

Janée Zakoren
Department of Ecology
Air Quality Program

(Comment Submitted Electronically)

RE: Comment on Washington State Landfill Methane Emissions Reduction Grant Program DRAFT Grant Guidelines

Dear Ms. Zakoren,

LoCI Controls, Inc. (“LoCI”) writes to strongly support the Department of Ecology’s proposed landfill emission reduction grant program and grant guidelines (“Proposed Grant”). LoCI is an established and respected real-time data and control company using patented technology to increase methane capture and reduce emissions from landfills. This comment letter (“Comment”) provides recommendations for how the Department of Ecology should leverage the Proposed Grant to maximize methane emission reductions by funding municipal solid waste landfills (“MSW landfills”) that have the highest potential to reduce overall greenhouse gas and methane emissions. By prioritizing the allocation of funds to such projects, the Proposed Grant would further support the purpose of the Landfills-Methane Emissions law, Chapter 70A.540 RCW (“Methane Emissions Law”) and Landfill Methane Emissions rule, Chapter 173-408 WAC (“Methane Emissions Rule”). Furthermore, allocating funds for such projects would allow for the largest return on investment in terms of 1) significantly increasing methane captured, 2) reducing methane emissions statewide, and 3) expediting Washington’s progress towards its carbon neutrality goals.

LoCI’s Technology

As a world leader in the development and deployment of Advanced Gas Control Systems, LoCI provides landfill gas collection system operators with real-time data to optimize gas collection system efficiency, improve operations, increase methane capture, and reduce landfill emissions. LoCI’s patented cloud-connected real-time data and automated gas collection and control system (“LoCI’s System”) has four components: the Controller, the Sentry, WellWatcher®, and Liquid Level Management devices. The automated collection of real-time data identifies opportunities to improve landfill’s gas collection by quickly identifying issues with the collection system, such as air leaks, watered out wells, or loss of vacuum, and allows for automated tuning adjustment to assist the operator in optimizing gas collection system efficiency and significantly reducing methane emissions at a relatively low cost. Given the operator’s ability to set precise, automated adjustments and continuously monitor gas collection, LoCI’s System delivers on average a 15% increase in landfill gas collection. Additionally, in 2021, the American Carbon Registry affirmed the environmental value of LoCI’s System with the approval of a methodology which enables landfills to go beyond existing regulations to prevent the release of methane and other gases into the atmosphere, thereby offering the potential to reduce hundreds of millions of tons of additional emissions over the next decade.¹

¹ “Methodology for the Quantification Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from Landfill Gas Destruction and Beneficial Use Projects, version 2.0,” <https://americancarbonregistry.org/carbon-accounting/standards-methodologies/landfill-gas-destruction-andbeneficial->

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14 Kendrick Road, Suite 2
Wareham, MA 02571

Background

Methane is a potent greenhouse gas with more than 80 times the warming power of carbon dioxide (“CO₂”) over the first 20 years after reaching the atmosphere, and MSW landfills located in Washington are responsible for 80% of the state’s total industrial methane pollution.^{2,3} More specifically, when organic waste breaks down in landfills, it constitutes about 58% of all annual landfill methane emissions.⁴ It is estimated that 50% of carbon in organic waste is degraded to landfill gas within the first 3.6 years of being in the landfill.⁵ Because of methane’s powerful heating impact, increased methane emission reduction from MSW landfills would have a rapid and more significant effect on global warming potential.

Washington’s Legislature recognizes that landfills are a significant source of methane emissions, therefore enacted the Methane Emissions Law which promulgated the Methane Emissions Rule, designed to reduce methane emissions from MSW landfills. Under the Proposed Grant, the State Legislature appropriated \$9.6 million to support owners and operators of MSW landfills to comply with the new Methane Emissions Rule.

Department of Ecology’s Proposed Grant

Scoring Criteria

Under the Proposed Grant, project applicants are scored in accordance with the following scoring criteria:

1. Environmental Health Disparities (30% of total score)
2. Landfill Status (30% of total score)
3. Landfill Gas Collection and Extraction (15% of total score)
4. Landfill Gas Control (15% of total score)
5. Monitoring (10% of total score)

The Proposed Grant’s current scoring structure is designed to benefit landfills, subject to regulatory compliance, with the least funding available and located in the most vulnerable or underrepresented communities in the state. However, the scoring criteria fails to consider project applicants’ methane emission reduction potential. Open landfills in the earlier stages of operation have higher methane emissions, but also have the potential to capture more methane over time with the early installation of a gas collection system, thus significantly reducing overall methane emissions. To achieve this goal and maximize the value of the Proposed Grant’s funds, LoCI recommends that the scoring criteria point distribution be reallocated as follows.

[use-projects/lfg-methodology-v2-f_2021-05-05.pdf](#)

² IPCC, AR6, WG 1, The Physical Science Basis at 7-125.

³ Industrious Labs analysis of U.S. EPA Greenhouse Gas Reporting Program 2022, U.S. EPA Greenhouse Gas Equivalency Calculator, EPA Environmental Justice Screen, and EPA Landfill Methane Outreach Program (LMOP).

www.dontwasteourfuture.org/washington-dashboard

⁴ U.S. EPA 2023. Quantifying Methane Emissions from Landfilled Food Waste.

https://www.epa.gov/system/files/documents/2023-10/food-waste-landfill-methane-10-8-23-final_508-compliant.pdf

⁵ ID.

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Environmental Health Disparities

Under the Environmental Health Disparities scoring criteria, the Proposed Grant awards points based solely on the project applicant's location using Washington Tracking Network's "Environmental Health Disparities" Index and the Climate Economic Justice Screening Tool. The scoring criteria grants the most points to a project with a high environmental health disparity score, identified as disadvantaged, or on tribal land.

While LoCI supports the Proposed Grant's prioritization of projects identified as such, LoCI recommends that the Department of Ecology factor in and award additional points to projects with the highest emission reduction potential. Landfills release fugitive methane emissions which are known to degrade air quality and consequently harm the surrounding communities' health and well-being. Thus, identifying projects with the potential to generate the most methane emissions and supporting such projects' efforts to reduce their emissions, provides greater protection to the surrounding communities. By awarding projects located in areas susceptible to environmental degradation *and* having the most potential to pollute the surrounding community, the Proposed Grant would make a more significant impact on protecting the most vulnerable communities in the state and achieve greater methane emission reductions to support the Methane Emissions Law.

Landfill Status

Under the Landfill Status scoring criteria, the Proposed Grant prioritizes closed MSW landfills by allocating 50 points to publicly owned/operated or tribally owned landfills and 40 points to privately owned/operated landfills. Open landfills, however, only receive 20 points. LoCI recommends that open MSW landfills receive the highest possible point value as they have a higher potential to capture more methane over time than closed landfills, therefore are a more viable investment and will increase overall methane emission reductions.

Awarding the most points to landfills with the least impact on capturing emissions defies the purpose of the Methane Emissions Law and Methane Emissions Rule. It is estimated that 30% of total landfill gas generation occurs prior to landfill closure and 50% of the total landfill gas generation occurring within the first 30 years after landfill closure.⁶ Given the fast decay rate of organic waste and potency of the associated methane emissions, it is advantageous to incentivize gas collection system efficiency for open, active MSW landfills as they are capable of achieving more methane emission reductions over time. Therefore, supporting open landfills significantly increases methane emission reduction and further aligns with the purpose of the Methane Emissions Law and Methane Emissions Rule.

⁶ Dever, Stuart & Swarbrick, Gareth & Stuetz, Richard. (2010). Handbook for the Design, Construction, Operation, Monitoring, and Maintenance of a Passive Landfill Gas Drainage and Biofiltration System.

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Impact of LoCI's Technology under the Proposed Grant

The installation of LoCI's System to a MSW landfill provides rapid, substantial methane emission reduction for a relatively low cost relative to other CO₂e emission reduction opportunities. Specifically, LoCI's System maximizes gas capture so landfills meet the quarterly SEM scan requirements, ensures gas collection wells maintain a negative pressure, and identifies underperforming gas collection wells to offer solutions to improve the well's gas capture. Furthermore, LoCI's header monitoring system uses real-time data and alerts to identify under serviced, available vacuums of a gas collection system and ensures vacuum is supplied through the headers so as to monitor regional gas quality.

Pursuant to the EPA Greenhouse Gas Reporting Program, Washington's largest landfills must report gas collection operating performance annually. Using the publicly reported data from the thirteen largest landfills in Washington, LoCI estimates that the installation of LoCI's System at such landfills could reduce 1.2 million metric tons of CO₂e from the atmosphere per year.⁷ This reduction is equivalent to the CO₂ emissions of 270,000 average passenger vehicles on the road each year.⁸ In order for Washington to achieve an equivalent reduction, the state would have to replace 350,000 gas/diesel passenger vehicles on the road with electric vehicles.⁹

Washington Landfills					
Landfill Name	GHGRP ID	Parent Company	City	2022 Total Methane Captured (MT CH ₄)	Total # of Collection Wells
KING CNTY SOLID WST CEDAR HILLS LANDFILL	1007822	COUNTY OF KING WASHINGTON (100%)	MAPLE VALLEY	38,461	829
ROOSEVELT REGIONAL LANDFILL	1003676	REPUBLIC SERVICES INC (100%)	ROOSEVELT	32,807	290
LAND RECOVERY LANDFILL INDUST	1004679	WASTE CONNECTIONS US INC (100%)	GRAHAM	20,802	240
WASTE MANAGEMENT GREATER WENATCHEE LANDF	1007818	WASTE MANAGEMENT INC (100%)	EAST WENATCHEE	5,816	69
Cowlitz County Headquarters Landfill	1008180	COWLITZ COUNTY WASHINGTON (100%)	Castle Rock	3,235	123
Asotin County Regional Landfill	1014475	Asotin County (100%)	Clarkston	1,646	9
Horn Rapids Landfill	1007090	CITY OF RICHLAND WASHINGTON (100%)	Richland	1,414	26
TACOMA CITY SOLID WASTE FAC	1005619	CITY OF TACOMA WASHINGTON (100%)	TACOMA	1,403	163
GRANT CNTY EPHRATA LANDFILL 1	1007160	GRANT COUNTY WASHINGTON (100%)	EPHRATA	715	65
COWLITZ COUNTY LANDFILL	1005412	COWLITZ COUNTY WASHINGTON (100%)	LONGVIEW	550	82
Hidden Valley Landfill	1004384	WASTE CONNECTIONS US INC (100%)	Puyallup	432	117
Cathcart Landfill	1006550	COUNTY OF SNOHOMISH WASHINGTON (100%)	SNOHOMISH	294	36
OLYMPIC VIEW SANITARY LANDFILL INC	1003586	WASTE MANAGEMENT INC (100%)	PORT ORCHARD	269	81
Total				107,845	2130

If the Department of Ecology were to follow LoCI's recommendation for scoring projects with a higher potential to capture methane emissions and support the installation of LoCI's System, the Proposed Grant's limited funds would provide a cost effective and significant impact on reducing methane

⁷ LoCI's analysis of the 2022 U.S. EPA Greenhouse Gas Reporting Program GHG data and 20 year GWP.

⁸ LoCI's analysis of the 2022 U.S. EPA Greenhouse Gas Reporting Program GHG data and the EPA's average of 4.6 tons per year CO₂ emissions for internal combustion passenger vehicles.

⁹ LoCI's analysis of the 2022 U.S. EPA Greenhouse Gas Reporting Program GHG data, the EPA's EV average mileage of 27kWh, and the western grid's average 2023 emissions data.

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emissions. Such recommendation aligns with the purpose of the Methane Emissions Law and aides Washington to achieve its statewide commitment to limit greenhouse gas emissions by 95% by 2050.

Conclusion

The Department of Ecology should reconsider the scoring criteria under the Proposed Grant to award the most points to projects with the highest potential to generate methane emission reductions. This may be accomplished by, under the Environmental Health Disparities scoring criteria, awarding more points to projects that have the most potential to reduce methane emissions and are located in underrepresented communities. Additionally, under the Landfill Status scoring criteria, open landfills should be awarded more points over closed landfills as they capture more methane emissions over time. By following these recommendations, the Department of Ecology could maximize its return on investment of the Proposed Grant's funds and further support the purpose of the Methane Emissions Law and Methane Emissions Rule.

LoCI is available to provide additional input regarding the Proposed Grant and the potential impact of the considerations identified in this Comment. We look forward to working with the Department of Ecology and continuing to support Washington's goals to reduce methane and greenhouse gas emissions.

Respectfully,



Nicole Neff
Director of Environmental Attributes

LoCI Controls

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