19	Bennington	43	Newfields
20	Greenfield	44	Newmarket
21	Greenville	45	Madbury
22	Fremont	46	Rollinsford
23	Brentwood	47	Somersworth
24	Sandown	48	Middleton



Note 1: Base plan taken from USGS Water Resources of New Hampshire and Vermont website: http://nh.water.usgs.gov/projects/nhvtwateruse/images/nh10_towns.gif

Figure 2 – Municipalities Served by NCES Affiliates Disposing at NCES

(Refer to Table 6)



Note 1: Base plan taken from USGS Water Resources of New Hampshire and Vermont website: http://nh.water.usgs.gov/projects/nhvtwateruse/images/nh10_towns.gif

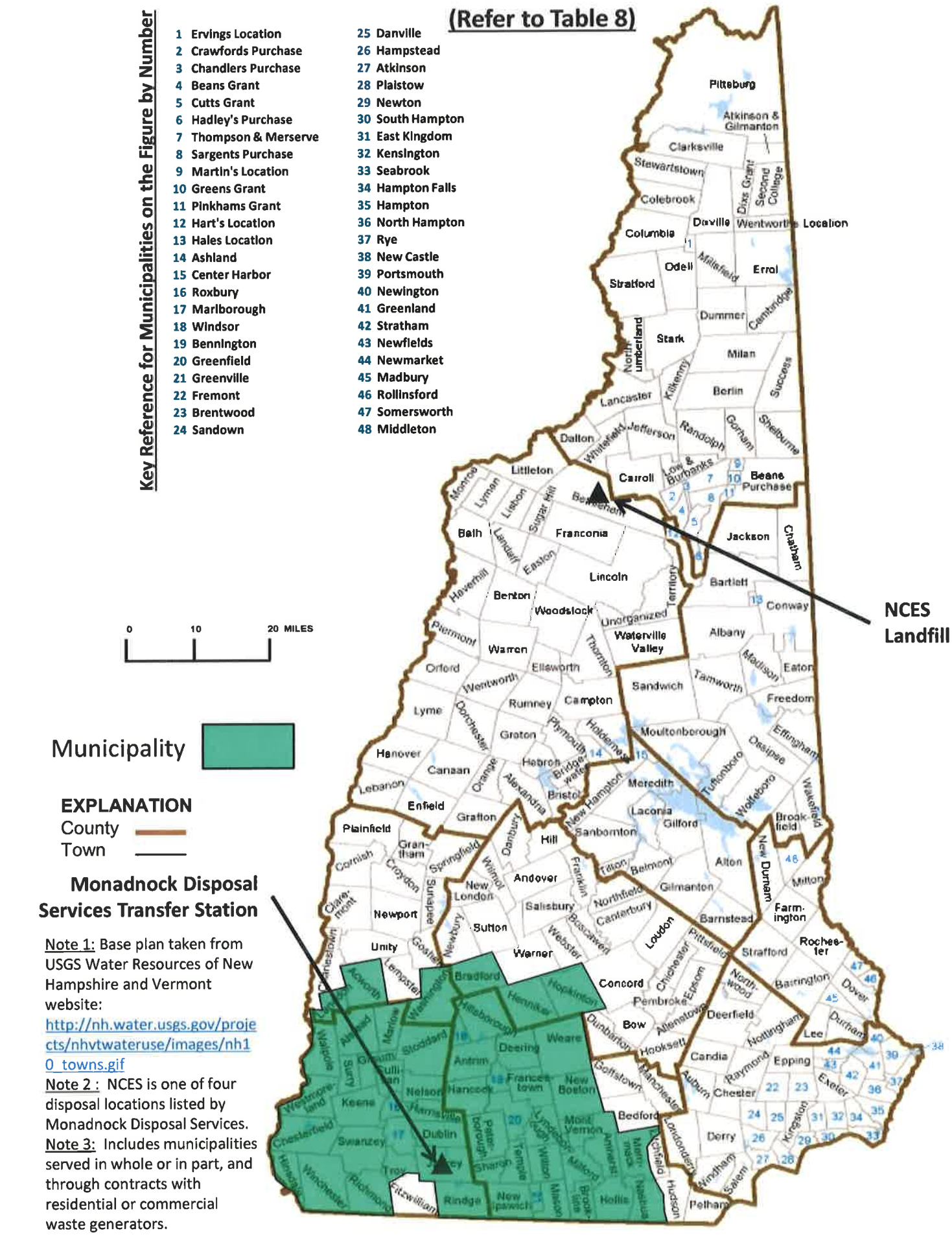
Note 2: Includes municipalities served in whole or in part, and through contracts with residential or commercial waste generators.

Figure 3 - Municipalities Served by Unaffiliated Third Parties Disposing at NCES

(Refer to Table 8)

Key Reference for Municipalities on the Figure by Number

1	Ervings Location	25	Danville
2	Crawfords Purchase	26	Hampstead
3	Chandlers Purchase	27	Atkinson
4	Beans Grant	28	Plaistow
5	Cutts Grant	29	Newton
6	Hadley's Purchase	30	South Hampton
7	Thompson & Merserve	31	East Kingdom
8	Sargents Purchase	32	Kensington
9	Martin's Location	33	Seabrook
10	Greens Grant	34	Hampton Falls
11	Pinkhams Grant	35	Hampton
12	Hart's Location	36	North Hampton
13	Hales Location	37	Rye
14	Ashland	38	New Castle
15	Center Harbor	39	Portsmouth
16	Roxbury	40	Newington
17	Marlborough	41	Greenland
18	Windsor	42	Stratham
19	Bennington	43	Newfields
20	Greenfield	44	Newmarket
21	Greenville	45	Madbury
22	Fremont	46	Rollinsford
23	Brentwood	47	Somersworth
24	Sandown	48	Middleton

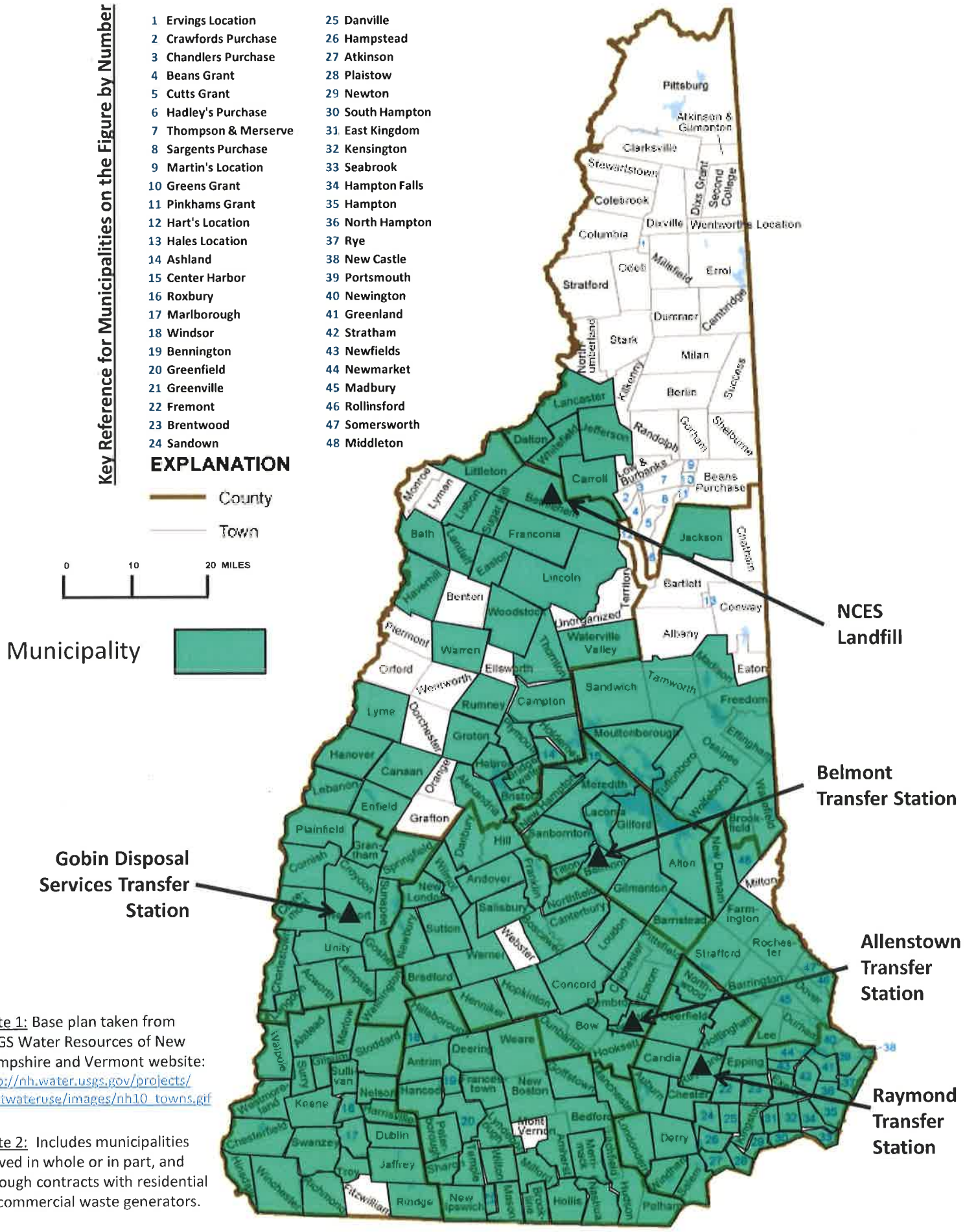


Note 1: Base plan taken from USGS Water Resources of New Hampshire and Vermont website: http://nh.water.usgs.gov/projects/nhvtwateruse/images/nh10_towns.gif

Note 2 : NCES is one of four disposal locations listed by Monadnock Disposal Services.

Note 3: Includes municipalities served in whole or in part, and through contracts with residential or commercial waste generators.

Figure 4 - All Municipalities Served by NCES (Refer to Table 9)



Note 1: Base plan taken from USGS Water Resources of New Hampshire and Vermont website: http://nh.water.usgs.gov/projects/nhvtwateruse/images/nh10_towns.gif

Note 2: Includes municipalities served in whole or in part, and through contracts with residential or commercial waste generators.

THE EXONIAN NEWSPAPER

Once you have finished reading The Exonian,
please recycle it in the bin below

Figure 5

DORM CLEAN OUT DONATION DRIVE

Wednesday, May 30 from 2:30 to 6:00 PM

Collection Locations: Bancroft Parking Lot,
Peabody Parking Lot & Ewald and Main Street

Linens • Clothing/Shoes

School, Cleaning & Kitchen Supplies • Non-Perishables

Appliances/Electronics • Furniture • Storage Bins

QUESTIONS? Contact ***jrrobinson@exeter.edu*** or ***tvassillion@exeter.edu***

DORM CLEAN OUT DONATION DRIVE, working with our partners to make the move out process more environmentally and community friendly.

Figure 5

OOPS!

It's ok - we all make mistakes!
Please review the checked boxes below to help improve the collection process.

Address: _____

- ☐ **Your material WAS collected, but please correct for next time.**
- ☐ **Your material WAS NOT collected.**

ZERO-SORT® RECYCLING *(these items DO NOT belong in your bin):*

- ☐ **Plastic Bags** *(includes bagged recyclables)*
- ☐ **Tanglers** *(cords, ropes, hoses, clothing, VHS tapes, etc.)*
- ☐ **Clothing** *(includes textiles)*
- ☐ **Food Waste/Liquids** *(includes dirty recycling)*
- ☐ **Bulky Items** *(scrap metal, wood, plastic furniture, etc.)*
- ☐ **Electronics** *(includes batteries of any kind)*
- ☐ **Other:** _____

TRASH *(these items DO NOT belong in your bin):*

- ☐ **Bulky Items** *(furniture, appliances, etc.)*
- ☐ **Hazardous Items** *(aerosol paints, pesticides, used oil, etc.)*
- ☐ **Electronics** *(includes batteries of any kind)*
- ☐ **Non-Conforming Trash Bag(s)**
- ☐ **Other:** _____

casella

For questions and more information, please call us at **800-CASELLA** or visit **casella.com/recyclebetter**

OOPS! TAG RECIPIENT

Address: _____

Driver/Date: _____

Reason: _____

Contaminated Stream *(circle)*: **Trash** **Recycling**

Figure 8