

IV. Workgroup Recommendations

SECTION A: Develop Common Understandings

1) A chronological history of key Coffin Butte Landfill topics

F) Assumptions

(i) When will the landfill close?

Current landfill lifespan estimates assume full excavation of existing quarry, which is not expected to occur based on the current rate of excavation, site development plan and existing cell capacity. This creates a discrepancy between the reported lifespan of the landfill and existing conditions.

- i. Republic Services estimates that the site will reach capacity between 2040-2043 (Republic Services, 2022)

Current landfill lifespan estimates assume a disposal rate at Coffin Butte Landfill of 750,000 tons/year (Republic Services, 2022), which is significantly less than the latest five-year average of 979,303.93 tons/year, approximately 30% above the assumed tonnage. If Coffin Butte Landfill continues to accept waste above the estimate of 750,000 tons/year, the landfill capacity will likely be reached before the estimated timeframe.

1. Factor 1: What is the current capacity of the landfill?

- How often are LIDAR volumetric assessments performed? Have these measurements been independently verified?
- What is the area of the open (active) cell?
- What is the current usable airspace volume of the open (active) cell?
- What is the current usable airspace volume of Cell 6 (quarry)?
- What is the volume extraction rate for Cell 6 due to ongoing quarry operations? What is its extraction history?
- What is the intake volume history?
- What is the expected intake volume over the remaining landfill lifetime?
- What is the delay time in tabulating intake volume by weight?
- What penalties if any will be applied if the annual tonnage cap is exceeded in the future?

Are these penalties sufficient to disincentivize runaway intake?

2. Factor 2: What is the current fill rate of the landfill?
 - What is the intake volume history?
 - What is the expected intake volume over the remaining landfill lifetime?
 - How close each year has the intake come to the cap?
3. Factor 3: How will the capacity of the landfill likely change in the future?
4. Factor 4: How will the fill rate of the landfill likely change in the future?

(ii) Can Benton County prohibit solid waste generated outside the county from being deposited at Coffin Butte landfill?

Answer: No.

The Commerce Clause, Art. I, §8, Cl. 3 of the U.S. Constitution, explicitly gives Congress the power “to regulate commerce with foreign nations, and among the several states, and with the Indian tribes.” Implicit in this grant of authority is the prohibition on states (and local governments) against passage of legislation which discriminates or burdens interstate commerce. This is referred to as the “dormant Commerce Clause.”

The dormant commerce clause was the basis of a decision by the United States Supreme Court in which it ruled unconstitutional a Michigan law barring out-of-state solid waste from being deposited in landfills located in Michigan counties.

In *Fort Gratiot Sanitary Landfill, Inc. v. Michigan Dept. of Natural Resources*, 504 U.S. 353, 112 S.Ct. 2019 (1992), Michigan enacted legislation which prohibited private landfill operators from accepting solid waste originating outside the county where the facility was located, unless otherwise authorized by the county’s waste management plan. *Id.* at 353. In its challenge to that law, the landfill operator argued “that requiring a private landfill operator to limit its business to the acceptance of local waste constituted impermissible discrimination against interstate commerce.” *Id.* at 357.

As part of its analysis, the Supreme Court reexamined its holding in *Dean Milk Co. v. Madison*, 340 U.S. 349, 71 S.Ct. 295 (1951) in which the petitioner challenged a Wisconsin city ordinance “that made it unlawful to sell any milk as unpasteurized unless it had been processed at a plant ‘within a radius of five miles from the central square of Madison.’” *Dean*, at 350. That local ban, as it applied to adjacent Illinois dairy producers, was found to be unconstitutional under the Commerce Clause. *Id.* But, significantly, the Court also emphasized the intrastate unconstitutionality of the ban:

The fact that the ordinance also discriminated against all Wisconsin producers whose facilities were more than five miles from the center of the city did not mitigate its burden on interstate commerce. As we noted, it was ‘immaterial that Wisconsin milk from outside the Madison area is subjected to the same

proscription as that moving in interstate commerce. *Dean* at 345, n. 4.

Fort Gratiot, 504 U.S. at 362-63.

Relying on *Dean* and *Philadelphia v. New Jersey*, 437 U.S. 617, 98 S.Ct. 2531 (1978), the Court found Michigan's ban "unambiguously discriminate[s] against interstate commerce and [is] appropriately characterized as protectionist measures that cannot withstand scrutiny under the Commerce Clause." *Fort Gratiot*, 504 U.S. at 367-68.

Pursuant to the holding in *Fort Gratiot*, and the precedent cited by the U.S. Supreme Court, Benton County may not prohibit a private landfill operator from accepting solid waste from outside Benton County.

(iii) Is Coffin Butte a Regional Disposal Site?

Answer: Yes.

Oregon Revised Statute (ORS) 459.005(23) defines a Regional Disposal Site as follows:

"Regional disposal site" means a disposal site that receives, or a proposed disposal site that is designed to receive more than 75,000 tons of solid waste a year from outside the immediate service area in which the disposal site is located. As used in this subsection, "immediate service area" means the county boundary of all counties except a county that is within the boundary of the metropolitan service district. For a county within the metropolitan service district, "immediate service area" means the metropolitan service district boundary.

The immediate service area of Coffin Butte is Benton County. To constitute a regional disposal site, Coffin Butte must have been designed to "receive more than 75,000 tons of solid waste a year" from outside Benton County.

The definition set forth in ORS 459.005(23) was enacted in 1987, but at that time, limited the 75,000-ton threshold to solid waste received from commercial haulers. In 1993, the definition of regional disposal site was amended to remove the reference to commercial haulers and has remained substantively unchanged since that time.

The 1994 annual report submitted by Benton County's Environmental Health Department showed solid waste received at Coffin Butte from outside Benton County in 1993 totaled 250,655 tons. In every year thereafter, Coffin Butte has received solid waste in excess of 75,000 tons from outside Benton County.

So, while the statute uses the term "designed to receive" rather than "receives," Coffin Butte has received more than 75,000 tons of out-of-county solid waste per year and the facility is clearly designed to accommodate those volumes. Its annual out-of-county solid waste volume exceeds the statutory threshold for meeting the definition of a regional disposal site.

Before the Oregon legislature defined regional disposal sites, Benton County established Coffin Butte as a regional disposal site through the land use process. The Board order dated May 15, 1974, declared “that the proposed Coffin Butte landfill be and is hereby approved as a regional sanitary landfill site as recommended by the Chemeketa Regional Solid Waste Program Report.” The staff report accompanying that order identifies Polk, Yamhill, Marion and Linn Counties as being served by the regional sanitary landfill. Benton County Comprehensive Plan Policy 6.5.8 identifies Coffin Butte as a “Regional Sanitary Landfill.”

The Chemeketa Report designated Coffin Butte as a regional landfill. Report, pg. 24. Pursuant to the Chemeketa Report, the region to be served by Coffin Butte included Polk, Yamhill, Marion, Linn and Benton Counties.

In 1988, by Board Order, Benton County included Tillamook County among the counties to be served by Coffin Butte. In 1993-94, the Board authorized the inclusion of Lincoln County in the region.

(iv) Is DEQ prohibited from permitting another landfill west of the Cascades?

This item requires a response from Oregon DEQ.

(v) Coffin Butte Landfill Environmental Impacts: “What is the environmental cost of the landfill?”

1. What are the costs of leachate?

- a. What is the generated volume of leachate? How much of this comes from the primary collection system and how much from the secondary?
- b. What is the composition of leachate?
- c. What are the levels of PFAS (“forever chemicals”) in leachate?
- d. How much does it cost to process (pump out, store, ship, etc.) leachate?
- e. How much does it cost to have leachate disposed of? Where is it taken to be treated? (City of Corvallis? Salem?) What is ‘Plan B’ if the leachate can no longer be disposed of locally?
- f. How long will the landfill be generating leachate? How will the rate of leachate production change year by year in the future?
- g. Who will be paying the costs of leachate over time?
- h. How much leachate is bypassing the collection system? How much is or will be polluting the groundwater?

2. What are the costs of landfill, exhaust, and waste gases?

- a. What are the volumes and composition of gaseous emissions of the landfill?
- b. How does the output of the Coffin Butte Landfill, which is in an area of moderate rainfall, compare with landfills in low-rainfall areas?
- c. Methane:
 - i. How much methane is generated in all by the landfill (daily/monthly/yearly)? How much of this is captured?
 - ii. What methods are being used to quantify how much methane is being generated/being captured/leaking from the landfill? Are there more accurate Methane detection methods available? Are there direct measurement technologies now available, from aerial or satellite surveys for example? What should we make of the studies that show that collection systems are net-negative, because of their leakage?
 - iii. Given the input history of the landfill and the projected intake, what is the projected methane output over the next 40 years?
 - iv. What measures has the landfill taken to reduce its emissions of greenhouse gases? Does the landfill have any responsibilities under new environmental regulations in the Inflation Reduction Act, as it relates to EPA's authority to regulate greenhouse gases as pollutants?
 - v. If a waste emissions fee is imposed on the landfill, what will the effect be?
- d. Carbon dioxide:
 - i. How much carbon dioxide is generated by the landfill (daily/monthly/yearly)?
 - ii. Given the input history of the landfill and the projected intake, what is the projected CO₂ output over the next 40 years?
- e. Hydrogen sulfide:
 - i. What are the atmospheric conditions that cause "dump days"? Will these atmospheric conditions occur more often in a climate-changed future?
 - ii. Given the input history of the landfill and the projected intake, what is the projected H₂S output over the next 40 years?
- f. Other gases: what other gases are produced by the landfill? What are their health and environmental effects?
- g. Particulate emissions: waste gases and exhaust from flaring/burning landfill gas.
 - i. What is the volume and composition of particulate emissions?
 - ii. Are there health or environmental effects from these gases?

- iii. Will output of these waste gases increase as we move into the future?
 - h. Particulate emissions: dust from alternate daily cover, including Covanta ash.
 - i. What is the volume and composition of dust and other particulates generated by the landfill?
 - ii. Are there health or environmental effects from these particulates?
 - iii. Do these effects increase over time, as dust and particulates accumulate around the landfill?
 - iv. Are studies being done to measure these accumulations in organisms around the landfill? If not, why not?
- 3. Wildlife impacts: What are the costs of disrupting the area ecosystems?
 - a. What were the results of heron rookery monitoring during 2022? Have these results been reported to ODFW?
- 4. Environmental impacts through traffic generation: the landfill generates vehicle travel, which in turn produces traffic costs, exhaust pollution, greenhouse gases, and other environmental impacts. What are the costs of these? How do alternatives compare?
 - a. What is the total number of landfill-related vehicle miles generated by the landfill? What is the environmental cost and other costs of these trips?
 - b. What do we learn from an origin and destination study of landfill-related traffic? i.e., looking at both where vehicles are coming from / returning to, as well as the number and types of vehicles. This should be created as a coded and keyed map.
- 5. Impacts on the visual environment: What is the cost of the landfill's impact on the visual environment?
 - a. What is the viewshed of the landfill (past, present, and future)? Displayed as a map.
 - b. What will the landfill look like over time? Displayed as photo-visualizations of the landfill 5, 10, 15 years in the future.
 - c. What will the landfill look like when post-operational? Displayed as a photovisualization.
- 6. Long-term impacts (impacts that last 100 or 1000 years or more)
 - a. What is the long-term cost of land-use impacts of the landfill site?
 - b. What is the long-term cost of land-use impacts around the landfill site?
 - c. How long must maintenance tasks (leachate, landfill gas, etc) continue? What is the long-term cost of these and other maintenance?

d. How long must maintenance tasks (replacement of wells, etc) continue? What is the long-term cost of these and other maintenance?

e. What is the long-term risk of damage to landfill facilities (landfill cover, liner, etc)?

f. Long-term risks and costs like these are subject to a “future discount,” i.e., a degree to which they are reduced because it is assumed that our descendants will be better able to handle the burdens than we are. Long-term risks and costs like these are also often minimized or dismissed because our descendants are not here yet and therefore cannot speak up in their own defense. If a future discount is being applied to these costs, what is it? How was that number derived? Or are these costs and risks being discounted for the second reason?

(vi) Coffin Butte Landfill Operational Impacts: “What are the rules that govern the landfill? Is it complying?”

Coffin Butte Landfill Impact: Benton County Resources and Infrastructure

1. How do the current landfill traffic volumes (vehicles per day by type and total transported tonnage) compare to the baseline documented in the 2001 Baseline Study?

Coffin Butte Landfill Impact: Benton County Citizens and Landfill Neighbors

1. How do the sale prices of private properties sold to the Valley Landfills, Inc. over the past 40 years compare to similar properties not located near the landfill?

Regulatory: EPA & Oregon DEQ

1. What are the current governing permits and regulations?
2. What expected operational lifetime is on record with EPA and ODEQ for Coffin Butte?

Coffin Butte Landfill Closure: Process, Timeline, Operator Liability, Potential Franchisee Resistance

1. What lead time is required for proper closure?
2. What are the primary process steps in closing a landfill such as Coffin Butte?
3. What are the documented costs of closing landfills similar in size to Coffin Butte (e.g. slope and terrain restoration, continued monitoring, containment or removal of toxic material, compensation for damages resulting from environmental hazards, fires, etc.)?

4. What guarantees are in place that the owner will close the landfill upon substantial completion?

5. What guarantees are in place that the landfill owner will not declare bankruptcy and abandon the landfill?

Franchisee Business Impact

1. What is the gross profit ratio for Republic Services landfill operations nationwide in the US? For the Coffin Butte Landfill?

2. What is the annual gross revenue for Republic Services landfill operations in the US, and how does this compare to the annual gross revenue for nationwide collection operations?

Business and Legal Envelopes

1. What are the current hours of operation (i.e. daily first employee arrival time – last employee leave time - daily)? What are the hours in which heavy equipment is active? What are the permitted hours of operation according to the current franchise agreement? What is the process by which these regulations are enforced?

2. What solid waste management plans has Benton County produced since the landfill was first permitted in 1974? What is the history of compliance to those plans?

3. What intake content monitoring measures are used (per load, sampling, open cell deposits, etc.)? How soon are those measurements released to the county and the public?

4. What are the current controlling documents for landfill operations (franchise agreement(s), site development plans, etc.)?

5. What are the inflow sources with weight and distance metrics (map form would be helpful)?

6. Between Valley Landfills, Inc. and Republic Services, which company is legally responsible, in perpetuity, for remediation of any environmental problems that may arise in the future? In other words, if Republic eventually sells or otherwise divests its financial interest in VLI, would Republic remain liable? Or would the liability be spun off to VLI?

7. Is Republic legally obligated to honor commitments made by its subsidiaries (VLI, Allied Waste etc.) during the application process for previous expansions that were allowed by the county?

8. What are the terms of Republic's lease agreement with Knife River Corporation, in terms of time period for excavation?

9. Are production rates at Knife River Corporation's other quarries in the mid-Willamette Valley region reported to the state and/or counties? Or can the company make the numbers for recent years available to the Benton County working group?

10. What are the rules that govern the post-operational state of landfill components? What is the final grading plan and when will it be implemented?

11. What are the plans for reclamation of the 700+ acres of landfill? When does Republic plan to establish native vegetation on existing cells of the present landfill? Are there plans / Is there an obligation to make the area a wildlife habitat? Are there plans to make fishing ponds?

(vii) Coffin Butte Landfill Public Safety Impacts: "What risks does the landfill create for the county?"

1. Risks of Fire, including persistent fire

a. What is the fire history of the landfill?

b. What is the risk of a subsurface fire that could persist for months or years? How did other landfill fires start?

c. What gaseous and particulate emissions typically result from landfill fires?

d. Given that methane is a flammable gas, what is the relationship between methane generation and fire risk?

e. Does methane generation increase with warmer weather? Will an increasing number of hot days cause a corresponding increase in fire danger?

f. What emergency plans are in place in case of fire? What precautions have been taken?

g. What training is necessary to limit risk to fire crews when fighting a landfill fire?

h. Does the risk of fire increase if the landfill expands?

2. Risks of Earthquake

a. What magnitude earthquake are the slopes of the landfill expected to withstand? Specifically, will an earthquake collapse the south slope onto Coffin Butte Road? How susceptible is the landfill to liquefaction?

b. How susceptible is the landfill infrastructure (gas collection systems, leachate collection systems, cogeneration plant, and so on) to earthquake? What are the harms if systems are damaged or destroyed?

c. What emergency plans are in place in case of earthquake?

3. Risks from Hazardous Waste

- a. How is hazardous waste officially defined?
- b. How much hazardous material is received annually and what is it constituted of?
- c. What safeguards are in place to prevent hazardous materials from entering the landfill?

4. Risks from PFAS

- a. What studies have been done to identify the level of PFAS in the landfill? In leachate?
- b. What plans are in place to prevent more PFAS from entering the landfill?
- c. Do PFAS escape the landfill in leachate? In landfill gas? In other ways?

5. Risks from Flood (and Extreme Flooding Conditions)

- a. What level of rainfall will overwhelm the landfill's leachate collection systems?
- b. Will an "internal flood" cause stress to or overflow the landfill's liner system? Will it potentially lead to leachate leaking into groundwater?
- c. What plans are in place to prevent internal flooding of the landfill?
- d. Have studies been done to pre-visualize the effects of extreme flooding (and other extreme weather) on landfill integrity and operations?
- e. Does the risk of flooding increase if the landfill expands?

6. Risks of Extended Power Outages

- a. What are the effects of power outages on landfill operations, especially necessary operations such as gas collection and leachate pumping? What studies or plans have been done to prepare for an extended power outage?

7. Risks of Concatenating Disasters

- a. What studies or plans have been done to prepare for situations where more than one disaster is happening, i.e., if a heat dome causes a power failure which starts a wildfire that jumps to the methane leaks of the landfill? Or an earthquake causes an extended power failure, critical damage to the landfill infrastructure, and a wildfire, which prevents emergency response?

8. Groundwater contamination

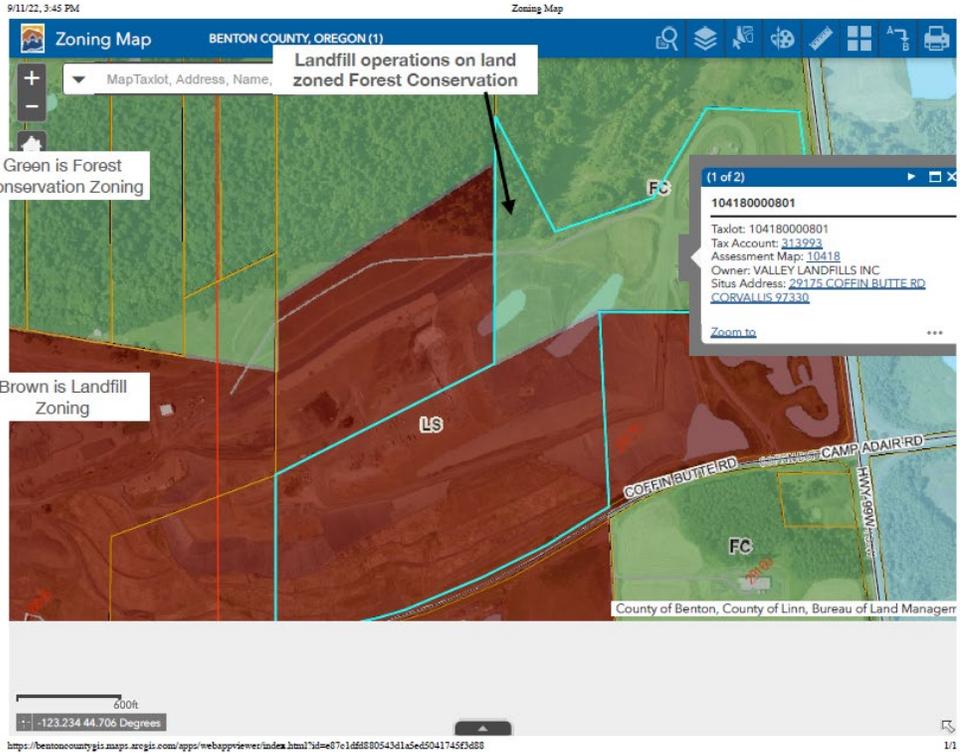
- a. What are our best estimates as to Groundwater contamination risk level currently? How does the probability increase over time?

- b. What are examples of liner failures at other landfills?
- c. What happens when this failure occurs? How will this failure be detected?
How will the damage spread?
- d. What is the history of groundwater contamination at the landfill site?

(viii) Coffin Butte Landfill Economic Impacts: “What are the economic effects of the landfill?”

Customer Interests: “What effect does the landfill currently have on collection rates in the county? On recycling rates? What are the alternatives to landfilling and how do their rates compare?”

1. How do Benton County garbage collection rates compare to other Oregon counties?
2. How do Benton County recycling rates compare to other Oregon counties?
3. How do Benton County per-capita waste disposal volumes compare to other Oregon counties?
4. What rate changes did the residents of Yamhill county experience once the Riverbend landfill closure was underway?
5. Is Republic’s profit motive (the desire not to end quarry operations) a driving factor in their quest for expanding the landfill? Is the company seeking new landfill area so that they can delay using the already approved landfill area?



For Clarification of Report Section I 1) History and I 6) Assumptions

Need Clarification: Portion of Landfill operations is shown outside LS Zoning on land zoned Forest Conservation