Permits

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 4:30 PM
To: Permits; Hasan Tahat
Cc: James C. Carmody; Nancy Lust; Carole Degrave
Subject: Cave written comment letter wenclosure
Attachments: Cave letter to YRCAA re comment attachments, October 3, 2023.docx.png; Cave letter to YRCAA Oct 3, 2023 enclosure.docx

Marc & Hasan

Please find my enclosed signed letter with list of the referenced documents and sources in my written comments provided last week. I will send the documents in multiple emails due to size limitations.

Respectfully,

Scott Cave

October 3, 2023

Marc Thornsbury, Executive Director, APCO
Hasan Tahat, Engineering and Planning Supervisor
Yakima Regional Clean Air Agency
186 Iron Horse Court, Suite 101
Yakima, WA 9810

Subject: Attachments & Source Materials to written comments submitted September 25, 2023

The enclosure is a list of the documents and source materials referenced in my written comments submitted September 25, 2023, to the YRCAA regarding DTG's NSR Application, and are being provided to YRCAA's email permits@yrcaa.org today. Due to email size limitation, I anticipate multiple emails to accomplish this task. At your convenience, please confirm receipt.

I also wish to inform the agency that per your extension for the comment period on DTG's NSR application, I'm preparing additional comments and support materials for submission.

Let me know if you cannot download any of the forthcoming documents.

Sincerely,

Scott Cave

Scott Cave
S.C. Communications
P.O. Box 258
Ritzville, WA 99169
(360) 789-2772

Enclosure (1)

cc: Jamie Carmody
Nancy Lust
Carole DeGrave

Scott Cave, S.C. Communications
DTG New Source Review Application Attachments & Source Materials
Sept 25, 2023

List of Referenced Attachments

1) James Rivard, Ecology, letter to Sean Magee, Yakima Health District, re PFAS disposal at DTG LPL, January 19, 2023
2) Ecology news release, Saving Washington's salmon from toxic tire dust, January 25, 2023
3) John Martin, DTG, email to James Rivard, Ecology, responding to Rivard's letter to Sean Magee, YHD on LPL cell development & Hydrogeology comments, February 15, 2022
4) James Rivard, Ecology, letter to Shawn Magee, Yakima Health District, re DTG LPL cell development & Hydrogeology comments, February 11, 2022.
5) See #1
6) Kimberly Grieves, Ecology, letter to Ted Silvestri, YHD, re Anderson (*DTG*) LPL, PCS and MRF Application, January 23, 2020
7) HWA GeoSciences, Inc., Memorandum to John Martin, DTG, *GEOTECHNICAL STUDY CDW EMBANKMENT SLOPE STABILITY EVALUATION, DTG-YAKIMA LPL, YAKIMA COUNTY, WASHINGTON*, July 25, 2022
8) LANDFILL FIRE CONTROL INC's, Memorandum to Ian Sutton, DTG, re DTG Yakima LPL – Health and Safety, Fire Control and Monitoring Plan
9) Scott Cave, SC Communications, letter to Tommy Carroll, Yakima County Planning Official, re DTG Mining Vegetative Screening, July 16, 2023
10) Tommy Carroll letter to Aaron Enebrad, DTG, re Condition Compliance, November 1, 2022
11) Washington State Organics Management Bill (ESSHB 1799)
12) State Organics Management bill implementation and source material links: https://app.box.com/6d60643b-79e6-4e9f-996d-d0551a4dcc42; https://app.box.com/s/r7shmywl2t798nu43f1udkp1481bcx6y/folder/164306282815;
13) Yakima County Compost Procurement Ordinance No. 001-2023, specifying County policy for the procurement of compost per ESSHB 1799, signed February 14, 2023, https://app.box.com/c6183830-4936-4e85-9887-94b596d02d72
14) Gypsum and landfill concerns and research:

- **Recycling 2016**, *Drywall Recycling and Reuse as a Compost-Bulking Agent in Canada and North America: A Review*, by Ifeanyi Ndukwe and Qiuyan Yuan, Dept. of Civil Engineering, University of Manitoba, Winnipeg, Oct 12, 2016
- **Politico**, *Canadian companies illegally shipped at least 2,300 metric tons of waste overseas, documents show*, by Maura Forrest, June 22, 2022
- **American Recycler**, Gypsum Recycling Presents Challenges, by Maura Keller, June 2022
- **Construction & Demolition Recycling,** *Study finds potentially harmful chemicals in building materials,* by Alex Kamczyc, April 22, 2021

- **Edie,** *Environment Agency issues new gypsum waste guidance. New science confirms there is no acceptable limit for gypsum to be deposited with biodegradable waste*, January 12, 2009

Regarding LFG generation and modeling

- **ENERGYneering Solutions Inc** letter to Elain Placido, Cowlitz County Building and Planning, re *Addendum to July 2013 EIS on Cowlitz County Headquarters Landfill,* Section 3.3.2.1.1, October 24, 2017

Permits

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 4:45 PM
To: Permits; Hasan Tahat
Cc: James C. Carmody; Nancy Lust; Carole Degrave
Subject: RE: Cave written comment letter wenclosure
Attachments: Ecol to YHD re Anderson DTG YTC Potential PFAS Soils, Jan 19, 2023.pdf; Saving Washington salmon from toxic tire dust, ECY Jan 25, 2023.docx; DTG LPL Virtual Review Mtg email, Feb 15, 2022.pdf; ECY to YHD Comments DTG New Cell - Hydrogeology Related Feb 11, 2022.pdf

YRCAA – here is the first group of Cave DTG NSR Application comment attachments:

1. James Rivard, Ecology, letter to Shawn Magee, Yakima Health District, re PFAS disposal at DTG LPL, January 19, 2023
2. Ecology news release, Saving Washington's salmon from toxic tire dust, January 25, 2023
3. John Martin, DTG, email to James Rivard, Ecology, responding to Rivard's letter to Shawn Magee, YHD on LPL cell development & Hydrogeology comments, February 15, 2022
4. James Rivard, Ecology, letter to Shawn Magee, Yakima Health District, re DTG LPL cell development & Hydrogeology comments, February 11, 2022.

Scott

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 4:30 PM
To: 'permits@yrcaa.org' <permits@yrcaa.org>; 'Hasan Tahat' <hasan@yrcaa.org>
Cc: James C. Carmody <Carmody@mftlaw.com>; Nancy Lust <nancy.fort@cascadianow.org>; Carole Degrave <lusciouslupine@icloud.com>
Subject: Cave written comment letter wenclosure

Marc & Hasan

Please find my enclosed signed letter with list of the referenced documents and sources in my written comments provided last week. I will send the documents in multiple emails due to size limitations.

Respectfully,

Scott Cave

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
1250 W. Alder Street • Union Gap, WA 98903-0009 • (509) 575-2490
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

January 19, 2023

Yakima Health District
ATTN: Shawn Magee
Environmental Health Director
1210 Ahtanum Ridge Drive
Union Gap, WA 98903

DTG Yakima Limited Purpose Landfill – PFAS Recommendations

Dear Shawn,

Ecology staff in our solid waste management division has recently learned that soils removed from the Yakima Training Center's (YTC) former Fire Training Facility were brought to the former Anderson Landfill (now DTG) for petroleum contamination treatment and disposal in 2004. As you may be aware, YTC's Fire Training Facility was a shallow unlined pit that was periodically filled with old fuel and set on fire so that fire crews at the YTC could practice fighting fires with aqueous film forming foam (AFFF). Prior to 2004, soil and groundwater at the YTC site was determined to be contaminated with petroleum-related compounds and cleanup was initiated. One of the selected remedies was to excavate the contaminated soil and remove it from the site. Approximately 743 cubic yards of the excavated soils were taken to Anderson Landfill for treatment at the petroleum contaminated soils (PCS) treatment site and disposal in the landfill.

In 2004, at the time of excavation of the YTC Fire Training Facility, the toxic characteristics of the ingredients of AFFF were not understood by YTC, the Yakima Health District (YHD), or Ecology. AFFF contains per- and poly-flouroalkyl substances (PFAS) which are now understood to be toxic at very low concentrations and extremely persistent in the environment. At the time of disposal of the Fire Training Facility soils, analytical methods were not available to identify and quantify PFAS in soil, and regulators were not aware that these compounds were as persistent or as toxic as they are now understood to be.

The PCS removed from the YTC site, were transported to the Anderson Landfill for treatment at the PCS site and disposal in the landfill. This material likely contained elevated concentrations of PFAS. Because the existing landfill and the PCS treatment site are unlined, there is a risk of migration of PFAS into groundwater. Ecology recommends that the sampling and analysis plan for routine monitoring at the landfill be amended to include analysis for PFAS. Ecology also recommends soil grid sampling of the PCS pad area and installation of monitoring wells around the PCS treatment area and development of a sampling and analysis plan for the site which should include soil sampling to determine if PFAS is present. Ecology recommends this work gets completed within 1 year time.

There have been some indications from DTG that they do not intend accept additional PCS for treatment at the PCS treatment facility. Ecology recommends monitoring well installation and soil sampling at the PCS treatment facility even if the facility will be closed to ensure that the site is not contaminated with PFAS or petroleum products. If the facility will remain open, Ecology also recommends that additional design features (e.g. an impermeable working surface, lined stormwater ponds, etc.) be required by YHD to ensure human health and the environment are protected during future operations. Either way more work is needed at the PCS site to decommission and monitor for the long-term, or prepare for future use with adequate environmental compliance controls.

Ecology has developed recommended groundwater cleanup levels for six PFAS compounds: PFOA, PFOS, PFNA, PFHxS, PFBS, HFPO-DA. The recommended cleanup levels and the basis for those levels are outlined in the attached document: *DRAFT Guidance for Investigating and Remediation PFAS Contamination in Washington State*. While the recommended groundwater cleanup levels and the guidance document are draft, they are still enforceable under the Model Toxics Control Act (MTCA) because the underlying toxicology information for these compounds meets the criteria required by MTCA. Therefore, it is within YHD's regulatory authority to require sampling and analysis for PFAS to ensure protection of human health and the environment.

Attached is some related documentation for YHD's records related to the YTC material.

Ecology appreciates the opportunity to work through the issues outlined above with YHD. For any concerns or questions feel free to contact me at (509) 731-5163 or via email at james.rivard@ecy.wa.gov.

Sincerely,

James Rivard (Signed Digitally)

James Rivard
Regional Manager
Solid Waste Management Program
Washington State Department of Ecology
Central Regional Office

Attachments:
(1) DRAFT Guidance for Investigating and Remediation PFAS Contamination in Washington State
(2) Some ECY related YTC related Information

CC: Steven Newchurch, YHD
Luke LeMond, Ecology
Cole Provence, Ecology
Sage Park, Ecology
Ecology Records

Dept. of Ecology

January 25, 2023

Saving Washington's salmon from toxic tire dust

We are taking action to reduce 6PPD-quinone, a chemical that is deadly to coho salmon

Coho salmon returning to rivers and streams often die before they can spawn. Photo by Roger Tabor, US Fish and Wildlife

For over 20 years, scientists faced a toxic mystery: coho salmon returning to urban streams and rivers in the Puget Sound region were dying before they could lay their eggs. The culprit was unknown, but it seemed linked to toxic chemicals running off our roads and highways.

The fate of the salmon carries weight far beyond that single species. The endangered Southern Resident orca whales rely on salmon for food. Salmon are intertwined with the health and culture of Indigenous communities and are a key part of tribal treaty rights. Washington's economy and food supply depend on healthy salmon runs. Salmon are important to our well-being.

In 2020, a group of researchers finally made a breakthrough — they pinpointed a specific chemical as the killer: 6PPD-quinone, the last part pronounced "qui-KNOWN," a toxic chemical released from automotive tires that ends up in roadway dust and can run into streams. The chemical is created when 6PPD, a preservative that helps tires last longer, reacts with ozone in the atmosphere.

With a culprit identified, the hard work of reducing contamination from something as widespread as tire dust is now underway. Alongside tribal governments, interest groups, and federal, state, and local organizations, we have begun planning the most effective ways to reduce the amount of 6PPD-quinone going into the water.

Our agency is initially focusing on three key efforts to effectively reduce the threat of 6PPD-quinone to salmon:

- **Understanding the problem:** Developing scientific methods to measure 6PPD-quinone in the environment and identifying affected areas.

- **Reducing stormwater pollution**: Identifying stormwater-management approaches to capture and treat 6PPD-quinone and tire debris before it reaches streams, updating guidance for local governments to use, and acquiring more funding for stormwater-management grants.
- **Reducing sources of 6PPD**: Researching alternate chemical preservatives that could replace 6PPD in tires, and evaluating if these chemicals are actually safer.

Ongoing funding from the Legislature will help us expand our efforts to reduce the harmful impacts from this toxic tire-related chemical.

Using science to understand the problem

Chemist Joan Protasio explains the process for analyzing and measuring 6PPD-quinone in water samples to Gov. Jay Inslee.

We are expanding our laboratory and field-monitoring capacity to understand when, where, and how 6PPD-quinone ends up in the environment. In November 2022, we published 6PPD in Road Runoff: Assessment and Mitigation Strategies, which identifies watersheds in the state that are particularly vulnerable to 6PPD-quinone pollution. The report also summarizes research on actions to reduce the toxicity of 6PPD-quinone.

Our scientists are comparing and analyzing different methods to collect water samples from rivers and streams. We have already developed a laboratory method to analyze these water samples and measure 6PPD-quinone at around one part per trillion, which is like detecting an amount the size of a drop of water in 20 Olympic-sized swimming pools. We aim to establish a study to measure the presence of tire-wear particles and related pollutants like 6PPD-quinone in rivers, streams, and Puget Sound.

There are many questions we still need to answer before we fully understand the old and new challenges we face. The pollution from 6PPD-quinone and tire-wear particles is diffused, which means it comes from many sources and is spread by rainfall and melting snow. We are unsure whether 6PPD-quinone ends up in places other than freshwater and marine environments, such as in mud, plants, or animals — or how long it stays in different environments.

Finding answers to these questions will help us adapt our strategies and take further action to reduce its toxicity to coho salmon.

Reducing pollution in stormwater

Runoff from roads filtered by engineered soil mixes and plants reduces pollutants from entering stormwater infrastructure and receiving waters. We are identifying practices that reduce stormwater pollution and are testing their effectiveness to capture and prevent stormwater from transporting 6PPD-quinone to surface waters (rivers, streams, and Puget Sound). Conducting science and engineering research on best management practices is essential so we can provide guidance to stormwater permit holders on how to manage tire-wear particles.

In June 2022, we published Stormwater Treatment of Tire Contaminants — Best Management Practices Effectiveness, which presents emerging guidance on this challenge. The publication provides an overview of existing management practices and their anticipated effectiveness to prevent stormwater contamination, slow down and reduce the volume of runoff, and treat stormwater to remove toxicity. Some of the highlighted practices include:

- **Capturing tire debris**: Sweeping streets to prevent debris and chemicals from entering stormwater drainage systems and the waterbodies they drain to.
- **Detaining water:** Using stormwater ponds to hold large volumes of stormwater, which slows down runoff, encouraging rubber particles to settle, or using infiltration areas that let water soak into the ground to prevent runoff to surface waters.
- **Using physical and chemical treatment processes:** Filtering runoff through the soil or grasses in engineered channels before it enters surface waters to reduce the concentration of pollutants.

We recently published Focus Sheet: Best Management Practices for 6PPD-q, which summarizes the studies we have already conducted on these practices. We will continue researching the relative effectiveness of these management practices and will meet with local governments, tribes, interest groups, and community members to incorporate management practices into our stormwater guidance, permits, and funding programs. We will issue more protective stormwater guidance in 2024 to help local governments manage stormwater practices and permits.

Lastly, in 2022, we increased our Municipal Stormwater Capacity grant program funding. With this increase in funding, we hope to better support the work local governments are doing to implement stormwater permits.

Reducing sources of 6PPD pollution

The chemical 6PPD is used as a rubber stabilizer that prevents tires from breaking down while driving and helps them last longer. Photo from pexels.com.

Automotive tires are the primary source of 6PPD and 6PPD-quinone. Our long-term goal is to prevent tires from releasing these toxic chemicals. However, 6PPD is an important ingredient for tire manufacturers: the chemical stops tires from breaking down quickly and helps them last much longer, which keeps passengers safe and minimizes the number of tires in landfills.

Without an effective replacement, 6PPD cannot be removed from tires without significant consequences. We are working hard to find an alternative that provides the same level of tire performance as 6PPD, but that isn't highly toxic in our environment.

In November 2021, we published a hazard assessment of 6PPD and nine possible alternatives. We are continuing that work to identify a potential alternative and to prioritize steps the state and industry should take to reduce the source of 6PPD pollution.

Solving a pollution problem that is happening every day, on every roadway, from millions upon millions of motor vehicles, requires coordination across state and federal regulatory agencies, tribal governments, industry, research universities and institutions, and interest groups.

We established a forum for these groups to work together to expedite sharing research and new ideas. We are funding research at academic institutions to learn more about 6PPD replacement chemicals and their toxic impact on salmon and other aquatic species. We are also coordinating with tire and chemical manufacturers to better understand 6PPD so that we can make knowledgeable decisions on finding a chemical to replace 6PPD in tires.

Controlling the source of pollution is the most effective way to prevent 6PPD-quinone from entering the environment; however, it will take many years to develop tires that don't contain 6PPD and never release 6PPD-quinone into the environment.

In the meantime, we will continue monitoring 6PPD-quinone in the environment and will provide guidance and funding to treat stormwater before it enters waterways. Our goal is to lessen the toxic effects of 6PPD-quinone until we can find a safer replacement.

Continuous collaboration

The threat of 6PPD-quinone is an urgent problem that needs dynamic solutions and innovative partnerships. We are developing solutions with partners throughout the state and the nation.

From leading workshops to find safer alternatives, to coordinating with local governments to implement stormwater management practices, to working with researchers to develop a statewide monitoring program — our work includes partners from tribal governments, local governments, state agencies, federal agencies, academic institutions, and industrial organizations.

Solving the mystery behind coho deaths was only the start of a long and difficult process. But if we can succeed, the rewards will be great. Protecting the salmon, restoring the water quality of streams in communities overburdened by pollution, and preserving Washington's environment, as well as our state's cultural and recreational values, are all goals worth fighting for.

Tire anti-degradant (6PPD) and 6PPD-quinone

6PPD stands for the chemical 6 p-phenylenediamine. It's a chemical that prevents automotive tires from degrading (i.e. breaking down) and helps them last longer. When 6PPD is exposed to air, it reacts with ozone to create **6PPD-quinone,** pronounced like "qui-KNOWN," and also referred to as **6PPD-q**. 6PPD-q is lethal to coho salmon and can contaminate water systems.
We work with tribal governments, local governments, state agencies, federal agencies, academic institutions, and industrial organizations to reduce the pollution and sources of 6PPD-q released from tires in Washington.

I want to...

- Read our blog about protecting salmon from 6PPD-q
- Read the initial hazard assessment of 6PPD and 6PPD-q
- Read about best management practices for 6PPD-q

What are the impacts of 6PPD-q?

Driving causes tires to release dust and small particles because of friction on the road. These particles contain 6PPD-q, which then washes into stormwater, and, in turn, can spread to rivers, streams, and Puget Sound. Since 6PPD-q was only recently discovered, we are still learning about this chemical and its impacts on wildlife.

6PPD-q can end up in freshwater or marine environments harming wildlife. Green infrastructure can help remove toxic chemicals like 6PPD-q from stormwater.

Taking action to protect salmon

We're initially focusing on three key efforts to effectively reduce the threat of 6PPD-q to salmon:

- **Understand the problem:** Develop scientific methods to measure 6PPD-q in the environment and identify affected areas.
- **Reduce stormwater pollution:** Identify stormwater-management approaches to treat 6PPD-q and tire debris before it reaches streams, update guidance for local governments to use, and increase funding for stormwater infrastructure.
- **Reduce sources of 6PPD:** Research alternate chemical preservatives that could replace 6PPD in tires, and evaluate if these chemicals are actually safer.

From: John Martin <john@dtgrecycle.com>
Sent time: 02/15/2022 09:40:18 AM
To: Rivard, James (ECY) <JRIV461@ECY.WA.GOV>; Ian Sutton <ISutton@parametrix.com>; Shawn Magee
Cc: Ted Silvestri; Grieves, Kimberly <ksar461@ECY.WA.GOV>; LeMond, Luke (ECY) <llem461@ECY.WA.GOV>; Arnie Sugar <asugar@hwageo.com>; Dwight Miller <DMiller@parametrix.com>; Rounds, Megan (ECY) <MROU461@ECY.WA.GOV>; Tom Vaughn <TVaughn@dtgrecycle.com>; Dan Guimont <dguimont@dtgrecycle.com>
Subject: RE: DTG Yakima LPL - Virtual Review Meeting
Attachments: DTG_Logo_15b8125f-a68a-4df8-8a18-487c6b89b740.png 058_sm_fb_b4c5bf88-e415-4f62-8f86-6308c9fe4a38.png 058_sm_in_e5fb2776-0c46-4412-a144-562ec71bfa8c.png SocialLink_Instagram_32x32_153ee435-b87a-481f-bc0e-46417254bb81.png dtg_sweeper_signature-600x150-300_b9fa682e-e80c-49fb-892f-e536be80fd56.png

James,

Let's keep this Friday's meeting to discuss hydrogeology. You are correct in assuming that we will have some ideas to present, and we would like to get them in front of you as soon as possible. We are eager to develop a concrete action plan to work with Yakima Health to address the points in your February 11, 2022, letter.

If you don't mind and to expedite our response, please copy me on your upcoming comment letter to Yakima Health District.

Thanks,

John

From: Rivard, James (ECY) <JRIV461@ECY.WA.GOV>
Sent: Tuesday, February 15, 2022 9:04 AM
To: John Martin <john@dtgrecycle.com>; Ian Sutton <ISutton@parametrix.com>; shawn.magee@co.yakima.wa.us
Cc: ted.silvestri@co.yakima.wa.us; Grieves, Kimberly <ksar461@ECY.WA.GOV>; LeMond, Luke (ECY) <llem461@ECY.WA.GOV>; Arnie Sugar <asugar@hwageo.com>; Dwight Miller <DMiller@parametrix.com>; Rounds, Megan (ECY) <MROU461@ECY.WA.GOV>
Subject: RE: DTG Yakima LPL - Virtual Review Meeting

Yeah no problem. It appears I glanced at schedules a little too quickly. Myself and Luke will be able to attend for sure on Friday. The February 11th letter was mostly about hydrogeology. So we can discuss that in a narrow scope, if you want to present a few concepts, but there may be no decision on Friday as time might be needed to consider and evaluate. Then meet back up again next week.

We are working on some additional comments regarding facility operations and engineering. Those may come later this week. So between staff schedules, additional comments coming later in the week, and the likelihood of needing to meet more than once…

What would you rather do: 1) Proceed with meeting on Friday, 2) Waiting until the next batch of comments comes to meet next week?

Either way, I think we will have to meet next week. So below is a Doodle Poll to help with scheduling.

https://doodle.com/poll/zq5rr4sbt2ytncqz?utm_source=poll&utm_medium=link

Thanks,

From: John Martin <john@dtgrecycle.com>
Sent: Monday, February 14, 2022 3:34 PM
To: Rivard, James (ECY) <JRIV461@ECY.WA.GOV>; Ian Sutton <ISutton@parametrix.com>; shawn.magee@co.yakima.wa.us
Cc: ted.silvestri@co.yakima.wa.us; Grieves, Kimberly <ksar461@ECY.WA.GOV>; LeMond, Luke (ECY) <llem461@ECY.WA.GOV>; Arnie Sugar <asugar@hwageo.com>; Dwight Miller <DMiller@parametrix.com>; Rounds, Megan (ECY) <MROU461@ECY.WA.GOV>
Subject: RE: DTG Yakima LPL - Virtual Review Meeting

James,

Thank you for your quick response. Friday at 3:30pm would work well for us.

-John

DTG Recycle
Customer Focused | Planet Obsessed

John Martin
Associate General Counsel

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www.dtgrecycle.com www.bigbluebag.com

Maltby • Port of Tacoma • Redmond • Renton • Seattle • Tacoma
Whidbey Island • Woodinville • Yakima

From: Rivard, James (ECY) <JRIV461@ECY.WA.GOV>
Sent: Monday, February 14, 2022 3:05 PM
To: Ian Sutton <ISutton@parametrix.com>; shawn.magee@co.yakima.wa.us
Cc: ted.silvestri@co.yakima.wa.us; Grieves, Kimberly <ksar461@ECY.WA.GOV>; LeMond, Luke (ECY) <llem461@ECY.WA.GOV>; John Martin <john@dtgrecycle.com>; Arnie Sugar <asugar@hwageo.com>; Dwight Miller <DMiller@parametrix.com>; Rounds, Megan (ECY) <MROU461@ECY.WA.GOV>
Subject: RE: DTG Yakima LPL - Virtual Review Meeting

I can be available.

Overlaying other Ecology's employees schedules.

Looks like these are available (sorry that they are late in the day)
Thursday (potentially 4 PM), after 4:30 PM all clear
Friday any time after 3:30 PM

From: Ian Sutton <ISutton@parametrix.com>
Sent: Monday, February 14, 2022 2:48 PM
To: shawn.magee@co.yakima.wa.us; Rivard, James (ECY) <JRIV461@ECY.WA.GOV>
Cc: ted.silvestri@co.yakima.wa.us; Grieves, Kimberly <ksar461@ECY.WA.GOV>; LeMond, Luke (ECY) <llem461@ECY.WA.GOV>; John Martin <jmartin@dtgrecycle.com>; Arnie Sugar <asugar@hwageo.com>; Dwight Miller <DMiller@parametrix.com>
Subject: DTG Yakima LPL - Virtual Review Meeting

Hello, Shawn and James.

After receipt of the letter from Ecology dated February 11, 2022 for the DTG Yakima Limited Purpose Landfill New Cell Development – Hydrogeology Comments, we would like to schedule a virtual meeting to review and discuss the comments.

I've CC'd those that may want to attend a virtual meeting. Would Thursday or Friday afternoon work for the call? We'll have some proposed responses prepared for the meeting and will expect to be able to fine tune those at the meeting to satisfy your

needs and provide DTG a path forward for continued operation of the facility.

Please let me know if a meeting is possible and your potential availability.

Best regards,
Ian

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Ian Sutton, PE
Senior Engineer
206-394-3712 | direct
206-769-8755 | mobile

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
1250 W. Alder Street • Union Gap, WA 98903-0009 • (509) 575-2490
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

February 11, 2022

Yakima Health District
ATTN: Shawn Magee
Environmental Health Director
1210 Ahtanum Ridge Drive
Union Gap, WA 98903

RE: DTG Yakima Limited Purpose Landfill New Cell Development – Hydrogeology Comments

Dear Shawn,

The facility is regulated under Washington Administrative Code (WAC) 173-350, which establishes minimum functional standards that the Yakima Health District (YHD) must enforce to ensure compliance with a limited purpose landfill (LPL). After DTG Recycle (DTG) approached the Washington State Department of Ecology (Ecology) and YHD late last year with news that DTG expected to begin filling a new landfill cell in January, Ecology raised concern that a review could take some time and recommended discussions about the new cell as soon as possible. Since that time, Ecology has been conducting additional review of the available information related to the facility. Our comments from this review will come in the form of two letters. This letter addressing Hydrogeology and a second letter addressing Facility Operations and Engineering. We are taking this approach to get comments out as timely as possible.

The technical assistance provided below is based on the known information available to Ecology at the time of this writing. If there is additional documentation that DTG or the YHD can provide, it may help better inform Ecology. Upon review of any additional information, new technical assistance in the future may follow.

Background

The DTG-Anderson Limited Purpose Landfill is located on the north slope of Cowiche Mountain west of Yakima, WA in Yakima County. The landfill is regulated under WAC 173-350 and operates under the jurisdiction of YHD under permit HSW2019-00020. The facility also includes a Petroleum Contaminated Soils (PCS) Treatment Facility and a Material Recovery Facility (MRF) that also operates under the jurisdiction of YHD permits HSW2020-00001 and HSW2020-00003, respectively. This landfill does not have a bottom liner and includes two groundwater monitoring wells along the northern boundary of the facility.

DTG Anderson Limited Purposed Landfill New Cell Development Permit Application

After a significant amount of additional review of facility documentation and WAC 173-350, Ecology finds that the hydrogeologic characterization of the site, and the resulting groundwater monitoring network, fails to meet the requirements of WAC 173-350-500. This conclusion is based on review of:

- 2007 Geotechnical and Hydrogeologic Investigation Report (HWA 2007).
- The second submittal of the same report HWA 2007 report with no changes (HWA 2015).
- Review of data collected at the facility to date.
- Publicly available geologic information in the site vicinity.
- Correspondence letters:
    - *RE: Anderson Limited Purpose Landfill, Petroleum Contaminated Soils Site and Material Recovery Facility Application*, Washington State Department of Ecology, January 23, 2020.
    - *RE: DTG Yakima/Anderson Limited Purpose Landfill and Petroleum Contaminated Soil Site Application*, Washington State Department of Ecology, April 30, 2020.
    - *Review of DTG Limited Purpose Landfill permit application and the DTG Petroleum Contaminated Soil Remediation Facility permit application, both received on March 30, 2020*, Yakima Health District, May 18, 2020.

Ecology recommends additional work to gather more information regarding geologic and hydrogeologic characteristics under the existing and proposed new cell, and design a groundwater monitoring network, which meets the requirements of WAC 173-350-500.

Specifically, groundwater monitoring and site characterization required by WAC 173-350-500(2) includes a detailed list of items required for landfill site characterization. The requirements include investigation of faults, joints and fractures, unstable slopes and subsidence areas, a site specific borehole program, a site-specific flow path analysis, a well survey, site water balance calculation, and conceptual monitoring network design. Many of these items received cursory investigation in the 2007 and 2015 applications, but in many ways left more questions than answers. While we understand that addressing the items identified in this letter may seem like a burden for DTG and may impact the landfill's operation, the recommendations described below are intended to ensure compliance with the requirements of WAC 173-350, and to protect human health and the environment.

Hydrogeology

Per WAC 173-350-500, the groundwater monitoring network must have enough wells to yield representative samples and sufficient data to interpret groundwater flow paths during each sampling event. ***It does not appear, from the information that Ecology has on file, that the existing monitoring network is satisfactory to meet these regulatory requirements.***

The existing monitoring network is comprised of two monitoring wells along the northern boundary of the facility. These wells are presumed to be downgradient based on a potentiometric surface map provided as Figure 11 in HWA 2007. The potentiometric surface contour lines in this map were generated from data that spans 20 years and does not meet minimum quality control standards. This potentiometric surface contradicts the surface generated from concurrently collected water level data presented in Figure 10 of HWA 2007. Concurrently collected data indicates groundwater flow is toward the south in Figure 10, while Figure 11 indicates flow to the north. To date, no additional potentiometric surface maps or groundwater flow directions have been provided.

Groundwater data collected at the facility since 2006 indicates that groundwater elevation in MW-3 is consistently over 100 feet higher than the groundwater elevation in MW-2. Groundwater elevation in MW-3 also appears to exhibit much more short-term variability than MW-2. Water quality in these two monitoring wells is also distinct. Geologic cross section B-B' provided in HWA 2007 may indicate a significant discrepancy in the location of the Vantage Interbed at these two wells that was not explored. Thus, the available data suggests that these two wells may not be screened in the same aquifer and/or an unmapped geologic structure is present between them. In addition, no groundwater was encountered at Borehole BH-1 in spite of the fact that it was advanced considerably deeper than the boreholes for MW-2 and MW-3. HWA 2007 and HWA 2015 state that groundwater beneath the southern portion of the facility *"may discharge to another deeper aquifer, or flow to the west, and eventually north"*. HWA

2007 and HWA 2015 also state that "*a flow boundary or discharge area likely exists somewhere between MW-2 and BH-1, possibly related to the thrust fault running under Cowiche Mountain*". Ecology can find no evidence that any attempt has been made to gather any additional information.

Review of USGS Wiley City 7.5' Quadrangle by Ecology indicates the presence of a "spring" or seep on the south side of Cowiche Mountain directly south of the facility, suggesting groundwater is present south of the facility and flowing to the south. Ecology acknowledges that the seep noted in this map may originate in a different aquifer, but the presence of seeps on the south side of the ridge could contradict the presumed groundwater flow direction. Ecology recommends that YHD work with DTG to further explore the hydrogeology at the site to ensure an adequate and complete site conceptual hydrogeologic model for the facility.

Since the design of the monitoring network must be based on accurate determination of groundwater flow direction, the existing monitoring network does not provide enough information to satisfy the regulatory requirements of WAC 173-350-500(3) Groundwater Monitoring –System Design.

Ecology recommends additional borings and monitoring well installation, and possibly the use of geophysical methods to investigate the presence or absence of potential geologic structures under the facility that may be causing this data gap.

Well Setbacks

Per WAC 173-350-400(3)(b), waste must be more than 1,000 ft from water supply wells. This facility has waste approximately 400 ft from a domestic well (denoted as Barnes '03 in HWA 2007). Based on the presumed groundwater flow direction in HWA 2007 and HWA 2015, the existing monitoring network appears to be inadequate for detection of groundwater contamination before it enters the Barnes '03 well. Ecology understands that the facility may have obtained a variance from this requirement for the current cell. However, at this time Ecology cannot support or recommend to YHD and DTG a variance for purposes of landfill expansion.

Ecology recommends an update to the landfill vicinity well survey for the proposed expansion cell to satisfy the requirement per WAC 173-350-500(2)(d). In addition, Ecology recommends installing a groundwater monitoring well between the facility and the Barnes '03 well on DTG's property and including it in the quarterly monitoring program to provide early notice of groundwater contamination to the user of Barnes '03.

Aquifer Characteristics

The aquifer performance test (APT) documented in HWA 2007 and HWA 2015, does not appear to have been conducted in a manner to yield enough meaningful information about the characteristics of the aquifer. Based on the saturated thickness of the aquifer being pumped, the appropriate monitoring well distance from the pumped well is expected to be in the range of 10 to 100 meters. The monitored wells during the test were more than 300 meters from the pumped well. In addition, the pumping duration may have been too short for drawdown to propagate to the monitoring wells. The design of the APT combined with the limited geologic information collected from lithologic logs at the site, appears to have resulted in poor quality APT data that sheds very little light on the hydrogeologic parameters of the aquifer, which makes estimates of groundwater velocity somewhat unreliable. Calculation of groundwater flow rate is required by WAC 173-350-500(2)(c) subsequent to significant additional exploratory drilling and site characterization.

Ecology recommends that at least one additional APT is conducted to properly estimate the hydraulic characteristics of aquifer(s) at the facility once additional monitoring wells are installed or the existence of a flow boundary is confirmed.

Groundwater Recharge

HWA 2007 and HWA 2015 discuss regional groundwater recharge from published sources but do little to evaluate recharge potential in the immediate vicinity of the site. The reports state that there is evidence that leakage from the Tieton Canal caused enough recharge to significantly raise water levels in nearby wells, suggesting a greater recharge potential than HWA 2007 and HWA 2015 acknowledge. While the arid climate in the area can greatly limit recharge, the presence of faults and/or fractures in the area can provide preferential flow paths that may greatly accelerate recharge.

Ecology recommends additional evidence be collected to provide more site-specific information related to recharge potential.

Faults and Geologic Structure

The hydrogeologic information outlined above suggests complex geology beneath the site as suggested by both HWA 2007 and HWA 2015. Geologic information in the area also suggest complex geology, including faults beneath the facility.

Geologic cross section C-C' provided in HWA 2007 and HWA 2015 fails to correlate the Vantage Interbed that was recorded in the drilling logs in BH-1, MW-2, and MW-3. The location of this unit corresponds to the lower limit of the first water-bearing unit encountered at the site and is

crucial to understand the hydrogeology of the site. In addition, no data has been collected at depth beneath the proposed or existing footprint of the waste. Again, Ecology recommends additional exploration at the site to create a conceptual site model that meets the requirements of WAC 173-350-500. Please note that the proposed and existing cells should be depicted on any cross sections that transect the cell locations.

HWA 2007 and HWA 2015 note the presence of a thrust fault with a surface expression on the southern face of Cowiche Mountain and likely present under the facility. The Vantage Interbed occurs along the southern edge of the LPL with a northerly dip of approximately 7 degrees. Two windows of the Vantage Interbed have also been mapped outcropping down the slope north of the site, suggesting additional faulting in the immediate area. The Grande Ronde Basalt outcrops at the top of Cowiche Mountain with a reported dip to the north of approximately 7 degrees, but windows of the Grande Ronde basalt also outcrop at the bottom of the northern slope of the mountain, with the younger Frenchman Springs Member of the Wanapum Basalt Formation in between. The recorded elevation offset in the Vantage Interbed occurrence between MW-2 and MW-3 and the corresponding 150 ft potentiometric surface difference between the two wells also suggests significant geologic structure in the area that has not been identified or described. Review of aerial photography and LiDAR datasets by Ecology indicate the presence of a linear feature resembling a scarp on the northern edge of Cowiche Mountain that could be further evidence of faulting. The thrust fault on the south side of Cowiche Mountain has been previously mapped as an inactive fault, but data from the Pacific Northwest Seismic Network indicate a number of low magnitude shallow earthquakes have been recorded since 1977 along this fault, suggesting it is active. Geomorphology off the southeastern end of Cowiche Mountain appears indicative of mass wasting events, further suggesting complex geology in the immediate vicinity of the site that has not been adequately characterized with relation to landfill activity and groundwater occurrence and flow patterns. HWA 2007 and HWA 2015 both acknowledged the possibility of additional unmapped faults at the site that have the potential to influence groundwater flow patterns. The available information for the site indicates that there may be significant poorly described faults and/or folds at the site and groundwater flow direction has not been determined. The presence of faults and/or fractures beneath the facility may provide preferential flow-paths from the surface to groundwater or between aquifers.

Based on these findings, Ecology has concluded that the existing site conceptual hydrogeologic model and groundwater monitoring network may be inadequate to ensure protection of human health and the environment. Again, for these reasons, significant additional site characterization is recommended to ensure compliance with the requirements of WAC 173-350-500. Any drilling program should include the use of X-Ray Fluorescence (XRF) analysis to

differentiate basalt formations and provide more definitive information related to faulting and folding. Ecology recommends additional investigation at the site to fully characterize the geology and hydrogeology in order to ensure regulatory compliance and to protect human health and the environment.

Petroleum Contaminated Soils

This facility includes a petroleum contaminated soil (PCS) treatment facility. PCS is stockpiled at the site and spread over ground for treatment. The facility is unlined. The existing Groundwater Sample and Analysis Plan dated March 21, 2007 and prepared by HWA Geosciences, Inc. includes no petroleum constituents. WAC 173-350-500(4)(i) requires inclusion of any other pertinent constituents based on the site specific waste profile. Ecology is concerned that the current groundwater sampling and analysis plan does not include PCS related constituents.

Ecology recommends the facility groundwater sampling and analysis plan include gasoline, diesel, and oil petroleum hydrocarbon analysis and volatile organic compounds (VOCs) via EPA Method 8260 SIM to meet the WAC 173-200 Groundwater Quality Criteria.

Electronic Data Submittal

WAC 173-350-500(5)(d) requires that all groundwater monitoring data be submitted in an electronic form compatible with Ecology's database. To date, Ecology has not received groundwater monitoring data in electronic form.

Ecology recommends that the facility's Sampling and Analysis Plan be updated to meet this requirement.

Liner Design

YHD has recently asked for clarification from Ecology regarding the need for a liner in the new cell versus using the alternative liner design used in the existing cell as is currently planned. Because of the uncertainties associated with the hydrogeologic conditions at the facility, Ecology cannot recommend an alternative liner for the new cell at this time. Significant additional information is needed for DTG to provide reasonable assurance that an alternative liner will be protective of human health and the environment.

Conclusion

Based on Ecology's review of the available information, the HWA 2007 and 2015 reports have never satisfied the requirements WAC 173-350-500(2), 173-350-500(3), 173-350-500(4), or 173-

350-500(5). Ecology recommends that YHD and DTG work together to address the deficiencies outlined above to bring the facility into compliance with WAC 173-350-500.

Ecology appreciates the opportunity to work through the issues outlined above with YHD. For technical related questions contact Luke Lemond, Regional Hydrogeologist at (509) 379-3961 or via email at luke.lemond@ecy.wa.gov.

Sincerely,

James Rivard (Signed Digitally During COVID-19 Telework Mandate)

Regional Manager
Solid Waste Management Program
Central Regional Office

CC: Ted Silvestri, YHD
Brandon Comfort, YHD
Luke Lemond, Ecology
Kimberly Greives, Ecology
Megan Rounds, Ecology
Ecology Records

Permits

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 4:53 PM
To: Permits; Hasan Tahat
Cc: James C. Carmody; Nancy Lust; Carole Degrave
Subject: FW: Cave written comment letter wenclosure
Attachments: Ecology comments on Anderson MRF LPLF PCS January 23, 2020.pdf; DTG LPL Slope Stability Evaluation FINAL, July 25, 2022.pdf

YRCAA – here is the second group of Cave DTG NSR Application comment attachments:

1. Kimberly Grieves, Ecology, letter to Ted Silvestri, YHD, re Anderson (*DTG*) LPL, PCS and MRF Application, January 23, 2020
2. HWA GeoSciences, Inc., Memorandum to John Martin, DTG, *GEOTECHNICAL STUDY CDW EMBANKMENT SLOPE STABILITY EVALUATION, DTG-YAKIMA LPL, YAKIMA COUNTY, WASHINGTON*, July 25, 2022

Scott

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 4:30 PM
To: 'permits@yrcaa.org' <permits@yrcaa.org>; 'Hasan Tahat' <hasan@yrcaa.org>
Cc: James C. Carmody <Carmody@mftlaw.com>; Nancy Lust <nancy.fort@cascadianow.org>; Carole Degrave <lusciouslupine@icloud.com>
Subject: Cave written comment letter wenclosure

Marc & Hasan

Please find my enclosed signed letter with list of the referenced documents and sources in my written comments provided last week. I will send the documents in multiple emails due to size limitations.

Respectfully,

Scott Cave

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
1250 W Alder St • Union Gap, WA 98903-0009 • (509) 575-2490

January 23, 2020

Yakima Health District
1210 Ahtanum Ridge Drive
Union Gap, WA 98903

Attn: Ted Silvestri

RE: Anderson Limited Purpose Landfill, Petroleum Contaminated Soils Site and Material Recovery Facility Application.

Dear Ted:

The Washington State Department of Ecology (Ecology) has reviewed the Anderson Limited Purpose Landfill (LPL), Petroleum Contaminated Soils Site (PCS) and Material Recovery Facility (MRF) permit application submitted on December 9, 2019 for conformance with Washington Administrative Code (WAC) 173-350. Ecology's understanding is that Yakima Health District is exercised its authority under WAC 173-350-710(6)(c) to require DTG to submit a new solid waste permit application pursuant to WAC 173-350-710(1).

DTG appears to have responded by resubmitting an original, but outdated, permit application form, a new draft operations plan for the proposed MRF, 1992 documents for the PCS site, and a 2015 LPL permit application document. At this time, Ecology does not recommend issuance of a permit. Ecology deems the application incomplete and is unable to complete our review until, at a minimum, the following is addressed. Please review the following and have the applicant re-submit a complete permit application.

- The Solid Waste Permit Application form is out of date. Please use the current form located on Ecology's website. Solid Waste forms can be found at www.ecology.wa.gov/Regulations-Permits/Reporting-requirements/Solid-waste-facilities-reporting.

- The 1992 PCS and 2015 LPL permit application documents are unacceptable as supporting documentation to this new permit application. The regulations in effect now are different from those that were in effect when the documents were prepared. Please direct the applicant to re-submit documentation that reflects current facility operations

- and regulations. The owner must update any existing variance requests and receive renewed approval from Ecology and the Yakima Health District.

- No evaluation has been presented to show how the existing constructed elements meet the current design standards for the PCS treatment activity, or the LPL activity. Please direct the applicant to submit documentation regarding how these activities meet the design requirements in WAC 173-350-320 and WAC 173-350-400.

- The 2015 limited purpose landfill permit application document as submitted was originally prepared in 2015 by Ian Sutton, P.E., for an application for a limited purpose landfill by Anderson Rock and Demolition. The original document was signed, dated, and stamped by Mr. Sutton with his engineer's seal at the time of preparation in 2015. The copy of the document presented with this application has an annotation on the title page stating "Submitted by and updated for DTG Enterprises, Inc. after acquiring Anderson Rock and Demolition Pits".

  DTG's approach of modifying the existing sealed 2015 engineering document for the LPL by inserting additional text is problematic and the applicant should withdraw the document. Specifically:

  - The modified document could represent an act of misconduct in the practice of engineering. WAC 196-27A-030(9) defines the act of "[m]odifying another licensee's work without notifying that licensee, and clearly delineating the modifications and sealing and signing the modifications made; EXCEPT where the plans, maps, or documents are modified by the owner to reflect changes over time for their own purposes and are not used for submittals or bid documents" as such an act of misconduct. Ecology contacted Ian Sutton and learned that he was unaware of the modifications that have been made to the 2015 application document bearing his seal. The exception for modification by the owner apparently would not apply because the modified document is a submittal by the owner to a permitting authority as part of a permit application.

  - Because the application document is based on a document written in 2015, it does not reference the current requirements of WAC 173-350, which were substantially revised in 2018.

  - Because the application document is based on a document written in 2015, it does not reflect the current state of development and utilization of the LPL, with associated changes to the cost-estimates for closure and post-closure and the necessary financial assurance.

- Variances requests must reference the relevant WAC section and cannot be issued without concurrence from Ecology. Please direct the applicant to clearly describe any

requested variances and demonstrate how the proposed alternatives meet the design standards in the regulations. The variance process is outlined in WAC 173-350-710(8).

- DTG must provide proof of financial assurance. Calculations must factor in any additional material received at the landfill due to the addition of residuals from a transfer station, MRF or other activity and must be sufficient to cover the cost of closure and post closure care for any additional facilities and activities.

- The 10 percent recovery rate in the DTG Recycle – Yakima Material Recovery Facility Operations Plan dated November 1, 2019 indicates that incoming material is not source separated from other types of solid waste, and thus the facility does not meet the definition of a MRF in WAC 173-350-100. Further discussion between the Yakima Health District, Ecology and the Washington Utilities and Transportation Commission is needed to assess an appropriate solid waste handling activity classification. In addition, the current application form and operations plan do not address how the proposed activity will meet the design criteria for a facility conducting any of these possible solid waste handling activities.

- Please direct the applicant to submit a letter from the lead SEPA agency stating that the additional activities proposed for the site are in accordance with the original SEPA review for the site, otherwise a new SEPA review must be completed.

These recommendations may not represent a comprehensive list of all deficiencies in the application. If you have any questions, feel free to reach out to me at 509-575-2837 or Kimberly.grieves@ecy.wa.gov.

Regards,

Kimberly Grieves
Facilities Specialist Lead
Solid Waste Management Program

cc: Kathryn McPherson, Washington Utilities and Transportation Commission

HWA GeoSciences Inc.
DBE/MWBE

TECHNICAL MEMORANDUM

TO: John Martin, DTG Recycling Inc.

PREPARED BY: Steven Greene, L.E.G., & Joe Westergreen, P.E. / HWA GeoSciences Inc.

SUBJECT: **GEOTECHNICAL STUDY**
CDW EMBANKMENT SLOPE STABILITY EVALUATION
DTG-YAKIMA LIMITED PURPOSE LANDFILL
YAKIMA COUNTY, WASHINGTON

DATE: July 25, 2022

HWA GeoSciences Inc. (HWA) has completed a geotechnical study and slope stability evaluation in support of the Permit renewal for the DTG Yakima Limited Purpose Landfill (DTG-YLPL) in Yakima County, Washington. This technical memorandum presents the results of our office review of geologic conditions and geotechnical engineering properties of on-site soil/rock and construction demolition waste (CDW) that is being processed and actively placed within the existing quarry excavation. We understand that originally plans involved placement and compaction of construction demolition waste over exposed basalt bedrock to a final 2.0H(Horizontal):1.0V(Vertical) embankment slope configuration. Currently, Yakima County has limited the embankment to a 3H:1.0V final slope configuration. Final cover will consist of a 2-foot-thick layer of compacted native sandy silt soils. The purpose of this evaluation is to re-assess the stability of the embankment slopes assuming a 2.0H:1.0V final slope configuration.

SITE CONDITIONS AND SETTING

The DTG-YLPL site is located on the northeast flank of Cowiche Mountain. The site is accessed via Rocky Top Road off Summit View Avenue. Figure 1, Area Map, shows the site location and vicinity.

The DTG-YLPL lies on the northeast-facing slope of Cowiche Mountain, in Section 10, Township 13 North, Range 17 East, Willamette Meridian, in Yakima County, Washington. Site elevations range from elevation 1980 feet above mean sea level (AMSL) at the southwest corner of the site, to around elevation 1760 AMSL at the northeast corner of the site.

The DTG-YLPL site contains an active quarry in the west portion (to be filled as part of the LPL), and an active CDW landfill in the central portion. The site accepts; clean concrete, bricks, tiles, asphalt, roofing materials, wood waste/lumber, crushed rock, dirt, sheet rock, insulation, glass, metals, brush/stumps/logs, and dredge spoils. Materials that can be separated

economically, such as wood waste and metals are processed on-site and recycled (metals) or sold as hog fuel (wood waste). Portions of the construction demolition waste materials that cannot be recycled economically are disposed of on-site within the active limited purpose landfill cell.

CLIMATIC CHARACTERISTICS

The site receives approximately eight inches of precipitation per year, including 24 inches per year of snowfall, on average. Twenty-four inches of snowfall may be equivalent to 0.6 to 2 inches of rain, depending on the temperature. Average monthly temperatures range from 21 to 88 degrees Fahrenheit (WRCC, 2005). Mean annual evapotranspiration in the area is 11 inches (Myers, et al., 1979).

TASK SCOPE

The purpose of this study was to evaluate the stability of the landfill utilizing the base excavation geometry and assuming final side slopes in excess of 300 high and inclined at 2.0H:1.0V. Specifically the scope of work included the following:

1. Review of the available geotechnical data for the landfill and native soils/rock.
2. Review of the proposed excavation and closure topographic maps.
3. Evaluation of slope stability using current seismic load parameters, proposed closure topography, and groundwater elevation data.
4. Preparation of this memorandum documenting our findings and recommendations.

SITE GEOLOGY

The project site and the surrounding Yakima area are located within the Columbia Plateau (also known as the Columbia Basin). The Columbia Plateau encompasses a broad area including eastern Washington, southwestern Idaho, and northern Oregon. The topography is characterized by incised rivers, extensive plateaus, and anticlinal ridges.

The Columbia Plateau is underlain by Miocene Columbia River Basalt Group rocks and interbedded sediments. The regional geologic units consist of gently warped to steeply folded volcanic basalt flows and interbedded sediments (fluvial sand and gravel, lacustrine silt and clay) that were deposited on top of and next to basalt flows between periods of basalt volcanism. Figure 2 presents a geologic map of the area (Bentley & Campbell, 1983). The site lies on the north limb of a large anticline, with a thrust fault mapped at the surface approximately one mile to the southwest. Most of the site is mapped as Wanapum Basalt, Kelley Hollow flow of the Frenchman Springs Member (Tfk), with areas of Ellensburg Formation (Teu) mapped at the

eastern and western portions of the site. Bentley & Campbell (1983) show the Vantage Interbed in the project area as cropping out north and south of the LPL site.

The Vantage Interbed strikes roughly west-northwest in the site, at a dip of approximately 7 degrees to the north, based on strike and dip data gathered by Bentley & Campbell (1983) and calculated from the outcrop patterns (using the intersections of topographic contours and outcrop boundaries. The unit consists of white and light tan clay to sand-sized fluvial and pyroclastic deposits.

SUBSURFACE CONDITIONS

Based on subsurface information obtained during a previous site investigation (HWA, 2007A), the site subsurface conditions appear to consist of weak to moderately strong basalt bedrock that is locally overlain by a veneer of soil of varying thickness (up to 12 feet thick) derived locally from loess, the Vantage interbed, or residual basalt. Areas adjacent to the active mining and landfill operations have been scraped down to basalt bedrock at a base elevation of EL 1850 AMSL, prior to filling with CDW. We understand that the on-going groundwater monitoring indicates that groundwater levels seasonally can reach a maximum height of about EL 1700 AMSL.

SEISMICITY AND FAULTING

The Yakima region lies within a relatively quiet seismic zone. The project site is located within the Yakima fold and thrust belt, a structural-tectonic sub province of the western Columbia Plateau (Lidke, et al, 2016). The Yakima fold belt consists of a series of generally east-trending anticlinal ridges and synclinal valleys formed by asymmetrical folding of the Miocene Columbia River Basalt flows and sediments. The east-west oriented features are primarily expressed as anticlinal folds underlain by thrust or reverse faults. The orientation of these structures indicates north to south compression beginning in Miocene time to the present at rates estimated to be less than 1.0 mm/year. (Lidke, et al, 2016). Review of the interactive fault map contained in the U.S.G.S. *Quaternary Fault and Fold Database of the United States* (Lidke, Barnett, and Haller, compilers, 2016), indicates no currently active fault is located within 5 miles of the project site (see Figure 3).

SEISMIC DESIGN PARAMETERS

To develop seismic design parameters at the site for earthquake loading, we utilized procedures in the 2018 International Building Code (IBC). The IBC procedures estimate inertial forces induced by a "Maximum Considered Earthquake" (MCE), which corresponds to an earthquake with a 2 percent probability of exceedance in 50 years (approximately 2,475-year return period), as developed by the United States Geologic Survey (USGS) for their United States National Seismic Maps. The hazard mapping defines the contribution of potential earthquake-induced ground motion from known sources and has been implemented into the IBC.

The IBC accounts for the effects of site-specific subsurface ground conditions on the response of structures/slopes in terms of site classes. Site classes are defined by the average density and stiffness of the soil profile underlying the site. We consider that in general the local undisturbed surface conditions would warrant at least a classification of Site Class B for the shallow basalt bedrock. However, based on our understanding of the waste characteristics, we recommend that landfill embankments be classified as Site Class C.

The probabilistic ground acceleration values (S_S, S_1, and PGA) were obtained from the Applied Technology Council Seismic Hazard Maps website and site coefficients for the general site areas based on the site soil conditions were calculated based on the requirements in Chapter 11 of ASCE 7-16 and Section 1613 of the 2018 IBC. The recommended seismic design values and coefficients for the site based on the IBC are presented in Table 1.

Table 1 – Ground Motion Values, Site Class C

Period (sec)	Mapped MCE Spectral Response Acceleration (g)		Site Coefficients		Adjusted MCE Spectral Response Acceleration (g)		Design Spectral Response Acceleration (g)	
0.0	PGA	0.225	F_{PGA}	1.200	PGAm	0.270	-	-
0.2	S_s	0.511	F_a	1.296	S_{MS}	0.662	S_{DS}	0.441
1.0	S_1	0.210	F_v	1.500	S_{M1}	0.315	S_{D1}	0.210

Transition Point	Period (sec)
T_0	0.095
T_S	0.476
T_L	16

Notes: **2% Probability of Exceedance in 50 years for Latitude 46.629442° and Longitude -120.690454°*
PGA = Peak ground acceleration
F_{PGA} = PGA site coefficient
PGA_M = Maximum considered earthquake geometric mean peak ground acceleration adjusted for Site Class effects
S_S = Short period (0.2 second) Mapped Spectral Acceleration
S_1 = 1.0 second period Mapped Spectral Acceleration
S_{MS} = Spectral Response adjusted for site class effects for short period = $F_a \cdot S_S$
S_{M1} = Spectral Response adjusted for site class effects for 1-second period = $F_V \cdot S_1$
S_{DS} = Design Spectral Response Acceleration for short period =2/3 • S_{MS}
S_{D1} = Design Spectral Response Acceleration for 1-second period =2/3 • S_{M1}
F_a = Short Period Site Coefficients
F_V = Long Period Site Coefficients
$T_0 = 0.2 \cdot S_{D1}/S_{Ds}$
$T_s = S_{D1}/S_{Ds}$
T_L = Long Period Transition period

CURRENT OPERATIONS AND FILLING PLAN

According to the current Director of Operations, after sorting and removal of recyclable material, the waste material is placed in the fill area with a D8 bulldozer. The waste is spread in a layer up to 24-inches thick and then compacted with several passes of the bulldozer in both parallel and cross directions to build lifts up to 15 feet thick with perimeter slopes inclined at 3.0H:1.0V or flatter. CDW is placed dry without addition of water for compaction or by the incorporation of

liquid waste materials. Soil cover materials consisting predominately of on-site borrow are placed over waste when filling operations cease for an extended period or the type of waste warrants more frequent application. Cover soils are limited to materials containing minimal organics and containing rocks less than 6-inches in diameter and predominately consist of on-site borrow. When completed each waste fill lift is covered with a 2-foot-thick compacted soil layer.

PROPOSED FINAL SLOPE CONFIGURATION

Currently, we understand that the final slope configuration has been restricted to slopes inclined no steeper than 3H:1V. Although previously, HWA (2008) conducted a slope stability evaluation that determined that final embankment slopes of 2H:1V were stable. The purpose of this evaluation is to re-assess stability of a steeper slope configuration (2H:1V) in light of updates in local seismic codes and geotechnical advances in the understanding of the engineering properties of CDW.

CDW CHARACTERIZATION

COMPOSITION AND UNIT WEIGHT

The available published Landfill waste unit weight data focuses predominately on municipal solid waste (MSW). However, some of the materials evaluated more closely resemble CDW in that they contain minimal to no organic waste, include considerable amounts of sheetlike/planar fragmental particles composed of concrete, sheet rock, tar paper, cardboard, wood, plastic, with relatively low amounts of gravel and soil-like material. Landfill specific values of CDW unit weight is variable and depends primarily on waste composition, moisture content, operational practices, and confining stress.

In an attempt to assess the composition and unit weight of the on-site CDW, at the request of HWA, the landfill operator exhumed CDW at three locations within the active filling area on May 12th, 2022. The dimensions of each excavation were measured in the field and the waste was loaded into a tared 15-CY skip box and weighed at the on-scale facility, similar to the method described by Zekkos, et al, 2006. For the most part, the CDW exhumed appears to consist of building demolition waste composed predominately of wood, tar paper, plastic, shingles, concrete, bricks, insulation, metal strapping, with less than 20% soil material. Particles were typically 12-inch minus, although larger material comprised of OSB/plywood, wall stud fragments and chunks of concrete, brick and masonry are scattered throughout the waste fill.

The calculated unit weights of CDW exhumed at three locations within the active fill area where: 39.6, 50, and 71.2 pounds per cubic foot (pcf) with an average 52.8 pcf. Photographs depicting the character of the CDW material exhumed at each location are shown on Figures 4 through 6. Unit weights measured in the field appeared to reflect compositional variability with the lowest unit weight determined for waste composed of primarily "2-dimensional" materials like

plywood, sheetrock, plastic, tar paper without significant amounts of soil-like particles to encapsulate or fill in void space (see Photo on Figure 4). Higher unit weights reflect material containing proportionally more heavy, incompressible material like brick, masonry, concrete, and soil particles (See photos on Figures 5 and 6).

SHEAR STRENGTH

Considerable discussion in the existing literature have been devoted to the evaluation of the MSW and not CDW. However, several studies have been published that evaluate materials that more closely resemble the CDW placed at the DTG-YLPL, typically exhibiting a more granular consistency than MSW, and a somewhat correspondingly lower cohesion and higher friction angle. For the purposes of this evaluation, we have reviewed the following literature:

- *Effects of Waste Composition and decomposition on the Shear Strength of Municipal Solid Waste,* Bareither, C., C. Benson, and T. Edil, 2012 Journal of Geotechnical and Geoenvironmental Engineering, Vol. 138, No. 10, pp. 1161-1174.

- *Classification and Mechanical Behavior Relationships for Municipal Solid Waste; Study using Synthetic Wastes*, Dixon, H., U. Langer, and P. Gotteland, 2008, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 134, No. 1, pp. 79-90.

- *11th Peck Lecture: Predesign Geotechnical Investigation for the OII Superfund Site Landfill,* Kavazanjian Jr. E., Matasovic, N., R. Bachus, 2013, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 139, No. 11, pp. 1849-1862.

- *Unit Weight of Municipal Solid Waste,* Zekkos, D, J. Bray, E. Kavazanjian jr., N. Matasovic, E. Rathje, M. Riemer, and K. Stokoe, 220, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 132, No. 10, pp. 1250-1261.

Dixon and Gotteland (Dixon et al, 2008) conducted a study using synthetic wastes to assess the relationship between their proposed waste classification and mechanical behavior of waste fills. Direct shear results reported for waste samples without a significant amount of compressible organics and soil materials, but contained appreciable amounts of brick, tire shreds, plastic, paper and textiles, and aluminum cans that are compositionally comparable to CDW exhibited closely grouped shear strength parameters ranging from phi= 34 to 34.9° and c' from 5.8 to 12.1 kPA (125 to 261 psf).

Bareither (Bareither, et al, 2013), conducted a study using relatively fresh waste exhumed from an existing landfill and collected at a transfer station. One of the samples (F-WI) contained nearly equal parts of material passing and retained on a 1-inch sieve. It contained significant amounts cardboard, paper, plastic and wood, and metals, but very little if any fine (minus No. 4 sieve) soil-like material similar to CDW placed at the DTG-YLPL. Shear testing conducted in a hydraulically loaded 11-inch diameter shear ring, yielded shear strength parameters ranging from

Phi= 37.2 to 43.9° and c' = 15.6 to 25.7 kPa (337 to 555 psf) for fresh and decomposed versions of F-WI with unit weights ranging from 40 to 55 pcf.

In summary, we expect the properties of the CDW at the DTG-YLPL to closely match those discussed in the literature for waste materials containing paper, plastic, textile, wood, metal, brick, concrete and other miscellaneous inert construction debris without decomposable organics or a large amount of soil filler. Review of the literature indicates that materials with similar composition exhibit shear strength parameters ranging from Phi= 34° to 43.9° and c' from 5.8 to 28.7 kPA (125 to 620 psf). It is important to note however that limited data is available for strength of waste material above a normal load of 200 kPA (4,320 psf). Without specific data to the contrary, it is assumed that CDW material will exhibit slightly more cohesion and less frictional resistance (lower Phi) at higher normal loads. Therefore, we selected the strength parameters of Phi= 35° and c'= 250 psf for our slope stability evaluation as shown in Table 2 below.

Table 2 - Material Parameters for Embankment Stability Analyses

Material Type	Unit Weight (lb/ft^3)	Friction Angle, Ø (degrees)	Cohesion, c´ (lb/ft^2)
Cover Soil	120	30	200
CDW	53	35	250
Basalt Bedrock	170	Infinite Strength (Relative)	

*Note: 53 pcf is average value from field sampling on May 12, 2022.

PORE PRESSURE CONSIDERATIONS

Based upon; the local climate, composition of waste, placement practices, and depth to groundwater, HWA does not foresee any scenario in which saturated waste conditions could develop resulting in increased pore pressure and reduced shear strength of CDW materials. Therefore, pore pressure development was not considered a design concern for stability analysis of the maximum slope configuration.

SLOPE STABILITY EVALUATION

We have evaluated the stability of the waste fill embankment slopes using the computer program SLIDE 8.032 (Rocscience, 2020), using limit equilibrium methods. Limit equilibrium methods consider force (or moment) equilibrium along potential failure surfaces. Results are provided in terms of a factor of safety (FOS). A factor of safety is defined as the summation of resisting forces divided by the summation of driving forces. Where the FOS is less than 1.0, instability is

predicted. Standard engineering practice considers a slope to be acceptably stable if it demonstrates through modeling a FOS of at least 1.5 and 1.1 for static and seismic loading conditions, respectively.

For our modeling we evaluated a conceptual slope with a maximum height of 435 feet inclined at 2.0H:1.0V. The maximum height is based on the provided excavation and fill plan that shows bedrock at an elevation of 1850 and maximum fill height at an elevation of 2285. For our analyses we have used the material parameters listed in Table 2.

Static/Gravity Loading Conditions

Stability analyses were conducted assuming dry conditions, as no leachate is expected to be generated by dry entombment of construction demolition waste in this arid climate. Based on our analysis, we calculated a FOS of 1.68 under static/gravity loading conditions as shown on Figure 7.

Seismic/Dynamic Loading Conditions

We also evaluated the conceptual slope using pseudo-static methods to evaluate the response of the slope under earthquake loading. Pseudo-static slope stability analyses model the anticipated earthquake loading as a constant horizonal force applied to the soil/waste mass. For our analysis, we used a horizontal seismic coefficient of 0.135 g, which is one-half of the maximum considered peak ground acceleration (PGA_M) adjusted for site class effects.

Based on our analysis, we calculated a FOS of 1.25 under seismic/dynamic loading conditions as shown on Figure 8.

CONCLUSIONS AND RECOMMENDATIONS

Material properties for CDW were estimated based on our literature review, and photos of current CDW material provided by the DTG-YLPL operator. Based on our analysis, adequate factors of safety are present for the LPL embankments inclined at slopes up to 2H:1V for both static and seismic loading conditions. Therefore, we recommend that a maximum LPL slope of 2H:1V be used for design purpose.

This evaluation is limited to global stability of the waste fill and does not evaluate the stability of the soil cover material. Shallow skin slides based in the near-surface cover soil layers may occur after long wet periods (a low probability for this site). However, these are not considered a threat to global stability of the embankment but should be considered a potential maintenance requirement.

Settlement/cracking

Note this slope stability analysis is intended to design side slopes that are stable under static and earthquake loading conditions, with respect to global slope failures that would affect the integrity

of the facility, or present safety issues. Minor settling, slumping, and cracking at solid waste facilities is common and expected, as the waste consolidates over time. These processes include consolidation, settlement/subsidence, and creep, and are slow and uniform as compared to slope failures which cause rapid soil movements such as rotation, displacement, etc. Stability of the waste increases as it consolidates reducing the risk of deep-seated slope failures over time. Surficial soil disturbances are addressed through operations and maintenance plans, closure plans, and post closure care provisions. Surficial settlement features at the site are repaired as needed. According to Section XI of the Operations Plan, site inspections are conducted daily to review containment structures to determine if maintenance is needed and for evidence of erosion. After final cover is applied, visual inspections will be conducted at least quarterly to assess its condition, including if underlying cover materials or waste is exposed from settlement, cracking, or erosion, per Section 5.5.2 of the LPL Permit Application.

CONDITIONS AND LIMITATIONS

We have prepared this technical memorandum for DTG Recycling for use in design and permitting of the DTG-YLPL Closure plan. The conclusions and interpretations presented herein should not be construed as a warranty of the subsurface conditions. Exploration and testing of site soils/rocks and CDW was not included in the scope of this technical memorandum. Experience has shown that soil and groundwater conditions can vary significantly over small distances. Inconsistent conditions may occur between explorations that may not be detected by a geotechnical study. If there is a substantial lapse of time between submission of this memorandum and the start of construction, or if conditions change due to operations, it is recommended that this memorandum be reviewed to determine the applicability of the conclusions and recommendations considering the changed conditions and time lapse.

Within the limitations of scope, schedule and budget, HWA attempted to execute these services in accordance with generally accepted professional principles and practices in the fields of geotechnical engineering and engineering geology at the time the report was prepared. No warranty, express or implied, is made. The scope of our work did not include environmental assessments or evaluations regarding the presence or absence of hazardous or toxic substances in the stockpiled soil.

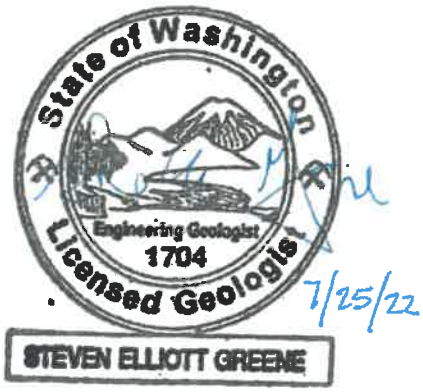
This firm does not practice or consult in the field of safety engineering. We do not direct the owner's operations and cannot be responsible for the safety of personnel other than our own on the site. As such, the safety of others is the responsibility of the owner.

July 25, 2022

We appreciate and thank you for the opportunity to provide geotechnical design services for the project. Should you have any questions regarding this report, or require additional services, please contact us at your convenience.

Sincerely,

HWA GEOSCIENCES INC.



Steven E. Greene, L.E.G.
Principal Engineering Geologist/Vice President

Joe T. Westergreen, P.E.
Geotechnical Engineer

Attachments:

Figure 1	Area Map
Figure 2	Area Geology
Figure 3	USGS Fault Map
Figures 4 – 6	CDW Waste Characterization Photos
Figure 7	Slide 5.0 Slope Stability Output-Static conditions
Figure 8	Slide 5.0 -Slope Stability Output-Seismic Conditions

REFERENCES

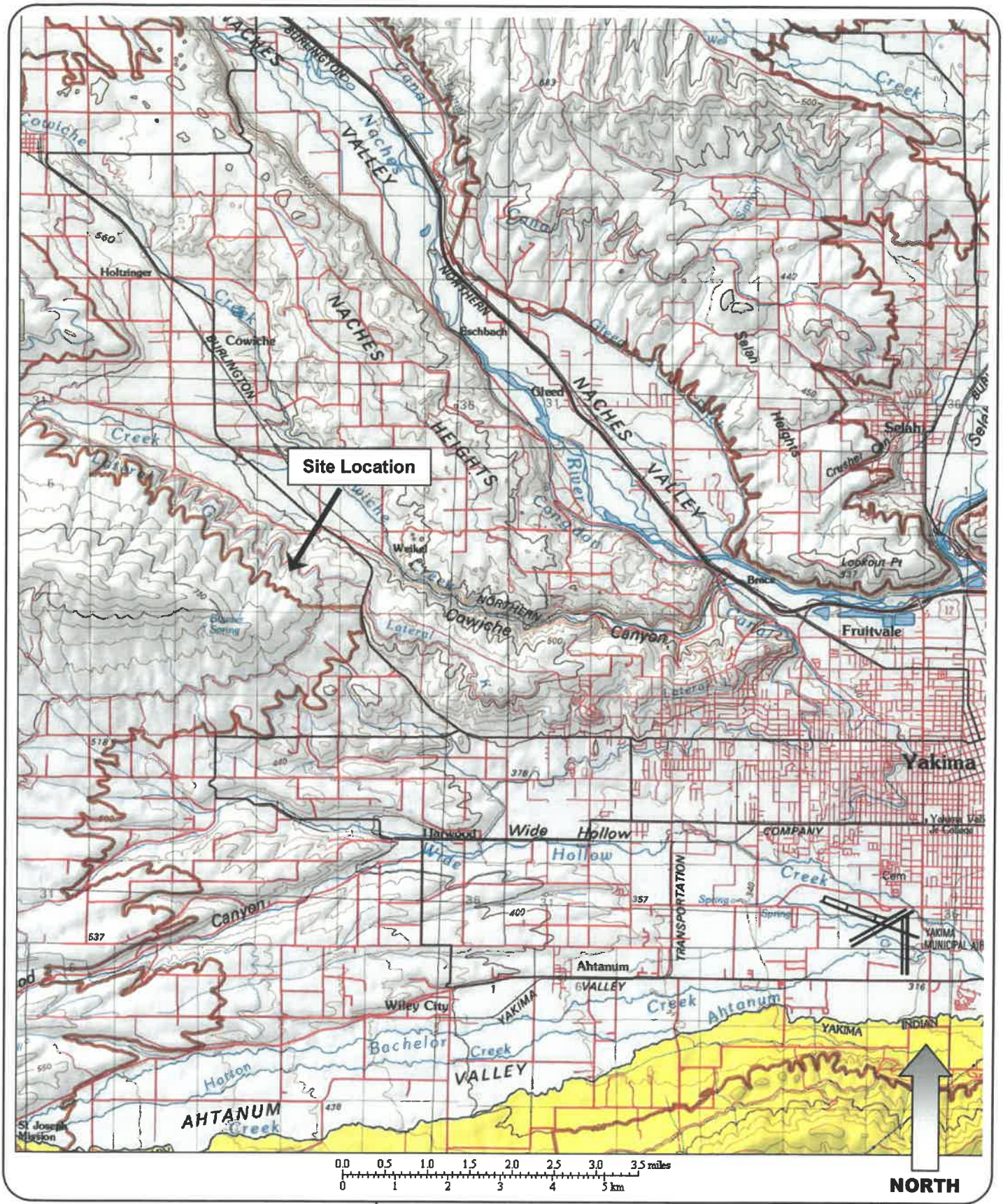
DTG, 2020, *DGT Yakima – Recycle, Limited Purpose landfill: Operations Plan.*

HWA Geosciences, Inc. 2007, *Geotechnical & Hydrogeologic Investigation, Anderson Limited Purpose Landfill, Yakima, Washington*. Prepared for R.W. Beck.

HWA Geosciences Inc., 2008, *Geotechnical Evaluation – Stability of Waste Embankments, Anderson Limited Purpose Landfill, Yakima, Washington.* Prepared for R. W. Beck.

Lidke, D.J., Barnett, E.A., and Haller, K.M., compilers, 2016, *Fault number 563b, Umtanum ridge structures, folds and other faults of Umtanum Ridge-Gable Mountain uplift, in Quaternary fault and fold database of the United States:* USGS website.

Rocscience Inc., 2020, SLIDE 2018 8.032, Computer Software.



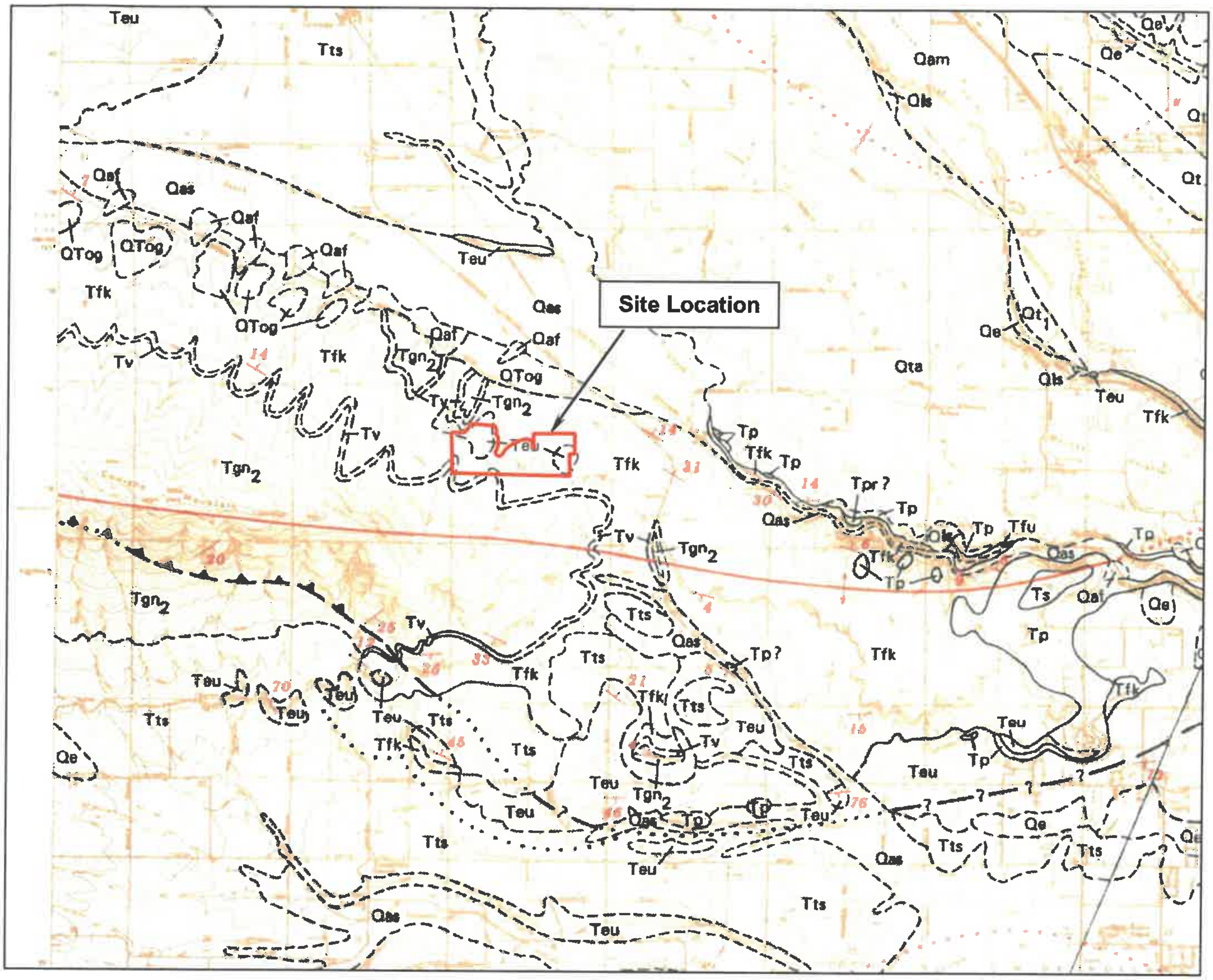
AREA MAP

CDW EMBANKMENT SLOPE STABILITY EVALUATION
YAKIMA LIMITED PURPOSE LANDFILL
YAKIMA COUNTY, WASHINGTON

FIGURE NO.
1

PROJECT NO.
2005-120

HWA GEOSCIENCES INC.



NORTH

0 miles 1
Approximate scale

Surficial Deposits

Qas – ALLUVIUM: Recent deposits of silt, sand and gravel dominantly of basaltic composition
Qaf – ALLUVIAL FAN DEPOSITS: Sand and gravel of diverse composition
Qtog – OLDER GRAVEL REMNANTS: Coarse sand and gravel, dominantly basalt clasts

Ellensburg Formation

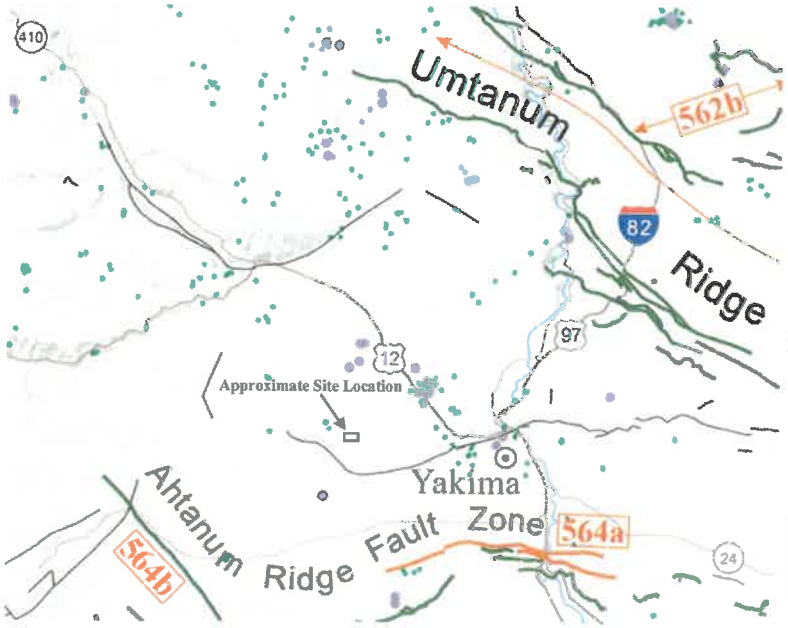
Teu – ELLENSBURG FORMATION UNDIFFERENTIATED: Gravel, sand, silt and clay
Tv – Vantage member: Clay, silt, and coarse sand; white to tan

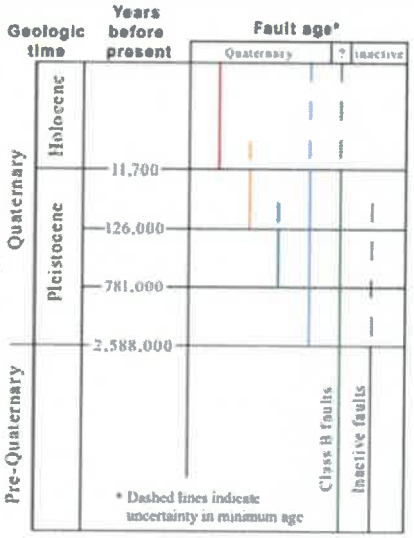
Columbia River Basalt Group

WANAPUM BASALT
Tfk – Flow of Kelly Hollow, Frenchman Springs Member: Fresh exposures are gray-black, weathers gray to reddish gray
GRANDE RONDE BASALT
Tgn_2 – Fresh exposures are gray-black, weathers reddish brown and gray

Source: Bentley, R.D. and Campbell, N.P., 1983. Geologic Map of the Yakima Quadrangle, Washington, Geologic Map GM-29, Washington State Department of Natural Resources

HWA GEOSCIENCES INC.	AREA GEOLOGY	FIGURE NO. 2
	CDW EMBANKMENT SLOPE STABILITY EVALUATION YAKIMA LIMITED PURPOSE LANDFILL YAKIMA COUNTY, WASHINGTON	PROJECT NO. 2005-120





NORTH

Approximate Scale: 1-inch = 7.3 miles

Map excerpt taken from: Czajkowski, J. L., and J. D, Bowman, 2014, *Faults and Earthquakes in Washington State*, Washington Division of Geology and Earth Resources, Open File OFR-2014-05.

HWA GeoSciences Inc.
DBE/MWBE

ACTIVE FAULT MAP

CDW EMBANKMENT SLOPE STABILITY EVALUATION
YAKIMA LIMITED PURPOSE LANDFILL
YAKIMA, WASHINGTON

FIGURE NO. 3

PROJECT NO. 2005-120

CDW Sample 3 - Approximately 9.25 CY, 4.94 tons = 39.6 pcf

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DBE/MWBE

CDW WASTE EXHUMED FROM ACTIVE FILLING AREA

CDW EMBANKMENT SLOPE STABILITY EVALUATION
DTG-YAKIMA LIMITED PURPOSE LANDFILL
YAKIMA, WASHINGTON

FIGURE NO. 4

PROJECT NO. 2005-120

CDW Sample 1 - Approximately 13.75 CY, 9.37 tons = 50.5 pcf

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DBE/MWBE

CDW WASTE EXHUMED FROM ACTIVE FILLING AREA

CDW EMBANKMENT SLOPE STABILITY EVALUATION
DTG-YAKIMA LIMITED PURPOSE LANDFILL
YAKIMA, WASHINGTON

FIGURE NO.
5

PROJECT NO.
2005-120

CDW Sample 2 - Approximately 9.75 CY, 9.37 tons = 71.2 pcf

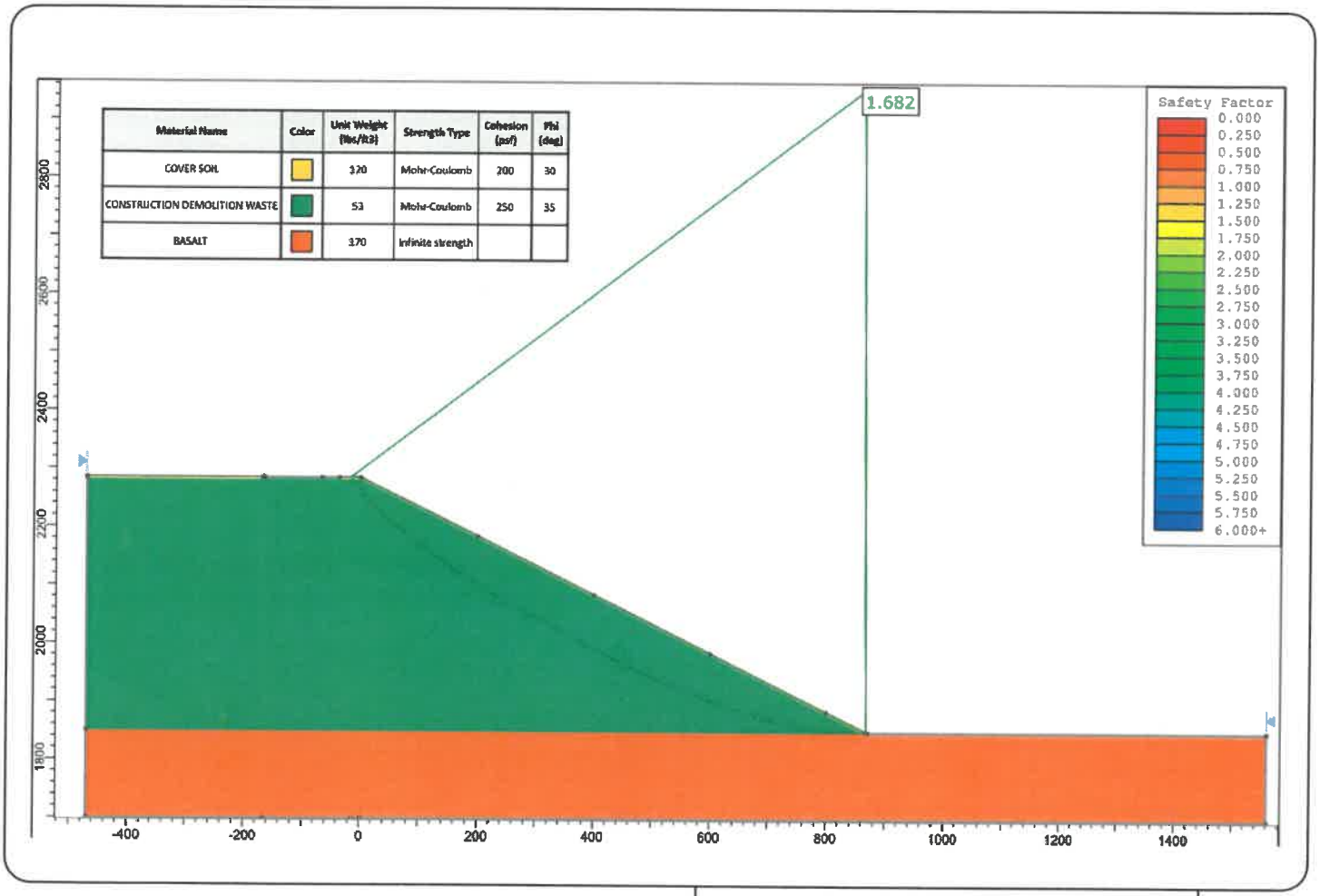
HWA GeoSciences Inc.
DBE/MWBE

CDW WASTE EXHUMED FROM ACTIVE FILLING AREA

CDW EMBANKMENT SLOPE STABILITY EVALUATION
DTG-YAKIMA LIMITED PURPOSE LANDFILL
YAKIMA, WASHINGTON

FIGURE NO. 6

PROJECT NO. 2005-120



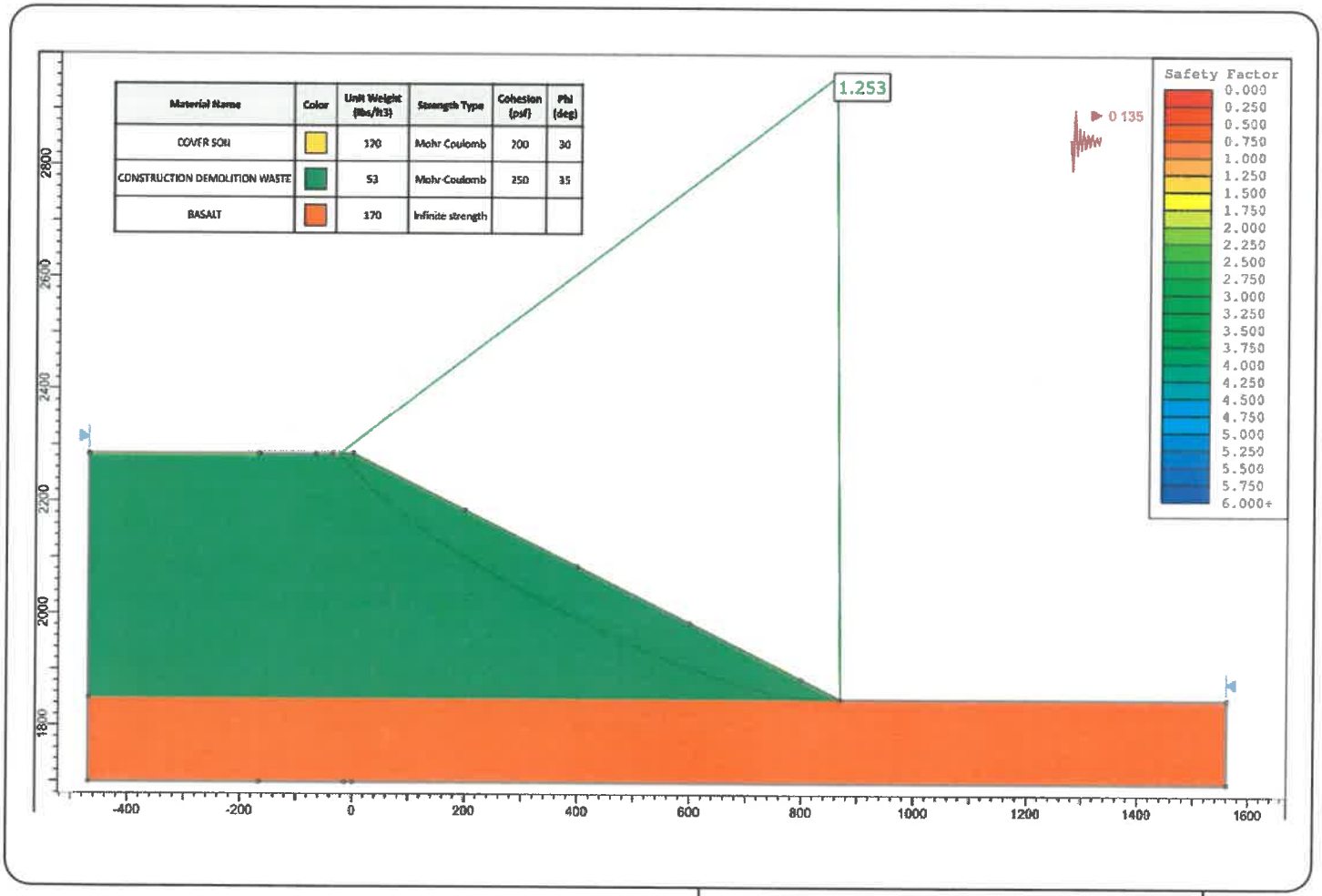
HWA GeoSciences Inc.
DBE/MWBE

STATIC SLOPE STABILITY ANALYSIS

CDW EMBANKMENT SLOPE STABILITY EVALUATION
YAKIMA LIMITED PURPOSE LANDFILL
YAKIMA, WASHINGTON

FIGURE NO. 7

PROJECT NO. 2005-120



HWA GeoSciences Inc.
DBE/MWBE

SEISMIC SLOPE STABILITY ANALYSIS

CDW EMBANKMENT SLOPE STABILITY EVALUATION
YAKIMA LIMITED PURPOSE LANDFILL
YAKIMA, WASHINGTON

FIGURE NO.
8

PROJECT NO.
2005-120

Permits

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 5:03 PM
To: Permits; Hasan Tahat
Cc: 'James C. Carmody'; 'Nancy Lust'; 'Carole Degrave'
Subject: RE: Cave written comment letter wenclosure
Attachments: LFCI DTG Landfill Health and Safety Fire Response and Monitoring Plan, May 9, 2023.pdf; Revised letter re Vegetative Screening; Yakima Co letter to DTGAnderson re condition compliance, Nov 1, 2022.pdf

Group 3

1. LANDFILL FIRE CONTROL INC's, Memorandum to Ian Sutton, DTG, re DTG Yakima LPL – Health and Safety, Fire Control and Monitoring Plan
2. Scott Cave, SC Communications, letter to Tommy Carroll, Yakima County Planning Official, re DTG Mining Vegetative Screening, July 16, 2023
3. Tommy Carroll letter to Aaron Enebrad, DTG, re Condition Compliance, November 1, 2022

Scott

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 4:30 PM
To: permits@yrcaa.org; 'Hasan Tahat' <hasan@yrcaa.org>
Cc: James C. Carmody <Carmody@mftlaw.com>; Nancy Lust <nancy.fort@cascadianow.org>; Carole Degrave <lusciouslupine@icloud.com>
Subject: Cave written comment letter wenclosure

Marc & Hasan

Please find my enclosed signed letter with list of the referenced documents and sources in my written comments provided last week. I will send the documents in multiple emails due to size limitations.

Respectfully,

Scott Cave

Providing a full range of landfill fire control and prevention services.

- Fire Safety Training
- Fire Safety Audits
- Fire Prevention and Response Plans
- Fire Extinguishment Strategies
- Fire Extinguishment Services
- Fire Monitoring
- Environmental Monitoring
- Forensic Investigations

May 9th, 2023

LFCIPRJ-2023-001

Mr. Ian Sutton, Director of Engineering
DTG Recycle
P.O. Box 14302 Mill Creek, WA 98082

By Email: isutton@dtgrecycle.com

Attention: Ian Sutton

Re: DTG Yakima Limited Purpose Landfill – Health and Safety, Fire Control and Monitoring Plan

Dear Mr. Sutton

As requested, Landfill Fire Control (LFCI) has prepared this Fire Control, Health and Safety and Monitoring Plan that outlines the recommended approach for managing health and safety, assessing the current landfill fire status, for putting in place a fire control and extinguishment plan and for conducting air quality monitoring to ensure that air quality at the work site and nearby properties downwind of the facility is safe to conduct work and residential occupancy.

The plan is being prepared in draft form for review and any suggested modifications by the Yakima Health District and partner regulatory agencies Washington State Dept. of Ecology (DOE) and Yakima Regional Clean Air Authority (YRCAA). The ambient air quality monitoring program will continue to be managed by Parametrix.

The Fire Control Plan is based on practical experience LFCI has gained in battling more than 60 major landfill fires around the globe, recent experience at nearby Caton Landfill and on field data gathered during LFCI's visit to the landfill site that was conducted by Dr. Tony Sperling, P.Eng. on April 17th and 18th, 2023. Based on that information, our team has determined that oxygen suppression is recommended as the initial control method to extinguish this fire, with overhaul as the fallback strategy.

1. SITE DESCRIPTION

The DTG Yakima Limited Purpose Landfill is located at 41 Rocky Top Road in Yakima, Washington. It has been developed on an elevated plateau 3.2 miles south of Cowiche, WA and 9.1 miles west of downtown Yakima. Figure 1 presents a site location satellite photo that shows the landfill in relation to Cowiche and Yakima. As shown in a closer view in Figure 2, the landfill is triangular in shape, measuring 1,200 ft. E-W and 1,000 ft. N-S. The toe of the landfill is at 1,850 ft. elevation and the crest is at about 2,000 ft. elevation. The maximum waste thickness is approximately 150'. The approximate area of the active fire is demarcated with a polygon on Figure 2.

There are active quarry and rock crushing operations occurring immediately to the west and a petroleum contaminated soil operation 500 ft to the east of the landfill. The north property of the landfill is demarcated by an abandoned irrigation canal. North of the canal is more gentle valley bottom topography that is being used as grazing land. The nearest farm residence is located about 300' from the landfill property line.

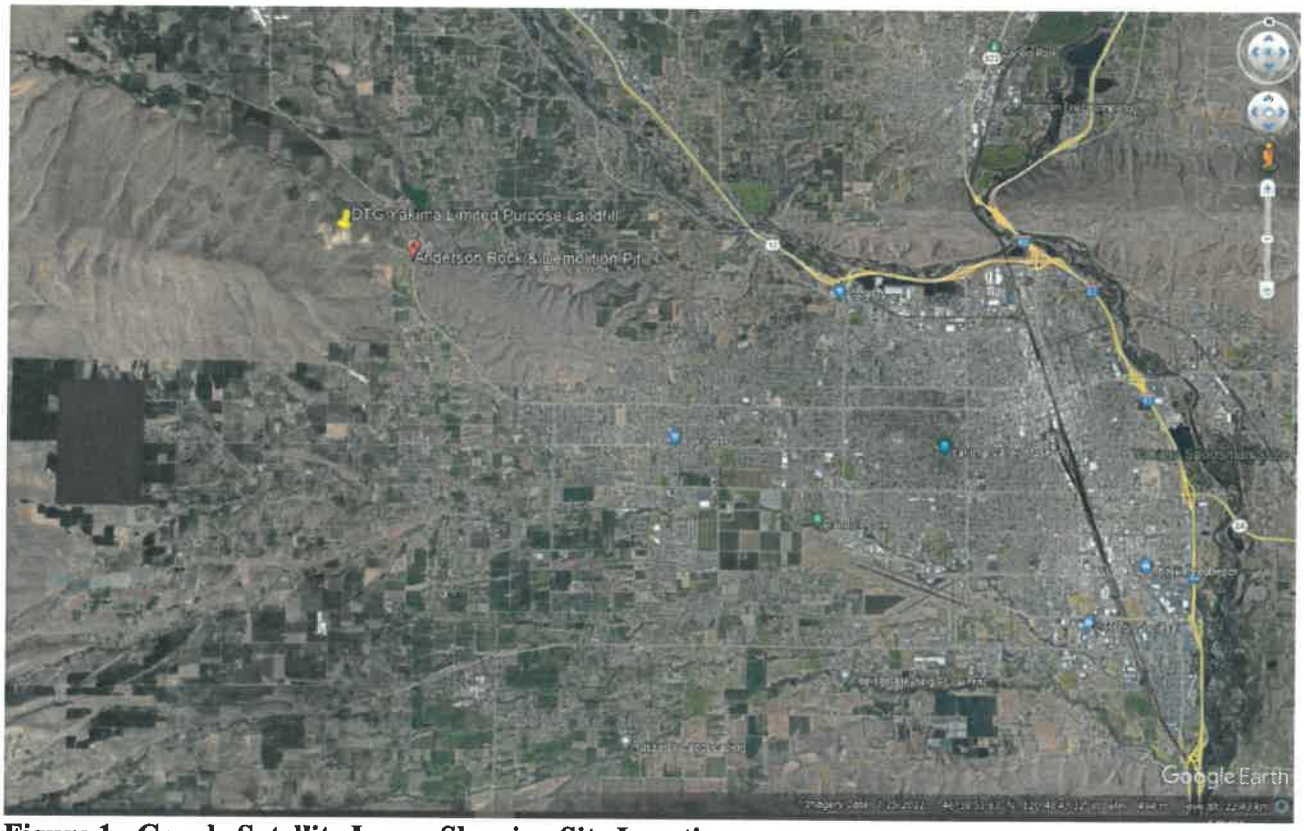


Figure 1. Google Satellite Image Showing Site Location

Figure 2. Google Aerial Photo of Landfill Site and adjacent Quarry Operations

The incoming waste materials are comprised of non-putrescible construction / demolition (C&D) waste. The waste types that are authorized for disposal include the following:

- Cured concrete
- Asphaltic materials
- Brick and masonry
- Ceramic materials
- Glass
- Stainless steel
- Aluminum
- Lime
- Gypsum, scrap drywall
- Dirt and rock
- Construction, demolition, and land-clearing debris
- Wood waste
- Ash (other than special incinerator ash)
- Dredge spoils

2. PREVIOUS INVESTIGATIONS

Abnormal odours were first detected at DTG Landfill during a routine monitoring program on December 3rd, 2021. The odours were strongest at crack locations. A program was initiated to seal the cracks and a consultant was hired to conduct soil gas sampling. Initial sampling was conducted on Dec. 8th, 2021 from three cracks in the landfill surface, at locations A-1, A-2 and A-3. Sample location A-1 was most impacted with high levels of VOC's including benzene, methanol and propene at concentrations above 100,000 ppbv. Temperatures in the cracks were also measured, with A-1 reporting the highest temperature at 145°F (65°C).

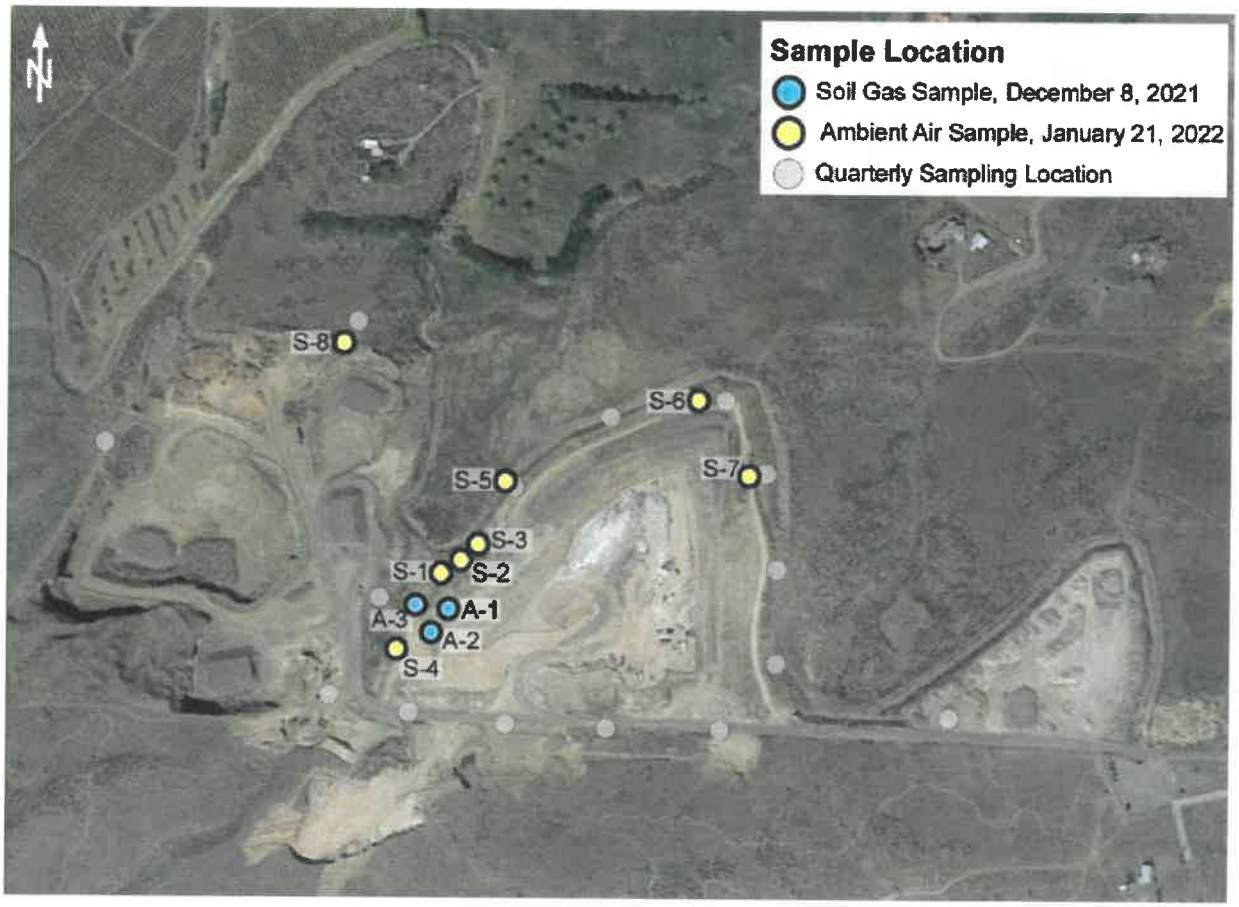


Figure 3. Soil Gas, Sample, Air Sample and Quarterly Methane Monitoring Locations
(Source, Soil Gas and Ambient Air Sampling Report, Freestone Env. Services, Feb. 25, 2022)

Subsequently, on January 21, 2022 Freestone undertook Summa cannister sampling of ambient air quality at a number of surface sampling sites labelled S-1 to S-8. The samples were analyzed at Atmospheric Analysis and Consulting , Inc. in Ventura, CA. The ambient air concentrations were reported in ug/m3 and compared to Model Toxics Control Act (MTCA) Method B and C clean up levels

which apply to the clean-up and prevention of contaminated sites. These limits may not be applicable for decision making at the DTG site, but provide a frame of reference for level of impact.

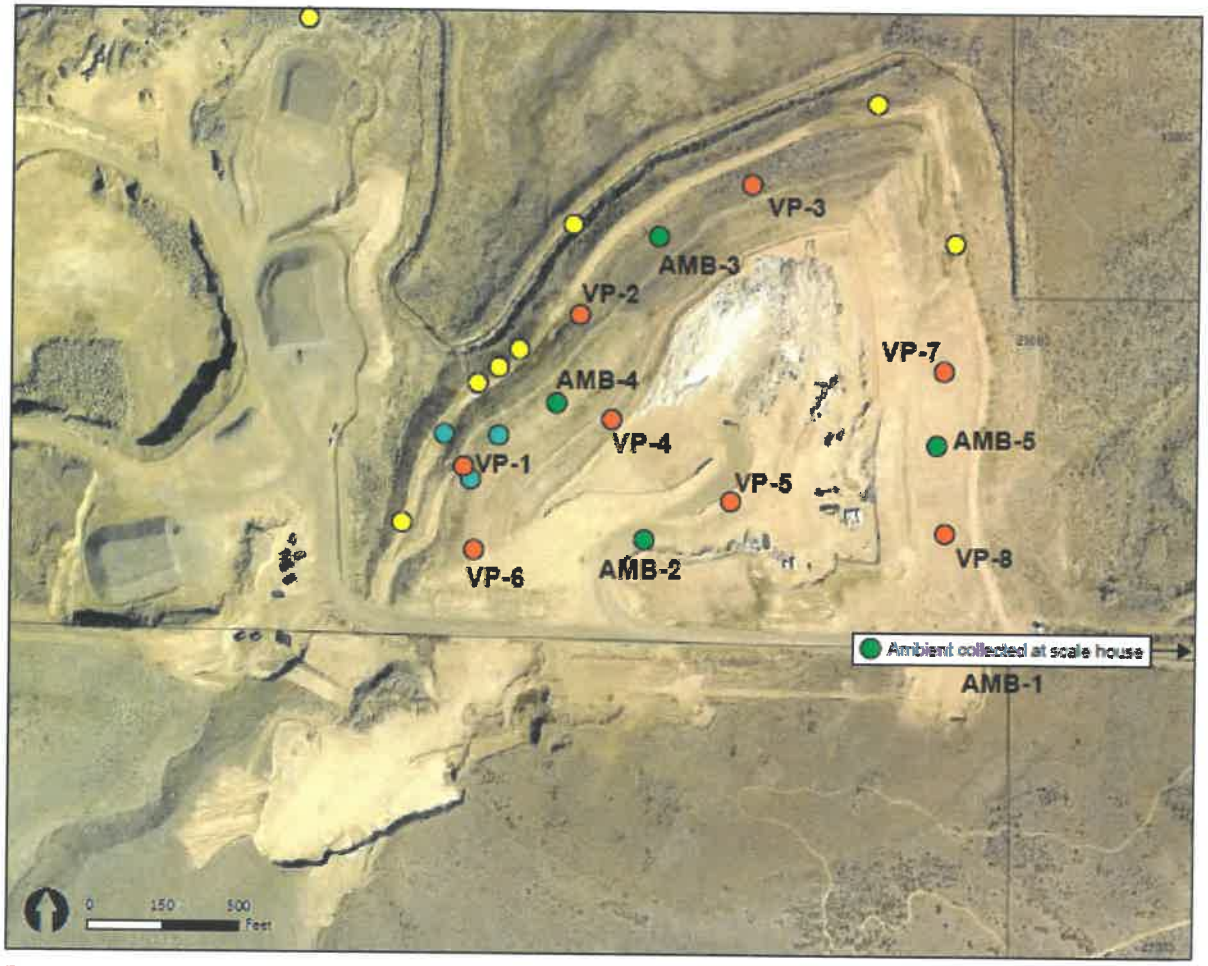
Most VOC's were not detected above sample reporting limits. For those that were detected, most were below the Method B and Method C limits, except Benzene, which has MTCA Clean Up Levels of 14 and 30 ug/m^3 for Method B and C respectively, while detected levels were 42.5, 41.5 and 85.6 ug/m^3 at S-1, S-2 and S-3, all downwind of the venting fracture at A-1.

Subsequently, due to concerns regarding the distribution of VOC emissions over the remainder of the landfill area, Parametrix was retained to undertake a more detailed field investigation. They drilled 8 monitoring wells 3' below grade at locations VP-1 to VP-8. The probes were drilled 3 to 3.75' below grade and all penetrated at least 2' into the waste mass. The overlying soil cover was comprised of sand, silt and gravel. The soil cover was typically 2 to 2.5' thick. Soil gas samples from the probes were tested with a GEM-5000 and gas samples were collected and sent to Friedman and Bruya, Environmental Chemists in Seattle, WA for analysis.

In their report dated August, 2022, Parametrix reported that *"Eight soil gas probes and five ambient air samples were analyzed for LFG with a GEM and through laboratory analysis. The results from this investigation confirm that the LFG issue at the LPL is limited to approximately 1-acre area on the northwest slope near location VP-1. The LFG and heat being generated appears related to the breakdown of PCS buried within the landfill as confirmed by predominantly petroleum hydrocarbons and related VOCs within the sample from location VP-1. Ambient air samples collected near the VP-1 area at location AMB-4 indicate conditions above MTCA Method B air cleanup levels consisting of APH, benzene, and naphthalene. Current and previous results of ambient air samples show this is confined to within the landfill property boundary (conditional point of compliance).*

Carbon monoxide was not detected in laboratory samples and measured temperatures by Freestone are below that which would indicate an underground fire; therefore, a landfill fire is not likely occurring. Results from excavating into the landfill show cover soils in the area of VP-1 are shallower and coarser grained than other areas of the landfill. Additional cover may help control odors and prevent VOC emissions."

4



Parametrix

Basemap from Yakima Planning GIS (2021 Aerials)

- Previous soil gas
- New soil gas
- Previous ambient
- New ambient

* all locations approximate

Figure 4

Sample Location Map

DTG Enterprises, Inc.
Yakima LPL Landfill Gas Investigation

In reviewing the Parametrix data set, LFCI notes that oxygen levels in all of the sampling locations were above 20%, indicating that substantive air intrusion into the landfill was occurring. Furthermore, the reported CO levels with the GEM-5000 were 5 ppm or less, indicating that a subsurface fire was not occurring at the time of investigation.

It is apparent that due to steep side slopes and poor (air pervious) soil cover, conditions at the DTG site were ideal for spontaneous combustion to develop. Spontaneous combustion is a gradual heating

reaction in the presence of oxygen that leads to exothermic chemical reactions, generation of heat, release of intermediate VOC reaction gases, and ultimately to initiation of fire.

Due to concerns that a fire was developing at depth, in March 2023 ten new Parametrix sampling wells were extended to a depth of 10' and resampled. The new monitoring wells were drilled on the lower and upper bench with one additional well added at the landfill toe and a second at the landfill crest. Monitoring wells GP-1 to GP-4 were drilled on the lower bench, wells GP-5 to GP-8 were drilled on the upper bench, GP-9 was drilled at the landfill toe and GP-10 was established at the landfill crest.

CO MONITORING: A cursory review of monitoring data collected by DTG Recycle staff indicates that very high carbon monoxide (CO) levels exceeding 2,000 ppm were detected in monitoring wells GP-2 and GP-3 on the lower bench and GP-7 on the upper bench. The CO data indicates that the most active fire area is around these three wells. Since March 29, 2023 the CO concentrations appear to be trending downward. LFCI notes that the CO concentrations reported by the GEM gas analyzer are typically lower than those reported by the multiRAE. It is suspected that this is because the GEM analyzer auto corrects for H2S cross interference on the CO sensor while the multiRAE does not.

TEMPERATURE MONITORING: Subsurface temperature readings have been taken since March 29th. Initial readings were taken at a depth of 36" below grade the highest recorded temperature being 81°F at GP-3. Subsequent readings, taken at a depth of 10' have been much higher, with wells GP-1, GP-2 and GP-3 reporting temperatures above 400 to 500°F as of April 14th.

The elevated CO concentrations and high temperature data indicates that the active fire area is in close proximity to GP-1 to GP-3.

3. LFCI INITIAL FIELD INVESTIGATION

An initial site orientation visit was conducted by LFCI's Dr. Tony Sperling, P.Eng. on Monday, April 17th, 2023. The meeting was attended by DTG's Ian Sutton and Site Manager Aaron Enebrad, and representatives from the regulatory agencies including Yakima Health District, Ecology and YRCAA. The initial site observations were submitted to DTG in a letter report dated April 26th, 2023 and reproduced in this report for context.

The subsurface fire is situated on the lower slopes of the completed Phase 1 Landfill. The landfill is 150' high with a toe elevation at 1,850 ft and a crest elevation at about 2,000 ft. Maintenance and storm water control benches have been established at approximately 30' vertical spacings. A concrete lined storm water channel is present at the landfill toe. The channel is a historic irrigation canal that is no longer in use. The canal has been repurposed as a storm water retention feature. North of the canal is private grazing land. There is very limited room at the landfill toe for slope regrading and access.

Photo 1. Site Photo from Lower Berm Looking to Northwest

A measurement of the slopes, as depicted in Photo 1, revealed that the grade below the lower bench was very steep, at -70% which is equivalent to 1.42H to 1V. This is essentially the angle of repose for shot rock aggregate. Slopes between the lower bench and upper bench appear a bit flatter and are estimated at 2H:1V. Slopes above the upper bench are estimated at 2.5H:1V.

Photo 2. Slopes in Problem Area, note very steep slopes below lower bench and settlement crack

Several horizontally oriented cracks were noted on the landfill surface, on and below the upper bench between GP-6 and GP-7, as well as an active diagonal crack west of GP-8 above the upper bench. The cracks that were actively venting appeared to be releasing steam with a strong VOC odour. The soil around the venting cracks was moist and discoloured with a light grey residue. A strong odour, characteristic of subsurface landfill fires was noted downwind of the vents.

Photo 3. Steep Slopes covered with coarse gravel intermediate cover below lower bench road

FLIR IMAGING: Hand held infra-red (IR) mapping was conducted by LFCI on Tuesday, April 18th before sunrise to avoid radiant heating. The IR imaging proved very effective at delineating the extents of the fire. Areas not influenced by fire were at ambient ground temperature around 0°C while active fire areas showed surface temperatures that were elevated 5 to 10°C above ambient, and vents were typically 12 to 15°C above ambient. A quick hand sketch presented as Figure 5 identifies the areas with elevated surface temperatures outlined in red and areas of recent soil cover application identified with black dashed lines.

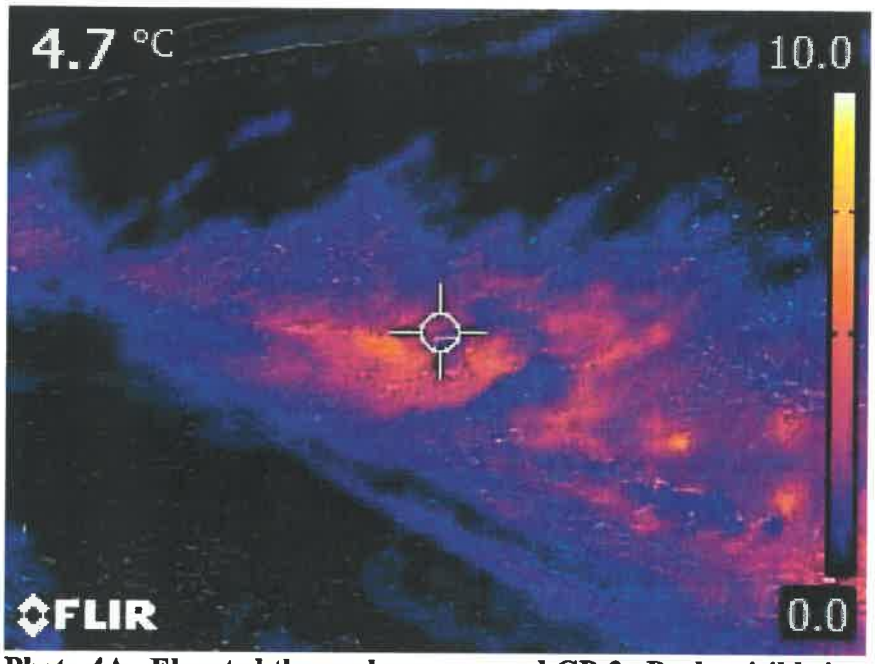


Photo 4A. Elevated thermal zone around GP-2. Probe visible in center of photo

Photo 4B. Visible Spectrum Image of same area of GP-2

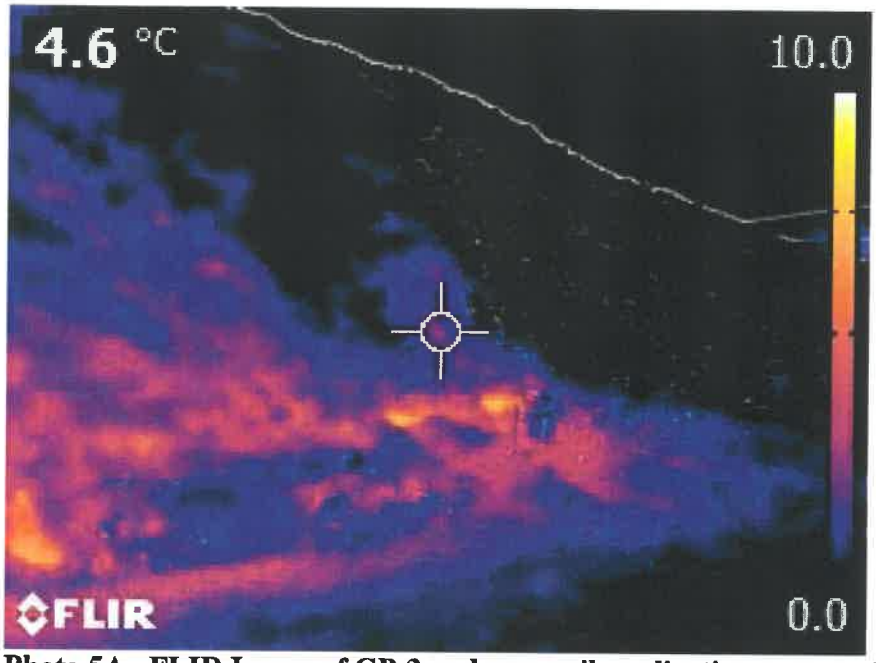


Photo 5A. FLIR Image of GP-3 and grey soil application to west. Fire zone extends to GP-3.

Photo 5B. Visible Spectrum Image of GP-3 area.

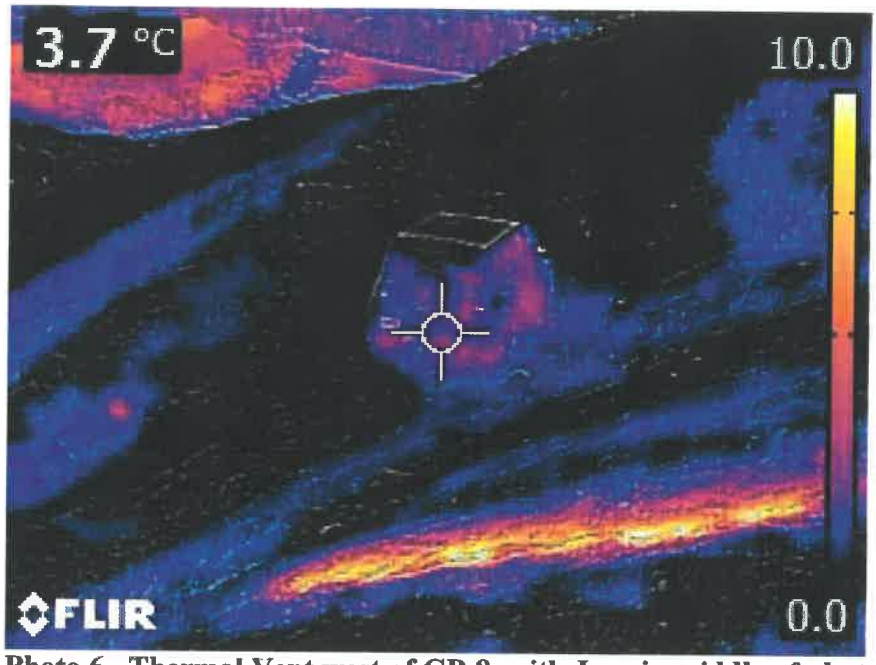


Photo 6. Thermal Vent west of GP-8, with Jeep in middle of photo. Warm area in upper corner is solar heating.

Based on thermal imaging and a review of collected data it appears that there are two fire zones in close proximity, one burning between GP-2 and GP-3 and expanding radially northeastward toward GP-1, with exhaust gases venting just below the upper bench road near GP-7. The second fire zone appears to be above the upper bench road south of GP-8.

LFCI concludes that the current fire situation is concerning given the rapid escalation of temperatures and CO concentrations, combined with the very steep slopes at this site. Given that pyrolytic chemical reactions have been occurring for over one year, it is apparent that a substantive amount of waste has been thermally converted to char and tar that is presently at high temperature. A ground collapse could expose this readily flammable material to oxygen and result in very rapid growth of this fire.

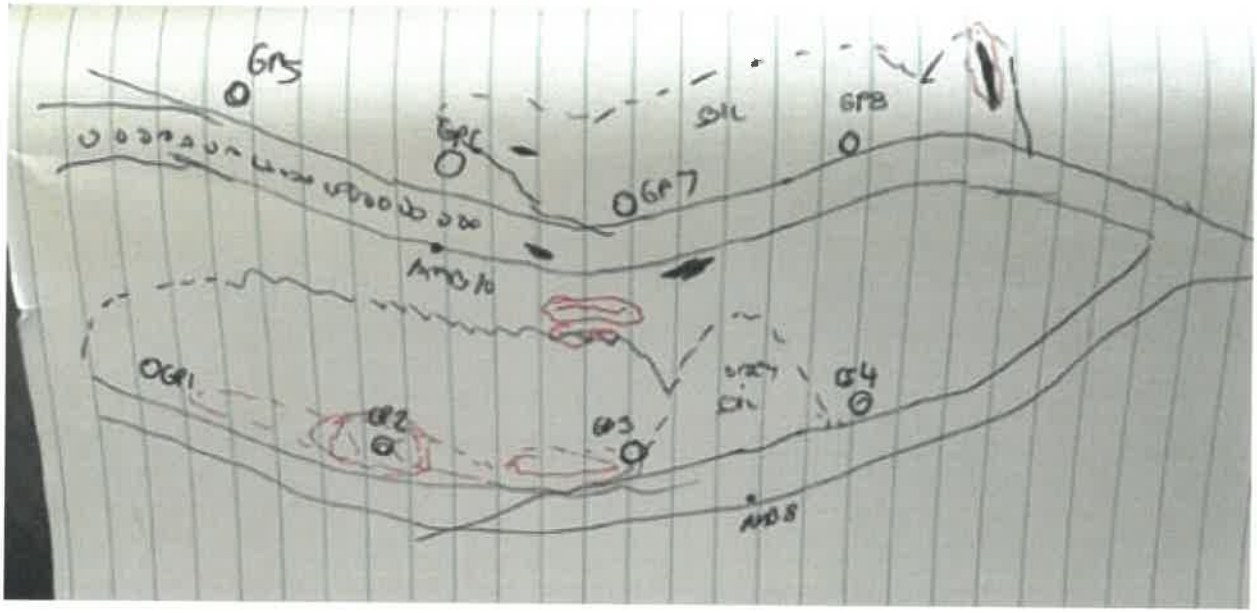


Figure 5. Field Sketch Map showing areas of elevated temperature, cracks and soil application areas

4. MONITORING PROGRAM

In order to fully characterize the extents and depth of the fire and ensure safe working conditions for fire fighters and equipment operators that will work on the fire LFCI is recommending a comprehensive environmental monitoring program, to be executed by DTG staff, supported by LFCI specialists on an as needed basis.

The environmental monitoring program has been organized into two sub-programs, one to fully characterize the fire and to determine if the landfill suppression is working and confirm when the fire is extinguished, and a second program for air quality impacts on workers and the public downwind of the landfill site.

LFCI routinely undertakes fire suppression monitoring programs on every suppression project that we undertake. The programs typically involve comprehensive monitoring of temperatures and landfill gas composition.

4.1 Gas Composition Monitoring

To track gas composition and subsurface temperatures in the landfill, LFCI typically installs a network of barhole punches to measure temperature and smoke composition. A typical barhole punch is shown in Photo 7.

Photo 7. Typical Barhole Punch

LFCI typically installs 10 to 20 barhole punch sampling points with the assistance of landfill staff and an excavator or track loader. Photo 8 shows a typical installation.

Photo 8. Bar Hole Punch Being Pushed with Track Loader

As mentioned previously, 10 wells have already been established at this site to a depth of 10'. These wells will be incorporated into the monitoring program, in addition to 9 new bar hole punch locations to include three new probes on each of the upper and lower benches spaced equidistant between existing probes, and new probes to the east of GP-1, west of GP-3 and west of GP-8. As a second priority, LFCI recommends drilling two deep thermistor holes to a depth of 40' mid way between GP-1 and GP-2 and mid way between GP-2 and GP-3, and instrumenting those holes with temperature sensors at 10', 20', 30' and 40'.

These barhole punch monitoring points shall continue to be monitored twice weekly for CO, H_2S, CH_4, O_2 and H_2 as well as temperature. Data shall be graphed and interpreted by LFCI specialists within 24 hours of being collected and submitted to regulatory agencies within 48 hours of being collected.

Landfill gas readings are taken from barhole punch probes using LFCI's Dräger X-am® 7000, as shown in Photo 9 or a GEM-500 LFG analyzer.

Photo 9. Dräger X-am® 7000 (Gas Analyzer)

The presence of hydrogen (H_2) and hydrogen sulphide (H_2S) gases will cause false positive cross interference readings for CO. Therefore, in cases when the presence of hydrogen or H_2S cross interference is suspected, LFCI will also test for CO using hydrogen-immune Gastec tubes to confirm the actual levels of CO that are present. If the Gastec tubes are indicating lower levels of CO than the Dräger, then Gastec tube readings will be taken as the correct readings.

The Dräger gas analyzer shall be used to obtain readings for CH_4, O_2, CO, H_2 and H_2S. An in-line H_2S scrubber shall be placed on the sampling feed to avoid CO sensor cross contamination from H_2S. CO readings should also be corrected for cross interference from H_2 based on H_2 gas concentrations actually measured.

Monitoring data should be tabulated and should be charted to track any trends or changes in the gas composition.

CO Monitoring: Carbon monoxide is the primary indicator of possible landfill fire. Based on experience, LFCI has developed the following scale to assist in interpreting the CO data.

No Fire Indication	0 – 200
Possible Fire in Area	200 – 500
Potential Smoldering Nearby	500 – 750
Fire or Exothermic Reaction Likely	750 – 1000
Fire in Area	> 1000

LFCI notes that CO can occur naturally in landfills at levels up to 500 ppm without a fire and CO can concentrate within monitoring wells due to density effects. For this reason, LFCI recommends that if high background CO concentrations are detected in the monitoring network, then the extinguishment threshold of 500 ppm CO be adopted rather than 200 ppm.

When measuring CO using instruments such as Dräger X-am 7000, it is imperative that field personnel have an in-line scrubber in place to remove H_2S as this gas influences the CO sensor and provides a false positive. H_2 gas is another naturally existing gas in landfills at variable levels. H_2 is generated especially during early stages of waste decomposition. As previously mentioned, H_2 also causes cross contamination and false positive readings for CO. Therefore, appropriate and site-specific CO measurement techniques were developed to examine presence and levels of CO in the landfill. If presence of H_2 is suspected, H_2 immune colorimetric tubes (commonly known as Gastec tubes) are used to accurately measure CO levels.

Monitoring of the CO levels will be the primary metric for determining when the fire has been extinguished. It has been recognized on other projects that atmospheric events such as the approach of an intense high pressure system and cracking of the soil cover can temporarily allow air entry which may result in a short term uptick of CO levels. Based on past experience, LFCI recommends that the fire can be considered extinguished when the true CO concentrations at all subsurface monitoring locations drop below 200 ppm for three consecutive readings (7 days). As mentioned above, the Draeger or GEM CO concentrations should be field verified with readings from hydrogen resistant GASTEC tubes and/or laboratory data.

Gastec Tube Analysis: The colorimetric detector tubes are glass vials filled with a chemical reagent that reacts to a specific chemical or family of chemicals. These are pre-calibrated, direct-read colorimetric detector tubes that offer distinct lines of demarcation for easier viewing and quick and reliable assessment of the gas or chemical of interest. Gastec offers over 300 different tubes that are commonly used for routine inspections.

There are 10 different types of Gastec tubes for reading CO levels in various ranges and environments. LFCI utilizes CO Gastec tubes 1H, 1L, 1M, 1LM, and 1LK on a regular basis. When Dräger high CO readings are suspected to be caused by presence of H_2 gas, the 1LM and 1LK tubes, which are hydrogen immune, should be used to confirm the Dräger readings. This practice in many cases indicates that very high CO levels are indeed present, but generally the CO levels are lower than those reported by the Dräger instrument due to H_2S and H_2 sensor cross contamination.

Recognizing that it can take a long time to reach background levels, it is LFCI's professional opinion and recommendation that the monitoring frequency be scaled back to once per week when CO levels on all monitoring stations drop below 1,000 ppm. After that, monitoring should be scaled back to once every two weeks after CO levels drop below 500 ppm and continued at that frequency until CO levels drop below 200 ppm, at which time the fire will be considered fully extinguished. After that monitoring can be scaled back to quarterly preventive screening.

4.2 Temperature Monitoring

Typically, subsurface temperatures in the interior of landfills that exist in an anaerobic state range from 25 to 55 °C (77 to 131°F). Elevated temperatures up to 75 to 80 °C (167 to 176°F) can develop in the waste if air intrusion is allowed and aerobic conditions develop. Temperatures above 75°C (167°F) are typically indicative of abnormal conditions, either due to combustion (landfill fire) or due to a self-sustaining subsurface exothermic reaction (SSSER). It has been LFCI's experience that temperatures measured in the near subsurface are generally lower than the maximum temperatures in the combustion zone. Despite encountering temperatures as high as 1,000 °C during overhaul operations, generally subsurface temperatures monitored in wells remain below 25°C. LFCI becomes concerned that combustion is occurring subsurface when temperatures of exhaust gases at surface exceed 55 to 60 °C (131 to 140°F).

During the course of the fire monitoring at the DTG Landfill, LFCI recommends using two tools to monitor temperatures including a FLIR E6 infrared camera for surface temperature measurements, and a Fluke 52 II Thermistor for downhole measurements in bar hole punches, shown in Photos 10 and 11 below, to monitor surface and subsurface temperatures, respectively. Photo 12 presents a typical image of a subsurface fire with an infrared camera.

Photo 10. FLIR E6 IR Camera for Surface Temperature monitoring

Photo 11. FLUKE 52 II used for monitoring downhole temperatures

The hand held infrared imagery is most useful for identifying vents and near surface fires. The Fluke thermistor is used for measuring temperatures in bar hole punch probes and monitoring wells below ground.

A third method of measuring surface temperatures is to scan the landfill with an infrared drone. Drone imagery is most useful when flown at night when solar heating effects are not evident. It is recommended that monthly infrared imagery be captured using the handheld FLIR to establish a thermal baseline and determine the extent of the fire.

It is recommended that the fire extinguishment threshold temperature for this project be 180°F in bar hole punch locations and surface vents. 180°F (82 °C) is the appropriate trigger temperature as it is slightly above the maximum expected temperature that can be generated by aerobic decomposition of 176°F. Fire suppression efforts shall continue as long as any temperatures exceed this threshold.

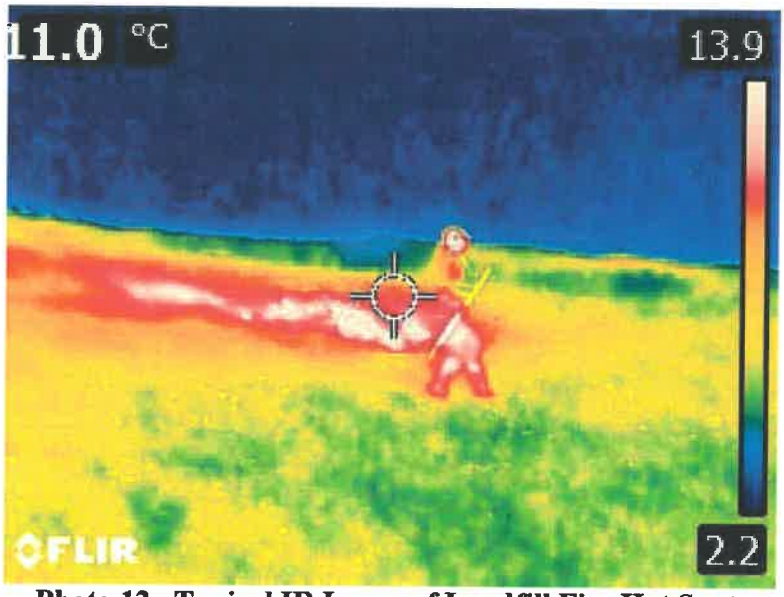


Photo 12. Typical IR Image of Landfill Fire Hot Spot

As of April 14th, 2023 in GP-1, GP-2 and GP-3 have been measured above 400 to 500°F. These elevated temperatures are a definite indication of subsurface fire. Temperatures in all monitoring wells should be collected twice per week until CO data supports reducing the monitoring frequency. Because solid waste is a good insulator, subsurface temperatures can be expected to decline at a much slower rate than CO concentrations. For this reason, CO concentrations should be the primary indicator of fire extinguishment.

4.3 Air Quality Monitoring

Ensuring that workers at the job site are safe at all times as are members of the public residing or working downwind of the fire zone is a top health and safety priority. Although LFCI has some air quality monitoring experience we are by no means specialists in air quality monitoring and data interpretation. Thus, we will defer to experts from Parametrix and the regulatory agencies for oversight of sampling protocols and interpretation of monitoring data collected.

Our experience has been that the parameters of most concern on landfill fires and the ones that our staff look to protect themselves from include CO, H_2S, hydrogen cyanide, and PM_{10} particulate. Detailed CO and H_2S determinations for safe work conditions shall be conducted by all on site workers throughout the project and daily scans shall be undertaken by the project monitoring technician at the established bar hole punch locations.

Volatile organics in the combustion gases can also be of concern. To date, air quality monitoring in the work zone has identified elevated benzene levels as the primary contaminant of concern. Testing for VOC's in ambient air shall continue to be undertaken by Parametrix or DTG staff following the work plan that was developed and approved by YHD, YRCAA, and Ecology for completion of the 2022 ambient air investigation (Parametrix, 2022). Handheld instrumentation such as the MultiRAE shall continue to be utilized on a daily basis at each of the established monitoring locations during fire extinguishment efforts to monitor for the presence of VOC's. If VOC's exceed a specified trigger value then all staff in the work zone shall be required to wear respiratory protection with activated carbon filters designed to remove VOC contamination from the breathing air. The trigger value shall be established by Parametrix, in consultation with Yakima Health to ensure protection of all workers.

If elevated levels of VOC's are detected in the work zone, a laboratory air sampling program shall also be initiated. Initial testing shall collect eight samples of gas from established ambient air test locations across the fill area, and analyze the samples for VOCs using EPA Method TO-15; air-phase petroleum hydrocarbons (APH) by MA-APH; and for major gases using EPA Method 3C. This testing shall be conducted once at the start of the program to establish a safety baseline. Thereafter, a correlation between field instrumentation and lab data shall be utilized to assess hazardous air quality at the work site, supported by monthly Summa tests as long as field data indicates there remains a concern that field air quality exceeds trigger response levels. Ambient air gas samples from 3' above the landfill surface shall also be measured for major gases with the Dräger X-Am 7000 or a Landtec GEM 5000 LFG meter (GEM).

A detailed and staged air quality monitoring plan following the above outline shall be prepared and submitted for review by Parametrix. The plan shall be executed once approved by the regulatory team. A template of the draft plan is appended to this plan as Appendix A.

Parametrix shall be required to submit a scope of work to YHD, Ecology and YCRAA including specific monitoring locations, parameters, and schedule for monitoring within 2 weeks of this plan being approved by Yakima Health District.

Parametrix may also be required to conduct additional monitoring by YRCAA to maintain compliance with the air permit.

4.4 Stormwater Quality Monitoring

Monitoring of fire water run-off quality and quantity discharging to off property should also be monitored if any discharges are to occur. The conductivity and flow rate of the leachate shall be measured daily, and samples for a water quality assessment should be conducted once per week. Fire water run-off shall be routed to a retention pond, settled and recycled if practical.

5. FIRE FIGHTING STRATEGY

To control the fire at DTG Landfill LFCI recommends immediate coverage of all vents to slow the rate of combustion and execution of the monitoring program as outlined above. Once data from the program is collected and reviewed LFCI will then proceed to develop a detailed Fire Control Plan for this site. Given the challenging geometry, we anticipate that the plan will involve application of low permeability soil at least 3' thick on lower slopes below lower road between GP-1 and GP-4, reinforced with a gravel buttress at a slope of 2.5H:1V. The soil cover will likely extend to the upper road. The second fire zone west of GP-8 is a possible candidate for excavation and overhaul using dirt suppression. A test pit program should be conducted to determine if the fire zone is containable.

The fallback suppression method of fire control will be overhaul and extinguishment of excavated material using a dirt smother approach.

The anticipated fire control strategy recommended by LFCI for the DTG Landfill has evolved over more than 60 successful extinguishments around the world. The five step approach that has evolved from that experience should be quickly adopted. It includes the following:

1. Health and Safety
2. Establish Control
3. Achieve Containment
4. Extinguish Fire
5. Conduct Confirmation Monitoring

Health and Safety: The Health and Safety Program that is recommended for this project is thoroughly detailed in Section 8. Key elements of the program include respiratory protection, PPE, steep slopes, collapse hazards, equipment safety, flash over, heat stress and decontamination.

In addition, the slope stability risk should be assessed by a geotechnical engineer given some slopes at DTG Landfill are very steep, at angles of about 1.5H:1V (based on observations and measurements in the field). To minimize risk of exacerbating instability, LFCI recommends that water application be limited and that any fire water be recirculated to avoid groundwater pollution. Furthermore, it has been recommended that initial application of soil cover should be conducted in lifts of about 300 mm (12") to minimize rapid loading and

ensure good compaction. Additional lifts can be added as needed to fully control atmospheric air intrusion.

A topographic site map and colour air photo should be produced on a priority basis for volume measurements and progress tracking. The site should also be assessed using an infra-red drone or surface infrared measurements with a hand-held camera. LFCI can provide the necessary resources.

Establish Control: Establishing control of the fire is a process to make the work site a safe worksite. First, worksite security must be achieved. Access to the site should be restricted to ensure that only authorized workers are permitted to enter the work site. Scavengers must be excluded.

The thermal imaging collected by LFCI during our site visit showed significant subsurface fire activity on steep side slopes of the landfill at the lower bench level, with limited venting below the upper bench. At the time of the LFCI inspection on April 17th and 18th the fire was fully controlled with no open flame and limited smoke release from a number of soil cover cracks, only a small number of active smokers showing.

Based on site observations and monitoring data as of April 18th, 2023 it is concluded that the DTG Landfill Fire is 100% controlled.

Achieve Containment: The goal of containment is to ensure that the fire will not spread beyond the existing perimeter and that the rate of combustion is cut back to a level that does not present any immediate threat. Typically, containment is achieved when smoke emissions are cut back to zero through extinguishment efforts, although some pockets of subsurface fire may still remain.

Often, containment will require the excavation of fire breaks to prevent the advancement of fire into the fill. Fire breaks are normally achieved by digging a trench one bucket width wide down to an inert soil cover layer within the landfill and then packing the vertical trench with low permeability soil (silt or clay). Landfills typically use a lift height of 10 to 15' and intermediate soil cover is placed 1 to 3' thick. Historical landfill construction practices and materials received remain to be established at this site.

Fully Extinguish the Fires: Extinguishment of a landfill fire is normally achieved by one of three fire suppression methods: 1) Oxygen Suppression, 2) Water Application, and 3) Overhaul. Given site conditions at the DTG Landfill, we are of the opinion that Oxygen Suppression will be the most effective.

Oxygen Suppression: Oxygen suppression is a very effective landfill fire suppression method which requires that the entire area of landfill affected by fire is completely covered with low permeability dirt such as silt or clay. Because fire needs oxygen to burn, cutting off the oxygen will effectively extinguish a fire. However, the oxygen barrier must be maintained fully intact over a period of months as it takes a long time for elevated temperatures within the burning waste mass to subside. If oxygen is allowed to re-enter before temperatures drop below the ignition point, then the fire will re-ignite.

Also, it is imperative with this method that oxygen cannot enter the waste mass from the sides or the base of the landfill, e.g. through a gravel leachate collection layer. Only if full encapsulation can be guaranteed should this method be considered.

Another very important consideration for oxygen suppression is side slope angle. Landfill slopes should ideally be no steeper than 2.5H:1V as it becomes very difficult to properly spread and compact soil on slopes that are steeper.

Photo 13. Clay Soil Cover Being Spread and Compacted with D7 Dozer in Tijuana Mexico Fire

LFCI has successfully used oxygen suppression methods on five large subsurface fires, namely Campbell Mountain Landfill in Penticton (1998), Lake County Landfill in Montana (2014), Bailey Landfill in Chilliwack (2017), Roatan Landfill Fire (2018) and Whitehorse Landfill (2018). The method has always proven effective as long as an air impervious cover can be established and maintained.

Given the steep side slopes at DTG Landfill which are presently as steep as 70% construction, a reliable cover system may not be 100% effective without regrading. Therefore, this very effective and low cost method of fire suppression cannot be guaranteed to be 100% effective as it is presently being used and additional intervention such as overhaul of localized fires (as was done at Cerro Patacon) or slope regrading to slopes that are flatter than 2.5H:1V may be necessary to achieve full extinguishment. The long-term stabilization plan at DTG Landfill is to place a 3' thick fire and air barrier on the northwest face of the landfill and support that fire wall with additional inert shot rock or concrete rubble and asphalt fill sloped to an overall grade no steeper than 2.0 to 2.5H:1V.

Prior to regrading slopes, it has been recommended by the on-site engineer that a hoe pack be utilized to compact the existing soil cover on the slopes from the crest, the toe and above and below the mid slope bench. It is hoped that this measure will further reduce oxygen intrusion into the fill.

If slope regrading is deemed necessary (e.g. after repeated break outs of fire or slope cover failures) then LFCI recommends that slopes of 2.5H:1V be established in the problem areas. The flatter slopes would make it possible to effectively compact native silt and clay soil or imported fill on the landfill surface. After regrade, compaction should be done in three 300 mm (12") lifts for a minimum soil cover thickness of 900 mm (3'). Stability of the soil veneer should be tested in the lab to ensure that there will be adequate shear strength provided at this angle. It will be imperative that soil cover be placed on completed surfaces immediately as the regrade excavation proceeds to prevent excessive air entry.

Photo 14 shows how cracks can develop if soil is not properly compacted or placed at too steep an angle. To fully extinguish the fire, it will be necessary to properly compact the soil and to maintain the soil cap.

Photo 14. Soil Cracks developing in Berm at Skway Landfill

DTG Landfill Fire Suppression Strategy: As at Cerro Patacon, extinguishing the DTG Landfill Fire may require additional effort given the steep slope and the depth of the fire zone. Preliminary indications and historic experience at the Caton site is that oxygen suppression has been effective at extinguishing fires and is the preferred method to achieve extinguishment at that nearby site.

During LFCI's first site visit on April 17th and 18th a comprehensive assessment was conducted to determine if the fire has been effectively controlled and if containment can be achieved. A monitoring program has also been developed for work zone, on-site and off-site air quality. A subsurface and surface monitoring program is currently being executed on a weekly basis to track oxygen suppression progress and to ensure that air quality in the work zone remains at acceptable levels.

An immediate goal at the site is to seal up all cracks. Then, the monitoring program should be implemented to establish input parameters for detailed design of suppression strategy. This will likely involve building an impervious oxygen barrier on the northwest face of the landfill against existing slopes about 3' thick, supported by a buttress of shot rock or concrete rubble.

Access should first be with an excavator, using the bucket to prove ground is stable. All equipment should be protected with spotters. Rescue capacity should be on standby.

Once the slopes are properly covered, final closure objectives should be considered, which may include placement of a top soil at least 2' thick. Erosion control measures including hay bales and straw wattle should be used as needed. This slope treatment is expected to provide effective temporary erosion control measures.

Normally, LFCI would grade out and smooth the entire landfill surface to achieve control, first smothering any burning waste with compacted refuse. Given the steepness of most slopes in the fire zone at the DTG Landfill site, we have determined that equipment including dozers and excavators cannot work safely on the slopes, so all soil placement will have to be done from the toe, working upward, except initial crack sealing measures which can be done from the existing benches using light weight excavators.

Although the fire response to date appears positive, given the discontinuous nature of the current soil cover, it is not yet clear whether the soil application will be sufficient to achieve full oxygen suppression or if additional intervention may be required. LFCI's experience is that soil can be spread and properly compacted up to angles of about 2H:1V. Above that angle, the soil has to be cascaded downslope to achieve coverage (if slopes steeper than 2H:1V). If soil is not adhering properly, it may be necessary to cut back the slope to 2.5H:1V prior to soil application using a balanced cut and fill approach, or by building up a soil wedge to 2.5H:1V from the landfill toe.

In areas where slope regrading is deemed necessary due to the extremely steep slopes and a balanced and fill approach is considered practical, LFCI recommends that an excavator start up-wind and place fill on the slopes to regrade them to 2.5H:1V. The first 3' of fill shall be placed against the existing steep slope, which should then be buttressed with additional high strength shot rock or concrete rubble. The pilot test pit excavation of the landfill should establish whether localized fire burning and smouldering west of GP-8 can be safely cut back and compacted to design grades without ignition.

If the regrading pilot is effective, then the same strategy should be implemented on all oversteepened slopes that are considered at risk of fire. However, due to the fact that the landfill has reportedly been reacting since December, 2021, there may be a lot of heat built up and a lot of hot charcoal formed that will explode in flame when regraded and exposed to air. For this reason, slope regrading will have to be carried out using only the fill method.

To achieve the grading wedge fill grading stakes should be established at the toe where the 2.5H:1V projection from the crest intersects existing ground. Inert waste (e.g. concrete rubble) or soil should then be compacted in horizontal lifts to achieve the 2.5H:1V grade. This is the preferred method of slope stabilization that has been implemented in the Caton Landfill post fire operations plan, by placing a 4' thick low permeability soil fire wall and a wedge of inert concrete and broken asphalt at a grade of 2.5H:1V.

Based on an analysis of the data a final determination of the ongoing method of extinguishment will be made by LFCI in consultation with the DTG Recycle and the Regulatory team (Unified Command

Team) once the initial LFCI field investigation is completed. Based on the results of the assessment, we expect that one of the following outcomes will ultimately play out:

1. The oxygen suppression is effective, full extinguishment has been achieved, continue monitoring to ensure trends in CO, temperatures and oxygen levels continue on a downward track. Continue cover maintenance.

2. The oxygen suppression may be effective, but full extinguishment has yet to be achieved. Continue adding additional soil cover, blocking all vents, cracks and fumaroles. Continue twice weekly monitoring to confirm that key data including CO, temperatures and oxygen levels start on a downward trajectory.

3. The oxygen suppression method appears unlikely to succeed. Assess feasibility of alternate fire suppression method, most likely overhaul of fire.

As of May 1, 2023 it is LFCI's opinion that Outcome #2 is most appropriate.

Regardless of the method of attack it was initially recommended that moving forward the five step approach to extinguishment should be followed, first putting in place an effective health and safety plan and Unified Command system, second establishing control of the landfill by covering all surfaces with inert soil and sealing up all cracks and vents. Third, a thorough assessment of site conditions, slope geometry and fire history should be undertaken and assessed to determine the best method of extinguishment. Once the method is identified and supported by the Unified Command Team then work on extinguishment should recommence.

To date, Health and Safety, Control, and this initial fire strategy and containment plan have been achieved. Activity is now focused on crack sealing and execution of the monitoring program. DTG Landfill is committed to continuing fire suppression efforts under the direction of LFCI until the fire is fully extinguished.

The first operational goal of extinguishment, is to reduce CO levels to 1,000 ppm or less in all on-site monitoring probes and to achieve that level of sustained stability for a period of five days in all on-site monitoring bar hole punch probes.

Having achieved control and containment, as recommended above, LFCI recommends that cover maintenance and bar hole punch monitoring continue at minimum frequency of twice weekly readings a until all monitoring locations drop below 1,000 ppm CO. Thereafter, LFCI recommends that monitoring efforts can be scaled back to readings once per week until CO levels drop below 500 ppm. Thereafter, monitoring should continue at a frequency of every two weeks until CO drops below 200 ppm. At that time, monitoring can switch to quarterly preventative monitoring.

A proper drone survey should be conducted and a proper engineering design should be completed by LFCI to prepare a base map that can be used to confirm the preliminary suppression layout. Photo 15

shows LFCI's survey drone in action during the Vancouver Landfill Fire in June of 2018. In addition to generating survey contours, the drone also provides infra-red heat sensing that identifies all problem areas that require extinguishment. Having infra-red imagery available will be extremely useful in planning the slope regrades safely.

Photo 15. LFCI's Drone Flying Infrared Mapping During Vancouver Fire

If the investigation identifies hot spots beneath the cover, it may be desirable to dig these pockets of fire out, as was done at Cerro Patacon. Depending on the size of the subsurface fires, some level of fire fighter support will be required during quenching operation. It is imperative that fire fighters always be positioned in a place of safety and up wind of excavation operations (see Photo 16). This can be achieved by having the excavator make the first cut from the top of the landfill down 2.5 m with the fire fighters behind the machine, sealing up the slope with soil and then starting the second 2.5 m cut from the bench with the Fire Fighters positioned in front of the excavator.

Water Supply: A reliable water supply is required for both water application and overhaul methods of fire suppression. If this method of attack becomes necessary (in the event that the current oxygen suppression approach fails and it becomes necessary to implement a slope regrade or overhaul) then a fire suppression network will need to be put in place whereby fire hoses and fire monitors can be deployed immediately in the event a flare up occurs or in the case of an emergency such as a collapse involving a piece of heavy equipment.

The system should include a large diesel powered trash pump and a minimum 6" pipe or hose that will support a sustained flow of 1,000 to 1,500 gpm to the landfill crest at a working pressure of 100 psi at the nozzle. Sufficient fire hose should be in place at the landfill crest to quickly deploy fire fighting water to any working area. A back up pump should be provided in case one pump fails. The water supply may also need to be protected from freezing temperatures. Multiple water tanks (e.g. 50,000 gallons) will need to be established

on site from which water can be drafted to support fire fighting efforts.

A water supply must be set up ahead of any overhaul operations. At this time it is not clear whether there is an effective fire water supply available at this site. If water is not available, then a tanker shuttle would be required to feed several large portable "Husky" tanks from which fire water could be drafted as needed. Photo 17 shows such a water shuttle operation in progress at the Whitehorse fire.

The water supply should include a high pressure trash pump capable of pumping 4,000 litres (1,000 gallons) per minute and achieving a minimum pressure of 100 psi at the nozzle. This means the pump must put out a minimum of 200 psi, including 100 psi of working pressure, 50 psi of elevation head and 50 psi of friction losses. The hose distribution pattern and position of nozzles and monitors should be planned ahead of time with the Unified Command team.

Photo 16. Hellfire Firefighter Laying Down Cooling Water During Overhaul at Iqaluit

Photo 17. Tanker Water Shuttle into Husky Folding Tank at Whitehorse Fire

If sufficient hose is not available locally it should be rented and mobilized from a local supplier. If water suppression is activated by Unified Command, LFCI recommends that a professional landfill fire suppression contractor such as Hellfire be contacted to provide the pump, 6" and 3" hose and all connections as well as two quad pod monitors and several hand line nozzles, along with SCBA equipment for this project. At this time it appears that oxygen suppression will be effective and that overhaul operations requiring a water supply will not be required. Nevertheless, some pre-planning should be undertaken by the team to ensure that water resources will be available if required.

An alternate approach to using water as the extinguishing agent would be to use soil to smother the burning material. Given the sensitivity of the receiving environment and groundwater resources, this overhaul approach may be preferred over water application.

6. INCIDENT / UNIFIED COMMAND AND RESOURCES

Incident / Unified Command: On major landfill fires the local Fire Department is usually tasked with assuming Incident Command or the responsibility is assigned to a landfill fire suppression specialist such as LFCI. On this project Unified Command was initially assumed by the Ecology. Subsequently, once the fire was contained Unified Command has been transferred from Ecology to the Yakima Health District. LFCI's Dr. Tony Sperling, Dr. Abedini and Todd Thalhamer have been contracted by DTG Landfill to serve as Subject Matter Experts to advise on strategy and tactics as fighting a landfill fire is very different than the normal structure fires that the fire service is trained to extinguish.

DTG Landfill has in-house earth moving resources to provide heavy equipment support during the oxygen suppression. A local engineer can be provided by LFCI to provide daily monitoring support.

Air quality testing will continue to be executed by Parametrix. LFCI can undertake air quality sampling to fully characterize air quality as outlined in Appendix B. It is proposed that eight one-time air quality samples in Summa cannisters will be collected from surface and eight from subsurface by LFCI's Dr. Abedini. Additional details of the air sampling protocols and locations are presented in Appendix B.

The following additional resources should be secured if the suppression is to proceed to a hot spot quenching or overhaul operation.

Fire Fighting Resources: A minimum of six SCBA trained fire fighters should be provided for any subsurface extinguishment work. The same fire fighters should be dedicated to the project for a minimum of two week rotations so that new staff do not have to be reoriented every day. In the case that the local Fire Department is not prepared to assume Incident Command and to provide the trained fire fighting resources necessary to fight the fire, then a commercial fire fighting contractor should be brought in to assist. The most experienced fire fighting contractor with extensive experience in extinguishment of landfill fires in North America is HellFire. LFCI recommends that Ryan Stambaugh of HellFire be contacted and put on notice that his company's resources may be required to support extinguishment efforts.

Heavy Equipment Resources: Heavy equipment resources are to include two CAT 330 Size Excavators (or larger), one D-7 Dozer or larger, one LGP Dozer (John Deere 650 or equivalent) and 4 dump trucks with off-road capacity. Very experienced senior operators who are prepared to operate in smoke conditions are to be provided. If these resources are not available, expert operators should be brought in by Landfill Fire Control. At a minimum, a senior heavy equipment operator with landfill fire fighting experience should be brought in to provide training to local operators on safe work practices on this project.

7. COMMUNITY AWARENESS:

It is essential to inform the community about the extinguishment plans and that smoke conditions may become considerably worse for a period of time if the fire is dug up and extinguished. In the unlikely event that on-site air quality exceeds action levels at the property line, an off site air quality monitoring program will be initiated in consultation with Unified Command to establish the level of air quality impact and to provide advisories for residents and workers at businesses / farms to either shelter indoors or evacuate down wind areas if particulate concentrations or volatile organic concentrations exceed safe levels. People with chemical sensitivity may have to relocate until the fire is extinguished. Extinguishment of this fire must be a priority to avoid ongoing impacts.

As a precautionary measure DTG Landfill should purchase an automated monitoring array to continuously monitor for CO, H2S, and VOC's downwind of the landfill. This array should be operated 8 hours daily and if any exceedances of action levels are identified, DTG Landfill will immediately report such to YHD.

8. HEALTH AND SAFETY PLAN IMPLEMENTATION

Health and safety of the fire fighting team will always be a top priority for the Unified Command System team. A formal safety program has been prepared at the onset of the project.

The primary risk factors identified were:

- Exposure to potentially toxic gases including CO, H_2S
- Exposure to particulate matter in smoke
- Exposure to elevated levels of volatile organic vapours
- Exposure to asbestos
- Exposure to dioxins and furans
- Roll over risk in heavy equipment
- Slope failure risk
- Collapse risk
- Trips and Falls
- Heat stress

To address the above hazards, a safety program has been developed which includes the following elements:

- Ensuring that all participants are fully oriented using the LFCI Fire Orientation Package
- All workers provided with N95 particulate masks or respirator complete with appropriate cartridges to filter organic vapours, depending on site conditions
- Workers are fit tested and trained in use of their respirators
- Minimum PPE is fire resistant clothing (Nomex overalls preferred), hard hat, eye protection, gloves, CSA approved boots, high vis vest, hearing protection on an as needed basis
- All workers in Warm Zone need to be equipped with personal gas analyzer for CO and H_2S
- A photoionization detector (PID) will be used to measure the presence of volatile organic compounds (VOCs)
- Equipment safety briefing to be provided daily
- Air horns to be placed at strategic locations. Blowing the air horn three times to indicate a major emergency. All workers were to muster at command post.

Respiratory Protection: The work area to be organized into Cold, Warm and Hot Zones.

Hot Zone: The Hot Zone to include areas any areas where elevated levels of combustion gases are detected above established trigger values. In an overhaul situation, the hot zone will be immediately around operating excavators. Only spotters working in direct radio and visual communication with the excavator operator will be allowed to work in the hot zone. Wearing respiratory protection will be required at all times while working in the hot zone.

Warm Zone: The Warm Zone will be the area impacted by smoke from the fire event. In an overhaul situation, this area will typically include the property directly downwind of the fire overhaul zone. All workers in the warm zone will be required to wear respiratory protection, as well as all other mandatory PPE.

Cold Zone: The Cold Zone will be the area outside the smoke impact zone. Basic PPE consistent with DTG Fire PPE requirements will be required in the Cold Zone. The Cold Zone will include the Command Post and the staging area for the Fire Department Pumper truck. Set up is expected to occur upwind but within 200 m of the landfill fire.

Because CO at concentrations above 100 ppm can be expected in the smoke and may exceed 1,000 ppm if the landfill is opened up, and H_2S from the disposed drywall, exposure to CO and H_2S are deemed to be of greatest respiratory concerns. OSHA (Occupational Safety and Health Administration) Permissible exposure limit (PEL) for CO is 35 parts per million (ppm) of air as an 8-hour time-weighted average (TWA) concentration [29 CFR Table Z-1]. NIOSH (National Institute for Occupational Safety and Health) Exposure limit (REL) for CO is 35 ppm as an 8-hour TWA and 200 ppm as a ceiling [NIOSH 1992]. ACGIH (American Conference of Governmental Industrial Hygienists) assigned CO a threshold limit value (TLV) of 25 ppm as a TWA for a normal 8-hour workday and a 40-hour workweek [ACGIH 1994, p. 15].

Based on the above guidance air quality alarm levels used on this project are as follows:

Gas	LFCI PID Limits Alarm1 Alarm2, units
CH_4	10 and 20% LEL
O_2	19.5 and 23.5%
CO	35 and 200 ppm
H_2S	10 and 15 ppm
PID	5 and 10 ppm

Utilizing the above Level 1 and Level 2 alarms, a project specific respiratory protection plan must be executed and fine tuned gradually as the project is advanced. Ultimately, to allow for good productivity while keeping staff safe, the following protocols should be adopted:

- Full face or half face respirators with appropriate cartridges to be warn at all times in the Warm and Hot Zones.
- Personal Gas Analyzers to be warn at all times in Warm and Hot zones.
- PID reading need to be collected during active fire fighting in both the Warm and Hot zones.
- Low level alarm on CO or H_2S. Become aware, check levels on analyzer, close doors/windows on equipment, reposition up wind and out of smoke if possible.
- High level alarm. Back out of bad atmosphere, wait for smoke to dissipate or control smoke emissions through application of soil cover.
- In instances where dangerous atmosphere cannot be avoided then commence work in self-contained breathing apparatus (SCBA). SCBA to be used only by individuals trained and qualified in the use of the equipment.

Photo 18. Delta Fire Assessing H_2S Levels in Borehole with SCBA

Working Around Heavy Equipment: Being run over or pinched by heavy equipment is identified as the third highest risk on the project. To mitigate risk all staff will be required to undertake a detailed equipment orientation that includes a review of blind spots, kill zones, pinch points and operator rescue for the excavators, dozers and dump trucks. This will include learning about lock out and kill switches, methods of shutting equipment down and access methods into each machine.

Photo 19. Todd Thalhamer Leading Equipment Orientation

Fire fighters shall always be positioned in safe zones outside heavy equipment traffic. LFCI spotters and monitoring staff must work closely with the excavator operators in both warm zone and kill zone areas. This work must be conducted with carefully coordinated radio communication, eye contact and hand signals.

Frost Bite: To be managed by ensuring warm clothing is worn, fire fighters and operators stay dry and frequent breaks are taken to drink warm liquids out of the cold. Period checks should be undertaken for signs of frost bite on the faces of people working in the elements.

Heat Stress: Heat Stress is to be managed by educating workers on importance of hydration, clothing to include light fireproof overalls rather than turn out gear, helmets are to be switched from Fire Fighter helmets to conventional hard hats. Gatorade and water is to be provided for hydration to all project team members.

Worker Fatigue: This will be an important consideration. Regular break times will be established on a 3 hour cycle, with start time at 7 am, first coffee break at 10:00 am to 10:30 am, lunch at 1:30 pm to 2 pm, second coffee break at 5:00 pm to 5:30 pm and shift at 7:00 pm. Coffee breaks to last 20 minutes and lunch to last 40 minutes on average.

Asbestos: Friable asbestos is a recognized material responsible for lung cancer. It is found in many older construction materials including insulation, drywall and linoleum. Release of asbestos must be expected during excavation into waste. Respiratory protection and overalls shall be worn at all times in risk areas. All staff to decontaminate by having a thorough shower immediately after every shift. Overalls to be laundered daily.

Roll Over Risk: The risk of equipment roll-over will be very high on this project given the very steep slopes currently involved and the unstable ground. For this reason it will be absolutely critical that all equipment has ROP protective cages and that operators wear their seat belts at all times. As well, the Fire Fighters shall be trained in proper evacuation and access points from each piece of heavy equipment on the project, including hydraulic lock outs, engine kill switches and electric power turn-off points.

Photo 20. Truck Roll Over – Cerro Patacon Fire, Panama

Slope Failure Risk: With side slopes as steep as 1.5H:1V or steeper, the risk of slope failure at this site is high. Awareness of potential slope failure will be critical for all workers on this project. A danger zone will be flagged 50' from the crest of slope. Only authorized and trained operators and fire fighters will be allowed entry into the danger zone. A geotechnical engineer shall be retained by DTG to assess geotechnical risk of any planned works.

Trips and Falls: These will be an ongoing risk factor. Awareness of uneven ground will be emphasized during training and PPE including steel toed high cut footwear, gloves and hard hats with chin straps will be mandatory on this project.

Basic PPE: The following PPE will be the minimum requirement on this project.

- Fireproof Overalls or Turn Out Gear
- Hard Hat with Chin Strap
- Safety Glasses
- Leather Gloves
- Steel Toed High Cut Leather Boots
- High Vis Vest (or reflective stripes)
- Personal Gas Analyzer

9. LANDFILL INTERMEDIATE / FINAL CLOSURE

The proposed suppression strategy will also achieve an effective intermediate cover on completed cells, and may serve as a portion of an evaporative final cover system on all outside landfill side slopes. A proper final closure cap design should be prepared by a qualified professional if one is not already in place.

For areas ready for final closure, the closure cap should be designed to achieve an air and water impervious final cap that sheds water. As a minimum, LFCI recommends a clay cap thickness of 900 mm (3'). The cap shall then be covered with DrainTube drainage geocomposite and a minimum of 300 mm (1') of top soil. The landfill should then be seeded with a local erosion control mix. Shredded organic matter or loose straw shall be placed on the surface to control erosion. Geotechnical stability of the cap must be verified before construction.

If levels of methane rise above 40% of LEL, then LFCI will recommend a methane control system. In that case, to vent landfill gasses LFCI will recommend that a network of horizontal LFG collectors be deployed on the landfill surface in trenches cut 500 mm into the waste and filled with a 150 mm perforated collector pipe and rounded stone. A typical horizontal sub cover collector is shown in Photo 21. The installations should be protected from clogging by geotextile. The horizontal LFG collection network will allow landfill gas to be vented to the atmosphere and optionally to be flared off.

Photo 21. Typical Horizontal LFG Collector Below Cap

Photo 22. Typical Goose Neck Vent

Purchasing a solar flare to flare the gas may be viable for example to make the entire operation carbon neutral. LFCI can assist with verification of GHG offsets and carbon accounting.

Photo 23 shows what the completed landfill closure should appear like when finished. Of course, the climate around Naches is drier than Creston so vegetation will need to be selected to thrive with limited water.

Photo 23. Completed Landfill Closure Cap and Seeding at Creston Landfill, B.C.

10. CASE HISTORIES

To demonstrate this fire suppression strategy, we have selected five case histories that are fairly similar to the DTG fire. Summaries of these case histories have been assembled in Appendix C. The case histories are:

Cerro Patacon Landfill Fire, Panama City, Panama (2014)
Lake County Montana Landfill Fire (2014)
Roatan Landfill Fire, Roatan Island, Honduras (2018)
Whitehorse Landfill, Yukon Territory, Canada (2018)
Edson Landfill Fire (2019)
Caton Limited Purpose Landfill, Yakima, WA (2022-23)

PDF files of each of the case histories for these projects and other case histories adopting overhaul suppression methods can be provided by LFCI on request.

11. CONCLUSIONS AND RECOMMENDATIONS

This report provides 6 practical case histories that illustrate how a landfill fire in a setting similar to that of the DTG Landfill site can be successfully extinguished using the oxygen suppression method.

There is no doubt that the subsurface fire is currently releasing potentially hazardous levels of Benzene and other VOC's in close proximity to active vents into the atmosphere. It is our understanding that as a result of control measures undertaken by DTG to date, air quality measurements undertaken by Freestone and Parametrix have indicated that air quality at the site and off property is at safe levels, with the exception of air quality in the immediate fire zone which will require workers in the hot and warm zones to have appropriate respiratory protection.

At this time the DTG fire appears to be fully controlled and steps should be taken quickly to achieve full containment and extinguishment.

Containment of the fire should continue to be achieved by filling in all vents, hoe packing all slopes that can be reached with the series 300 excavator and placing additional buttress fill such that slopes can be regraded to a more stable 2H:1 or preferably to 2.5H:1V as room permits. A minimum of 3' of low permeability soil shall be compacted on the existing landfill surface to establish an effective oxygen barrier layer concurrently as the buttress is constructed.

Extinguishment of the fire should be attained by implementing the Oxygen Suppression method of fire control. Some quenching or overhaul operations may be required in certain hot spots. Water application should not be considered as it will be ineffective given the depth of the waste and the very steep slopes.

Monitoring of the bar hole punches should continue on a 2 times per week basis until all levels drop below 1,000 ppm CO. At that time, subject to Unified Command approval, LFCI recommends that the monitoring program be scaled back to once per week until all readings drop below 500 ppm. Once below 500 ppm, LFCI recommends readings be scaled back to once every two weeks and continued until CO drops below 200 ppm, at which time the fire will be considered fully extinguished. After that monitoring can be scaled back to quarterly preventive screening.

DTG Landfill shall continue conducting the subsurface monitoring events per the above schedule and shall report the results to the regulatory team within 48 hours to YHD until the fire is confirmed extinguished by YHD, with CO concentrations less than 200 ppm and temperatures less than 180°F.

For maximum operational efficiency, LFCI recommends that Dr. Tony Sperling and Todd Thalhamer continue to serve as subject matter experts to advise DTG Landfill and the regulatory team on this project until extinguishment is completed. It is further recommended that Dr. Ali Abedini conduct a site visit to establish the bar hole punch network and supervise drilling of the two monitoring wells on a priority basis. Dr. Sperling or Mr. Thalhammer shall then conduct a follow up visit to conduct the test pit assessment of fire activity at depth to assess whether local overhaul would be a safe and effective strategy at this site and to review the construction sequence for the toe berm buttress with the regulatory team.

Report prepared by:
LANDFILL FIRE CONTROL INC.

DRAFT

Dr. Tony Sperling, P.Eng.
President

May 9, 2023

APPEDIX A. AMBIENT AIR QUALITY MONITORING PLAN FOR SUMMA SAMPLING

APPENDIX A. AMBIENT AIR QUALITY MONITORING PLAN FOR SUMMA SAMPLING

Air quality monitoring in DTG Landfill will be completed by a qualified professional (QP) in cooperation with DTG Landfill Staff and representatives from Yakima Health District and or Washington Dept. of Ecology and YRCAA. LFCI will deploy a number of methods to measure and monitor air quality, including air sample collection in SUMMA canisters for lab analysis, as well as using hand held mobile instrumentation for additional real-time sampling and air quality monitoring. This monitoring program includes air quality monitoring at the site's work zone, on-site and off-site (site boundaries). The proposed tests and sampling procedures are described below.

A1 – Air Quality Monitoring

A1.1 - Volatile Organic Compounds (VOCs)

LFCI will collect a total of ten (10) VOC samples including: (i) four samples from work zone, (ii) two subsurface samples, and (iii) four from site boundary (one upwind and three downwind). Additional QA samples (one blank and two duplicates) will also be collected as part of this one-time sampling program.

USEPA Method TO-15a will be used and samples will be collected using specially prepared canisters (So called "TO-Can") and analyzed by gas chromatography–mass spectrometry (GC-MS) by an accredited lab. "TO" stands for "toxic organics." Method TO-15a is used to measure up to 97 VOCs of the total 189 hazardous air pollutants (HAPs) listed in the Clean Air Act. Photos B1 and B2 below show TO-Cans that LFCI used in a similar project.

Photos A1&A2 – Evacuated TO-Cans used by LFCI for gas samling in a previous Project

Use of Method TO-15a is recommended for various applications including when the measurement of VOCs in ambient air is to assess possible health impacts due to inhalation exposures to HAPs source emissions dispersing into downwind areas.

LFCI will collect air and soil gas samples as grab samples as an initial testing. Based on this initial air quality monitoring sampling, we may suggest collection of time-integrated sample in the future. During sample collection, canisters' vacuum will be verified and the final pressures of the collected samples will be recorded (sub-atmospheric or at atmospheric pressure). Even though the holding time for the methos is reported to be 30 days, LFCI will immediately send the canisters to laboratory for analysis.

A1.2 - Particulate Matter 2.5 ($PM_{2.5}$)

Another air quality concern caused by landfill fire and fire suppression activities is fine particulate matter a.k.a particulate matter 2.5 ($PM_{2.5}$). Fine particulate matter refers to particles with an aerodynamic diameter of less than 2.5 microns. $PM_{2.5}$ is categorized as air pollutant and a concern for people's health when levels in air is high. According to the USEPA's National Ambient Air Quality Standards for $PM_{2.5}$ (2012) the short-term standard (24-hour or daily average) is 35 micrograms per cubic meter of air ($\mu g/m^3$) and the long-term standard (annual average) is 12 $\mu g/m^3$.

As part of the DTG Landfill air quality monitoring plan, LFCI will use a handheld DustTrak™ II Aerosol Monitor 8532 to measure real-time aerosol concentrations corresponding to $PM_{2.5}$ on site and at property boundary. Photo A3 below shows a DustTrak™ II Aerosol Monitor 8532.

Photo A3 – DustTrak™ II Aerosol Monitor 8532

A1.3 - Hydrogen Sulphide (H_2S):

On numerous landfill fire projects LFCI encountered high Hydrogen Sulphide (H_2S) concentrations subsurface in certain areas. Landfill gas (LFG) is expected to contain H_2S, which originates from the biological consumption of Sulphur found in gypsum wallboard. Hydrogen Sulphide is a flammable gas and highly toxic in concentrations above 50 ppm. Normally, H_2S can be smelled at concentrations as low as 0.05 ppm, and by 3 ppm, a distinctive odour of rotten egg is normally noted. A concern with H_2S is the ability to smell the gas gradually decreases during exposure. At concentrations between 10 and 50 ppm, most people experience headaches and nausea. H_2S causes eye injury above 50 ppm and a serious life threat above 300 ppm.

As part of the DTG Landfill air quality monitoring plan LFCI will complete a full round of H_2S sampling. LFCI will deploy two gas analyzers for this purpose (i) GEM5000, and (ii) Dräger x-am 8000. While it is not expected to be within detection limit in ambient air, other gases such as methane (CH_4), Carbon Dioxide (CO_2) and carbon monoxide (CO) will also be monitored when using these instrument for air quality monitoring. Photos B4 and B5 below show GEM5000 and Dräger x-am 8000 gas analyzers, respectively.

Photo A4. Landtec GEM5000 (Landfill Gas Analyzer)

Photo A5. Dräger X-am® 8000 (Gas Analyzer)

A2 – Additional Monitoring

A2.1 – CO Sampling Quality Control

The CO sensors commonly used in handheld monitoring devices are susceptible to cross-interference from other gases, most notably hydrogen (H_2) and H_2S. While CH_4 and CO_2 make up 90 to 98% of landfill gas there is 2 to 10% remaining that includes nitrogen, oxygen, ammonia, sulfides, hydrogen and various other gases such as non-methane organic compounds (NMOCs). Therefore, in order to ensure validity and reliability of the measured CO concentrations, LFCI will be utilizing a hydrogen gas leak detector to accurately assess the levels of H_2 present in the monitoring probes installed at DTG Landfill. We will also use appropriate colorimetric Gastec Tubes which are designed to accurately measure CO levels even in an H_2 rich environment.

Photos B6 and B7 below show MGD-2002 H_2 leak detector and Gastec sampling pump and colorimetric tubes, respectively.

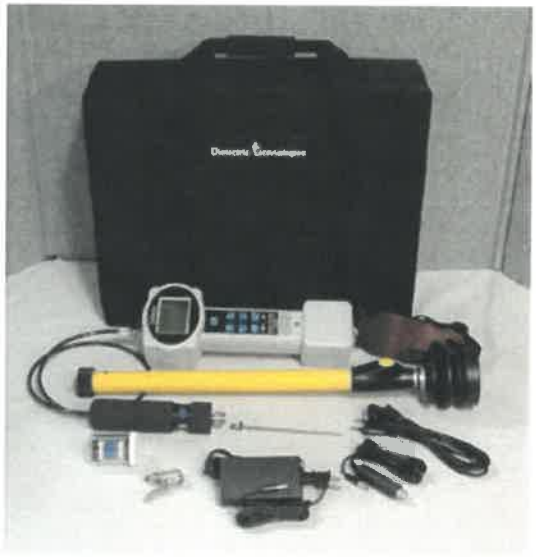


Photo A6. Model MGD-2002 SPX (H2 Leak Detector)

Photo A7. Gastec Pump and Tubes

Appendix B. OXYGEN SUPPRESSION CASE HISTORIES

Cerro Patacon Landfill (2014): This massive fire is the largest ever controlled by LFCI. It involved a landfill about 40 m high and covering some 6 Ha of land. The fire started at surface and because the landfill lacked soil cover the fire spread quickly over the entire landfill surface.

The fire was contained by limited application of foam sprayed from fire trucks and application of soil cover which involved the spreading of about 300 mm (12") of fine grained soil on the waste surface. The soil was hauled to the edge of landfill side slopes with articulated rock trucks and then pushed over the edge with a dozer. Slopes were extremely steep, too steep to safely operate equipment. Soil was allowed to cascade onto the surface from the crest.

Covering of the burning landfill surface with soil was very effective at smothering the fire. This process required about 14 days of work. After the entire landfill was covered and the fire brought under control mop up operations were commenced. A total of 67 hot spots were identified where the fire was burning underground. Most of these underground fires were initiated by molten burning pyrolytic oil from burning tires that created high heat and fuel to take the fire much deeper into the waste profile. The hot spots were extinguished by digging out the burning material. Using a thermal camera to confirm all hot material was dug out, foaming the excavation and the excavated material and then filling the excavation with inert soil.

Photo B1. Cerro Patacon Landfill Fire (extinguished with Oxygen Suppression & Quenching Hot Spots)

Photo B2. Very Steep Landfill Surface Being covered by dumping soil from crest. Hot spots dug out and quenched.

Key lessons from this fire applicable to your project are that about 300 mm of low permeability soil (e.g. silt, clay, loam) proved effective in smothering the surface fires and dramatically reduced the smoke impacts. Also, leaving slopes at a very steep angle proved problematic for cover soil placement.

White Horse Landfill Fire (2018): A fire erupted in mixed C&D waste at the Whitehorse Landfill. Despite applying several thousand GPM (about 8,000 L/min) of water on the waste by the local fire department the fire continued to grow for three days over an area of about 2 Ha. When LFCI's Dr. Sperling arrived on site and was assigned command of the project, he quickly changed strategy. First, dozers were used to smooth out, level and compact the waste and to fill in any cavities that were burning with unburned waste. This action reduced smoke emissions by at least 90%. Working into the night clay soil about 300 mm thick was then applied on the landfill surface. The clay fully contained the fire and eliminated the smoke. Eventually, monitoring proved out that the clay application was effective in fully extinguishing this deep seated fire in less than 24 hours of intense fire fighting effort.

Key take aways from this project are that just like at Delta Shake and Shingle, pushing and compacting unburned waste and grading a site will bring a fire under control, making conditions much safer for fire fighters and equipment operators. The project clearly demonstrated that oxygen suppression with soil is generally much more effective at extinguishing a fire than is application of water.

Photo B3. Whitehorse Landfill Fire (extinguished with oxygen suppression in 24 hours)

Photo B4. Spreading 12" of quality clay on track packed and compacted waste surface, Whitehorse

Roatan Landfill Fire (2018): LFCI was called in to develop a fire suppression plan for the Roatan Landfill Fire that was affecting tourism in a big way on this destination island off the coast of Honduras.

The landfill about 2 Ha in size and 13 m high was fully involved. Slopes were very steep. Fire was burning and smouldering for several months. A recommendation was made to cut down the landfill side slopes to a more manageable grade of 2.5H:1V, to compact the surface and to then cover the surface with 1,000 mm of clay. This strategy proved very effective in extinguishing the fire. The execution of the project was undertaken by CERO, the local power supply company.

Photo B5. West Face of Roatan Landfill on Fire before regrading and soil cover

Photo B6. Roatan Landfill Regraded and capped per LFCI extinguishment plan.

Edson Landfill Fire (2019): LFCI was retained by the Town of Edson Alberta to provide expert advice on extinguishment of a subsurface fire burning in mid winter at their C&D landfill. A bar hole punch assessment identified a number of areas that had experienced spontaneous combustion due to a lack of soil cover. A strategy was developed to compact the landfill surface, fill in existing voids with soil and then cap areas with high temperatures with an additional 2' of clay. The plan was executed and resulted in full extinguishment of the fire and a decrease of CO levels over a period of four weeks.

Photo B7. Sink holes and melted snow indicative of fire zones at Edson Landfill Fire, Alberta.

Photo B8. Edson Landfill with voids filled in and capped with 600 mm (2') of Clay (2019)

Lake County Montana Landfill Fire (2014): LFCI was retained by Lake County to provide strategic advice on extinguishing a deep seated landfill fire in their C&D landfill that was situated in a deep ravine with a total depth of waste of up to 100'. With good quality soil and containment on three sides it was determined that oxygen suppression would be effective.

Fissures in the existing soil cover were filled over and large voids were filled in with dirt using an excavator and dozer. Then an additional 600 mm (2') of soil were compacted on the landfill surface. Monitoring confirmed that the oxygen suppression strategy was effective in extinguishing this fire over a period of 60 days.

Photo B9. Cracked soil cover and vents releasing smoke at Lake County landfill Fire (2014)

CATON LANDFILL (2022) Several fires broke out at the Caton Limited Purpose Landfill near Naches, WA in March, October and November, 2022. The fires occurred on landfill side slopes that were as steep as 1.5H:1V. The surface fires were quickly smothered with soil but continued to burn sub-surface. Landfill Fire Control Inc. was retained by Caton Landfill in December, 2022 to assist with complete extinguishment.

A field investigation determined that elevated CO levels were present and oxygen levels in the subsurface were neat atmospheric (21%). Given the steep landfill geometry and abundance of low permeability soils it was determined that oxygen suppression would be the best method of fire extinguishment.

The site operator was tasked with applying 2 to 3' of soil over all areas indicating fire activity or elevated CO concentrations. Monitoring was conducted daily to assess progress. As baseline conditions were established showing that soil cover was effective in eliminating oxygen subsurface and that CO levels were dropping, the monitoring frequency was scaled back to twice per week and then weekly. Suppression activities continued until CO levels dropped below 200 ppm and the fire was declared extinguished.

Permits

From: Scott Cave <sccomm@sosmail.us>
Sent: Sunday, July 16, 2023 4:09 PM
To: Tommy Carroll
Cc: Carole Degrave; James C. Carmody; Amanda McKinney; LaDon Linde; Kyle.curtis@co.yakima.wa.us; Nancy Lust
Subject: Revised letter re Vegetative Screening
Attachments: Cave letter to Carroll re DTG Vegetative Screening REVISED July 16, 2023 p 3.png; Cave letter to Carroll re DTG Vegetative Screening REVISED July 16, 2023 p 1.png; Cave letter to Carroll re DTG Vegetative Screening REVISED July 16, 2023 p 2.png

Importance: High

Hi Tommy

After returning from vacation I reread the vegetative screening letter (dated June 29th 2023) submitted on behalf of Carole DeGrave, and realized it required a few clarifying edits on page 2 regarding referenced attachments. With this email I'm resubmitting a revised letter, dated July 16, 2023 for your consideration. Let me know if you have any problem downloading the document. A hard copy will be mailed. Please refer to this letter in your future response.

I appreciate your timely attention to this matter.

Sincerely,

Scott

July 16, 2023 CORRECTED – see REVISED 2nd page

Tommy Carroll, Yakima County Planning Official
Yakima County Public Services
128 North Second Street, Fourth Floor
Yakima, WA 98908

Subject: DTG Mining Vegetative Screening

Tommy,

I'm writing on behalf of my client, Carole DeGrave, 390 Pioneer Way, Yakima, WA, Macquarie/DTG's closest neighbor who continues to be impacted daily by the company's mining and landfill operations due to their allowed proximity to her residence (about 300 feet). As you know, Conditional Use Permit (CUP) 03-112, Final MDNS, March 24, 2004, Conditions of Approval #8 states:

> *At least five years prior to mining of Area 2, Stage 5, vegetative screening of sufficient height using native trees, must be provided along the north line adjacent to Parcel #21003, and adequately maintained thereafter.*

The Hearing Examiner's Decision (County File No. APL 04-004; CUP03-112 & SEP03-055) for Anderson's (now Macquarie/DTG) *Rock Mining and Crushing, Asphalt Batching, and Landscape Materials Retail Outlet* application, July 22, 2004 (Attachment 1), provided this clarification under *Site screening*:

> *The Mining zone ordinance allows the Administrative Official to protect surrounding properties from visual impacts by imposing site screening decisions. The department required the installation of native tree plantings to screen a neighboring property from the visual impacts of the increased project footprint. The condition does not by its term require irrigation, but rather assumes that a native vegetative screen would be self-sustaining. The appellant has not met its burden of showing that the condition is erroneous.*

In a Memorandum (Attachment 2) from Debi Barnes, Yakima County Planning Services to Bill Hordan, Hordan Planning Services, regarding Anderson compliance with conditions of approval (CUP 03-112 & APL 04-008), Barnes summarizes Condition #8 accordingly:

> *No vegetative buffering is to be planted at this time but will be planted as conditioned. Buffer will be planted in accordance with this condition. Attached is a list of native trees which will be used in determining the make-up of the vegetative buffer.*

After the H.E. Decision, Linda LeDoux, Hordan Planning Services, requested a list of native trees from Barnes (Attachment 3) and received specific recommendations and comprehensive lists of Yakima area native plants, including Cowiche Canyon, a week later with these instructions:

> *The screening required as a condition of approval of the continued mining operation means that evergreen plants (trees/shrubs) would be needed. In our research, a combination of Ponderosa Pine, choke cherry, sagebrush and service berry should develop into an adequate screen for the subject property and are suggested. The Ponderosa Pine, sagebrush and choke cherry are drought tolerant once established. During a site visit, we did notice some deciduous trees growing in the area that the screening is required. You may want to further research that species and plant more of the same.*

In summary, CUP 03-112, Condition #8, requires install and maintenance of a self-sustaining native vegetative buffer five years *prior* to mining the area directly south of DeGrave's residence. Also, County Planning provided Anderson with appropriate drought resistant species and access to WA Native Plant Society lists of appropriate native species in Yakima County.

This issue was raised to regulators during a neighbor meeting last summer (Attachment 4). Due to a lack of County response, we raised it again in comments at the County Board of County Commissioner's Work Session, September 19th, 2022 (Attachment 5), which prompted your letter to DTG on November 1, 2022 (Attachment 6) informing them of the violation and responsibility to remedy the situation. However, your letter did not provide a time frame for compliance or list enforcement actions or penalties for non-compliance. Instead, you requested they only provide photo evidence of the install.

Since your November letter, landfill neighbors and others have reported to regulators suspect activity in the mining area, including violation of after-hours operations, uninspected loads, and suspect disposal of contaminated soils and unknown material (Attachment 7). When questioned about the company's response to your letter at the neighbor meeting on January 26, 2023, you relayed that DTG had not responded at all.

On April 17 & 20, 2023, Nancy emailed you and Shawn Magee regarding continued suspect activity in the mining area, including stockpiling of concrete/cement and asphalt (Attachment 8). Around this time, you relayed DTG had informed you its consultants were working on a vegetative screening proposal. The suspect mining activity and lack of vegetative buffer were agenda items at the regulator neighbor meeting May 25, 2023 (Attachment 9). Yakima County Public Services/Planning did not participate.

As of today, the company remains in violation of CUP 03-112 Condition #8 and has not provided regulators with a proposal to bring the mining area into compliance. With the evolving MTCA LPL investigation and landfill fire control issues dominating the agenda of facility operators and regulators, we are concerned the absence of any written or formal agreement with DTG for installation of native vegetative screening will allow the company to delay compliance until it aligns with their development schedule or threatens the status of a facility land use or operating permit.

As the impacted party identified by the County in Condition #8, we respectfully request the County

1) provide Carole DeGrave with DTG's vegetative screening proposal(s) as available,
2) suspend the mining permit or prohibit any operations within 1,500 feet of DeGrave's property line until an appropriate vegetative barrier is installed and approved. The vegetative buffer should consist of trees of a height commensurate with the current height of trees planted and maintained by DeGrave, and
3) issue Macquarie/DTG a civil penalty to reimburse DeGrave for damages suffered to date.

We appreciate your attention to this matter and look forward to your timely reply.

Sincerely,

Scott Cave

Scott Cave
S.C. Communications
P.O. Box 258
Ritzville, WA 99169

cc: Carole DeGrave
Jamie Carmody
Amanda McKinney
LaDon Linde
Kyle Curtis
Nancy Lust

Attachments

1. Hearing Examiner's Decision (County File No. APL 04-004; CUP03-112 & SEP03-055) for Anderson's *Rock Mining and Crushing, Asphalt Batching, and Landscape Materials Retail Outlet* application, July 22, 2004.

2. Memorandum from Bill Hordan, Hordan Planning Services, to Debi Barnes, Yakima County Planning Services regarding Anderson compliance with Conditions of Approval CUP 03-112 & APL 04-008.

3. Debi Barnes letter to Linda LeDoux, Hordan Planning Services, with list of Washington Native Plant Society list of approved plants for Cowiche Canyon, September 9, 2004.

4. Agenda, DTG neighbors and regulator meeting, July 8, 2022.

5. Scott Cave testimony on behalf of Carole DeGrave, Yakima County Board of County Commissioner's Work Session on the DTG Landfill, September 19th, 2022.

6. Tommy Carroll letter to Aaron Enebrad, Park Manager, re Condition Compliance for after hours operation and vegetative screening, November 1, 2022.

7. Nancy Lust emails to Tommy Carroll and Shawn Magee re DTG operating hours and odors with DeGrave vegetative buffer photo, January 17, 2023, and January 23, 2023.

8. Nancy Lust email with photos to Tommy Carroll and Shawn Magee re Canadian semi-truck and concerns about activity in the mining area, April 17, 2023, and follow-up email April 20, 2023.

9. Agenda, DTG neighbors and regulator meeting, May 25, 2023.

Public Services

128 North Second Street • Fourth Floor Courthouse • Yakima, Washington 98901
(509) 574-2300 • 1-800-572-7354 • FAX (509) 574-2301 • www.co.yakima.wa.us

LISA H. FREUND – Director

November 1, 2022

Aaron Enebrad
Park Manager
41 Rocky Top Road
Yakima, WA 98908

Re: Condition Compliance

Mr. Enebrad,

Yakima County has received a number of complaints from neighbors regarding operational violations at the DTG Anderson facility. The two issues they presented was potential violation of the facility's approved hours of operation and failure to provide required site-screening as required in previous land use approvals. The specific conditions being violated are as follows:

- SEP2003-00055 – Mitigation Measure B1. The hours of opeation for mining, processing, asphalt plant, landscape supply sales and administrative offices are limited from 6 am to 6 pm, Monday through Saturday. Landscape sales may also occur on Sundays from 9 am to 6 pm. In addition, CUP2017-00056/SEP2017-00022 set the Standards of Operation for 6 am to 6 pm.

This picture was provided to us in early September of this year showing truck traffic around 9:30 pm. This shows operational activity beyond the standard hours of operation. The neighbors have expressed concerns that dumping is occuring after established operating hours, when agency oversight of the landfill is non-existent.

It is this activity that the neighbors have specifically asked Yakima County, Department of Ecology and the Yakima Health District to address immediately in light of recent compliance issues related to landfill. This practice of operating beyond approved hours is not authorized under your current land use approval and potentially may impact the status your current mining and landfill permits.

- CUP2003-00112/SEP2003-00055 - Condition #8. At least five years prior to mining of Area 2, Stage 5, vegetative screening of sufficient height using native trees, must be provided along the north line adjacent to Parcel #21003, and adquately maintained thereafter.

The inset map above shows where the vegetative buffer was required to be installed. This vegetative buffer needs to be placed as required by the 2003 permit, Yakima County would expect this buffer to be installed during a time of year most conducive for successful planting and growth (i.e. spring, when warmer tempertures and irrigation is available, etc.). Once the vegetative buffer has been planted please provide Yakima County with photos and we'll sign off on that condition.

Please note, this letter represents the County's attempt to seek voluntary compliance. If additional complaints are received regarding the off-hour activity we will forward the matter to our Code Enforcement Division. If you have further questions please feel free contact myself at 509-574-2300.

Respectfully,

Thomas Carroll – Planning Official
Yakima County Public Services

Cc: John Martin – DTG
James Rivard – Ecology
Shawn Magee – Yakima Health District
Friends of Rocky Top (FORT)
Lisa Freund – Public Services Director
John Walkenhauer – Yakima County Code Enforcement Manager

Permits

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 5:07 PM
To: Permits; Hasan Tahat
Cc: 'James C. Carmody'; 'Nancy Lust'; 'Carole Degrave'
Subject: RE: Cave written comment letter wenclosure
Attachments: 2022-OMLaw-StatewideLocalGovtRequirements.xlsx; ECY Bus Man Requirements for 2022 Organics Law, August 2023.pdf; Engrossed Second Substitute HB 1799 Final Full Version.pdf; ES2HB1799-RCW_References.xlsx; OM Law Compost Procurement and Reporting Quick Guide - April 2023.pdf; Yakima County - CPO Final.pdf

Group 4

1. Washington State Organics Management Bill (ESSHB 1799)
2. State Organics Management bill implementation and source material links: https://app.box.com/6d60643b-79e6-4e9f-996d-d0551a4dcc42; https://app.box.com/s/r7shmywl2t798nu43f1udkp1481bcx6y/folder/164306282815;
3. Yakima County Compost Procurement Ordinance No. 001-2023, specifying County policy for the procurement of compost per ESSHB 1799, signed February 14, 2023, https://app.box.com/c6183830-4936-4e85-9887-94b596d02d72

Scott

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 5:03 PM
To: 'permits@yrcaa.org' <permits@yrcaa.org>; 'Hasan Tahat' <hasan@yrcaa.org>
Cc: 'James C. Carmody' <Carmody@mftlaw.com>; 'Nancy Lust' <nancy.fort@cascadianow.org>; 'Carole Degrave' <lusciouslupine@icloud.com>
Subject: RE: Cave written comment letter wenclosure

Group 3

1. LANDFILL FIRE CONTROL INC's, Memorandum to Ian Sutton, DTG, re DTG Yakima LPL – Health and Safety, Fire Control and Monitoring Plan
2. Scott Cave, SC Communications, letter to Tommy Carroll, Yakima County Planning Official, re DTG Mining Vegetative Screening, July 16, 2023
3. Tommy Carroll letter to Aaron Enebrad, DTG, re Condition Compliance, November 1, 2022

Scott

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 4:30 PM
To: permits@yrcaa.org; 'Hasan Tahat' <hasan@yrcaa.org>
Cc: James C. Carmody <Carmody@mftlaw.com>; Nancy Lust <nancy.fort@cascadianow.org>; Carole Degrave

<lusciouslupine@icloud.com>
Subject: Cave written comment letter wenclosure

Marc & Hasan

Please find my enclosed signed letter with list of the referenced documents and sources in my written comments provided last week. I will send the documents in multiple emails due to size limitations.

Respectfully,

Scott Cave

CERTIFICATION OF ENROLLMENT

ENGROSSED SECOND SUBSTITUTE HOUSE BILL 1799

Chapter 180, Laws of 2022

67th Legislature
2022 Regular Session

ORGANIC MATERIALS—VARIOUS PROVISIONS

EFFECTIVE DATE: June 9, 2022

Passed by the House March 8, 2022
Yeas 57 Nays 40

LAURIE JINKINS

Speaker of the House of Representatives

Passed by the Senate March 3, 2022
Yeas 34 Nays 14

DENNY HECK

President of the Senate

Approved March 25, 2022 10:37 AM

JAY INSLEE

Governor of the State of Washington

CERTIFICATE

I, Bernard Dean, Chief Clerk of the House of Representatives of the State of Washington, do hereby certify that the attached is **ENGROSSED SECOND SUBSTITUTE HOUSE BILL 1799** as passed by the House of Representatives and the Senate on the dates hereon set forth.

BERNARD DEAN

Chief Clerk

FILED

March 28, 2022

Secretary of State
State of Washington

ENGROSSED SECOND SUBSTITUTE HOUSE BILL 1799

AS AMENDED BY THE SENATE

Passed Legislature - 2022 Regular Session

State of Washington 67th Legislature 2022 Regular Session

By House Appropriations (originally sponsored by Representatives Fitzgibbon, Berry, Duerr, Riccelli, and Harris-Talley)

READ FIRST TIME 02/07/22.

AN ACT Relating to organic materials management; amending RCW 70A.205.040, 70A.205.015, 69.80.031, 69.80.040, 89.08.615, 43.155.020, 36.70.330, 39.30.040, 70A.455.010, 70A.455.020, 70A.455.040, 70A.455.050, 70A.455.060, 70A.455.070, 70A.455.080, 70A.455.090, 70A.455.100, and 70A.455.030; reenacting and amending RCW 43.21B.110 and 43.21B.300; adding new sections to chapter 70A.205 RCW; adding a new section to chapter 43.21C RCW; adding a new section to chapter 15.04 RCW; adding a new section to chapter 36.70A RCW; adding a new section to chapter 35.63 RCW; adding a new section to chapter 35A.63 RCW; adding new sections to chapter 43.19A RCW; adding a new section to chapter 70A.455 RCW; adding a new chapter to Title 70A RCW; creating new sections; repealing RCW 70A.455.110 and 70A.455.900; and prescribing penalties.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

NEW SECTION. **Sec. 1.** (1) The legislature finds that landfills are a significant source of emissions of methane, a potent greenhouse gas. Among other economic and environmental benefits, the diversion of organic materials to productive uses will reduce methane emissions.

(2) In order to reduce methane emissions associated with organic materials, the legislature finds that it will be beneficial to

improve a variety of aspects of how organic materials and organic material wastes are reduced, managed, incentivized, and regulated under state law. Therefore, it is the intent of the legislature to support the diversion of organic materials from landfills through a variety of interventions to support productive uses of organic material wastes, including by:

(a) Requiring some local governments to begin providing separated organic material collection services within their jurisdictions in order to increase volumes of organic materials collected and delivered to composting and other organic material management facilities and reduce the volumes of organic materials collected in conjunction with other solid waste and delivered to landfills;

(b) Requiring local governments to consider state organic material management goals and requirements in the development of their local solid waste plans;

(c) Requiring some businesses to manage their organic material wastes in a manner that does not involve landfilling them, in order to address one significant source of organic materials that currently frequently end up in landfills;

(d) Reducing legal liability risk barriers to the donation of edible food in order to encourage the recovery of foods that might otherwise be landfilled;

(e) Establishing the Washington center for sustainable food management within the department of ecology in order to coordinate and improve statewide food waste reduction and diversion efforts;

(f) Establishing various new funding and financial incentives intended to increase composting and other forms of productive organic materials management, helping to make the responsible management of organic materials more cost-competitive with landfilling of organic material wastes;

(g) Facilitating the siting of organic material management facilities in order to ensure that adequate capacity exists to process organic materials at the volumes necessary to achieve state organic material diversion goals;

(h) Encouraging cities and counties to procure more of the compost and finished products created from their organic material wastes in order to support the economic viability of processes to turn organic materials into finished products, and increasing the likelihood that composting and other responsible organic material management options are economically viable; and

(i) Amending standards related to the labeling of plastic and compostable products in order to reduce contamination of the waste streams handled by compost and organic material management facilities and improve the economic viability of those responsible organic material management options.

PART 1
State Targets and Organic Material Waste Collection Requirements

NEW SECTION. **Sec. 101.** A new section is added to chapter 70A.205 RCW to read as follows:

(1)(a) The state establishes a goal for the landfill disposal of organic materials at a level representing a 75 percent reduction by 2030 in the statewide disposal of organic material waste, relative to 2015 levels.

(b) The state establishes a goal that no less than 20 percent of the volume of edible food that was disposed of as of 2015 be recovered for human consumption by 2025.

(2) The provisions of subsection (1) of this section are in addition to the food waste reduction goals of RCW 70A.205.715(1).

NEW SECTION. **Sec. 102.** A new section is added to chapter 70A.205 RCW to read as follows:

(1) Beginning January 1, 2027, in each jurisdiction that implements a local solid waste plan under RCW 70A.205.040:

(a) Source-separated organic solid waste collection services must be provided at least every other week or at least 26 weeks annually to:

(i) All residents; and

(ii) Nonresidential customers that generate more than .25 cubic yard per week of organic materials for management; and

(b) All organic solid waste collected from residents and businesses under (a) of this subsection must be managed through organic materials management.

(2) A jurisdiction may charge and collect fees or rates for the services provided under subsection (1) of this section, consistent with the jurisdiction's authority to impose fees and rates under chapters 35.21, 35A.21, 36.58, and 36.58A RCW.

(3)(a) Except as provided in (d) of this subsection, the requirements of this section do not apply in a jurisdiction if the department determines that the following apply:

(i) The jurisdiction disposed of less than 5,000 tons of solid waste in the most recent year for which data is available;

(ii) The jurisdiction has a total population of less than 25,000 people; or

(iii) The jurisdiction has a total population between 25,000 and 50,000 people and curbside organic solid waste collection services are not offered in any area within the jurisdiction, as of July 1, 2022.

(b) The requirements of this section do not apply:

(i) In census tracts that have a population density of less than 75 people per square mile that are serviced by the jurisdiction and located in unincorporated portions of a county, as determined by the department, in counties not planning under chapter 36.70A RCW; and

(ii) Outside of urban growth areas designated pursuant to RCW 36.70A.110 in unincorporated portions of a county planning under chapter 36.70A RCW.

(c) In addition to the exemptions in (a) and (b) of this subsection, the department may issue a renewable waiver to jurisdictions or portions of a jurisdiction under this subsection for up to five years, based on consideration of factors including the distance to organic materials management facilities, the sufficiency of the capacity to manage organic materials at facilities to which organic materials could feasibly and economically be delivered from the jurisdiction, and restrictions in the transport of organic materials under chapter 17.24 RCW. The department may adopt rules to specify the type of information that a waiver applicant must submit to the department and to specify the department's process for reviewing and approving waiver applications.

(d) Beginning January 1, 2030, the department may adopt a rule to require that the provisions of this section apply in the jurisdictions identified in (b) and (c) of this subsection, but only if the department determines that the goals established in section 101(1) of this act have not or will not be achieved.

(4) Any city that newly begins implementing an independent solid waste plan under RCW 70A.205.040 after July 1, 2022, must meet the requirements of subsection (1) of this section.

Sec. 103. RCW 70A.205.040 and 2010 c 154 s 2 are each amended to read as follows:

(1) Each county within the state, in cooperation with the various cities located within such county, shall prepare a coordinated, comprehensive solid waste management plan. Such plan may cover two or more counties. The purpose is to plan for solid waste and materials reduction, collection, and handling and management services and programs throughout the state, as designed to meet the unique needs of each county and city in the state. When updating a solid waste management plan developed under this chapter, after June 10, 2010, local comprehensive plans must consider and plan for the following handling methods or services:

(a) Source separation of recyclable materials and products, organic materials, and wastes by generators;

(b) Collection of source separated materials;

(c) Handling and proper preparation of materials for reuse or recycling;

(d) Handling and proper preparation of organic materials for ((~~composting or anaerobic digestion~~)) organic materials management; and

(e) Handling and proper disposal of nonrecyclable wastes.

(2) When updating a solid waste management plan developed under this chapter, after June 10, 2010, each local comprehensive plan must, at a minimum, consider methods that will be used to address the following:

(a) Construction and demolition waste for recycling or reuse;

(b) Organic material including yard debris, food waste, and food contaminated paper products for ((~~composting or anaerobic digestion~~)) organic materials management;

(c) Recoverable paper products for recycling;

(d) Metals, glass, and plastics for recycling; and

(e) Waste reduction strategies.

(3)(a) When newly developing, updating, or amending a comprehensive solid waste management plan developed under this chapter, after July 1, 2024, each local comprehensive solid waste management plan must consider the transition to the requirements of section 102 of this act, and each comprehensive solid waste management plan implemented by a county must identify:

(i) The priority areas within the county for the establishment of organic materials management facilities. Priority areas must be in

industrial zones, agricultural zones, or rural zones, and may not be located in overburdened communities identified by the department of ecology under chapter 70A.02 RCW. Priority areas should be designated with an attempt to minimize incompatible uses and potential impacts on residential areas; and

(ii) Organic materials management facility volumetric capacity required to manage the county's organic materials in a manner consistent with the goals of section 101 of this act.

(b) When newly developing, updating, or amending a comprehensive solid waste management plan developed under this chapter, after January 1, 2027, each local comprehensive solid waste management plan must be consistent with the requirements of section 102 of this act.

(c)(i) Notwithstanding (a) and (b) of this subsection, and except as provided in (c)(ii) of this subsection, a jurisdiction implementing a local comprehensive solid waste management plan under this chapter may not site the increase or expansion of any existing organic materials management facility that processed more than 200,000 tons of material, relative to 2019 levels.

(ii) The limitation in (c)(i) of this subsection does not apply to the siting of any anaerobic digester or anaerobic digestion facility.

(4) Each city shall:

(a) Prepare and deliver to the county auditor of the county in which it is located its plan for its own solid waste management for integration into the comprehensive county plan;

(b) Enter into an agreement with the county pursuant to which the city shall participate in preparing a joint city-county plan for solid waste management; or

(c) Authorize the county to prepare a plan for the city's solid waste management for inclusion in the comprehensive county plan.

((~~(4)~~)) (5) Two or more cities may prepare a plan for inclusion in the county plan. With prior notification of its home county of its intent, a city in one county may enter into an agreement with a city in an adjoining county, or with an adjoining county, or both, to prepare a joint plan for solid waste management to become part of the comprehensive plan of both counties.

((~~(5)~~)) (6) After consultation with representatives of the cities and counties, the department shall establish a schedule for the development of the comprehensive plans for solid waste management. In

preparing such a schedule, the department shall take into account the probable cost of such plans to the cities and counties.

((~~(6)~~)) (7) Local governments shall not be required to include a hazardous waste element in their solid waste management plans.

NEW SECTION. **Sec. 104.** (1) The department of ecology must contract with a third-party consultant to conduct a study of the adequacy of local government solid waste management funding, including options and recommendations to provide funding for solid waste programs in the future if significant statewide policy changes are enacted. The department must include the Washington association of county solid waste managers, the association of Washington cities, an association that represents the private sector solid waste industry, and other stakeholders in scoping the study and reviewing the consultant's findings and recommendations prior to submittal to the legislature.

(2) The study must include:

(a) Consideration for jurisdictional type, location, size, service level, and other relevant differences between cities and counties;

(b) A review and update of current funding types and levels available, and their rate of adoption;

(c) The funding needs to implement the solid waste core services model developed by the Washington association of county solid waste managers;

(d) Alternative funding models utilized by other publicly managed solid waste programs in other states or countries that may be relevant to Washington; and

(e) An evaluation of the impacts on solid waste funding resources available to cities and counties from statewide solid waste management policy proposals considered by the legislature or enacted in the last four years, including proposals to:

(i) Reduce the quantity of organic waste to landfills;

(ii) Manage products through product stewardship or extended producer responsibility programs;

(iii) Improve or install new or updated methane capture systems;

(iv) Increase postconsumer content requirements for materials collected in solid waste programs; and

(v) Other related proposals that may impact solid waste funding resources.

(3) The study must evaluate a range of forecasted fiscal impacts for each type of policy change on local government solid waste management programs, including:

(a) The level of service provided by local government;

(b) Costs to the local government;

(c) Existing revenue levels; and

(d) The need for additional revenue.

(4) The department must submit the report, including findings and any recommendations, to the appropriate committees of the legislature by July 1, 2023.

Sec. 105. RCW 70A.205.015 and 2020 c 20 s 1161 are each amended to read as follows:

((~~As used in this chapter, unless the context indicates otherwise:~~)) The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

(1) "City" means every incorporated city and town.

(2) "Commission" means the utilities and transportation commission.

(3) "Composted material" means organic solid waste that has been subjected to controlled aerobic degradation at a solid waste facility in compliance with the requirements of this chapter. Natural decay of organic solid waste under uncontrolled conditions does not result in composted material.

(4) "Department" means the department of ecology.

(5) "Director" means the director of the department of ecology.

(6) "Disposal site" means the location where any final treatment, utilization, processing, or deposit of solid waste occurs.

(7) "Energy recovery" means a process operating under federal and state environmental laws and regulations for converting solid waste into usable energy and for reducing the volume of solid waste.

(8) "Functional standards" means criteria for solid waste handling expressed in terms of expected performance or solid waste handling functions.

(9) "Incineration" means a process of reducing the volume of solid waste operating under federal and state environmental laws and regulations by use of an enclosed device using controlled flame combustion.

(10) "Inert waste landfill" means a landfill that receives only inert waste, as determined under RCW 70A.205.030, and includes facilities that use inert wastes as a component of fill.

(11) "Jurisdictional health department" means city, county, city-county, or district public health department.

(12) "Landfill" means a disposal facility or part of a facility at which solid waste is placed in or on land and which is not a land treatment facility.

(13) "Local government" means a city, town, or county.

(14) "Modify" means to substantially change the design or operational plans including, but not limited to, removal of a design element previously set forth in a permit application or the addition of a disposal or processing activity that is not approved in the permit.

(15) "Multiple-family residence" means any structure housing two or more dwelling units.

(16) "Person" means individual, firm, association, copartnership, political subdivision, government agency, municipality, industry, public or private corporation, or any other entity whatsoever.

(17) "Recyclable materials" means those solid wastes that are separated for recycling or reuse, such as papers, metals, and glass, that are identified as recyclable material pursuant to a local comprehensive solid waste plan. Prior to the adoption of the local comprehensive solid waste plan, adopted pursuant to RCW 70A.205.075(2), local governments may identify recyclable materials by ordinance from July 23, 1989.

(18) "Recycling" means transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration.

(19) "Residence" means the regular dwelling place of an individual or individuals.

(20) "Sewage sludge" means a semisolid substance consisting of settled sewage solids combined with varying amounts of water and dissolved materials, generated from a wastewater treatment system, that does not meet the requirements of chapter 70A.226 RCW.

(21) "Soil amendment" means any substance that is intended to improve the physical characteristics of the soil, except composted material, commercial fertilizers, agricultural liming agents, unmanipulated animal manures, unmanipulated vegetable manures, food wastes, food processing wastes, and materials exempted by rule of the

department, such as biosolids as defined in chapter 70A.226 RCW and wastewater as regulated in chapter 90.48 RCW.

(22) "Solid waste" or "wastes" means all putrescible and nonputrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, and recyclable materials.

(23) "Solid waste handling" means the management, storage, collection, transportation, treatment, utilization, processing, and final disposal of solid wastes, including the recovery and recycling of materials from solid wastes, the recovery of energy resources from solid wastes or the conversion of the energy in solid wastes to more useful forms or combinations thereof.

(24) "Source separation" means the separation of different kinds of solid waste at the place where the waste originates.

(25) "Vehicle" includes every device physically capable of being moved upon a public or private highway, road, street, or watercourse and in, upon, or by which any person or property is or may be transported or drawn upon a public or private highway, road, street, or watercourse, except devices moved by human or animal power or used exclusively upon stationary rails or tracks.

(26) "Waste-derived soil amendment" means any soil amendment as defined in this chapter that is derived from solid waste as defined in this section, but does not include biosolids or biosolids products regulated under chapter 70A.226 RCW or wastewaters regulated under chapter 90.48 RCW.

(27) "Waste reduction" means reducing the amount or toxicity of waste generated or reusing materials.

(28) "Yard debris" means plant material commonly created in the course of maintaining yards and gardens, and through horticulture, gardening, landscaping, or similar activities. Yard debris includes but is not limited to grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit, vegetable garden debris, holiday trees, and tree prunings four inches or less in diameter.

(29)(a)(i) "Organic materials" means any solid waste that is a biological substance of plant or animal origin capable of microbial degradation.

(ii) Organic materials include, but are not limited to, manure, yard debris, food waste, food processing waste, wood waste, and garden waste.

(b) "Organic materials" does not include any materials contaminated by herbicides, pesticides, pests, or other sources of chemical or biological contamination that would render a finished product of an organic material management process unsuitable for general public or agricultural use.

(30) "Organic materials management" means management of organic materials through composting, anaerobic digestion, vermiculture, black soldier fly, or similar technologies.

PART 2
Requirements for Organics Management by Businesses

NEW SECTION. **Sec. 201.** A new section is added to chapter 70A.205 RCW to read as follows:

(1)(a) Beginning July 1, 2023, and each July 1st thereafter, the department must determine which counties and any cities preparing independent solid waste management plans:

(i) Provide for businesses to be serviced by providers that collect food waste and organic material waste for delivery to solid waste facilities that provide for the organic materials management of organic material waste and food waste; and

(ii) Are serviced by solid waste facilities that provide for the organic materials management of organic material waste and food waste and have capacity to accept increased volumes of organic materials deliveries.

(b)(i) The department must determine and designate that the restrictions of this section apply to businesses in a jurisdiction unless the department determines that the businesses in some or all portions of the city or county have:

(A) No available businesses that collect and deliver organic materials to solid waste facilities that provide for the organic materials management of organic material waste and food waste; or

(B) No available capacity at the solid waste facilities to which businesses that collect and deliver organic materials could feasibly and economically deliver organic materials from the jurisdiction.

(ii)(A) In the event that a county or city provides written notification to the department indicating that the criteria of (b)(i)(A) of this subsection are met, then the restrictions of this section apply only in those portions of the jurisdiction that have available service-providing businesses.

(B) In the event that a county or city provides written notification to the department indicating that the criteria of (b)(i)(B) of this subsection are met, then the restrictions of this section do not apply to the jurisdiction.

(c) The department must make the result of the annual determinations required under this section available on its website.

(d) The requirements of this section may be enforced by jurisdictional health departments consistent with this chapter, except that:

(i) A jurisdictional health department may not charge a fee to permit holders to cover the costs of the jurisdictional health department's administration or enforcement of the requirements of this section; and

(ii) Prior to issuing a penalty under this section, a jurisdictional health department must provide at least two written notices of noncompliance with the requirements of this section to the owner or operator of a business subject to the requirements of this section.

(2)(a)(i) Beginning January 1, 2024, a business that generates at least eight cubic yards of organic material waste per week must arrange for organic materials management services specifically for organic material waste;

(ii) Beginning January 1, 2025, a business that generates at least four cubic yards of organic material waste per week must arrange for organic materials management services specifically for organic material waste; and

(iii) Beginning January 1, 2026, a business that generates at least four cubic yards of solid waste per week shall arrange for organic materials management services specifically for organic material waste, unless the department determines, by rule, that additional reductions in the landfilling of organic materials would be more appropriately and effectively achieved, at reasonable cost to regulated businesses, through the establishment of a different volumetric threshold of solid waste or organic material waste than the threshold of four cubic yards of solid waste per week.

(b) The following wastes do not count for purposes of determining waste volumes in (a) of this subsection:

(i) Wastes that are managed on-site by the generating business;

(ii) Wastes generated from the growth and harvest of food or fiber that are managed off-site by another business engaged in the growth and harvest of food or fiber;

(iii) Wastes that are managed by a business that enters into a voluntary agreement to sell or donate organic materials to another business for off-site use; and

(iv) Wastes generated in exceptional volumes as a result of a natural disaster or other infrequent and unpreventable event.

(3) A business may fulfill the requirements of this section by:

(a) Source separating organic material waste from other waste, subscribing to a service that includes organic material waste collection and organic materials management, and using such a service for organic material waste generated by the business;

(b) Managing its organic material waste on-site or self-hauling its own organic material waste for organic materials management;

(c) Qualifying for exclusion from the requirements of this section consistent with subsection (1)(b) of this section; or

(d) For a business engaged in the growth, harvest, or processing of food or fiber, entering into a voluntary agreement to sell or donate organic materials to another business for off-site use.

(4)(a) A business generating organic material waste shall arrange for any services required by this section in a manner that is consistent with state and local laws and requirements applicable to the collection, handling, or recycling of solid and organic material waste.

(b) Nothing in this section requires a business to dispose of materials in a manner that conflicts with federal or state public health or safety requirements. Nothing in this section requires businesses to dispose of wastes generated in exceptional volumes as a result of a natural disaster or other infrequent and unpreventable event through the options established in subsection (3) of this section.

(5) When arranging for gardening or landscaping services, the contract or work agreement between a business subject to this section and a gardening or landscaping service must require that the organic material waste generated by those services be managed in compliance with this chapter.

(6)(a) This section does not limit the authority of a local governmental agency to adopt, implement, or enforce a local organic material waste recycling requirement, or a condition imposed upon a

self-hauler, that is more stringent or comprehensive than the requirements of this chapter.

(b) This section does not modify, limit, or abrogate in any manner any of the following:

(i) A franchise granted or extended by a city, county, city and county, or other local governmental agency;

(ii) A contract, license, certificate, or permit to collect solid waste previously granted or extended by a city, county, city and county, or other local governmental agency;

(iii) The right of a business to sell or donate its organic materials; and

(iv) A certificate of convenience and necessity issued to a solid waste collection company under chapter 81.77 RCW.

(c) Nothing in this section modifies, limits, or abrogates the authority of a local jurisdiction with respect to land use, zoning, or facility siting decisions by or within that local jurisdiction.

(d) Nothing in this section changes or limits the authority of the Washington utilities and transportation commission to regulate collection of solid waste, including curbside collection of residential recyclable materials, nor does this section change or limit the authority of a city or town to provide the service itself or by contract under RCW 81.77.020.

(7) The definitions in this subsection apply throughout this section unless the context clearly indicates otherwise.

(a)(i) "Business" means a commercial or public entity including, but not limited to, a firm, partnership, proprietorship, joint stock company, corporation, or association that is organized as a for-profit or nonprofit entity.

(ii) "Business" does not include a multifamily residential entity.

(b) "Food waste" has the same meaning as defined in RCW 70A.205.715.

PART 3
Updates to the Washington Good Samaritan Act

Sec. 301. RCW 69.80.031 and 1994 c 299 s 36 are each amended to read as follows:

(1) This section may be cited as the "good samaritan food donation act."

(2) ((~~As used in this section:~~)) The definitions in this subsection apply throughout this section unless the context clearly requires otherwise.

(a) "Apparently fit grocery product" means a grocery product that meets ((~~all quality and~~)) safety and safety-related labeling standards imposed by federal, state, and local laws and regulations even though the product may not be readily marketable due to appearance, age, freshness, grade, size, surplus, passage of a date on a date label other than a safety or safety-related labeling of a date, or other conditions.

(b) "Apparently wholesome food" means food that meets ((~~all quality and~~)) safety and safety-related labeling standards imposed by federal, state, and local laws and regulations even though the food may not be readily marketable due to appearance, age, freshness, grade, size, surplus, passage of a date on a date label other than a safety or safety-related labeling of a date, or other conditions.

(c) "Donate" means to give without requiring anything of monetary value from the recipient, except that the term shall include giving by a nonprofit organization to another nonprofit organization, notwithstanding that the donor organization has charged a nominal fee to the donee organization, if the ultimate recipient or user is not required to give anything of monetary value.

(d) "Food" means a raw, cooked, processed, or prepared edible substance, ice, beverage, or ingredient used or intended for use in whole or in part for human consumption.

(e) "Gleaner" means a person who harvests for free distribution to the needy, or for donation to a nonprofit organization for ultimate distribution to the needy, an agricultural crop that has been donated by the owner.

(f) "Grocery product" means a nonfood grocery product, including a disposable paper or plastic product, household cleaning product, laundry detergent, cleaning product, or miscellaneous household item.

(g) "Gross negligence" means voluntary and conscious conduct by a person with knowledge, at the time of the conduct, that the conduct is likely to be harmful to the health or well-being of another person.

(h) "Intentional misconduct" means conduct by a person with knowledge, at the time of the conduct, that the conduct is harmful to the health or well-being of another person.

(i) "Nonprofit organization" means an incorporated or unincorporated entity that:

(i) Is operating for religious, charitable, or educational purposes; and

(ii) Does not provide net earnings to, or operate in any other manner that inures to the benefit of, any officer, employee, or shareholder of the entity.

(j) "Person" means an individual, corporation, partnership, organization, association, or governmental entity, including a retail grocer, wholesaler, hotel, motel, manufacturer, restaurant, caterer, farmer, and nonprofit food distributor or hospital. In the case of a corporation, partnership, organization, association, or governmental entity, the term includes an officer, director, partner, deacon, trustee, councilmember, or other elected or appointed individual responsible for the governance of the entity.

(k) "Qualified direct donor" means any person required to obtain a food establishment permit under chapter 246-215 WAC, as it existed as of January 1, 2022, including a retail grocer, wholesaler, agricultural producer, restaurant, caterer, school food authority, or institution of higher education as defined in RCW 28B.10.016.

(l)(i) "Safety and safety-related labeling" means a marking intended to communicate information to a consumer related to a food product's safety. "Safety and safety-related labeling" includes any marking that federal or state law requires to be affixed to a food product including, but not limited to, markings placed on infant formula consistent with 21 C.F.R. Sec. 107.20, as that regulation existed as of January 1, 2021.

(ii) "Safety and safety-related labeling" does not include a pull date required to be placed on perishable packaged food under RCW 15.130.300 or a "best by," "best if used by," "use by," or "sell by" date or similarly phrased date intended to communicate information to a consumer regarding the freshness or quality of a food product.

(3)(a) A person or gleaner is not subject to civil or criminal liability arising from the nature, age, packaging, or condition of apparently wholesome food or an apparently fit grocery product that the person or gleaner donates in good faith to a nonprofit organization for ultimate distribution to needy individuals, except that this subsection does not apply to an injury to or death of an ultimate user or recipient of the food or grocery product that

results from an act or omission of the donor constituting gross negligence or intentional misconduct.

(b) A qualified direct donor may donate food directly to end recipients for consumption. A qualified direct donor is not subject to civil or criminal liability arising from the nature, age, packaging, or condition of apparently wholesome food or an apparently fit grocery product that the qualified direct donor donates in good faith to a needy individual. The donation of nonperishable food that is fit for human consumption, but that has exceeded the labeled shelf-life date recommended by the manufacturer, is an activity covered by the exclusion from civil or criminal liability under this section.

(c) The donation of perishable food that is fit for human consumption, but that has exceeded the labeled shelf-life date recommended by the manufacturer, is an activity covered by the exclusion from civil or criminal liability under this section if the person that distributes the food to the end recipient makes a good faith evaluation that the food to be donated is wholesome.

(4) A person who allows the collection or gleaning of donations on property owned or occupied by the person by gleaners, or paid or unpaid representatives of a nonprofit organization, for ultimate distribution to needy individuals is not subject to civil or criminal liability that arises due to the injury or death of the gleaner or representative, except that this subsection does not apply to an injury or death that results from an act or omission of the person constituting gross negligence or intentional misconduct.

(5) If some or all of the donated food and grocery products do not meet ((~~all quality and~~)) safety and safety-related labeling standards imposed by federal, state, and local laws and regulations, the person or gleaner who donates the food and grocery products is not subject to civil or criminal liability in accordance with this section if the nonprofit organization or other end recipient that receives the donated food or grocery products:

(a) Is informed by the donor of the distressed or defective condition of the donated food or grocery products;

(b) Agrees to recondition the donated food or grocery products to comply with all the ((~~quality and~~)) safety and safety-related labeling standards prior to distribution; and

(c) Is knowledgeable of the standards to properly recondition the donated food or grocery product.

(6) This section may not be construed to create liability.

PART 4
Washington Center for Sustainable Food Management

NEW SECTION. **Sec. 401.** The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

(1) "Center" means the Washington center for sustainable food management.

(2) "Department" means the department of ecology.

(3) "Organic material" has the same definition as provided in RCW 70A.205.015.

(4) "Plan" means the use food well Washington plan developed under RCW 70A.205.715.

NEW SECTION. **Sec. 402.** (1) The Washington center for sustainable food management is established within the department, to begin operations by January 1, 2024.

(2) The purpose of the center is to help coordinate statewide food waste reduction.

(3) The center may perform the following activities:

(a) Coordinate the implementation of the plan;

(b) Draft plan updates and measure progress towards actions, strategies, and the statewide goals established in section 101 of this act and RCW 70A.205.715(1);

(c) Maintain a website with current food waste reduction information and guidance for food service establishments, consumers, food processors, hunger relief organizations, and other sources of food waste;

(d) Provide staff support to multistate food waste reduction initiatives in which the state is participating;

(e) Maintain the consistency of the plan and other food waste reduction activities with the work of the Washington state conservation commission's food policy forum;

(f) Facilitate and coordinate public-private and nonprofit partnerships focused on food waste reduction, including through voluntary working groups;

(g) Collaborate with federal, state, and local government partners on food waste reduction initiatives;

(h) Develop and maintain maps or lists of locations of the food systems of Washington that identify food flows, where waste occurs, and opportunities to prevent food waste;

(i)(i) Collect and maintain data on food waste and wasted food in a manner that is generally consistent with the methods of collecting and maintaining such data used by federal agencies or in other jurisdictions, or both, to the greatest extent practicable;

(ii) Develop measurement methodologies and tools to uniformly track food donation data, food waste prevention data, and associated climate impacts resultant from food waste reduction efforts;

(j) Research and develop emerging organic materials and food waste reduction markets;

(k)(i) Develop and maintain statewide food waste reduction and food waste contamination reduction campaigns, in consultation with other state agencies and other stakeholders, including the development of waste prevention and food waste recovery promotional materials for distribution. These promotional materials may include online information, newsletters, bulletins, or handouts that inform food service establishment operators about the protections from civil and criminal liability under federal law and under RCW 69.80.031 when donating food; and

(ii) Develop guidance to support the distribution of promotional materials, including distribution by:

(A) Local health officers, at no cost to regulated food service establishments, including as part of normal, routine inspections of food service establishments; and

(B) State agencies, including the department of health and the department of agriculture, in conjunction with their statutory roles and responsibilities in regulating, monitoring, and supporting safe food supply chains and systems;

(l) Distribute and monitor grants dedicated to food waste prevention, rescue, and recovery; and

(m) Research and provide education, outreach, and technical assistance to local governments in support of the adoption of solid waste ordinances or policies that establish a financial disincentive for the generation of organic waste and for the ultimate disposal of organic materials in landfills.

(4) The department may enter into an interagency agreement with the department of health, the department of agriculture, or other

state agencies as necessary to fulfill the responsibilities of the center.

(5) The department may adopt any rules necessary to implement this chapter including, but not limited to, measures for the center's performance.

NEW SECTION. **Sec. 403.** A new section is added to chapter 70A.205 RCW to read as follows:

(1) In order to obtain data as necessary to support the goals of the Washington center for sustainable food management created in section 402 of this act and to achieve the goals of RCW 70A.205.715(1), the department may establish a voluntary reporting protocol for the receipt of reports by businesses that donate food under RCW 69.80.031 and recipients of the donated food, and may encourage the use of this voluntary reporting protocol by the businesses and recipients. The department may also request that a donating business or recipient of donated food provide information to the department regarding the volumes, types, and timing of food managed by the donating facility or business, and food waste and wasted food generated by the donating facility or business. To the extent practicable, the department must seek to obtain information under this section in a manner compatible with any information reported to the department of agriculture under RCW 43.23.290, and in a manner that minimizes the reporting and information-provision burdens of donating businesses and recipients.

(2) For the purposes of this subsection, "food waste" and "wasted food" have the same meaning as defined in RCW 70A.205.715.

Sec. 404. RCW 69.80.040 and 1983 c 241 s 4 are each amended to read as follows:

The department of agriculture shall maintain an information and referral service for persons and organizations that have notified the department of their desire to participate in the food donation program under this chapter. The department must coordinate with the department of ecology to ensure that the information and referral service required under this section is implemented in a manner consistent with the activities of sections 402 and 403 of this act.

NEW SECTION. **Sec. 405.** (1) By January 1, 2025, and in consultation with the office of the attorney general, the department

must research and adopt several model ordinances for optional use by counties and cities that provide for model mechanisms for commercial solid waste collection and disposal that are designed, in part, to establish a financial disincentive or other disincentives for the generation of organic waste and for the ultimate disposal of organic materials in landfills. The model ordinances must be designed to provide options that might be preferred by jurisdictions of different sizes and consider other key criteria applicable to local solid waste management circumstances.

(2)(a) The department must review the model ordinances created in this section under the provisions of chapter 43.21C RCW.

(b) A county or city that adopts a model ordinance created by the department under this section and that has been reviewed by the department under the provisions of chapter 43.21C RCW is not required to review the ordinance under the provisions of chapter 43.21C RCW.

(3) No city, town, or county is required to adopt the model ordinances created in this section.

NEW SECTION. **Sec. 406.** A new section is added to chapter 43.21C RCW to read as follows:

Amendments to regulations and other nonproject actions taken by a city or county to adopt or implement the model ordinance created by the department under section 405 of this act is not subject to the requirements of this chapter.

PART 5
Funding and Incentives for Methane Emissions Reduction Activities Associated with Organic Materials Management

Sec. 501. RCW 89.08.615 and 2020 c 351 s 3 are each amended to read as follows:

(1) The commission shall develop a sustainable farms and fields grant program in consultation with the department of agriculture, Washington State University, and the United States department of agriculture natural resources conservation service.

(2) As funding allows, the commission shall distribute funds, as appropriate, to conservation districts and other public entities to help implement the projects approved by the commission.

(3) No more than ((~~fifteen~~)) 15 percent of the funds may be used by the commission to develop, or to consult or contract with private

or public entities, such as universities or conservation districts, to develop:

(a) An educational public awareness campaign and outreach about the sustainable farm and field program; or

(b) The grant program, including the production of analytical tools, measurement estimation and verification methods, cost-benefit measurements, and public reporting methods.

(4) No more than five percent of the funds may be used by the commission to cover the administrative costs of the program.

(5) No more than ((~~twenty~~)) 20 percent of the funds may be awarded to any single grant applicant.

(6) Allowable uses of grant funds include:

(a) Annual payments to enrolled participants for successfully delivered carbon storage or reduction;

(b) Up-front payments for contracted carbon storage;

(c) Down payments on equipment;

(d) Purchases of equipment;

(e) Purchase of seed, seedlings, spores, animal feed, and amendments;

(f) Services to landowners, such as the development of site-specific conservation plans to increase soil organic levels or to increase usage of precision agricultural practices, or design and implementation of best management practices to reduce livestock emissions; ((~~and~~))

(g) The purchase of compost spreading equipment, or financial assistance to farmers to purchase compost spreading equipment, for the annual use for at least three years of volumes of compost determined by the commission to be significant from materials composted at a site that is not owned or operated by the farmer;

(h) Scientific studies to evaluate and quantify the greenhouse gas emissions avoided as a result of using crop residues as a biofuel feedstock or to identify management practices that increase the greenhouse gas emissions avoided as a result of using crop residues as a biofuel feedstock;

(i) Efforts to support the farm use of anaerobic digester digestate, including scientific studies, education and outreach to farmers, and the purchase or lease of digestate spreading equipment; and

(j) Other equipment purchases or financial assistance deemed appropriate by the commission to fulfill the intent of RCW 89.08.610 through 89.08.635.

(7) Grant applications are eligible for costs associated with technical assistance.

(8) Conservation districts and other public entities may apply for a single grant from the commission that serves multiple farmers.

(9) Grant applicants may apply to share equipment purchased with grant funds. Applicants for equipment purchase grants issued under this grant program may be farm, ranch, or aquaculture operations coordinating as individual businesses or as formal cooperative ventures serving farm, ranch, or aquaculture operations. Conservation districts, separately or jointly, may also apply for grant funds to operate an equipment sharing program.

(10) No contract for carbon storage or changes to management practices may exceed ((~~twenty-five~~)) 25 years. Grant contracts that include up-front payments for future benefits must be conditioned to include penalties for default due to negligence on the part of the recipient.

(11) The commission shall attempt to achieve a geographically fair distribution of funds across a broad group of crop types, soil management practices, and farm sizes.

(12) Any applications involving state lands leased from the department of natural resources must include the department's approval.

NEW SECTION. **Sec. 502.** A new section is added to chapter 15.04 RCW to read as follows:

(1)(a) Subject to the availability of amounts appropriated for this specific purpose, the department must establish and implement a compost reimbursement program to reimburse farming operations in the state for purchasing and using compost products that were not generated by the farming operation, including transportation, spreading equipment, labor, fuel, and maintenance costs associated with spreading equipment. The grant reimbursements under the program begin July 1, 2023.

(b) For the purposes of this program, "farming operation" means: A commercial agricultural, silvicultural, or aquacultural facility or pursuit, including the care and production of livestock and livestock products, poultry and poultry products, apiary products, and plant

and animal production for nonfood uses; the planting, cultivating, harvesting, and processing of crops; and the farming or ranching of any plant or animal species in a controlled salt, brackish, or freshwater environment.

(2) To be eligible to participate in the reimbursement program, a farming operation must complete an eligibility review with the department prior to transporting or applying any compost products for which reimbursement is sought under this section. The purpose of the review is for the department to ensure that the proposed transport and application of compost products is consistent with the department's agricultural pest control rules established under chapter 17.24 RCW. A farming operation must also verify that it will allow soil sampling to be conducted by the department upon request before compost application and until at least 10 years after the last grant funding is used by the farming operation, as necessary to establish a baseline of soil quality and carbon storage and for subsequent department evaluations to assist the department's reporting requirements under subsection (8) of this section.

(3) The department must create a form for eligible farming operations to apply for cost reimbursement for costs from purchasing and using compost from facilities with solid waste handling permits, including transportation, equipment, spreading, and labor costs. All applications for cost reimbursement must be submitted on the form along with invoices, receipts, or other documentation acceptable to the department of the costs of purchasing and using compost products for which the applicant is requesting reimbursement, as well as a brief description of what each purchased item will be used for. The department may request that an applicant provide information to verify the source, size, sale weight, or amount of compost products purchased and the cost of transportation, equipment, spreading, and labor. The applicant must also declare that it is not seeking reimbursement for purchase or labor costs for:

(a) Its own compost products; or

(b) Compost products that it has transferred, or intends to transfer, to another individual or entity, whether or not for compensation.

(4) A farming operation may submit only one application per fiscal year in which the program is in effect for purchases made and usage costs incurred during the fiscal year that begins on July 1st and ends on June 30th. Applications for reimbursement must be filed

before the end of the fiscal year in which purchases were made and usage costs incurred.

(5) The department must distribute reimbursement funds, subject to the following limitations:

(a) A farming operation is not eligible to receive reimbursement if the farming operation's application was not found eligible for reimbursement by the department under subsection (2) of this section prior to the transport or use of compost;

(b) A farming operation is not eligible to receive reimbursement for more than 50 percent of the costs it incurs each fiscal year for the purchase and use of compost products, including transportation, equipment, spreading, and labor costs;

(c) A farming operation is not eligible to receive more than $10,000 per fiscal year;

(d) A farming operation is not eligible to receive reimbursement for its own compost products or compost products that it has transferred, or intends to transfer, to another individual or entity, whether or not for compensation; and

(e) A farming operation is not eligible to receive reimbursement for compost products that were not purchased from a facility with a solid waste handling permit.

(6) The applicant shall indemnify and hold harmless the state and its officers, agents, and employees from all claims arising out of or resulting from the compost products purchased that are subject to the compost reimbursement program under this section.

(7) There is established within the department a compost reimbursement program manager position. The compost reimbursement program manager must possess knowledge and expertise in the area of program management necessary to carry out the duties of the position, which are to:

(a) Facilitate the division and distribution of available costs for reimbursement; and

(b) Manage the day-to-day coordination of the compost reimbursement program.

(8) In compliance with RCW 43.01.036, the department must submit an annual report to the appropriate committees of the legislature by January 15th of each year of the program in which grants have been issued or completed. The report must include:

(a) The amount of compost for which reimbursement was sought under the program;

(b) The qualitative or quantitative effects of the program on soil quality and carbon storage; and

(c) A periodically updated evaluation of the benefits and costs to the state of expanding or furthering the strategies promoted in the program.

Sec. 503. RCW 43.155.020 and 2017 3rd sp.s. c 10 s 2 are each amended to read as follows:

The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

(1) "Board" means the public works board created in RCW 43.155.030.

(2) "Capital facility plan" means a capital facility plan required by the growth management act under chapter 36.70A RCW or, for local governments not fully planning under the growth management act, a plan required by the public works board.

(3) "Department" means the department of commerce.

(4) "Financing guarantees" means the pledge of money in the public works assistance account, or money to be received by the public works assistance account, to the repayment of all or a portion of the principal of or interest on obligations issued by local governments to finance public works projects.

(5) "Local governments" means cities, towns, counties, special purpose districts, and any other municipal corporations or quasi-municipal corporations in the state excluding school districts and port districts.

(6) "Public works project" means a project of a local government for the planning, acquisition, construction, repair, reconstruction, replacement, rehabilitation, or improvement of streets and roads, bridges, water systems, or storm and sanitary sewage systems, lead remediation of drinking water systems, and solid waste facilities, including recycling facilities and composting and other organic materials management facilities. A planning project may include the compilation of biological, hydrological, or other data on a county, drainage basin, or region necessary to develop a base of information for a capital facility plan.

(7) "Solid waste or recycling project" means remedial actions necessary to bring abandoned or closed landfills into compliance with regulatory requirements and the repair, restoration, and replacement of existing solid waste transfer, recycling facilities, and landfill

projects limited to the opening of landfill cells that are in existing and permitted landfills.

(8) "Technical assistance" means training and other services provided to local governments to: (a) Help such local governments plan, apply, and qualify for loans, grants, and financing guarantees from the board, and (b) help local governments improve their ability to plan for, finance, acquire, construct, repair, replace, rehabilitate, and maintain public facilities.

(9) "Value planning" means a uniform approach to assist in decision making through systematic evaluation of potential alternatives to solving an identified problem.

PART 6
Organic Materials Management Facility Siting

Sec. 601. RCW 36.70.330 and 1985 c 126 s 3 are each amended to read as follows:

The comprehensive plan shall consist of a map or maps, and descriptive text covering objectives, principles and standards used to develop it, and shall include each of the following elements:

(1) A land use element which designates the proposed general distribution and general location and extent of the uses of land for agriculture, housing, commerce, industry, recreation, education, public buildings and lands, and other categories of public and private use of land, including a statement of the standards of population density and building intensity recommended for the various areas in the jurisdiction and estimates of future population growth in the area covered by the comprehensive plan, all correlated with the land use element of the comprehensive plan. The land use element shall also provide for protection of the quality and quantity of groundwater used for public water supplies and shall review drainage, flooding, and stormwater runoff in the area and nearby jurisdictions and provide guidance for corrective actions to mitigate or cleanse those discharges that pollute Puget Sound or waters entering Puget Sound. Development regulations to implement comprehensive plans under this chapter that are newly developed, updated, or amended after January 1, 2025, must allow for the siting of organic materials management facilities in the areas identified in RCW 70A.205.040(3)(a)(i) to the extent necessary to provide for the

establishment of the organic materials management volumetric capacity identified under RCW 70A.205.040(3)(a)(ii);

(2) A circulation element consisting of the general location, alignment and extent of major thoroughfares, major transportation routes, trunk utility lines, and major terminal facilities, all of which shall be correlated with the land use element of the comprehensive plan;

(3) Any supporting maps, diagrams, charts, descriptive material and reports necessary to explain and supplement the above elements.

NEW SECTION. **Sec. 602.** A new section is added to chapter 36.70A RCW to read as follows:

Development regulations to implement comprehensive plans under this chapter that are newly developed, updated, or amended after January 1, 2025, must allow for the siting of organic materials management facilities in the areas identified in RCW 70A.205.040(3)(a)(i) to the extent necessary to provide for the establishment of the organic materials management volumetric capacity identified under RCW 70A.205.040(3)(a)(ii).

NEW SECTION. **Sec. 603.** A new section is added to chapter 35.63 RCW to read as follows:

For cities not planning under RCW 36.70A.040, development regulations to implement comprehensive plans under RCW 35.63.100 that are newly developed, updated, or amended after January 1, 2025, must allow for the siting of organic materials management facilities in the areas identified by the county in which the city is located under RCW 70A.205.040(3)(a)(i) to the extent necessary to provide for the establishment of the organic materials management volumetric capacity identified under RCW 70A.205.040(3)(a)(ii).

NEW SECTION. **Sec. 604.** A new section is added to chapter 35A.63 RCW to read as follows:

For cities not planning under RCW 36.70A.040, development regulations to implement comprehensive plans required under RCW 35A.63.060 that are newly developed, updated, or amended after January 1, 2025, must allow for the siting of organic materials management facilities in the areas identified by the county in which the city is located under RCW 70A.205.040(3)(a)(i) to the extent necessary to provide for the establishment of the organic materials

management volumetric capacity identified under RCW 70A.205.040(3)(a)(ii).

PART 7
Organic Materials Procurement

NEW SECTION. **Sec. 701.** A new section is added to chapter 43.19A RCW to read as follows:

(1) By January 1, 2023, the following cities or counties shall adopt a compost procurement ordinance to implement RCW 43.19A.120:

(a) Each city or county with a population greater than 25,000 residents as measured by the office of financial management using the most recent population data available; and

(b) Each city or county in which organic material collection services are provided under chapter 70A.205 RCW.

(2) A city or county that newly exceeds a population of 25,000 residents after January 1, 2023, as measured by the office of financial management, must adopt an ordinance under this subsection no later than 12 months after the office of financial management's determination that the local government's population has exceeded 25,000.

(3) In developing a compost procurement ordinance, each city and county shall plan for the use of compost in the following categories:

(a) Landscaping projects;

(b) Construction and postconstruction soil amendments;

(c) Applications to prevent erosion, filter stormwater runoff, promote vegetation growth, or improve the stability and longevity of roadways; and

(d) Low-impact development and green infrastructure to filter pollutants or keep water on-site, or both.

(4) Each city or county that adopts an ordinance under subsection (1) or (2) of this section must develop strategies to inform residents about the value of compost and how the jurisdiction uses compost in its operations in the jurisdiction's comprehensive solid waste management plan pursuant to RCW 70A.205.045.

(5) By December 31, 2024, and each December 31st of even-numbered years thereafter, each city or county that adopts an ordinance under subsection (1) or (2) of this section must submit a report covering the previous year's compost procurement activities to the department of ecology that contains the following information:

(a) The total tons of organic material diverted throughout the year;

(b) The volume and cost of compost purchased throughout the year; and

(c) The source or sources of the compost.

(6) Cities and counties that are required to adopt an ordinance under subsection (1) or (2) of this section shall give priority to purchasing compost products from companies that produce compost products locally, are certified by a nationally recognized organization, and produce compost products that are derived from municipal solid waste compost programs and meet quality standards comparable to standards adopted by the department of transportation or adopted by rule by the department of ecology.

(7) Cities and counties may enter into collective purchasing agreements if doing so is more cost-effective or efficient.

(8) Nothing in this section requires a compost processor to:

(a) Enter into a purchasing agreement with a city or county;

(b) Sell finished compost to meet this requirement; or

(c) Accept or process food waste or compostable products.

Sec. 702. RCW 39.30.040 and 2013 c 24 s 1 are each amended to read as follows:

(1) Whenever a unit of local government is required to make purchases from the lowest bidder or from the supplier offering the lowest price for the items desired to be purchased, the unit of local government may, at its option when awarding a purchase contract, take into consideration tax revenue it would receive from purchasing the supplies, materials, or equipment from a supplier located within its boundaries. The unit of local government must award the purchase contract to the lowest bidder after such tax revenue has been considered. However, any local government may allow for preferential purchase of products made from recycled materials or products that may be recycled or reused. Any local government may allow for preferential purchase of compost to meet the requirements of RCW 43.19A.120. Any unit of local government which considers tax revenue it would receive from the imposition of taxes upon a supplier located within its boundaries must also consider tax revenue it would receive from taxes it imposes upon a supplier located outside its boundaries.

(2) A unit of local government may award a contract to a bidder submitting the lowest bid before taxes are applied. The unit of local

government must provide notice of its intent to award a contract based on this method prior to bids being submitted. For the purposes of this subsection (2), "taxes" means only those taxes that are included in "tax revenue" as defined in this section.

(3) The definitions in this subsection apply throughout this section unless the context clearly requires otherwise.

(a) "Tax revenue" means sales taxes that units of local government impose upon the sale of supplies, materials, or equipment from the supplier to units of local government, and business and occupation taxes that units of local government impose upon the supplier that are measured by the gross receipts of the supplier from the sale.

(b) "Unit of local government" means any county, city, town, metropolitan municipal corporation, public transit benefit area, county transportation authority, or other municipal or quasi-municipal corporation authorized to impose sales and use taxes or business and occupation taxes.

NEW SECTION. **Sec. 703.** A new section is added to chapter 43.19A RCW to read as follows:

A contract by a local government or state agency must require the use of compost products to the maximum extent economically feasible to meet the requirements established in RCW 43.19A.120.

PART 8
Product Degradability Labeling

Sec. 801. RCW 70A.455.010 and 2019 c 265 s 1 are each amended to read as follows:

(1) The legislature finds and declares that it is the public policy of the state that:

(a) Environmental marketing claims for plastic products, whether implicit or implied, should adhere to uniform and recognized standards for "compostability" and "biodegradability," since misleading, confusing, and deceptive labeling can negatively impact local composting programs and compost processors. Plastic products marketed as being "compostable" should be readily and easily identifiable as meeting these standards;

(b) Legitimate and responsible packaging and plastic product manufacturers are already properly labeling their compostable

products, but many manufacturers are not. Not all compost facilities and their associated processing technologies accept or are required to accept compostable packaging as feedstocks. However, implementing a standardized system and test methods may create the ability for them to take these products in the future.

(2) Therefore, it is the intent of the legislature to authorize the ((~~state's attorney general and local governments~~)) department of ecology, cities, and counties to pursue false or misleading environmental claims and "greenwashing" for plastic products claiming to be "compostable" or "biodegradable" when in fact they are not.

Sec. 802. RCW 70A.455.020 and 2019 c 265 s 2 are each amended to read as follows:

The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

(1) "ASTM" means the American society for testing and materials.

(2) "Biodegradable mulch film" means film plastic used as a technical tool in commercial farming applications that biodegrades in soil after being used, and:

(a) The film product fulfills plant growth and regulated metals requirements of ASTM D6400; and

(b)(i) Meets the requirements of Vincotte's "OK Biodegradable Soil" certification scheme, as that certification existed as of January 1, 2019;

(ii) At ambient temperatures and in soil, shows at least ((~~ninety~~)) 90 percent biodegradation absolute or relative to microcrystalline cellulose in less than two years' time, tested according to ISO 17556 or ASTM 5988 standard test methods, as those test methods existed as of January 1, 2019; or

(iii) Meets the requirements of EN 17033 "plastics-biodegradable mulch films for use in agriculture and horticulture" as it existed on January 1, 2019.

(3) "Federal trade commission guides" means the United States federal trade commission's guides for the use of environmental marketing claims (Part 260, commencing at section 260.1), compostability claims, including section 260.8, and degradation claims (subchapter B of chapter I of Title 16 of the Code of Federal Regulations), as those guides existed as of January 1, 2019.

(4) "Film product" means a bag, sack, wrap, or other sheet film product.

(5) "Food service product" ((~~means a product including, but not limited to, containers, plates, bowls, cups, lids, meat trays, straws, deli rounds, cocktail picks, splash sticks, condiment packaging, clam shells and other hinged or lidded containers, sandwich wrap, utensils, sachets, portion cups, and other food service products that are intended for one-time use and used for food or drink offered for sale or use~~)) has the same meaning as defined in RCW 70A.245.010.

(6) ((~~"Manufacturer" means a person, firm, association, partnership, or corporation that produces a product.~~

~~(7)~~)) "Person" means individual, firm, association, copartnership, political subdivision, government agency, municipality, industry, public or private corporation, or any other entity whatsoever.

((~~(8)~~)) (7) "Plastic food packaging and food service products" means food packaging and food service products that is composed of:

(a) Plastic; or

(b) Fiber or paper with a plastic coating, window, component, or additive.

((~~(9)~~)) (8) "Plastic product" means a product made of plastic, whether alone or in combination with another material including, but not limited to, paperboard. A plastic product includes, but is not limited to, any of the following:

(a) A product or part of a product that is used, bought, or leased for use by a person for any purpose;

(b) A package or a packaging component including, but not limited to, packaging peanuts;

(c) A film product; or

(d) Plastic food packaging and food service products.

((~~(10)~~)) (9) "Standard specification" means either:

(a) ASTM D6400 - standard specification labeling of plastics designed to be aerobically composted in municipal or industrial facilities, as it existed as of January 1, 2019; or

(b) ASTM D6868 - standard specification for labeling of end items that incorporate plastics and polymers as coatings or additives with paper and other substrates designed to be aerobically composted in municipal or industrial facilities, as it existed as of January 1, 2019.

((~~(11)(a) "Supplier" means a person, firm, association, partnership, company, or corporation that sells, offers for sale, offers for promotional purposes, or takes title to a product.~~

~~(b) "Supplier" does not include a person, firm, association, partnership, company, or corporation that sells products to end users as a retailer.~~

~~(12)~~)) (10) "Utensil" means a product designed to be used by a consumer to facilitate the consumption of food or beverages, including knives, forks, spoons, cocktail picks, chopsticks, splash sticks, and stirrers.

(11) "Department" means the department of ecology.

(12) "Producer" means the following person responsible for compliance under this chapter for a product sold, offered for sale, or distributed in or into this state:

(a) If the product is sold under the manufacturer's own brand or lacks identification of a brand, the producer is the person who manufactures the product;

(b) If the product is manufactured by a person other than the brand owner, the producer is the person that is the licensee of a brand or trademark under which a product is used in a commercial enterprise, sold, offered for sale, or distributed in or into this state, whether or not the trademark is registered in this state, unless the manufacturer or brand owner of the product has agreed to accept responsibility under this chapter; or

(c) If there is no person described in (a) and (b) of this subsection over whom the state can constitutionally exercise jurisdiction, the producer is the person who imports or distributes the product in or into the state.

Sec. 803. RCW 70A.455.040 and 2019 c 265 s 4 are each amended to read as follows:

(1)((~~(a)~~)) A product labeled as "compostable" that is sold, offered for sale, or distributed for use in Washington by a ((~~supplier or manufacturer~~)) producer must:

((~~(i)~~)) (a) Meet ASTM standard specification D6400;

((~~(ii)~~)) (b) Meet ASTM standard specification D6868; or

((~~(iii)~~)) (c) Be comprised of wood, which includes renewable wood, or fiber-based substrate only;

((~~(b)~~)) (2) A product described in ((~~(a)(i) or (ii) of this~~)) subsection (1)(a) or (b) of this section must:

((~~(i)~~)) (a) Meet labeling requirements established under the United States federal trade commission's guides; and

((~~(ii)~~)) (b) Feature labeling that:

((~~(A)~~)) (i) Meets industry standards for being distinguishable upon quick inspection in both public sorting areas and in processing facilities;

((~~(B)~~)) (ii) Uses a logo indicating the product has been certified by a recognized third-party independent verification body as meeting the ASTM standard specification; ((~~and~~

~~(C)~~)) (iii) Displays the word "compostable," where possible, indicating the product has been tested by a recognized third-party independent body and meets the ASTM standard specification; and

(iv) Uses green, beige, or brown labeling, color striping, or other green, beige, or brown symbols, colors, tinting, marks, or design patterns that help differentiate compostable items from noncompostable items.

((~~(2) A compostable product described in subsection (1)(a)(i) or (ii) of this section must be considered compliant with the requirements of this section if it:~~

~~(a) Has green or brown labeling;~~

~~(b) Is labeled as compostable; and~~

~~(c) Uses distinctive color schemes, green or brown color striping, or other adopted symbols, colors, marks, or design patterns that help differentiate compostable items from noncompostable materials.~~))

Sec. 804. RCW 70A.455.050 and 2019 c 265 s 5 are each amended to read as follows:

(1) A ((~~manufacturer or supplier~~)) producer of a film bag that meets ASTM standard specification D6400 and is distributed or sold by retailers must ensure that the film bag is readily and easily identifiable from other film bags in a manner that is consistent with the federal trade commission guides.

(2) For purposes of this section, "readily and easily identifiable" products must meet the following requirements:

(a) Be labeled with a certification logo indicating the bag meets the ASTM D6400 standard specification if the bag has been certified as meeting that standard by a recognized third-party independent verification body;

(b) Be labeled in accordance with one of the following:

(i) The bag is tinted or made of a uniform color of green, beige, or brown and labeled with the word "compostable" on one side of the bag and the label must be at least one inch in height; or

(ii) Be labeled with the word "compostable" on both sides of the bag and the label must be one of the following:

(A) Green, beige, or brown color lettering at least one inch in height; or

(B) Within a contrasting green, beige, or brown color band of at least one inch in height on both sides of the bag with color contrasting lettering of at least one-half inch in height; and

(c) Meet industry standards for being distinguishable upon quick inspection in both public sorting areas and in processing facilities.

(3) If a bag is smaller than ((~~fourteen~~)) 14 inches by ((~~fourteen~~)) 14 inches, the lettering and stripe required under subsection (2)(b)(ii) of this section must be in proportion to the size of the bag.

(4) A film bag that meets ASTM standard specification D6400 that is sold or distributed in this state may not display a chasing arrow resin identification code or recycling type of symbol in any form.

(5) A ((~~manufacturer or supplier~~)) producer is required to comply with this section only to the extent that the labeling requirements do not conflict with the federal trade commission guides.

Sec. 805. RCW 70A.455.060 and 2020 c 20 s 1446 are each amended to read as follows:

(1)(a) A ((~~manufacturer or supplier~~)) producer of plastic food service products or film products that meet ASTM standard specification D6400 or ASTM standard specification D6868 must ensure that the items are readily and easily identifiable from other plastic food service products or plastic film products in a manner that is consistent with the federal trade commission guides.

(b) Film bags are exempt from the requirements of this section, and are instead subject to the requirements of RCW 70A.455.050.

(2) For the purposes of this section, "readily and easily identifiable" products must:

(a) Be labeled with a logo indicating the product has been certified by a recognized third-party independent verification body as meeting the ASTM standard specification;

(b) Be labeled with the word "compostable," where possible, indicating the food packaging or film product has been tested by a

recognized third-party independent body and meets the ASTM standard specification; ((~~and~~))

(c) Meet industry standards for being distinguishable upon quick inspection in both public sorting areas and in processing facilities;

(d) If the product is a plastic food service product or food contact film product, be at least partially colored or partially tinted green, beige, or brown, or have a green, beige, or brown stripe or band at least .25 inches wide; and

(e) If the product is a nonfood contact film product, be at least partially colored or partially tinted green or have a green stripe or band at least .25 inches wide and display the word "compostable".

(3) ((~~A compostable product described in subsection (1) of this section must be considered compliant with the requirements of this section if it:~~

~~(a) Has green or brown labeling;~~

~~(b) Is labeled as compostable; and~~

~~(c) Uses distinctive color schemes, green or brown color striping, or other adopted symbols, colors, marks, or design patterns that help differentiate compostable items from noncompostable materials.~~

~~(4)~~)) It is encouraged that each product described in subsection (1) of this section((~~:~~

~~(a) Display~~)) display labeling language via printing, embossing, or compostable adhesive stickers using, when possible, either the colors green, beige, or brown that contrast with background product color for easy identification((~~; or~~

~~(b) Be tinted green or brown~~)).

((~~(5)~~)) (4) Graphic elements are encouraged to increase legibility of the word "compostable" and overall product distinction that may include text boxes, stripes, bands, or a green, beige, or brown tint of the product.

((~~(6)~~)) (5) A ((~~manufacturer or supplier~~)) producer is required to comply with this section only to the extent that the labeling requirements do not conflict with the federal trade commission guides.

Sec. 806. RCW 70A.455.070 and 2020 c 20 s 1447 are each amended to read as follows:

(1) A ((~~manufacturer or supplier of film products or food service products~~)) producer of plastic film bags sold, offered for sale, or

distributed for use in Washington that does not meet the applicable ASTM standard specifications provided in RCW 70A.455.050 ((~~and 70A.455.060~~)) is:

((~~(1)~~)) (a) Prohibited from using tinting, color schemes, labeling, ((~~and~~)) or terms that are required of products that meet the applicable ASTM standard specifications under RCW 70A.455.050 ((~~and 70A.455.060~~));

((~~(2)~~)) (b) Discouraged from using ((~~coloration,~~)) labeling, images, and terms that may reasonably be anticipated to confuse consumers into believing that noncompostable ((~~bags and food service packaging~~)) products are compostable; and

((~~(3)~~)) (c) Encouraged to use ((~~coloration,~~)) labeling, images, and terms to help consumers identify noncompostable bags ((~~and food service packaging~~)) as either: ((~~(a)~~)) (i) Suitable for recycling; or ((~~(b)~~)) (ii) necessary to dispose as waste.

(2) A producer of food service products, or plastic film products other than plastic film bags subject to subsection (1) of this section, sold, offered for sale, or distributed for use in Washington that does not meet the applicable ASTM standard specifications provided in RCW 70A.455.060 is:

(a) Prohibited from using labeling, or terms that are required of products that meet the applicable ASTM standard specifications under RCW 70A.455.060;

(b) Discouraged from using labeling, images, and terms that may reasonably be anticipated to confuse consumers into believing that noncompostable products are compostable; and

(c) Encouraged to use tinting, coloration, labeling, images, and terms to help consumers identify film products and food service packaging as either: (i) Suitable for recycling; or (ii) necessary to dispose as waste.

Sec. 807. RCW 70A.455.080 and 2019 c 265 s 8 are each amended to read as follows:

(1) Upon the request by a person, including the department, a ((~~manufacturer or supplier~~)) producer shall submit to that person or the department, within ((~~ninety~~)) 90 days of the request, nonconfidential business information and documentation demonstrating compliance with this chapter, in a format that is easy to understand and scientifically accurate.

(2) Upon request by a commercial compost processing facility, ((~~manufacturers~~)) producers of compostable products are encouraged to provide the facility with information regarding the technical aspects of a commercial composting environment, such as heat or moisture, in which the ((~~manufacturer's~~)) producer's product has been field tested and found to degrade.

Sec. 808. RCW 70A.455.090 and 2020 c 20 s 1448 are each amended to read as follows:

(1)(a) The ((~~state, acting through the attorney general,~~)) department and cities and counties have concurrent authority to enforce this chapter and to issue and collect civil penalties for a violation of this chapter, subject to the conditions in this section and RCW 70A.455.100. An enforcing government entity may impose a civil penalty in the amount of up to ((~~two thousand dollars~~)) $2,000 for the first violation of this chapter, up to ((~~five thousand dollars~~)) $5,000 for the second violation of this chapter, and up to ((~~ten thousand dollars~~)) $10,000 for the third and any subsequent violation of this chapter. If a ((~~manufacturer or supplier~~)) producer has paid a prior penalty for the same violation to a different government entity with enforcement authority under this subsection, the penalty imposed by a government entity is reduced by the amount of the payment.

(b) The enforcement of this chapter must be based primarily on complaints filed with the department and cities and counties. The department must establish a forum for the filing of complaints. Cities, counties, or any person may file complaints with the department using the forum, and cities and counties may review complaints filed with the department via the forum. The forum established by the department may include a complaint form on the department's website, a telephone hotline, or a public outreach strategy relying upon electronic social media to receive complaints that allege violations. The department, in collaboration with the cities and counties, must provide education and outreach activities to inform retail establishments, consumers, and producers about the requirements of this chapter.

(2) ((~~Any civil penalties collected pursuant to this section must be paid to the office of the city attorney, city prosecutor, district attorney, or attorney general, whichever office brought the action. Penalties collected by the attorney general on behalf of the state~~

~~must be deposited in the compostable products revolving account created in RCW 70A.455.110~~)) Penalties issued by the department are appealable to the pollution control hearings board established in chapter 43.21B RCW.

(3) The remedies provided by this section are not exclusive and are in addition to the remedies that may be available pursuant to chapter 19.86 RCW or other consumer protection laws, if applicable.

(4) In addition to penalties recovered under this section, the enforcing ((~~government entity~~)) city or county may recover reasonable enforcement costs and attorneys' fees from the liable ((~~manufacturer or supplier~~)) producer.

Sec. 809. RCW 70A.455.100 and 2020 c 20 s 1449 are each amended to read as follows:

((~~Manufacturers and suppliers~~)) (1) Producers who violate the requirements of this chapter are subject to civil penalties described in RCW 70A.455.090. A specific violation is deemed to have occurred upon the sale of noncompliant product by stock-keeping unit number or unique item number. The repeated sale of the same noncompliant product by stock-keeping unit number or unique item number is considered a single violation. ((~~A city, county, or the state~~))

(2)(a) A city or county enforcing a requirement of this chapter must send a written notice and a copy of the requirements to a noncompliant ((~~manufacturer or supplier~~)) producer of an alleged violation, who will have ((~~ninety~~)) 90 days to become compliant. ((~~A city, county, or the state may assess a first penalty if the manufacturer or supplier has not met the requirements ninety days following the date the notification was sent. A city, county, or the state~~))

(b) A city or county enforcing a requirement of this chapter may assess a first penalty if the producer has not met the requirements 90 days following the date the notification was sent. A city or county may impose second, third, and subsequent penalties on a ((~~manufacturer or supplier~~)) producer that remains noncompliant with the requirements of this chapter for every month of noncompliance.

(3) The department may only impose penalties under this chapter consistent with the standards established in RCW 43.21B.300.

NEW SECTION. **Sec. 810.** A new section is added to chapter 70A.455 RCW to read as follows:

(1) The department may adopt rules as necessary for the purpose of implementing, administering, and enforcing this chapter.

(2) Producers of a product subject to RCW 70A.455.040, 70A.455.050, or 70A.455.060 must submit, under penalty of perjury, a declaration that the product meets the standards established under those sections of this chapter for the product. This declaration must be submitted to the department:

(a) By January 1, 2024, for a product that is or will be sold or distributed into Washington beginning January 1, 2024;

(b) Prior to the sale or distribution of a product newly sold or distributed into Washington after January 1, 2024; and

(c) Prior to the sale or distribution of a product whose method of compliance with the standards established in RCW 70A.455.040, 70A.455.050, or 70A.455.060 is materially changed from the method of compliance used at the last declaration submission under this section.

(3) The department must begin enforcing the requirements of this chapter by July 1, 2024.

Sec. 811. RCW 70A.455.030 and 2019 c 265 s 3 are each amended to read as follows:

(1) Except as provided in this chapter, no ((~~manufacturer or supplier~~)) producer may sell, offer for sale, or distribute for use in this state a plastic product that is labeled with the term "biodegradable," "degradable," "decomposable," "oxo-degradable," or any similar form of those terms, or in any way imply that the plastic product will break down, fragment, biodegrade, or decompose in a landfill or other environment.

(2) This section does not apply to biodegradable mulch film that meets the required testing and has the appropriate third-party certifications.

Sec. 812. RCW 43.21B.110 and 2021 c 316 s 41 and 2021 c 313 s 16 are each reenacted and amended to read as follows:

(1) The hearings board shall only have jurisdiction to hear and decide appeals from the following decisions of the department, the director, local conservation districts, the air pollution control boards or authorities as established pursuant to chapter 70A.15 RCW, local health departments, the department of natural resources, the

department of fish and wildlife, the parks and recreation commission, and authorized public entities described in chapter 79.100 RCW:

(a) Civil penalties imposed pursuant to RCW 18.104.155, 70A.15.3160, 70A.300.090, 70A.20.050, 70A.530.040, 70A.350.070, 70A.515.060, 70A.245.040, 70A.245.050, 70A.245.070, 70A.245.080, 70A.65.200, 70A.455.090, 76.09.170, 77.55.440, 78.44.250, 88.46.090, 90.03.600, 90.46.270, 90.48.144, 90.56.310, 90.56.330, and 90.64.102.

(b) Orders issued pursuant to RCW 18.104.043, 18.104.060, 43.27A.190, 70A.15.2520, 70A.15.3010, 70A.300.120, 70A.350.070, 70A.245.020, 70A.65.200, 86.16.020, 88.46.070, 90.14.130, 90.46.250, 90.48.120, and 90.56.330.

(c) Except as provided in RCW 90.03.210(2), the issuance, modification, or termination of any permit, certificate, or license by the department or any air authority in the exercise of its jurisdiction, including the issuance or termination of a waste disposal permit, the denial of an application for a waste disposal permit, the modification of the conditions or the terms of a waste disposal permit, or a decision to approve or deny an application for a solid waste permit exemption under RCW 70A.205.260.

(d) Decisions of local health departments regarding the grant or denial of solid waste permits pursuant to chapter 70A.205 RCW.

(e) Decisions of local health departments regarding the issuance and enforcement of permits to use or dispose of biosolids under RCW 70A.226.090.

(f) Decisions of the department regarding waste-derived fertilizer or micronutrient fertilizer under RCW 15.54.820, and decisions of the department regarding waste-derived soil amendments under RCW 70A.205.145.

(g) Decisions of local conservation districts related to the denial of approval or denial of certification of a dairy nutrient management plan; conditions contained in a plan; application of any dairy nutrient management practices, standards, methods, and technologies to a particular dairy farm; and failure to adhere to the plan review and approval timelines in RCW 90.64.026.

(h) Any other decision by the department or an air authority which pursuant to law must be decided as an adjudicative proceeding under chapter 34.05 RCW.

(i) Decisions of the department of natural resources, the department of fish and wildlife, and the department that are reviewable under chapter 76.09 RCW, and the department of natural

resources' appeals of county, city, or town objections under RCW 76.09.050(7).

(j) Forest health hazard orders issued by the commissioner of public lands under RCW 76.06.180.

(k) Decisions of the department of fish and wildlife to issue, deny, condition, or modify a hydraulic project approval permit under chapter 77.55 RCW, to issue a stop work order, to issue a notice to comply, to issue a civil penalty, or to issue a notice of intent to disapprove applications.

(l) Decisions of the department of natural resources that are reviewable under RCW 78.44.270.

(m) Decisions of an authorized public entity under RCW 79.100.010 to take temporary possession or custody of a vessel or to contest the amount of reimbursement owed that are reviewable by the hearings board under RCW 79.100.120.

(n) Decisions of the department of ecology that are appealable under RCW 70A.245.020 to set recycled minimum postconsumer content for covered products or to temporarily exclude types of covered products in plastic containers from minimum postconsumer recycled content requirements.

(o) Orders by the department of ecology under RCW 70A.455.080.

(2) The following hearings shall not be conducted by the hearings board:

(a) Hearings required by law to be conducted by the shorelines hearings board pursuant to chapter 90.58 RCW.

(b) Hearings conducted by the department pursuant to RCW 70A.15.3010, 70A.15.3070, 70A.15.3080, 70A.15.3090, 70A.15.3100, 70A.15.3110, and 90.44.180.

(c) Appeals of decisions by the department under RCW 90.03.110 and 90.44.220.

(d) Hearings conducted by the department to adopt, modify, or repeal rules.

(3) Review of rules and regulations adopted by the hearings board shall be subject to review in accordance with the provisions of the administrative procedure act, chapter 34.05 RCW.

Sec. 813. RCW 43.21B.300 and 2021 c 316 s 42 and 2021 c 313 s 17 are each reenacted and amended to read as follows:

(1) Any civil penalty provided in RCW 18.104.155, 70A.15.3160, 70A.205.280, 70A.300.090, 70A.20.050, 70A.245.040, 70A.245.050,

70A.245.070, 70A.245.080, 70A.65.200, 70A.455.090, 88.46.090, 90.03.600, 90.46.270, 90.48.144, 90.56.310, 90.56.330, and 90.64.102 and chapter 70A.355 RCW shall be imposed by a notice in writing, either by certified mail with return receipt requested or by personal service, to the person incurring the penalty from the department or the local air authority, describing the violation with reasonable particularity. For penalties issued by local air authorities, within ((~~thirty~~)) 30 days after the notice is received, the person incurring the penalty may apply in writing to the authority for the remission or mitigation of the penalty. Upon receipt of the application, the authority may remit or mitigate the penalty upon whatever terms the authority in its discretion deems proper. The authority may ascertain the facts regarding all such applications in such reasonable manner and under such rules as it may deem proper and shall remit or mitigate the penalty only upon a demonstration of extraordinary circumstances such as the presence of information or factors not considered in setting the original penalty.

(2) Any penalty imposed under this section may be appealed to the pollution control hearings board in accordance with this chapter if the appeal is filed with the hearings board and served on the department or authority ((~~thirty~~)) 30 days after the date of receipt by the person penalized of the notice imposing the penalty or ((~~thirty~~)) 30 days after the date of receipt of the notice of disposition by a local air authority of the application for relief from penalty.

(3) A penalty shall become due and payable on the later of:

(a) Thirty days after receipt of the notice imposing the penalty;

(b) Thirty days after receipt of the notice of disposition by a local air authority on application for relief from penalty, if such an application is made; or

(c) Thirty days after receipt of the notice of decision of the hearings board if the penalty is appealed.

(4) If the amount of any penalty is not paid to the department within ((~~thirty~~)) 30 days after it becomes due and payable, the attorney general, upon request of the department, shall bring an action in the name of the state of Washington in the superior court of Thurston county, or of any county in which the violator does business, to recover the penalty. If the amount of the penalty is not paid to the authority within ((~~thirty~~)) 30 days after it becomes due and payable, the authority may bring an action to recover the penalty

in the superior court of the county of the authority's main office or of any county in which the violator does business. In these actions, the procedures and rules of evidence shall be the same as in an ordinary civil action.

(5) All penalties recovered shall be paid into the state treasury and credited to the general fund except those penalties imposed pursuant to RCW 18.104.155, which shall be credited to the reclamation account as provided in RCW 18.104.155(7), RCW 70A.15.3160, the disposition of which shall be governed by that provision, RCW 70A.245.040 and 70A.245.050, which shall be credited to the recycling enhancement account created in RCW 70A.245.100, RCW 70A.300.090, which shall be credited to the model toxics control operating account created in RCW 70A.305.180, RCW 70A.65.200, which shall be credited to the climate investment account created in RCW 70A.65.250, RCW 90.56.330, which shall be credited to the coastal protection fund created by RCW 90.48.390, and RCW 70A.355.070, which shall be credited to the underground storage tank account created by RCW 70A.355.090.

PART 9
Miscellaneous

NEW SECTION. **Sec. 901.** Sections 401, 402, and 405 of this act constitute a new chapter in Title 70A RCW.

NEW SECTION. **Sec. 902.** Nothing in this act changes or limits the authority of the Washington utilities and transportation commission to regulate the collection of solid waste, including curbside collection of residential recyclable materials, nor does this section change or limit the authority of a city or town to provide the service itself or by contract under RCW 81.77.020.

NEW SECTION. **Sec. 903.** The following acts or parts of acts are each repealed:

(1) RCW 70A.455.110 (Compostable products revolving account) and 2020 c 20 s 1450 & 2019 c 265 s 11; and

(2) RCW 70A.455.900 (Effective date—2019 c 265) and 2019 c 265 s 13.

NEW SECTION. **Sec. 904.** If any provision of this act or its application to any person or circumstance is held invalid, the remainder of the act or the application of the provision to other persons or circumstances is not affected.

NEW SECTION. **Sec. 905.** If specific funding for the purposes of this act, referencing this act by bill or chapter number, is not provided by June 30, 2022, in the omnibus appropriations act, this act is null and void.

Passed by the House March 8, 2022.
Passed by the Senate March 3, 2022.
Approved by the Governor March 25, 2022.
Filed in Office of Secretary of State March 28, 2022.

--- END ---

Local Government Compost Procurement Ordinance Adoption (CPO) and Reporting Requirements

RCW 43.19A.150

Why an organics management law?

Implementing the law will help the state achieve its greenhouse gas emission reduction goals by:

- Expanding markets for compost.
- Increasing compost production through organics diversion from landfills.
- Increasing compost production and use from organic material collected locally.

Who is required to adopt a CPO and report to Ecology?

- Counties and cities with a population of more than 25,000.
- Counties with a population fewer than 25,000 that contract to provide or require the UTC-franchised hauler(s) in their county to provide residential curbside organic material collection services.
- Cities with a population fewer than 25,000 that directly provide, contract to provide or require the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside organic material collection services.

Who is not required to adopt a CPO and report to Ecology?

- Counties and cities with a population of fewer than 25,000 where residential curbside organic material collection services are not provided.
- Counties and cities with a population of fewer than 25,000 where the hauler provides residential curbside organic material collection services to customers however the hauler is not required to provide the service by the jurisdiction.
- Cities with a population of fewer than 25,000 where residential curbside organic material collection services are provided by the UTC-franchised hauler(s) under a requirement set by the county.

What to report to Ecology

Cities required to adopt a CPO should report the following:

- Total tons of organic material collected by all curbside programs they directly provide, or contract with a hauler(s) to provide.
- Total tons of organic material collected at drop-off sites they operate, or they contract with a third-party to operate.
- Total tons of organic material collected by residential curbside programs they require the UTC franchised hauler(s) to provide in their jurisdiction.

Organics Management Team
Organics@ecy.wa.gov
(509) 960-1290

Counties required to adopt a CPO should report the following:

- Total tons of organic material collected at drop-off sites they operate, or contract with a third-party to operate.
- Total tons collected by residential curbside programs they contract with a hauler to provide or require the UTC-franchised hauler(s) to provide in their county.
- Jurisdictions should use conversion formulas in Ecology's General Measurement Standards and Reporting Guidelines (wa.gov).

Cities and counties required to adopt a CPO should report the compost purchases *only* for compost purchased directly by them and for compost purchased by contractors hired by them.

- The source or sources of the compost purchased.
- The volume and cost (without sales tax) of compost purchased each year from each source. (If 100% compost is not available, jurisdictions should report the quantities and costs based on the percentage of the blended product that is compost.)
- Cities and counties that enter into collective purchasing agreements should only report the volume and cost of the compost they purchased under those agreements for use by their jurisdictions.
- Cities and counties should also report compost they produce themselves and use in public projects, or compost that is provided to them at no cost.

When to report to Ecology

- The first report is due by December 31, 2024, after that reports are due on December 31st every two years, including two years of data, starting in 2026 and subsequent even numbered years.
- The first report should include the available data for 2023.
- An Ecology Department portal for submission of compost procurement activity reports is expected to open by July 1, 2024.

How to learn more

- Check out the Compost Procurement Ordinance and Reporting focus sheet.
- Visit the BOX platform for additional resources including examples of compost procurement ordinances.
- Subscribe to the Organics Management Newsletter.
- Contact our Organics Management Team at Organics@ecy.wa.gov or (509) 960-1290.

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DEPARTMENT OF ECOLOGY
State of Washington

2022 Organics Management Law

Focus on Business Management Requirements

Overview

Methane is a greenhouse gas that is, over 20 years, at least 75 times more potent than carbon dioxide. The primary goal of the 2022 Organics Management Law[1] is to reduce the emissions of methane created when organic materials, like food and yard waste, decompose in a landfill. To achieve this reduction, the bill established milestones based on 2015 disposal levels:

- Rescue 20% of previously disposed edible food for human consumption by 2025
- Divert 75% of previously disposed organic materials from landfills by 2030

To help meet the state's organic management goals, the new law added to and amended many different RCWs.

State requirements

This focus sheet examines a portion of the new law, RCW 70A.205.545[2], which has near-term requirements for Ecology and businesses. By July 1, 2023, and each following year, Ecology must post a determination of where the following apply:

- Curbside collection of food waste and organic materials is provided to businesses, and these materials are delivered to an organics management facility such as a compost facility or anaerobic digester.
- Adequate capacity exists at these facilities to accept increased volumes of organic materials from businesses.

Businesses requirements

Based on available service and volumes of organic material and solid waste produced, businesses must arrange for organic materials management services following the schedule below:

- **Jan. 1, 2024** -Businesses generating at least eight cubic yards of organic material waste per week must arrange for organic materials management service.
- **Jan. 1, 2025** -Businesses generating at least four cubic yards of organic material waste per week must arrange for organic materials management service.
- **Jan. 1, 2026** - Businesses generating at least four cubic yards of solid waste per week must arrange for organic materials management service.

These requirements also apply to businesses arranging for gardening and landscape work. Following the schedule above, they must ensure that an organics management facility will process the organic materials taken off site.

More details on these requirements can be found at Organics management for businesses - Washington State Department of Ecology.

Organics Management

(continued)

[1] https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Waste-reduction-programs/Organic-materials/2022-organics-management-law

[2] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.205.545

Organics Management

Business exemptions may apply

Ecology and local jurisdictions will work together to determine primary exemptions for businesses from the organic material management requirements

- Businesses will not be required to arrange for organics management services if there are no haulers in a jurisdiction to collect and deliver organic materials to a management facility, or the existing organic management facilities have no capacity for additional deliveries, or it is not economically feasible to collect and deliver organic materials to them.
- A jurisdiction may provide written notice to Ecology that, based on the criteria above, the organic material management requirements do not apply to businesses in their jurisdiction. Guidance on how to request an exemption can be found here.

Businesses may also be exempt from arranging for organic material management services if one of the following conditions apply:

- Organic materials are managed onsite.
- Organic materials from growing or harvesting food or fiber are used offsite by a business for growing food or fiber.
- Organic materials are sold or donated to another business for offsite use.
- Organic materials are generated from a natural disaster.
- Organic materials are self-hauled to an organic materials management facility.

How to learn more

Subscribe to the Organics Management email news to stay up to date. To sign up, follow the email news[2] link:

- Submit your email address
- Choose the Solid Waste Management Program
- Choose Organic Materials

Additional information about the 2022 Organics Management Law and related resources can be on our BOX platform.

DEFINITIONS

"**Business**" means a commercial or public entity including, but not limited to, a firm, partnership, proprietorship, joint stock company, corporation, or association that is organized as a for-profit or nonprofit entity. [Note: This definition includes public and nonprofit entities such as schools, churches, and hospitals.]

"**Business**" does not include a multifamily residential entity.

"**Food waste**" means waste from fruits, vegetables, meats, dairy products, fish, shellfish, nuts, seeds, grains, and similar materials that results from the storage, preparation, cooking, handling, selling, or serving of food for human consumption.

[2] https://public.govdelivery.com/accounts/WAECY/subscriber/new?topic_id=WAECY_244%22%3eClick%20to%20subscribe%3c/a

[3] https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Strategic-policy-and-planning/Enacting-legislation

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To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 360-407-6381 or visit https://ecology.wa.gov/accessibility. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877- 833-634

ES2HB1799 | 2022 Organics Management Act

Bill Part	Bill Section	RCW	New or revised sections	Summary of provisions	Focus	RCW Title & Chapter	RCW Section Description
1 - State Targets and OM Waste Collection Requirements	101	70A.205.007	New section	Sets goals - 75% reduction in statewide disposal of organic material waste by 2030 - 20% reduction of volume of edible food disposed to be recovered for human consumption. Both goals are relative to 2015 levels	**Goals**	* **Title 70A:** ENVIRONMENTAL HEALTH AND SAFETY * **Chapter 70A.205:** Solid waste management - Reduction and Recycling.	Landfill disposal of organic materials—Goal.
1 - State Targets and OM Waste Collection Requirements	102	70A.205.540	New section	Requires that in each jurisdiction with an Solid Waste Management Plan, source-separated organics collection be provided at least 26 weeks annually to all residential and non-residential customers by 01-01-2027. Allows for waivers and rule making by Ecology.	**Collection**	* **Title 70A:** ENVIRONMENTAL HEALTH AND SAFETY * **Chapter 70A.205:** Solid waste management - Reduction and Recycling.	Organic solid waste collection services—Fees—Exceptions
1 - State Targets and OM Waste Collection Requirements	103	70A.205.040	* (3)(a)	Requires SWMPs developed, updated, or amended after 7-1-24 to consider transition to collection requirements in 70A.205.540 and to identify priority areas for siting new OM management facilities. *Jurisdictions will also need to ensure the land use element in their comprehensive plan allows for the siting of OM facilities in the priority areas identified in the SWMP. See Bill Section 601 - 604 for how the comprehensive plan requirements apply to different types of jurisdictions.*	**Planning**	* **Title 70A:** ENVIRONMENTAL HEALTH AND SAFETY * **Chapter 70A.205:** Solid waste management - Reduction and Recycling.	County comprehensive solid waste management plan—Joint plans—Requirements when updating—Duties of cities.
1 - State Targets and OM Waste Collection Requirements	104	Not codified - Section 104, chapter 180, Laws of 2022.	New section	Requires ECY to contract a third-party consultant to study the adequacy of funding for local solid waste management with key stakeholders by 7-1-2023.These will include funding issues for policy proposals introduced or passed since 2019.	**Funding**		
1 - State Targets and OM Waste Collection Requirements	105	70A.205.015	* (16)(a)(i)(ii) & (b) * (17)	Adds definitions of OM and OM management to 70A.205, the SW Mgmt. - Reduction and Recycling chapter	**Definitions**	* **Title 70A:** ENVIRONMENTAL HEALTH AND SAFETY * **Chapter 70A.205:** Solid waste management - Reduction and Recycling.	Definitions
2 - Requirements for Organics Management by Businesses	201	70A.205.545	New section	Sets phased in requirements for business OM collection services beginning 7-1-2024. ECY must determine where these requirements apply by 7-1-2023 and each July 1 thereafter. Local health department may enforce. The requirements do not apply in areas within which a local jurisdictions has provided ECY with written notification that they should not apply based on criteria defined in this section.	**Collection - Businesses**	* **Title 70A:** ENVIRONMENTAL HEALTH AND SAFETY * **Chapter 70A.205:** Solid waste management - Reduction and Recycling.	Certain businesses must arrange for organic materials management services—Requirements—Limitations of this section—Definitions.
Part 3 - Updates to the Washington Good Samaritan Act	301	69.80.031	* (2)(a), 2(b) * (2)(k), (2)(k)(1)(i),(ii) * (3)(b) & 3(c) * (5), (5)(a), (5)(b)	Reduces liability for donating food including food that's past its best by, use by, and similar dates related to product freshness, not safety.	**Food Donations**	* **Title 69:** FOOD, DRUGS, COSMETICS, AND POISONS * **Chapter 69.80:** Food Donation and distribution - Liability	Good Samaritan food donation act—Definitions—Collecting, distributing, gleaning—Liability
Part 4 - Washington Center for Sustainable Food Management (CSFM) - New Chapter established - RCW.207A to create the CSFM	401	70A.207.010	Section in new chapter	Definitions for the work of the CSFM	**Center for Sustainable Food Management**	* **Title 70A:** ENVIRONMENTAL HEALTH AND SAFETY * **Chapter 70A.207:** Washington Center for Sustainable Food Management	Definitions
Part 4 - Washington Center for Sustainable Food Management New RCW chapter -	402	70A.207.020	Section in new chapter	Sets the purpose and activities for the CSFM	**Center for Sustainable Food Management**	* **Title 70A:** ENVIRONMENTAL HEALTH AND SAFETY * **Chapter 70A.207:** Washington Center for Sustainable Food Management	Washington center for sustainable food management—Established—Purpose—Authorized activities—Rules.
Part 4 - Washington Center for Sustainable Food Management	403	70A.205.550	New section	Provides ECY the authority to establish voluntary reporting protocols to obtain data on food donation and related activities to support the goals of the CSFM	**Center for Sustainable Food Management**	* **Title 70A:** ENVIRONMENTAL HEALTH AND SAFETY * **Chapter 70A.205:** Solid waste management - Reduction and Recycling.	Data to support the goals of the Washington center for sustainable food management—Voluntary reporting protocols.
Part 4 - Washington Center for Sustainable Food Management	404	69.80.040	New section	Requires WSDA to coordinate with ECY to ensure food donation information and referrals are consistent with the activities of the CSFM	**Center for Sustainable Food Management**	* **Title 69:** FOOD, DRUGS, COSMETICS, AND POISONS * **Chapter 69.80:** Food Donation and distribution - Liability	Information and referral service for food donation program.
Part 4 - Washington Center for Sustainable Food Management	405	70A.207.030	Section in new chapter	Requires ECY to adopt several model ordinances for optional use by cities and counties to disincentivize the generation of OM by businesses for landfill disposal by 1-1-25. Ordinances must be reviewed under the provisions of RCW 43.21C - the State Environmental Policy Act (SEPA).	**Model Ordinances**	* **Title 70A:** ENVIRONMENTAL HEALTH AND SAFETY * **Chapter 70A.207:** Washington Center for Sustainable Food Management	Model ordinances—Mechanisms for commercial solid waste collection and disposal.
Part 4 - Washington Center for Sustainable Food Management	406	43.21C.525	New section	Exempts local governments that adopt a model ordinance developed by Ecology from doing a SEPA review if one had been done by ECY.	**Model Ordinances**	* **Title 43:** STATE GOVERNMENT - EXECUTIVE * **Chapter 43.21C:** State Environmental Policy	Model ordinances created under RCW 70A.207.030—Certain actions not subject to the requirements of this chapter.
Part 5 - Funding and Incentives for Methane Emissions Reduction Activities Associated with Organic Materials Management	501	89.08.615	* (6) (f), (g),(h),(i) & (j) * (10)	Provides grant funding through the Sustainable Farms and Fields Program to farmers for equipment and other support to increase the use of compost and anaerobic digestate and to study the reduction in GHG emissions by using crop residues to produce biofuel.	**Funding**	* **Title 89:** RECLAMATION, SOIL CONSERVATION, AND LAND SETTLEMENT * **Chapter 89.08:** Conservation Districts	Sustainable farms and fields grant program—Commission to develop in consultation with the department of agriculture, Washington State University, and the United States department of agriculture natural resources conservation services—Use of funds—Grant applications
Part 5 - Funding and Incentives for Methane Emissions Reduction Activities Associated with Organic Materials Management	502	15.04.420	New section	Requires WSDA to set up program to reimburse farmers for the cost of purchasing and using compost by 7-1-2023.	**Funding**	* **Title 15:** AGRICULTURE AND MARKETING * **Chapter 15.04:** General Provisions	Compost reimbursement program—Eligibility—Application form—Limitations on distribution of funds—Report to the legislature.
Part 5 - Funding and Incentives for Methane Emissions Reduction Activities Associated with Organic Materials Management	503	43.155.020	(6)	Adds "composting and other organic materials management facilities" to the list of public works projects that can be funded through the Public Works Trust Fund.	**Funding**	* **Title 43:** STATE GOVERNMENT - EXECUTIVE * **Chapter 43.155:** Public Works Projects	Definitions.
Part 6 - Organic Materials Management Facility Siting	601	36.70.330	(1)	Requires local comprehensive plans developed, updated or amended after 1-1-25 to allow for the siting of OM management facilities to meet OM reduction and diversion goals - See Section Bill Section 602 RCW - 36.70A.142. *Jurisdictions will need to ensure the land use element in their comprehensive plan allows for the siting of OM facilities in the priority areas identified for OM facilitiies in their SWMPs. See Bill Section 103 - RCW 70A.205.040(3)(a).*	**Planning**	* **Title 36:** COUNTIES * **Chapter 36.70 :** Planning Enabling Act	Comprehensive plan—Required elements.

Part 6 - Organic Materials Management Facility Siting	**602**	36.70A.142	New section	Requires development regulations for comprehensive plans developed, updated or amended after 1-1-25 to allow for the siting of OM management facilities as identified in local SWMPs to meet OM reduction and diversion goals. *Jurisdictions will need to ensure the land use element in their comprehensive plan allows for the siting of OM facilities in the priority areas identified for OM facilities in their SWMPs. See Bill Section 103 - RCW 70A.205.040(3)(a).*	**Planning**	* **Title 36:** COUNTIES * **Chapter 36.70A:** Growth Management - Planning by Selected Counties and Cities	Comprehensive plans—Siting of organic materials management facilities.
Part 6 - Organic Materials Management Facility Siting	**603**	35.63.290	New section	Requires cities and towns not planning under 36.70A.040 & 35.63.100 to allow for the siting of OM management facilities in their comprehensive plans developed, updated or amended after 1-1-25. See Section Bill Section 602 RCW - 36.70A.142. *Jurisdictions will need to ensure the land use element in their comprehensive plan allows for the siting of OM facilities in the priority areas identified for OM facilities in their SWMPs. See Bill Section 103 - RCW 70A.205.040(3)(a).*	**Planning**	* **Title 35:** CITIES AND TOWNS * **Chapter 35.63:** Planning Commissions	Development regulations to implement comprehensive plans—Siting of organic materials management facilities.
Part 6 - Organic Materials Management Facility Siting	**604**	35A.63.310	New section	Requires code cities not planning under 36.70A.040 & 35.63.060 to allow for the siting of OM management facilities in their comprehensive plans developed, updated or amended after 1-1-25. See Section Bill Section 602 RCW - 36.70A.142. *Jurisdictions will need to ensure the land use element in their comprehensive plan allows for the siting of OM facilities in the priority areas identified for OM facilities in their SWMPs. See Bill Section 103 - RCW 70A.205.040(3)(a).*	**Planning**	* **Title 35A:** OPTIONAL MUNICIPAL CODE * **Chapter 35.63:** Planning and Zoning in Code Cities	Development regulations to implement comprehensive plans—Siting of organic materials management facilities.
PART 7 - Organic Materials Procurement	**701**	43.19A.150	New section	Requires counties and cites with more than 25,000 in population and/or have OM collection services provided in their jurisdictions to adopt compost procurement ordinances by 1-1-23. These jurisdictions are also required to report to ECY the quantity of OM diverted, and the source and quantities of the compost they purchase every 2 years starting 12-31-24.	**Procurement/Markets**	* **Title 43:** STATE GOVERNMENT - EXECUTIVE * **Chapter 43.19A:** Recycled Product Procurement	Cities and counties required to adopt a compost procurement ordinance—Report.
PART 7 - Organic Materials Procurement	**702**	39.30.040	(1)	Amends purchasing and bidding rules to say "Any local government may allow for the preferential purchase of compost to meet the requirements in 43.191.120"	**Procurement/Markets**	* **Title 39:** PUBLIC CONTRACTS AND INDEBTEDNESS * **Chapter 39.30:** Contracts - Indebtedness - Competitive Bidding Violations	Purchases—Competitive bidding—Consideration of tax revenues—Purchase of recycled or reused materials or products—Definitions.
PART 7 - Organic Materials Procurement	**703**	43.19A.160	New section	Contracts by a local government or state agency must require the use of compost products to the maximum extent economically feasible to meet the requirements in 43.19A.120	**Procurement/Markets**	* **Title 43:** STATE GOVERNMENT - EXECUTIVE * **Chapter 43.19A:** Recycled Product Procurement	Use of compost products.
PART 8 - Product Degradability Labeling	**810**	70A.455.120	New section	All cities and counties in Washington, as well as Ecology, have the authority to investigate complaints and enforce violations. Provides ECY rule-making authority for enforcement of these statutes. ECY is required to develop a forum for complaints and will collaborate with cities and counties to provide technical assistance to retailers, consumers, and producers. Enforcement must begin by 7-1-24.	**Product Degradability Labeling**	* **Title 70A:** ENVIRONMENTAL HEALTH AND SAFETY * **Chapter 70A.455:** Plastic Product Degradability	Rules—Producers' declaration—Enforcement.
Part 4 - Washington Center for Sustainable Food Management (CSFM)	**401-404**	70A.207	New chapter	Establishes the CSFM Operations to begin by 01-01-24	**Center for Sustainable Food Management**		
PART 7 - Organic Materials Procurement	**701-703**	43.19A.120	Primary statute: Not revised, but referenced in new and amended sections	The changes to other statutes to implement this part of the law reference back to this this statute that requires the use of compost products in government projects.	**Procurement/Markets**	* **Title 43:** STATE GOVERNMENT - EXECUTIVE * **Chapter 43.19A:** Recycled Product Procurement	Use of compost products in projects.
PART 8 - Product Degradability Labeling	**801 - 809 & 811**	70A.455	70A.455.020, 030, 040, 050, 060, 070,080,090, 100. 70A.455.110 is repealed.	Beginning 1-1-24, producers of products sold in Washington and labeled as compostable, including bags, film products, and food service products, must submit a declaration of compliance to ECY. Compliance includes using appropriate labels and colors on compostable products.	**Product Degradability Labeling**	* **Title 70A:** ENVIRONMENTAL HEALTH AND SAFETY * **Chapter 70A.455:** Plastic Product Degradability	Many sections
PART 8 - Product Degradability Labeling	**812 - 813**	43.21B	43.21B.110, 43.21B.300	Defines penalties, the process of enforcing violations, and the appeal process for producters.	**Product Degradability Labeling**	* **Title 43:** STATE GOVERNMENT - EXECUTIVE * **Chapter 43.21B:** Environmental and Land Use Hearings Office - Pollution Control Hearings Board	• Pollution control hearings board jurisdiction. • Penalty procedures.

AGENDA REQUEST FORM

Return completed form and complete agenda item to the Clerk of the Board
Yakima County Commissioners' Office, Room 232

Prepared by: Lisa Freund

Department: Solid Waste

Requested Agenda Date: 02/14/2023

Presenting: Karma Suchan

Board of County Commissioners Record Assigned

001-2023

APPROVED FOR AGENDA:

☐ Consent ☐ Regular

Board of County Commissioners Determined

Document Title:

Compost Procurement Ordinance

Action Requested: *Check Applicable Box*

☐ PASS RESOLUTION ☐ EXECUTE or AMEND **AGREEMENT** CONTRACT or GRANT

☐ ISSUE PROCLAMATION ☒ PASS ORDINANCE ☐ OTHER _____

Describe Fiscal Impact:

Cost of advertising for Public Hearing

Background Information:

This ordinance is to meet the requirements of ESSHB 1799 that was signed into Washington State law in March 2022, to assist in reducing greenhouse gases. When feasible, practicable, and fiscally responsible Yakima County will utilize compost materials from within Yakima County for projects related to erosion prevention, landscaping, soil amendments, as listed in the ordinance.

Summary & Recommendation:

We recommend passing the ordinance to stay in compliance with the law.

Motion:

Department Head/ Elected Official

Signature

AGREEMENT Attached Is Approved as to Form
Corporate Counsel Initial ✓

Late Agenda Requests Require BOCC Chairman Signature:

BOARD OF YAKIMA COUNTY COMMISSIONERS

ORDINANCE NO. 001-2023

AN ORDINANCE SPECIFYING COUNTY POLICY FOR THE PROCUREMENT OF COMPOST, AS REQUIRED BY CHAPTER 43.19A RCW, AND ADDING A NEW CHAPTER TO YAKIMA COUNTY CODE ("YCC") TITLE 16

WHEREAS, in March 2022, House Bill 1799, Chapter 180, Laws of Washington 220 was signed into Washington law, which included a requirement for counties to adopt a compost procurement ordinance, to-wit, RCW 49.19A.150; and

WHEREAS, the County continues to assess the use of compost products in its government-funded projects; now, therefore

BE IT HEREBY ORDAINED by the Board of Yakima County Commissioners, that a new chapter shall be added to Title 16 of the Yakima County Code, as follows:

Chapter 16.19
COMPOST PROCUREMENT

Sections:

16.19.010 Definitions.

(1) "Compost' means a product created with "composted material" as defined in RCW 70A.205.015(3). "Compost" includes, but is not limited to, one hundred percent finished compost or blends that include compost as a primary ingredient. Mulch is "compost" if it contains a minimum of sixty percent composted material. Bark is not "compost."

16.19.020 General Policy.

(1) Yakima County and its departments shall purchase finished compost products for use in public projects in which compost is an appropriate material in county projects or on county land, provided it is not cost prohibitive to acquire. Procurement costs will include the product cost and all associated transportation and delivery charges.

(2) Yakima County is not required to use compost products if:

(i) Compost products are not available within a reasonable period of time;

(ii) Compost products that are available do not comply with existing purchasing standards; and

(iii) Available compost products do not comply with federal or state health, quality, or safety standards.

(iv) Compost product prices are not reasonable or competitive.

16.19.030 Planning. In order to meet the general policy, Yakima County shall plan for compost use in the following categories:

(1) Landscaping projects;

(2) Construction and postconstruction soil amendments;

(3) Applications to prevent erosion, filter stormwater runoff, promote vegetative growth, or improve the stability and longevity of roadways; and

(4) Low-impact development of green infrastructure to filter pollutants or to keep water onsite, or both.

16.19.040 Local Purchasing. Yakima County and its departments will purchase finished compost products from companies

(1) Producing compost locally;

(2) Certified by a nationally recognized organization, such as the U.S. Composting Council, or its equivalent;

(3) Produce compost products that are derived from municipal solid waste compost programs and meet quality standards comparable to standards adopted by the Washington State Department of Transportation or adopted by rule by the Washington State Department of Ecology, and in compliance with apple maggot boundaries and rules set by the United States Department of Agriculture, as defined by RCW 43.19A.130.

16.19.050 Education. The Yakima County Solid Waste Division shall be responsible for educating residents and businesses about the value of food and yard waste compost, and how Yakima County uses compost in its operations each year.

16.19.060 Reporting. In co-operation with other Yakima County departments, the Solid Waste Division is responsible for submitting a report to the Washington State Department of Ecology beginning December 31, 2024, and each December 31st of even numbered years thereafter, with the following information:

(1) The total tons of organic material diverted from the Yakima County waste stream;

(2) The volume and cost of compost purchased; and

(3) The source or sources of the compost purchased.

16.19.070 Severability. If any section, subsection, sentence, clause, phrase or other portion of this Ordinance or its application to any person is, for any reason, declared invalid, illegal or unconstitutional in whole or in part by any court or agency of competent jurisdiction, said decision shall not affect the validity of the remaining portions hereof.

16.19.080 Effective Date. This Ordinance shall take effect immediately upon adoption.

16.19.090 Corrections. Upon approval of the Yakima County Prosecuting Attorney's Office, the Clerk of the Board is authorized to make any necessary corrections to any section, subsection, sentence, clause, phrase or other portion of this Ordinance for scriveners or clerical errors, references, ordinance numbering, section/subsection numbers, and any reference thereto.

BE IT FURTHER ORDAINED, the Clerk of the Board shall send a copy of this signed Ordinance to all affected Department Heads and Elected Officials.

ADOPTED this 14th of February.

Attest:

Julie Lawrence, Clerk of the Board
Erin Franklin, Deputy Clerk of the Board

Approved as to form:

Don L. Anderson
Deputy Prosecuting Attorney

BOARD OF YAKIMA COUNTY COMMISSIONERS

LaDon Linde, Chair

Excused

Amanda McKinney, Commissioner

Kyle Curtis, Commissioner
Constituting the Board of County Commissioners for Yakima County, Washington

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Adams County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Hatton	80	Residential - No Business with food - No	Exempt	Exempt	Exempt
Lind	535	Residential - No Business with food - No	Exempt	Exempt	Exempt
Othello	8,920	Residential - No Business with food - No	Exempt	Exempt	Exempt
Ritzville	1,780	Residential - No Business with food - No	Exempt	Exempt	Exempt
Washtucna	210	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	9,575	Residential - No Business with food - No	N/A	Exempt	Exempt
Adams County *does **not** plan under the Growth Management Act*	21,100	No minimum service level for curbside organics	Exempt	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- **Cities and counties with a population of 25,000 or more.**
- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

- **Areas where curbside OM collection services including food is available to businesses** *and*
- **Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.**

Residential and "non-residential" collection requirements apply in:

- **Cities* and counties** with a population of 25,000 or more** *or in*
- **Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that **do** plan under the Growth Management Act)* *or in*
- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that **do not** plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Asotin County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Asotin	1,220	Residential - No Business with food - No	Exempt	Exempt	Exempt
Clarkston	7,215	Residential - Municipal Business with food - No	CPO Requirements Apply	Exempt	Exempt
Unincorporated	14,165	Residential - No Business with food - No	N/A	Exempt	Exempt
Asotin County *does **not** plan under the Growth Management Act*	22,600	No minimum service level for curbside organics	Exempt	N/A	N/A

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The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do** plan under the Growth Management Act)* *or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do not** plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

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Benton County *2022 Organics Management Law compost procurement and collection provisions*	*Requirement*	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
	RCW	43.19A.150	70A.205.545	70A.205.540
	More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
	Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Benton City	3,710	**Residential** - No **Business with food** - No	Exempt	Exempt	Exempt
Kennewick	**85,320**	**Residential** - Contract - No* **Business with food** - No **Unlimited bags of leaves collected three weeks during the year under contract and disposed.*	CPO Requirements Apply	Exempt	2027 Resid./Non-Resid. Collection Requirements Apply *population exceeds 50,000 and no curbside residential OM collection is currently provided. Waiver needed to be exempted.*
Prosser	6,195	**Residential** - No **Business with food** - No	Exempt	Exempt	Exempt
Richland	**62,220**	**Residential** - Municipal **Business with food** - No	CPO Requirements Apply	Exempt	2027 Resid./Non-Resid. Collection Requirements Apply
West Richland	17,410	**Residential** - No **Business with food** - No	Exempt	Exempt	Exempt
Unincorporated	37,445	**Residential** - No **Business with food** - No	N/A	Exempt	2027 Resid./Small Non-Resid. Collection Requirements Apply *in UGAs for incorporated cities with populations of more than 25,000 (Kennewick & Richland) and in wholly unincorporated UGAs (none identified), unless a waiver is issued.*
Benton County *plans under the Growth Management Act*	**212,300**	No minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

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- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

- **Areas where curbside OM collection services including food is available to businesses** *and*
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Residential and "non-residential" collection requirements apply in...

- **Cities* and counties** with a population of 25,000 or more** *or in*
- **Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that do plan under the Growth Management Act) or in*
- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

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Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*

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Chelan County *2022 Organics Management Law compost procurement and collection provisions*		*Requirement*	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
		RCW	43.19A.150	70A.205.545	70A.205.540
		More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
		Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027
Jurisdiction Name	**2022 Population**	**Current OM Collection Services**	**Status** *see criteria below*	**Status** *see criteria below*	**Status** *see criteria below*
Cashmere	3,280	Residential - No Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Chelan	4,390	Residential - Contract Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Entiat	1,355	Residential - No Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Leavenworth	2,515	Residential - Municipal (2x/year) Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Wenatchee	35,650	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Unincorporated	33,460	Residential - No Business with food - in some areas *see BOMA Map*	N/A	See BOMA Map Business OM Management Requirements apply except in Zip Code 98852 in north Chelan County	2027 Resid./Small Non-Resid. Collection Requirements Apply in UGAs for incorporated cities with populations of more than 25,000 (Wenatchee) and in wholly unincorporated UGAs (Peshastin & Manson), unless a waiver is issued.
Chelan County *plans under the Growth Management Act*	80,650	No minimum service level for curbside organics	CPO Requirements Apply	See BOMA Map Business OM Management Requirements apply except in Zip Code 98852 in north Chelan County	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

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- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

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Clallam County
2022 Organics Management Law compost procurement and collection provisions

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Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Forks	3,360	**Residential** - No **Business with food** - No	Exempt	Exempt	Exempt
Port Angeles	**20,200**	**Residential** - Municipal **Business with food** - No	CPO Requirements Apply	Exempt	Exempt
Sequim	**8,215**	**Residential** - Contract **Business with food** - No	CPO Requirements Apply	Exempt	Exempt
Unincorporated	45,850	**Residential** - No **Business with food** - No	N/A	Exempt	2027 Resid./Small Non-Resid. Collection Requirements Apply *in UGAs for incorporated cities with populations of more than 25,000 (none at this time), and in wholly unincorporated UGAs (Carlsborg, Joyce, & Clallam Bay), unless a waiver is issued.*
Clallam County *plans under the Growth Management Act*	**77,625**	**No minimum service level for curbside organics**	CPO Requirements Apply	N/A	N/A

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- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that **do not** plan under the Growth Management Act)*

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Clark County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
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Battle Ground	21,780	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Camas	27,250	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	2027 Resid./Non-Resid. Collection Requirements Apply
La Center	3,835	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Ridgefield	13,640	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Vancouver	197,600	Residential - Contract Business with food -Yes	CPO Requirements Apply	Exempt	2027 Resid./Non-Resid. Collection Requirements Apply
Washougal	17,390	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Woodland *also in Cowlitz County*	6,575	Residential - No Business with food - No	Exempt	Exempt	Exempt
Yacolt	1,670	Residential - Contract Business with food - No	Exempt *(all towns are exempt)*	Exempt	Exempt
Unincorporated	237,650	Residential - Yes Business with food - Yes - exclusive of some rural areas.	N/A	Exempt	2027 Resid./Small Non-Resid. Collection Requirements Apply *in UGAs for incorporated cities with populations of more than 25,000 (Vancouver & Camas) and in wholly unincorporated UGAs (none identified), unless a waiver is issued.*
Clark County *plans under the Growth Management Act*	520,900	Contracts for residential OM collection services	CPO Requirements Apply	N/A	N/A

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- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

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Cowlitz County
2022 Organics Management Law compost procurement and collection provisions

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Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Castle Rock	2,445	Residential - No Business with food - No	Exempt	Exempt	Exempt
Kalama	3,065	Residential - No Business with food - No	Exempt	Exempt	Exempt
Kelso	12,720	Residential - No Business with food - No	Exempt	Exempt	Exempt
Longview	**37,780**	Residential - No Business with food - No	CPO Requirements Apply	Exempt	Exempt *no curbside organics*
Woodland *also in Clark County*	6,575	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	24,590	Residential - No Business with food - No	N/A	Exempt	Exempt
Cowlitz County *does not plan under the Growth Management Act*	**44,000**	No minimum service level for curbside organics	CPO Requirements Apply	Exempt	Exempt

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

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Columbia County

2022 Organics Management Law compost procurement and collection provisions

	Requirement	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
	RCW	43.19A.150	70A.205.545	70A.205.540
	More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
	Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027
Jurisdiction Name	**2022 Population**	**Current OM Collection Services**	**Status** *see criteria below*	**Status** *see criteria below*	**Status** *see criteria below*
Dayton	2,445	Residential - No Business with food - No	Exempt	Exempt	Exempt
Starbuck	120	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	1,385	Residential - No Business with food - No	N/A	Exempt	Exempt
Columbia County *plans under the Growth Management Act*	3,950	No minimum service level for curbside organics	Exempt	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
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Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

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Last updated - 08-18-2023

Douglas County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Bridgeport	2,135	Residential - No Business with food - No	Exempt	Exempt	Exempt
Coulee Dam *also in Okanogan County*	1,210	Residential - No Business with food - No	Exempt	Exempt	Exempt
East Wenatchee	**14,180**	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Mansfield	330	Residential - No Business with food - No	Exempt	Exempt	Exempt
Rock Island	1,425	Residential - Yes - *but not part of City contract* Business with food - No	Exempt	Exempt	Exempt
Waterville	**1,140**	Residential - No Business with food - No	Exempt	Business OM Management Requirements Apply	Exempt
Unincorporated	24,590	Minimum service ordinance for yard waste collection in the UGAs for Greater East Wenatchee and Greater Rock Island.	N/A	See BOMA Map Business OM Management Requirements apply in certain zip codes - see below*	Exempt *may apply in Pangborn Industrial Service UGA when total unincorporated population exceeds 25,000, unless a waiver is issued.*
Douglas County *plans under the Growth Management Act*	**44,000**	No minimum service level ordinance outside of the Greater East Wenatchee and Greater Rock Island UGAs.	CPO Requirements Apply	See BOMA Map Business OM Management Requirements apply in certain zip codes - see below*	N/A

*** Requirements only apply in zip codes 98843, 98858, 98802, and the small portion of 98488 in Douglas County. All other areas in the county are exempt.**

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- **Cities and counties with a population of 25,000 or more.**
- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

- **Areas where curbside OM collection services including food is available to businesses** ***and***
- **Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.**

Residential and "non-residential" collection requirements apply in...

- **Cities* and counties** with a population of 25,000 or more** ***or in***
- **Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that* ***do*** *plan under the Growth Management Act)* ***or in***
- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that* ***do not*** *plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

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Ferry County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Republic	1,000	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	6,300	Residential - No Business with food - No	N/A	Exempt	Exempt
Ferry County *does not plan under the Growth Management Act*	7,300	No minimum service level for curbside organics	Exempt	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do** plan under the Growth Management Act)* *or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do not** plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

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Franklin County

2022 Organics Management Law compost procurement and collection provisions

	Requirement	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) managment requirements	2027 residential and "non-residential" OM collection requirements
	RCW	43.19A.150	70A.205.545	70A.205.540
	More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
	Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027
Jurisdiction Name	**2022 Population**	**Current OM Collection Services**	**Status** *see criteria below*	**Status** *see criteria below*	**Status** *see criteria below*
Connell	4,840	Residential - No Business with food - No	Exempt	Exempt	Exempt
Kahlotus	145	Residential - No Business with food - No	Exempt	Exempt	Exempt
Mesa	390	Residential - Contract Business with food - No	Exempt	Exempt	Exempt
Pasco	**80,180**	**Residential - No Business with food - No**	**CPO Requirements Apply**	Exempt	**2027 Resid./Non-Resid. Collection Requirements Apply** *population exceeds 50,000 and no residential OM collection is currently provided. Waiver needed to be exempted.*
Unincorporated	14,195	Residential - No Business with food - No	N/A	Exempt	Exempt
Franklin County *plans under the Growth Management Act*	**99,750**	**No minimum service level for curbside organics**	**CPO Requirements Apply**	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- **Cities and counties with a population of 25,000 or more.**
- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

- **Areas where curbside OM collection services including food is available to businesses** *and*
- **Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.**

Residential and "non-residential" collection requirements apply in...

- **Cities* and counties** with a population of 25,000 or more** *or in*
- **Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that do plan under the Growth Management Act)* *or in*
- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

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Other resources

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Garfield County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Pomeroy	1,395	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	905	Residential - No Business with food - No	N/A	Exempt	Exempt
Garfield County *plans under the Growth Management Act*	**2,300**	No minimum service level for curbside organics	Exempt	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility wit

The business OM organics material management requirements apply in:

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do** plan under the Growth Management Act)* *or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do not** plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

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Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

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Grant County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Coulee City	560	Residential - No Business with food - No	Exempt	Exempt	Exempt
Electric City	960	Residential - No Business with food - No	Exempt	Exempt	Exempt
Ephrata	8,620	Residential - No Business with food - No	Exempt	Exempt	Exempt
George	820	Residential - No Business with food - No	Exempt	Business OM Management Requirements Apply	Exempt
Grand Coulee	965	Residential - No Business with food - No	Exempt	Exempt	Exempt
Hartline	180	Residential - No Business with food - No	Exempt	Exempt	Exempt
Krupp	50	Residential - No Business with food - No	Exempt	Exempt	Exempt
Mattawa	3,535	Residential - No Business with food - No	Exempt	Exempt	Exempt
Moses Lake	**26,040**	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	2027 Resid./Non-Resid. Collection Requirements Apply
Quincy	7,830	Residential - No Business with food - No	Exempt	Business OM Management Requirements Apply	Exempt
Royal City	1,910	Residential - No Business with food - No	Exempt	Exempt	Exempt
Soap Lake	1,740	Residential - No Business with food - No	Exempt	Exempt	Exempt
Warden	2,525	Residential - No Business with food - No	Exempt	Exempt	Exempt
Wilson Creek	205	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	45,860	Residential - No Business with food - No	N/A	**See BOMA Map** Business OM Management Requirements apply only in Zip Code 98848.	2027 Resid./Small Non-Resid. Collection Requirements Apply *in UGAs for incorporated cities with populations of more than 25,000 (Moses Lake) and in wholly unincorporated UGAs (none identified), unless a waiver is issued.*
Grant County *plans under the Growth Management Act*	101,800	No minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
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The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
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Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act)* *or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

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Jefferson County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Port Townsend	**10,290**	**Residential - Contract Business with food - No**	**CPO Requirements Apply**	**Exempt**	**Exempt**
Unincorporated	23,060	**Residential - No Business with food - No**	**N/A**	**Exempt**	**Exempt** *may apply in Jefferson County UGA when total unincorporated population exceeds 25,000, unless a waiver is issued.*
Jefferson County *plans under the Growth Management Act*	**33,350**	**No minimum service level for curbside organics**	**CPO Requirements Apply**	**N/A**	**N/A**

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- **Cities and counties with a population of 25,000 or more.**
- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

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Residential and "non-residential" collection requirements apply in...

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Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Grays Harbor County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Aberdeen	17,040	Residential - No Business with food - No	Exempt	Exempt	Exempt
Cosmopolis	1,665	Residential - No Business with food - No	Exempt	Exempt	Exempt
Elma	3,460	Residential - No Business with food - No	Exempt	Exempt	Exempt
Hoquiam	8,785	Residential - No Business with food - No	Exempt	Exempt	Exempt
McCleary	2,040	Residential - No Business with food - No	Exempt	Exempt	Exempt
Montesano	4,150	Residential - No Business with food - No	Exempt	Exempt	Exempt
Oakville	720	Residential - No Business with food - No	Exempt	Exempt	Exempt
Ocean Shores	7,160	Residential - No Business with food - No	Exempt	Exempt	Exempt
Westport	2,255	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	29,125	Residential - No Business with food - No	N/A	Exempt	Exempt
Grays Harbor County *does not plan under the Growth Management Act*	**76,400**	**No minimum service level for curbside organics**	**CPO Requirements Apply**	**N/A**	**N/A**

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- **Cities and counties with a population of 25,000 or more.**
- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

- **Areas where curbside OM collection services including food is available to businesses** *and*
- **Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.**

Residential and "non-residential" collection requirements apply in...

- **Cities* and counties** with a population of 25,000 or more** *or in*
- **Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that do plan under the Growth Management Act)* *or in*
- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Island County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Coupeville	1,965	Residential - No Business with food - No	Exempt	Exempt	Exempt
Langley	1,155	Residential - No Business with food - No	Exempt	Exempt	Exempt
Oak Harbor	**24,760**	Residential - Municipal Business with food - No	CPO Requirements Apply	Exempt	Exempt *will apply when pop. reaches 25,000*
Unincorporated	59,820	Residential - No Business with food - No	N/A	See BOMA Map Business OM Management Requirements apply only on Camano Island	2027 Resid./Small Non-Resid. Collection Requirements Apply *in UGAs for incorporated cities with populations of more than 25,000 (none at this time) and in wholly unincorporated UGAs (Freeland), unless a waiver is issued.*
Island County *plans under the Growth Management Act*	**87,700**	No minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-08-2023

King County

2022 Organics Management Law compost procurement and collection provisions

		Requirement	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
		RCW	43.19A.150	70A.205.545	70A.205.540
		More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
		Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting* [illegible]	Phased in from January 1, 2024 to January 1, [illegible]	Beginning January 1, 2027
Jurisdiction Name	**2022 Population**	**Current OM Collection Services**	**Status** see criteria below	**Status** see criteria below	**Status** see criteria below
Algona	3,300	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Auburn *also in Pierce County*	88,750	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Beaux Arts Village	315	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Bellevue	153,900	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Black Diamond	6,145	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Bothell *also in Snohomish County*	48,940	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Burien	52,490	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non Resid. Collection Requirements Apply
Carnation	2,160	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Clyde Hill	3,110	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Covington	21,200	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Des Moines	33,160	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Duvall	8,320	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Enumclaw	12,910	Residential - Muncipal Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Federal Way	101,800	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Hunts Point	460	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Issaquah	40,950	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Kenmore	24,090	Residential - UTC Business with food - Yes	Exempt *will apply when pop. reaches 25,000*	Business OM Management Requirements Apply	Exempt *will apply when pop. reaches 25,000*
Kent	137,900	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
King County - Unincorporat	248,160	Residential - UTC Business with food - Yes	CPO Requirements Apply (Satisfied via overall KC CPO)	See BOMA Map see exempt zip codes below	2027 Resid./Small Non-Resid. Collection Requirements Apply *In UGAs for incorporated cities with populations of more than 25,000 and in wholly unincorporated UGAs,* [illegible]
King County *plans under the Growth Management Act*	[illegible]	Minimum service level for curbside organics	CPO Requirements Apply	See BOMA Map see exempt zip codes below	2027 Resid./Small Non-Resid. Collection Requirements Apply *In UGAs for incorporated cities with populations of more than 25,000 and in wholly unincorporated UGAs,* [illegible]
Kirkland	93,570	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Lake Forest Park	13,620	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Maple Valley	28,920	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Medina	2,915	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Mercer Island	25,780	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Milton *also in Pierce County*	8,695	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Newcastle	13,560	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Normandy Park	6,790	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
North Bend	7,915	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Pacific *also in Pierce County*	7,270	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Redmond	75,270	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Renton	107,500	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Sammamish	68,150	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
SeaTac	31,910	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Seattle	762,500	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Shoreline	[illegible]	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Skykomish	165	Residential - No Business with food - No	Exempt	Exempt	Exempt
Snoqualmie	14,490	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Tukwila	22,620	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Woodinville	13,450	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Yarrow Point	1,125	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt

Zip codes exempted from Business OM requirements: 98070, 98019, 98224, 98288, 98204, 98065, 98045, 98826, and the portion of 98022 that is in King County.

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses and
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in:

- Cities* and counties** with a population of 25,000 or more or in
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 (for counties that do plan under the Growth Management Act) or in
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 (for counties that do not plan under the Growth Management Act)

*Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.

**All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.

***UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	Includes subfolder below on the new OM law. Use Food Well Won Plan resources, funding resources, local program resources including school programs and more.
2022 OM Law Resource Folder	Include details on compost procurement, table crosswalking ec2HB1799 with the RCW, facility siting and [illegible]
Compost procurement resources	Includes examples of local CPOs and resources to assist with compost purchasing.
Planning and Waste Reduction Resource Library	robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plans, waste composition and market data, sample contracts, and lots more.

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Kitsap County *2022 Organics Management Law compost procurement and collection provisions*	*Requirement*	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
	RCW	43.19A.150	70A.205.545	70A.205.540
	More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
	Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Bainbridge Island	25,060	Residential - UTC Business with food - No	CPO Requirements Apply	Exempt	2027 Resid./Non-Resid. Collection Requirements Apply
Bremerton	45,220	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	2027 Resid./Non-Resid. Collection Requirements Apply
Port Orchard	16,400	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	Exempt
Poulsbo	12,180	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	Exempt
Unincorporated	182,040	Residential - UTC - *offered in most areas - expanding countywide in 2026* Business with food - No	N/A	Exempt	2027 Resid./Small Non-Resid. Collection Requirements Apply *in UGAs for incorporated cities with populations of more than 25,000 (Bainbridge Island & Bremerton), and in wholly unincorporated UGAs (Central Kitsap, Kingston, Grost, & Silverdale UGAs), unless a waiver is issued.*
Kitsap County *plans under the Growth Management Act*	280,900	Minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do** plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do not** plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Kittitas County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Cle Elum	2,250	Residential - No Business with food - No	Exempt	Exempt	Exempt
Ellensburg	20,940	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	Exempt
Kittitas	1,440	Residential - No Business with food - No	Exempt	Exempt	Exempt
Roslyn	960	Residential - No Business with food - No	Exempt	Exempt	Exempt
South Cle Elum	565	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	21,045	Residential - No Business with food - No	N/A	Exempt	Exempt
Kittitas County *plans under the Growth Management Act*	47,200	No minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- **Cities and counties with a population of 25,000 or more.**
- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

- **Areas where curbside OM collection services including food is available to businesses** ***and***
- **Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.**

Residential and "non-residential" collection requirements apply in...

- **Cities* and counties** with a population of 25,000 or more** ***or in***
- **Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that* ***do*** *plan under the Growth Management Act)* ***or in***
- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that* ***do not*** *plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
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Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
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Klickitat County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Bingen	780	Residential - No Business with food - No	Exempt	Exempt	Exempt
Goldendale	3,475	Residential - No Business with food - No	Exempt	Exempt	Exempt
White Salmon	2,490	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	16,405	Residential - No Business with food - No	N/A	Exempt	Exempt
Klickitat County *does not plan under the Growth Management Act*	**23,150**	No minimum service level for curbside organics	Exempt *will apply when pop. reaches 25,000*	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
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The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
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Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

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Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Lewis County
2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	**CPO adoption - January 1, 2023** *Reporting every 2 years starting in December 2024*	**Phased in from January 1, 2024 to January 1, 2026**	**Beginning January 1, 2027**

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Centralia	18,360	**Residential** - Yes - *but not part of City contract* **Business with food** - No	Exempt	Exempt	Exempt
Chehalis	7,365	**Residential** - Yes - *but not part of City contract* **Business with food** - No	Exempt	Exempt	Exempt
Morton	1,070	**Residential** - Yes - *but not part of City contract* **Business with food** - No	Exempt	Exempt	Exempt
Mossyrock	780	**Residential** - Yes - *but not required under City or County code* **Business with food** - No	Exempt	Exempt	Exempt
Napavine	1,955	**Residential** - Yes - *but not part of City contract* **Business with food** - No	Exempt	Exempt	Exempt
Pe Ell	650	**Residential** - Yes - *but not required under City or County code* **Business with food** - No	Exempt	Exempt	Exempt
Toledo	685	**Residential** - Yes - *but not required under City or County code* **Business with food** - No	Exempt	Exempt	Exempt
Vader	655	**Residential** - Yes - *but not part of City contract* **Business with food** - No	Exempt	Exempt	Exempt
Winlock	1,695	**Residential** - Yes - *but not required under City or County code* **Business with food** - No	Exempt	Exempt	Exempt
Unincorporated	50,185	**Residential** - Yes - *but not required under County code* **Business with food** - No	N/A	Exempt	**2027 Resid./Small Non-Resid. Collection Requirements Apply** *in UGAs for incorporated cities with populations of more than 25,000 (none at this time) and in wholly unincorporated UGAs (Transalta Industrial Park & Onalaska), unless a waiver is issued.*
Lewis County *plans under the Growth Management Act*	83,400	**No minimum service level for curbside organics**	**CPO Requirements Apply**	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*
***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*
****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*
Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Lincoln County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Almira	320	Residential - No Business with food - No	Exempt	Exempt	Exempt
Creston	215	Residential - No Business with food - No	Exempt	Exempt	Exempt
Davenport	1,710	Residential - No Business with food - No	Exempt	Exempt	Exempt
Harrington	430	Residential - No Business with food - No	Exempt	Exempt	Exempt
Odessa	890	Residential - No Business with food - No	Exempt	Exempt	Exempt
Reardan	650	Residential - No Business with food - No	Exempt	Exempt	Exempt
Sprague	500	Residential - No Business with food - No	Exempt	Exempt	Exempt
Wilbur	895	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	5,440	Residential - No Business with food - No	N/A	Exempt	Exempt
Lincoln County *does not plan under the Growth Management Act*	11,050	No minimum service level for curbside organics	Exempt	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

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Mason County *2022 Organics Management Law compost procurement and collection provisions*	*Requirement*	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
	RCW	43.19A.150	70A.205.545	70A.205.540
	More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
	Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Shelton	10,430	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	Exempt
Unincorporated	55,770	Residential - No Business with food - No	N/A	Exempt	2027 Resid./Small Non-Resid. Collection Requirements Apply *In UGAs for incorporated cities with populations of more than 25,000 (none at this time) and in wholly unincorporated UGAs (Belfair & Allyn), unless a waiver is issued.*
Mason County *plans under the Growth Management Act*	66,200	No minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

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Okanagan County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Brewster	1,990	Residential - No Business with food - No	Exempt	Exempt	Exempt
Conconully	190	Residential - No Business with food - No	Exempt	Exempt	Exempt
Coulee Dam *also in Douglas County*	1,210	Residential - No Business with food - No	Exempt	Exempt	Exempt
Elmer City	245	Residential - No Business with food - No	Exempt	Exempt	Exempt
Nespelem	180	Residential - No Business with food - No	Exempt	Exempt	Exempt
Okanogan	2,415	Residential - No Business with food - No	Exempt	Exempt	Exempt
Omak	4,950	Residential - No Business with food - No	Exempt	Exempt	Exempt
Oroville	1,805	Residential - No Business with food - No	Exempt	Exempt	Exempt
Pateros	590	Residential - No Business with food - No	Exempt	Exempt	Exempt
Riverside	325	Residential - No Business with food - No	Exempt	Exempt	Exempt
Tonasket	1,085	Residential - No Business with food - No	Exempt	Exempt	Exempt
Twisp	1,035	Residential - No Business with food - No	Exempt	Exempt	Exempt
Winthrop	555	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	26,325	Residential - No Business with food - No	N/A	Exempt	Exempt
Okanagan County *does **not** plan under the Growth Management Act*	42,700	No minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do** plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do not** plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

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Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
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Pacific County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Ilwaco	1,100	Residential - No Business with food - No	Exempt	Exempt	Exempt
Long Beach	1,715	Residential - No Business with food - No	Exempt	Exempt	Exempt
Raymond	3,090	Residential - No Business with food - No	Exempt	Exempt	Exempt
South Bend	1,735	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	15,960	Residential - No Business with food - No	N/A	Exempt	Exempt
Pacific County *plans under the Growth Management Act*	23,600	No minimum service level for curbside organics	Exempt *will apply when pop. reaches 25,000*	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do** plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do not** plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

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Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

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Pend Oreille County

2022 Organics Management Law compost procurement and collection provisions

	Requirement	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
	RCW	43.19A.150	70A.205.545	70A.205.540
	More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
	Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027
Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Cusick	155	Residential - No Business with food - No	Exempt	Exempt	Exempt
Ione	425	Residential - No Business with food - No	Exempt	Exempt	Exempt
Metaline	160	Residential - No Business with food - No	Exempt	Exempt	Exempt
Metaline Falls	275	Residential - No Business with food - No	Exempt	Exempt	Exempt
Newport	2,130	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	10,480	Residential - No Business with food - No	N/A	Exempt	Exempt
Pend Oreille County *plans under the Growth Management Act*	13,625	No minimum service level for curbside organics	Exempt	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

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- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do** plan under the Growth Management Act)* *or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that **do not** plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
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Last updated - 08-18-2023

Pierce County
2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2026*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Auburn *also in King County*	88,750	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Bonney Lake	22,990	Residential - Contract Business with food - No	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Buckley	5,316	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	Exempt
Carbonado	740	Residential - Contract Business with food - No	Exempt	Exempt	Exempt
DuPont	10,180	Residential - Contract Business with food - No	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Eatonville	2,890	Residential - Contract Business with food - No	Exempt	Exempt	Exempt
Edgewood	13,520	Residential - UTC Business with food - No	Exempt	Exempt	Exempt
Fife	11,180	Residential - UTC Business with food - No	Exempt	Business OM Management Requirements Apply	Exempt
Fircrest	7,215	Residential - Contract Business with food - No	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Gig Harbor	12,540	Residential - UTC Business with food - No	Exempt	Exempt	Exempt
Lakewood	63,800	Residential - Contract Business with food - No	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Milton *also in King Co.*	8,895	Residential - Contract Business with food - No	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Orting	9,055	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	Exempt
Pacific *also in King Co.*	7,270	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Pierce County *plans under the Growth Management Act*	337,400	Minimum service level includes curbside organics	CPO Requirements Apply	See BOMA Map see exempt zip codes below	N/A
Puyallup	43,260	Residential - Contract Business with food - No	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Roy	815	Residential - UTC Business with food - No	Exempt	Exempt	Exempt
Ruston	1,060	Residential - Contract Business with food - No	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
South Prairie	620	Residential - Contract Business with food - No	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Steilacoom	6,790	Residential - Contract Business with food - No	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Sumner	10,800	Residential - Contract Business with food - No	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Tacoma	220,800	Residential - Municipal Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Unincorporated	440,800	Residential - UTC Business with food - No	N/A	See BOMA Map see exempt zip codes below	2027 Resid./Small Non-Resid. Collection Requirements Apply *In UGAs for incorporated cities with populations of more than 25,000 (Lakewood, Puyallup, & Tacoma) and in wholly unincorporated UGAs (Parkland, Mid-County, Midland, South Hill, Graham, Tehaleh, & an undesignated UGA (NE of Tehaleh), unless a waiver is issued.*
University Place	35,420	Residential - Contract Business with food - No	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Wilkeson	495	Residential - UTC Business with food - No	Exempt	Exempt	Exempt

Zip codes exempted from Business OM requirements: 98328, 98360, 98321, 98323, and the portions of 98022, 98330 and 98304 in Pierce County.

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
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The business OM organics material management requirements apply in:

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- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

*Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.
**All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.
***UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.
Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	Includes subfolder below on the new OM law, the Food Well Wa Plan resources, funding resources, local program resources including school programs and more
2022 OM Law Resource Folder	Include details on compost procurement, table crosswalking e2HB 1799 with the RCW, facility siting and lots more.
Compost procurement resources	Includes examples of local CPOs and resources to assist with compost purchasing
Planning and Waste Reduction Resource Library	robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

San Juan County

2022 Organics Management Law compost procurement and collection provisions

	Requirement	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
	RCW	43.19A.150	70A.205.545	70A.205.540
	More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
	Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027
Jurisdiction Name	**2022 Population**	**Current OM Collection Services**	**Status** *see criteria below*	**Status** *see criteria below*	**Status** *see criteria below*
Friday Harbor	2,680	Residential - Municipal Business with food - No	Exempt	Exempt	Exempt
Unincorporated	15,470	Residential - No Business with food - No	N/A	Exempt	Exempt *Eastsound and Lopez UGAs are exempt*
San Juan County *plans under the Growth Management Act*	18,150	No minimum service level for curbside organics	Exempt	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

Cities and counties with a population of 25,000 or more.

Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

Areas where curbside OM collection services including food is available to businesses *and*

Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

Cities* and counties with a population of 25,000 or more** *or in*

Urban Growth Areas (UGA)* that are not part of city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that do plan under the Growth Management Act) or in*

Census tracts* with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

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Skagit County
2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) managment requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Anacortes	17,880	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Burlington	9,800	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Concrete	810	Residential - No Business with food - No	Exempt	Exempt	Exempt
Hamilton	295	Residential - UTC Business with food - No	Exempt	Exempt	Exempt
La Conner	980	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Lyman	425	Residential - UTC Business with food - No	Exempt	Exempt	Exempt
Mount Vernon	35,500	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Sedro-Woolley	12,590	Residential - Municipal Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Unincorporated	52,970	Residential - UTC Business with food - Yes *in some areas*	N/A	**See BOMA Map** Business OM Management Requirements apply only in most areas west of Route 9	2027 Resid./Small Non-Resid. Collection Requirements Apply *in UGAs for incorporated cities with populations of more than 25,000 (Mount Vernon), and in wholly unincorporated UGAs (Bayview Ridge UGA), unless a waiver is issued.*
Skagit County *plans under the Growth Management Act*	131,250	Minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

Cities and counties with a population of 25,000 or more.

Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

Areas where curbside OM collection services including food is available to businesses *and*

Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

Cities* and counties** with a population of 25,000 or more *or in*

Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*

Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Skamania County

2022 Organics Management Law compost procurement and collection provisions

	Requirement	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
	RCW	43.19A.150	70A.205.545	70A.205.540
	More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
	Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027
Jurisdiction Name	**2022 Population**	**Current OM Collection Services**	**Status** *see criteria below*	**Status** *see criteria below*	**Status** *see criteria below*
North Bonneville	975	Residential - No Business with food - No	Exempt	Exempt	Exempt
Stevenson	1,550	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	9,375	Residential - No Business with food - No	N/A	Exempt	Exempt
Skamania County *does not plan the Growth Management Act*	11,900	No minimum service level for curbside organics	Exempt	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act)* *or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services are not provided.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

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Snohomish County
2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	**CPO adoption - January 1, 2023** *Reporting every 2 years starting in December 2024*	**Phased in from January 1, 2024 to January 1, 2026**	**Beginning January 1, 2027**

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Arlington	21,260	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Bothell *also in King County*	48,940	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Brier	6,590	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Darrington	1,490	Residential - No Business with food - Yes	Exempt	Exempt	Exempt
Edmonds	42,980	Residential - UTC Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Everett	113,300	Residential - UTC Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Gold Bar	2,290	Residential - UTC Business with food - Yes	Exempt	Exempt	Exempt
Granite Falls	4,705	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Index	155	Residential - UTC Business with food - Yes	Exempt	Exempt	Exempt
Lake Stevens	40,700	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Lynnwood	38,740	Residential - UTC Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Marysville	72,380	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Mill Creek	21,510	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Monroe	19,700	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Mountlake Terrace	22,070	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Mukilteo	21,590	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Snohomish	10,200	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Stanwood	8,405	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Sultan	6,260	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Woodway	1,330	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Snohomish County *plans under the Growth Management Act*	547,300	Minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A
Unincorporated	371,915	Residential - UTC Business with food - Yes	N/A	**See BOMA Map** Business OM Management Requirements apply in all zip codes in Snohomish County except 98241, 98252, 98294, and 98253.	2027 Resid./Small Non-Resid. Collection Requirements Apply *in UGAs for incorporated cities with populations of more than 25,000 and in wholly unincorporated UGAs (Maltby, SW Snohomish (Silver Firs Gap), SW County (Larch Way Overlap), SW County (Lake Stickney Gap), SW County (Paine Field) UGAs) unless a waiver is issued.*

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- **Cities and counties with a population of 25,000 or more.**
- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

- **Areas where curbside OM collection services including food is available to businesses *and***
- **Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.**

Residential and "non-residential" collection requirements apply in...

- **Cities* and counties** with a population of 25,000 or more *or in*
- **Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services are not provided.*
***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*
****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*
Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, the Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

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Spokane County
2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Waverly	120	Residential - No Business with food - No	Exempt	Exempt	Exempt
Latah	185	Residential - No Business with food - No	Exempt	Exempt	Exempt
Spangle	280	Residential - No Business with food - No	Exempt	Exempt	Exempt
Rockford	545	Residential - No Business with food - No	Exempt	Exempt	Exempt
Fairfield	600	Residential - No Business with food - No	Exempt	Exempt	Exempt
Millwood	1,915	Residential - UTC Business with food - No	Exempt	Exempt	Exempt
Deer Park	4,670	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	Exempt
Medical Lake	4,840	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	Exempt
Airway Heights	11,040	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	Exempt
Liberty Lake	12,870	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	Exempt
Cheney	12,920	Residential - No Business with food - No	Exempt	Exempt	Exempt
Spokane Valley	107,100	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	2027 Resid./Non-Resid. Collection Requirements Apply
Unincorporated	162,715	Residential - UTC Business with food - No	N/A	Exempt	2027 Resid./Small Non-Resid. Collection Requirements Apply *In UGAs for incorporated cities with populations of more than 25,000 (Spokane & Spokane Valley), and in wholly unincorporated UGAs (none identified), unless a waiver is issued.*
Spokane	230,900	Residential - Municipal Business with food - No	CPO Requirements Apply	Exempt	2027 Resid./Non-Resid. Collection Requirements Apply
Spokane County *plans under the Growth Management Act*	550,770	Minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- Cities and counties with a population of 25,000 or more.
- Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*
***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*
****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*
Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

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Stevens County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Chewelah	2,535	**Residential** - No **Business with food** - No	Exempt	Exempt	Exempt
Colville	4,900	**Residential** - No **Business with food** - No	Exempt	Exempt	Exempt
Kettle Falls	1,650	**Residential** - No **Business with food** - No	Exempt	Exempt	Exempt
Marcus	215	**Residential** - No **Business with food** - No	Exempt	Exempt	Exempt
Northport	295	**Residential** - No **Business with food** - No	Exempt	Exempt	Exempt
Springdale	283	**Residential** - No **Business with food** - No	Exempt	Exempt	Exempt
Unincorporated	37,172	**Residential** - No **Business with food** - No	N/A	Exempt	2027 Resid./Small Non-Resid. Collection Requirements Apply *in UGAs for incorporated cities with populations of more than 25,000 (none at this time), and in wholly unincorporated UGAs (Lake Spokane), unless a waiver is issued.*
Stevens County *plans under the Growth Management Act*	**47,050**	No minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- **Cities and counties with a population of 25,000 or more.**
- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

- **Areas where curbside OM collection services including food is available to businesses** *and*
- **Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.**

Residential and "non-residential" collection requirements apply in...

- **Cities* and counties** with a population of 25,000 or more** *or in*
- **Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that* ***do*** *plan under the Growth Management Act)* *or in*
- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that* ***do not*** *plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement. .

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
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Thurston County *2022 Organics Management Law compost procurement and collection provisions*	*Requirement*	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
	RCW	43.19A.150	70A.205.545	70A.205.540
	More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
	Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Bucoda	610	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Lacey	58,180	Residential - UTC Business with food - Yes	*CPO Requirements Apply*	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Olympia	56,370	Residential - Municipal Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Rainier	2,510	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Tenino	2,030	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Tumwater	26,360	Residential - UTC Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Non-Resid. Collection Requirements Apply
Yelm	10,680	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Unincorporated	143,760	Residential - UTC Business with food - Yes	N/A	See BOMA Map Business OM Management Requirements apply countywide	2027 Resid./Small Non-Resid. Collection Requirements Apply *in UGAs for incorporated cities with populations of more than 25,000 (Olympia, Lacey & Tumwater), and in wholly unincorporated UGAs (Grand Mound), unless a waiver is issued.*
Thurston County *plans under the Growth Management Act*	300,500	Minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply
The CPO and reporting requirements apply in the following jurisdictions:
Cities and counties with a population of 25,000 or more.
Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.
The business OM organics material management requirements apply in:
Areas where curbside OM collection services including food is available to businesses *and*
Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.
Residential and "non-residential" collection requirements apply in...
Cities* and counties** with a population of 25,000 or more *or in*
Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*
**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*
***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*
****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*
Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources	
Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Wahkiahum County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	**CPO adoption - January 1, 2023** *Reporting every 2 years starting in December 2024*	**Phased in from January 1, 2024 to January 1, 2026**	**Beginning January 1, 2027**

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Cathlamet	283	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	3,965	Residential - No Business with food - No	N/A	Exempt	Exempt
Wahklakum County *plans under the Growth Management Act*	4,525	No minimum service level for curbside organics	Exempt	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- **Cities and counties with a population of 25,000 or more.**
- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

- **Areas where curbside OM collection services including food is available to businesses** ***and***
- **Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.**

Residential and "non-residential" collection requirements apply in...

- **Cities* and counties** with a population of 25,000 or more** ***or in***
- **Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that* ***do*** *plan under the Growth Management Act)* ***or in***
- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that* ***do not*** *plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Walla Walla County
2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status	Status	Status
College Place	9,855	Residential - No Business with food - No	Exempt	Exempt	Exempt
Prescott	370	Residential - No Business with food - No	Exempt	Exempt	Exempt
Waitsburg	1,180	Residential - No Business with food - No	Exempt	Exempt	Exempt
Walla Walla	**34,020**	Residential - Contract Business with food - No	CPO Requirements Apply	Exempt	2027 Resid./Non-Resid. Collection Requirements Apply
Unincorporated	**17,200**	Residential - No Business with food - No	N/A	Exempt	Exempt *Waiver may be needed to exempt the City of Walla Walla's UGA*
Walla Walla County *plans under the Growth Management Act*	**62,625**	No minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- **Cities and counties with a population of 25,000 or more.**
- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

- **Areas where curbside OM collection services including food is available to businesses** ***and***
- **Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.**

Residential and "non-residential" collection requirements apply in...

- **Cities* and counties** with a population of 25,000 or more** *or in*
- **Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that do plan under the Growth Management Act) or in*
- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*
***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*
****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*
Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
2022 OM Law Resource Folder	*include details on compost procurement, table crosswalking es2HB1799 with the RCW, facility siting and lots more.*
Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Whatcom County
2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and small "non-residential" OM collection requirements
Requirement			
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Bellingham	93,910	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	2027 Resid./Small Non-Resid. Collection Requirements Apply
Blaine	6,130	Residential - UTC Business with food - Yes	Exempt	Business OM Management Requirements Apply	Exempt
Everson	3,060	Residential - Contract Business with food - Yes	Exempt	Exempt	Exempt
Ferndale	15,970	Residential - Contract Business with food - Yes	CPO Requirements Apply	Business OM Management Requirements Apply	Exempt
Lynden	16,150	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Nooksack	1,560	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Sumas	1,740	Residential - Contract Business with food - Yes	CPO Requirements Apply	Exempt	Exempt
Unincorporated	93,130	Residential - UTC Business with food - Yes *in some areas*	N/A	**See BOMA Map** Business OM Management Requirements apply only in specific areas where routed OM collection services are provided by Sanitary Service Company	2027 Resid./Small Non-Resid. Collection Requirements Apply *in UGAs for incorporated cities with populations of more than 25,000 and in wholly unincorporated UGAs (Cherry Point, Birch Bay, and Columbia Valley), unless a waiver is issued.*
Whatcom County *plans under the Growth Management Act*	231,650	Minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in...

- Cities and counties with a population of 25,000 or more *and/or in*
- Counties with a population of 25,000 or fewer that contract to provide or require the UTC-franchised hauler(s) in their county to provide residential curbside OM collection services.
- Cities and towns with a population of 25,000 or fewer that directly provide, contract to provide or require the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.

The business OM organics material management requirements apply in:

- Areas where curbside OM collection services including food is available to businesses *and*
- Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.

Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

Organics Management Resources	*includes subfolder below on the new OM law, Use Food Well WA Plan resources, funding resources, local program resources including school programs and more*
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Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

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Whitman County

2022 Organics Management Law compost procurement and collection provisions

	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
RCW	43.19A.150	70A.205.545	70A.205.540
More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Albion	545	Residential - No Business with food - No	Exempt	Exempt	Exempt
Colfax	2,785	Residential - No Business with food - No	Exempt	Exempt	Exempt
Colton	405	Residential - No Business with food - No	Exempt	Exempt	Exempt
Endicott	310	Residential - No Business with food - No	Exempt	Exempt	Exempt
Farmington	140	Residential - No Business with food - No	Exempt	Exempt	Exempt
Garfield	565	Residential - No Business with food - No	Exempt	Exempt	Exempt
LaCrosse	300	Residential - No Business with food - No	Exempt	Exempt	Exempt
Lamont	80	Residential - No Business with food - No	Exempt	Exempt	Exempt
Malden	135	Residential - No Business with food - No	Exempt	Exempt	Exempt
Oakesdale	400	Residential - No Business with food - No	Exempt	Exempt	Exempt
Palouse	1,035	Residential - No Business with food - No	Exempt	Exempt	Exempt
Pullman	**32,790**	**Residential - UTC** *required by City code* **Business with food - No**	**CPO Requirements Apply**	Exempt	**2027 Resid./Non-Resid. Collection Requirements Apply**
Rosalia	590	Residential - No Business with food - No	Exempt	Exempt	Exempt
St. John	600	Residential - No Business with food - No	Exempt	Exempt	Exempt
Tekoa	810	Residential - No Business with food - No	Exempt	Exempt	Exempt
Unincorporated	5,920	Residential - No Business with food - No	N/A	Exempt	Exempt
Whitman County *does not plan under the Growth Management Act*	**47,800**	**No minimum service level for curbside organics**	**CPO Requirements Apply**	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

- **Cities and counties with a population of 25,000 or more.**
- **Any jurisdiction that directly provides, contracts to provide or requires the UTC-franchised hauler(s) in their jurisdiction to provide residential curbside OM collection services.**

The business OM organics material management requirements apply in:

- **Areas where curbside OM collection services including food is available to businesses** *and*
- **Where there is an OM management facility with capacity to accept additional OM material including food from businesses in that area.**

Residential and "non-residential" collection requirements apply in...

- **Cities* and counties** with a population of 25,000 or more** *or in*
- **Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that* ***do*** *plan under the Growth Management Act)* *or in*
- **Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000** *(for counties that* ***do not*** *plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

***All unincorporated areas of a county outside of UGAs and census tracts with 75+ people per square mile are exempt.*

****UGAs and census tracts with 75+ people per square mile that are wholly in unincorporated areas of a county are exempt if the unincorporated population of the county is fewer than 25,000 people.*

Other criteria may exempt a jurisdiction or a portion of a jurisdiction. A process will be developed to request a waiver from the requirement.

Other resources

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Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
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If you find inaccuracies in or have questions about this data, please contact Organics@ecy.wa.gov | Last updated - 08-18-2023

Yakima County *2022 Organics Management Law compost procurement and collection provisions*	*Requirement*	Compost procurement ordinance (CPO) adoption and reporting requirements	Business organic material (OM) management requirements	2027 residential and "non-residential" OM collection requirements
	RCW	43.19A.150	70A.205.545	70A.205.540
	More details	CPO focus sheet & overview	Business OM management focus sheet	*More details in criteria below. A waiver process will be developed.*
	Timeline	CPO adoption - January 1, 2023 *Reporting every 2 years starting in December 2024*	Phased in from January 1, 2024 to January 1, 2026	Beginning January 1, 2027

Jurisdiction Name	2022 Population	Current OM Collection Services	Status *see criteria below*	Status *see criteria below*	Status *see criteria below*
Grandview	11,020	Residential - No Business with food - No	Exempt	Exempt	Exempt
Granger	3,740	Residential - No Business with food - No	Exempt	Exempt	Exempt
Harrah	580	Residential - Yes - *but not part of City contract* Business with food - No	Exempt	Exempt	Exempt
Mabton	1,975	Residential - No Business with food - No	Exempt	Exempt	Exempt
Moxee	4,665	Residential - No Business with food - No	Exempt	Exempt	Exempt
Naches	1,125	Residential - Yes - *but not part of City contract* Business with food - No	Exempt	Exempt	Exempt
Selah	8,365	**Residential - Contract** **Business with food - No**	CPO Requirements Apply	Exempt	Exempt
Sunnyside	16,500	Residential - No Business with food - No	Exempt	Exempt	Exempt
Tieton	1,505	Residential - No Business with food - No	Exempt	Exempt	Exempt
Toppenish	8,870	**Residential** - Contract **Business with food - No**	CPO Requirements Apply	Exempt	Exempt
Union Gap	6,640	Residential - No Business with food - No	Exempt	Exempt	Exempt
Wapato	4,615	Residential - No Business with food - No	Exempt	Exempt	Exempt
Yakima	98,200	**Residential - Municipal** **Business with food - No**	CPO Requirements Apply	Exempt	2027 Resid./Non-Resid. Collection Requirements Apply
Zillah	3,195	Residential - Yes - but not under City contract Business with food - No	Exempt	Exempt	Exempt
Unincorporated	88,955	Residential - No Business with food - No	N/A	Exempt	2027 Resid./Small Non-Resid. Collection Requirements Apply *In UGAs for incorporated cities with populations of more than 25,000 (Yakima), and in wholly unincorporated UGAs (none identified), unless a waiver is issued.*
Yakima County *does not plan under the Growth Management Act*	259,950	No minimum service level for curbside organics	CPO Requirements Apply	N/A	N/A

Primary criteria for determining where the Compost Procurement Ordinance (CPO) and Organics Material (OM) collection requirements apply

The CPO and reporting requirements apply in the following jurisdictions:

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Residential and "non-residential" collection requirements apply in...

- Cities* and counties** with a population of 25,000 or more *or in*
- Urban Growth Areas (UGA)*** that are not part of city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do plan under the Growth Management Act) or in*
- Census tracts*** with 75+ people per square mile that are not part of a city or town exempted under another criteria like having a population of fewer than 25,000 *(for counties that do not plan under the Growth Management Act)*

**Cities with a population between 25,000 and 50,000 are exempt if curbside OM collection services were not provided as of July 1, 2022.*

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Compost procurement resources	*includes examples of local CPOs and resources to assist with compost purchasing*
Planning and Waste Reduction Resource Library	*robust collection of solid waste related resources including copies of all Ecology approved SW & HW Plan, waste composition and market data, sample contracts, and lots more...*

Permits

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 5:30 PM
To: Permits; Hasan Tahat
Cc: 'James C. Carmody'; 'Nancy Lust'; 'Carole Degrave'
Subject: RE: Cave written comment letter wenclosure
Attachments: Amer Recycler, Gypsum Recycling Presents Challenges, June 2022.docx; C&D Recycling, Study finds potentially harmful chemicals in building materials, Apr 22, 2021.docx; edie, Environment Agency issus new gypsum waste guidance, Jan 12 2009.docx; Canadian drywall recycling and reuse paper, Oct 12 2016.pdf; Cowlitz Co Landfill EIS Addendum Narrative, Oct 24, 2017.pdf; POLITICO Canadian companies illegally shipeed at least 2,300 metric tons of waste overseas, June 22, 2022.docx

Group 5 – this is my last email as it provides the remaining attachments

1. Gypsum and landfill concerns and research:
    - **Recycling 2016**, *Drywall Recycling and Reuse as a Compost-Bulking Agent in Canada and North America: A Review*, by Ifeanyi Ndukwe and Qiuyan Yuan, Dept. of Civil Engineering, University of Manitoba, Winnipeg, Oct 12, 2016
    - **Politico**, *Canadian companies illegally shipped at least 2,300 metric tons of waste overseas, documents show*, by Maura Forrest, June 22, 2022
    - **American Recycler**, Gypsum Recycling Presents Challenges, by Maura Keller, June 2022
    - **Construction & Demolition Recycling,** *Study finds potentially harmful chemicals in building materials,* by Alex Kamczyc, April 22, 2021
    - **Edie,** *Environment Agency issues new gypsum waste guidance. New science confirms there is no acceptable limit for gypsum to be deposited with biodegradable waste,* January 12, 2009

    Regarding LFG generation and modeling

    - **ENERGYneering Solutions Inc** letter to Elain Placido, Cowlitz County Building and Planning, re *Addendum to July 2013 EIS on Cowlitz County Headquarters Landfill,* Section 3.3.2.1.1, October 24, 2017

Scott

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 5:07 PM
To: 'permits@yrcaa.org' <permits@yrcaa.org>; 'Hasan Tahat' <hasan@yrcaa.org>
Cc: 'James C. Carmody' <Carmody@mftlaw.com>; 'Nancy Lust' <nancy.fort@cascadianow.org>; 'Carole Degrave' <lusciouslupine@icloud.com>
Subject: RE: Cave written comment letter wenclosure

Group 4

1. Washington State Organics Management Bill (ESSHB 1799)
2. State Organics Management bill implementation and source material links: https://app.box.com/6d60643b-79e6-4e9f-996d-d0551a4dcc42; https://app.box.com/s/r7shmywl2t798nu43f1udkp1481bcx6y/folder/164306282815;
3. Yakima County Compost Procurement Ordinance No. 001-2023, specifying County policy for the procurement of compost per ESSHB 1799, signed February 14, 2023, https://app.box.com/c6183830-4936-4e85-9887-94b596d02d72

Scott

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 5:03 PM
To: 'permits@yrcaa.org' <permits@yrcaa.org>; 'Hasan Tahat' <hasan@yrcaa.org>
Cc: 'James C. Carmody' <Carmody@mftlaw.com>; 'Nancy Lust' <nancy.fort@cascadianow.org>; 'Carole Degrave' <lusciouslupine@icloud.com>
Subject: RE: Cave written comment letter wenclosure

Group 3

1. LANDFILL FIRE CONTROL INC's, Memorandum to Ian Sutton, DTG, re DTG Yakima LPL – Health and Safety, Fire Control and Monitoring Plan
2. Scott Cave, SC Communications, letter to Tommy Carroll, Yakima County Planning Official, re DTG Mining Vegetative Screening, July 16, 2023
3. Tommy Carroll letter to Aaron Enebrad, DTG, re Condition Compliance, November 1, 2022

Scott

From: Scott Cave <sacave81@gmail.com>
Sent: Tuesday, October 3, 2023 4:30 PM
To: permits@yrcaa.org; 'Hasan Tahat' <hasan@yrcaa.org>
Cc: James C. Carmody <Carmody@mftlaw.com>; Nancy Lust <nancy.fort@cascadianow.org>; Carole Degrave <lusciouslupine@icloud.com>
Subject: Cave written comment letter wenclosure

Marc & Hasan

Please find my enclosed signed letter with list of the referenced documents and sources in my written comments provided last week. I will send the documents in multiple emails due to size limitations.

Respectfully,

Scott Cave

recycling

MDPI

Review

Drywall (Gyproc Plasterboard) Recycling and Reuse as a Compost-Bulking Agent in Canada and North America: A Review

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Abstract: The incessant disposal of drywall waste, generated predominantly from construction and demolition sites, has been associated with many environmental problems. In landfill sites, it has long been linked with the generation of hydrogen sulphide, a toxic and foul-smelling gas, while the incineration of this waste results in the potential release of sulphur dioxide gas, a contributor to acid rain formation. The traditional disposal methods also result in the loss of a valuable resource. Therefore, proper management of this waste through recycling programs and subsequent returns to the end market will ensure that a valuable resource is not lost and that environmental impacts are mitigated. Many potential end markets have been identified for recycled drywall. The application as a bulking agent for composting is one of these markets, which could also provide additional calcium and sulphur nutrients to the soil. Despite the benefits of drywall waste recycling, certain challenges have crippled its recycling rate in North America. This review summarises the current situations with drywall recycling and disposal, existing markets, and the availability of competing markets. Furthermore, the potential use of drywall as a compost-bulking agent is discussed. Finally, a possible solution to improving the recycling rate and market demands for drywall is presented.

Keywords: drywall recycling; construction and demolition waste; bulking agent; composting

1. Introduction

Gypsum drywall, also referred to as wallboard, gyproc, or sheetrock, is mainly composed of 93% calcium sulphate dehydrate ($CaSO_4 \cdot 2H_2O$) and 7% paper [1]. It is an important interior wall material in North America for construction and remodeling. It is also an excellent fire barrier and hence applied in interior walls for both residential and commercial establishments [2]. In recent years, the generation of drywall waste has been on the rise in North America due to economic and population growth. The majority of this waste comes from both construction and demolition projects. On average, it is estimated that about a metric ton of drywall waste is generated from the construction of a typical single-family home of about 2000 square feet, while a 50,000-square-foot new office building generates approximately 16 metric tons of waste [1,3]. Between 496,000 and 585,000 tons of drywall waste is generated annually in Canada [4]. According to several characterisation studies on construction and demolition (C&D) debris in Canada, waste drywall accounts for about 9% of the mass of waste generated from C&D waste streams [5]. In North America, it comprises between 12% and 27% of C&D waste [6,7]. In general, waste drywall can be divided into three categories based on their source. (1) Manufacturing waste: This includes drywall waste that does not meet the required wallboard manufacturing specifications. It accounts for 12% of total waste drywall; (2) Construction waste: In North America, approximately 12% of new construction drywall is wasted during installation.

Drywall separation at the construction site is becoming a common practice, especially for large construction projects. Construction waste is the major source of waste drywall, accounting for 64% of the total; (3) Demolition waste: This includes both demolition and renovation waste, account for about 24% of waste drywall [8,9].

The disposal of drywall waste to the landfill is common practice in the past, even today. When disposed to the landfill, the moist anaerobic conditions of the landfill allow anaerobic microorganisms (sulphate reducing bacteria) to degrade the sulphate component of the drywall, producing potentially toxic levels of hydrogen sulphide gas [2,7,10,11]. Hydrogen sulphide is a flammable and extremely hazardous gas with a distinctive smell of a rotten egg. Consequent exposure to low concentrations can cause eye, nose, throat, respiratory system irritation, breathing difficulties, and headache. If ignited, hydrogen sulphide will be oxidised to sulphur dioxide, which is a known major contributor of acid rain. Acid rain is known for its negative impact on plant, aquatic, and animal life, as well as infrastructures. Drywall decomposition also results in an increase in the sulphate content in the landfill leachate, which could potentially contaminate both surface and groundwater. Excessive concentration of sulphate is of major concern in water supplies owing to its cathartic effect [12].

Owing to the environmental and public health concerns associated with waste drywall disposal, certain regions in North America have already banned the disposal of drywall in landfills. The Greater Vancouver Regional District and Toronto are two regions in Canada that have already banned its disposal to landfills, which has significantly improved drywall recycling in those regions. The Greater Vancouver Region recycles approximately 100,000 tons of drywall annually [3]. In 2010, the Massachusetts Department of Environmental protection banned the disposal of clean drywall scrap to the C&D landfill in the state due to the odour complaints from residents [13]. Many states in the United States have also long abolished the incineration of drywall waste [8].

2. Drywall Recycling

With numerous environmental challenges facing drywall disposal in the landfill, waste drywall recycling has been considered an important strategy to minimising this waste and consequently returning them back to end markets [14]. Generally, drywall waste that is generated from the manufacturing process and construction site is free of contamination or less contaminated. They are preferred material for recycling. However, drywall waste from demolition and renovation sites typically consists of certain contaminants. These include nails, tape, joint compound (primarily made from limestone or gypsum), and paint (structures built before 1978 may contain lead paint) [1,6,8]. The presence of these contaminants makes the recycling process complicated and costly. It is one of the challenges in waste drywall recycling.

Recycling drywall waste typically involves a collection of waste from manufacturing, construction, and deconstruction or reconstruction sites, and subsequent transportation to material recovery facilities (MRFs). At a MRF, drywall waste is sorted manually using a sorting belt to remove metals, plastics, and other debris. Drywall waste that is highly contaminated, for example, with mould and paint, unsuitable for the manufacturer's feedstock, is also removed. The minute ferrous metal fragments are removed from the sorted material by magnetic separation. The paper liner is separated from the gypsum core in an enclosed processing area. The recycled gypsum is then transported for use in a wide variety of applications [15]. After adequate recycling, the material contents are recovered, typically consisting of about 93% gypsum material, 6% paper, and <1% waste [10].

Currently, there are two drywall recycling facilities in Canada—the New West Gypsum Recycling (NWGR) and Recycle Gypse Quebec. NWGR, established in Langley, BC, in 1985, has developed into an international company with facilities across North American and Europe [3]. There are also a handful of drywall recycling facilities in the United States [2], including USA Gypsum, Gypsum Agri-Cycle, and Seattle Drywall Recycling Services. The listed drywall recycling facilities in North America currently accept all kinds of drywall scraps, except for Gypsum Agri-Cycle, which does not accept painted drywall.

3. Markets for Recycled Gypsum

Many potential markets have been identified for recycled gypsum, as shown in Table 1. However, the predominant markets identified for recycled gypsum in North America include drywall manufacturing and soil amendment. The majority of these end markets have very strict purity standards that only allow recycling facilities to accept clean scrap. As such, most drywall waste from demolition and renovation sites cannot be resold once recycled.

Table 1. Potential markets for recycled drywall [6].

End Markets	Specific Use
Drywall	Core material
Soil Amendment	Adds nutrients to soil for food growing, lawn and golf courses
Compost	As a bulking agent to compost materials
Cement additive	Added to control setting time and enhance capacity of radiant heat slabs
Stucco & planter	Used as an alternative for virgin material in this gypsum-based products typically made by gypsum manufactures
Wastewater treatment	Settle suspended clay particles in treatment process
Manure treatment	When mixed with ammonia, gypsum reduced odour from animal waste
Animal bedding	Helps to absorb moisture in bedding when mixed with wood shavings
Grease absorption	Can be sprinkled on top of oil leaks on auto shop or other industrial floors
Athletic field	Creates lines on football or soccer fields as an alternative to chalk
Dental moulds	Virgin material is used to make temporary moulds
Roadways	Facilitates the leaching of salts from soil along roads while ice melting

3.1. New Drywall Manufacturing

The use of recycled drywall for new wallboard manufacturing will help lower the need for virgin raw materials and reduce both energy and transportation costs. Drywall manufacturers have strict requirements for recycled gypsum incorporation into new drywall manufacturing. The paper content of drywall waste impacts the amount of recycled gypsum permitted for new drywall, as the paper content directly affects the fire rating [6]. Therefore, the separation of paper and other contaminants from drywall waste is desired by drywall manufacturers.

3.2. Land Application

Drywall waste from both construction and manufacturing has fewer contaminants and can therefore be recycled and used for soil amendment purposes. As soil amendment, it can be used for general agriculture, golf courses, mushroom growing, forestry and mine reclamation, nurseries, city parks and recreation areas, compost amendments, and residential lawns [8]. Gypsum from drywall is used to improve water penetration and the workability of an impermeable alkali soil. It is also very useful for agricultural purposes in improving both the poor soil physical properties and nutrient availability through the supply calcium and sulphur to the soil [6,16,17]. The calcium has also been reported to help flocculate clay in soil, hence providing favourable soil structure for root growth, air, and water movement [18].

4. Market Analysis for Recycled Drywall

New market opportunities (locally and regionally) and demand are the major driving forces towards sustaining the economic feasibility of recycled drywall. Strong demand is an important factor for any business establishment. Recycled materials with lower values and higher costs are generally not desired by customers without any regulatory body enforcing the choice for recycled materials. Despite the numerous end markets already identified for recycled drywall, the recycling rate for waste drywall in North America still remains at a very minimal level. Many factors contribute to this problem including low landfill tipping fees and low market demand.

4.1. Landfill Tipping Fees

Tipping fees are the predominant hurdles to recycling. It is also a major consideration for waste generators in making decisions regarding waste recycling or disposal in landfills in the absence of adequate recycling regulations or a landfill ban. Therefore, controlling the tipping fees and enforcing other conditions on the acceptance of wastes are strategic means to keep waste out of landfill [19]. The low tipping fee particularly in the United States has a hampered recycling rate of drywall within the region (North America), and recyclers find it extremely difficult to compete with the low fee [3]. Table 2 showcases some of the tipping fees of certain regions in North America.

Table 2. Landfill tipping fees in North America.

Country/City	Tipping Fee (CAD/t)	Source
Vancouver	133–150 [1]	City of Vancouver [20]
Kelowna	145	City of Kelowna [20]
Guelph	60	City of Guelph [20]
Calgary	80	City of Calgary [20]
Edmonton	42 [2]	City of Edmonton [20]
USA	44 [3]	Biocycle [21]

[1] $133/t for costumers with up to 2 sheets of drywall. $150 for over 2 sheets; [2] Clean and segregated drywall; [3] Based on the average tipping fees of all states.

In Europe, in addition to tipping fees, landfill taxes have also been enforced which has had a stimulating effect on the recycling industry. The high and increasing cost of landfill taxes has led to increased levels of waste recovery and a low reliance on landfill. The twenty countries in Europe that applied a landfill tax generated a total revenue of approximately €2.1 billion in 2009–2010. This revenue has been used to contribute towards general state and regional budgets, environmental initiatives, and waste management initiatives [22]. According to the European Environment Agency [23], The Netherlands has the highest landfill tax in Europe estimated at €107.50, while Sweden has the highest combined landfill charge (gate fee and landfill tax) at €155.50 (estimates based on the disposal of non-hazardous municipal waste). This high landfill fee in Europe has spurred the recycling rate in the region. For example, the recycling rate in Norway is estimated at 70% [22].

4.2. Market Demand

The demand for recycled drywall is influenced by several factors including (1) the cost of transportation, collection, and processing; (2) market availability; and (3) the existence of competing materials. Currently, the demand for recycled drywall in North America is low [3]. One of the most important reasons is the high cost of recycling drywall.

Though a number of markets have been identified for recycled drywall (Table 1), these innovative applications have not been widely employed in real practice. So far, wallboard manufacturing still remains the biggest market for recycled drywall. It has been reported that up to 25% recycled gypsum from New West Gypsum Recycling Inc. has been incorporated successfully for new wallboard manufacturing without any effect on quality [19]. Manufacturers typically set a limit for recycled drywall incorporation into new gypsum wall production due to quality issues as it might affect the productivity of gypsum board. Recyclers are often faced with technological challenges associated with the separation and processing of recyclable materials with mixed contaminants. Therefore, for an effective and high-quality recycling of post-consumer drywall to be accomplished, there should be mutual co-operation of a number of establishments, including waste collectors, recyclers, deconstruction contractors, and municipal governments. This will ensure the incorporation of higher percentages into new gypsum board.

The existence of a competing market has also limited the demand and recycling rate of post-consumer drywall. Synthetic gypsum, flue gas desulphurisation (FGD) gypsum, produced

by FGD systems on coal-fired power plants, is a strong competitor for recycled gypsum. On an average, the production rate of FGD gypsum in Canada between years 2009 to 2011 was about 276,000 tonnes. A high percentage (99.3%) of the generated FGD gypsum was used for the manufacturing of new drywall, while the remaining percentage was incorporated into cement manufacturing [24]. In 2014, about 34 million tons of FGD gypsum was produced in the United States out of which 49% were used in different applications (Figure 1).

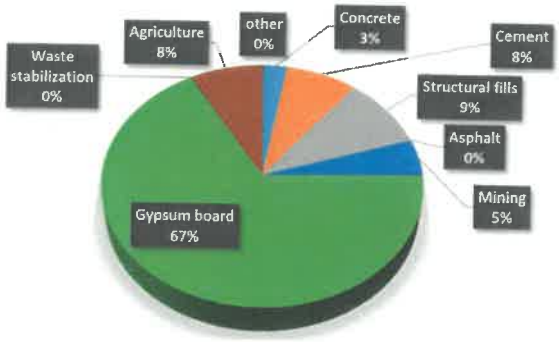

Figure 1. Percentage of FGD gypsum usage in the United States in 2014 [25].

In comparison to natural gypsum, FGD gypsum has a higher purity, usually around 96% to 80% of natural gypsum. In 2007, it was estimated that an average 44% of FGD was included in new wallboard manufacturing across Europe [26]. A recent report published by the USEPA has certified the use of FGD gypsum as safe; in terms of adverse environmental effects, no differences were found between FGD gypsum wallboard and natural gypsum wallboard [9]. Currently, high percentages of gypsum used in the manufacture of drywall in the United States come from FGD gypsum [27]. The low cost and ready availability of FGD gypsum in comparison to natural gypsum has encouraged drywall manufacturers to seek it and site their new plants close to coal-powered plants that produce synthetic gypsum. This has subsequently reduced transportation costs and fossil fuel usage. Currently, USG Corporation, a leading supplier of building materials to North American construction markets, currently incorporates more than 33% of FGD gypsum for drywall manufacturing. The percentage is expected to go up in the near future [20].

From the information gathered for the FGD gypsum, it might be difficult for post-consumer drywall to compete on the same playing field with the FGD gypsum. While high tipping fees and a landfill ban might accelerate its recycling rate, it could also pose a challenge for recycling companies without adequate technology for drywall recycling. This will in effect affect the cost of the recycled gypsum board. Therefore, it is the role of the government to create demand for it and provide funds for cutting edge technologies in order to improve the overall quality of recycled drywall at an affordable cost.

Addressing the issue of waste drywall from demolition and renovation sites is challenging due to the presence of contaminants including paper, paints, nails, screws, asbestos, etc. [1]. As such, most of them still end up in the landfill. To encourage recycling and reusability, deconstruction rather than demolition should be utilised. Deconstruction techniques would allow for the separation and subsequent recycling of materials including drywall.

5. Drywall as a Compost Additive/Bulking Agent

Application as a compost-bulking material is one of the potential end markets identified for recycled drywall. The growing demand for long-established bulking agents such as sawdust and woodchip as candidate raw materials for biofuel production has shifted interest into finding alternate

bulking materials [28]. Therefore, recycled drywall could be co-composted with organic wastes such as municipal solid waste, biosolids, and animal manure.

Composting is a biological degradation process of organic material in a predominantly aerobic conditions forming a stabilised final compost free of phytoxicity and pathogens as well as supplying adequate nutrients beneficial for plant growth.

Composting generally provides solutions to the diversion of organic waste from landfill sites, thereby mitigating possible leachate occurrences, greenhouse gases emissions, odour generation, reductions in volume and moisture content, the stabilisation of organic matter, and, most importantly, the provision of high-quality fertilisers [29,30]. However, composting organic waste has proven to be very challenging as a result of high moisture contents and a lack of structure. This prevents free circulation of air and permeability within the compost pile, leading to potential odour generation and nitrous oxide emissions [31,32].

Hence, the use of bulking agents during the composting process will aid in bulk density adjustment, promote porosity and air void, balance the C/N ratio, provide sufficient aeration of composting piles while maintaining structure, and absorb excess moisture while sustaining microbial activity in the compost mix without inhibition [10,33,34]. The use of recycled drywall as a bulking agent will also supply valuable nutrients, including calcium and sulphur, which are beneficial for soil amendment purposes and plant growth [10]. This would prove useful in areas with scarce woody bulking materials and large amounts of grass clippings, and help to reduce the volume of waste dumped in landfills [1].

5.1. Studies on the Application of Drywall as a Bulking Agent

The incorporation of recycled drywall into a compost material for commercial land applications has not yet been developed. However, studies have suggested that its introduction does not interfere with either the composting process or the time of completion as a result of the sufficient biodegradation of drywall [35]. Very few studies on the use of recycled drywall as a compost mix have been reported. The published works have considered only clean drywall scrap from construction and manufacturing facilities and have not been treated with post-manufacturing coatings such as paint.

Saludes et al. [28] reported that using clean drywall scrap from manufacturing sites as a bulking agent for diary manure compost had no detrimental effect on the compost process after a period of 28 days. No phyto-inhibitory effects were detected at the end of the final compost with a germination index of 99%. The calcium level of the final compost increased significantly due to the presence of gypsum drywall. Another work has shown that the incorporation of clean drywall from construction sites to biosolids and manure composts, respectively, proceeded effectively with a significant increase in calcium and sulphur levels in the final compost. The study also showed that the application of drywall-biosolid compost to reclamation soils is likely to enhance response to plant biomass 7. Arnold [4] also reported that the co-composting of clean drywall scrap from construction sites with a combination of food waste, woodchips, and grass mixtures did not impede the overall composting process. The time for the compost completion proceeded as expected.

It is anticipated that the introduction of a bulking agent (gypsum drywall) will help control ammonia volatilisation in the form of nitrogen losses common to composting. The primary route for the nitrogen (N) transformation process in organic matter involves the mineralisation of organic N to NH_4^+ to NO_3^-, and subsequent denitrification of NO_3^- to N_2O and N_2 as shown in Figure 2.

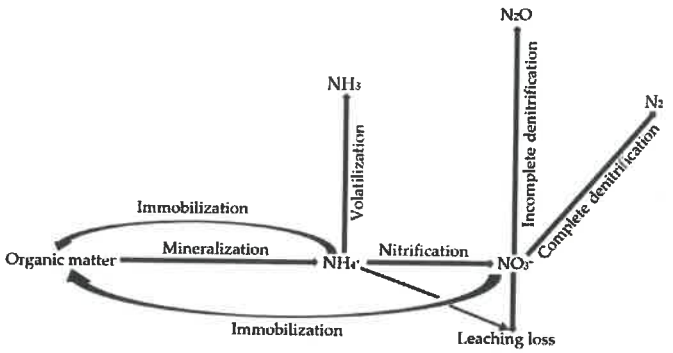

Figure 2. Pathway for nitrogen transformation during composting.

As the organic N is mineralised and given off as soluble NH_4^+ ions during the composting process, certain reaction pathways compete to transform the soluble NH_4^+ ions in the compost. These include the volatilisation loss as NH_3, immobilisation by microorganism, nitrification, and leaching. The major concern is loss through ammonia volatilisation (Figure 2). This ammonia loss during the composting process is not desired due to the association between the loss of nitrogen and a reduction in agronomic value of the final compost and potential odour generation [29]. About 50%–90% of all NH_3 losses have been reported to occur during the first few weeks of composting, which has been associated with a high temperature and pH [36]. Hence, when the gypsum drywall is blended into the compost mix as a bulking agent, the sulphate will attach to the ammonium molecules, forming a stable form of ammonium sulphate, which will prevent potential ammonia volatilisation. Tubail et al. [37] has reported some significant reductions of nitrogen in biosolids and dairy manure composts incorporated with FGD gypsum, which differ from the studies using gypsum drywall. Ammonia volatilisation during composting is particularly noted to be influenced by several factors, including ammoniacal nitrogen concentration, pH, temperature, moisture content, and aeration rate [38,39].

The electrical conductivity (EC) increased significantly when co-composting gypsum drywall with diary manure [7,28]. Electrical conductivity (EC) value greater than 4 dSm^{-1} as found in manure composts indicate excess salinity [40,41], which has the potential of inhibiting germination and plant growth [7]. An EC value less than 2.5 dSm^{-1} is recommended as a necessary growth condition for some plants [42]. Therefore, an adjustment of EC is necessary to avoiding plant growth inhibition. A possible method to the elimination of excess salt from the soil is through leaching with good drainage in place. An alternative method is the cultivation of salt-tolerant plants in the affected soil to accumulate the excess salt and the subsequent harvesting of plants to remove the salt from the area.

6. Future Prospects

Strong market demands and improved recycling for waste drywall in the near future still remain uncertain, but are achievable in North America. Many challenges have been identified for drywall recycling including low tipping fees, the existence of competing markets, high processing costs, and the presence of contaminants in waste drywall. Therefore, to overcome some of these pressing challenges and improve its acceptance in the market, there should be efforts by governments to create demands for the recyclables through education and public awareness, providing sufficient funds to recyclers to invest in cutting-edge technologies for drywall processing, in order to obtain high-quality products at a reasonable cost, and to impose a landfill ban on waste drywall. Generally, mutual co-operation of a number of establishments including waste collectors, recyclers, deconstruction contractors, and municipal governments will ensure that these challenges are met.

The use of gypsum from recycled drywall as a compost-bulking agent is one of the potential markets identified, but is still in its infancy. Several studies have shown that its incorporation into

compost mixes did not affect either the composting process or the completion time ofcomposting. Additional calcium and sulphur were also provided by the gypsum and are beneficial for plant growth. However, the role of drywall in nitrogen reduction and the impact on greenhouse gas emissions require further study. Meanwhile, the EC value should be closely monitored, as this might result in plant growth inhibition.

7. Conclusion

Environmental concerns associated with waste drywall disposal are challenges that must be addressed. Waste minimisation through the diversion of drywall disposed in landfills to potential end markets will help reduce greenhouse gases emissions, odour generation, and energy costs for virgin materials, as well as the pressure on landfills to capacitate this waste. One of the potential markets identified is the introduction of gypsum drywall as a bulking agent during composting. Studies have shown that its incorporation might be beneficial to the overall compost process.

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POLITICO
CANADA
6/22/2022 03:21 PM EDT

Canadian companies illegally shipped at least 2,300 metric tons of waste overseas, documents show

"We should stop using developing countries as our dump sites," says environmental advocate Kathleen Ruff.

The port in Subic bay where a transport vessel is berthed to load waste materials on May 30, 2019, in Subic Bay, north of Manila, Philippines. A years-long dispute with the Philippines over dozens of cargo containers of Canadian garbage embarrassed the government. | Jes Aznar/Getty Images

By MAURA FORREST

OTTAWA — The federal government has issued dozens of warning letters and fines to Canadian companies for shipping illegal waste overseas in the last five years, but critics say the penalties do nothing to stem the tide of trash being dumped in developing countries.

Since 2017, Ottawa has identified well over 100 shipping containers of waste that have been illegally transported to developing countries from Canada, carrying more than 2,300 metric tons of garbage.

Much of the waste was plastic scrap and contaminated paper bales, but there were also shipments of used batteries, electronic waste and metal scrap. Most of it was sent to Hong Kong, India, Vietnam and Malaysia.

"It shows a lackadaisical attitude on the part of the government," said Kathleen Ruff, founder of environmental advocacy group RightOnCanada. "They're sending a message to the world that trivializes the seriousness of the issue."

Canada has come under fire in recent years for sending waste overseas, often misidentified as recyclable material. A years-long dispute with the Philippines over dozens of cargo containers of Canadian garbage embarrassed the government, which eventually paid more than C$1 million to ship the unwanted trash back to Vancouver.

That fiasco led to regulatory changes in 2016 that Ottawa said would prevent the export of such material without a permit.

But since then, the government has issued 21 warning letters and 23 fines to companies for shipping waste overseas without permits, according to a document tabled in the House of Commons last week.

Environment and Climate Change Canada (ECCC) isn't releasing the names of the companies because they haven't been convicted in court.

"Out of respect for the presumption of innocence... ECCC's policy is not to release identifying information with respect to enforcement measures applied where no conviction is recorded," the department says in the document.

The individual fines are for either C$400 or C$2,000 — a "laughable" amount, according to Ruff. "That would make no difference to the people receiving those warning notices and those fines," she said in an interview. "It sends a message that the government will not take serious action against you. There will not be serious consequences if you violate this law."

The department did not explain why it issued warning letters in some cases and fines in others, but said warning letters "will be taken into account in future responses to alleged violations, and may influence the frequency of inspections."

Sabaa Khan, director of the climate portfolio at the David Suzuki Foundation, said the shipments were likely intentionally mislabeled as clean, recyclable material, which doesn't require the same insurance and documentation as contaminated scrap. She said they were probably only found during random inspections. "False labeling is a huge problem in the waste trade," she said. "It's a huge malpractice in the industry."

Khan also said there's a "major lack of transparency" around who's breaking the rules and how enforcement officers decide when to issue warning letters versus fines, and how much to fine.

Waste disposal and recycling — of plastics in particular — is an increasingly pressing problem for many wealthy nations, especially since China banned most imports of plastic scrap in 2018.

The Liberals are aiming for Canada to reach zero plastic waste by 2030, in part by banning certain single-use items, requiring plastic packaging to contain 50 percent recycled content by 2030, and making plastic producers responsible for recycling. But Environment Minister Steven Guilbeault this week said only eight percent of the plastic produced in Canada each year is recycled.

Conservative MP Scot Davidson, who is trying to pass a bill that would ban the export of plastic waste, said the government's enforcement efforts are a "joke." The small fines are just "the cost of doing business" for recycling companies, he said. "You get more for a speeding ticket on the 417."

Davidson introduced a private member's bill in 2020 to halt the export of plastic waste for final disposal. He had the support of all parties except the governing Liberals, but the proposed legislation died on the order paper. He's now trying to shepherd a similar bill through the Senate.

However, environmental advocates have said Davidson's initiative won't get at the heart of the problem, since it only targets waste labeled for final disposal, not material that's misidentified as recyclable.

Ruff said the government should ratify an amendment to the Basel Convention, an international treaty designed to reduce the flow of waste from wealthy nations to poorer countries, which would prevent Canada from shipping hazardous waste, including plastic scrap, to the developing world.

Canada is a signatory to the Basel Convention, but has thus far refused to adopt the ban amendment, which has been ratified by roughly 100 countries.

"Canada has been totally out of sync with the message of the Basel Convention," Ruff said. "The number one problem is we should stop using developing countries as our dump sites."

Ruff also pointed out that Canada sends the vast majority of its plastic waste to the United States, which is not a signatory to the Basel Convention, and can therefore export waste more freely to the developing world.

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GYPSUM RECYCLING PRESENTS CHALLENGES

Construction & Demolition Front Page

by MAURA KELLER

Published in the June 2022 Edition

The construction and demolition industry continues to experience tremendous growth in new construction of housing and commercial buildings across the U.S.

Gypsum is widely mined and is used as a fertilizer and as the main constituent in many forms of plaster, blackboard chalk and drywall. Gypsum board is commonly known as sheetrock or plasterboard.

As such, gypsum drywall scrap (from both demolition and construction activity) is also growing exponentially.

However, according to Isabelle Kavanagh, sustainability engineer at BuroHappold in New York, current estimates indicate a very low recycling rate for gypsum and data from the Environmental Protection Agency (EPA) suggests that just two percent of the millions of tons of gypsum waste produced annually is recycled into wallboard.

"Clearly there is significant room for growth, given this extremely low recycling rate," Kavanaugh said. "And it's critical to make progress for many reasons – including the fact that gypsum is a natural mineral that must be mined. An industry that adapts to reuse and recycle gypsum whenever possible will help avoid exploitation and depletion of natural resources."

Terry Weaver, owner of USA Gypsum Drywall Recycling in Denver, Pennsylvania, said that gypsum drywall recycling in the U.S. is currently limited to a handful of successful recyclers but is well established in Canada and the European Union. For 24 years USA Gypsum has recycled new gypsum drywall trim scrap and recycles them for beneficial use in agricultural, Portland cement and closed loop wallboard manufacturing.

"The outlook is strong because the demand for gypsum is growing while production in the U.S. is diminishing as coal fired power plants, which produce synthetic gypsum, are being closed and mines struggle to expand due to environmental challenges," Weaver said. "Reduced production is offset by imports which are subject to supply chain and transportation costs. Gypsum reclaimed from drywall will increasingly be viewed as a competitive source.

Indeed, the good news is that industry pressure and organizations like Building Product Ecosystems, founded by Amanda Kaminsky and the Durst Organization, are pushing for growth in this area.

"This is important because decomposing gypsum can produce dangerous gases such as hydrogen sulfide, so not only is a potentially valuable resource being wasted, but there is the possibility of harm to the health of those who live near landfills," Kavanaugh said.

Most gypsum sent to landfills comes from the demolition of older buildings. In these cases, the gypsum is not source-separated during demolition, and therefore cannot be recovered for proper recycling and/or reuse. Also, the recycling infrastructure is still developing and expanding to meet this need.

According to Matt Dunyon director of operations at DTG Recycle, there is a noticeable increase in volume from builders and drywall installers due to the current construction boom.

"It is a topic of conversation in the industry, especially with landfills facing more and more scrutiny around hydrogen sulfide gas emissions that result from landfilling drywall," Dunyon said. "Based on these concerns, we believe drywall recycling will have a significant upside in the near term."

Currently, DTG Recycle uses recycled gypsum as a soil amendment for the agricultural market for farms, including cherries, apples, and potatoes, and mixing it with topsoil and manure for compost.

"We also have a robust product development pipeline through our Recycling Innovation Center, where we have partnered with local universities to develop a variety of gypsum-based construction and plant nursery-related products," Dunyon said.

Challenges Aplenty

Michael McCamley, manager, technical services and market development at New West Gypsum Recycling (NWGR), said that one of the key issues for gypsum recycling is keeping it free from asbestos and lead. Lead based paints are a concern but asbestos is the biggest danger. NWGR recycles post-consumer gypsum waste into a product that's used in the wallboard manufacturing process. Since 1985, the company has recycled more than six million tons of gypsum waste.

As McCamley explained, until the late 1970s asbestos was used in the mud joint compound to plaster walls and ceilings. It was never used in the production of wallboard. It is an important practice to test for asbestos prior to any deconstruction or renovation if the building was built before 1990.

"It's also paramount that gypsum recyclers never accept gypsum that contains asbestos. For that to happen they need to have robust safety and screening procedures for incoming loads before accepting pre-1990 gypsum waste, third-party testing in place to test waste to be processed and the end product before is shipped out to re-ensure there is no asbestos," McCamley said. "If asbestos is discovered, all operations need to cease and abatement of facilities must occur."

This was the case for New West Gypsum Recycling (NWGR) in 2015 at its British Columbia, Canada operation.

"All it took was one bad actor to upset the market. We ended up paying the price for this bad actor and the toll it took on the local construction industry," McCamley said. "In total, all the gypsum waste recycling came to standstill in the Metro Vancouver area. The reason being is that we receive the vast majority of gypsum waste for recycling within Metro Vancouver. Meanwhile NWGR worked closely with WorkSafeBC to strengthen our policies, which are more robust and stricter than ever before, for accepting gypsum waste. In my opinion, every gypsum recycler should be made to police themselves as well as being regulated by local work authorities, for their safety, for employee safety, for customer safety and for those who use recycle gypsum as a product. Asbestos is most dangerous when airborne and everyone must do their due diligence to reduce the risk of exposure."

As Weaver noted, end markets are another big challenge surrounding gypsum recycling. In addition, gypsum is a low valued commodity that is expensive to transport.

According to Weaver, of the 42 million metric tons supplied, 10 percent is used to manufacture Portland cement, 36 percent for agriculture and miscellaneous. and 53 percent for wallboard and plaster.

"Producing quality recycled gypsum for beneficial use with chemistry similar to mined or synthetic gypsum begins by removing foreign material and paper facing," Weaver says. "Understanding the physical characteristics, such a moisture and particle sizes the specific market needs, are the key to determining the type of process needed to successfully replace competing sources of gypsum."

DTG's current end markets require the gypsum to be contaminant free. Accordingly, they spend a great deal of time educating construction customers on how to separate and keep their drywall scraps clean and free of contamination.

Successful gypsum recycling requires attention to source separation: intentional efforts by contractors on construction and demolition sites to separate materials before they are sent to recycling facilities.

"This requires behavior change, which can be challenging," Kavanaugh said. "Also, what constitutes end of life for recycled gypsum is evolving. For example, factory scrap and some trim scrap from new construction can be used to constitute new wallboard, but demolition scrap is trickier. Some potential end-of-life scenarios for demolition scrap include use in soil amendment or cement manufacturing."

A Concerted Effort

Due to the growing interest in recovering gypsum from the C&D waste stream the Construction and Demolition Recycling Association (CDRA) recently formed a gypsum recycling committee with key stakeholders including gypsum drywall manufacturers, contractors, recyclers and building owners to move the industry forward. The CDRA Gypsum Recycling Committee's mission is to provide guidelines and other assistance in developing and expanding recovery and end markets for recovered gypsum.

According to Weaver, who is the first chairman of the committee, the initial action steps that the committee will take include:

•Creating a drywall diversion policy to develop clear definitions on what types of wallboard can and should be recovered and marketed back to manufacturers of drywall with the goal of closing the loop on this construction product.
•Developing end product specifications recyclers have to meet in order to sell the recovered material back to drywall manufacturers.
•Creating best management practices (BMPs) for contractors and processors to increase the diversion of drywall.
•Working with drywall companies to set post-recycled content for new drywall.
•Promoting that recyclers must be third-party certified using a program developed to an ISO level so accurate diversion rates can be obtained and that drywall manufacturers would use a similar certification program to demonstrate the recycled content of their products.
•Defining specifications for other end products made from recycled drywall.

Kavanaugh said that everyone in the construction and demolition industry needs to be more ambitious with their targets for waste recycling. She noted that setting a high bar will help increase demand for effective recycling infrastructure for gypsum wallboard and other C&D materials, ultimately helping create more circular supply chains.

"Continued industry pressure can also help make source separation of gypsum more common practice on job-sites," Kavanaugh said. "Also the creation of new, innovative products that use recycled gypsum, will increase demand for the resource."

Weaver said that there is a consensus that more gypsum can be recovered by source separating at the job-site and not adding the drywall scrap to mixed C&D containers where the gypsum can become contaminated. As it is crushed and gets wet, it crumbles in small pieces that cannot easily be recovered and contaminates other materials that become more difficult to recover.

"We expect this practice to become more widespread," Weaver said.

In addition, Weaver pointed out that drywall scraps in mixed C&D that are processed mechanically are mostly lost to C&D process screens and become mixed with other fines such as soil and aggregate which are often used as alternative daily cover (ADC) in landfills.

"The sulfate in the gypsum can produce hydrogen sulfide which in addition to odors can contaminate leachate. For this reason, many landfill operators refuse to accept or limit the use of ADC," Weaver said. "Regulators in various states have reacted to sulfate problems in landfills and a patchwork of landfill bans and restrictions has emerged around disposal of gypsum drywall in landfills. Because disposing of gypsum is problematic in landfills and demand for gypsum is increasing, we expect gypsum drywall recycling in the U.S. to increase following successful examples set by Canada and the European Union."

So what is the outlook for the gypsum recycling segment of the industry? Industry experts agree that it's bright.

"I personally have seen a greater interest in the subject of gypsum recycling, which is awesome. Of late, there have been a lot of emerging gypsum recyclers entering the market, which is good, but with the gypsum recycling industry growth will come the bad actors looking to make a 'quick buck' ultimately setting back our industry on whole," stated McCamley. "With that all being said, NWGR is proud to be a part of the CDRA Gypsum Recycling Committee in the protection of our industry by promoting best practices and to help guide the gypsum recycling industry with all the other major gypsum industry stakeholders involved in the committee. With due care, NWGR has proven it safe and possible to recycle gypsum wallboard and we want to keep it that way."

Edie
Environment Agency issues new gypsum waste guidance

12 January 2009, source edie newsroom

New science confirms there is no acceptable limit for gypsum to be deposited with biodegradable waste.

Firms dealing with gypsum waste, such as plasterboard and plaster, are being encouraged to recycle and reuse more as new guidance on gypsum going to landfill has been announced by the Environment Agency.

The landfilling of gypsum and other wastes with a high sulphate content together with biodegradable waste has been banned in England and Wales since July 2005.

This is to prevent the build up of hydrogen sulphide gas which is both toxic and odorous. However, where construction waste contains up to 10 per cent gypsum, separate disposal has to date not been required.

From 1 April 2009 the ten per cent guideline will be scrapped and gypsum waste that cannot be recycled and is sent to landfill must be deposited in a separate cell with non-biodegradable waste.

Liz Parkes, the Environment Agency's Head of Waste, said: "In response to calls from industry we have up to now been taking a pragmatic view that separate disposal was not necessary for construction waste containing low levels of gypsum.

"However, our position is changing because new science confirms that the relationship between the amount of sulphate in waste and the production of hydrogen sulphide gas is complex.

"We cannot therefore set an acceptable limit within which gypsum can be deposited with biodegradable waste without creating this gas.

"We are also aware that some were relying on the disposal guideline at the expense of segregating and recycling their construction waste. But the guideline was never intended to be a limit to allow producers to add gypsum up to ten per

cent.

"In line with the Landfill Directive, which is about minimising the impact of landfilling on the environment, we want to encourage the reuse and recycling of more gypsum and other high sulphate-bearing waste while reducing the potential production of hydrogen sulphide gas at landfill."

The new guidance, Landfilling of gypsum waste including plasterboard, which can be found at www.environment-agency.gov.uk, means that from 1 April 2009, producers of construction and demolition waste must:

- Separate gypsum-based material from other wastes so it can either be recycled, reused or disposed of properly at landfill
- Not deliberately mix gypsum waste or plasterboard with other waste

Meanwhile, landfill operators must:

- Adopt waste acceptance procedures that will identify whether a waste stream contains gypsum-based material
- Dispose of gypsum waste in a separate cell that does not contain biodegradable waste above specific limits
- Let us know about any non-compliant load and its producer so we can take action

As well as revising its position on gypsum, the Environment Agency is working with industry to develop guidance on the management of other wastes with high sulphate content which it hopes to make available in spring 2009.

Industry views are also currently being sought on the draft Quality Protocol for gypsum from waste plasterboard. Unveiled last month by the Waste Protocols Project - a joint Environment Agency and WRAP (Waste & Resources Action Programme) initiative - the Protocol would see gypsum lose its waste tag once it has been recycled to an agreed standard.

This would help boost the market for gypsum recycling.

You can take part in the Quality Protocol Consultation for the production and use of gypsum from waste plasterboard online at http://qp.dialoguebydesign.net

The consultation closes on Thursday, 22 January 2009.

CONSTRUCTION & DEMOLITION RECYCLING

Study finds potentially harmful chemicals in building materials

A report released April 21 2021 says that building materials are common sources of PFAS.

POSTED BY ALEX KAMCZYC | **APRIL 22, 2021**

A study conducted by the Green Science Policy Institute in Berkley, California, has found that per- and polyfluoroalkyl substances (PFAS), including large fluoropolymers, are used in several common building materials.

The research found that PFAS are added to roofing materials, paints and coatings, sealants, caulks, adhesives, fabrics, glass and more. This is because PFAS provides functions such as weatherproofing; corrosion prevention; and resistance to stains, grease, and water.

However, PFAS can make their way into water, air, food and indoor dust during the manufacturing, use and disposal of these materials. Building construction and maintenance workers, as well as do-it-yourselfers, may be particularly at risk, the Green Science Policy Institute says.

PFAS contamination has been associated with a wide range of serious health consequences, including certain cancers. Additionally, tile and grout spray-on waterproofing products containing PFAS have been implicated in several cases of acute lung damage, the institute says.

"It's worrisome that PFAS may be wall-to-wall in our homes and offices," says Tom Bruton, senior scientist at the Green Science Policy Institute. "But the good news is that safer alternatives already exist. This is a problem that architects, designers and manufacturers can solve."

ENERGYneering Solutions Inc.
15820 Barclay Drive, Sisters, OR 97759 | 541.549.8766 | www.ENERGYneeringSolutions.com

October 24, 2017

Elaine Placido
Director of Cowlitz County Building and Planning
Delivered via Email to: Ron Melin at MelinR@co.cowlitz.wa.us

Subject: Addendum to July 2013 EIS on Cowlitz County Headquarters Landfill, Section 3.3.2.1.1

Ms. Elaine Placido:

The Cowlitz County Landfill site currently utilizes an enclosed flare system as a Landfill Gas (LFG) control device to meet air pollution control regulations established by the Southwest Clean Air Agency (SWCAA) under the county's existing air permit for the site. Due to higher than expected LFG production at the Cowlitz County Landfill, an additional Enclosed Ground Flare Station will be installed to limit additional LFG fugitive emissions from the landfill. In conjunction with this project, ESI worked with the SWCAA to revise the County's existing air permit based on the latest gas generation projections for the landfill. The air permit revisions also necessitate modifications to the July 2013 Environmental Impact Study (EIS) to reflect the changes. The following information details the basics of the project and recommended modifications to the EIS:

The flare expansion project consists of the installation of a new enclosed flare along with mechanical, electrical, and controls integration into the existing system. A site plan drawing is provided in Attachment A that depicts the new flare installation. Work and construction required to install and utilize the proposed flare system will include installation of a concrete pad, extended fence perimeter, wiring modifications, blower skid modifications, and a second fuel train. Other modifications will be made to the three main subsystems associated with the operation of the flare. These include (1) the flare itself, (2) the blower skid system and piping, and (3) the flare control system.

The flare to be installed will be identical to the one presently on site and will stand approximately 40 ft tall with an outside diameter of 9 ft. It will be located approximately 13 ft. north of the existing Blower-skid. The original lies approximately 12 ft. to the West of the blower skid. The new flare is designed to handle LFG with 30-50% methane content at 1000 scfm and 30 MMBtu/hr. Overall flare capacity will be doubled with the addition of the second flare system, resulting in 2000 scfm of 60 MMBtu/hr total LFG destruction capacity; potential maximum annual volumetric discharge of 1,051 MMscf and 525,600 MMBtu LFG destruction capacity. The elevated flow rate will require numerous system changes.

Energyneering Solutions, Inc. (ESI) worked with the SWCAA to revise the existing air permit for the site based on updated background pollutant concentrations, revised landfill fugitive emissions projections, existing flare effects, and additional proposed flare effects. The installation of the additional flare system will duplicate the emissions and pollutants of the original flare system. To ensure that relevant state, local, and federal air quality regulations are met for the system, Kent Norville of Air Sciences Inc. developed an Air Dispersion model (See Attachment B) to evaluate the site's emissions potential. Updated background pollutants were less than those of the original air dispersion model, allowing for a larger emissions envelope in which the flares can operate. With the flares operating at full emissions potential, the model results indicated that the site would meet ambient air quality standards. A draft permit revision was completed earlier this year reflecting results of the air dispersion

model (See ESI summary review of draft permit revision- Attachment C), to be finalized in conjunction with these modifications to the EIS. Updated short and long-term emission limits were made for Nitrogen Oxides, Carbon Monoxide, VOCs, Sulfur Dioxide, and Hydrogen Chloride. See the Air discharge permit prepared by Southwest Clean Air Agency for details.

Based on changes to the air permit and the addition of the new enclosed flare, the existing EIS, particularly section 3.3.2.1.1, should be modified to reflect the new background pollutant concentrations, single, and dual flare operations. Table 8 titled "Criteria Pollutant Impacts" on page 114 of the EIS is to be updated to reflect impacts outlined in Table 8 on page 14 of the 2017 Air Dispersion Model (See Attachment B). Table 9 titled Toxic Air Pollutant (TAP) Impacts on page 115 of the EIS must also be addended to reflect results of Table 9 on page 15 of the 2017 Air dispersion model (See Attachment B).

If there are any questions about this project work, feel free to call me at (541) 549-8766 ext. 279.

Regards,

Kyle Petersen
Project Engineer
ENERGYneering Solutions, Inc.

Attachment A- Site Plan/Layout

JF PROJECT MANAGER 07/06/2017 DATE

PD DRAWN BY 07/06/2017 DATE

CF CHECKED BY 07/06/2017 DATE

CALL FOR INC

HORIZ. SCALE: N/A
VERT. SCALE: N/A
PROJECT ID: 8481
ROAD NO. :
COMPUTER FILE: Blower Flare Upgrade Site Layout.dwg

COWLITZ COUNTY WASHINGTON

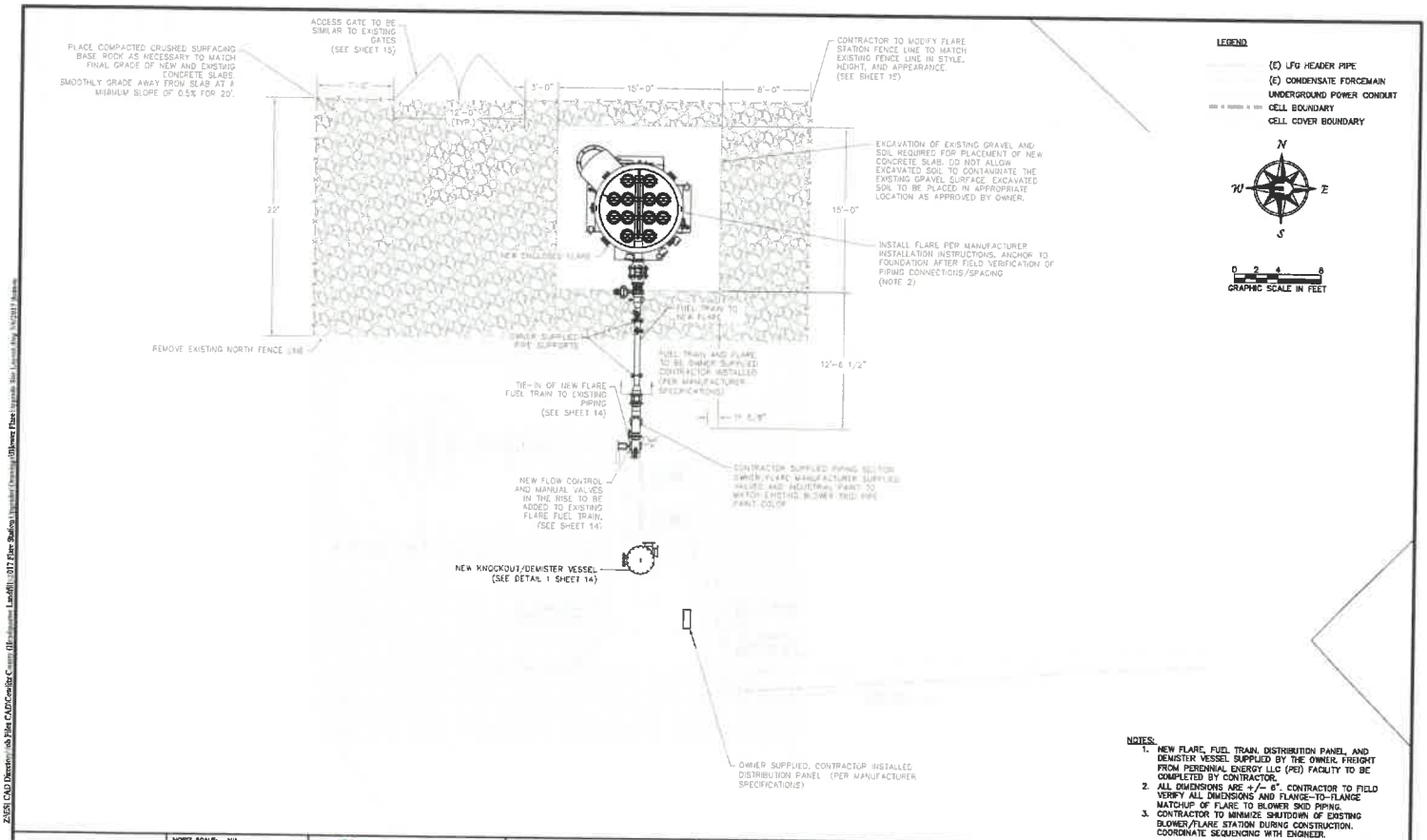
DEPARTMENT OF PUBLIC WORKS
1600 13TH AVENUE SOUTH
KELSO, WASHINGTON 98626

ENERGYNEERING SOLUTIONS INC
15820 BARCLAY DRIVE, SISTERS, OR 97759
PHONE: (541) 549-5766
FAX: (541) 549-1901

COWLITZ COUNTY HEADQUARTERS LANDFILL
FLARE STATION EXPANSION

LANDFILL LAYOUT

SHEET 02 OF 15



NOTES:

1. NEW FLARE, FUEL TRAIN, DISTRIBUTION PANEL, AND DEMISTER VESSEL SUPPLIED BY THE OWNER, FREIGHT FROM PERENNIAL ENERGY LLC (PEI) FACILITY TO BE COMPLETED BY CONTRACTOR.
2. ALL DIMENSIONS ARE +/- 6". CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND FLANGE-TO-FLANGE MATCHUP OF FLARE TO BLOWER SKID PIPING.
3. CONTRACTOR TO MINIMIZE SHUTDOWN OF EXISTING BLOWER/FLARE STATION DURING CONSTRUCTION. COORDINATE SEQUENCING WITH ENGINEER.

JF PROJECT MANAGER 07/05/2017 DATE PD DRAWN BY 07/05/2017 DATE CF CHECKED BY 07/05/2017 DATE	HORIZ. SCALE: N/A VERT. SCALE: N/A PROJECT ID: 8461 ROAD NO. : COMPUTER FILE: Blower Flare Upgrade Site Layout.dwg	COWLITZ COUNTY WASHINGTON	DEPARTMENT OF PUBLIC WORKS 1800 13TH AVENUE SOUTH KELSO, WASHINGTON 98626		ENERGYNEERING SOLUTIONS INC 63820 BARCLAY DRIVE, SISTERS, OR 97759 PHONE: (541) 549-8786 FAX: (541) 549-1901	COWLITZ COUNTY HEADQUARTERS LANDFILL FLARE STATION EXPANSION **FLARE STATION LAYOUT**	SHEET 03 OF 15

CALL FOR INC

Attachment B- Air Dispersion Model

AIR SCIENCES INC.

DENVER • PORTLAND

April 14, 2017

Project No. 333-01

Mr. Clint Lamoreaux
Southwest Clean Air Agency
11815 NE 99th Street, Suite 1294
Vancouver, WA 98682-2454

Subject: Modeling Report for the Cowlitz County Headquarters Landfill

Dear Mr. Lamoreaux:

This letter contains a modeling report for the Cowlitz County Headquarters Landfill east of Castle Rock, Washington. This report is intended to outline the assumptions and methodologies that were used to demonstrate that the project criteria pollutants and toxic air emissions from a new flare and landfill fugitive emissions are less than the applicable standards and Acceptable Source Impact Levels.

If you have any questions or comments on this report, please contact me at (503) 525-9394 ext. 112 or via e-mail at knorville@airsci.com.

Sincerely,

Air Sciences Inc.

Kent Norville

Kent Norville, Ph.D.
Principal Atmospheric Scientist

Modeling Report for the Cowlitz County Headquarters Landfill

The Southwest Clean Air Agency (SWCAA) has requested that the Cowlitz County Headquarters (CCH) Landfill evaluate criteria pollutants and toxic air pollutant (TAP) emission impacts. The landfill is located in Cowlitz County on Silver Lake Road, about 5 miles east of Castle Rock, Washington, and 10 miles northeast of Longview. Cowlitz County acquired the landfill and developed it as a municipal solid waste landfill. A map of the proposed area is shown in Figure 1. The approximate coordinates for this site are 46° 14.8′ N; 122° 46.5′ W. The facility was modeling in 2012 in an application submitted to the Southwest Clean Air Agency. The methodologies for this analysis follow the steps and procedures used in the previous submittal.

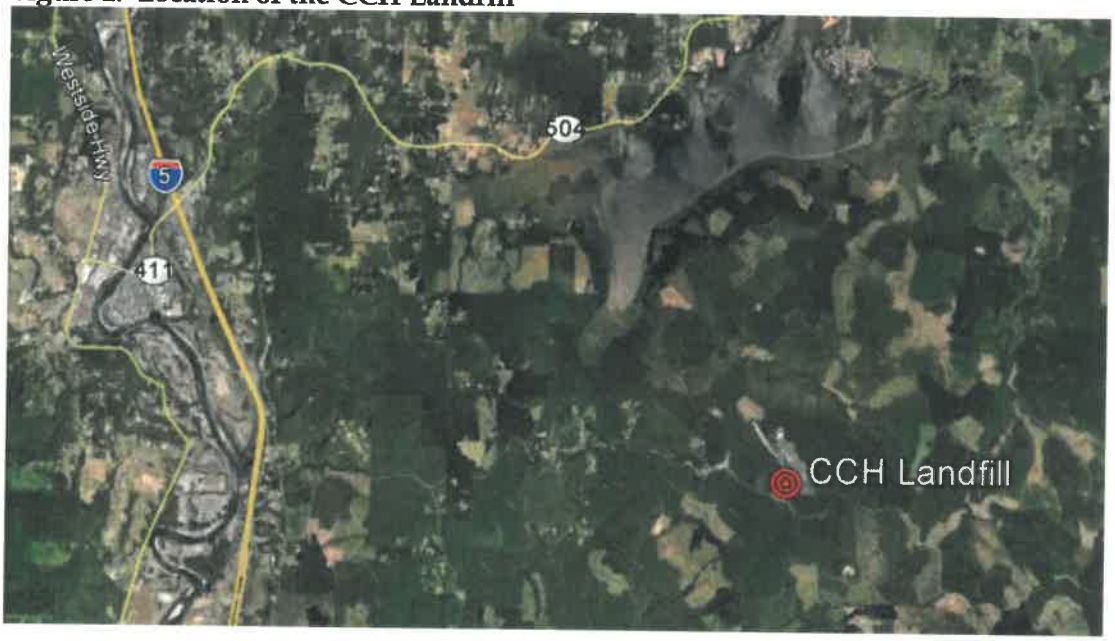
Table 1 shows the criteria pollutants of concern and their applicable evaluation criteria. The Acceptable Source Impact Levels (ASILs) for the TAPs are provided in Table 4.

Table 1. Criteria Pollutants and Applicable Standards

Pollutant	Averaging Time	Evaluation Criteria µg/m³
Carbon Monoxide (CO)	1-hour[a] 8-hour[a]	40,000 10,000
Nitrogen Dioxide (NO_2)	1-hour[b] Annual[c]	188 (0.100 ppm) 100 (0.053 ppm)
Particulate Matter with Aerodynamic Diameter less than 10 microns (PM_{10})	24-hour[d] Annual[e]	150 50
Particulate Matter with Aerodynamic Diameter less than 2.5 microns ($PM_{2.5}$)	24-hour[f] Annual[e]	35 15
Sulfur Dioxide (SO_2)	1-hour[g] 3-hour[a] 24-hour[a] Annual[c]	196 (0.075 ppm) 1,300 (0.5 ppm) 260 (0.1 ppm) 52 (0.02 ppm)

[a] Not to be exceeded more than once per calendar year.
[b] Not to exceed the three-year average of the 98th percentile daily maximum.
[c] Not to be exceeded.
[d] Not to be exceeded more than three times in a three-year period.
[e] Three-year average not to be exceeded.
[f] The three-year average of the 98th percentile daily maximum not to be exceeded.
[g] Not to exceed the three-year average of the annual 99th percentile daily maximum 1-hour values.

Figure 1. Location of the CCH Landfill



Emissions and Source Characterization

This modeling analysis considered impacts associated with the landfill gas fugitives, the existing flare and an additional new flare. Two scenarios were evaluated. The first scenario was for a typical case, with a 1,000 standard cubic feet per minute (scfm) flow to the existing flare. Figure 2 shows the source configuration. The flare was modeled as an enclosed flare with a height of 40 feet, an 8-foot diameter, an exhaust flow of 44,008 actual cubic feet per minute (acfm), and an exit temperature of 1400°F. The landfill gas fugitives were assumed to emit from the landfill itself. Since the elevation of the landfill varies, ranging from roughly 1,000 to 1,250 feet, the landfill was characterized with a series of volume sources placed over the surface, as shown in Figure 2. Each volume source was depicted by a circle with a diameter of 270 meters. The elevation of the volume sources was the average of the maximum and minimum elevations (ΔE) within the circle. The sigma-y coefficients were set to the diameter of the circle divided by 2.15. The sigma-z values were set to ΔE divided by 2.15. The height of the volume sources was set to 1 meter above ground, which was the approximate height of the wellheads.

Based on operations at the landfill, projections indicate that the future flow rate could higher than anticipated. In this second scenario, the flow was assumed to be double of

the first case (that is, 2,000 scfm). In this scenario, a second flare would be used, which would be located 15 feet northwest of the existing flare. Each flare would have a flow of 1,000 sfcm. Therefore, the second flare would have the same parameters as the existing flare.

Hydrogen sulfide ASIL limits were not adhered to in this review. Instead, upper bound H_2S concentrations in the two flow scenarios were identified such that the flare SO_2 impact would not exceed 80 percent of the ambient air quality standard. This was done because the landfill was originally permitted as an industrial waste landfill prior to the release of Washington's Air Toxics rules which established air pollutant ASILs. During that time, large quantities of waste that produce H_2S were deposited. The ownership of the landfill has since been transferred and it was re-permitted as a municipal solid waste landfill. Now the landfill is dealing with unusually high H_2S levels in the gas from these legacy waste cells. Since the waste in these cells is arguably not subject to State Air Toxics rules and the landfill is already utilizing the Best Available Control Technology to reduce the H_2S levels going to the flare, the CCH feels that the H_2S ASIL limits are impractical and instead focus on meeting the SO_2 ASIL limits which yield reasonably achievable emission limits. Given this scenario, H_2S levels were assigned as 890 ppm and 445 ppm for the 1,000 sfcm and 2,000 scfm cases respectively.

Table 2 shows the criteria pollutant emissions for the flare and landfill fugitives. Table 3 shows TAP combined flare and landfill fugitive emissions for the project, along with the Small Quantity Emission Rate (SQER). The SQER defines the level of emissions below which dispersion modeling is not required to demonstrate compliance with ASILs. Only TAPs listed in Washington Administrative Code (WAC) 173-460-150 were included. For the 1,000 scfm case, there are 10 TAPs over the SQER. For the 2,000 scfm case, there are 13 TAPs over the SQER.

Figure 2. Location of Fugitive Volume Sources

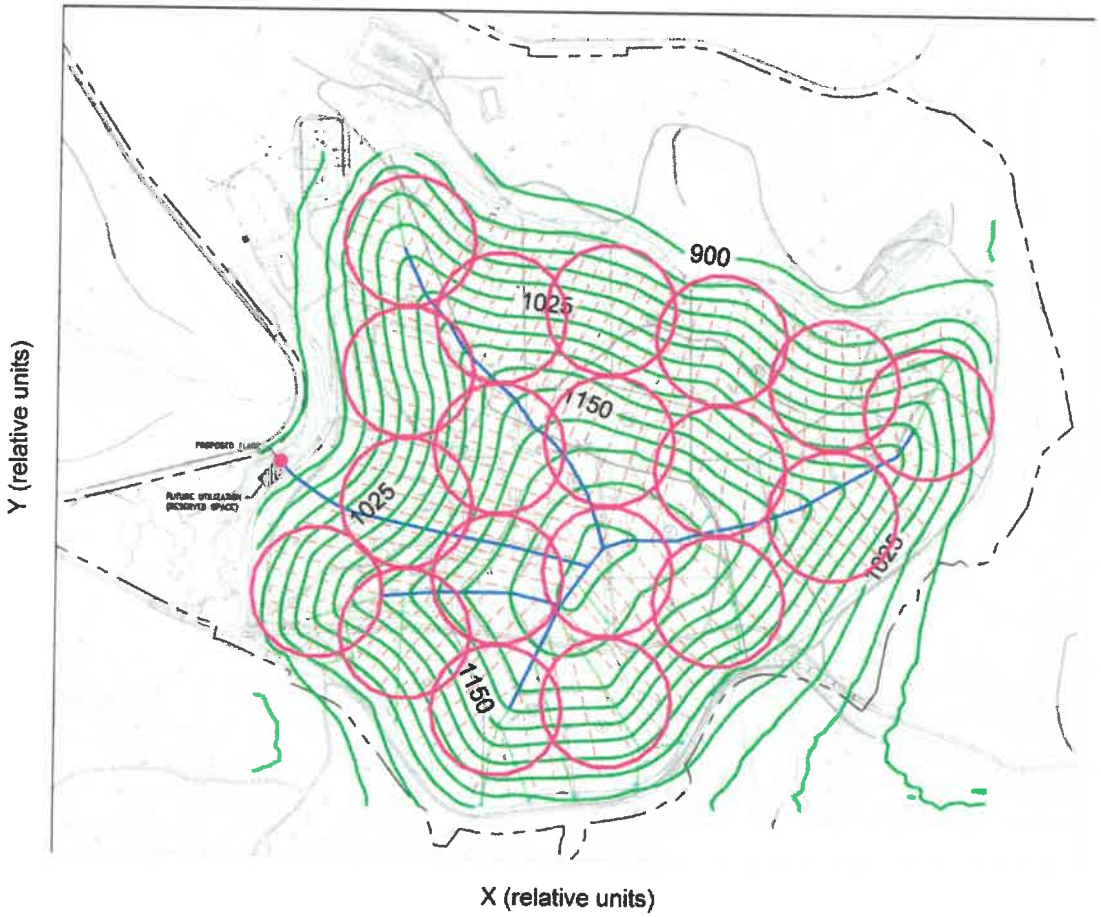


Table 2. Flare and Landfill Fugitive Criteria Pollutant Emissions

Pollutant	1,000 scfm Gas Flow Scenario					
	Flare			Landfill Fugitive		
	Hourly (lb/hr)	Hourly (g/s)	Annual (tons/year)	Hourly (lb/hr)	Hourly (g/s)	Annual (tons/year)
NO_X	1.80	0.227	7.88	--	--	--
CO	3.00	0.378	13.14	0.04	0.005	0.16
PM	0.45	0.057	1.97	--	--	--
SO_2	8.69	1.10	38.07	--	--	--
Pollutant	**2,000 scfm Gas Flow Scenario**					
	Flare			Landfill Fugitive		
	Hourly (lb/hr)	Hourly (g/s)	Annual (tons/year)	Hourly (lb/hr)	Hourly (g/s)	Annual (tons/year)
NO_X	3.6	0.45	15.77	--	--	--
CO	6.0	1.51	26.28	0.07	0.001	0.31
PM	0.9	.0113	3.94	--	--	--
SO_2	8.69	1.10	38.07	--	--	--

Table 3. TAP Emissions (Flare + Landfill Fugitive)

Toxic Air Pollutant	CAS	Ave Time	SQER (lb/ave time)	1,000 scfm Flare + Fug. ER (lb/ave time)	2,000 sfcm Flare + Fug ER (lb/ave time)	Over? (1000,2000)
1,1,1-Trichloroethane	71-55-6	24-hr	131	0.043	0.086	No, No
1,1,2,2-Tetrachloroethane	79-34-5	year	3.3	43.975	86.561	**Yes, Yes**
1,1,2,3,4,4-Hexachloro-1,3-butadiene (Hexachlorobutadiene)	87-68-3	year	8.73	0.446	0.877	No, No
1,1,2-Trichloroethane	79-00-5	year	12	10.321	20.317	No, **Yes**
1,1-Dichloroethane	75-34-3	year	120	100.79	198.414	No, **Yes**
1,1-Dichloroethene (1,1-Dichloroethylene)	75-35-4	24-hr	26.3	0.021	0.041	No, No
1,2-Dibromoethane (Ethylenedibromide)	106-93-4	year	2.71	0.442	0.869	No, No
1,2-Dichloroethane (Ethylenedichloride)	107-06-2	year	7.39	7.705	15.167	**Yes, Yes**
1,2-Dichloropropane	78-87-5	year	19.2	2.877	5.664	No, No
1,3-Butadiene (Vinyl ethylene)	106-99-0	year	1.13	4.397	8.655	**Yes, Yes**
1,4-Dioxane (1,4-Diethylenedioxide)	123-91-1	year	24.9	0.358	0.704	No, No

Toxic Air Pollutant	CAS	Ave Time	SQER (lb/ave time)	1,000 scfm Flare + Fug. ER (lb/ave time)	2,000 sfcm Flare + Fug ER (lb/ave time)	Over? (1000,2000)
2-Butanone (Methyl ethyl ketone)	78-93-3	24-hr	657	0.388	0.764	No, No
2-Propanol (Isopropyl alcohol)	67-63-0	1-hr	7.01	0.145	0.286	No, No
4-Methyl-2-pentanone (MIBK)	108-10-1	24-hr	394	0.119	0.234	No, No
Acetaldehyde	75-07-0	year	71	1.670	3.287	No, No
Acetonitrile	75-05-8	year	11,500	11.177	22.001	No, No
Benzene	71-43-2	year	6.62	91.801	180.703	**Yes, Yes**
Benzyl chloride	100-44-7	year	3.91	1.122	2.208	No, No
Bromodichloromethane	75-27-4	year	5.18	0.704	1.387	No, No
Bromomethane (Methyl bromide)	74-83-9	24-hr	0.657	0.003	0.005	No, No
Carbon disulfide	75-15-0	24-hr	105	0.015	0.030	No, No
Carbon tetrachloride	56-23-5	year	4.57	0.601	1.183	No, No
Chlorobenzene	108-90-7	24-hr	131	0.073	0.144	No, No
Chlorodifluoromethane (Freon 22)	75-45-6	24-hr	6,570	0.092	0.182	No, No
Chloroethane (Ethyl chloride)	75-00-3	24-hr	3,940	0.342	0.673	No, No
Chloromethane (Methyl chloride)	74-87-3	24-hr	11.8	0.017	0.033	No, No
Cyclohexane	110-82-7	24-hr	789	0.114	0.224	No, No
Dichlorobenzene	106-46-7	year	17.4	67.666	133.197	**Yes, Yes**
Ethylbenzene	100-41-4	year	76.8	252.67	497.378	**Yes, Yes**
Formaldehyde	50-00-0	year	32	0.172	0.339	No, No
Hexane	110-54-3	24-hr	92	0.358	0.706	No, No
Hydrogen sulfide	7783-06-4	24-hr	0.263	39.96	39.96	**Yes, Yes**
Isopropylbenzene (Cumene)	98-82-8	24-hr	52.6	0.069	0.136	No, No
Mercury (total)	7439-97-6	24-hr	0.0118	0.000	0.000	No, No
Mercury (elemental)	7439-97-6	24-hr	0.0118	0.000	0.000	No, No
Methyl tert-butyl ether (MTBE)	1634-04-4	year	739	5.094	10.027	No, No
Naphthalene	91-20-3	year	5.64	6.716	13.220	**Yes, Yes**
Styrene (Vinylbenzene)	100-42-5	24-hr	118	0.057	0.113	No, No
Tetrachloroethylene (Perchloroethylene)	127-18-4	year	32.4	164.85	324.495	**Yes, Yes**
Toluene (Methyl benzene)	108-88-3	24-hr	657	3.647	7.178	No, No
Tribromomethane (Bromoform)	75-25-2	year	174	1.535	3.021	No, No

Toxic Air Pollutant	CAS	Ave Time	SQER (lb/ave time)	1,000 scfm Flare + Fug. ER (lb/ave time)	2,000 sfcm Flare + Fug ER (lb/ave time)	Over? (1000,2000)
Trichloroethylene (Trichloroethene)	79-01-6	year	95.9	53.28	104.87	No, Yes
Trichloromethane (Chloroform)	67-66-3	year	8.35	4.139	8.147	No, No
Vinyl acetate	108-05-4	24-hr	26.3	0.029	0.056	No, No
Vinyl chloride (Chloroethene)	75-01-4	year	2.46	43.46	85.55	Yes, Yes
Xylenes (o-, m-, p-, mixtures)	108-38-3	24-hr	29	1.315	2.588	No, No

Table 4 shows the applicable TAPs with emissions greater than the SQER and with an ASIL defined in WAC 173-460-150. Since the flare-to-fugitive emissions ratio (1-to-16.95) was the same for all TAPs, the TAPs were modeled in a single run with a unit emissions rate (1 g/sec). Thus, the flare component was modeled with a total emission rate of 0.0557 g/s and the fugitives used 0.944 g/s. Each landfill volume had an emission rate equal to the total fugitive rate divided by the number of volumes. The TAP concentrations were found by multiplying the unit impacts by the total TAP emission rates in Table 4.

Table 4. TAPs Emissions and ASILs

Toxic Air Pollutant	CAS	Ave. Time	1,000 scfm Flow ER (lb/day)	2,000 sfcm Flow ER (lb/day)	ASIL ($\mu g/m^3$)
1,1,2,2-Tetrachloroethane	79-34-5	year	43.28	86.56	0.0172
1,1,2-Trichloroethane	79-00-5	year	- -	20.32	0.0625
1,1-Dichloroethane	75-34-3	year	- -	198.41	0.625
1,2-Dichloroethane (Ethylenedichloride)	107-06-2	year	7.58	15.17	0.0385
1,3-Butadiene (Vinyl ethylene)	106-99-0	year	4.33	8.66	0.00588
Benzene	71-43-2	year	90.35	180.70	0.0345
Dichlorobenzene	106-46-7	year	66.60	133.20	0.0909
Ethylbenzene	100-41-4	year	248.69	497.38	0.4
Hydrogen Sulfide	7783-06-4	24-hr	39.96	39.96	2
Naphthalene	91-20-3	year	6.61	13.22	0.0294
Tetrachloroethylene (Perchloroethylene)	127-18-4	year	162.25	324.49	0.169
Trichloroethylene (Trichloroethene)	79-01-6	year	- -	104.87	0.5
Vinyl chloride (Chloroethene)	75-01-4	year	42.77	85.55	0.0128

Model Selection

For this analysis, the most recent version (16216r) of the AERMOD (AMS [American Meteorological Society]/EPA [Environmental Protection Agency] Regulatory Model) was used to estimate the air quality impacts. AERMOD is an advanced modeling system that incorporates the boundary layer theory, turbulence, and effects of terrain features into air dispersion simulations. It is an EPA-recommended guideline model to be used for this type of facility and terrain.

The AERMOD was run with the regulatory default options, which include the following:

- Calm winds or missing meteorological data processing
- Elevated terrain algorithms using actual receptor elevations

Building Heights/Building Downwash

There are no buildings around the flares, so building downwash was not incorporated into the AERMOD runs.

Meteorological Data

The model was run using 3 years of hourly meteorological data from the Longview Weyerhaeuser Facility as provided by the SWCAA. Additional data include upper-air data from the Salem National Weather Service (NWS) and hourly NWS surface data from Portland. These data were reprocessed in the most recent version of AERMOD's Meteorological Pre-processor, AERMET (version 16216). AERMET was run using the "ADJ_U*" feature which adjustments to frictional velocity (U*) during low wind speed conditions.

AERMET requires the input of three surface boundary layer parameters: albedo, Bowen ratio, and surface roughness length. These parameters are dependent on the land use and vegetative cover of the area being evaluated. The AERSURFACE processor (version 13016) was used to determine the surface parameters. AERSURFACE required the input of land cover data from the U.S. Geological Survey (USGS) National Land Cover Data 1992 archives (NLCD92), which it used to determine the land cover types for the user-specified location. Each of the land cover categories in the NLCD92 archive is linked within AERSURFACE to a set of seasonal surface characteristics. AERSURFACE was run for the project site.

AERSURFACE was set to run with monthly periods (winter=December–February; transitional spring=March–May; summer=June–September, fall with vegetation=October–November) using one sector. Based on a thirty-year precipitation

record from Longview, dry conditions were used for 2001 and 2002, while average conditions were used for 2003. The continuous snow cover option was turned off, since periods of snow cover are limited.

Receptor Grid

AERMOD requires receptor terrain processing with an AERMAP pre-processor to extract receptor elevations and estimate hill height scale values. AERMAP uses USGS 1-degree and 7.5-minute Digital Elevation Model (DEM) files and National Elevation Dataset (NED) input for this purpose. AERMAP was run to generate the receptor elevations and hill heights using the NED data. All coordinates were characterized in a UTM NAD 83, Zone 10 coordinate system.

The elevation of the landfill is approximately 1,000 feet above sea level (asl). The terrain around the landfill generally slopes downward to the north (toward Silver Lake at 500 feet asl) and west (toward the I-5 corridor at 100 feet asl). The terrain slopes upward to the south to about 1,600 feet and to the east to about 2,000 feet. Previous modeling of a flare at the landfill[1] indicated that the highest concentrations occurred within 3 kilometers of the facility. Thus, the following grid spacing was used in the modeling analyses:

- 25-meter spacing along the property line
- 50-meter spacing within 1 kilometer, centered on the landfill flare
- 100-meter spacing between 1 and 3 kilometers from the landfill flare

Receptors were not placed within the property boundary.

Background Concentrations

Before comparing the project's criteria pollutant impacts to the National Ambient Air Quality Standards (NAAQS), ambient background concentrations were added to account for the prevailing air pollution in the area from other sources. Table 5 shows the criteria pollutant background levels. Values were derived from regional air quality monitoring (e.g., Southwest Washington and Northwest Oregon), using up to three recent years of data if available. Since most of the monitoring locations are in urban areas and the project is rural in nature, these background concentrations are greater than what is expected to occur around the flare site. Note that the background levels have decreased since the analysis in 2012.

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[1] Modeling Report for the Weyerhaeuser Regional Landfill, Letter to Clint Lamoreaux, SWCAA, June 28, 2007.

Table 5. Background Concentrations

Pollutant	Averaging Time	Value $\mu g/m^3$ (ppm)	Comment
CO	1-hour	2,519.8 (2.2)	Three-year (2013-2015) average of the maximum values from the SE Lafayette, Portland, OR site[a]
	8-hour	2,151.5 (1.9)	
NO_2	1-hour	65.17 (0.035)	Three year average of the 98th percentile of daily maximum for 2012 to 2014 from the SE Lafayette, Portland, OR site[b]
	Annual	17.55 (0.009)	Three-year (2012-2014) average from the SE Lafayette, Portland, OR site[b]
PM_{10}	24-hour	42.0	Three-year (2012-2014) average of highest 24-hour from the SE Lafayette Station in Portland, OR [b]
$PM_{2.5}$	24-hour	18.1	Three-year (2012-2014) average of the 98th percentile from the Longview-30th Ave. site[c]
	Annual	6.0	Three-year annual average (2012-2014) from the Longview-30th Ave. site[c]
SO_2	1-hour, 3-hour	16.71 (0.006)	Maximum concentrations observed from 2011 to 2013 at the SE Lafayette Station in Portland, OR [b]
	24-hour	7.8 (0.003)	
	Annual	2.1 (0.0008)	

[a] The Vancouver Atlas-Cox CO monitor was removed in 2006. EPA AirData website (https://epa.maps.arcgis.com/apps/webappviewer/index.html).
[b] 2014 Oregon Air Quality Data Summaries, Oregon Department of Environmental Quality, June 2015 (http://www.deq.state.or.us/aq/forms/aqdatasum2014.pdf) and Oregon DEQ Laboratory Analytical Storage and Retrieval (LASAR) website (http://deq12.deq.state.or.us/lasar2/default.aspx)
[c] Washington State Department of Ecology's Real-Time Air Monitoring Data website (https://fortress.wa.gov/ecy/enviwa/Default.ltr.aspx)

Evaluation

The AERMOD model was run twice for each scenario: once for CO emissions and once for the unit emissions. The maximum impacts from these runs are shown in Table 6. The date and location of the maximum unit flare and fugitive impacts are shown in Table 7. CO was run separately because the flare-to-landfill ratio was unique for CO. All other pollutants have the same flare-to-landfill ratio. The unit impacts for the two flow scenarios are basically identical as the ratio of flare-to-fugitive emissions is the same in both cases. Note that when the actual emissions are applied to the unit concentrations, the resulting 2,000 scfm concentrations will be higher; similar to what is seen in the CO impacts.

The other criteria pollutant impacts were scaled from the unit flare impacts using this equation:

$$\chi_p = \chi_u * (ER_p/ER_f)$$

where χ_p is the resultant pollutant concentration, χ_u is the unit concentration for the flare by itself, ER_p is the pollutant emission rate, and ER_u is the emission rate used in the unit run for the flare. The scaled impacts were added to the background concentration and compared to the ambient air quality standards, as shown in Table 8. For NO_2, it was assumed that all NO_X was converted to NO_2 (Tier 1 approach) for comparison to the standard.

For the TAPs, the maximum impact was compared to the applicable ASIL as shown in Table 9. All TAPs are less than their applicable ASIL except H_2S. For this scenario, the maximum H_2S concentration is about 2.3 times the ASIL.

Table 6. Modeled Maximum Impacts by Averaging Time

Parameter	1,000 SCFM Flow Scenario Unit Flare	Unit Flare + Fugitive	CO Flare + Fugitive
Emission Rate (g/s)	0.0557	1.0	0.386
1-hour max ($\mu g/m^3$)	7.1	153.4	48.5
3-hour max ($\mu g/m^3$)	3.3	65	--
8-hour max ($\mu g/m^3$)	1.8	38.6	12.9
24-hour max ($\mu g/m^3$)	1.2	22.4	--
Annual max ($\mu g/m^3$)	0.119	5.7	--
Parameter	2000 SFCM Flow Scenario Unit Flare	Unit Flare + Fugitive	CO Flare + Fugitive
Emission Rate (g/s)	0.0557	1.0	0.765
1-hour max ($\mu g/m^3$)	7.1	153.4	97.20
3-hour max ($\mu g/m^3$)	3.3	65	--
8-hour max ($\mu g/m^3$)	1.8	38.6	25.7
24-hour max ($\mu g/m^3$)	1.2	22.4	--
Annual max ($\mu g/m^3$)	0.118	5.68	--

Table 7. Location and Date of Unit Maximum Impacts

Averaging Time	ALL	1,000 scfm Flow Scenario Date (YYMMDDHH)	UTM X (m)	UTM Y (m)
1-hour	153.4	02092505	517071.6	5121147.1
3-hour	65.0	02101706	517218.7	5121529.2
8-hour	38.6	03122308	518172.6	5121073.1
24-hour	22.4	03120924	517303.5	5121006.1
Annual	5.7	2003	518172.6	5121073.1
Averaging Time	**ALL**	**2,000 scfm Flow Scenario Date (YYMMDDHH)**	**UTM X (m)**	**UTM Y (m)**
1-hour	337.0	02092505	517071.6	5121147.1
3-hour	271.9	02101706	517218.7	5121529.2
8-hour	198.6	03122308	518172.6	5121073.1
24-hour	49.7	03120924	517303.5	5121006.1
Annual	24.0	2003	518172.6	5121073.1

Table 8. Criteria Pollutant Results

1,000 scfm Flow Scenario							
Pollutant	**Averaging Time**	**Emission Rate (g/s)**	**Conc. (µg/m³)**	**Bkg. (µg/m³)**	**Total Conc. (µg/m³)**	**Standard* (µg/m³)**	**Pass?**
NO_X	1-hr	0.227	28.90	65.17	94.08	188	Yes
	Annual	0.227	0.48	17.55	18.03	100	Yes
CO	1-hr	0.378	48.5	2519.8	2,568.3	40,000	Yes
	8-hr	0.378	12.9	2151.5	2,164.4	10,000	Yes
PM_{10}	24-hr	0.057	1.22	42	43.22	150	Yes
$PM_{2.5}$	24-hr	0.057	1.22	18.1	19.32	35	Yes
	Annual	0.057	0.12	6.0	6.13	15	Yes
SO_2	1-hr	1.095	139.58	16.71	156.29	156.8*	Yes
	3-hr	1.095	64.88	16.71	81.59	1040*	Yes
	24-hr	1.095	23.59	7.8	31.39	292*	Yes
	Annual	1.095	2.33	2.13	4.46	64*	Yes
2,000 scfm Flow Scenario							
Pollutant	**Averaging Time**	**Emission Rate (g/s)**	**Conc. (µg/m³)**	**Bkg. (µg/m³)**	**Total Conc. (µg/m³)**	**Standard* (µg/m³)**	**Pass?**
NO_X	1-hr	0.454	57.81	65.17	122.98	188	Yes
	Annual	0.454	0.96	17.55	18.51	100	Yes
CO	1-hr	0.765	97.20	2520	2,617.0	40,000	Yes
	8-hr	0.765	25.70	2151	2,177.2	10,000	Yes
PM_{10}	24-hr	0.1134	2.44	42	44.44	150	Yes
$PM_{2.5}$	24-hr	0.1134	2.44	18.1	20.54	35	Yes
	Annual	0.1134	0.24	6.0	6.25	15	Yes
SO_2	1-hr	1.095	139.58	16.71	156.29	156.8*	Yes
	3-hr	1.095	64.88	16.71	81.59	1040*	Yes
	24-hr	1.095	23.59	7.8	31.39	292*	Yes
	Annual	1.095	2.33	2.13	4.46	64*	Yes

* For SO2, 80% of the standard is shown.

Table 9. TAP Results

1,000 scfm Flow Scenario						
Toxic Air Pollutant	**CAS**	**Ave. Time**	**Emission Rate (lb/day)**	**Conc. (µg/m³)**	**ASIL (µg/m³)**	**Pass?**
1,1,2,2-Tetrachloroethane	79-34-5	year	0.120	0.004	0.0172	Yes
1,2-Dichloroethane (Ethylenedichloride)	107-06-2	year	0.021	0.001	0.0385	Yes
1,3-Butadiene (Vinyl ethylene)	106-99-0	year	0.012	0.000	0.0059	Yes
Benzene	71-43-2	year	0.252	0.008	0.0345	Yes
Dichlorobenzene	106-46-7	year	0.185	0.006	0.0909	Yes
Ethylbenzene	100-41-4	year	0.692	0.021	0.4000	Yes
Hydrogen sulfide	7783-06-4	24-hr	39.96	4.70	2	No
Naphthalene	91-20-3	year	0.018	0.001	0.0294	Yes
Tetrachloroethylene (Perchloroethylene)	127-18-4	year	0.452	0.013	0.1690	Yes
Vinyl chloride (Chloroethene)	75-01-4	year	0.119	0.004	0.0128	Yes
2,000 scfm Flow Scenario						
Toxic Air Pollutant	**CAS**	**Ave. Time**	**Emission Rate (lb/day)**	**Conc. (µg/m³)**	**ASIL (µg/m³)**	**Pass?**
1,1,2,2-Tetrachloroethane	79-34-5	year	0.237	0.0071	0.0172	Yes
1,1,2-Trichloroethane	79-00-5	year	0.056	0.0017	0.0625	Yes
1,1-Dichloroethane	75-34-3	year	0.544	0.0162	0.625	Yes
1,2-Dichloroethane (Ethylenedichloride)	107-06-2	year	0.042	0.0012	0.0385	Yes
1,3-Butadiene (Vinyl ethylene)	106-99-0	year	0.024	0.0007	0.0059	Yes
Benzene	71-43-2	year	0.495	0.0148	0.0345	Yes
Dichlorobenzene	106-46-7	year	0.365	0.0109	0.0909	Yes
Ethylbenzene	100-41-4	year	1.363	0.0407	0.400	Yes
Hydrogen Sulfide	7783-06-4	24-hr	39.96	4.70	2	No
Naphthalene	91-20-3	year	0.036	0.0011	0.0294	Yes
Tetrachloroethylene (Perchloroethylene)	127-18-4	year	0.889	0.0265	0.1690	Yes
Trichloroethylene (Trichloroethene)	79-01-6	year	0.2873	0.0086	0.5	Yes
Vinyl chloride (Chloroethene)	75-01-4	year	0.234	0.0070	0.0128	Yes

Figure 3. Maximum 1-Hour Unit Concentrations

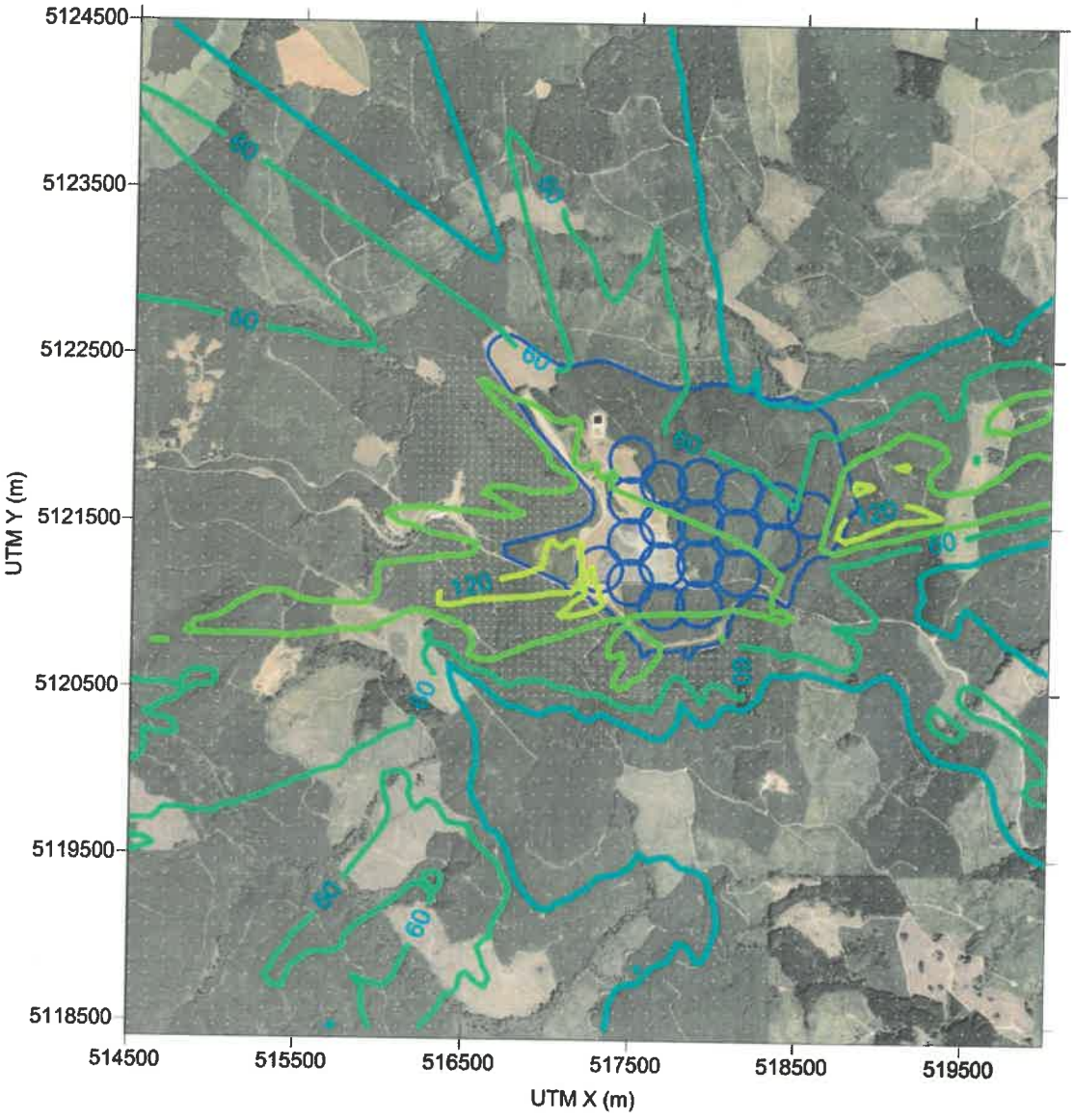


Figure 4. Maximum 24-Hour Unit Concentrations

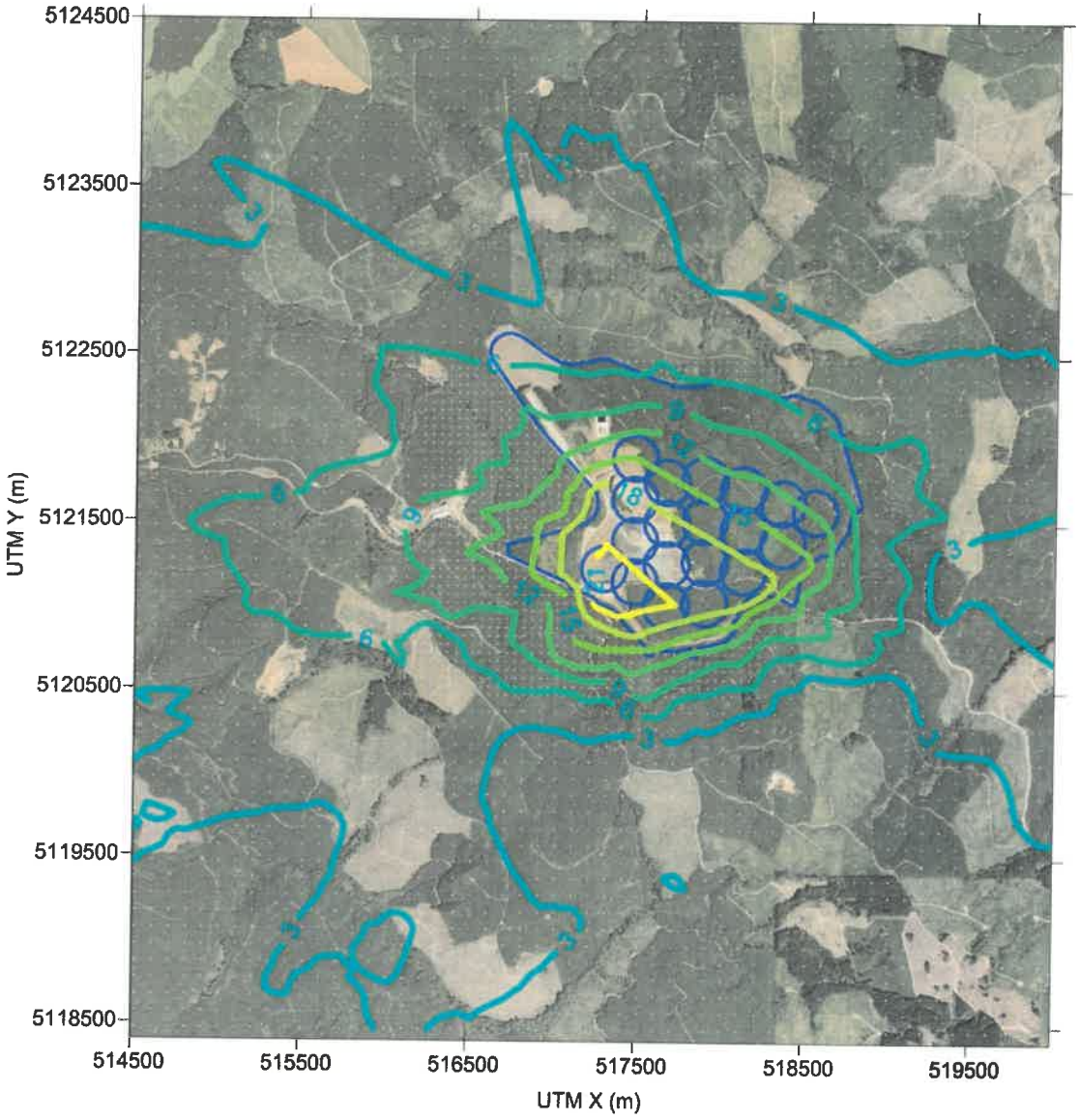
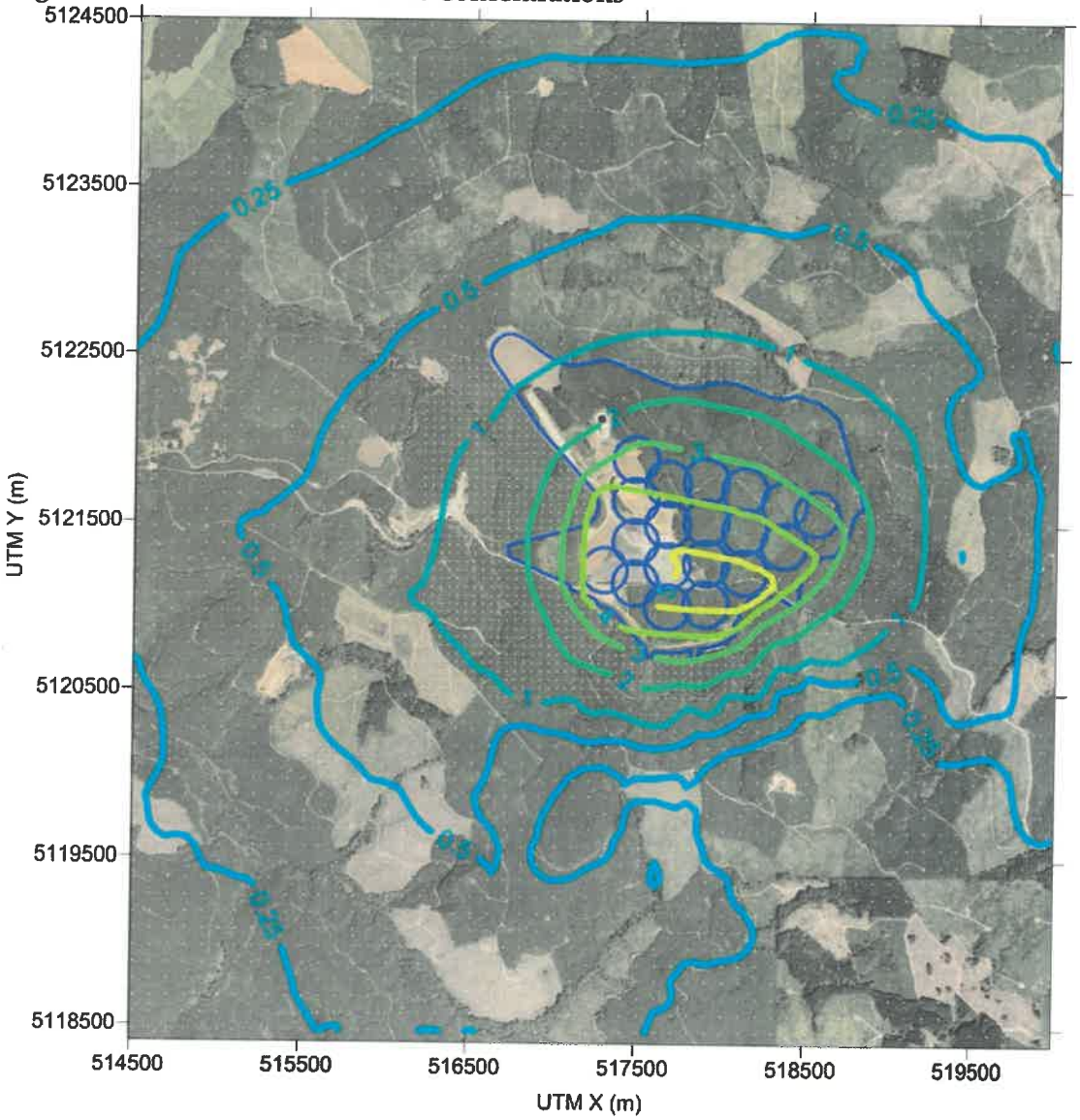


Figure 5. Maximum Annual Unit Concentrations



Lower Bound H_2S Concentration

In the above analysis, the landfill H_2S gas concentrations were assigned to 890 ppm for the 1,000 scfm case and 450 ppm for the 2,000 scfm case so that the SO2 impact did next exceed 80 percent of the SO_2 standard. In these cases, the H_2S ASIL was exceeded.

An estimate was made to estimate the lower bound landfill H_2S concentration such that the H_2S ASIL would not be exceeded. It was found that the H_2S concentration would have to be reduced to 378 ppm for the 1,000 scfm case and 189 ppm for the 2,000 scfm case, which corresponds to a H_2S emission rate of 16.97 lbs/day, as shown in Table 10. The corresponding SO_2 emission rate could be reduced from 208.6 lb/day to 88.6 lb/day, which will keep the impact well below 80 percent of the 1-hour SO_2 standard.

Table 10. Lower Bound SO_2/H_2S Emission Rate and Impact Comparison

Pollutant	Ave Time	Conc ($\mu g/m^3$)	Bkg ($\mu g/m^3$)	Total Conc. ($\mu g/m^3$)	80% Std. ($\mu g/m^3$)	Pass?
SO_2	1-hr	139.58	16.71	156.29	156.8	Yes
88.6 lb SO2/day	3-hr	64.88	16.71	81.59	1040	Yes
	24-hr	23.59	7.8	31.39	292	Yes
	Annual	2.33	2.13	4.46	64	Yes
Toxic Air Pollutant	**CAS**	**Ave Time**	**Emission Rate (lb/day)**	**Conc. ($\mu g/m^3$)**	**ASIL ($\mu g/m^3$)**	**Pass?**
Hydrogen Sulfide	7783-06-4	24-hr	16.97	1.99	2	Yes

Attachment C- ESI Summary Review of Draft Permit Revision

ENERGYneering Solutions Inc.
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To: Ron Junker, Cowlitz County Landfill

7/31/2017

Subject: Review of Cowlitz County Landfill's Draft Air Discharge Permit

The new permit provided by the South West Clean Air Agency is very similar to the previous air discharge permit you've been operating under. Notable changes included increased emission limits for Hydrogen Chloride and Sulfur Dioxide, improved clarity for some of the language, and specific reference to Flare #2. This memo includes a list of comments and changes from the previous permit.

Comments and Changes from Previous Permit:

- The second flare is listed as Emission Unit ID #2
  - The emergency generator and leachate ponds were pushed to ID #s 3 and 4, respectively
- The requirement for calculating annual greenhouse gas emissions has been removed, as has the 95,000 tpy limit on greenhouse gas emissions.
- The emission limits for the flares have been updated to the following:

Pollutant	New limits*		Old Limits	
	Short Term Limit *(1 hr average)*	Annual Limit *(tons per year)*	Short Term Limit *(1 hr average)*	Annual Limit *(tons per year)*
Nitrogen Oxides	0.06 lb/MMbtu	15.3	0.06 lb/MMbtu	12.44
Carbon Monoxide	0.10 lb/MMbtu	25.5	0.10 lb/MMbtu	20.73
Volatile Organic Compounds	1.47 lb/hr	12.88	2.39 lb/hr	10.47
Sulfur Dioxide	4.44 lb/hr	38.88	1.44 lb/hr	6.31
Hydrogen Chloride	0.42 lb/hr	3.68	0.57 lb/hr	2.48

*Note that the new annual limits in the new permit are given for each flare. This table indicates the overall limit for both flares which is how the limits were presented in the old permit.

- Toxic air pollutant emission limits have also been updated per results from the air dispersion model
- Condition number 23 was modified to more closely match the regulation upon which it was based. It now reads "The permittee must use recognized good practice and procedures to reduce odors to a reasonable minimum."
- No changes were made to condition 25 or 26 which limit the amount of gypsum, poultry feathers, and paper mill sludge that can be accepted for placement.
- Not a change from the original permit, but worth noting: Flare #2 must be emission tested within 60 days of initial startup. Subsequent tests are to be conducted concurrently with the 5-year testing schedule of Flare #1. (see condition 42 for details)
- Excess emission reporting timeline was shortened from 48 hours to 12 hours for emissions that are a threat to human health and safety (condition 46).
- Reporting requirements related to air quality complaints have been updated (condition 48).
- The source testing requirements have been updated, seemingly for clarity (appendix A).

Conclusion:

After reviewing the permit, it would seem that the necessary changes have been made for you to operate the second flare and be able to meet SO2 and H2S emission limits more often. ESI does not see any need for further modification to the permit. We recommend contacting Clint Lamoreaux to confirm that the permit appears satisfactory and that you would like to move towards it being released. Please feel free to get in touch with any questions or concerns regarding the updated permit.

Regards,

Ben Burke

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