



Draft Fiscal Impact Statement

Introduction

DEQ invites public input on proposed permanent rule amendments to chapter 340 of the Oregon Administrative Rules.

Executive Order No. 20-04 (EO 20-04), signed by Governor Brown on March 10, 2020, directs state agencies to take actions within their current statutory authority to reduce greenhouse gas emissions, with the purpose of achieving reductions of at least 45 percent by 2035 and 80 percent by 2050. One of the specific policy directions in EO 20-04 is for the EQC and DEQ to “take actions necessary to reduce methane gas emissions from landfills, as defined in ORS 459.005(14), that are aligned with the most stringent standards and requirements for reducing methane gas emissions from landfills adopted among the states having a boundary with Oregon.”

Methane emissions from landfills represent an important element of Oregon’s overall greenhouse gas (GHG) emissions. Methane is a natural byproduct of the decomposition of organic material in landfills. Methane is a potent greenhouse gas, far more effective than CO₂ at trapping heat in the atmosphere over a 100-year period. In 2017, six of the twenty-five largest stationary sources of GHG emissions in Oregon were landfills. Existing and new large (with a design capacity over 2.5 million megagrams or 2.5 million cubic meters) landfills are required to have landfill gas emission controls under federal regulations, and federal rules were updated in 2016.

The proposed permanent rules would require all active landfills, as well as closed landfills with greater than 200,000 tons of waste-in-place and the potential to generate over 664 metric tons of methane per year, to obtain air quality permits from DEQ. The proposed rules would include reporting requirements to assist DEQ in collecting data and information needed to track and account for greenhouse gas emissions from these landfills in Oregon. The proposed rules phase in reporting, monitoring, and gas control requirements based on landfill size, characteristics, and potential for methane generation.

Fee Analysis

These proposed rules do not include creation of new fees. If adopted, the proposed rules would require some landfills to obtain new permits, which would require the landfill to pay permitting fees under the current permitting program.

Statement of fiscal and economic impact

Fiscal and Economic Impact

Under the proposed rules, DEQ would require air contaminant discharge permits (ACDPs) be obtained by an estimated 39 landfills that have not previously been required to have ACDPs, based on existing information in DEQ databases. The proposed rules would increase reporting, monitoring, and gas control system requirements for the 39 newly permitted entities as well as the 12 landfills that currently have an air discharge permit. Landfill owners are mainly local governments, both city and county, and private businesses.

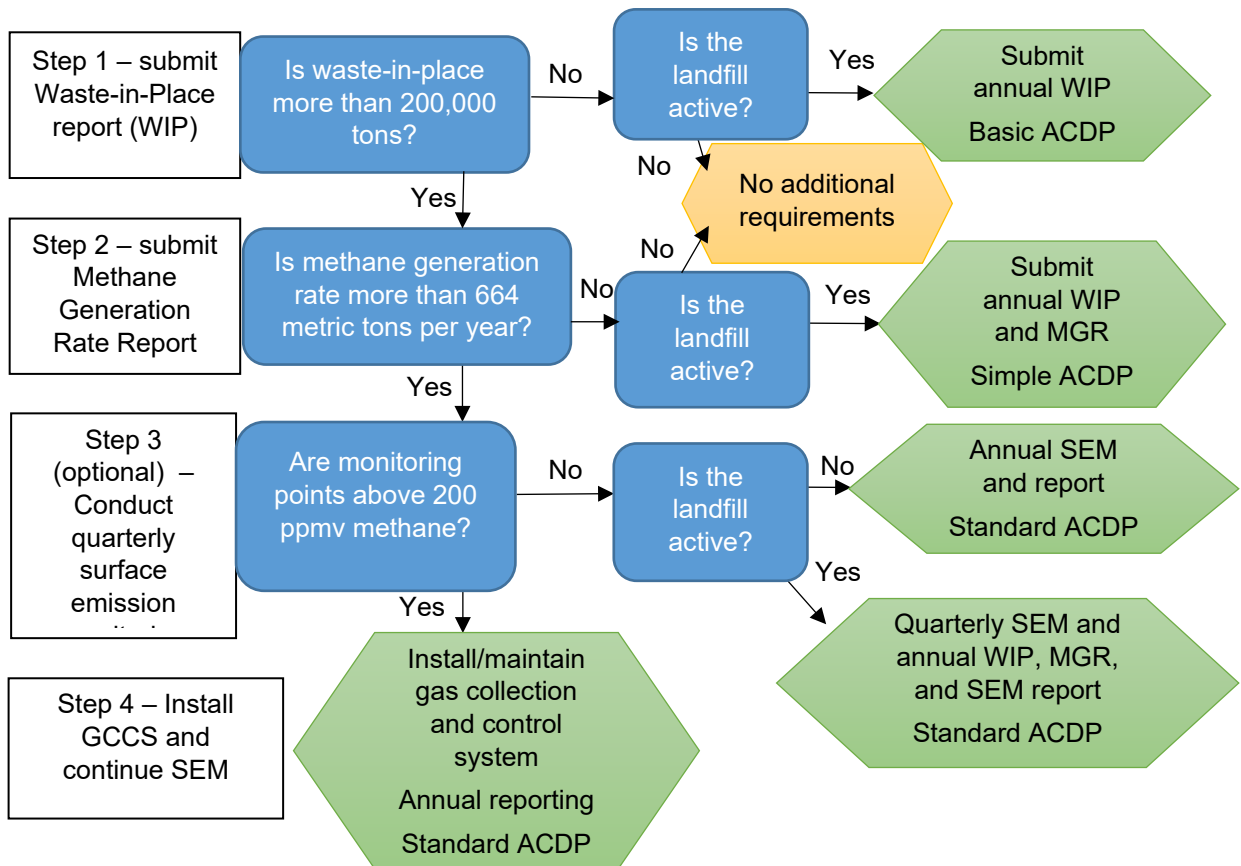
DEQ proposes to require ACDP types based on anticipated effort of DEQ staff to prepare and oversee the required activities at the landfills; as well as the levels of anticipated emissions, including the extent of control devices required, and the extent to which conditions needed to be tailored to particular facilities.

- For active landfills with under 200,000 tons of waste-in-place, DEQ would require a Basic ACDP. Landfill owners or operators in this category would be required to submit annual reports of the amount and type of waste received.
- For active landfills with over 200,000 tons of waste-in-place, where landfill gas generation calculations indicate insufficient methane generation (under 664 metric tons per year) to require additional efforts, DEQ would require a Simple ACDP. Landfill owners or operators in this category would be required to submit annual reports of the amount and type of waste received as well as updated landfill gas generation calculations. Since this will be a new permit for the majority of landfills, DEQ is proposing to require the “high fee,” per OAR 340-216-0064(2)(b) for the Simple ACDP due to the need for additional analysis by DEQ staff required to oversee the permits.
- For active and closed landfills with over 200,000 tons of waste-in-place where landfill gas generation calculations indicate sufficient methane generation to require additional activities and permit conditions, DEQ would require a Standard ACDP. Landfill owners or operators in this category would be required to conduct either surface emission monitoring, or install and maintain a gas collection and control system, along with continuing surface emission monitoring.
- Closed landfills that have either less than 200,000 tons waste-in-place or a calculated methane generation rate below 664 metric tons per year will be required to submit one report and will likely not be required to obtain a permit due to the proposed rules.
- Landfills required to obtain a permit will be subject to Cleaner Air Oregon (CAO) requirements in OAR chapter 340, division 245, as well as associated CAO fees.
 - Landfills that are currently constructed and will be required to obtain an ACDP under the proposed rules, should be treated as an existing source under

CAO, as long as the construction was conducted with all appropriate approvals under the federal Clean Air Act and the landfill was not operating without a required ACDP.

- Landfills required to obtain a simple or standard air permit will be required to perform a risk assessment, and if applicable, apply for a Toxic Air Contaminant Permit Addendum concurrently with an application for a permit.
- DEQ may require the owner or operator of a landfill that is required to obtain a Basic ACDP to perform a risk assessment and demonstrate compliance with CAO, and if applicable, apply for a Toxic Air Contaminant Permit Addendum concurrently with an application for a permit.
- Landfills that already have a permit are already subject to CAO requirements.

The flow chart below provides a high level overview of the landfill requirements. Estimated costs of complying with the proposed rules are listed in the following tables and discussed in detail below.



Landfill Gas Emissions permit types and fees					
Landfill Characteristics¹	Permit type²	Initial Fee	Annual Fee	CAO Fee	Est. no. of sites
Active landfills - less than 200,000 tons of waste-in-place	Basic ACDP	\$180	\$648	\$151	24
Active landfills - greater than 200,000 tons waste-in-place and a calculated methane generation rate below 664 metric tons per year	Simple ACDP ³	\$9,000	\$7,834	\$1612	7
Active and closed landfills - greater than 200,000 tons waste-in-place, a calculated methane generation rate above 664 metric per year, but surface emissions below 200 ppmv methane across the landfill	Standard ACDP	\$18,000	\$15,759	\$3,225	8 ^a
Active and closed landfills with greater than 200,000 tons waste-in-place, a calculated methane generation rate above 664 metric tons per year, and surface emissions above 200 ppmv methane anywhere on the landfill	Standard ACDP	\$18,000	\$15,759	\$3,225	

CAO = Cleaner Air Oregon

ACDP = Air Contaminant Discharge Permit

1. Closed landfills with less than 200,000 tons waste in place or a calculated methane generation rate below 664 metric tons per year will not be required to obtain an air quality permit. The owner or operator will be required to submit one report to verify the exemption.

2. Unless required to have a Title V permit for other facility emissions. If otherwise required to have a Title V permit, the landfill owner or operator will pay Title V permit fees.

3. High fees per OAR 340-216-0064(2)(b).

a. DEQ does not have enough information to assess which landfills will have surface emissions in excess of 200 ppmv methane.

Landfill Gas Emissions Permit Type Requirements	
Permit type	
Basic ACDP	Submit annual WIP Report
Simple ACDP	Submit annual WIP and MGR Report
Standard ACDP	SEM
Standard ACDP	SEM and GCCS installation

ACDP = Air Contaminant Discharge Permit

WIP = Waste-in-Place

MGR = Methane Generation Rate

SEM = Surface Emission Monitoring

GCCS = Landfill Gas Collection and Control System

Estimated Permit Compliance Costs				
Proposed minimum requirement	Lump sum cost (2009)¹	Per acre cost (2009)	Lump sum cost 2021³	Cost per acre 2021³
Annual WIP Report	\$167	NA	\$260	NA
Calculate MGR annually	\$167	NA	\$260	NA
SEM	\$48,000	\$99	\$59,792	\$123
Upgrade GCCS	\$25,000	\$1,900 ²	\$2,367	\$12,457
Install new GCCS	\$25,000	\$18,900	\$31,142	\$25,543

1. All 2009 costs: California Environmental Protection Agency, Air Resources Board, May 2009, Staff Report: Initial Statement of Reasons for the Proposed Regulation to Reduce Methane Emissions from Municipal Solid Waste Landfills
 2. The cost to upgrade the GCCS are highly variable. The cost of upgrading an existing GCCS is estimated to be approximately 1/10 of installing a new GCCS.
 3. Costs updated to \$2021 using: https://www.bls.gov/data/inflation_calculator.htm
- WIP = Waste-in-Place
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Statement of Cost of Compliance

State agencies – Oregon Department of Environmental Quality

DEQ will need fee funds to support staff time to write and manage the permits, review permit submittals, implement and manage a data collection system, develop data analysis methods, and coordinate permit information and data collection with other DEQ programs.

The proposed rules will not have fiscal effects on other state or federal agencies because there are no additional requirements for these entities. The proposed rules are intended to be equal to or more stringent than existing federal regulations on landfill gas emissions. EPA will complete an equivalency review of the proposed rules. Once that is completed, federal oversight will remain at current levels.

Local governments

The Lane Regional Air Protection Agency (LRAPA) implements the Air Quality Permitting Program for air permitted facilities in Lane County. According to current data, there are two landfills in Lane County that will be permitted after this rulemaking. Currently, LRAPA permits one landfill, the Short Mountain Landfill. Based on DEQ's data, one additional landfill may be required to obtain and maintain a Standard ACDP permit. The table below lists the landfills located in Lane County and the potential permitting requirements based on the proposed rules.

Landfills and Permit Types in Lane County			
Site name	Site owner	Permit required before/ after Proposed rules:	Proposed rule requirements
Short Mountain Landfill ¹	Lane County	Title V ¹ /Title V	Update GCCS & SEM
Delta Sand & Gravel Demolition Landfill	Delta Sand & Gravel Company	None/Standard ACDP	SEM
Weyerhaeuser - Last Chance Landfill	Weyerhaeuser NR Company	None/None	One WIP Report (no permit)
Florence Landfill	Lane County	None/None	One WIP Report (no permit)
Franklin Landfill	Lane County	None/None	One WIP Report (no permit)
Murphy Plywood Irving Road Disposal Site	Murphy Company	None/None	One WIP Report (no permit)

WIP = Waste in Place

SEM = Surface Emission Monitoring

1. Title V Permit 204740 administered by LRAPA

The proposed rules will have a fiscal impact on Local governments that own or operate landfills due to the increased permitting, monitoring, and potential onsite controls required at landfills.

Fourteen (14) local government owned landfills will need new AQ permits and be subject to fees, reporting and potentially monitoring requirements. These facilities and the potential minimum requirements are summarized in the table below. The costs associated with complying with these requirements are presented in the Fiscal and Economic Impact section.

Local Government Owned Landfills				
Facility Name	Owner	AQ Permit type (existing)	AQ Permit type (Proposed rule)	Proposed minimum requirement
Milton-Freewater Sanitary Landfill	City of Milton-Freewater	None	Basic ACDP	Annual WIP Report
Ant Flat Landfill	Wallowa County	None	Basic ACDP	Annual WIP Report
Salem Airport Disposal Site	City of Salem	None	Basic ACDP	Annual WIP Report
Haines Landfill	City of Haines	None	Basic ACDP	Annual WIP Report
Drewsey Disposal Site	Harney County	None	Basic ACDP	Annual WIP Report
Riley Disposal Site	Harney County	None	Basic ACDP	Annual WIP Report
Fields Disposal Site	Harney County	None	Basic ACDP	Annual WIP Report
Frenchglen Disposal Site	Harney County	None	Basic ACDP	Annual WIP Report
Thomas Creek Road Landfill	Lake County	None	Basic ACDP	Annual WIP Report

Local Government Owned Landfills				
Facility Name	Owner	AQ Permit type (existing)	AQ Permit type (Proposed rule)	Proposed minimum requirement
North Marion County Disposal Facility	Marion County	None	Simple ACDP	Annual MGR Report
Lytle Boulevard Landfill	Malheur County	None	Simple ACDP	Annual MGR Report
Klamath Falls Landfill	Klamath County	None	Standard ACDP	SEM
Crook County Landfill	Crook County	None	Standard ACDP	SEM
Brown's Island Demolition Landfill	Marion County	None	Standard ACDP	SEM
Short Mountain Landfill	Lane County	Title V	Existing permit	Update GCCS & Monitoring
Knott Landfill	Deschutes County	Title V	Existing permit	Update GCCS & Monitoring
St. Johns Landfill	Metro	Title V	Existing permit	Update GCCS & Monitoring
KFD Landfill	City of Portland	None	None	One MGR Report
Beaver Hill Solid Waste Facility	Coos County	None	None	One MGR Report
Grants Pass - Merlin Landfill	City of Grants Pass	None	None	One MGR Report
Fox Hill Landfill	Union County	None	None	One MGR Report
Agate Beach Landfill	City of Newport, Lincoln County Consortium	None	None	One WIP Report
Southwest Landfill	Deschutes County	None	None	One WIP Report
Lake County Landfill	Lake County	None	None	One WIP Report
Joe Ney Construction And Demolition Landfill	Coos County	None	None	One WIP Report
Port Orford Disposal Site	Curry County	None	None	One WIP Report
Tillamook County Landfill	Tillamook County	None	None	One WIP Report
Reedsport Landfill	Douglas County	None	None	One WIP Report
Florence Landfill	Lane County	None	None	One WIP Report
Box Canyon Landfill	Jefferson County	None	None	One WIP Report
Sunrise Park (Obrist) Landfill	City of Troutdale	None	None	One WIP Report
Kerby Landfill	Josephine County	None	None	One WIP Report
Crescent Landfill	Klamath County	None	None	One WIP Report
Bandon Disposal Site	Coos County	None	None	One WIP Report
Franklin Landfill	Lane County	None	None	One WIP Report
Astoria Landfill	City of Astoria	None	None	One WIP Report
Hood River Landfill	Hood River County	None	None	One WIP Report
Vernonia Landfill	City of Vernonia	None	None	One WIP Report

WIP = Waste-in-Place

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Public

The proposed rules will not have a direct fiscal impact on the public. Costs to local governments or businesses may be passed onto the public by increased solid waste tipping fees. DEQ is unable to quantify the impact at this time since the decision on how to fund these additional fees will be up to landfill operators/owners.

Public benefit

The proposed permanent rules should provide for future reduced costs to the general public from the reduction of greenhouse gas emissions and the impacts of climate change. DEQ is unable to quantify this impact since the actual methane reduction that will be attributable to this rule cannot be quantified at this time.

One such methane emission reduction in the proposed permanent rules comes from a more stringent onsite emission monitoring requirement. The proposed rules require extensive surface emission monitoring, in alignment with the California Landfill Methane Rule, which requires monitoring on a 25-foot grid and integrated surface emission monitoring. The current federal regulations require monitoring on a 30-meter (98 foot) grid. A 2015 analysis by Eastern Research Group (ERG) showed that the smaller (25-foot) monitoring grid resulted in increased exceedances detected. Detected exceedances are mitigated by either fixing the landfill cover or fixing the landfill cover and installing a landfill gas collection and control system, thus reducing the methane emissions from the landfill. ERG was unable to calculate the actual methane reduction; however, DEQ anticipates decreased methane emissions from landfills from the proposed rules.

Large businesses - businesses with more than 50 employees

DEQ estimates that landfills with more than 200,000 tons of waste-in-place are largely operated by large businesses or local governments. DEQ assumes that landfills with a larger tonnage of waste-in-place require more resources to be properly maintained. Based on this assumption, 24 landfills are owned by a large business. Twelve (12) of these landfills already have an air permit and will not see additional permit fees, two likely would not require a permit because they are closed and DEQ does not anticipate their methane generation rate would trigger additional gas control requirements.

The proposed rules will require additional monitoring, control efficiency, reporting, and shutdown requirements for the landfills with existing air permits. The proposed rules would require new air contaminant discharge permits, more stringent monitoring requirements, reporting requirements, control efficiency, and shutdown requirements for the landfills that do not currently have an air contaminant discharge permit. Landfills required to obtain a permit will be subject to Cleaner Air Oregon requirements in OAR chapter 340, division 245 and associated fees. Landfills that already have a permit were already subject to CAO. Estimated costs for these activities are provided in the Fiscal and Economic Impacts section.

Small businesses – businesses with 50 or fewer employees

DEQ estimates that landfills with less than or equal to 200,000 tons of waste-in-place are largely operated by small businesses. This assumption is based on the idea that these smaller landfills require fewer personnel to properly maintain. Based on this assumption, 36 landfills

are owned by a small business. Twenty (20) of these landfills would likely not be required to obtain an air quality permit because they are closed. These landfills would be required to submit one waste in place reporting including waste characterization details. The remaining 16 landfill owners would likely be required to obtain a Basic Air Contaminant Discharge Permit and submit annual waste in place reports including waste characterization data. Landfills required to obtain a permit will be subject to Cleaner Air Oregon requirements in OAR chapter 340, division 245 and associated fees. Landfills that already have a permit were already subject to CAO. Estimates costs for these activities are provided in the Local governments section.

ORS 183.336 Cost of Compliance Effect on Small Businesses

1. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

Assuming the landfills with less than 200,000 tons WIP are all small businesses, 35 small businesses would experience a fiscal impact from the proposed rules. The businesses are typically solid waste management companies.

2. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

Assuming the landfills owned by small businesses are all landfills with less than 200,000 tons of waste-in-place, the additional reporting requirements are annual reporting of the types and amounts of waste received. Landfills already track the waste received amounts and types so these costs represent costs to submit the data to DEQ. DEQ estimates this will cost approximately \$260 per report. This fee is detailed in the Estimated Permit Compliance Costs table in the Fiscal and Economic Impact section.

If a landfill exceeds the 200,000 tons waste-in-place, the owner would also be required to calculate the potential methane generation. DEQ estimates this will cost approximately \$260 per event.

Cleaner Air Oregon

Under the proposed rules, small business Landfill owners and operators will also be subject to reporting requirements for Cleaner Air Oregon and generally will not have been subject to CAO before because DEQ did not require these landfills to have air permits. Under the CAO regulations, all facilities that emit toxic air contaminants may be required to report emissions to DEQ a minimum of every three years. Facilities that have permit requirements to limit toxic air contaminant emissions must report compliance annually or semi-annually. The initial emissions inventory created the greatest workload for facilities, so updating this inventory should involve minimal costs. DEQ anticipates that the additional reporting requirements for Cleaner Air Oregon cost facilities approximately \$120 to \$1,200 per year.

3. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

Costs to small business associated with reporting, recordkeeping and other administrative are discussed in the New Reporting Requirements section of the Fiscal and Economic Impact section above.

4. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ notified small businesses during rule development by announcements on the DEQ website and advisory committee meetings. Small businesses were welcome to comment during advisory committee meetings during rule development.

Documents relied on for fiscal and economic impact

Document title	Document location
Air Contaminant Discharge Permits – Table 1 and Table 2	https://secure.sos.state.or.us/oard/view.action?ruleNumber=340-216-8020 https://secure.sos.state.or.us/oard/view.action?ruleNumber=340-216-8020
Oregon Solid Waste Disposal Site Permit data	Oregon Department of Environmental Quality 700 NE Multnomah St. Suite 600 Portland OR 97232
California Environmental Protection Agency, Air Resources Board, May 2009 <i>Staff Report: Initial Statement of Reasons for the Proposed Regulation to Reduce Methane Emissions from Municipal Solid Waste Landfills</i>	California Air Resources Board: https://ww3.arb.ca.gov/regact/2009/landfills09/isor.pdf
U.S. Bureau of Labor Statistics, CPI Inflation Calculator	https://www.bls.gov/data/inflation_calculator.htm
ERG Memorandum, July 2015, <i>Analysis of Surface Exceedances from California Landfills under the New Source Performance Standards and the California Landfill Methane Rule</i>	https://www.regulations.gov/document/EPA-HQ-OAR-2014-0451-0140
U.S. Global Change Research Program, April 2016, <i>Impacts of Climate Change on Human Health in the United States, a Scientific Assessment</i>	https://www.regulations.gov/document/EPA-HQ-OAR-2014-0451-0211

Advisory committee fiscal review

DEQ appointed the Landfill Gas Emissions 2021 Rulemaking Advisory Committee to provide input on the proposed rules and for input on the fiscal and economic impact statement. As ORS 183.333 requires, DEQ will ask for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact,
- The extent of the impact, and
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact.

The committee will review the draft fiscal and economic impact statement and will share its comments findings with DEQ staff, who will document those comments and findings.

Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel.

DEQ determined the proposed rules may have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200- square-foot detached, single-family dwelling on that parcel. The costs of additional permits, onsite monitoring and landfill gas control equipment, and compliance could be passed through by businesses and local governments providing products and services for such development and construction. DEQ cannot quantify the impact at this time because the available information does not indicate whether the costs would be passed on to consumers and any such estimate would be speculative.

Alternative formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.