



For a thriving New England

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*Via Email*

January 25, 2018

New Hampshire Department of Environmental Services  
Waste Management Division  
Solid Waste Management Bureau  
29 Hazen Drive, PO Box 95  
Concord, NH 03302-0095  
Email: [solidwasteinfo@des.nh.gov](mailto:solidwasteinfo@des.nh.gov)

**Re: Waste Management of New Hampshire, TLR-III Refuse Disposal Facility (“Turnkey Landfill”), Type IA Permit Application**

To Whom It May Concern:

The Conservation Law Foundation would like to absolutely oppose the expansion Waste Management of New Hampshire (“Waste Management”) has requested to the Turnkey Landfill in Rochester, New Hampshire (“the Proposed Expansion”) in the Standard Permit Application for Solid Waste Management Facility, Volumes 1 & 2, TLR-III South Area, File No. 3534.03, dated May 2017 (“the Permit Application”). ***Adding 58.6 acres and about 14 Million tons of capacity to the largest landfill in New Hampshire is a danger to public health, safety and the environment.***

CLF is a nonprofit, member-supported, regional environmental organization working to conserve natural resources, protect public health, and promote thriving communities for all in the New England region. CLF has a long history of advocating for clean air and clean water, and environmental justice by working to end the unfair environmental burdens imposed on low-income and communities of color. We also advocate for access to local green spaces, fresh healthy food, and more affordable transportation options.

**Background<sup>1</sup>**

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<sup>1</sup> Waste Management’s original application, **Standard Permit Application for Solid Waste Management Facility, Volume 1, TLR\_III South Area**, dated May, 2017, see pdf: <http://www4.des.state.nh.us/IISProxy/IISProxy.dll?ContentId=4658592>)

History -- The landfill is located in an area that was historically used for agricultural purposes from as early as 1938 until 1973.<sup>2</sup> The New Hampshire Department of Health and Welfare, Division of Public Health Services approved the first design plans for a landfill in the area in June 1979 and it began operating that same year. Waste Management acquired the site in 1983. To date, Waste Management owns over 1,200 acres on Rochester Neck Road.

The original facility consisted of 14 acres.<sup>3</sup> The 14 acre parcel and a contiguous 32 acre parcel (approved in 1981) totaling 46 acres comprise TLR-I. While the permit application and diagrams are not clear, at least part of TLR-I, probably the initial 14 acre cell, is unlined, meaning that it does not have a modern, plastic liner system. Another portion of TLR-I seems to have a single plastic liner.<sup>4</sup>

TLR-II is not contiguous to TLR-I or III. It is located to the west of Rochester Neck Road, and operated from 1988 through 1997. It is not clear from the Permit Application how many acres TLR-II is, how high it is, or what protective systems it may or may not have.

TLR-III seems to have been built around and on top of TLR-I. The acreage to the north and south of TLR-I, that are now part of TLR-III, were acquired in 1990 and permitted in April 1995. It is unclear how large TLR-III is right now. This is further confused by the fact that TLR-III was built on top of some of TLR-I using earth berms at the southerly and northerly edges of the TLR-III (in other words, Waste Management built new landfill cells directly on top of unlined, closed, landfill cells). While Waste Management refers to the danger of the cap on TLR-I “ballooning” due to a buildup of landfill gas under the new TLR-III cells, they avoid clarifying how many acres of cells were built this way.<sup>5</sup> Waste Management is currently burying waste in TLR-III. *See Waste Management of New Hampshire, Inc., Site Report TLR-III South Area, File No. 3534.03, May 2017, Figures 5.1, 5.2 and 5.3.*

Waste Accepted and Capacity -- Waste Management buried more than 1.4 Million tons of solid waste at Turnkey Landfill in 2016, including:

Non-Hazardous, Asbestos-Friable, Asbestos-Non-Friable, Auto Shredder Fluff, Biosolids, CERCLA Waste, Construction & Demolition Debris, Drum Management-

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<sup>2</sup> Waste Management of New Hampshire, Inc., Site Report TLR-III South Area, File No. 3534.03, May 2017, Page 15.

<sup>3</sup> Waste Management of New Hampshire, Inc., Site Report TLR-III South Area, File No. 3534.03, May 2017, Page 15.

<sup>4</sup> Waste Management of New Hampshire, Inc., Site Report TLR-III South Area, File No. 3534.03, May 2017, Page 15.

<sup>5</sup> **Ballooning reference**

Liquids, Drum Management-Solids, Industrial & Special Waste, Liquifix (Solidification Services), Municipal Solid Waste and Yard Waste<sup>6</sup>

Waste Management did not seek to alter the type of material accepted, where the waste is coming from, and the operation of the facility. **Over 850,000 tons, or more than 60%, of the waste buried at Turnkey Landfill in 2017 was generated outside of the State of New Hampshire.**

In 2017, Turnkey Landfill had about 9.5 Million tons of capacity -- more than enough to take care of all of New Hampshire's waste needs for about five years. Projections estimate their capacity will be exhausted in 2024 at the current rate of dumping.<sup>7</sup>

Currently some of the leachate collected at the facility is pretreated and then discharged directly into the City of Rochester Sewer System. Any residual or sludge produced by the treatment is disposed of at the Landfill. Some leachate is recirculated at the Landfill. And some leachate is delivered, untreated to the Lowell Regional Wastewater Utility.

**Proposed Expansion -- If allowed, the permit requested by Waste Management would expand the existing landfill footprint by 58.6 acres ("TLR-III South") and the maximum height of the Landfill by 22 feet<sup>8</sup>, add about 14 million tons of capacity, and extend the facility's life by approximately ten years, to about 2034. If allowed, the total waste and cover materials (like ash and contaminated soil) at the Landfill will total more than 41 million tons.<sup>9</sup>** The expansion is proposed for property adjacent and to the south of the existing TLR-III cells, which Waste Management refers to as TLR-III South.

Waste Management plans on increasing the amount of waste they accept each year by about 15%. It is unclear what the base year is for that calculation. The most recent data publicly available shows that Waste Management received 1.4 million tons in 2016.<sup>10</sup> A 15% increase would mean Waste Management would accept about 1.6 million tons of waste a year (though their permit does not impose a yearly limit) each year from 2024-2034, though it is unclear.

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<sup>6</sup> <https://www.wmsolutions.com/locations/details/id/9>)

<sup>7</sup> <http://www4.des.state.nh.us/DESOnestop/SWFDetail.aspx?ID=0000133>)

<sup>8</sup> Waste Management of New Hampshire, Inc., Site Report TLR-III South Area, File No. 3534.03, May 2017, Page 11.

<sup>9</sup> Standard Permit Application for Solid Waste Management Facility Volume I, SEciton I-VI), TLR-III South Area, May 2017, page 3.

<sup>10</sup> 2016 Annual Report, Page 3.

Waste Management cites an increase in traffic from 500 to 580 truck trips a day, but they do not make clear, again, if those trips represent 1.4 million tons increasing to 1.6 million tons, or other numbers.<sup>11</sup>

The proposed expansion would include the building of an earthen perimeter berm with a 3H:1V outer slope. It is not clear how long or high that wall would be.

The average daily leachate production at TLR-III will increase from 25,000-30,000 gallons a day to 100,000-105,000 gallons a day – a potential 4X increase.<sup>12</sup> Waste Management is planning to expand its leachate treatment capacity, but has not done so yet.

The confluence of the Isinglass and Cocheco rivers is located to the southeast of the proposed expansion. A portion of the expansion is located in the watershed of the Isinglass River, and a portion is located in the watershed of the Cocheco River.<sup>13</sup>

The proposed expansion would necessitate moving a portion of Rochester Neck Road, as well as a 200+ year old burial ground located along Rochester Neck Road.

The proposed expansion will include filling in about 1.55 acres of naturally occurring wetland areas, including palustrine forested or persistent emergent seasonally flooded/saturated wetlands.<sup>14</sup> Waste Management is also proposing to fill approximately 4.7 acres of wetlands and roadside drainage swales located within TLR-III South. It is unclear if that 1.55 acres is part of the 4.7 acres, or is additional wetlands being filled. Waste Management is also proposing they fill other wetlands along Rochester Neck Road, but did not specify how much in the expansion application.<sup>15</sup>

As part of this permit application, Waste Management is seeking a waiver to Env-Sw 804.03(e) relating to the setbacks from wetland areas. This requirement states "the footprint of a landfill shall not be located within 200 feet upgradient and 100 feet downgradient of a wetland within the jurisdiction of RSA 482-A, excluding any drainage appurtenances related to the site, that is not allowed to be filled under the authority of RSA 482-A" As proposed, the facility will be constructed within approximately 125 feet upgradient of wetland area covered by this section.<sup>16</sup> The existing landfill is currently operating under Standard Permit No. DES-SW-SP-95-001 issued by NHDES.

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<sup>11</sup> Waste Management of New Hampshire, Inc., Site Report TLR-III South Area, File No. 3534.03, May 2017, Page 18.

<sup>12</sup> Facility Operating Plan, TLR-III Refuse Disposal Facility, May 2017, Page 12.

<sup>13</sup> Waste Management of New Hampshire, Inc., Site Report TLR-III South Area, File No. 3534.03, May 2017, Page 12.

<sup>14</sup> Waste Management of New Hampshire, Inc., Site Report TLR-III South Area, File No. 3534.03, May 2017, Page 12,

<sup>15</sup> Standard Permit Application for Solid Waste Management Facility Volume I, Section I-VI), TLR-III South Area, May 2017, page 1.

<sup>16</sup> Information below found in letters to abutters:

<http://www4.des.state.nh.us/IISProxy/IISProxy.dll?ContentId=4661320>

Public Process -- A single public hearing to receive testimony on this permit application was held at the American Legion Post #7, in Rochester, on Tuesday, December 19, 2017. The comment period ending today is the only public comment period associated with the solid waste permit required to expand this landfill.

**Request that NHDES DENY this Proposed 58.6 Acre Expansion**

CLF requests that NHDES deny this expansion, because it directly contravenes the stated purpose of Title X Public Health, Chapter 149-M Solid Waste Management, Section 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.”* Our objections include, but are not limited, to the following points:

**Incomplete, Obscured and Missing Information**

CLF has pored through the Permit Application submitted by Waste Management, which has two volumes, thirteen sections and over 2200 pages. It seems to have been written to NOT reveal or clarify certain information. Perhaps an experienced landfill engineer might be able to glean some of this information from certain diagrams, but we were not able to, nor can Waste Management expect a normal member of the public to do so. *CLF requests that NHDES require Waste Management to provide more and clearer information in a readable form that can be shared with the public. At that time, CLF also requests that NHDES host a public meeting so that citizens can comment on the Proposed Expansion after they are clear on what it is.*

The Proposed Expansion should not be granted, or even considered, until Waste Management submits or clarifies the following information as part of the Permit Application:

- How high is the Landfill? The Permit Application states it will be 22 feet higher, but how high is it now?
- A map should be submitted to NHDES showing the heights of each portion of the landfill as permitted, and the planned final heights of the Proposed Expansion. This is crucial information, especially considering that local citizens expressed concerns about the height of the Landfill at the December 19, 2017 public meeting.<sup>17</sup>
- It is unclear where berm walls are currently located, and where they are proposed to be built. A plan should be provided that includes the lengths, heights and slopes of existing and proposed earthen berm walls around the landfill cells.
- What is the engineering life of the existing and proposed berms? What is the plan for maintaining the berms after Waste Management has left the site and after they are no

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<sup>17</sup> MP3 recording of December 19, 2017 Public Meeting,  
<https://www.des.nh.gov/organization/divisions/waste/swmb/index.htm>.

longer required to monitor or maintain the berm walls (postclosure monitoring is only required for thirty years)?

- A map of TLR-I, II and III including the acreage of each.
- A map clearly indicating, for instance via color coding, which cells are unlined (a.k.a. have no plastic liner), which have gas collection and leachate collection systems and which don't, and where TLR-III landfill cells have been built on top of TLR-I cells.
- How many total acres of wetlands will be filled or otherwise impacted by the Proposed Expansion? The acreage to be filled in connection with moving Rochester Neck Road is never given, only the acreage to be filled as part of TLR-III South. Any information included in the wetland permit application and request for waiver should also be included in the Permit Application, as NHDES should evaluate the total impact on wetlands as part of this Permit Application.
- Waste Management is unclear regarding how many tons of waste they plan to accept in the coming years, and the impact that will have on capacity. This should be clarified. On the one hand, we know that Waste Management accepted over 1.4 million tons of waste in 2016, not from the Permit Application, but from the 2016 Annual Facility Report submitted by Waste Management to NHDES and dated March 31, 2017.<sup>18</sup> However, Waste Management indicates in the Permit Application that they will accept no more than 1.26 million tons of waste a year from 2017-2023.<sup>19</sup> The other increases – in traffic, landfill gas, leachate, etc. largely depend on how many more tons the Landfill accepts each year, so this information is crucial to evaluate the environmental impact of the expansion.
- The Permit Application gives no information about the potential removal of the more than 200 year old Bickford-Hayes Burial ground. How large is the burial ground? How many people are buried there? Who are they? Where will the burial ground be relocated, exactly, and how will that be configured over how many acres? Will it be accessible to the public? What permits has Waste Management applied for or received regarding this part of the Proposed Expansion? Those applications should be included in the Permit Application, so they might be evaluated by NHDES and the public.

***Until the public and NHDES has the opportunity to review, understand, and comment on the above-referenced information, this Permit Application should be shelved.***

**START REVIEWING HERE, TOM, PLEASE**

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<sup>18</sup> 2016 Annual Facility Report, Waste Management of New Hampshire, Inc., dated March 31, 2017, page 4.

file:///C:/Users/kpecci/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/1T2A25YB/2016%20AFR%20-%20TLR-

III%20Refuse%20Disposal%20Facility%20LF%20Rochester%20NH%20(002).pdf

<sup>19</sup> Public Benefits Statement, Table 4, TLR-III.



**The Existing Facility is a Danger to Public Health, Safety and the Environment**

**I. Danger to Ground and Surface Water**

**a. All Landfills Leak<sup>20</sup>**

In the 1950s, landfills, or sanitary dumps, were just holes in the ground where the waste was covered by a layer of soil to reduce odors and vermin. In the 1970s compacted soil and clay liners were proposed for waste containment.<sup>21</sup> This technology was ultimately abandoned as ineffective at preventing the leachate from escaping the landfill -- A clay liner that is a foot thick will be breached in less than five years.<sup>22</sup>

In the 1980s landfills had begun installing plastic liners. Plastic liners, or plastic sheeting flexible membrane liners inevitably fail as well. Many times they develop holes during installation, and they develop holes and stress cracks over time. Free-radicals, permeability to low molecular weights, their inherent diffusion based qualities will also cause plastic liners to ultimately become non-functional.<sup>23</sup>

Over time, the regulations evolved to require a composite liner system. That originally required a two-foot thick clay liner and a 60 mil-thick layer of plastic sheeting (about the thickness of paperboard). Today landfill developers are using a geosynthetic clay liner as a substitute for clay. A geosynthetic clay liner is about a quarter of an inch thick. While there are pipes to collect the leachate and landfill gas buried in the waste, and a second liner system is now also required, the total thickness of the two liner systems may be a few inches.<sup>24</sup>

In 1991 the United States Environmental Protection Agency promulgated regulations for landfilling municipal solid waste (“MSW”) as part of the Resource Conservation Recovery Act (“RCRA”), Subtitle D. Originally Subtitle D required a single composite (plastic sheeting and compacted clay/geosynthetic) liner, and it was eventually amended to require two liner systems for all new landfill cells.

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<sup>20</sup> Flawed Technology of Subtitle D Landfilling of Municipal Solid Waste, G. Fred Lee & Associates, Updated January 2015.

<http://www.gfredlee.com/Landfills/SubtitleDFlawedTechnPap.pdf>

<sup>21</sup> Overview of Subtitle D Landfill Design, Operation, Closure and Postclosure Care, January 2004 Page 2. <http://www.gfredlee.com/Landfills/LFoverviewMSW.pdf>

<sup>22</sup> Flawed Technology of Subtitle D Landfilling of Municipal Solid Waste, G. Fred Lee & Associates, Updated January 2015, Page 13.

<sup>23</sup> Id. Page 11.

<sup>24</sup> Id. at Page 10.

The theory behind Subtitle D Landfills, or Dry Tomb Landfills, is to entomb the landfill in plastic sheeting, thereby keeping water away from the MSW. This was meant to minimize leachate production and the migration of that leachate through the soil and groundwater surrounding the landfill. In theory it also would minimize the production of landfill gas, especially methane, which requires water to form (see more below). Another goal of the regulations was to prevent offsite groundwater pollution by landfill leachate. Subtitle D mandated the collection of leachate from the landfill. Subtitle D also required a groundwater monitoring program whereby the extent of the inevitable groundwater pollution could be detected, and the polluted groundwater remediated (cleaned up) before it migrated to adjacent properties.

Unfortunately, the failure of these double composite liner systems is not only inevitable, it can be rapid. Rowe et al. (2003) tested the life of liner systems using a lagoon. They stated:

*A geomembrane – compacted clay composite liner system used to contain municipal solid waste (MSW) landfill leachate for 14 years is evaluated. Field observations of the geomembrane revealed many defects, including holes, patches, and cracks. . . . Contaminant modelling of the entire lagoon liner suggests that the geomembrane liner most likely stopped being effective as a contaminant barrier to ionic species sometime between 0 and 4 years after the installation.*<sup>25</sup>

While one or two composite liners may or may not delay the release of leachate into the environment, they do not prevent it.

As acknowledged repeatedly by USEPA<sup>26</sup>, leachate generation potential will continue for thousands of years (landfills developed by the Roman Empire, 2,000 years ago are still producing leachate)<sup>27</sup>. After the plastic cap is installed, and the landfill cell is closed, the landfill company is required under RCRA to monitor the site for 30 years. Unfortunately, the caps break down in the same manner as the plastic liners. As a result, the landfill company often walks away from the site, the cap fails, precipitation enters the landfill cell, and a whole new wave of leachate production begins, without

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<sup>25</sup> Id. at Page 12 citing Rowe, R. K.; Sangam, H. P. and Lake, C. B., “Evaluation of an HDPE Geomembrane after 14 Years as a Leachate Lagoon Liner,” Can. J. Geotech./Rev. Can. Geotech. 40(3): 536-550 (2003).

<http://www.ingentaconnect.com/content/nrc/cgj/2003/00000040/00000003/art00004>.

<sup>26</sup> Flawed Technology of Subtitle D Landfilling of Municipal Solid Waste, G. Fred Lee & Associates, Updated January 2015, Page 6.

<sup>27</sup> Flawed Technology of Subtitle D Landfilling of Municipal Solid Waste, G. Fred Lee & Associates, Updated January 2015, Page 8.



the leachate collection or monitoring that took place while the cell was accepting waste.<sup>28</sup>

Dr. Lee reports that John Skinner, Executive Director of the Solid Waste Association of North America and former USEPA official was quoted in the July/August 2001 MSW Management Journal as saying:

*The problem with the dry-tomb approach to landfill design is that it leaves the waste in an active state for a very long period of time. If in the future there is a breach in the cap or a break in the liner and liquids enter the landfill, degradation would start and leachate and gas would be generated. Therefore, dry-tomb landfills need to be monitored and maintained for very long periods of time (some say perpetually), and someone needs to be responsible for stepping in and taking corrective action when a problem is detected.*<sup>29</sup>

**b. Danger of Landfill Cells built On Top of Unlined Cells**

Given that clay lined landfill cells potentially leak five years after installation (see above) CLF has serious concerns about the long term effects of the new TLR-III landfill cells that were built upon the original 14 acres of the landfill. Built in circa 1980, those underlying 14 acres do not have the double composite liner systems required by current regulations. According to Waste Management, some, or all of the 14 acres is only lined with clay. After almost 40 years, TLR-I is leaking. Their release of contaminants is undoubtedly exacerbated by the millions of tons of waste deposited on top of them.

**c. Danger of Using Earth Berm Walls to Build a Column, rather than Mountain of Waste**

The earth berm walls (referred to as “mechanically stabilized earthen berms”) are used to increase the landfill’s airspace by building earth walls around the landfill and then burying the waste within the walls. Here they were used to build cells on top of an existing, closed landfill. Earth wall are also planned for the expansion. This kind of landfill stacking and steep walls will be unstable in the long term. Rather than allowing gravity to keep the waste in place, the steep slopes of the earth walls requires continuous monitoring and maintenance in perpetuity, but the engineering life of most of these MSE Berms is about 75-100 years. This technology has already failed at the South Hadley Landfill in Massachusetts.<sup>30</sup>

**PLEASE STart HERE TOM**

**d. Turnkey Landfill is Already Leaking**

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<sup>28</sup> Flawed Technology of Subtitle D Landfilling of Municipal Solid Waste, G. Fred Lee & Associates, Updated January 2015, Page 8.

<sup>29</sup> Id.

<sup>30</sup> <https://townreminder.wordpress.com/category/south-hadley-landfill/>

The groundwater monitoring reports indicate releases of contaminants into the surface and groundwater in the area may already be occurring. **Volatile organic compounds have been detected, and exceeded drinking water standards in groundwater monitoring samples in certain monitoring wells repeatedly.**<sup>31</sup> While the consultant states that they are uncertain where the 1,4 dioxane originates, given that this site was historically agricultural land, and the lack of other potential sources, and the enormous landfill with almost forty year old, clay lined cells, the answer seems obvious. At the very least, NHDES should require further investigation before expanding and possibly exacerbating this hazard.

Perfluorooctanoic acid (PFOA), and perfluorooctanesulfonic acid (PFOS) were also detected in the Turnkey Landfill groundwater monitoring wells in 2017. PFOS was detected in six wells. PFOA was detected in three wells. These contaminants are dangerous enough to warrant serious investigation. They are not naturally occurring, and would indicate that the Landfill is probably leaking.<sup>32</sup>

The existing monitoring is also inadequate – wells are not placed closely enough to each other to capture potential leaking, and testing is infrequent. This is especially important in regions like New Hampshire where there is a great deal of granite, making the directional flow of contaminated groundwater very complicated.

**e. Potential Negative Impact on the Cocheco and Insinglass Rivers and Surrounding Wetlands**

The Cocheco River is one of seven major rivers that flows into the Great Bay – Piscataqua Estuary, one of New Hampshire’s more important coastal resources and considered an “Estuary of National Significance” by the USEPA. The Great Bay – Piscataqua Estuary provides rich habitat for fish, shellfish and wildlife, supports a burgeoning oyster aquaculture industry, and provides spectacular views and recreational opportunities to residents and visitors alike.

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<sup>31</sup> **Standard Permit Application for Solid Waste Management Facility, Volume 1, TLR\_III South Area**, dated May, 2017, see pdf: <http://www4.des.state.nh.us/IISProxy/IISProxy.dll?ContentId=4658592>), pages 24, 26, 208.

<sup>32</sup> PFAS Groundwater Monitoring Results, September 29, 2017, <http://www4.des.state.nh.us/IISProxy/IISProxy.dll?ContentId=4676952>

Unfortunately, the health of the Great Bay – Piscataqua Estuary is in decline. According to the 2018 State of Our Estuaries Report, indicators for 12 of 16 criteria, including toxic contaminants, are either cautionary or negative.<sup>33</sup> Toxic and persistent pollutants such as PCBs and DDT can accumulate in the tissue of marine biota, making them a particular concern in a fragile ecosystem that is widely used for fishing, shellfishing and recreation.

The confluence of the Cocheco and Isinglass rivers is located about 2,000 feet from the Proposed Expansion.<sup>34</sup> The observed groundwater flow directions, the Isinglass River appears to be the primary discharge zone for groundwater over most of the Proposed Expansion. The easternmost portion of the Proposed Expansion appears to discharge to the Cocheco River.<sup>35</sup>

The Cocheco River is among the most impaired rivers in the Great Bay – Piscataqua watershed. According to the 2014 EPA-approved Threatened and Impaired Water Assessment by the State of NH, the Cocheco River fails to meet designated uses for supporting aquatic life, fish consumption, primary contact recreation, or shellfishing. The River is impaired for a long list of toxic pesticides, solvents and industrial compounds including DDT, Dieldrin, Dioxins, PAHs, PCBs.<sup>36</sup>

In the 2016 NH 303(d) report, the Cocheco River shows no improvement with respect to toxic contaminants, and is additionally impaired for conventional criteria such as excess nitrogen and chlorophyll-A, pH and dissolved oxygen.<sup>37</sup> In fact, the Cocheco River has a new impairment for Aquatic Life Use Support in the 2016 report. Between the 2014 and most recent assessment, 63% of samples showed iron concentrations above the chronic criteria.<sup>38</sup>

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<sup>33</sup> <http://www.stateofourestuaries.org/indicators/>

<sup>34</sup> **Standard Permit Application for Solid Waste Management Facility, Volume 1, TLR\_III South Area**, dated May, 2017, Hydrogeologic Report, TLR South Area, May 2017, Page 2.

<sup>35</sup> *Id.*, Page 19.

<sup>36</sup> <https://www.des.nh.gov/organization/divisions/water/wmb/swqa/2014/documents/r-wd-15-11-list.pdf>

<sup>37</sup> <https://www.des.nh.gov/organization/divisions/water/wmb/swqa/2016/documents/r-wd-17-09-app-a1.pdf>

<sup>38</sup> <https://www.des.nh.gov/organization/divisions/water/wmb/swqa/2016/documents/r-wd-d17-10.pdf>

The Isinglass River has shown some improvement between the 2014 and 2016 report. Higher dissolved oxygen concentrations bumped it from a 5-M to 2-G so the River now supports Aquatic Life designation.<sup>39</sup>

While investment in wastewater treatment infrastructure in both Rochester and Dover is providing significant reduction in nitrogen pollution in the Cocheco River, expansion and potential failure of leachate collection systems at the massive Turnkey Landfill pose an enormous threat to the health of the community and the estuary as a whole. CLF has serious concerns about the inevitable and ongoing releases of contaminants from this landfill into the nearby wetlands and Cocheco River, including heavy metals, volatile organic compounds and the other tens of thousands of contaminants found in the solid waste accepted at this facility.

**f. For These Reasons the Setback Waiver Should Not be Granted**

After reviewing the information available about the site and the Proposed Expansion, it is unclear even how many acres of wetlands are to be filled. Given that lack of clarity, further investigation and public comment are needed before NHDES can evaluate this aspect of the Proposed Expansion. 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.

**g. Impact on the Water Supply of the City of Dover**

The Hydrogeologic Report indicates that the City of Dover has a registered water withdrawal from the Isinglass River a point just downstream from the Rochester Neck Bridge, 1,300 ft topographically downgradient of the Proposed Expansion.<sup>40</sup> Given that this Proposed Expansion would be denied categorically if the distance were 1,000 feet, this information should be communicated to the City of Dover and its citizens for their review and input.

**h. Dangers of Leachate and Disposal at Lowell Wastewater Treatment Plant**

Turnkey Landfill produces an astronomical amount of leachate. In 2016 it produced almost 9 million gallons.<sup>41</sup> About 5.5 million gallons was pre-treated at the site and sent to the City of Rochester wastewater treatment plant. About 2.8 million gallons was sent to the City of Lowell wastewater treatment plant, without pre-treatment. Another 500,000 gallons was recirculated at the site.

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<sup>39</sup> <https://www.des.nh.gov/organization/divisions/water/wmb/swqa/2016/documents/r-wd-d17-10.pdf>

<sup>40</sup> **Standard Permit Application for Solid Waste Management Facility, Volume 1, TLR\_III South Area**, dated May, 2017, Hydrogeologic Report, TLR South Area, May 2017, Page 6.

<sup>41</sup> 2016 Fourth Quarter Facility Reports, Waste Management, Dated January 30, 2017.

While pre-treatment probably removes some contaminants, it is unclear which ones. Also, the contaminants in the leachate sent to the City of Lowell, which is not pre-treated, will end up adhering to the sewer sludge, off-gasing or being released, still in the water, into the river. This is very dangerous, as we know this leachate has repeatedly tested as having tetrahydrofuran, ter-butyl alcohol and lead, for example.<sup>42</sup>

**i. Expanding the Landfill Will Exacerbate All of These Dangers**

NHDES should not allow Waste Management to expand a landfill that is already leaking thereby exacerbating a known hazard. Careful review of the existing surface and groundwater data, as well as additional wells and testing should take place before any expansion is considered.

**ii. Dangerous Air Pollution Emitted by Turnkey Landfill**

**a. Landfill Gas**

Landfill Gas is produced by anaerobic bacteria (in the absence of air) which consume organic matter in the MSW. Landfill Gas is made up of methane (about 55%, flammable), carbon dioxide (45%), and small amounts of oxygen, nitrogen, and other dangerous gases like volatile organic compounds and hydrogen sulfide.<sup>43</sup> Landfill Gas is very dangerous, not only because it is flammable and has trace amounts of toxic gases, but because it migrates through soils, and accumulates in confined spaces.<sup>44</sup> It also can cause very strong odors. As such, it can cause asthma and other health problems.<sup>45</sup>

**b. Climate Impact of Landfill Gas**

Methane is 28 times more potent a greenhouse gas than carbon dioxide. Landfills are the largest anthropomorphic source of methane, and it is significant. In 2014, U.S. landfills released about 163 million tons of CO<sub>2</sub> equivalent of methane.<sup>46</sup> Considering the shorter life span of methane, reducing the methane from landfills, should be a priority.

It is impossible to know how much methane is produced by a landfill, or what percentage of it is captured in a flare or landfill gas to energy system (LFGTE). Kerry Kelly, senior director of federal affairs for Waste Management “says it’s

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<sup>42</sup> 2017 Second Tri-annual Leachate Analytical Reports, October 27, 2017, file:///C:/Users/kpecci/Documents/2017%20Second%20Tri-Annual%20Leachate%20test%20Turnkey.PDF

<sup>43</sup> **Standard Permit Application for Solid Waste Management Facility, Volume 2, TLR\_III South Area**, dated May, 2017, Gas Monitoring Plan, TLR South Area, May 2017, Page 1.

<sup>44</sup> Id.

<sup>45</sup> <https://ensia.com/features/methane-landfills/>

<sup>46</sup>

simply not possible to accurately assess methane leakage. “You can measure how much gas you’re collecting. You can’t measure how much gas the landfill actually generates,” she said.<sup>47</sup> Waste Management acknowledges that methane and other landfill gases are escaping the site – for instance, Waste Management’s Gas Monitoring Plan requires them to measure the gas for methane in facility buildings and monitoring locations outside the limits of the landfill cells.<sup>48</sup>

Estimates by USEPA and scientists outside of the waste industry run from 10 to 90 percent gas capture over the life of the landfill – a large margin for error. The best practice is to prohibit all organics – food, textiles, paper and cardboard from the landfill. Only then will methane production be halted.

**It is also clear that LFGTE systems, like the one at Turnkey Landfill, capture less of the methane than flares. Based on studies by government agencies, consultants to the waste industry, and academic institutions, a potential result in 3.8-7.8 times more net GHG emissions for LFGTE systems as compared to flaring.**<sup>49</sup> This effect is especially clear when landfill leachate is recirculated, as is done at the Turnkey Landfill.<sup>50</sup>

**c. Expanding the Landfill Will Exacerbate All of These Dangers**

The larger the landfill, and the more waste it accepts, especially organics, which make up more than half of MSW, the more methane it will produce and release into the environment.

**The Proposed Expansion is Unjust**

**I. Low-Income Communities are More Likely to Host Mega-Landfills in New England**

For over 20 years, NHDES has had a policy that it will “ensure fair and equitable treatment of all New Hampshire citizens in the implementation of federal and state environmental laws, rules, programs, and policies.”<sup>51</sup> This policy is based on the principle of environmental justice, which states that “[f]air treatment means that no

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<sup>47</sup> <https://ensia.com/features/methane-landfills/>

<sup>48</sup> Waste Management of New Hampshire, Inc., Site Report TLR-III South Area, File No. 3534.03, May 2017, Page 10.

<sup>49</sup> Landfill Gas-to-Energy Projects May Release More Greenhouse Gasses Than Flaring, Jim R. Stewart, PhD, January 2013. <http://www.energyjustice.net/files/lfg/lfgte-increases-ghgs.pdf>

<sup>50</sup> Id.

<sup>51</sup> See e.g., *Performance Partnership Agreement for Federal Fiscal Years 2005-2007*, NHDES and EPA (Feb. 2005), <https://www.des.nh.gov/organization/commissioner/p2au/pis/ppap/documents/ff05-07.pdf>.



group of people, including a... socioeconomic group, should bear more than its share of negative environmental impacts.”<sup>52</sup>

New Hampshire has prospered in recent years with low unemployment and one of the highest median incomes in the nation. Yet Rochester lags dramatically behind the rest of the state. State-wide median household income is over \$76,000,<sup>53</sup> while in Rochester, the median household income is \$46,979.<sup>54</sup> The poverty rate in Rochester exceeds the state average by over 60%,<sup>55</sup> and in a state where nearly half of the population holds a bachelor’s degree or higher,<sup>56</sup> just over one-fifth of Rochester’s residents have reached the same level of educational attainment.<sup>57</sup>

The Turnkey landfill is not serving the people of Rochester. It is a cash cow for Waste Management, who has every incentive to continue importing trash from around New England, regardless of local waste reduction efforts.

In fact, instead of planning for reduced tonnage down the road, WM is actually anticipating *increased* waste collection at Turnkey in its expansion proposal,<sup>58</sup> contrary New Hampshire legislature’s stated goals of source reduction, recycling, and re-use.<sup>59</sup>

In the short term, Waste Management’s economic leverage over the town is formidable. Waste Management paid the City of Rochester about \$1.7 million in taxes in 2015, according to Town’s finance director.<sup>60</sup> However, that is a very small

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<sup>52</sup> See *Glossary*, NH ENVT’L PUBLIC HEALTH TRACKING (Jan. 23, 2018), <https://www.nh.gov/epht/glossary/e.htm>.

<sup>53</sup> New Hampshire Has the Highest Median Income in the US, NHPR (Sep. 14, 2017), <http://nhpr.org/post/new-hampshire-has-highest-median-income-us#stream/0>.

<sup>54</sup> *Community Profiles: Rochester, NH*, NH EMPLOYMENT SECURITY (Nov. 2017), <https://www.nhes.nh.gov/elmi/products/cp/profiles-htm/rochester.htm>.

<sup>55</sup> The state’s poverty level is 8.2%, while Rochester’s is 13.2%. See *Poverty by State: New Hampshire 2016*, TALKPOVERTY, <https://talkpoverty.org/state-year-report/new-hampshire-2016-report> (last visited Jan. 23, 2018); *Community Profiles: Rochester, NH*, NH EMPLOYMENT SECURITY (Nov. 2017), <https://www.nhes.nh.gov/elmi/products/cp/profiles-htm/rochester.htm>.

<sup>56</sup> *New Hampshire Population Demographics*, POINT2HOMES, <https://www.point2homes.com/US/Neighborhood/NH-Demographics.html> (last visited Jan. 23, 2018) (showing 46.8% of the NH population with a bachelor’s degree or higher).

<sup>57</sup> *Community Profiles: Rochester, NH*, NH EMPLOYMENT SECURITY (Nov. 2017), <https://www.nhes.nh.gov/elmi/products/cp/profiles-htm/rochester.htm> (showing 20.8% of Rochester’s residents with a bachelor’s degree or higher).

<sup>58</sup> Standard Permit Application for Solid Waste Management Facility, Vol. I, TLR-III South Area (May 2017), <http://www4.des.state.nh.us/IISProxy/IISProxy.dll?ContentId=4658592>.

<sup>59</sup> See Title X 149 M:3 (1996).

<sup>60</sup> Talking Trash and Cash in Rochester, Fosters October 9, 2016 <http://www.seacoastonline.com/news/20161009/talking-trash-and-cash-in-rochester>

fraction of the money Waste Management stands to make if this expansion goes through. Waste Management reported that they would be paid \$78 per ton on Section IX., Financial Report of their Standard Permit Application Form, Page 17. Assuming the expansion allows them to bury another 14 M tons of waste, they will make more than \$109 million a year. Rochester is keeping this waste permanently – Waste Management is just required to monitor it for 30 years. Shouldn't the Town receive at least \$10 million, or 10% of the fees associated with this facility? And the taxes? The Town of Southbridge received more than \$2 million in host fees a year, on top of property taxes, from Casella Waste, who only buried up to 405,600 tons there a year. Similarly, the Town of Saugus receives a \$3 million host fee, on top of property taxes, from Wheelabrator Saugus Incinerator, who burns less than half of what Waste Management buries in Rochester. This underscores the lack of control the Town of Rochester has over Waste Management and the Turnkey Landfill.

The Turnkey landfill has provided a boost to the tax base of Rochester; revenues from the landfill account for the largest single tax contribution to the town.<sup>61</sup> In addition, the landfill employs 150 people.<sup>62</sup> The appeal of a large corporation providing jobs and tax revenues is understandable, but should not be overstated. First of all, current plans call for continued operations for TLR-III through 2024, based on current waste collection. This means that the town and the Turnkey employees have years to plan for operational changes at the landfill. Through smart management, the town has already set aside funds to prepare for diminished revenue associated with the closure of Turnkey.

Secondly, the eventual need to reduce the number of employees at the landfill should be kept in perspective. The landfill employs fewer people than the local Market Basket.<sup>63</sup> If a local supermarket was importing hazardous materials from other states and leaking harmful byproducts into the local rivers, there is little doubt that the supermarket's operations would be shut down quickly, let alone be given permission to expand. In this case, we already know of the enormous environmental risk at the landfill, and there are years ahead for the town and its people to adapt for the future without an active Turnkey landfill.

Finally, the continued operation and expansion of the landfill may serve to harm the local interests of Rochester in the long term. While Turnkey provides tax revenue now, an ever-expanding mega-landfill is not the kind of asset that drives future investment. Waste Management has done an effective job of tying itself into the local economy of Rochester so as to appear as an irreplaceable asset, but the Lilac City deserves better. In line with its mission of ensuring fair treatment of all New

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<sup>61</sup> Liz Markhlevskaya Imark, *Talking Trash and Cash in Rochester*, SEACOASTONLINE (Oct. 9, 2016), <http://www.seacoastonline.com/news/20161009/talking-trash-and-cash-in-rochester>.

<sup>62</sup> *Id.*

<sup>63</sup> *Community Profiles: Rochester, NH*, NH EMPLOYMENT SECURITY (Nov. 2017), <https://www.nhes.nh.gov/elmi/products/cp/profiles-htm/rochester.htm>.

Hampshire citizens, the NHDES must stop the expansion of the landfill on behalf of the people of Rochester to ensure that a community is not exploited by Waste Management to become a dumping ground for the rest of New England.

### **The Proposed Expansion is Unnecessary and Bad Solid Waste Policy**

#### **I. The Proposed Expansion Does Not Provide a Substantial Benefit to the State of New Hampshire, The Established Solid Waste Districts, or the Waste Generators in the State**

According to the permit application, New Hampshire generated 1,841,200 tons of solid waste in 2015. Waste Management also explains that the State has one operating incinerator, and ten other landfills, only six of which are lined. Waste Management maintains that once these other landfills reach capacity, New Hampshire will need the additional airspace provided by the Proposed Expansion.<sup>64</sup>

However, Waste Management does not explain that in 2016 more than 850,000 tons of the approximately 1.4 million tons accepted at the Turnkey Landfill in 2016 were from outside of New Hampshire. If Waste Management wished to benefit New Hampshire, they could stop taking out of state waste, and then the life of the landfill, and the capacity needed by the state, would be met until about 2030.

Furthermore, while New Hampshire's diversion rate is about 32 percent, New Hampshire has not met its 2000 diversion goal of 40%, has not passed regulations in step with other New England states to divert food waste or other recyclables, has not invested in Zero Waste programs, or even released a solid waste plan since 2008.

New Hampshire should work to meet its solid waste diversion goals before allowing any expansion of landfill or incinerator capacity. A study done by the Rockefeller Center at Dartmouth College found that "In 1996, the New Hampshire legislature adopted Chapter 149-M: Solid Waste Management, which dictated that the state should have reached a "40 percent minimum weight diversion of solid waste landfilled or incinerated on a per capita basis" through source reduction, recycling, reuse, and composting. ... As of 2006, the state has failed to meet this goal."<sup>65</sup> This goal has not been met as of 2018, more than twenty years after it was set. In fact, we have been unable to locate even a solid waste plan or meaningful review of New Hampshire's waste system by any state agency conducted in the past five years.

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<sup>64</sup> **Standard Permit Application for Solid Waste Management Facility, Volume 2, TLR\_III South Area**, May 2017, Public Benefit Statement, Table 4.

<sup>65</sup> [http://rockefeller.dartmouth.edu/sites/rockefeller.drupalmulti-prod.dartmouth.edu/files/prs\\_brief\\_0708-05.pdf](http://rockefeller.dartmouth.edu/sites/rockefeller.drupalmulti-prod.dartmouth.edu/files/prs_brief_0708-05.pdf), page 2.

Granting Waste Management a permit to accept 1.4 Million tons of waste a year – more than the yearly municipal solid waste being generated by the entire state – will ensure that New Hampshire cements its future as New England’s toxic trash heap. This is not good for New Hampshire’s public health, environment, or economy.

## **Expansion Requires Destroying 200+ Year Old Burial Ground**

### **I. Insult to Injury**

On some level, all of us are aware of the uniqueness and irreplaceability of each acre of land. No more land will ever be created in New Hampshire. Once that land’s soil and water are befouled by a landfill, it is lost to us, never to be more than a hazard that should be monitored in perpetuity. This is made especially clear by the presence of a historic burial ground on the site.

The Bickford-Hayes Burial Ground was established circa 1800.<sup>66</sup> It is a beautiful and unique feature of Rochester that will be lost if Waste Management is allowed to expand this landfill. Rather than a place to picnic and learn about the Town’s roots, it will become a source of contaminated water and air forever. CLF is currently investigating the validity of the permits issued thus far to remove this burial ground, and maintains that there is not adequate need to justify the destruction of this irreplaceable historic resource.

### **Conclusion**

The potential destruction of the Bickford-Hayes Burial Ground puts in sharp relief the question before the New Hampshire DES. Not only is each acre of land unique, but so is each community and each human being. Expanding a facility that will negatively impact the public health of the region, negatively impact the environmental resources in the area and have a negative impact on the economic and sustainability of all of New England is short-sighted, unwise and irresponsible. For these reasons, among others, the Conservation Law Foundation respectfully requests that NHDES deny this permit request to expand the Turnkey Landfill. Barring that at this time, CLF respectfully requests that NHDES extend the comment period for another thirty days to ensure an opportunity for meaningful and informed public participation. Thank you for the opportunity to comment on this proposal and your attention to this matter.

Very truly yours,



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<sup>66</sup> <http://www.seacoastonline.com/news/20170820/state-laws-protect-small-cemeteries-from-development>



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