

**Central Landfill  
Action Committee  
Report #1:**

**Recommendations  
Addressing  
Odor Problems at  
Central Landfill**

**July 2000**

Prepared by the Central Landfill Action Committee

**Central Landfill Action Committee Report #1:  
Recommendations Addressing Odor Problems at  
Central Landfill**

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## **INTRODUCTION**

In response to an ongoing high number of odor complaints related to Central Landfill and neighboring facilities, the office of the Mayor of Johnston invited Jan Reitsma, Director of the Rhode Island Department of Environmental Management, to attend a public meeting on October 21, 1999 in Johnston, Rhode Island. The public meeting was held to allow members of the public and surrounding communities an opportunity to ask questions and discuss conditions.

This public meeting was heavily attended and the issues clearly could not be addressed in a single meeting. In order to provide regular, consistent opportunities to follow up on the many, many issues raised at the October 21st meeting, Director Reitsma suggested the formation of an ongoing Advisory Committee to explore the issues in more depth, seek solutions and formulate recommendations. This ad hoc committee was formed to advise state, federal, and local authorities on appropriate actions to be taken concerning issues such as odor and erosion problems that have been occurring at the Central Landfill. The committee would also serve as a vehicle for providing outreach and dialogue with the community on a regular, ongoing basis.

Shortly after the meeting, DEM senior managers met with the office of the Mayor of Johnston, town residents and the United States Environmental Protection Agency to begin organizing the Central Landfill Action Committee. The first meeting of the committee was held on November 17, 1999. The Committee is made up of citizens from communities surrounding the landfill and representatives from the Rhode Island Department of Environmental Management, Rhode Island Department of Health, United States Environmental Protection Agency, Rhode Island Resource and Recovery Inc., New England Ecological Development, Mayor of the Town of Johnston, Johnston Town Council and state legislators.

From the very first meeting, a broad list of over 75 issues and concerns was outlined. These concerns were combined into common groups, discussed by the committee and prioritized. The consensus priorities for the committee's attention were odors, health and environmental impacts from the facilities, traffic, and issues related to the buffer zone (in that order). The Committee decided to expand its scope beyond the Central Landfill to include the New England Ecological Development (N.E.E.D.) facility, transfer stations and other potential sources.

The first three meetings were also dedicated to organizing the committee itself. A mission statement, meeting ground rules, and operating procedures were established and the committee membership was determined.

By the fourth meeting, held on January 11, 2000, the committee began to dig into the technical issues related to the odors themselves and odor control at the landfill. Since that time, the committee has held bi-weekly meetings and listened to, deeply discussed and evaluated technical information from a broad spectrum of sources, heard the testimony of experts, and come up with a list of recommendations. This report sets forth the first set of recommendations regarding odors at Central Landfill.

**CENTRAL LANDFILL ACTION COMMITTEE REPORT #1:**

**Recommendations Addressing Odor Problems at Central Landfill**

## **RECOMMENDATIONS ADDRESSING ODOR PROBLEMS AT CENTRAL LANDFILL**

The Central Landfill Action Committee has adopted all of the following forty recommendations by consensus.

1. Rhode Island Resource Recovery Corporation (RRC) will begin diverting all municipal solid waste, as well as any highly putrescent commercial wastes (e.g. fish waste, restaurant waste) which can be easily identified and segregated, out of Phases II & III, and into Phase IV of the landfill.

RRC will report to the Committee within 30 days as to whether it accepts this recommendation and will report to the Committee periodically on the status and schedule of obtaining final approvals from the U.S. Environmental Protection Agency (EPA) and Rhode Island Department of Environmental Management (DEM) to allow filling in Phase IV. Also, EPA and DEM will report to the Committee within 30 days on the status of agency approvals.

2. RRC will ensure that the design of the new transfer station effectively consolidates loads and limits litter. The plan for the transfer station will include details on the design and operation of the transfer station and will be submitted to the proper regulatory agencies for approval.

RRC will report to the Committee monthly on the transfer station project schedule and the status of DEM approvals. Also, DEM will report to the Committee monthly on the status of agency approvals.

3. RRC will expedite staging of interim capping measures as they proceed with future filling, to reduce the area of active waste disposal as much as possible. The gas collection system will be installed during each phase of filling to adequately capture gases, and the system will be designed to be crush-proof.

RRC will report to the Committee monthly on the interim capping measures (i.e. areas capped with intermediate and/or final cap) taken to reduce the area of active waste disposal and on the status and schedule of final cap design.

4. RRC will adopt a written "Good Neighbor Policy" which goes beyond the requirements set out in the regulations by:
  - a. Correcting odor and methane problems before regulatory agencies take enforcement actions;
  - b. Refusing to accept loads of waste that are even suspected of being from out-of-state;
  - c. Anticipating potential problems, and taking appropriate action before they escalate into serious problems, and;
  - d. Keeping all RRC property and surrounding neighborhoods clean of litter.

RRC will report back to the Committee within 45 days about its plans to adopt a written "Good Neighbor Policy" as outlined above. Then, RRC will report to the Committee quarterly on the success of the policy.

5. RRC and the Town of Johnston will work together to block off Macera Circle to prevent illegal dumping and litter. RRC and the Town of Johnston will report to the Committee within 30 days on the status of implementing this recommendation.
6. There should be close federal oversight of RRC.
7. RRC shall ensure that waste haulers cover their loads.
8. RRC shall ensure that trucks are thoroughly cleaned before leaving the landfill, such as with water cannon.
9. RRC shall work with state agencies to keep the roads to and from the landfill clean of trash.
10. On Saturdays, RRC shall accept trash loads only until noon.
11. Representative of the RRC Board should attend Central Landfill Action Committee meetings.
12. There should be a "shake-up" of RRC management.
13. The RRC Board shall include professionals from the solid waste management industry.
14. The process of selecting members of the RRC Board shall be changed to ensure fair and proportionate representation for the surrounding communities of Johnston, Cranston and Scituate.

15. RRC will finish all Central Landfill gas mitigation efforts as soon as possible. DEM and the EPA will determine if recent gas mitigation efforts have been effective in eliminating the severity of the odors. If they determine that the actions have not been effective, DEM and EPA will identify additional measures and RRC will pursue those measures.
16. RRC will revise its model and recalculate the volume of gas generated at Central. DEM and EPA will validate the model including the model's assumptions.
17. RRC will compare its estimated amounts of gas generated daily and annually to the amounts actually collected. RRC will review and revise the design of the gas collection system as necessary to ensure that the system is effective and has enough excess capacity to collect and treat more gas than is predicted. This will be accomplished with the oversight of DEM and EPA.
18. RRC will immediately begin to design and cap the inactive portions of phase II and phase III of the landfill. All new and proposed landfill cells will be designed and constructed so that as the landfill cells fill with waste, an impermeable liner and cap will be installed.
19. As it plans for the future, RRC will anticipate the growth of the landfill and the volume of gas that will be generated so as to minimize negative impacts to the surrounding community.
20. RRC will maintain the gas collection system and correct any problems with the system including those caused by landfill settlement and landfill growth.
21. RRC will conduct quarterly monitoring of the surface of the landfill for gas emissions to ensure the gas collection system and cap are working properly. When landfill gas emissions on the surface are identified at unacceptable levels, RRC will immediately take mitigation steps in that location.
22. RRC will conduct continuous monitoring of landfill gases in residential neighborhoods and if unacceptable levels of landfill gasses are identified, RRC will immediately take steps to mitigate the gas emissions.
23. RRC will report the status of its design and on mitigation measures taken to reduce odors. These reports will be made regularly to the Central Landfill Action Committee and on a quarterly basis to the public. The report will address the effectiveness of design and mitigation measures in abating odors and what further actions will be pursued.
24. RRC will estimate the current and future amounts of gas controlled by the gas control system, compare this amount to estimates/models of the amount of gas generated and collected at the landfill, and report these findings to the Central Landfill Action Committee regularly and to the public on a quarterly basis.

25. RRC will design a gas control system that has a capacity in excess of estimates of current and future amounts of gas collected at the landfill. The design will also include plans for addressing common problems in gas control (e.g. flare failure, power plant service disruption) in ways that do not cause odor problems in surrounding neighborhoods.
26. RRC will monitor emissions from the flares and power plant, model transport of these emissions to surrounding neighborhoods, and verify these modeling results with field monitoring. RRC will respond to exceedence of guidelines or standards by designing and implementing controls on the emissions from flares and the power plant in a timely fashion.
27. RRC will design and implement an automated system that monitors and reports flare failure to the RRC and the DEM. RRC will report monitoring results to the Central Landfill Action Committee regularly and to the public on a quarterly basis.
28. RRC will design and implement a plan for effectively responding to common system failures that will be identified by the monitoring system.
29. RRC shall set its commercial solid waste tipping fees, both non-contract and contract, so as to reflect the prevailing pricing conditions in the regional market.
30. The Rhode Island General Assembly shall review tipping fees on municipal solid waste to encourage recycling.
31. The Rhode Island General Assembly will revise the Mission Statement of RRC to emphasize safety, recycling and a "Good Neighbor Policy." The Mission Statement should not emphasize cost-effectiveness.
32. An example of a new RRC Mission Statement that would address the Central Landfill Action Committee's concerns is:  
  

*“Rhode Island Resource Recovery Corporation shall provide the utmost in protection of public health and the environment while working towards having no impacts on the quality of life in the surrounding neighborhoods. The Corporation shall set an example of being a good neighbor by minimizing the impacts of its’ operations on the surrounding community, while setting high industry standards for recycling and waste disposal. RRC shall seek the best mix of public and private processing, recycling and disposal systems, programs, and facilities for both commercial and municipal waste to meet Rhode Island’s needs.”*
33. DEM will establish more objective standards for determining odor violations and investigate the possibility of using quantitative equipment for this function.
34. Additional trees should be planted in the buffer zone and surrounding areas.

35. DEM, EPA, Department of Health (HEALTH) and ATSDR will evaluate the existing monitoring strategy to address odor issues at the Central Landfill. The monitoring strategy will address the needs for routine on-site monitoring, monitoring in neighborhoods impacted by odors, and monitoring in response to odor complaints. RRC will implement this monitoring strategy with technical assistance, support and oversight from DEM and EPA.
- a. The monitoring strategy will include guidance on instrumentation capable of continuous measurement of methane and hydrogen sulfide levels.
  - b. The monitoring strategy will include episodic investigations in response to odor complaints or excess methane or hydrogen sulfide levels. The monitoring plan shall address the following odor causing contaminants:
    - i. Other compounds found in the gas collection system,
    - ii. Volatile organic compounds (VOC's),
    - iii. aldehydes (formaldehyde),
    - iv. esters (methyl butyrate),
    - v. reduced sulfur compounds (mercaptans),
    - vi. ammonia,
    - vii. acids (butyric acid),
    - viii. hydrocarbons (limonene), and,
    - ix. alcohols (ethanol).
  - c. The monitoring strategy will include provisions for requiring monitoring of any or all of these contaminants in response to exceedences of the odor standards.
36. EPA, DEM, HEALTH, ATSDR and RRC will evaluate the monitoring data at least quarterly to determine if the monitoring program is adequately accounting for odor problems in the community. If monitoring data do not account for odors, EPA, DEM, HEALTH, ATSDR and RRC will propose changes to the monitoring strategy and any additional research necessary to identify and control the source of odors.
37. The Town of Johnston will offer qualified municipal first responders (fire fighters, emergency medical technicians [EMTs], police and qualified public works officials) training for classification of odors. DEM, EPA and the Office of the Attorney General will establish procedures for how odor investigations conducted by Johnston town officials are to be used for compliance and enforcement. RRC will fund the expense of the training program approved by DEM and HEALTH.

38. The EPA, DEM, HEALTH, ATSDR and RRC will develop a monitoring strategy to address community concerns about contaminants in groundwater, surface water, sediments and soil in the communities around Central Landfill. The plan will include testing for all compounds detected in Central Landfill leachate. Samples will be taken from areas adjacent to the landfill, which receive groundwater or surface water discharges from the landfill.
39. DEM and RRC will evaluate the utility of sorting and pulverizing certain waste streams such as commercial construction and demolition waste to reduce the volume of waste landfilled.
40. Work with the University of Rhode Island on the vegetation issue and development of hardy grass seed mixtures for cover after capping.

\* \* \* \* \*

**The following are notes to the forty recommendations adopted by the Central Landfill Action Committee.**

Note Regarding Odor Recommendations

Problem Statement Regarding Odor:

Odor is a recurring situation at landfills generally. The problem at Central Landfill is the severity of the odor. The severity of the odor is having a negative impact on the quality of life of residents in the area. The severity of the odor may also be having negative health impacts on residents. Litter is another problem associated with Central Landfill.

Note Regarding Recommendations 1 through 5

These first five recommendations aim to improve the odor and litter problems by 1) better segregating putrescent commercial waste and municipal solid waste, 2) building a transfer station, 3) expediting interim capping and gas control measures, 4) adopting a proactive "Good Neighbor Policy," and 5) blocking off Macera Circle.

Note Regarding Recommendation 17

The gas collection system will be capable of handling the daily fluctuation of gas generated and will have a built in margin of safety. This margin of safety could be the maximum amount of gas generated in one day in a worst-case scenario.

### Notes Regarding Recommendation 18

Impermeable liners to prevent water from infiltrating the landfill and to prevent gas from seeping out of the landfill are critical components of an effective gas collection system.

The goal is to begin cap construction this summer.

### Notes Regarding Gas Collection Problem and Recommendations 24 – 28

Description of the Gas Collection Problem:

Landfill gasses collected by the gas collection system at Central are not effectively processed and treated for several reasons:

Landfill gasses collected by the gas collection system are discharged directly into the atmosphere when flares or the power plant are not functioning properly.

The current monitoring system for flares is inadequate to provide timely notice of malfunction.

Emissions from the flares and the power plant emissions cause odors.

### Additional Notes Regarding Recommendations 24 – 28

These recommendations will be submitted to DEM.

The plans included in these recommendations will first be submitted to DEM and approved before implementation of gas control measures that are the subjects of the plans.

Greater beneficial use of landfill gas should be promoted. RRC business plans should be Re-examined for possible increase in sales of gas to the plant and other users. This may increase RRC revenue.

Failure of flares, especially larger flares, potentially increases odors and raises other air pollution issues.

An implementation tracking system will be developed by the Committee for these and other recommendations.

### Note Regarding Recommendation 25

Plans to monitor gas emissions in the neighborhoods are a critical component of odor solutions.

## Notes Regarding Recommendations 29 and 30

### *Background on Recommendations 29 and 30:*

The General Assembly sets RRC's tipping fee for municipal solid waste (MSW).

The current tipping fee for MSW is \$32.00 per ton.

RRC's Board of Commissioners sets the tipping fees for commercial solid waste (CSW).

RRC's current "contract rate" for CSW is \$45.00 per ton.

RRC's current "non-contract rate" is \$58.00 per ton.

The following analysis is based on non-contract rates, more commonly referred to as "gate rates." This rate was selected for comparison, as it was the only rate publicly available from all of the solid waste facilities contacted. (Solid Waste facilities with an average daily intake of one thousand (1,000) or more tons per day.)

### *Analysis Regarding Recommendations 29 and 30:*

Listed below, by state, are the solid waste facilities contacted by the Work Group that receive one thousand (1,000) or more tons of solid waste per day, and their respective tipping fees for non-contract CSW.

#### Rhode Island

Central Landfill: \$58.00 per ton non-contract CSW

#### Connecticut

State of Connecticut Resource Recovery Authority: Bridgeport Project. Non-contract CSW \$75.00 per ton.

State of Connecticut Resource Recovery Authority: Mid-Connecticut Project. Non-contract CSW ranges from \$59.00 per ton to \$85.00 per ton depending on waste classification.

#### Massachusetts

American Ref-fuel/Seamass Rochester: \$85.00 per ton CSW.

Central Mass. Resource Recovery Project: \$85.00 per ton non-contract CSW.

North Andover RESCO Mass. Refusetech, Inc.: \$80.00 per ton non-contract CSW.

Saugus RESCO/WTI: \$80.00 per ton CSW.

Chicopee Landfill: \$100 per ton non-contract CSW. (Contract CSW and MSW negotiated at tipping rates between \$70.00 per ton and \$100.00 per ton.) Note: this facility receives between five hundred (500) and one thousand (1,000) tons per day.

#### New Hampshire

Turnkey: Non-contract in-state CSW \$72.50 per ton; Non-contract out of state CSW \$80.00 per ton.

Findings Regarding Recommendations 29 and 30:

RRC's non-contract tipping fee of \$58.00 per ton is approximately 39% less than the average rate of \$81.18 per ton in place at large scale solid waste facilities in the Northeast.

The disparity in pricing creates an economic incentive for waste haulers to dispose of out of state waste at the Central Landfill.

#### Notes Regarding Recommendations 31 and 32

As part of the review of the operation of the Central Landfill and the potential root causes that may have contributed to the odor problems experienced in the surrounding communities, the Central Landfill Action Committee has evaluated the mission statement of the Rhode Island Resource Recovery Corporation. RRC's current mission statement is:

*"Rhode Island Resource Recovery Corporation will provide environmentally responsible and economically sound waste management options to meet community needs using public and private systems, programs, and facilities."*

While the Committee agrees that this mission statement addresses many of the core operational functions of RRC, the Committee is concerned that the mission statement does not reflect a strong commitment to the neighboring communities and does not convey the level of leadership that Rhode Islander's expect from this quasi-government agency. Specifically, the Committee is concerned with four areas in the current mission statement:

- a. Over Emphasis on Economics. While the Committee agrees that RRC should always strive to operate in a cost-effective manner, we do not feel that this should be given specific emphasis in the mission statement.
- b. Safety Must Be Emphasized. The mission statement must reflect a commitment to operate the landfill in a safe manner. We feel that this is a critical, mission-level commitment that RRC should communicate to its' neighbors and other stakeholders.
- c. Recycling Must Be Emphasized. The mission statement must emphasis all aspects of recycling. In practice, RRC has been very active in promoting recycling of household wastes. The mission statement must emphasize recycling of both municipal and

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commercial waste streams. RRC should provide leadership and direction to obtain the best mix of private and public operations to meet Rhode Island's statutory recycling goals and should support the development of markets for recycled materials.

- d. "Good Neighbor Policy" Must Be Emphasized. The mission statement must reflect a commitment to be a "Good Neighbor" to both Johnston, as the host community, and other neighboring municipalities. Operation of a centralized disposal facility of this size, servicing virtually the entire State of Rhode Island, sometimes imposes hardships on neighbors. RRC should commit to minimizing those impacts directly in its' mission statement.

Given these concerns, the Committee recommends that General Assembly re-evaluate the RRC mission statement and amend the language to address the four issues described above.

#### Notes Regarding Recommendation 34

DEM's Division of Forestry should provide input to the selection of trees.

The number, type and size of trees should be carefully evaluated.

#### Note Regarding Recommendation 35

Accountability: RRC will acknowledge accountability through: a) public disclosures and publication (for example, via a website), at least twice monthly, of all permit violations, monitoring results and all administrative actions, and b) conducting additional monitoring in response to odor violations (i.e. increase the frequency of monitoring, the number of chemicals and the number of locations both at the landfill and in the community, as necessary).

#### Note Regarding Recommendation 36

Accountability: DEM will post a one-page summary of this evaluation on its website.

#### Note Regarding Recommendation 37

Accountability: The Mayor of Johnston and/or the Johnston Town Council will report on the number of officials who have completed training, the number of investigations conducted, and the outcome of these investigations. These reports will be presented to the public at least quarterly.

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