

**RESPONSE TO PUBLIC COMMENT**  
**Application for Landfill Expansion, Permit No. DES-SW-SP-95-001**  
**Waste Management of New Hampshire, Inc.**  
**TLR-III Refuse Disposal Facility, Phases 15-17**  
**90 Rochester Neck Road, Rochester, NH**  
**June 11, 2018**

**Table of Contents**

<b>I. Introduction .....</b>	<b>3</b>
<b>II. Permitting &amp; Design.....</b>	<b>4</b>
1. Proposal is Contrary to RSA 149-M:1 .....	4
2. Public Comment Process .....	4
3. Environmental Justice.....	6
4. Application is Incomplete .....	6
5. Facility History and Facility Design .....	7
6. Extreme Weather Events.....	8
7. Bickford-Hayes Burial Ground .....	9
8. Height .....	10
9. MSE Berms.....	10
10. Design Technology.....	12
11. Facility Design Life .....	15
12. Public Health and Safety.....	16
13. Coakley Landfill .....	17
14. Waste Type Receipt/Acceptance.....	17
15. Operating Plan .....	19
16. Waste Tonnages/Airspace Utilization .....	20
<b>III. Impacts to Surrounding areas .....</b>	<b>20</b>
17. Odors .....	20
18. Landfill Gas.....	22
19. Noise .....	26
20. Litter .....	26
21. Traffic.....	27
22. Property Values .....	27
23. Aesthetics .....	27
<b>IV. Groundwater and Surface Water Protection &amp; Wetlands .....</b>	<b>28</b>
24. Leachate.....	28
25. Groundwater & Surface Water.....	29
26. Wetlands.....	34

<b>V. Public Benefit, Recycling &amp; Out-of-State Waste.....</b>	<b>35</b>
27. Public Benefit.....	35
28. Capacity and Promoting Reduce, Reuse, and Recycle.....	36
29. Out-of-State Waste.....	37

## I. Introduction

On May 24, 2017, the New Hampshire Department of Environmental Services (NHDES) received an application from Waste Management of New Hampshire, Inc. (WMNH) to modify Permit No. DES-SW-SP-95-001 by authorizing a vertical and lateral expansion of WMNH's TLR-III Refuse Disposal Facility (TLR-III, Landfill) on Rochester Neck Road in Rochester, New Hampshire. The expansion, referred to as TLR-III South, has a design capacity of 15.9 million cubic yards, a projected life expectancy of 10.6 years, and partly overlies portions of the existing TLR-III landfill in areas referred to as Phases 1 through 7 and 9 through 14. The application for expansion was accompanied by an application for a waiver of a wetlands setback requirement contained in the New Hampshire Solid Waste Rules (Env-Sw 100 et seq.), specifically Env-Sw 804.03(e).

NHDES held a public hearing on the applications in Rochester, NH on December 19, 2017 and kept the public comment period/hearing record open through January 25, 2018. During the public comment period, NHDES received letters of both support and opposition to the applications.

NHDES also received numerous comments asking questions and expressing concerns about the application for expansion, the waiver application, permitting requirements and procedures, facility operations, current site conditions, and other issues. NHDES considered the many public concerns expressed during the public comment and hearing process prior to making its decision to approve the applications and during the drafting of the terms and conditions of both approvals.

NHDES has prepared this document to present its responses to the public comments. Many of the individual comments were related to similar subjects and NHDES has summarized and consolidated the comments in this response for brevity. The information is organized and grouped as shown in the Table of Contents. The comments are shown in underlined italic type. The responses are shown in regular type.

NHDES is issuing this response to public comments concurrently with its decision to approve the application for expansion of the landfill and the application for a waiver of a portion of the wetland setback rule. The approved permit modification and waiver, and supporting documentation are available via NHDES' OneStop online database at <https://www.des.nh.gov/onestop/index.htm>.

## II. Permitting & Design

### 1. Proposal is Contrary to RSA 149-M:1

- a. Granting a permit to expand the Landfill directly contravenes the stated purpose of RSA 149-M:1, "to protect human health, to preserve the natural environment, and to conserve precious and dwindling natural resources through the proper and integrated management of solid waste."

RSA 149-M (the NH Solid Waste Management Act) is comprised of 60 sections. NHDES works within the full framework of RSA 149-M to achieve the stated purpose of the Act. Thus, in making its decision to approve expansion of the Landfill to increase the capacity and extend the operating life by an estimated 10.6 years, NHDES had to consider many factors. Those factors included: that landfills, although least preferred, are a component of the integrated solid waste management system endorsed by the General Court in RSA 149-M:3; that the need for landfills to be part of the integrated system is unlikely to cease within the lifespan of the expansion; that the expansion, with certain conditions added to the permit to ensure capacity for NH solid waste generators and promote the waste management hierarchy established in RSA 149-M:3, will provide a substantial public benefit based on the criteria specified in RSA 149-M:11 (see Condition (21) of the Permit Modification and Attachment A of the Permit Application Review Summary); and that the proposed plans for building and operating the expansion meet state and federal requirements for solid waste landfills. Thus, NHDES does not agree that approval to expand the landfill is contrary to the purpose of RSA 149-M.

### 2. Public Comment Process

- a. A number of commenters expressed concern regarding the public comment process, stating that it was undemocratic or otherwise lacking. Several commenters expressed concern that the City of Dover and Dover residents had not been provided an opportunity to comment and/or had not commented on the application.

Requirements for notice of filing and opportunity for public comment are contained in the Solid Waste Rules, specifically Env-Sw 303 and Env-Sw 304, as well as the Solid Waste Management Act, specifically RSA 149-M:9,VIII and RSA 149-M:11,IV(a).

In accordance with the Solid Waste Rules, WMNH notified the City of Rochester and abutters to the Landfill property, which includes the City of Dover, of its intent to file an application for expansion of the Landfill. Notification occurred as required by the Solid Waste Rules within 30 days prior to the filing in May 2017.

After NHDES deemed the application complete in November 2017, WMNH and NHDES coordinated the date, time, and location of the public hearing. NHDES' regulatory obligation with regard to notification of a public hearing is described in Env-Sw 304.08, *Public Hearing*, and is summarized as follows:

- NHDES shall provide notice to the public by publication in a newspaper of general circulation in the host municipality and host solid waste management district; and
- NHDES shall provide notice to the applicant, host municipality, host solid waste management district and other affected entities, excluding abutters (who receive their notice from WMNH), in writing and sent by first class mail.

NHDES fulfilled its notification obligations in accordance with Env-Sw 304.08.

WMNH's regulatory obligation for providing notice of the public hearing is also described in Env-Sw 304.08, *Public Hearing*. As required by that rule, WMNH notified the City of Rochester and abutters to the Landfill, which includes the City of Dover, that a public hearing would be held. Notice was also published in *Foster's Daily Democrat*, a newspaper of general circulation in the host municipality and host solid waste management district, as required. Notifications were made at least 30 days in advance of the public hearing.

In addition to fulfilling these minimum requirements, NHDES also elected to:

- Post the notice on the NHDES website at <https://www.des.nh.gov/organization/divisions/waste/swmb/index.htm>;
- Post the notice on a bulletin board in the NHDES lobby located at 29 Hazen Drive in Concord, NH; and
- Share the notice of public hearing using the NHDES' Ecolink mail server list, which occurred on December 13, 2017.

The public hearing was held on December 19, 2017 in Rochester, NH. NHDES initially set the public comment period to terminate on January 5, 2018 in recognition of the impending holidays. Additionally, in response to multiple requests for extension of the public comment period, NHDES extended the comment period by 20 days to January 25, 2018. Upon deciding to extend the public comment period until January 25, NHDES notified the applicant, the host municipality, the host solid waste management district, abutters, including the City of Dover, and other interested parties, as well as posted a notice of the extended public comment period in *Foster's Daily Democrat*, on the NHDES bulletin board, on the NHDES website, and in the Municipal Ecolink sent January 16, 2018. After receiving an initial comment letter from the City of Dover within the public comment period, NHDES requested additional input and clarification from the City of Dover. The City of Dover provided the additional information, which NHDES considered in making its final decision to approve the application.

The notification requirements of the Solid Waste Rules and the Solid Waste Management Act (RSA 149-M) were not only followed, but exceeded, and adequate time and opportunity were provided for public comment as evidenced by receipt of over 150 comments including those presented by the City of Dover.

- b. One commenter expressed concern that a form letter may have been used by municipalities to express support for the proposed expansion.

Numerous public comments were received that appeared to be based on templates or form letters from parties that support the expansion and from parties that oppose the expansion. NHDES considers all public comments during its review process, regardless of whether a template/form is used or not.

### 3. Environmental Justice

- a. How has NHDES applied its environmental justice policy to the review of this application?

NHDES used its authority provided under RSA 149-M to ensure fair and equitable treatment of all New Hampshire citizens in evaluating the application and deciding to approve the application with conditions. As required by Env-Sw 304.08, *Public Hearing* and RSA 149-M:11,IV(a), NHDES specifically considered the concerns of citizens living near the Landfill in evaluating whether the expansion meets the criteria for providing a public benefit. NHDES made substantive efforts to assure that citizens affected by the decision were aware of the opportunity to express their concerns and submit comments for NHDES to consider, regardless of their socioeconomic group. These efforts are detailed in the response to comment II.2.a.

NHDES received over 150 comments from citizens, municipalities, and advocacy groups, including oral testimony and written comments from citizens who live near the Landfill. NHDES believes that the outreach was successful, and considered all of these comments in its determination.

### 4. Application is Incomplete

- a. A few commenters expressed concern that the application was incomplete and therefore NHDES and the public were deprived of information necessary for the public to meaningfully comment on the application and NHDES to render a decision.

NHDES reviewed the application in accordance with the Solid Waste Rules and determined that the application was complete in accordance with Env-Sw 304, *Application Review*.

Some of the commenters noted that specific design details were not included in the application. NHDES notes that this application, and NHDES' approval, is only for expanded capacity and *preliminary* plans. Relative to design, NHDES has only determined that, based on preliminary plans, the landfill expansion can be designed and constructed in compliance with all applicable solid waste requirements. The approval decision made by NHDES does not allow actual construction of the facility. As a condition of its permit, WMNH is required to apply for and obtain approval of final plans for construction, operation, financial assurance, and closure of the facility by complying with the requirements in Env-Sw 1104.01, *Prerequisites for Construction*. Additional design details will be provided in those subsequent applications.

## 5. Facility History and Facility Design

- a. *Several commenters expressed concern about the prolonged development of the Landfill and incremental expansion. Some commenters asked how many permits and permit modification applications WMNH has submitted over the years.*

In Section II of the application, WMNH included a 50-year history of the property on which the Landfill is sited and a description of the expansion of TLR-III over time. NHDES has provided a facility description and permit history for TLR-III in the Permit Application Review Summary. Please refer to those documents for detailed descriptions of the Landfill's development over time, including incremental expansion.

The Solid Waste Rules require facilities, including landfills, to obtain a permit based on preliminary plans. Following issuance of an initial permit, the rules require the permittee to obtain NHDES approval of such as actions as construction of each approved phase, expansion of landfill gas collection system(s), revisions to the facility's operating plan, and any footprint expansions. The mechanism for obtaining NHDES approval is by applying for a permit modification, so that the approval, if granted, becomes an enforceable condition of the facility's permit. Since the initial standard permit was issued for TLR-III in 1995, NHDES has issued more than 150 such permit modifications and approvals for the Landfill. A list of all permit modifications and approvals for TLR-III is included in Appendix A of the Permit Modification approved on June 11, 2018.

- b. *One individual commented that this facility was never designed to be expanded, and several commenters expressed concern regarding the effects of constructing new capacity on top of existing landfill cells.*

The Solid Waste Rules do not preclude landfills from expanding, and in fact, the rules contemplate that landfills may expand over time. The Solid Waste Rules require that a

landfill expansion occur in accordance with the rules in effect at the time of the proposed expansion, and the rules and standard of practice at the time of construction. NHDES reviews each application for expansion to determine whether it can be designed and built in accordance with the Solid Waste Rules in effect at the time of the proposal and construction.

These requirements apply for all expansions, including construction of new capacity on top of existing landfill cells. The Solid Waste Rules also include specific requirements for construction of new capacity on top of existing cells in Env-Sw 805.17, *Vertical Expansion of Landfills*.

c. A map of TLR-I, II and III including the acreage of each landfill should be provided.

The application for expansion is focused on TLR-III. Maps showing the facility layout are provided in the application as follows:

- The locations of TLR-I, TLR-II and TLR-III are provided on a USGS map in Section I, as Figure No. 1 (PDF page 16); and
- The locations of TLR-I, TLR-II and TLR-III, including the TLR-III South expansion, are provided on layout plans in Section V as Figures 5.2 and 5.3 (PDF pages 206 and 207).

The acreage of each previously permitted landfill is not required to be provided in the application for permit modification. NHDES notes that the acreage of each landfill at the facility is as follows:

- TLR-I is approximately 49 acres, of which approximately 45 acres is overlain by TLR-III;
- TLR-II is approximately 51 acres;
- TLR-III Phases 1-14 constitute approximately 218 acres (including those portions that overlay TLR-I); and
- The facility expansion approved on June 11, 2018, known as TLR-III South (Phases 15-17) constitutes approximately 58.6 acres.

With the expansion, the total acreage of approved landfill footprint at WMNH's Turnkey Recycling & Environmental Enterprise (TREE) site on Rochester Neck Road is about 330 acres.

## 6. Extreme Weather Events

a. The facility must be prepared for extreme rainfall events resulting from climate disruption. Erosion prevention and leachate treatment must be in place to handle these extremes.

The Solid Waste Rules require solid waste facility infrastructure to be designed to accommodate rainfall events of varying intensity. For example, Env-Sw 805.06, *Leachate Collection and Removal System Design Standards*, includes specific infrastructure

requirements for 25-year and 100-year storm events. As noted in the Permit Application Review Summary, NHDES has determined that, based on preliminary plans submitted with the application, the Landfill expansion can be designed to meet these standards.

Recognizing that storm intensity and duration is changing over time, NHDES requires applicants to use the most recent storm intensity/duration information published by the Northeast Regional Climate Center (NRCC). NHDES has determined that the preliminary plans included in the application are based on data from NRCC.

See NHDES response to comment IV.24.b and IV.24.c for more information regarding contingency plans and backup power.

*b. Can anything more be done to prevent rainwater from entering landfills in the first place?*

Current Solid Waste Rules [ref. Env-Sw 805.06, Env-Sw 805.09, Env-Sw 806.02, Env-Sw 806.05, and Env-Sw 806.06] include many design and operating requirements to limit rainwater infiltration, including:

- Applying daily cover;
- Applying cover material over all sides and working faces of the landfill to control drainage;
- Installing an engineered cover system over areas when final grades are achieved;
- Constructing and maintaining stormwater management systems to divert and direct stormwater run-on around or away from the waste mass;
- Placing and compacting waste in such a manner as to limit rainfall infiltration;
- Repairing settlement to maintain positive drainage of the landfill cover system;
- Designing a stormwater system to minimize the generation of leachate; and
- Creating interim/temporary stormwater diversion features and directing stormwater run-on away from the waste mass.

In addition, Env-Sw 1005.01, *General Operating Requirements*, requires solid waste facilities to be operated and maintained in a manner that controls the production of leachate (in addition to other subjects) to the greatest extent practicable.

## **7. Bickford-Hayes Burial Ground**

*a. WMNH gives no information regarding effects and potential removal of the 200 year old burial ground in its application.*

Management of and relocation of the Bickford-Hayes Burial Ground is not within the authority or purview of the Solid Waste Management Bureau at NHDES. Accordingly,

information regarding relocation of the burial ground was not required to be included in the application for expansion and NHDES did not consider this issue in its evaluation of the application.

However, the following information was provided in the application: WMNH retained the services of an archaeologist and relocated the burial ground in accordance with approvals from the New Hampshire State Archaeologist, Department of Vital Records, and the City of Rochester. Additionally, WMNH has confirmed that relocation of the Bickford-Hayes Burial Ground is complete, and that the burial ground is now located south of the Isinglass River on Rochester Neck Road.

## 8. Height

- a. How high is the landfill? How high is it proposed to be? Current and proposed heights on a map should be submitted.

The maximum permitted elevation for Phases 1-14 prior to granting approval to expand the Landfill was 340 feet referenced to the National Geodetic Vertical Datum (NGVD) of 1929 as shown on Sheet 3 of 48 in the Design Drawings in the application for expansion. As shown on Sheet 21 of 48 in the Design Drawings, the elevation of the expanded landfill is now permitted to be 360 feet NGVD, which is about a 20 foot increase in overall height. For reference, Rochester Neck Road at the main entrance to the facility is at about elevation 216 feet NGVD and the height of the landfill as of May 2018 was approximately elevation 340 feet NGVD.

- b. Several commenters expressed concern regarding the height of the landfill over the tree line.

The Solid Waste Rules do not explicitly restrict the height of a landfill, nor do they include height criteria relative to tree line. Accordingly, NHDES did not consider height above tree line in its review of the application.

## 9. MSE Berms

- a. What is the engineering life of the existing and proposed berms? What is the plan for maintaining the berms after WMNH has left the site and is no longer required to monitor or maintain the berm walls (post-closure monitoring is only required for 30 years)?

The Solid Waste Rules do not specify a design life expectancy for mechanically-stabilized earth (MSE) berms. The engineering design life of a MSE berm varies, but is typically at least 75 years according to the Federal Highway Administration. WMNH is required to

monitor and maintain MSE berms in accordance with its permit during active filling operations and after the facility has stopped receiving waste. Once the facility is closed, the Solid Waste Rules and the permit require WMNH to maintain the facility in accordance with an approved closure plan, which will include requirements for monitoring and maintaining MSE berms.

There is a common mis-conception that landfills are required to be maintained for only 30 years after closure. In fact, permittees are required to provide financial assurance on a rolling 30-year basis pursuant to Env-Sw 1400, *Financial Assurance*, that is, 30 years is not the total duration of the post-closure monitoring and maintenance period. Rather, permittees are required to continue providing post-closure care of a solid waste landfill until the performance standards in Env-Sw 807.04, *Performance Standards*, are achieved. For landfills, this post-closure care period is much longer than 30 years.

- b. Specific information on current earthen berm locations and proposed locations under the proposed expansion is not included in the application. A plan detailing the proposed berm specifications (including location, length, height, and slope) should be required.

The proposed location, length, height, and slope of the MSE berms are included in the Design Drawings and Section VI, Design Report, of the application. Specifically, Design Drawing Sheet 4 shows the general alignment of the berm as indicated by contour changes; Sheets 5, 6 and 7 show the berm alignment relative to the initial development plan and profile; and Sheets 37 and 38 show proposed MSE berm details including a proposed slope of 1H:3V. Specifications for construction of the MSE berm are provided in Appendix B of the Design Report. As described in response to comment II.4.a, the plans provided are preliminary. Final design plans must be provided as described in response to comment II.9.c below.

The locations of existing MSE berms at the facility are provided in the as-built records for the Landfill. To review as-built records, please contact the NHDES' Public Information Center. To request a file review, please call (603) 271-8808, email [filereview@des.nh.gov](mailto:filereview@des.nh.gov), or complete the online file review request form found through this webpage: <https://www.des.nh.gov/organization/commissioner/pip/index.htm>.

- c. A full analysis of the proposed berms is necessary.

Agreed. The plans provided are preliminary. In accordance with Env-Sw 1104.01, *Prerequisites for Construction*, and Condition (8) of the Permit Modification approved June 11, 2018, WMNH is required to obtain NHDES approval of final design plans, including the final MSE berm design and related supporting documentation.

- d. Using earthen berm walls to build a column of waste poses an unreasonable danger. This kind of technology has already failed at the South Hadley Landfill in Massachusetts.

MSE berms used to contain waste must be designed in accordance with the requirements of the Solid Waste Rules, specifically Env-Sw 805.17, *Vertical Expansion of Landfills*, which requires MSE berms to be: designed with a static factor of safety of at least 1.5 against overturning and sliding; constructed on a stable foundation as demonstrated by calculations and geotechnical investigation; and separated from landfilled waste by a double liner system meeting the requirements of Env-Sw 805.05, *Liner System Design Standards*.

In responding to this comment, NHDES contacted the Massachusetts Department of Environmental Protection (MassDEP) to obtain information regarding the South Hadley Landfill in Massachusetts. MassDEP confirmed that one of the South Hadley Landfill berms experienced excess movement that resulted in an approximately 20-foot long crack forming length-wise along the top of the berm. The crack was observed during monitoring and has been remediated. According to MassDEP, the berm is now stable and monitoring of MSE berms at the South Hadley Landfill continues.

There are several differences between the South Hadley Landfill berms and the proposed TLR-III landfill berms. The South Hadley Landfill berm that experienced excess movement is founded on top of solid waste, was up to 50 feet tall, was over 1,000 feet long, was stepped in some locations, and included a section with a concave alignment. The TLR-III South earth berm is much less complex: it will not be founded on waste but instead on a stable foundation as required by Env-Sw 805.17(b)(2); it does not include a concave alignment; it is not proposed to be stepped; and, with a proposed maximum height of 18 feet, it will be much shorter in height. Since MSE berms are part of the landfill infrastructure, inspection, monitoring and maintenance of the MSE berms is required in accordance with the Solid Waste Rules and the facility's permit during both active filling operations and the post-closure care period.

## 10. Design Technology

- a. What kind of technology is being used for the expansion? Is the expansion going to utilize different technology than the original landfill? How has the technology improved?

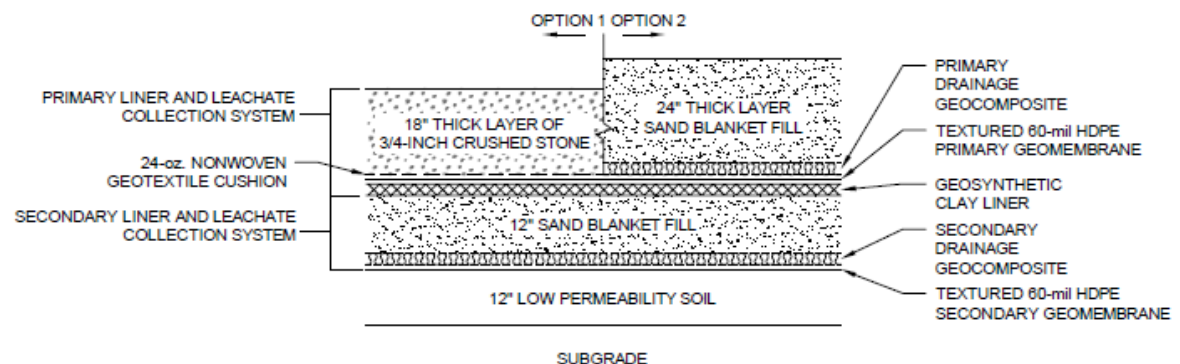
The Landfill expansion must meet the design requirements of the Solid Waste Rules in effect at the time of final design plan approval and, pursuant to Env-Sw 1103.01, *General Design Requirements*, employ best practicable technology(s) and sound engineering practices in meeting those requirements. Landfills are comprised of many different parts and types of infrastructure, and there are many different ways to design a landfill to meet

the requirements of the Solid Waste Rules. NHDES has determined that the technologies proposed by WMNH can be used to meet the current design standards in the Solid Waste Rules. A brief description of liner, cap, and landfill gas collection technology proposed for the expansion is provided below.

A cross-section of the proposed typical liner for the TLR-III South expansion is presented below. The double-liner system for TLR-III South, from the bottom up, consists of the following layers:

- Subgrade soil;
- 12-inch thick layer of low permeability soil;
- 60-mil textured geomembrane, referred to as the secondary liner;
- A drainage geocomposite to move liquids off the secondary liner;
- A secondary leachate collection system (i.e., pipes) embedded in a 12-inch thick sand blanket;
- A geosynthetic clay liner (GCL);
- A 60-mil textured high density polyethylene (HDPE) geomembrane, referred to as the primary liner;
- The primary leachate collection layer, which consists of the primary leachate collection system embedded in either 18-inches of  $\frac{3}{4}$ -inch crushed stone, or 24-inches of sand underlain by a primary drainage geocomposite.

Below is a detail from the Design Drawings (Sheet No. 28 of 48) in the permit modification application showing a typical base liner section.



## TYPICAL BASE LINER SECTION

1

NOT TO SCALE

Leachate, which is any liquid that has contacted or passed through waste, is collected on the liner system and removed by pumping it up from the base of the landfill to a central collection facility. Leachate is either piped through the local sewer system directly to the Rochester wastewater treatment plant (WWTP) or hauled off-site to a WWTP in Lowell, MA. Both WWTPs have issued industrial discharge permits to WMNH for these disposal activities. WMNH also operates an on-site pre-treatment plant to treat some of the leachate prior to transporting it off-site for final treatment and discharge at the permitted WWTPs.

To collect landfill gas, the Landfill design includes a network of landfill gas collection wells and horizontal collector pipes. The conceptual landfill gas collection system design is provided in Appendix E of the Design Report found in Volume 1 of the application.

The landfill cap must be designed in accordance with the Solid Waste Rules at the time the landfill is closed. WMNH has proposed a preliminary cap design consisting of, from the bottom up, a gas venting sand layer, a 40-mil thick HDPE geomembrane, a drainage sand layer, and a stabilizing vegetation layer.

Some of the regulatory standards and technology related to landfill design and construction have changed since TLR-I was permitted in 1979. While a description of how landfill technology has improved over time is beyond the scope of this Response to Comments, NHDES has provided a brief description below of the progression of liner technology used at the three WMNH landfills in Rochester. For those who desire more detail, the design and as-built plans for these landfills are on file at NHDES and available for review by appointment. To request a file review, please call (603) 271-8808, email [filereview@des.nh.gov](mailto:filereview@des.nh.gov), or complete the online file review request form found through this webpage: <https://www.des.nh.gov/organization/commissioner/pip/index.htm>.

The earliest State-approved landfill at this site, referred to as TLR-I, was initially permitted with a three-foot thick clay liner with a leachate collection system. Additional phases of TLR-I were permitted later and include a geocomposite clay/HDPE geomembrane liner and leachate collection system. TLR-II, the second landfill developed at this site, was permitted with a dual liner (primary and secondary) and dual leachate collection system (primary and secondary). TLR-II was one of the first double-lined landfills permitted in New Hampshire. TLR-III is also permitted with a double-liner and dual leachate collection system.

- b. One commenter expressed concern about the long term effects of the new landfill cells built upon the original 14 acres of the landfill. The commenter noted that having been built in the early 1980s, those underlying 14 acres do not seem to have the double

composite liner systems required by current regulations and that their release of contaminants is undoubtedly exacerbated by the millions of tons of waste deposited on top of them.

Construction of TLR-III over TLR-I was previously approved by NHDES in 2006 and is not the focus of this approval. However, NHDES notes that TLR-I, the original 14-acre landfill, has a 3-foot thick clay liner in certain phases and a clay/HDPE geomembrane liner in other phases, which were designed to meet or exceed the regulations in effect when they were approved. The portions of TLR-III built over TLR-I were designed and constructed with a double-liner/leachate collection system as required by Env-Sw 805.17, *Vertical Expansion of Landfills*. Approval for the construction of TLR-III over TLR-I also included a requirement to maintain leachate collection systems in TLR-I to reduce the potential for build-up of leachate on the TLR-I liner. Groundwater monitoring data does not indicate a change in local groundwater quality due to the construction and operation of TLR-III over TLR-I.

## 11. Facility Design Life

- a. One commenter expressed concern about the design life expectancy of the landfill infrastructure, including the double composite liner system.

Landfills are constructed of many materials and systems. The Solid Waste Rules specify design life expectancy for some landfill components, but not all. Examples of how design life is addressed in the Solid Waste Rules for three components of landfill infrastructure: leachate collection systems, liner, and cap, are provided below.

Leachate collection and removal systems, which are part of the liner system, are required to be built of materials with an appropriate design life expectancy to function effectively during both the active life of the landfill, and the landfill closure and post-closure care period in accordance with Env-Sw 805.06, *Leachate Collection and Removal System Design Standards*. For a landfill, this design life is indeterminate because it is not known how long the post-closure care period will last. Therefore, the Solid Waste Rules require the design to use the most appropriate, longest lasting materials currently available for these types of systems.

Based on NHDES' review of the preliminary plans, the proposed leachate collection system complies with the leachate collection system design standards in the Solid Waste Rules.

The design of landfill liners is required to comply with Env-Sw 805.04, *Liner Material and Construction Requirements*. Some of the requirements in Env-Sw 805.04 help ensure that

the liner will continue to function for as long as possible. For example, Env-Sw 805.04(b)(2) requires that synthetic liner material be chemically compatible with anticipated waste and leachate characteristics. While the liner requirements in the rules include requirements to help prolong the lifespan of liners, there is no specified design life for liners. Based on NHDES' review of the preliminary plans, the proposed liner system complies with the landfill liner material and construction requirements of Env-Sw 805.04, *Liner Material and Construction Requirements*.

The final cap is an integral part of the landfill waste containment system. While the Solid Waste Rules do not include a specified design life for final caps, the cap is accessible for repairs if needed. NHDES notes that, based on experience with unlined landfills, the final cap is an effective way to protect groundwater from the release of waste-related contaminants.

## 12. Public Health and Safety

### a. Several commenters expressed concern that landfills pose a danger to public health, safety and the environment.

NHDES agrees that solid waste, if mismanaged, can pose a danger to public health, safety, and the environment. The General Court also recognized this and promulgated RSA 149-M, the Solid Waste Management Act, the purpose of which is presented in RSA 149-M:1:

**RSA 149-M:1 Statement of Purpose.** - It is the declared purpose of the general court to protect human health, to preserve the natural environment, and to conserve precious and dwindling natural resources through the proper and integrated management of solid waste.

NHDES, using the authority provided by RSA 149-M, established the Solid Waste Rules used for regulating the management of solid waste, the purpose of which is presented in Env-Sw 101.01:

Env-Sw 101.01 Purpose. The purpose of the rules in subtitle Env-Sw is to minimize risks to the environment and public health and safety by assuring proper management of solid waste.

The Solid Waste Rules include specific requirements for landfills and NHDES takes seriously its responsibility to administer and enforce those rules.

### 13. Coakley Landfill

- a. Expansion of this landfill will create a similar environmental concern to the Coakley Landfill.

The TLR-III landfill and the Coakley Landfill are not similar. The TLR-III landfill is regulated under current Solid Waste Rules. TLR-III has a modern double-liner system and is not authorized to accept hazardous or liquid wastes. The Coakley Landfill is an unlined trench-style landfill that accepted hazardous and liquid wastes.<sup>1</sup>

### 14. Waste Type Receipt/Acceptance

- a. Unacceptable wastes will find their way into the landfill, regardless of regulatory prohibitions. We must be sure that harmful materials are not improperly disposed.

The Solid Waste Rules, permits, and operating plans administered and enforced by NHDES include measures to prevent acceptance of unauthorized wastes at solid waste management facilities. Examples of some of these measures are described below. NHDES recognizes that, while these measures may minimize acceptance of unauthorized wastes, they do not guarantee that no unacceptable waste will ever be disposed of at a landfill.

The list of authorized and prohibited wastes for the Landfill is clearly stated in its prior permits and is reiterated in Condition (17) of the permit modification approved June 11, 2018.

To comply with the authorized and prohibited waste requirements of the Solid Waste Rules and permit, WMNH inspects all waste coming into the landfill and implements measures to restrict acceptance of prohibited wastes. Those measures include: customer education and signed agreements regarding rules and regulations for use of the facility, specifically including acceptable and unacceptable wastes; and routine visual inspection of each load by trained operators looking for unacceptable materials when loads are discharged from the delivery vehicle onto the working face and as the waste is spread out at the working face.

Special wastes, such as contaminated soils, are profiled prior to being disposed of at the Landfill. A waste profile is submitted to landfill operators and reviewed by WMNH staff to determine whether the waste meets the Landfill's acceptance criteria. If the profiled waste meets acceptance criteria, the special waste may be approved for disposal at the

---

<sup>1</sup> U.S. Environmental Protection Agency. (2018 January) "Five Year Review: Coakley Landfill Superfund Site, North Hampton, NH." Retrieved on April 25, 2018 from <https://semspub.epa.gov/work/01/100001375.pdf>.

Landfill. If the profiled waste does not meet acceptance criteria, the special waste is rejected. Profiling typically includes characterization of the special waste using due diligence and, when appropriate, laboratory analysis of representative samples of the waste to ensure that the waste is non-hazardous and of a type and form that can be accepted by the Landfill. When a waste load arrives at the landfill, landfill operators check the waste profile number to ensure the waste is authorized for disposal at the facility, compare the shipping papers against the profile, and inspect the waste load to ensure it comports with the waste type expected. The permittee's special waste profiling procedures meet the requirements of the Solid Waste Rules.

- b. Landfills accept toxic waste that threatens our health. For example, in 2009, the landfill received illegally dumped asbestos waste that is still in the landfill. In 2015, the landfill received contaminated soil from the proposed Wynn Everett Casino site (formerly a Monsanto chemical plant site).

As noted above in response to comment II.14.a, the Solid Waste Rules, permits, and operating plans administered and enforced by NHDES include measures to prevent acceptance of unauthorized wastes at solid waste management facilities. Also, as noted by the commenter and acknowledged by NHDES, these measures may minimize acceptance of unauthorized wastes, but they do not guarantee that no unacceptable waste will ever be disposed of at a landfill. NHDES takes action to address such situations when we become aware of them.

For example, relative to the contaminated soil from the Wynn Everett Casino site referenced by the commenter, WMNH personnel followed the special waste profiling procedures described in response to comment II.14.a above for contaminated soils. WMNH determined through its special waste profiling procedures that some, but not all, of the contaminated soil from the Wynn Everett Casino project was acceptable for disposal at the TLR-III landfill. Soils that did not meet the facility's acceptance criteria were not authorized to be disposed of at the facility.

With regards to asbestos waste disposal, the TLR-III landfill is authorized to accept properly packaged asbestos waste for disposal in accordance with Env-Sw 900, *Management of Certain Wastes*, specifically Env-Sw 901, *Asbestos*. In 2009, the facility did receive improperly packaged/labeled asbestos waste. At the time the waste was received, it was identified by the generator as demolition debris. WMNH facility personnel did not observe anything unusual about the waste and managed the waste as demolition debris. NHDES and the New Hampshire Office of the Attorney General later determined through an investigation of the asbestos waste generator that the waste had not been properly packaged, labeled and shipped. The generator was fined for violations of NH regulations relating to asbestos abatement and asbestos waste management.

Based on the lapsed time between the disposal date at the Landfill and the date the investigation concluded that improperly packaged/labeled asbestos waste was sent to the facility, it was neither reasonable nor safe for facility personnel to exhume the improperly managed asbestos waste and, since TLR-III is permitted to accept asbestos waste, it was best to not attempt to remove it. The approximate location of the improperly packaged asbestos waste is known and the facility is operated to avoid unnecessary work in this area.

## 15. Operating Plan

- a. *The Wood and Construction Demolition Waste Processing Plan in the Operating Plan appears to be out of date. It would be useful to include a more detailed description of quality control measures in place. The plan mentions incineration of some components of the construction and demolition (C&D) debris waste stream, but does not recognize the ban on in-state C&D combustion in RSA 125-C:10-c. Waste acceptance procedures, and screening, segregation and processing procedures should be strengthened.*

WMNH did not propose changes to the wood and construction & demolition (C&D) debris operations at the facility; therefore, an updated Wood and Construction & Demolition Waste Processing Plan in Appendix A of the Operating Plan was not included in or required to be part of the permit application.

Appendix A of the Operating Plan specifies procedures for on-site management of wood and C&D debris, and subsequent wood sorting and processing operations. While the plan does not explicitly reference the ban on in-state C&D combustion in RSA 125-C:10-c, the plan does require that the treated and untreated wood transported off-site must be sent to a facility authorized to accept the material. Accordingly, the plan restricts WMNH from transporting C&D waste to any New Hampshire facility for combustion because none are currently authorized to accept such waste for combustion. NHDES notes that there are facilities authorized to accept C&D waste for combustion outside of New Hampshire.

NHDES also notes that there are numerous criteria that may limit authorization of off-site facilities to accept any residual or bypass waste from WMNH – too numerous and variable to list in the operating plan for the landfill. NHDES prefers the less specific, but more encompassing, requirement that waste transported off-site be sent to a facility authorized to accept the material.

Relative to waste acceptance procedures, please note that while Appendix A of the Operating Plan provides supplemental handling requirements for wood and C&D waste, that waste stream is also subject to the requirements of the main body of the Approved Operating Plan of Record, including Section 3.3, *Waste Review and Unloading and*

*Inspection Procedures, Section 3.4, Method to Track Quantities and Sources of Waste, and Section 3.4, Method to Track Outgoing Waste and Waste-Derived Products.* Review and amendment of these existing, approved procedures was not required as part of this application for expansion of the Landfill.

NHDES finds that the Approved Operating Plan, even without the specific reference to RSA 125-C:10-c, is currently adequate and it is not necessary to require the revisions suggested by the commenter as part of approval of the application for expansion of the Landfill.

## 16. Waste Tonnages/Airspace Utilization

- a. *A few commenters expressed concern that the application was not clear about the waste acceptance rate in tons.*

The capacity of landfills is defined in Env-Sw 102.09, "Approved Design Capacity", as both the average weekly tonnage to be received at the facility during the quarter for which the most waste is anticipated to be received, and the approved design volume. WMNH applied for an increase in its approved design volume, but did not request a modification of the weekly tonnage. As such, weekly tonnage information was not required to be included in the application.

In researching the files to provide information in response to this request, NHDES determined that the facility's existing permit does not clearly state the approved average weekly tonnage. Therefore, in the approval for expansion, NHDES has included a permit condition requiring WMNH to provide the average weekly tonnage as part of its application for final design approval. In the meantime, NHDES provides the following information in response to the comment. Based on the approved airspace usage volume of 1.55 million cubic yards per year and an annual compaction density of 1,540 pounds per cubic yard (lbs/cy) regularly achieved at the facility, NHDES estimates that the facility may receive up to approximately 1.2 million tons of waste per year.

## III. Impacts to Surrounding areas

### 17. Odors

- a. *There are often unpleasant odors that come from this landfill that impact the surrounding area. What efforts will be taken to mitigate smell from the proposed expansion? Is the odor problem predicted to get worse during and after this proposed expansion? Daily cover should be mandated.*

The Solid Waste Rules include multiple specific requirements that limit the potential for odors from landfills, in addition to the requirement in Env-Sw 1005.01, *General Operating Requirements*, that solid waste facilities “...be operated and maintained in a manner that controls to the greatest extent practicable...odor.” The use of daily cover is specifically required in Env-Sw 806.03, *Landfill Cover During Operations*, which requires solid waste facility operators to:

- Apply “an approved cover material ... over all sides and working faces of the landfill in a manner and at a frequency required to achieve the following performance objectives ... minimize the dispersal of offensive odors” [ref. Env-Sw 806.03(a)(1)]; and
- Place “... cover material ... over all exposed waste no less frequently than at the end of each operating day” [ref. Env-Sw 806.03(c)].

To date and in conformance with the Solid Waste Rules, WMNH has instituted the following measures to mitigate odor:

- WMNH uses daily cover to control odors at the working face;
- WMNH has installed multiple landfill gas extraction wells, blowers, engines, turbines, and flares to control the facility’s active landfill gas management system;
- WMNH has hired two landfill gas technicians who tune, balance and monitor the 300 plus landfill gas extraction wells at the facility at least 5 days per week, with a minimum of once monthly landfill gas well monitoring per federal requirements;
- WMNH conducts monthly landfill cover integrity checks;
- WMNH conducts quarterly landfill surface emission monitoring,
- WMNH conducts monthly landfill gas migration monitoring at perimeter gas probes;
- WMNH conducts daily leachate structure monitoring;
- WMNH conducts quarterly total reduced sulfur (TRS) sampling; and
- WMNH only accepts C&D fines that have been processed to remove gypsum, a significant contributor to hydrogen sulfide (e.g., rotten egg) odors.

In addition to the above, WMNH submits to NHDES an annual Odor Control Evaluation Report, certified by a professional engineer licensed in New Hampshire, in accordance with the permit modification approved on June 5, 2006. The report includes an evaluation of methods used to control working face, operational and landfill gas odors from the landfill; an evaluation of the landfill gas collection system; identification of deficiencies or issues surrounding the working face trash/odors and landfill gas odors and proposed recommendations and solutions for minimizing such odors; and identification and evaluation of all citizen odor complaints received by the State and/or WMNH during the evaluation period to address trends, causes and proposed solutions.

WMNH proposes to use similar construction and operation practices, including odor controls, for the permitted expansion. No changes in generation of odors compared to

current operations are anticipated. See also responses to comments III.17.b and III.17.c, below.

*b. Does WMNH monitor hydrogen sulfide in real time at TLR-III and will it be monitored in real time at the expansion?*

Hydrogen sulfide is not monitored in real time at the site perimeter, nor is it proposed to be. Emissions of hydrogen sulfide from the landfill are regulated by NHDES Air Resources Division for compliance with New Hampshire air pollution control regulations (described in more detail in response to comment III.17.c, below). Compliance with hydrogen sulfide air emission standards at the landfill is determined using air dispersion modeling based upon site-specific emissions, terrain, and meteorology.

*c. Several commenters requested a better methodology for reporting odor complaints and/or giving feedback. One commenter proposed an air quality commission between WMNH, City officials, and local citizens and/or a bi-annual survey of the local community to request feedback regarding air quality and other issues at the facility.*

NHDES has added Condition (22)(a) to the permit to require WMNH to submit to NHDES by December 11, 2018, an evaluation of its communication practices with the public regarding landfill nuisances, including reports of odor, and make recommendations to improve communication with the public. While NHDES has not required the specific protocols suggested by the commenters, NHDES expects WMNH to consider them in its evaluation.

*d. The annual Odor Control Evaluation Report does not reflect all odor complaints filed with WMNH.*

The reporting period for each annual Odor Control Evaluation Report is from July 1 through June 30. As such, the 2017 Odor Control Evaluation Report is for the period from July 1, 2016 through June 30, 2017. Complaints filed after the end of the reporting period will be included in the next annual report, due to be submitted on August 28, 2018. Individuals who are concerned that their odor complaints have not been documented by WMNH may contact NHDES in addition to reporting directly to WMNH. NHDES will then be able to compare complaints reported and included in WMNH's documentation to complaints reported to NHDES.

## **18. Landfill Gas**

*a. Will there be an increased effort to capture or burn landfill gas?*

The active landfill gas collection system at the facility will be expanded as required to accommodate the expansion and maintain compliance with solid waste and air regulations.

*b. Several commenters expressed concern about the distance that landfill gas travels through soil (possibly into their homes) and air.*

The Solid Waste Rules require WMNH to control the generation of methane and other hazardous or explosive gases to the greatest extent practicable in accordance with Env-Sw 1005.01, *General Operating Requirements*. Several of the measures used by WMNH to control emissions of landfill gas are discussed in the response to comment III.17.a above.

In addition, the Solid Waste Rules contain specific limitations on the migration of explosive gases in soil, and require that WMNH monitor soil gas to assure that these requirements are met. The requirements are established in Env-Sw 806.07, *Decomposition Gas Control Requirements*. WMNH's soil gas monitoring plan, approved by NHDES and provided in Appendix E, Gas Monitoring Plan, of the facility's current Approved Operating Plan, requires WMNH to maintain a network of soil gas probes around the perimeter of the Landfill and to monitor the concentration of gas in the probes monthly to assure that facility operations do not cause the concentration of explosive gases in soil and structures to exceed the thresholds established under Env-Sw 806.07(b). Further, Env-Sw 806.07(e) requires WMNH to notify NHDES immediately and implement contingency measures to ensure protection of public health and safety if the thresholds in Env-Sw 806.07(b) are exceeded. Perimeter soil probe monitoring in 2017 indicates that the facility is in compliance with the soil gas migration requirements.

In addition to the overall requirement to control explosive gases to the greatest extent practicable and the specific requirements to control explosive gases in soil and structures, NHDES air pollution control regulations and permits include requirements to limit emissions of pollutants into the air. Prior to expansion of the landfill, WMNH is required to demonstrate that the emissions from the expanded landfill will remain compliant with air emissions regulations and obtain a Temporary (pre-construction) air emissions permit. Air pollution control regulation of the facility is described in more detail in response to comment III.17.c, below.

*c. Several commenters expressed concern about the effects of landfill gas, including associated odors, on human health and air quality, stating their belief that dangerous air pollution is emitted by TLR-III (also known as the Turnkey Landfill).*

Odors, and human health impacts from air pollutants are regulated by NHDES.

As discussed in response to comment III.17.a, New Hampshire solid waste regulations and the facility's solid waste permit require the Landfill to control odors, and other potential impacts, to the greatest extent practicable pursuant to Env-Sw 1005.01(d).

Air emissions from the Landfill are regulated by the NHDES Air Resources Division. The regulations require the facility to comply with health risk-based air quality standards, regardless of whether the pollutants exhibit detectable odors. WMNH operates the landfill under the provisions of air emissions Title V Operating Permit TV-0062 issued by and enforced by the NHDES Air Resources Division. That permit covers air emissions from the landfill and certain associated landfill gas control equipment. Under the provisions of the facility's air permit, the air emissions from the existing landfill are regularly evaluated. To date, the evaluations have shown emissions to be less than the ambient air limits (AALs) for Regulated Toxic Air Pollutants codified in the Air Program Rules, specifically Env-A 1400, *Regulated Toxic Air Pollutants*. NHDES establishes AALs for Regulated Toxic Air Pollutants for the express purpose of protecting public health. NHDES employs a well-established risk assessment methodology to develop the health-based AAL standards using the most current toxicological data and health effects information available from the scientific literature. The AALs are reviewed and updated periodically, typically on an annual basis, to ensure that the standards are consistent with the most current research findings for each chemical. Based on this established methodology and regular review of the standards, NHDES has determined that these limits for the Regulated Toxic Air Pollutants are protective of public health, and are appropriate for the regulation of these pollutants.

Prior to expansion of the Landfill, WMNH is required to demonstrate that the emissions from the expanded landfill will remain compliant with air emissions regulations, including the AALs of the Regulated Toxic Air Pollutants Rule, and obtain a Temporary Permit from NHDES Air Resources Division.

There is no correlation between the odor threshold concentration of a chemical and the likelihood of adverse health effects. An odor threshold is the lowest concentration of a substance in air that can be detected by humans through smell. Odor thresholds are highly variable because of the differing ability of individuals to detect odors. For many chemicals, the odor threshold is lower than the corresponding health-based standard (i.e., the AAL). Consequently, many substances do not present a health risk until levels are well above their odor threshold. As an example, hydrogen sulfide can be detected by some people at concentrations as low as 0.01 parts per million (ppm). The 24-hour AAL for hydrogen sulfide, as regulated under Air Program Rule Env-A 1400, *Regulated Toxic Air Pollutants*, is 0.036 ppm.

- d. The application does not indicate the layout of the landfill gas collection system throughout the site. A map of the current and proposed systems is necessary, but not included.

The proposed landfill gas collection system plan is provided in Section VI, Appendix E, of the application. As with all modern landfills, until the Landfill is permanently closed, the landfill gas system is regularly expanded as part of the facility's operations. Following each related landfill gas system construction event, the permittee provides an as-built record of the newly expanded landfill gas collection system to NHDES. Plans showing the layout of the current landfill gas collection system can be viewed by requesting a file review through NHDES' Public Information Center. To request a file review, please call (603) 271-8808, email [filereview@des.nh.gov](mailto:filereview@des.nh.gov), or complete the online file review request form found through this webpage: <https://www.des.nh.gov/organization/commissioner/pip/index.htm>.

- e. Why is the landfill gas powering the University of New Hampshire (UNH) and not the City of Rochester schools?

The agreement between WMNH and UNH to transmit landfill gas to the UNH campus is a private agreement between WMNH and UNH. NHDES did not participate in negotiating that agreement. The Solid Waste Rules do not specify how a landfill permittee markets its gas, only that at least one mechanism to destroy the gas be maintained, and that the selected method comply with all federal, state, and local requirements (see Env-Sw 806.07(h) and (i)). NHDES has determined that the current system of devices owned and maintained by WMNH, combined with its arrangement with UNH, comply with those requirements.

While NHDES did not participate in establishing the agreement between WMNH and UNH, NHDES was involved in some aspects of the project because it required numerous permits and approvals. Additionally, the project was undertaken by WMNH, in part, due to a Supplemental Environmental Project (SEP) as described below.

In 2006, NHDES and WMNH entered into a consent decree to settle alleged air, solid waste and groundwater violations by WMNH asserted by NHDES. The Consent Decree was approved by the Strafford Superior Court on February 28, 2006 (available at <http://www4.des.state.nh.us/OneStopPub/Air/330170000320060228TypeCD.pdf>). The Consent Decree included, among other conditions, a total civil penalty to be paid by WMNH of \$1,750,000, a portion of which WMNH was allowed to satisfy through completion of certain SEPs. One of the SEPs allowed WMNH to satisfy up to \$1,200,000 of the civil penalty by providing funding to UNH for the landfill gas project, the development of which was already underway at the time the SEP was approved. Subsequently, WMNH

elected to exercise this SEP to satisfy part of the civil penalty and provided \$1,200,000 to UNH toward the project. The total cost of the project was approximately \$49,000,000 according to UNH on its website at <https://sustainableunh.unh.edu/ecoline>).

The Consent Decree also included a SEP option allowing WMNH to satisfy up to \$200,000 of the civil penalty by supporting local air pollution control projects in the cities of Rochester and Dover. The Consent Decree did not specifically identify providing landfill gas energy to Rochester schools as an eligible SEP, but rather specified that the State invite the cities of Rochester and Dover to submit written applications describing proposed projects and budgets. Subsequently, WMNH elected to exercise this SEP and provided funding to the projects proposed by the cities of Rochester and Dover. The City of Rochester projects included the purchase of energy-efficient hybrid vehicles, and the replacement of the boiler at the Rochester City Hall with a new, more efficient, lower-emitting boiler. NHDES approved Rochester's proposal and WMNH provided \$100,000 to the City for those projects.

## 19. Noise

- a. *The landfill destroys the peace and quiet of the area, including at off-hour times. There is often a lot of noise. The beeping from vehicles driving in reverse carries a long way. What efforts will be taken to mitigate noise from the proposed expansion?*

The Solid Waste Rules, specifically Env-Sw 1005.01, *General Operating Requirements*, require solid waste facilities to "...be operated and maintained in a manner that controls to the greatest extent practicable...noise." Routine landfill operations are restricted to the hours between 6 a.m. and 6 p.m. pursuant to Env-Sw 1105.08. The TLR-III operating hours are 6 a.m. to 6 p.m., Monday through Saturday. Waste deliveries are accepted from the public generally between 7 a.m. and 4 p.m., Monday through Friday, and 7 a.m. and 1 p.m. on Saturday. NHDES was not aware of recent noise complaints prior to receiving this comment. NHDES understands that excessive noise can be disruptive and requests that noise concerns be reported to WMNH directly as they are best positioned to respond to concerns in a timely manner. If WMNH is not being responsive to a complaint, please contact NHDES. Further, NHDES has added Condition (22)(b) to the permit requiring WMNH to submit a report to NHDES which includes an evaluation of the methods currently used at the facility to control noise, and identify deficiencies or issues related to the noise control methods and propose recommendations and solutions for minimizing noise.

## 20. Litter

- a. *A few commenters expressed concern about litter.*

The Solid Waste Rules, specifically Env-Sw 1005.01, *General Operating Requirements*, requires solid waste facilities to “...be operated and maintained in a manner that controls to the greatest extent practicable...litter.” WMNH minimizes the potential for windblown litter by limiting the size of the active face, using daily cover over active landfill areas, using litter catch fences as needed, and employing litter pickers to cleanup windblown litter. In addition, waste hauling trucks are required to have their loads tarped or to deliver waste in closed containers/truck bodies. NHDES was not aware of recent litter complaints prior to receiving these comments. NHDES understands that excessive litter can be a nuisance and requests that litter concerns be reported to WMNH directly as they are best positioned to respond to concerns in a timely manner. If WMNH is not being responsive to a complaint, please contact NHDES.

## 21. Traffic

a. Will the proposed expansion lead to an increase in traffic to the landfill?

Yes, traffic will likely increase. Traffic impacts are discussed in Section V, Site Report, of the application. With the request for expansion, WMNH also requested an increase of about 14% in the waste quantity received by the facility. Currently, the site receives an average of about 250 trucks per day. A 14% increase represents an additional trip count of about 35 trucks per day, for an overall average truck trip count each day of about 285.

b. There should be a Traffic Management Plan that restricts trash haulers to prime arterial routes along State highways.

Off-site traffic management, including use of local roads and state highways, is under the purview of others, and is not within the scope of NHDES’ permitting authority.

## 22. Property Values

a. The landfill has caused a decline in property values and could affect future home sales.

Property values depend on many factors. NHDES acknowledges that zoning and allowable local land uses can affect property values, sometimes resulting in an increase or a decrease in market value. However, controlling property values is not within the scope of NHDES’ permitting authority and the Landfill’s effect on property values was not considered in NHDES’ evaluation of the application.

## 23. Aesthetics

a. The landfill has an overall unattractive appearance.

RSA 149-M and the Solid Waste Rules do not provide explicit provisions regarding landfill appearance. However, Env-Sw 804.04, *Setback Requirements*, requires a 500-foot vegetated buffer between the landfill footprint and residentially zoned properties, and a 100-foot buffer between the landfill footprint and Class III through Class VI roads. NHDES has determined that the preliminary design plans for TLR-III South conform to these requirements.

**IV. Groundwater and Surface Water Protection & Wetlands**

**24. Leachate**

a. One commenter expressed concern regarding leachate treatment and disposal at the Rochester and Lowell, Massachusetts wastewater treatment plants.

The Solid Waste Rules, specifically Env-Sw 806.05, *Leachate Management Requirements*, require that leachate be managed by either collecting and removing it from the liner system(s) to an approved treatment or disposal facility, or by an innovative alternative leachate management system (e.g., recirculation). As noted in response to comment II.10.a, WMNH currently sends its leachate to WWTPs operated by the cities of Rochester, New Hampshire and Lowell, Massachusetts. Based upon review of the discharge permits issued to WMNH by Rochester and Lowell (included in the application document WMD Log No. 2017-28465-11), both WWTPs have agreed to accept leachate from the landfill. Treatment and discharge of the leachate by the Rochester and Lowell WWTPs are subject to local, state, and federal permits administered by other agencies or NHDES bureaus.

b. Will the upgraded leachate treatment plant release water with heavy metals at levels low enough that it is safe to drink? Is there any chance that a 500-year rainfall/flood event would result in heavy metals being released to the environment?

Leachate from the facility is not discharged directly to a receiving water – the treatment plant at the landfill only pre-treats leachate prior to it being transported off-site for further treatment. As indicated above, WMNH currently sends leachate from the facility to municipal wastewater treatment plants in Rochester and Lowell, where it is treated prior to discharge to those facilities' receiving waters. The discharge of pollutants (e.g., heavy metals) from those wastewater treatment plants is subject to local, state and federal discharge requirements in those communities. (See also response to comment IV.24.a.)

With regard to the design storm event, the leachate collection system is designed to manage the quantity of leachate to be generated by the 100-year storm event in accordance with Env-Sw 805.06, *Leachate Collection and Removal System Design Standards*. Further, the Solid Waste Rules, specifically Env-Sw 1105.11(d)(6), require WMNH to, in the facility's Operating Plan, identify and describe appropriate response actions to reasonably foreseeable emergencies. The TLR-III Approved Operating Plan includes a contingency plan for severe storm events. The Approved Operating Plan meets the requirements of the Solid Waste Rules and that section of the plan does not require to modification to accommodate the expansion.

- c. *It sounds like leachate treatment requires a significant amount of electricity, especially after heavy rain. Is there adequate and reliable backup power?*

WMNH is prepared with backup generators and pumps, consistent with the requirements of the Solid Waste Rules in Env-SW 805.06(o), which specifies that pump stations located outside the landfill footprint be designed to provide backup pumping capacity, backup power supply, and high-water alarms. Further, the high water alarms (called "float switches" on the Design Drawings) in leachate structures remain powered by backup systems during grid outages.

- d. *The application does not indicate the layout of the leachate collection system throughout the site. A map of the current and proposed systems is necessary, but not included.*

Preliminary layout of the proposed leachate collection systems are provided in the Design Drawings in Section VI, Appendix A, of the application, specifically on Sheet Nos. 8 and 9. Prior to construction of the base liner system, which includes the leachate collection systems, the permittee is required to provide final design plans for NHDES approval in accordance with Env-Sw 1104.01, *Prerequisites for Construction*. After completion of construction, the permittee is required to provide NHDES with an as-built record of the base liner system and leachate collection systems in accordance with Env-Sw 1104.07, *Construction Reporting and Recordkeeping Requirements*. Plans showing the layout of the current leachate collection systems can be viewed by requesting a file review through NHDES' Public Information Center. To request a file review, please call (603) 271-8808, email [filereview@des.nh.gov](mailto:filereview@des.nh.gov), or complete the online file review request form found through this webpage: <https://www.des.nh.gov/organization/commissioner/pip/index.htm>.

## 25. Groundwater & Surface Water

- a. *Existing monitoring is inadequate: wells are not placed closely enough to each other to capture potential leaking, and testing is infrequent. Careful review of the existing surface*

and groundwater data, as well as additional wells and testing should take place before any expansion is considered.

NHDES has determined that the existing groundwater monitoring well locations and testing frequencies are adequate and meet the requirements of the applicable rules, specifically Env-Or 700, *Groundwater Release Detection Permits*. The current groundwater monitoring network for the site includes 26 monitoring wells that are routinely sampled in accordance with the requirements of the TREE site Groundwater Release Detection Permit (GWRD Permit) issued by NHDES. The downgradient wells are generally located as close as feasible to the limit of waste containment. Given the relative size and extent of the landfill areas being monitored, the spacing between wells is considered to be more than adequate to detect a significant leachate release and is consistent with monitoring requirements at other active landfills in New Hampshire.

As to the frequency of groundwater testing, under the GWRD Permit, all 26 monitoring wells are currently sampled twice per year (each April and November) and analyzed for “leachate indicator” parameters (i.e., chloride, nitrate, total Kjeldahl nitrogen (TKN), iron, and manganese) and volatile organic compounds, such as 1,4-dioxane. Based on experience and considering the characteristics of this site, including the calculated groundwater seepage velocity (i.e., rate of groundwater flow), which ranges between 200 and 600 feet per year, NHDES considers the twice yearly frequency more than adequate for release detection purposes. Additional testing/frequency is required under the GWRD Permit for select site monitoring wells, including testing for additional analytes based on site-specific history of monitoring results and the need to continually assess site-wide and background groundwater quality conditions for a broader list of constituents (e.g., expanded list of metals and major cations/anions).

Groundwater quality monitoring has been conducted at the site since the 1980s. Thus, a robust database of groundwater quality data, leachate volumes and analytical characteristics, and landfill performance monitoring data currently exists. The results of these monitoring programs are routinely reported to NHDES by WMNH as well as environmental consultants and analytical laboratories working on behalf of WMNH, and are closely reviewed by NHDES’ technical staff. NHDES is confident that the on-going groundwater quality monitoring program and the associated landfill performance monitoring programs are sufficient to ensure that leaks, should they occur, are identified in a timely manner.

- b. Several commenters expressed concern that the landfill may be leaking contaminants into, or pose an unreasonable risk to, nearby water sources including the Cocheco and Isinglass Rivers. Commenters also asked whether the expansion plan provides any added protection for these water sources, such as continuous monitoring or routine surface water sampling.

*The City of Dover specifically requested that NHDES require a surface water sampling program for the Isinglass River that would be implemented at the same intervals and include the same water quality parameters as the groundwater monitoring program.*

#### Regarding Leaking

Groundwater monitoring data does not indicate that the Landfill is leaking. Based on the on-going monitoring results, there is no evidence to indicate that the landfill liners or other containment systems are not functioning as designed. The limited on-site areas where impacts to groundwater quality have been documented (principally 1,4-dioxane at low part-per-billion concentrations) are attributed to historical leachate releases associated with and pre-dating a 1990-1991 construction project that corrected a deficiency in the original (1979) clay liner system for the TLR-I landfill.

In addition, the Solid Waste Rules contain many provisions to prevent landfill leaks (e.g., liner and leachate collection system design standards as described in response to comment II.10.a); construction quality assurance/quality controls as required in Env-Sw 805.16, *Quality Assurance/Quality Control (QA/QC) Standards for Liner and Capping Systems*; long term inspection, monitoring and maintenance as required in Env-Sw 806.08, *Inspections, Maintenance, Monitoring and Reporting Requirements*, and Env-Sw 807, *Closure Requirements*). WMNH is required to monitor for leaks using the secondary leachate collection system and the groundwater release detection program, and provisions exist in the applicable rules to respond to leaks, should they occur. NHDES determined that the landfill and expansion can be constructed and operated in compliance with the Solid Waste Rules and Env-Or 700, *Groundwater Release Detection Permits*.

#### Regarding Added Protection

Added protection will include the installation and periodic sampling/analysis of groundwater from additional groundwater monitoring wells to be installed at NHDES-approved locations specific to the expansion area and located between the expansion and the rivers. Consistent with the overall groundwater quality monitoring program for the site to date, the monitoring well network will include wells located to monitor groundwater quality conditions in areas downgradient ("downstream") from the landfill for possible releases from the landfill, as well as upgradient ("upstream"), to document background groundwater quality conditions. The groundwater quality monitoring program for the TREE site currently includes twice-yearly analysis of groundwater samples for the following group of NHDES-defined "leachate indicator" parameters: chloride, nitrate, TKN, iron, and manganese. These constituents are typically present at high concentrations in landfill leachate and thus their detection in groundwater would provide an indication of a leachate release. No changes to the sampling frequency or the suite of analytical parameters are proposed.

Groundwater monitoring and a thorough review of the data is an ongoing aspect of facility operations and regulatory oversight. This will continue to take place before and after the expansion may be granted construction and operational approval.

Regarding Surface Water

With regard to surface water, there is currently no evidence that the Isinglass and/or Cocheco Rivers are being negatively affected by the Landfill or are at substantial risk of being impacted. To date, the very limited impacts to groundwater (see response to comment IV.25.a and above discussion) would not result in significant impacts to surface water quality in either the Cocheco or Isinglass Rivers via the natural discharge of groundwater from the site area to the rivers. As discussed above, the extensive monitoring systems in place at the TREE site and their planned expansion when the new landfill area is constructed, will continue serving as a detection system for any impacts to on-site groundwater quality before any such impact might reach surface waters or otherwise affect surface water quality. Therefore, NHDES has determined that there is no need for WMNH to conduct additional water quality monitoring in the rivers.

- c. Several commenters expressed concerns about the potential impact of the landfill expansion on private and public drinking water supplies, including the City of Dover's public water supply intake on the Isinglass River. Further, several commenters requested information on response actions and financial resources if water supplies are affected during active landfill operations and after closure of the landfill.

The quality of groundwater at the site (see response to comment IV.25.a) and the hydrogeologic characteristics of the site (e.g., geology, seepage velocity, flow pattern) do not indicate a concern that the Landfill is adversely impacting surface water quality in either the Cocheco or Isinglass Rivers. With the monitoring systems and requirements in place, NHDES believes that significant releases to groundwater at the site would be detected prior to a potential impact to surface water in either of the rivers, and thus it is unlikely that the Landfill would affect the City of Dover water supply intake.

NHDES recently required WMNH to inventory potential drinking water supply wells in the area between the TLR-I, TLR-II and TLR-III landfills and the Cocheco and Isinglass Rivers. As reported by WMNH's environmental consultant, Sanborn, Head & Associates, Inc. (Sanborn Head), there are no active potable residential water supply wells located between the Landfill and the rivers. However, three water supply wells were noted in this area, and all three wells are located on WMNH property. One of the wells is inactive, the second well is a non-potable water supply for the Materials Recovery Facility, and the third well is a supply well for the landfill-gas-to-energy plant. In response to the Sanborn

Head report, NHDES requested that WMNH collect and test groundwater samples from each of the three active wells. The complete results of this sampling event are pending.

WMNH owns all of the land between the landfill, including the expansion area, and the Cocheco and Isinglass Rivers. Therefore, NHDES sees little potential for new private water supply wells to be developed in these areas.

If contamination is detected in a private or public drinking water supply at levels that exceed drinking water standards, NHDES is able to respond in various ways to assure all appropriate action is taken to identify the source of the contamination, implement a corrective action plan, and restore a supply of clean drinking water to the affected parties. However, it is more likely that groundwater quality impacts, if they were to occur at the facility, would be identified in the site's extensive groundwater monitoring well network prior to the contamination reaching a private or public drinking water supply well. If groundwater quality impacts are identified during routine sampling of groundwater monitoring wells, the GWRD Permit and the rules in Env-Or 700 specify requirements for the permittee to implement assessment monitoring and take corrective action, in order to protect against the contamination moving off-site.

- d. The City of Dover requested that NHDES mandate some type of performance measure to ensure the efficacy of the stormwater controls, and that a broader suite of analyses than the current total suspended solids and total iron be added to track potential contamination from stormwater.

Stormwater controls are designed in accordance with the Solid Waste Rules (see comment II.6.b) and NHDES Alteration of Terrain Bureau requirements in Env-Wq 1500, *Alteration of Terrain*. Stormwater discharge requirements are within the purview of the federal government and not within the authority of NHDES solid waste permitting program. WMNH has a stormwater management permit as required by the federal National Pollutant Discharge Elimination System (NPDES).

- e. The City of Dover requested NHDES include provisions in the permit granting the City of Dover the opportunity to review and approve the Blasting Plan and the final monitoring well installation plan.

NHDES appreciates the City of Dover's concern and understands that there are multiple concerns surrounding blasting (e.g., safety, protection of water supplies, protection of structures). However, not all of these concerns are addressed under the authority of the Solid Waste Rules. NHDES has prepared a general fact sheet regarding the concerns, and controls, related to rock blasting, available

at: <https://www.des.nh.gov/organization/commissioner/pip/publications/wd/documents>

[/wd-10-12.pdf](#). WMNH is required to submit final blasting specifications to NHDES prior to construction. WMNH is also required to submit any proposed changes to the groundwater release detection monitoring well network to NHDES in accordance with its GWRD permit. NHDES will review blasting specifications and monitoring well network plans for compliance with the applicable NHDES rules. While these documents, and the results of NHDES' review, will be available to the public, NHDES will not require that WMNH obtain approval of these documents from the City of Dover.

f. All landfills should be required to meet necessary and significant setbacks from waterways.

The proposed landfill expansion meets landfill siting setback requirements in Env-Sw 804, *Siting Requirements*, and solid waste facility setback requirements in Env-Sw 1003, *Universal Siting Requirements*, and Env-Sw 1102, *Additional Siting Requirements*. Specifically, as required under Env-Sw 804.03, *Surface Water Protection Standards*, the footprint of the expansion will not be located within 200 feet of any perennial surface water bodies, including the Cocheco and Isinglass Rivers.

NHDES notes that WMNH applied for a waiver to the setback requirement for two wetlands, and NHDES is granting that request. NHDES' evaluation and determination relative to this waiver request is described in more detail in Attachment B of the Permit Application Review Summary and is also addressed in the response to comment IV.26.a below.

## 26. Wetlands

a. Several commenters expressed concern regarding the filling of wetlands and the associated potential ecological impact. Commenters expressed concern that the permit application provided only limited information regarding the wetlands proposed for filling.

Approval to fill wetlands is within the purview of the Wetlands Bureau at NHDES pursuant to RSA 482-A and Env-Wt 100 et seq. For that reason, detailed information about the impacts to wetlands is available in the application submitted by WMNH to the Wetlands Bureau and not the application filed with the Solid Waste Management Bureau. The application for filling wetlands can be viewed by requesting a file review through NHDES' Public Information Center. To request a file review, please call (603) 271-8808, email [filereview@des.nh.gov](mailto:filereview@des.nh.gov), or complete the online file review request form found through this webpage: <https://www.des.nh.gov/organization/commissioner/pip/index.htm>.

WMNH's application for filling wetlands, if approved, would involve leaving a certain portion of wetland unfilled and within the setback specified in the Solid Waste Rules. WMNH applied for a waiver to this setback requirement in its solid waste permit application for expansion. The information provided with the solid waste waiver application met the completeness requirements of the Solid Waste Rules, specifically Env-Sw 202, *Waiver of Solid Waste Rules*. NHDES' evaluation and determination relative to this waiver request is described in more detail in Attachment B of the Permit Application Review Summary.

- b. One commenter noted that it was unclear during the public hearing if the permitting agencies with which WMNH was working had conducted site walks to view the potentially impacted wetland areas.

Multiple site walks by different parties occurred relative to the wetland impacts. Staff from the NHDES Wetlands Bureau and Solid Waste Management Bureau, as well as staff from the US Environmental Protection Agency, the US Army Corps of Engineers and the City of Rochester Conservation Commission participated in the site walks. Further, WMNH developed its applications for filling wetlands in consultation with representatives of NHDES' Wetlands Bureau, and Alteration of Terrain Bureau; the US Army Corps of Engineers; the US Environmental Protection Agency; and the City of Rochester Conservation Commission.

- c. Expanding the landfill into the 200' wetland buffer, not to mention the drainage swales, retention ponds and other landfill appurtenances, will have a negative and immediate impact on the surrounding wetlands. A setback waiver should not be granted.

WMNH's application for waiver includes information describing how it will maintain protection of the wetlands within the reduced setback distance. NHDES has determined that the criteria for waiver in Env-Sw 202, *Waiver of Solid Waste Rules*, have been met and has granted the request for waiver subject to conditions. NHDES' evaluation and determination relative to this waiver request is described in more detail in Attachment B of the Permit Application Review Summary.

The Solid Waste Rules do not specify a setback distance for drainage swales, retention ponds and other landfill appurtenances from wetlands; only the landfill footprint has a minimum setback requirement.

## **V. Public Benefit, Recycling & Out-of-State Waste**

### **27. Public Benefit**

a. The proposal does not provide a public benefit.

NHDES has determined that the facility, with specific permit conditions, provides a substantial public benefit as required by and based on the criteria provided in RSA 149-M:11, *Public Benefit Requirement*. NHDES' evaluation and determination is described in more detail in Attachment A of the Permit Application Review Summary. The public benefit permit requirements are provided in permit Condition (21).

b. Regarding public benefit, NHDES needs to look critically at how effective WMNH's commitment to public education, environmental protection and serving NH first have been in assisting the State to meet the Solid Waste Plan's goals in a measurable way.

NHDES considered these issues in its public benefit analysis and has included conditions in the permit to help advance the diversion rate of waste in the facility's service area and assist New Hampshire generators with efforts to achieve the waste management goals in RSA 149-M in measureable ways. See description in Attachment A of the Permit Application Review Summary and permit Condition (21)(d).

## 28. Capacity and Promoting Reduce, Reuse, and Recycle

a. New Hampshire should work to meet its solid waste diversion goals before allowing any expansion of landfill or incinerator capacity. Granting WMNH a permit will only serve to undermine any efforts within the State to reduce, reuse, recycle and compost. We are not creating a plan for the future.

Landfills and incinerators, while less preferred than other waste management methods, are allowable and part of an integrated system in New Hampshire's goals for managing solid waste set forth in RSA 149-M:2, *Waste Reduction Goal*.

NHDES did consider solid waste diversion goals and New Hampshire's waste management hierarchy in RSA 149-M:3, *Achieving Goals; Hierarchy*, in evaluating whether to approve expansion of the TLR-III landfill. As noted in the response to comment IV.27.b above, NHDES has included permit conditions targeted at advancing future progress toward waste diversion goals.

b. WMNH serves our condo and does not include recycling.

New Hampshire does not have a mandatory recycling law. As such, it is the option of each municipality, association, or generator to opt-in (or not) to a recycling program. NHDES encourages concerned citizens to discuss recycling and other diversion programs with their waste service provider.

## 29. Out-of-State Waste

- a. WMNH is landfilling a lot of waste material that was not generated in NH, using future capacity. Given that the State has significant disposal capacity already (incineration and numerous landfills), granting WMNH a permit will only serve to perpetuate the substantial importation of waste.

As described in more detail in the public benefit analysis in Attachment A of the Permit Application Review Summary, NHDES determined that there is a future need for additional disposal capacity for New Hampshire generated waste and that the expansion will assist in serving that need.

The United States Constitution and interstate commerce law prohibit states from preventing out-of-state generators from having access to disposal services in any other state. While NHDES cannot specifically prohibit importation of waste not generated in New Hampshire, NHDES did include a condition in the permit for expansion requiring that disposal capacity be made available to New Hampshire generators (see permit Condition (21)(c)).