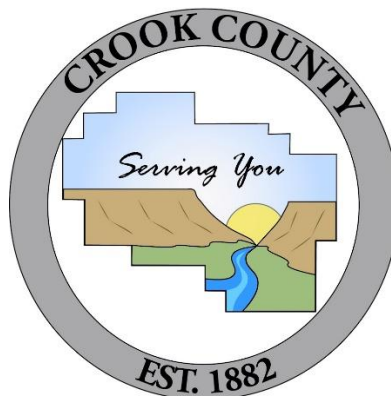


Solid Waste Management Plan Update



**Prepared for
Crook County
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1. Executive Summary

The goal for this Solid Waste Management Plan Update (“SWMP”) is to inform and update the general public and County Commissioners of all significant regulatory and operational changes since the 2009 Plan update, as well as provide various implementation strategies for providing cost-effective solid waste management for Crook County.

Maintaining a reliable disposal facility to serve the County is important since there are no current long-term regional options in adjacent counties. Deschutes County is pursuing a new site to replace Knott Landfill; however, this is still in the planning and permitting stages. The SWMP update will address the continued operation of the County’s landfill as a mainstay facility to provide cost-effective services for the ratepayers. This includes determining the need to address all regulatory requirements and provide for the disposal of all waste generated.

Meeting state recycling goals and securing recycling collection program funding support through the Recycling Modernization Act¹, are also important goals for the County.

1.1. History of Crook County Landfill



The Oregon Department of Environmental Quality (ODEQ) permits the Crook County Landfill (CCLF) to dispose of municipal solid waste (MSW) at the landfill site following a Site Development Plan that was prepared by G. Friesen Associates, Inc. and approved by the ODEQ in 2013. The Site Development Plan shows a maximum final grade elevation of 3,300 feet mean sea level (MSL) and an MSW disposal area footprint of approximately 69 acres. This Site Development Plan was updated in 2020 with the landfill continuing to operate within these permitted boundaries.

The Crook County Landfill is located approximately three miles southwest of the City of Prineville, Oregon in Sections two and three, Township 15 S, Range 15 E, W. M. The landfill is accessible from State Route 126 by turning north on Tom McCall Road approximately a quarter mile from the entrance to Prineville Airport. Tom McCall Road turns into Houston Lake Road approximately one mile from State Route 126. The entrance to the landfill (110 SW Landfill Road) is off Houston Lake Road at mile marker two. The landfill property is approximately 837 acres in size north of Houston Lake Road.

The facility began operation before 1970 as an open burning dump. The landfill was permitted to accept waste in December 1973. Crook County owned and operated the site from 1973 to 1985.

In 1985, Crook County allowed the landfill to be operated by Prineville Disposal, Inc. Prineville Disposal operated the Crook County Landfill from 1985 to September 1995. During this period, cell two was opened. In 1995, the County again assumed operation of the facility.

Before 1997, the facility disposed of less than 20 tons per day (TPD) of MSW and operated under the classification of a small solid waste facility. Under this classification, the facility was exempt from RCRA Subtitle D landfill design, operation, and monitoring requirements. Waste at the CCLF site was disposed of in excavated trenches of variable depths that generally ranged from five to 20 feet below the ground surface. The depth of disposal trenches was limited by the elevation of the upper surface of the basalt flows that underlie the site.

In November 1995, the County initiated a permit renewal process for the facility, and it was determined that the CCLF no longer met the Small Landfill Exemption Criteria. A Site Development Plan that followed RCRA Subtitle D and ODEQ

¹ [Recycling Modernization Act](#)



requirements was subsequently developed, and the first lined cell (Phase 1A- 2.6 acres) was constructed during the fall of 2000. Placement of municipal solid waste in the first lined cell commenced on December 22, 2000.

In the period between 2000 and 2008, there were significant inflows of MSW from Jefferson County via Madras Sanitary Service (MSS) with out-of-county waste comprising 30% of total disposed tonnage at CCLF. In July 2009, MSS began hauling waste into the Wasco County Landfill in The Dalles, Oregon.

CCLF annual tonnage peaked in 2007 at 45,028 tons and began a significant decline in 2008 to 36,585 tons and to 19,578 tons in 2009. The declines were driven by no longer receiving MSS waste and significant reductions in C&D waste due to the economic downturn.

Since the completion of the last Solid Waste Management Plan update in 2009, in-County disposed tonnage has increased 120% from 19,578 tons (2009) to 43,130 tons (2023) given ongoing population increases, increased economic activity (e.g., construction of Apple and Facebook data centers) and construction.

1.2. Brief Outline of Regulatory Requirements

In preparing this SWMP Update, it is important to understand the regulations that pertain to the responsibility and authority of the County. This Update is focused on the County's solid waste activities excluding the City of Prineville.

The County Landfill Division has the primary responsibility for planning and operating the County's solid waste system. Collection and recycling services are provided in the unincorporated portions of the County by Republic Services (formerly Prineville Disposal). The Landfill Division collaborates with County administration on the management of the franchise agreement coordination of operational activities and reporting of data to ODEQ. Changes to the Franchise Agreement are subject to approval of the Board of Commissioners.

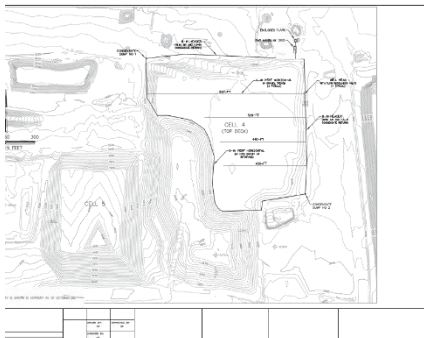
Landfill Regulations



Operations at the landfill are regulated by the ODEQ, under Oregon Administrative Rule (OAR) Chapter 340, Divisions 93 through 97. The rule prescribes requirements, limitations, and procedures for storage, collection, transportation, and disposal of solid waste. For a site such as Crook County Landfill, the rule requires the entity owning or controlling the site to obtain a permit from the ODEQ.

OAR Chapter 340, Division 94 incorporates by reference the Criteria for Municipal Solid Waste Landfills (MSWLFs), prescribed by the United States Environmental Protection Agency (EPA) in Title 40, Code of Federal Regulations (CFR), Part 258 and any amendments or technical corrections thereto. These regulations, otherwise known as RCRA Subtitle D, will be adhered to at the Crook County Landfill site.

The ODEQ has been approved by the EPA to administrate RCRA Subtitle D. RCRA Subtitle D allows some flexibility within some of its provisions if alternatives that are proposed are approved by the Director of the ODEQ.



OAR Chapter 340, Division 239 pertains to landfill gas emissions, Division 239. This division applies in all areas of the state and to all new landfills and all landfills that have received solid waste after November 8, 1987, excluding those sources located on either tribal or federal lands that are not subject to regulation by DEQ and except as provided in OAR 340-239-0010(2). This division does not apply to subsection a) Landfills with less than 200,000 tons of waste-in-place except that they must comply with section (4). Section (4) states that Landfills with less than 200,000 tons of waste-in-place must maintain the landfill cover in all areas of the landfill to minimize landfill gas emissions.



In October 2021, ODEQ implemented new regulations (OAR 340-239) to manage landfill gas emissions. The rules require many landfills in Oregon to obtain an air quality permit, submit data on landfill characteristics, and monitor and/or control landfill gas emissions.

Based on the waste-in-place volume and calculated methane generation rates at the CCLF the CCLF exceeded the threshold that requires collecting surface emission monitoring (SEM) data for the CCLF quarterly and reporting results beginning with the quarter ending on June 30, 2022. Further information is provided in Chapter 5: Transfer, Disposal, and Alternative Solid Waste Management and Services, Subsection 2 Disposal Facilities re: what these new landfill gas emissions are and future changes that may be required at the CCLF.

Solid Waste Management Authority for Counties

In section 459.085 of the Oregon Revised Statutes (ORS), the specific authority for solid waste management for each county in the State is spelled out. The section deals with a county's authority outside cities and the effect of annexation and interagency agreements. Some key highlights of the regulations are as follows:

1. For areas outside of cities, a board of county commissioners may, by ordinance or by regulation or order adopted pursuant to an ordinance or regulation:
 - a. Prescribe the quality and character of and rates for collection service.
 - b. Divide the unincorporated area into service areas, and grant franchises to persons for collection service within service areas.
 - c. Prescribe a procedure for issuance, renewal, or denial of a franchise to a person providing or proposing to provide a collection service.
 - d. Regulate solid waste management.
2. For areas outside of cities, a board of county commissioners may adopt ordinances to:
 - a. Own and operate disposal sites and may license disposal sites as an alternative to franchising of service.
 - b. Regulate, license, or franchise salvage businesses or the operation of salvage sites where such action is found necessary to implement any part of a solid waste management plan applicable in the county.

These primary authorities and responsibilities listed above are also applicable to cities. In summary, both cities and counties are responsible for ensuring basic solid waste collection, recycling, and disposal services are provided to all residents and businesses. Although local jurisdictions can operate collection services, the primary delivery method in the State of Oregon is through franchise agreements. There are several other citations, but those cited above represent the primary authority granted to local jurisdictions for managing solid waste.



The State supports local governments cooperatively working to prepare SWMP and to coordinate services in the most efficient approach. ORS 459.065 states local governments may enter into intergovernmental agreements as follows:

- a. For joint franchising of service or the franchising or licensing of disposal sites.
- b. For joint preparation or implementation of a solid waste management plan.
- c. For the establishment of a joint solid waste management system.
- d. For cooperative establishment, maintenance, operation, or use of joint disposal sites, including but not limited to energy and material recovery facilities.
- e. For the employment of persons to operate a site owned or leased by the local government unit.
- f. For promotion and development of markets for energy and material recovery.
- g. For the establishment of landfills including site planning, location, acquisition, development, and placing into operation.

ORS 459 has several citations that govern the management of solid waste. The ORS citations above describe the authority of local governments to manage solid waste within their jurisdictional boundaries and for local governments to work together on solutions and services.

Opportunity to Recycle Act

To address waste reduction and prevention, the Oregon State Legislature enacted ORS 459A, which was most recently amended in 2015 through Senate Bill (SB) 263, which established several statewide waste generation goals. Specifically, section 459A.007-010 outlines the elements through which programs should achieve these goals, as follows:

- 459A.007 – Describes fee structures as a mechanism to reduce waste generation by lowering collection rates for customers who use smaller or lower volume waste bins.
- 459A.008 – Describes the requisite educational and promotion programs that should be enacted to encourage more sustainable behavior regarding the generation and disposal of waste.
- 459A.010 – Outlines the state’s waste management policies and establishes goals and recovery rates for various generators and material streams.



This amendment to the original “Opportunity to Recycle Act” enacted new recovery rates for all Counties also referred to as wastesheds. For Crook County, the voluntary recovery rate was set at 20%. It also removed the recycling rate credits awarded to local jurisdictions; therefore, Crook County will need to consider approaches to increase the recovery rate (includes all diversion activities per Republic Services in the unincorporated area, Prineville Recycling Depot, and diversion at the landfill) from 7% in 2023 to 20% by 2025. This will be discussed further in Chapter 3: Waste Reduction/Recycling/Collection Programs.



Chapter 3 will also provide information on the Recycling Modernization Act (Senate Bill 582) passed during the 2021 legislative session. The new law became effective Jan. 1, 2022, and recycling program changes will start in July 2025. This system-wide update will make recycling easier for the public to use, expand access to recycling services, upgrade the facilities that sort recyclables, and create environmental benefits while reducing social and environmental harms, such as plastic pollution. Producers and manufacturers of packaged items, paper products, and food services will pay for many of these necessary improvements and help ensure recycling is successful in Oregon.

1.3. Overview of SWMP Update Process

The SWMP update takes a comprehensive look at the entire solid waste system elements including franchised collection services, transfer and disposal system, and material processing operations utilized by the County. Chapters of the SWMP update were developed by completing the following approach:

- Defining the **existing solid waste system** (i.e., collection, processing, transfer, and disposal system).
- Preparing **future projections** for population, economy, and material flows (e.g., solid waste, recycling, etc.).
- Completing a **needs and opportunities assessment of current programs, policies, and infrastructure**.
Alternatives were identified and evaluated, and a list of recommendations was developed to meet the County’s needs over the next ten years.



- **Preparing a CIP for the complete list of recommended system improvement projects** in order of importance for implementation over the next ten years. Documentation is provided on capital cost estimate assumptions.
- Developing a recommended funding strategy for future capital improvements through the implementation of a capital reserve policy and funds.

The intended public information and involvement program for this SWMP Update was highly reliant on the engagement of a Solid Waste Advisory Committee (SWAC). The City of Prineville maintains a SWAC and County staff had discussions with the city regarding the SWAC serving in an advisory role for this project. Unfortunately, no agreement was reached with the city.

Other planned public engagement opportunities include presentations to the County Board of Commissioners. The draft recommendations for the SWMP were presented to the Commissioners on January 15, 2025, and no suggested changes were made.

1.4. Summary of Recommendations and Facility Improvements

Table 1 summarizes recommendations made throughout this document. Details on the cost impact of each recommendation and potential funding sources can be found in Chapter 6.

Table 1: Summary of Recommendations and Facility Improvements

SWMP Chapter	Recommendation	Timeframe
3 - Waste Reduction/Recycling/Collection Programs	Enter into negotiations with Republic Services for a new and restated franchise agreement to address additional recycling services and upgrade the contract provisions to industry standards.	2025-2026
	Seek funding through the Recycling Modernization Act to fund the Franchise Agreement related recycling service improvements as applicable.	2025-2026
	Seeking funding through the Recycling Modernization Act to fund improvements at the Republic Services recycling depot in Prineville.	2025-2027
	Seek funding through the Recycling Modernization Act to fund new recycling depot at the Crook County Landfill. Bulky item-related improvements would likely be funded by the County.	2025-2027
	Collaborate with Deschutes County on recycling processing improvements planned by the County.	Ongoing
4 - Household Hazardous Waste Collection Programs	County to fund the HHW-related improvements planned for the new recycling depot at the Crook County Landfill.	2026-2027



5 - Transfer, Disposal, and Alternative Solid Waste Management and Services	Implement the proposed improvements to the Public Transfer Area	2026
	Finalize and release a Request for Proposal (RFP) to obtain bids for a Beneficial Landfill Gas Utilization Project at the Crook County Landfill.	Tentative 2026
6 - Admin. and Financial Plan	County to adopt a capital reserve policy for landfill related assets. The policy will identify funding sources to pay for a multi-year equipment replacement program and new facility improvements.	



2. Introduction and Overview of Existing Solid Waste System

2.1. Introduction



The area of Crook County is 2,987 square miles, with Prineville being the only incorporated City. The county is located in the geographic center of Oregon. The total population of the County in 2023 is estimated at 26,583, with Prineville estimated at a population of 11,598.

The County is at an average elevation of 4,393 ft. and is characterized by a semiarid climate, with cool nights throughout the year and precipitation during the winter. The City of Prineville receives an annual average precipitation of 9.89 inches and an average annual snowfall of 12.4 inches.

Table 2 summarizes population changes since the preparation of the last SWMP update in 2009. Since 2009 population has increased by 23% from 21,410 (2009) to 26,375 (2023).

Table 2: Crook County Historical Population Figures (2009-2022)

Total Population	Annual Estimates of the Resident Population for Counties in Oregon, 2009-2022						
County /Year	2009	2012	2015	2018	2020	2021	2022
Crook County	21,410	20,607	21,455	23,825	24,923	25,753	26,375
Sources: Annual Estimates of Resident Population for Counties in Oregon: April 1, 2020, to July 1, 2022 (CO-EST2022-POP-41), March 2023.							
Annual Estimates of Resident Population for Counties in Oregon: April 1, 2010, to July 1, 2019 (CO-EST2019-ANNRES-41), March 2020.							
Intercensal Estimates of Resident Population for Counties of Oregon: April 1, 2000, to July 1, 2010 (CO-EST00INT-01-41), September 2011.							
U.S. Census Bureau, Population Division							

Table 3 provides the forecasted population through 2040. Please see the footnotes in **Table 3** for annual population increase assumptions.

Table 3: Crook County Population Forecast by Year (2022-2040)

Total Population	Population Forecast by Year (2022-2040)				
County/ Year	2022 ¹	2025	2030	2035	2040
Crook County	26,375	27,528	29,123	30,547	31,947
¹ Modified 2022 population estimate to reflect US Census Bureau 2022 figure. All subsequent figures were adjusted by the same % change over the prior period as assumed by Portland State University, Population Research Center.					
Population Forecasts prepared by: Population Research Center, Portland State University, June 30, 2022.					
Note: The population forecasted at the beginning of the 50-year timeframe is expected to be similar to the growth rate in the 2020 census (i.e., 1.6%). Over time, the population growth slows down and eventually remains at around 0.9% AAGR.					



High levels of population growth will continue to drive further increases in waste generation in Crook County over the next 10-15 years.

2.2 Overview of Existing Solid Waste System



The County’s solid waste system is managed by the Crook County Landfill (CCLF) division that operates the local landfill. CCL has nine **full-time employees and operates with a budget of about \$8.86M (FY25)**. This budget includes a reserve of \$5M for future expenditure. The landfill meets all regulatory standards as required by State and Federal agencies. In addition to the primary disposal cell that receives municipal solid waste, the County operates a secondary cell that receives construction and demolition (C&D) waste.

Table 4 provides actual disposed tonnage figures for the past three years.

Table 4: Crook County Landfill Disposed Tons 2021-2023

Disposed Tons 2021-2023						
Source	2021	% of Total	2022	% of Total	2023	% of Total
Prineville Disposal ¹	15,083.71	70.70%	17,254.70	36.30%	16,885.90	39.20%
Self-Haul customers ²	6,259.10	29.30%	30,257.20	63.70%	26,244.20	60.80%
Total:	21,342.81		47,511.90		43,130.10	
¹ Crook County Landfill Report Entitled "3648_001_Prineville tonnage"						
² Crook County Landfill Report Entitled "3649_001_SH tonnages"						

Please note the significant fluctuations in tonnage from 2021 to 2022 were largely caused by economic disruptions from the COVID-19 pandemic and its impacts on business activity. Commercial tonnage as a percentage of total tons dropped significantly while self-haul tons increased significantly.

Using population projections noted in **Table 3**, future disposed tons were forecasted in **Table 5** below.

Table 5: Crook County Waste Disposal Projections¹

Year	Population Projections	Waste Disposed (tons)
2022 (actual)	26,375	47,512
2023 (7/1/23 pop. est.)	26,952	43,130
2025	27,528	45,016
2030	29,123	47,624
2035	30,547	49,953
2040	31,947	52,243
¹ Population estimates are based on the 2022-2040 Crook County Population Forecast.		



Besides the Crook County Landfill, other solid waste infrastructure in the County includes the following:

- A rural transfer station in Paulina (east of Prineville Junction of Hwy 113 and, SEC20,T16S, R24E, Paulina)
- A recycling depot in Prineville (1751 N Main St. Ste. B, Prineville)
- Hauling yard and recyclables transfer and bale operation in Prineville (same address as recycling depot)

The Paulina Transfer station is owned by the County but operated by Republic Services as part of their franchise agreement. The recycling depot and hauling yard are owned and operated by Republic Services.

Further information on the County's solid waste infrastructure is provided below.

Franchise Collection Services



Franchised collection service is provided by Republic Services within the City limits of Prineville, the urban growth boundary around Prineville, and in unincorporated areas of the County. Republic Services acquired Prineville Disposal in 2020.

Residents and businesses may also haul directly to the landfill or transfer station. Republic Services provides weekly and biweekly garbage collection services and comingled recycling pick-up to all garbage customers. More details on collection

programs are provided in Chapter 3.

Recycling depots are located at the landfill and the location of the offices of Republic Services in Prineville. The Republic Recycling Depot accepts comingled recyclables (paper, plastic, tin/aluminum), cardboard, glass, used motor oil, and car batteries. More details on these recycling depots are provided in Chapter 3.



Transfer and Disposal System

The current solid waste and recycling system is comprised of the CCLF outside of Prineville and a small rural transfer station in Paulina. The landfill is owned and operated by the County; the transfer station is operated through a contract with Republic Services.

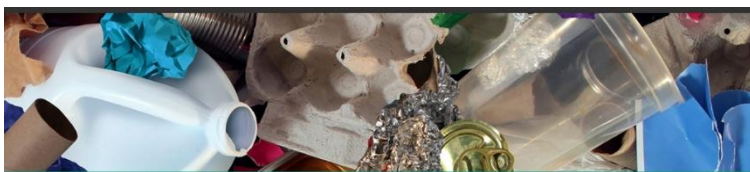


The current landfill operation has two active cells. Cell 3 is an unlined cell and accepts construction debris and woody debris. Cell 4 is the lined cell and accepts all other non-recyclable waste except for Asbestos waste, which is accepted in a separate area. Cell 5 has been excavated but has not been lined nor is it in operation. The landfill has a main-scale entrance, administration, and shop buildings, a public transfer area, a recycling depot, and other ancillary structures. Details on the landfill and its history are provided in the Executive Summary section of this document.

3. Waste Reduction/Recycling/Collection Programs

The current Crook County programs were evaluated in light of current regulatory requirements, notably meeting state recycling goals and securing recycling collection program funding support through the Recycling Modernization Act scheduled for implementation in 2025. Such regulatory requirements also include a new statewide mattress recycling program (SB 1576, 2022) scheduled for rollout in 2025². Crook County presently has decided not to participate in the mattress recycling program given implementation issues with the Mattress Recycling Council.

An important context here was addressing direct County-controlled programs at the landfill vs. those contractually driven by the Republic franchise agreement. The project team wasn't asked to review or evaluate the franchise services provided by Republic. However, information is provided in this Chapter on proposed recycling collection and related improvements per the Recycling Modernization Act.



Oregon has established waste recovery goals for jurisdictions throughout the State. Waste generation quantifies the total amount of material generated, whether the used item was eventually discarded or recycled. While diverting materials to recycling markets

is important, reducing the overall generation of all materials will ultimately lessen the burden on natural resources, manufacturing, distribution, retail, collection, recycling, and disposal infrastructures.

To address waste reduction and prevention, the Oregon State Legislature enacted ORS 459A, most recently amended in 2015, which established several statewide waste generation goals. Specifically, section 459A.007-010 outlines the elements through which programs should achieve these goals, as follows:

- 459A.007 – Describes fee structures as a mechanism to reduce waste generation by lowering collection rates for customers who use smaller or lower volume waste bins.
- 459A.008 – Describes the requisite educational and promotion programs that should be enacted to encourage more sustainable behavior regarding the generation and disposal of waste.
- 459A.010 – Outlines the state's waste management policies and establishes goals and recovery rates for various generators and material streams.

Statewide, the primary waste reduction and recovery goals outlined in 459A.010 include:

- Food waste recovery rate: 25% by 2020.
- Plastic waste recovery rate: 25% by 2020.
- Carpet waste recovery rate: 25% by 2025.
- General solid waste recovery rate: 55% by 2025.
- Total solid waste generation between 2025-2049 should be 15% lower than it was in 2012.
- Beyond 2050, total solid waste generation shall be 40% lower than it was in 2012.
- Crook County should maintain a 20% recovery rate by 2025 and beyond.

Table 6 on the next page details the programming elements featured in ORS 459A.007(1) and their present status within Crook County. According to ORS 459A.007(4) subsection (e), as a municipality “with a population of more than 10,000... located more than 150 miles from the City of Portland,” **Crook County is obligated to implement either Elements A, B, and C and any additional Element or at least five Elements.**

There are compliance deficiencies noted in **Table 6** on the next page. Section 3.4 will address potential alternatives to address these deficiencies.

² [Department of Environmental Quality : Mattress Recycling Program : Recycling : State of Oregon](#)



Table 6: Required Elements for WR/R Programs and Status of County Programs

Element	Status
Element A: Provide curbside recycling container	Cities and urbanized portions of the County are meeting this requirement because the haulers provide residents with curbside commingled recycling and glass separation.
Element B: Provide weekly curbside recycling	Recycling services in all cities and the urbanized portions of the County are offered every other week.
Element C: Expanded recycling education and promotion program which includes a contamination reduction education plan.	Limited data available. Republic doing cardboard only.
Element D: Provide multi-family recycling to apartment complexes that request it.	Currently, cardboard only. City and County may consider adopting ordinances re: recycling services.
Element E: Curbside yard debris collection is available to residential collection service customers at least once a month, and depots that accept yard waste are conveniently located.	Not currently provided per Franchise Agreement in County unincorporated areas. May be considered in an amended Franchise Agreement.
Element F: Recycling is available to businesses and schools.	Limited data available. Unclear if what Republic is doing meets state guidelines.
Element G: There is a recycling depot available for every 25,000 residents.	With 24,738 residents the County has two recycling drop-off centers, one located at Republic Services facility in Prineville at 1751 N Main Street and the other at the Crook County Landfill (110 SW Landfill Rd., Prineville).
Element H: Weight-based collection rates that encourage reduction, reuse, and recycling	No cities use weight-based rates. However, the current volume-based rates provide incentives for customers to use smaller containers to reduce waste disposal.
Element I: Food composting /anaerobic digestion is available for businesses.	Not currently provided
NEW Element J: Cities (and counties for the UGB) require businesses that generate four or more cubic yards/week of garbage to have a recycling program in place.	Not currently provided. Republic does offer recycling collection, but not sure of thresholds and data not provided..
NEW Element K: Curbside food composting /anaerobic digestion is available for residents.	Not currently provided
NEW Element L: Cities require recycling program for construction/demolition (C/D) (6 cy for self-haul, 10 cy for collection service)	Not currently provided
NEW Element M: Cities require a food waste program for large generators (50 tons/yr.).	Not currently provided



3.1. Education and Outreach



Republic Services currently provides limited public education and outreach services to support its collection programs. Program information, newsletter, collection schedules, and participation requirements (e.g., acceptable and non-acceptable materials) are provided on the Republic Services website (see [Prineville, OR Waste & Recycling Services | Republic Services](#)). Republic Services attends local events and fairs in the area with information booths.

The County has recycling information posted on their website as well (www.co.crook.or.us/landfill). Educational fliers are available at the landfill recycling depot.

3.2. Trash, Recycling, and Yard Debris Collection Programs

3.2.1 Residential Collection Programs

Table 7 below summarizes information on the current Franchise Agreement with Republic Services. The current Agreement is a continuing six-year agreement as noted. Solid waste is collected weekly, recyclables every other week, and no separate yard waste collection service is provided. Curbside recyclables are delivered to a receiving and transfer facility at the Republic Services hauling yard in Prineville for reloading and shipment to Deschutes Recycling in Bend, Oregon for further processing. Provisions of the Recycling Modernization Act will expand acceptable materials in the future. See Section 3.4 for more details.

Table 7: Summary of Franchised Collection Services

<u>Municipal Solid Waste (Garbage) Collection</u>				
<u>Area and Jurisdiction</u>	<u>Regulatory Authority</u>	<u>Service Provider</u>	<u>Mandatory Collection</u>	<u>Contract Term</u>
Provide service to any and all persons who so desire and are located within the County, exclusive of the area included within the city limits of the City of Prineville. Weekly collection service.	County-contracted	Republic Services of Central Oregon		Continuing 6-year franchise, unless sooner terminated under Section 10. Beginning on March 15 of each year, the franchise will be considered renewed for an additional 6-year term unless at least thirty (30) days before March 15 of any year, the one party shall notify the other in writing of intent to terminate the franchise.
<u>Recycling Collection</u>				
Provide service to any and all persons who so desire and are located within the County, exclusive of the area included within the city limits of the City of Prineville. Bi-weekly collection.	County-contracted	Republic Services of Central Oregon		Same as above
<u>Yard Waste Collection</u>				
Republic Services offers yard waste recycling services on a subscription basis for customers within the City of Prineville limits and the UGB.				

Table 8 on the next page summarizes residential collection services.

Table 9 on the next page provides residential collection rates by service levels.

**Table 8: Residential Collection Services Matrix**

<u>Jurisdiction</u>	<u>Service Provider</u>	<u>Garbage Mandatory</u>		<u>Recycling Services</u>		<u>Yard Debris / Organics Service</u>		<u>Bulky Item Service</u>	
		<u>Yes</u>	<u>No</u>	<u>Bundled</u>	<u>Subscription</u>	<u>Bundled</u>	<u>Subscription</u>	<u>Bundled</u>	<u>On-Call Fee</u>
Crook County	Republic Services of Central Oregon (Prineville Disposal)	X		X (included in solid waste rates)		Service not provided		Yes, for an additional fee, Republic Services can pick up any extra items that won't fit in your cart. We can remove couches, TVs, refrigerators, computers, desks, and more. Recyclable items will be taken to a facility for recycling.	

Current collection rates for residential service levels are summarized below in **Table 9**.

Table 9: Republic Services – Residential Collection Rates

<u>Level of Service: Residential</u>	<u>Urban Growth Boundary</u>	<u>County</u>	<u>Distant Rural</u>
35 Gallon Roll Cart Weekly	\$23.74	\$25.42	
35 Gallon Roll Cart Every Other Week	\$18.43	\$20.10	
35 Gallon Roll Cart E4W	\$14.85	\$16.52	
35 Carryout Weekly	\$30.82	\$32.35	
35 Carryout Every Other Week	\$22.47	\$24.13	
35 Carryout Every E4W	\$16.74	\$18.40	
65 Gallon Roll Cart Weekly	\$37.94	\$39.62	
65 Gallon Roll Cart Every Other Week	\$28.37	\$30.03	\$31.34
65 Gallon Roll Cart E4W	\$21.97	\$23.63	\$22.39
65 Carryout Weekly	\$46.01	\$47.71	
65 Carryout Every Other Week	\$32.41	\$34.09	\$39.79
65 Carryout Every E4W	\$23.85	\$25.53	\$29.84
95 Gallon Roll Cart Weekly	\$48.62	\$50.30	
95 Gallon Roll Cart Every Other Week	\$37.94	\$39.62	\$44.77
95 Gallon Roll Cart E4W	\$30.87	\$32.54	\$34.82
95 Carryout Weekly	\$54.98	\$56.61	
95 Carryout Every Other Week	\$41.98	\$43.67	\$49.73
95 Carryout Every E4W	\$32.75	\$34.42	\$39.79
95 Recycle	\$0.00	\$0.00	
95 CO Recycle	\$0.00	\$0.00	
Add'l 95 recycle	\$1.67	\$1.67	
Extra Trash Per Bag	\$5.73	\$6.06	\$6.20
Extra Trash Per Yard	\$20.42	\$21.90	
Garbage or Glass in Recycle Cart	\$16.52	\$16.52	



Table 10 below provides a breakout of the various recyclables collected by Republic Services. Recycling tonnages have increased significantly over the past two years as post-COVID conditions have returned with more normal collection operations. Curbside recyclables are delivered to a receiving and transfer facility at the Republic Services hauling yard in Prineville for reloading and shipment to Deschutes Recycling in Bend, Oregon for further processing.

Table 10: Republic Services - Recycling Tonnage Breakout

Crook County¹			
Metrics	2021	2022	2023
Residential curbside commingled tons	207.01	1,026.66	666.28
Recycling Depots commingled tons	0	0	177.64
Recycling Depots glass tons	0	0	37.86
<i>Residential subtotal:</i>	207.01	1,026.66	881.78
Commercial commingled tons	13.22	0	170.08
Commercial cardboard tons	319.1 ²	506.32	694.33
Newspaper/Magazines	128.75 ³		
Commercial glass tons	37.88 ⁴	35.71	5.00
Commercial scrap metal tons	27.87 ⁵	10.71	79.50
<i>Commercial subtotal:</i>	526.82	552.74	948.91
<i>Grand Total:</i>	733.83	1,579.40	1,830.69
¹ Data source is 2021-2023 Oregon Recycling Collector Survey for Republic Services – Prineville Disposal. ² Includes 176.79 tons from Disposal Sites and TS, C&D loads, etc. ³ From C.O. Press. ⁴ Disposal Sites and TS Please note the survey also includes reported data for Wood / Lumber (WW), Compacted Yard Debris (YD), and Uncompacted Yard Debris (YD) that's not included in the above table.			

3.2.2 Commercial Collection Programs

Information on scheduling services and types of services available can be found on the Republic Services website (see [Prineville, OR Waste & Recycling Services | Republic Services](#)).

A commercial recycling guide can be found at [Commercial Recycling Guide](#). Commercial recycling tonnage information can be found in **Table 9 above**. Commercial recycling tonnage has increased significantly in the post-COVID period, though still relatively small numbers. Commingled recyclables are delivered to a receiving and transfer facility at the Republic Services hauling yard in Prineville for reloading and shipment to Deschutes Recycling in Bend, Oregon for further processing. Clean loads of cardboard are baled at the Prineville location and shipped to end markets. Provisions of the Recycling Modernization Act will expand acceptable materials in the future. See Section 3.4 for more details.

Current collection rates for commercial service levels are summarized below in **Table 11**.

Table 11: Republic Services – Commercial Collection Rates

Level of Service: <u>Commercial</u>	<u>Urban Growth</u> <u>Boundary</u>	<u>County</u>	<u>Distant Rural</u>
The rate reflects once-per-week service. Additional weekly services, Every Other Week, and Every 4 Week Service Available. Commercial services are not available in the Distant Rural Service Area.			
1 Yard	\$116.12	\$117.80	
1 1/2 Yard	\$139.21	\$140.89	
2 Yard	\$174.72	\$176.40	

3 Yard	\$223.14	\$224.81	
4 Yard	\$281.04	\$282.73	
5 Yard	\$370.81	\$372.48	
6 Yard	\$425.08	\$426.76	
Level of Service:			
Industrial	Urban Growth Boundary	County	Distant Rural
All Box Sizes are charged disposal fees, rent, and truck time per hour for delivery and hauling. Additional fees and charges may apply for box relocation, dry runs, and minimum lift fees. The rates reflected are for temporary rental charges only. Customers with permanent boxes are offered reduced rates.			
10 yd rental	\$216.26	\$216.26	\$216.26
15 yd rental	\$243.61	\$243.61	\$243.61
20 yd rental	\$269.87	\$269.87	\$269.87
30 yd rental	\$323.85	\$323.85	\$323.85
40 yd rental	\$378.19	\$378.19	\$378.19

3.3. Recyclables Drop-off Programs

3.3.1 Prineville Recycling Depot



Republic operates a recycling depot that's accessible 24/7 at:

Prineville Recycling Depot

1751 N Main St Ste B

Prineville, OR 97754

[Prineville Recycling Depot](#)

Recycling depot tonnage information can be found in **Table 10**. Please note that tonnage information wasn't reported in 2021 and 2022. Higher volumes are expected at this recycling depot in the future with the implementation of the Recycling Modernization Act. See Section 3.4 for more details.

3.3.2 Paulina Transfer Station



The Paulina Transfer Station has limited hours and is open only one Saturday per month for two hours. Limited recycling drop-off services are offered.

3.3.3 Crook County Landfill- Recyclables Drop-Off



The County offers comprehensive drop-off services at the landfill as summarized in **Table 12** on the next page. Traditional curbside recyclables are accepted along with automotive fluids (i.e., used motor oil and antifreeze, cooking oil, latex and oil-based paint, E-waste, and alkaline and car batteries). Drop-off areas are provided before the scales on a gravel pad and adjacent to a small building near the Administration Building. More specifically, electronics, car batteries, and paint are dropped off on a paved area and/or near the small building noted above.





Provisions of the Recycling Modernization Act will expand acceptable materials in the future. See Section 3.4 for more details.

Table 12: Crook County Landfill – Acceptable Recyclables

<u>Crook County Landfill – Acceptable Recyclables</u>
<u>Automotive and Alkaline Batteries</u>
Whole batteries only. No Cracked or leaking batteries.
<u>Corrugated Cardboard</u>
Remove the packing materials and flatten them. No wax-coated boxes.
<u>Newspaper</u>
In paper sacks or bundled. Place in newspaper trailer.
<u>Magazines</u>
Place loose into newspaper trailer.
<u>Glass Bottles and Jars</u>
Clean. Remove labels and lids. Can mix colored and clear glass. No ceramics, Pyrex, light bulbs, mirrors, or window glass.
<u>Plastic</u>
NOT ACCEPTING FOR RECYCLE AT THIS TIME
<u>Aluminum and Tin Cans</u>
Clean and remove labels. No paint or aerosol cans.
<u>Used Motor Oil</u>
Residential Customer Use Only. Limit of 25 gallons. In a non-breakable container with a tight-fitting lid. No antifreeze, solvents, or cooking oil. (Cooking oil has its container located by the battery recycling)
<u>Antifreeze</u>
Residential Customer Use Only. Limit of 25 gallons. In a non-breakable container with a tight-fitting lid. No solvents.
<u>Latex and Oil-Based Paint</u>
It must be liquid in the original container. Solid latex paint is non-recyclable and is subject to a weight fee.
Paint Guidelines: https://www.paintcare.org/products/ [1]
<u>Used Cooking Oil</u>
Households only; no businesses. No motor oil, antifreeze, or solvents. (Motor oil and antifreeze have their containers located by glass recycling)

Recycling tonnage information for the past three years can be found in **Table 13** on the next page. The significant drop in wood/lumber tonnages from 2022 to 2023 can be attributed to diminished quality of the inbound materials; scrap wood was too “dirty”, and the County had to switch to recycling wood pallets only to ensure it was clean. The clean wood pallets come from Les Schwab only.

There were similar issues with yard debris with a notable decline from 2021 to 2023. Further, the material can’t be composted onsite given limited water supplies. Without a composting option, operations are limited to producing a mulch made from larger brush and tree limbs. Around the end of 2021 we began landfilling yard debris like grass, leaves, etc. and only grind brush and large limbs.



Table 13: Crook County Landfill Drop-Off Recyclables and Other Wastes, Historical Tonnages 2021-2023

<u>Recyclable Tonnages Collected</u>					
<u>Materials</u>	<u>Unit of Measure</u>	<u>Disposal Sites and Transfer Station 2021¹</u>	<u>Disposal Sites and Transfer Station 2022²</u>	<u>Disposal Sites and Transfer Station 2023</u>	<u>Total Amount Collected / Handled in this Wasteshed</u>
Newspaper / Mags. (FIB NP)	Tons	9.52	13.10	7.50	30.12
Cardboard / Kraft (OCC)	Tons	38.72	37.60	32.30	108.62
Container Glass (GL)	Tons	24.08	21.900	19.00	64.98
Tinned Cans (TC)	Tons	3.66	3.70	4.60	11.96
Scrap Metal (SCM)	Tons	340.28	357.90	387.30	1,085.48
Wood / Lumber (WW)	Tons	592.5	704.2	299.20	1,595.90
Uncompacted Yard Debris (YD)	Tons	294.98	195.20	189.00	679.18
Tires (TIR)	Tons	92.74	85.60	70.60	248.94
Electronics (EL)	Tons	56.31	29.20	34.00	119.51
Lead Acid Batteries (LAB)	Tons	7.21	9.00	9.50	25.71
Used Motor Oil (OIL)	Gal	7,007	7,363	7,438	21,808
Other – Cooking Oil	Gal			55.00	55.00
<i>Totals – Tons:</i>		1,460	1,457	1,053	3,970
<i>Total – Gals:</i>		7,007	7,363	7,493	21,808
¹ Includes Wood / Lumber - 394.02 tons from “Other Companies.”					
² Includes Wood / Lumber - 466.8 tons from Les Schwab, and 210.43 tons from Republic Prineville Disposal.					
Source: Oregon Recycling Collector Survey 2021-2023 submitted to Oregon DEQ.					



Tonnage levels have remained steady over the past three years with notable decreases only in wood and yard waste and electronics.

Electronics, Appliances, Metals, and Tires



Nontraditional recyclables such as electronic waste and bulky items are also accepted at the landfill. Some of these items like appliances and tires are charged items and customers pay at the scale booth and drop the items off after the scales. The drop-off area has designated bunkers for items and the area is unpaved and uncovered. Landfill fees for various materials can be found at [Itemized Dump Fees | Crook County Oregon](#).

Freon is removed from any appliances by a vendor that comes onsite. Appliances are combined with other scrap metal and shipped offsite for further processing.

Separate vendors collect electronics and tires and process the materials offsite for beneficial use. Tires are processed offsite at Liberty Tire in Prineville.

Operational improvements to this area are further described in Section 3.4.

As noted before, electronics drop off before the scales near a small building near the Administration Building. This same building is used for periodic household hazardous waste (HHW) collection events.



Yard Debris Drop-Off



The County maintains a designated drop-off area for yard debris and fees are charged for disposal of this material. The area is past the scale and adjacent to the public transfer area.

A separate wood waste area is maintained off the access road to cell 4. That material is ground periodically with a portable grinder and the wood chips are sold.



3.4. Program Evaluation and Alternatives

Crook County is currently not meeting the state recycling goals under the Opportunity to Recycling Act. The County's recycling diversion rate in 2023 is estimated at 7%, which is well below the 25% target by 2025. Specific programmatic deficiencies are noted in **Table 6** on P. 11. Specific opportunities for improvement may include:

- Implementing weekly curbside collection vs. the current biweekly service in the urban growth boundary areas and implementing this service in County unincorporated areas.
- Expanded commingled recyclables collection services for businesses.
- Expanded public education and outreach services to align with the expanded residential and commercial recyclables collection services.
- Providing residential yard debris collection services in the County.
- Expanded collection of recyclables at the Prineville recycling depot and the Crook County Landfill.

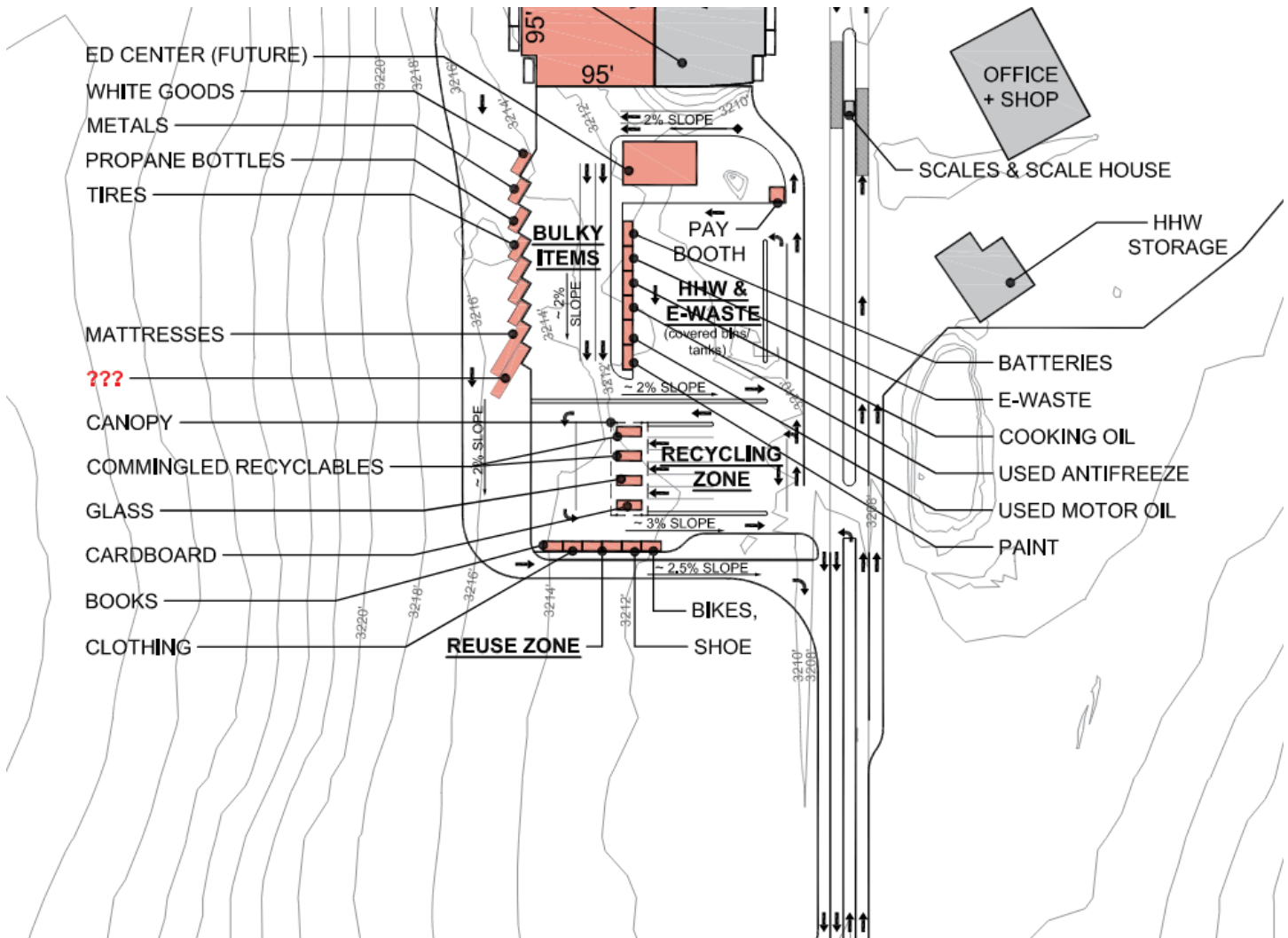
The Recycling Modernization Act will likely provide funding for some of the items above while other program expansion costs will be borne through the Franchise Agreement with Republic Services. The County is expected to enter into negotiations with Republic Services to address additional services and to upgrade the contract provisions to be more in line with industry standards.

Deschutes County has initiated a process to upgrade its material processing services and a modified franchise agreement with Republic Services. There are opportunities for collaboration between Crook County and Deschutes County regarding these items.

In 2023 JRMA completed a Diversion Master Plan for Deschutes County that envisions a large material recovery facility for the processing of residential and commercial recyclables and C&D waste streams. The plan also includes a potential composting facility adjacent to the new Negus Transfer Station in Redmond, Oregon.

JRMA has also completed a site layout, see **Appendix A**, for a new recycling depot at the Crook County Landfill to replace the existing operation. The new recycling depot will accept all currently accepted materials plus new recyclables included within the Recycling Modernization Act. This facility will also address the recycling of Mattresses by a new state law to be implemented in 2025 if the County chooses to participate in this program in the future. An enlarged section of the new recycling depot site plan can be found below.

Figure 1: Crook County Landfill – New Recycling Depot Site Plan



The new recycling depot will generally be in the same location as the existing recyclables drop-off area and include the following operational components:

- Reuse zone for public drop-off of reusable items such as clothing, bikes, shoes, and other items as appropriate.
- Recycling zone for public drop-off of commingled recyclables (same materials to be accepted in the expanded curbside recycling program), glass, and cardboard.
- HHW and e-waste drop-off area for batteries, e-waste, used motor oil, used antifreeze, paint, and cooking oil.



- An elevated z-wall drop-off area for bulky items including white goods (e.g., appliances), metals, propane bottles, tires, mattresses (if applicable), and other items as appropriate. A pay booth will accept payment from customers for these items.
- Future space for an education center for public visitors and school groups.

Funding for this new recycling depot would be pursued through the Recycling Modernization Act.

Recommendations

The following recommendations will address the current recycling service deficiencies to meet the state recycling goal of 25%, and sync with new state requirements under the Recycling Modernization Act and Mattress recycling law.

1. Enter into negotiations with Republic Services for a new and restated franchise agreement to address additional recycling services and to upgrade the contract provisions to be more in line with industry standards.
2. Seek funding through the Recycling Modernization Act to fund the Franchise Agreement related recycling service improvements as applicable.
3. Seek funding through the Recycling Modernization Act to fund improvements at the Republic Services recycling depot.
4. Seek funding through the Recycling Modernization Act to fund the new recycling depot at the Crook County Landfill. Bulky item-related improvements planned for the new recycling depot at the Crook County Landfill would likely be funded by the County.
5. Collaborate with Deschutes County on recycling processing improvements planned by the County.



4. Household Hazardous Waste Collection Programs

4.1. Drop-Off Services at Crook County Landfill



HHW is collected at the landfill through its drop-off program and periodic one-day HHW events. **Table 14** on the next page provides a summary of total pounds collected for each waste type over the past three years. Automotive fluid (i.e., waste oil and anti-freeze) volumes have been steadily increasing over the past three years with over 8,200 gallons. collected in 2023. Latex paint collected through the Paint Care³ program is another large volume item collected with nearly 40,000 pounds collected in 2023.



HHW materials collected are segregated by waste type and stored in the small building near the Administration Building.

Based on feedback from County staff, this program is working well but improvements could be made to better consolidate the operations for material handling efficiency purposes given limited landfill staffing levels. Please see Section 3.4 for details on a new public recycling depot that will handle certain HHW items and e-waste.

Recommendations

The following recommendation will address operational enhancements to the current HHW program:

1. County to fund the HHW-related improvements planned for the new recycling depot at the Crook County Landfill.

³ [Oregon paint recycling and drop-off locations — PaintCare](#)
Solid Waste Management Plan Update



Table 14: Crook County Household Hazardous Waste Annual Report 2021-2023

Waste Type	2021 Total Lbs.	2022 Total Lbs.	2023 Total Lbs.	Disposal Method	Name of Final Destination
Acids	310	155	35	Treatment/ Neutralization	Clean Earth (CE)
Bases	541	312	200	Treatment	CE
Oxidizers	102	65	49	Treatment / Neutralization	CE
Reactives	31			Labpak - Incineration	CE
Mercury Wastes	8			Recycle	CE
Toxics (metals, pesticides)	2,810	1,600	1,535	Incineration	CE
Flammable Liquids	4,300	2,300	2,000	Fuel Blend / Energy Recovery	CE
Flammable Solids		7	16	Incineration	CE
Aerosols: Paint and non-paint	1,200	700	1,060	Incineration	CE
Latex Paint and Oil Bases (non-Paint Care)			2,760	Recycle	CE
Oil-based Paint (non-paint Care)	2,875	2,670		Fuel Blend / Energy Recovery	CE
Paint Care: Latex and Oil Based Paint	48,950	48,600	39,268	Recycle	CE
Fluorescent Tubes	1,620	1,760	9,722 ¹	Recycle	AES
Compact Fluorescent Bulbs	85 Bulbs	44 bulbs	48 bulbs	Recycle	AES
UV Lamps	10 Bulbs	103 bulbs		Recycle	AES
HID Lamps	64 Bulbs	1 Bulb	81 Bulbs	Recycle	AES
Neco Lights		8 Bulbs		Recycle	AES
Motor Oil	6,354 gal	7,641 gal	7,658 gal	Recycle	Thermo Fluids



Antifreeze	400 gal	830 gal	595 gal	Recycle	Thermo Fluids
Lead-acid Batteries	15,820	17,600	19,800	Recycle	Interstate Batteries
Corrosives			8,320	Neutralized / Recycled	CE
Non-Reg Liquids	1,200			Disposal	CE - Rabanco Landfill
Totals:	79,767 lbs.	75,769 lbs.	84,765 lbs.		
	159 bulbs	156 bulbs	129 bulbs		
	6,754 gals	8,471 gals	8,253 gals		
Source: HHW Annual Reports 2021-2023 submitted to Oregon DEQ.					
¹ Businesses replacing with LEDs.					

5. Transfer, Disposal, and Alternative Solid Waste Management and Services

5.1. Transfer Facilities

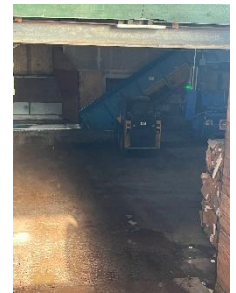
5.1.1 Paulina Transfer Station

The Paulina Transfer Station has limited hours and is open only one Saturday per month for two hours. Limited recycling drop-off services are offered. The public unloads trash into rolloff boxes and the waste is shipped to the Crook County Landfill for disposal. County staff have reported an interest from local residents in expanded services. While no improvements are currently planned for the site, any future franchise agreement negotiations with Republic Services could address potential improvements as needed.

5.1.2 Republic Services of Central Oregon - Prineville



Republic Services operates recyclables receiving, baling, and transfer operations at its Prineville hauling yard. Curbside recyclables and commercial recyclables are unloaded here and transferred to Deschutes Recycling in Bend, Oregon for further processing. Clean loads of cardboard are baled at the Prineville location and shipped to end markets.



Implementation of the Recycling Modernization will likely result in increased recycling volumes from both residents and businesses resulting in higher volumes of material flowing through this facility and the recycling depot also located at this facility.

It's currently unclear if funding from the Recycling Modernization Act would cover any needed future improvements (e.g., new baler, additional trailers, etc.) at the site to handle higher volumes of recyclables.

5.2. Disposal Facilities

5.2.1 Crook County Landfill

Sections 1.1 and 1.2 provide detailed information on the history of the landfill and related regulations that apply to the landfill operations. County staff provided directions that the most critical items to address for future landfill operations are as follows:

- Make improvements to the public transfer area at the landfill to address traffic circulation and capacity issues.
- Plan for future compliance with ODEQ regulations to manage landfill gas emissions.

5.2.1.1 Public Transfer Area



Just past the scale entrance to the landfill is a public transfer area ("Public Transfer Station") for public customers to unload their MSW trash into rolloff bins. Once full, the rolloff boxes are hauled up and unloaded at the active face of the MSW Cell. This operational area is an industry best practice to minimize the mixing of public vehicles and large commercial vehicles (e.g., garbage trucks); such mixing of traffic at the landfill face causes safety issues and requires higher staffing levels to provide traffic direction.

Staff noted there are current operational limitations related to traffic circulation and unloading/loadout capacity. The current roadway leading up to



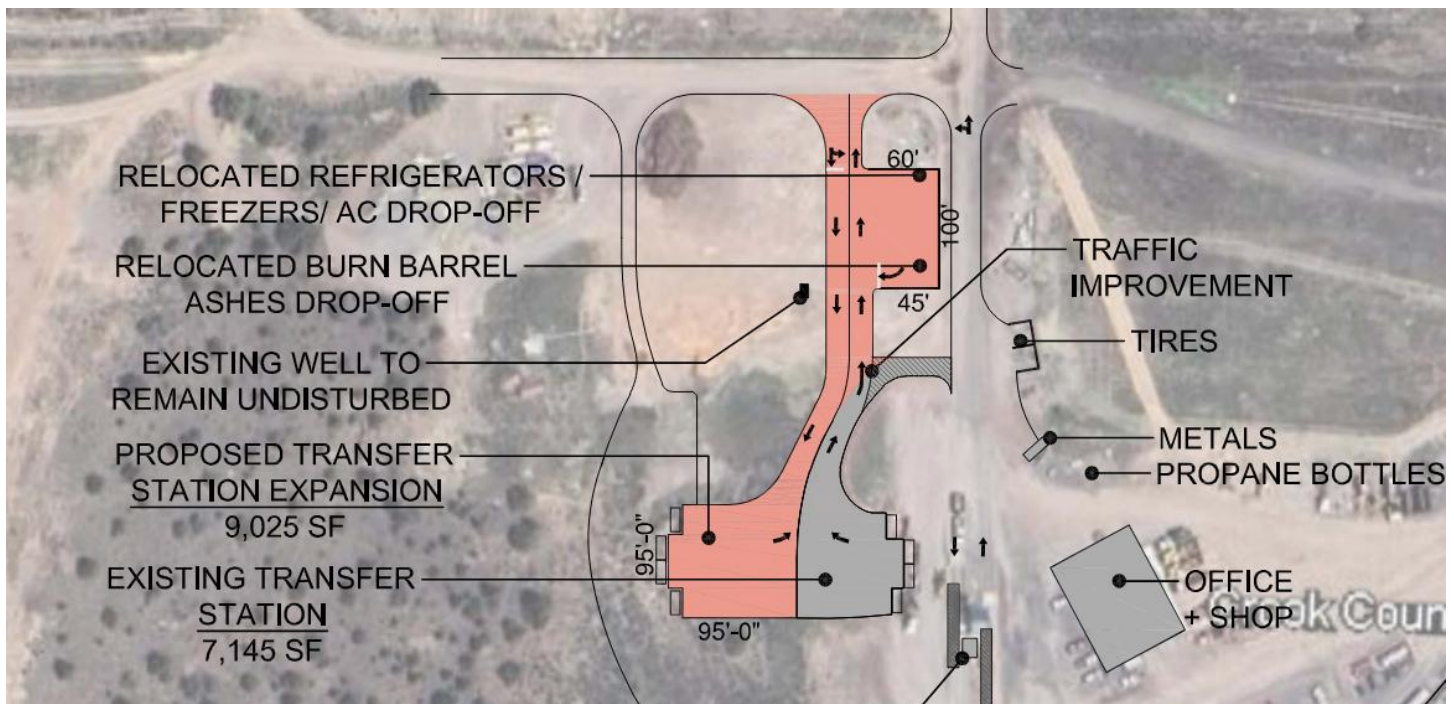


the elevated transfer tipping area is narrow and can only handle one-way traffic. This means that on busy days at the landfill (e.g., on weekends) public traffic exiting the inbound scale can back up while trying to make a left turn to the public transfer area. This back-up blocks traffic trying to exit (use the outbound scales).

The other relates to capacity with only four unloading spaces for public vehicles. Again, on busy days, this has the cascading effect of impacting the traffic pad atop the transfer area and on the access road.

JRMA staff worked with County staff to design improvements to the public transfer area that eliminates traffic circulation issues while also doubling unloading space and loadout capacity. An enlarged section of the expanded public transfer area site plan can be found below and full-size site plan in **Appendix B**.

Figure 2: Crook County Landfill – Expanded Public Transfer Area



This expanded facility has the following operational components:

- Two-way traffic circulation with much longer traffic queue to space customers.
- Doubles the capacity of unloading spaces from four to eight.
- Doubles the loadout capacity from four rollofs to eight rollofs.
- Added a new paved area for customer unloading of bulky items and burn barrels.

This operation has also been designed to integrate with the future a new recycling depot. The elevated public transfer area would be at the same elevation and adjacent to the elevated z-wall portion of the new recycling depot.

Funding for the project is likely to be from landfill operating funds as funding would not likely be available from non-County sources.



5.2.1.2.2 Landfill Gas Collection and Control System

ODEQ enacted new regulations (October 2021, OA 340-239) to manage landfill gas emissions. The rules require many landfills in Oregon to obtain an air quality permit, submit data on landfill characteristics, and monitor and/or control landfill gas emissions.

Gerry Friesen, PE, G. Friesen Associates, Inc., prepared a technical memorandum (see **Appendix C**) that addresses the applicability of the ODEQ regulations and potential next steps for the County. Based on the waste-in-place volume and calculated methane generation rates at the Crook County Landfill (CCLF) the CCLF exceeded the threshold that requires collecting surface emission monitoring (SEM) data for the CCLF quarterly and reporting results beginning with the quarter-ending on June 30, 2022. Annual reports are to document that all quarterly SEM data and any follow-up remedial efforts remain below the threshold methane concentration of 200 parts per million by volume (ppmv).

For those landfills where any measured concentration of methane at the surface of the landfill remains greater than 200 ppmv, the rules require a:

1. Design Plan for a Gas Collection and Control System (GCCS) be submitted within one year of becoming subject to this rule (OAR 340-239-0110(1)(a)).
2. Gas Collection and Control System (GCCS) be installed and operating within 30 months after becoming subject to this rule (OAR 340-239-0110(1)(d)).

To address the potential need to prepare a design plan for a GCCS, Mr. Friesen's memo details a conceptual plan for such a system, provides an initial cost estimate, and recommends that the County develop a Request for Proposal (RFP) to obtain bids for a Beneficial Landfill Gas Utilization Project at the Crook County Landfill. A draft RFP is shown in **Appendix C, Exhibit C** which is based on an RFP that was issued by Deschutes County in 2022. Various natural gas companies and other renewable energy providers responded, and an agreement has now been made to utilize landfill gas that is being generated at the Knott Landfill beneficially.

5.3. Alternative Solid Waste Management Facilities

No alternative technology or waste facilities were included in the scope of this SWMP update. There are publicly available sources of such information in reports completed by JRMA for Deschutes County.

5.4. Recommendations

The following recommendations will address operational enhancements needed at the Crook County Landfill:

1. Implement the proposed improvements to the Public Transfer Area
2. Finalize and release an RFP to obtain bids for a Beneficial Landfill Gas Utilization Project at Crook County Landfill.



6. Administration and Financial Plan

This Chapter provides a summary of the financial impact of the proposed recommendations, identifies potential funding sources, and details a proposed future capital reserve policy to be implemented.

This Plan doesn't address CCLF organization structural or other administrative items. It also doesn't include an analysis of the current franchise agreement with Republic Services, though the Plan acknowledges expected future County negotiations with Republic Services to address additional services and to upgrade the contract provisions to be more in line with industry standards.

6.1. Rate Analysis

Currently, CCLF operates as a separate enterprise fund with its primary revenue source being tipping fees charged at the landfill. The original scope of the Plan was to include an analysis of the fees charged at the landfill and ways to consolidate and simplify without reducing current revenues. Based on discussions with staff it was determined that the current fee structure was appropriate, and no changes were needed.

A review was conducted on how capital projects were currently funded. Such projects are funded on a pay as you go basis without the use of reserve funds. A memo was prepared, see **Appendix F**, detailing how reserve policies and the use of designated capital reserve funds (e.g., landfill equipment replacement fund) are commonplace in the industry and utilized many local governments managing solid waste disposal and transfer systems. An example of a Landfill Equipment Replacement Schedule was included in the memo and a snapshot of the worksheet can be found below.

Asset Replacement Schedule																			
5.0% Asset Escalator										Asset Replacement Schedule Table									
Asset Number	Asset Description	Purchase Year	Hours	Miles	Asset Cost	Asset Life	Replace Year	Replacement Cost		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
102	Chevy 2500 4x4	1998		149,048	\$ 5,000	27	2025	\$ 18,667	\$ 18,667										
103	Ford F250 4x4 Ext. Cab	2003		85,285	\$ 10,000	23	2026	\$ 30,715	\$ 30,715										
104	Ford Flat Bed	1990		61,120	\$ 15,000	37	2027	\$ 91,221	\$ 91,221										
105	F350 (Service Truck)	1990		16,090	\$ 12,000	38	2028	\$ 76,626	\$ 76,626										
107	Ford Explorer Sport Trac	2022		131,671	\$ 21,000	7	2029	\$ 29,549	\$ 29,549										
108	Ford F350	2010		116,122	\$ 7,500	20	2030	\$ 19,900	\$ 19,900										
109	Chevy 3500	2022		3,080	\$ 32,000	9	2031	\$ 49,643	\$ 49,643										
110	Ford F150	2007		93,412	\$ 9,000	25	2032	\$ 30,477	\$ 30,477										
201	D7H CAT Dozer	1989	15,489		\$ 75,000	44	2033	\$ 641,786	\$ 641,786										
203	D5 CAT Dozer	1995	11,280		\$ 101,000	39	2034	\$ 677,180	\$ 677,180										
204	D7G CAT Dozer	1985	3,731				1985	\$ -											
301	CAT Scraper 615	1987	12,950				1987	\$ -											
304	615 Scraper CII	2006	3,592				2006	\$ -											
401	CAT Loader 966H	2006	11,304				2006	\$ -											
402	CAT Loader 966D	1980	10,604				1980	\$ -											
403	416 Backhoe	1986	9,337				1986	\$ -											
404	977L Track Loader	1977	7,471				1977	\$ -											
405	420E Backhoe	2007	3,695				2007	\$ -											
406	973D Compactor	2015	8,929				2015	\$ -											
407	966M Loader	2022	2,535				2022	\$ -											

The Landfill Equipment Replacement Schedule calculates the future cost of the assets by compounding the price paid for the current asset by an escalation factor (5% for this table).

The Total Cost of Assets is the expected amount that will be expended to purchase the assets scheduled for replacement.

Incoming Waste Tons that generate revenue are estimated for the respective years.

A cost per ton is calculated, which is the additional amount added to the disposal fee to pay for equipment replacement annually. When reviewing the worksheet shown in **Appendix F** you will see that over the ten-year schedule, the average cost per ton for equipment replacement is \$1.13.



6.2. Funding Strategies

Table 15 below summarizes each SWMP recommendation, cost impact, and potential funding sources. The costs shown range from the use of existing staff time to capital costs for the two proposed facility improvements at the landfill, the new Recycling Depot, and the expanded Public Transfer area. There are multiple potential sources of funding for the recommendations including:

- Use of existing landfill operating funds
- Potential funding through State of Oregon Recycling Modernization Act for recycling related collection service improvements
- Potential future capital reserves funding through tipping fee adjustments

Table 15: SWMP Recommendations, Cost Impact, and Funding Sources

SWMP Chapter	Recommendation	Cost Impact	Funding Source
3 - Waste Reduction/Recycling/Collection Programs	Enter into negotiations with Republic Services for a new and restated franchise agreement to address additional recycling services and upgrade the contract provisions to industry standards.	Not known at this time	Potential funding through State of Oregon Recycling Modernization Act ⁴ for recycling related collection service improvements
	Seek funding through the Recycling Modernization Act to fund the Franchise Agreement related recycling service improvements as applicable.	Staff time to apply for funding and participate in funding process	Landfill operating budget
	Seek funding through the Recycling Modernization Act to fund improvements at the Republic Services recycling depot in Prineville.	Not known at this time	Potential funding through State of Oregon Recycling Modernization Act for recycling related collection service improvements
	Seek funding through the Recycling Modernization Act to fund new recycling depot at the Crook County Landfill. Bulky item-related improvements would likely be funded by the County.	\$2.5M	Potential funding through State of Oregon Recycling Modernization Act for recycling depot related collection services
	Collaborate with Deschutes County on recycling processing improvements planned by the County.	Limited Staff time	Landfill operating budget
4 - Household Hazardous Waste Collection Programs	County to fund HHW-related improvements planned for the new Recycling Depot at the Crook County Landfill.	Cost included within \$2.5M for Recycling Depot.	Capital reserves funding through tipping fee adjustments
5 - Transfer, Disposal, and Alternative Solid Waste Management and Services	Implement the proposed improvements to the Public Transfer Area.	\$1.24M	Capital reserves funding through tipping fee adjustments

⁴ [Recycling Modernization Act](#)



	Finalize and release RFP to obtain bids for a Beneficial Landfill Gas Utilization Project at the Crook County Landfill.	Staff time + costs for landfill engineer to assist with reviewing proposals. Est. outside consultant costs \$30k.	Landfill operating budget
6 - Admin. and Financial Plan	County to adopt a capital reserve policy for landfill related assets. The policy will identify funding sources to pay for multi-year equipment replacement program and new facility improvements.	Staff time.	Potential funding sources include tipping fee adjustments, grants, Recycling Modernization Act, etc.

6.3. Recommendations

The following recommendations will address operational enhancements needed at the Crook County Landfill:

1. Implement the proposed improvements to the Public Transfer Area.
2. Finalize and release an RFP to obtain bids for a Beneficial Landfill Gas Utilization Project at Crook County Landfill.

7. Implementation Plan

Table 16 below summarizes each SWMP recommendation, cost impact, and potential funding sources. **The draft recommendations for the SWMP were presented to the Commissioners on January 15, 2025, and no suggested changes were made.**

These recommendations should be included in the current and future budget development process.

Table 16: SWMP Recommendations, and Implementation Timeframe

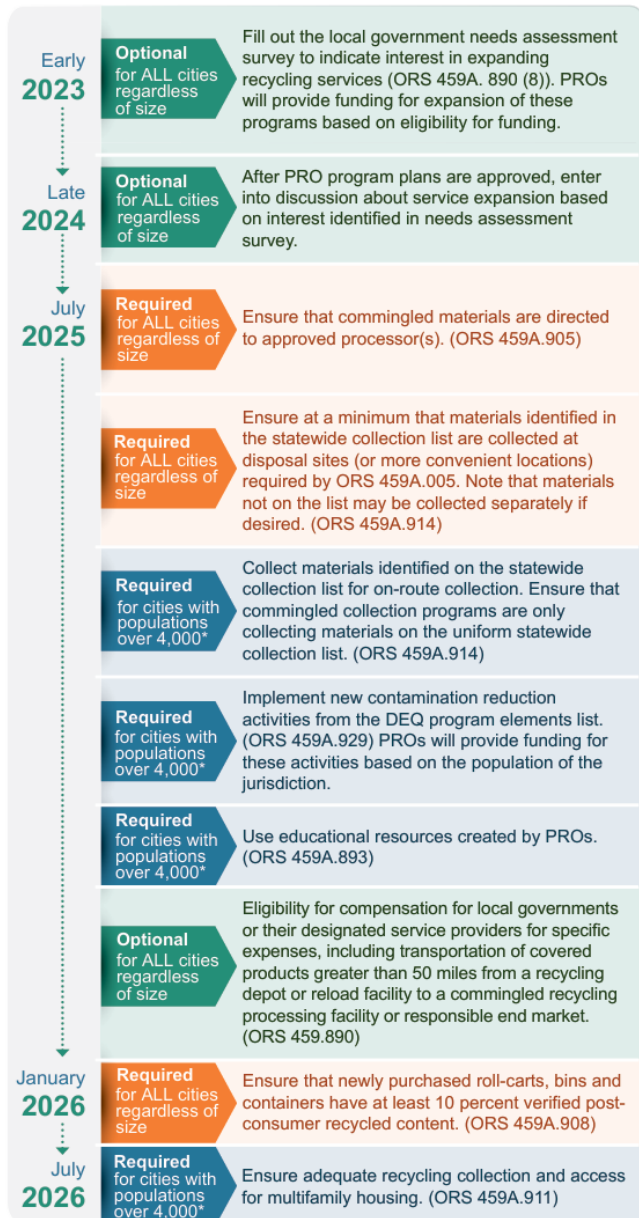
<u>SWMP Chapter</u>	<u>Recommendation</u>	<u>Timeframe</u>
3 - Waste Reduction/Recycling/Collection Programs	Enter into negotiations with Republic Services for a new and restated franchise agreement to address additional recycling services and upgrade the contract provisions to industry standards.	2025
	Seek funding through the Recycling Modernization Act to fund the Franchise Agreement related recycling service improvements as applicable.	2025-2026
	Seek funding through the Recycling Modernization Act to fund improvements at the Republic Services recycling depot in Prineville.	2025-2027
	Seek funding through the Recycling Modernization Act to fund new recycling depot at the Crook County Landfill. The	2025-2027



	County would likely fund bulky item-related improvements.	
	Collaborate with Deschutes County on recycling processing improvements planned by the County.	Ongoing
<u>SWMP Chapter</u>	<u>Recommendation</u>	<u>Timeframe</u>
4 - Household Hazardous Waste Collection Programs	County to fund the HHW-related improvements planned for the new recycling depot at the Crook County Landfill.	2026-2027
5 - Transfer, Disposal, and Alternative Solid Waste Management and Services	Implement the proposed improvements to the Public Transfer Area	2026
	Finalize and release a Request for Proposal (RFP) to obtain bids for a Beneficial Landfill Gas Utilization Project at the Crook County Landfill.	Tentative 2026
6 - Admin. and Financial Plan	County to adopt a capital reserve policy for landfill related assets. The policy will identify funding sources to pay for a multi-year equipment replacement program and new facility improvements.	

For implementation tasks related to the RMA, it's critical that Crook County staff continue their active engagement with Oregon DEQ and meet the local government requirements detailed in the graphic on the next page.

Local government requirements





Appendices

Appendix A – Proposed Recycling Depot Site Plan at Crook County Landfill

Appendix B – Proposed Public Transfer Area Expansion Site Plan at Crook County Landfill

Appendix C – Crook County Landfill – Gas Collection and Control System (GCCS)

Appendix D – Rough Order of Magnitude Cost Estimate for Public Transfer Area

Appendix E – Rough Order of Magnitude Cost Estimate for Recycling Depot

Appendix F – Crook County Funding Reserves Background Memo

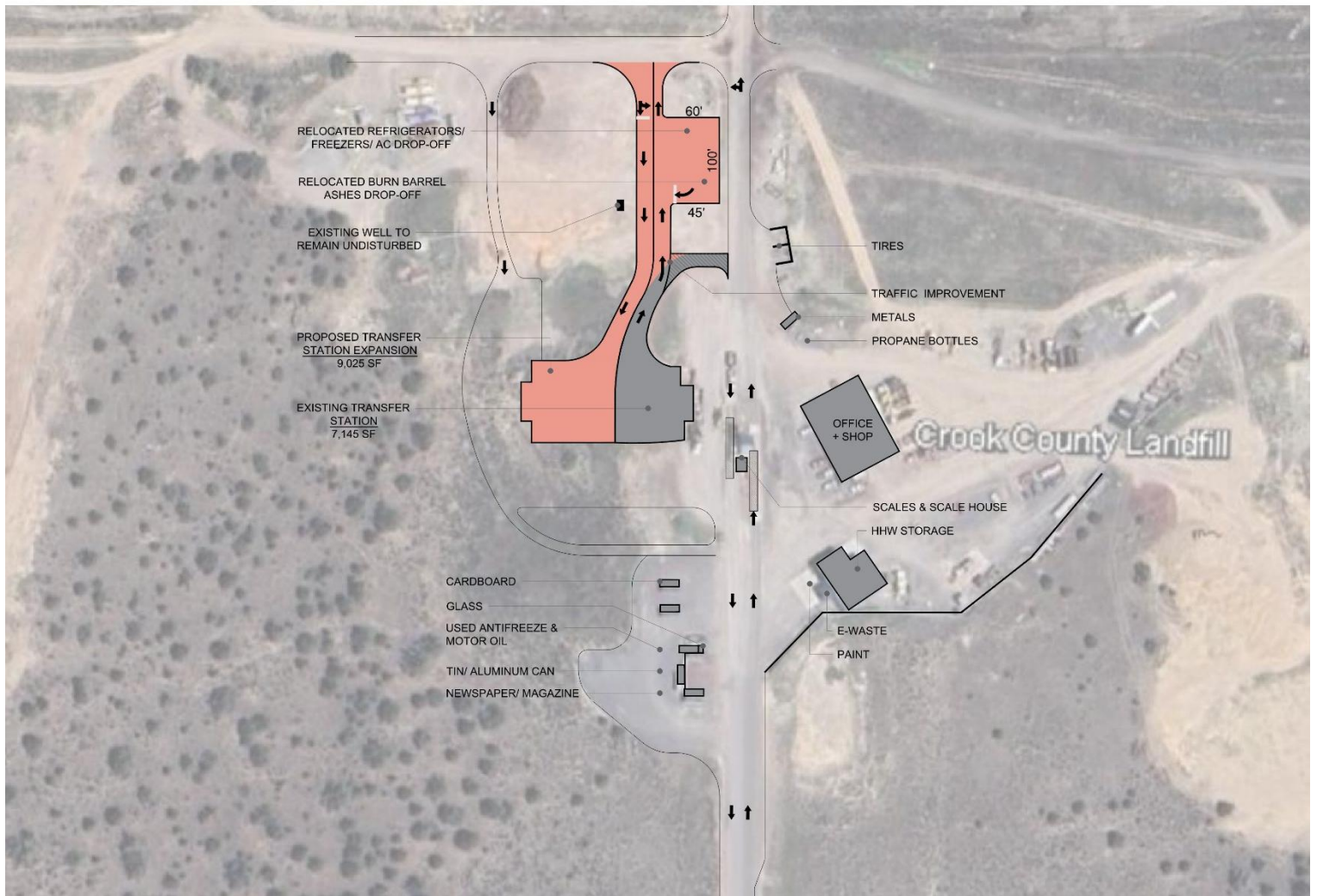


Appendix A - Proposed Recycling Depot Site Plan at Crook County Landfill





Appendix B - Proposed Public Transfer Area Expansion Site Plan at Crook County Landfill



SCALE: 1"=50'/0"

0' 25' 50' 100' 200'



SITE PLAN

CROOK COUNTY LANDFILL
110 SW LANDFILL RD, PRINEVILLE, OR 97754

Job No. 6053
01.09.2025
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Appendix C - Crook County Landfill – Gas Collection and Control System (GCCS)



Technical Memorandum

To: Jacquie Davis, Crook County Landfill Manager

From: Gerry Friesen PE, G. Friesen Associates, Inc.

cc: Kevin McCarthy, JRMA Architects/Engineers

Date: July 12, 2024

Re: Crook County Landfill – Gas Collection and Control System (GCCS)

Applicable Regulations

In October 2021, the Oregon Department of Environmental Quality (ODEQ) implemented new regulations (OAR 340-239) to manage landfill gas emissions. The rules require many landfills in Oregon to obtain an air quality permit, submit data on landfill characteristics, and monitor and/or control landfill gas emissions.

Based on the waste-in-place volume and calculated methane generation rates at the Crook County Landfill (CCLF) the CCLF exceeded the threshold that requires collecting surface emission monitoring (SEM) data for the CCLF quarterly and reporting results beginning with the quarter-ending on June 30, 2022.

Annual reports are to document that all quarterly SEM data and any follow-up remedial efforts remain below the threshold methane concentration of 200 parts per million by volume (ppmv).

For those landfills where any measured concentration of methane at the surface of the landfill remains greater than 200 ppmv, the rules require a:

1. Design Plan for a Gas Collection and Control System (GCCS) be submitted within one year of becoming subject to this rule (OAR 340-239-0110(1)(a)).
2. Gas Collection and Control System (GCCS) be installed and operating within 30 months after becoming subject to this rule (OAR 340-239-0110(1)(d)).

Current Status

The County is not required to operate a GCCS based on previous quarterly SEM results.

The Surface Emissions Monitoring 2023 Annual Report (PBS, February 2024) documents that all quarterly SEM data after follow-up remedial efforts were completed below the threshold methane concentration of 200 ppmv.

In 2023, initial instantaneous SEM results indicated a total of 22 of the 19,506 points (0.11%) initially exceeded the threshold limit concentration of 200 ppmv methane. The areas surrounding each of these points were remediated by the County within ten days of the initial exceedance. The remediated locations were re-monitored, and the results confirm that all instantaneous monitoring points were sufficiently remediated to achieve concentrations below the threshold limit of 200 ppmv methane specified in OAR 340-239-0800(3)(b). Figures 2, 3, 4, and 5 in the PBS report (see **Exhibit A**) show the 22 locations where the initial instantaneous threshold limits were exceeded. The locations are all in Cell 4 and predominantly at the interface between the leachate collection gravel layer and the top of the municipal solid waste (MSW) lift that is being constructed. The current method for remediation is to place a low permeability soil layer over the leachate collection gravel layer. If in the future this remedial method is no longer effective, installation of a Gas Collection and Control System (GCCS) system will be required.

Conceptual Design of Gas Collection and Control System

A conceptual design for a Gas Collection and Control System at the Crook County Landfill is shown in Drawing No. 1. Solid Waste Management Plan Update

February 2025, p. C-2



The conceptual design includes:

- **Four 6-inch Perforated Horizontals** will be installed in gravel trenches that are spaced approximately 125 feet apart.
- **A 6-inch Perforated Horizontal** will be installed at the interface between the top of the latest MSW lift and the leachate collection gravel on the west sidewall of Cell 4.
- **An 8-inch HDPE Pipe Header System** that is located on the north and east perimeter of Cell 4. The headers system will be sloped to drain to low points on the NW and SE corners.
- **Seven Wellheads** will connect each of the horizontal LFG wells to the Main Header. The wellheads will regulate flow and control the vacuum on the landfill gas field.
- **Two Condensate Sumps** are located at each of the low points in the Main Header system. The condensate sumps will be air-actuated and remove LFG condensate from the main header system.
- **A Landfill Gas Handling Skid** that includes 2 blowers that will maintain a vacuum of 45-in WC on the LFG field and discharge LFG to an Enclosed Flare or a beneficial user of the landfill gas.
- **An Enclosed Flare with a Combustion Air Blower** will combust the landfill gas that is collected.

Estimated Cost of Gas Collection and Control System

The estimated cost for a Gas Collection and Control System at the Crook County Landfill has been developed and is shown in **Table 1**. The total estimated cost is in the \$1.75 million range and includes a contingency of 20%.

The major component of the cost is the Enclosed Flare with Gas Handling Skid, which is required by the regulations. Specifications and a cost estimate for the Enclosed Flare with Gas Handling Skid have been included in **Exhibit B**. This exhibit also includes a drawing showing the equipment that is required and a proposed layout for the facility.

Beneficial Use of Landfill Gas

Landfill gas is a valuable resource and can be beneficially used to generate renewable electricity or natural gas. **Exhibit C** provides a Request for Proposal (RFP) that could be utilized by Crook County to obtain bids for a Beneficial Landfill Gas Utilization Project at the Crook County Landfill.

The RFP shown in **Exhibit C** is based on an RFP that was issued by Deschutes County in 2022. Various natural gas companies and other renewable energy providers responded, and an agreement has now been made to utilize landfill gas that is being generated at the Knott Landfill beneficially.

If Crook County would like to proceed with developing a Landfill Gas Utilization Project at the Crook County Landfill the following tasks will be required:

- **Task 1: Finalize the Landfill Gas Utilization Project RFP.** The RFP shown in **Exhibit C** is the first draft. Under this task, the RFP would be modified to include comments from Crook County.
- **Task 2: Project the Quantity and Quality of Landfill Gas.** The quantity and quality of landfill gas that could be collected from the landfill over the next 20 years or more would be projected under this task. The LFG quantity and quality calculations would be based on the type of solid waste received, the age of the waste, and its moisture content.
- **Task 3: Meet with Potential Landfill Gas End Users.** Several potential renewable energy end users within Crook County could greatly benefit from the landfill gas that is being generated by the landfill. Several potential end users include Facebook, Apple, or the natural gas/electricity utilities that are supplying natural gas/electricity to residents of Crook County. Under this task, the project team would meet with these end users to determine their level of interest and determine ways to structure the RFP so that it is attractive to potential responders.
- **Task 4: Issue an RFP for a Beneficial Landfill Gas Utilization Project at the Crook County Landfill.** Typically, a bid period of 45 to 75 days should be allowed.



- **Task 5: Select a Developer for the Beneficial Landfill Gas Utilization Project.** Selection criteria should be based on:
 - Previous experience in developing other similar projects.
 - Experience with the operation of Gas Collection and Control Systems.
 - Proposed approach and time schedule; and
 - Compensation to Crook County.

With this type of approach, Crook County might be able to beneficially use the landfill gas that is being generated by the Crook County Landfill.

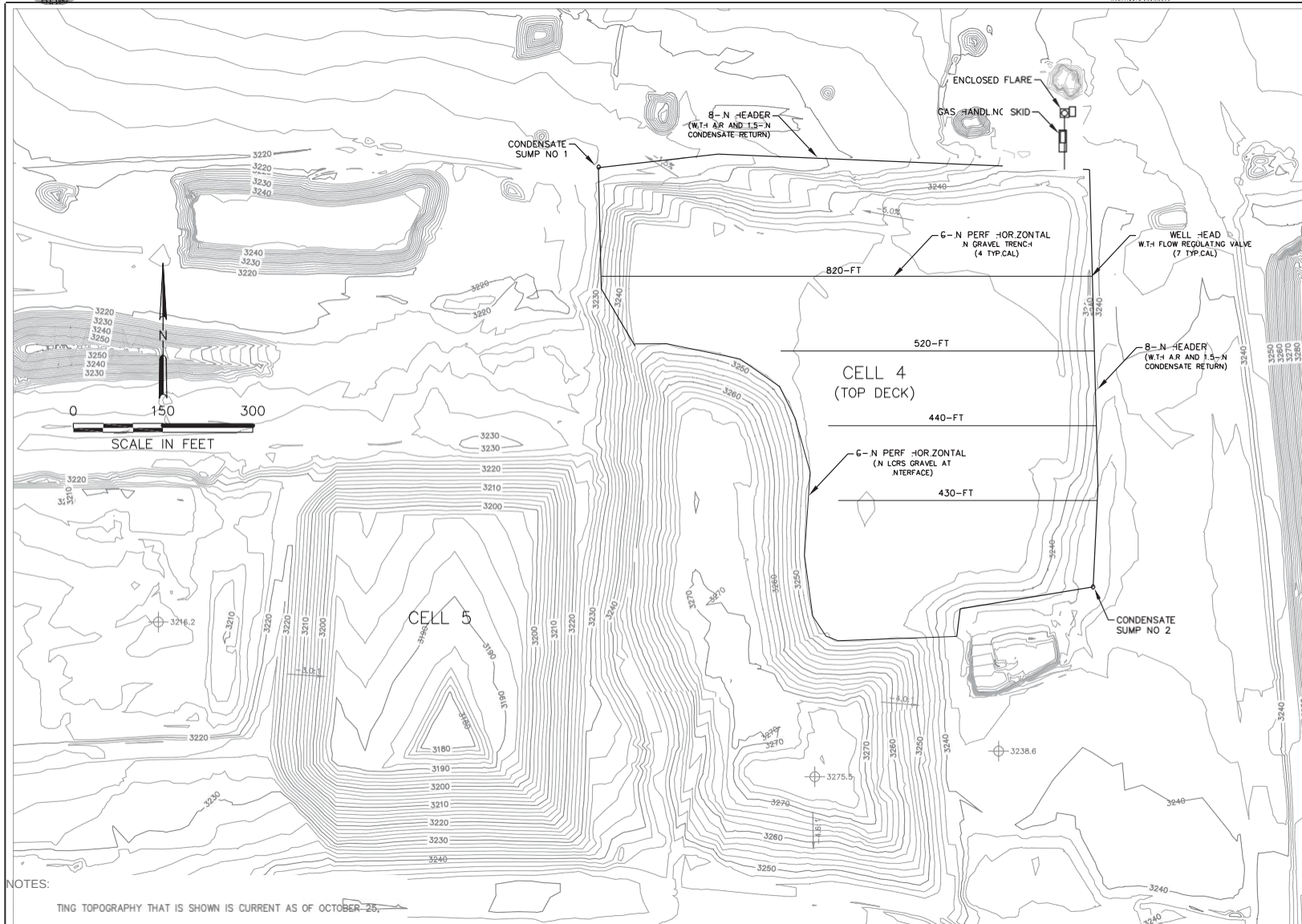


Crook County Landfill - Gas Collection and Control System

Table 1: Estimated Cost for Construction

Current as of July 12, 2024

<u>Item #</u> <u>Item</u>	<u>Approximate</u> <u>Quantity</u> <u>Unit</u>		<u>Unit</u> <u>Price</u>	<u>Total</u>
			(2024 Dollars)	(2024 Dollars)
1 Mobilization	100.0%	LS	\$50,000	\$50,000
2 6-inch Horizontal Wells in Gravel Trench	3,010	LF	\$30	\$90,300
3 8-inch Main Header	2,100	LF	\$40	\$84,000
4 Air and 1-1/2-inch Return Line	1,540	LF	\$10	\$15,400
5 Well Heads	12	Each	\$500	\$6,000
6 Condensate Sumps	2	Each	\$30,000	\$60,000
7 Enclosed Flare with Gas Handling Skid	1	Lump Sum	\$840,000	\$840,000
8 Concrete and Site Work	1	Lump Sum	\$150,000	\$150,000
9 Electrical Work	1	Lump Sum	\$50,000	\$50,000
Subtotal				\$1,345,700
Engineering and Contract Administration	10%			\$134,570
Contingencies	20%			\$269,140
Total Estimated Cost				\$1,749,410



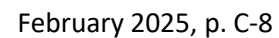
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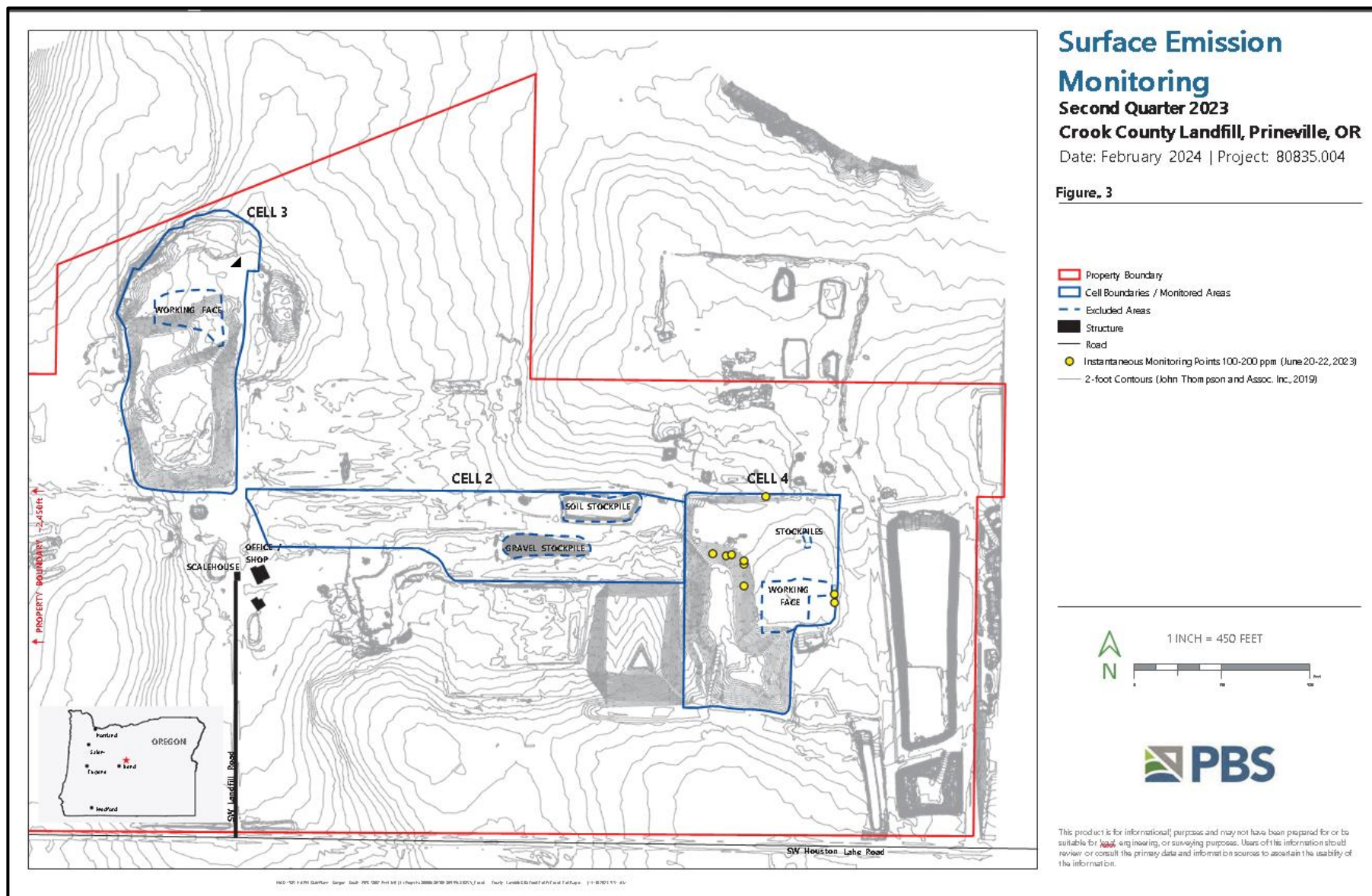


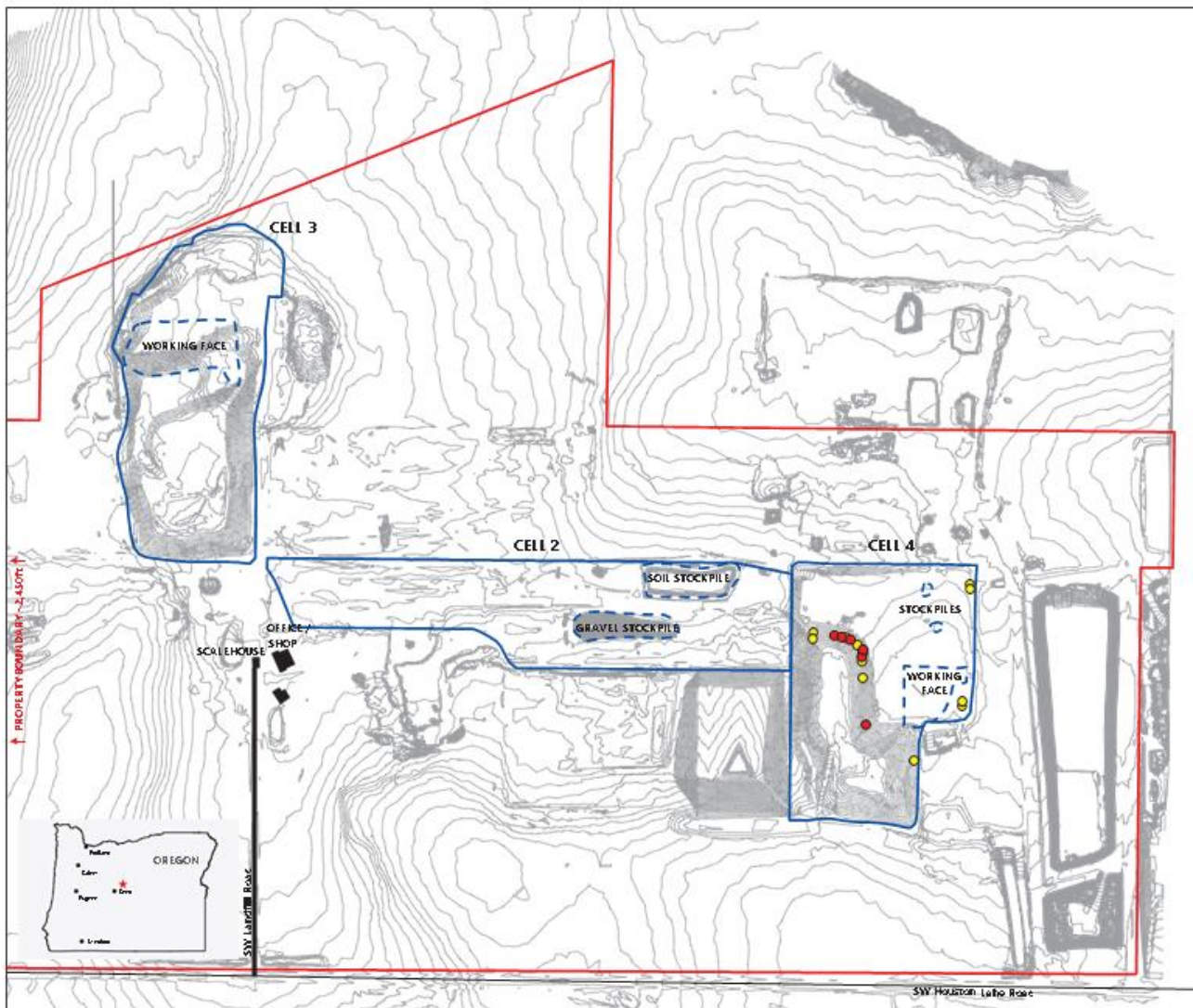
Exhibit A:

**Locations of 22 Instantaneous Monitoring Points that Initially
Exceeded the 200 ppmv Limit**

(from Surface Emissions Monitoring 2023 Annual Report by PBS (dated February 2024))







Surface Emission Monitoring

Third Quarter 2023
Crook County Landfill, Prineville, OR
Date: February 2024 | Project: 80835.004

Figure 4

- Property Boundary
- Cell Boundary / Ventilation Area
- Isolated Area
- Structure
- Flow
- Intermittent Ventilation Points (Lowest 200 ppm (September 3-7, 2023))
- Intermittent Ventilation Points (100-200 ppm (September 3-7, 2023))
- 2-foot Contours (John Thompson and Assoc. Inc. 2019)

1 INCH = 450 FEET



This product is for informational purposes and may not have been prepared for or be suitable for engineering or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the reliability of the information.

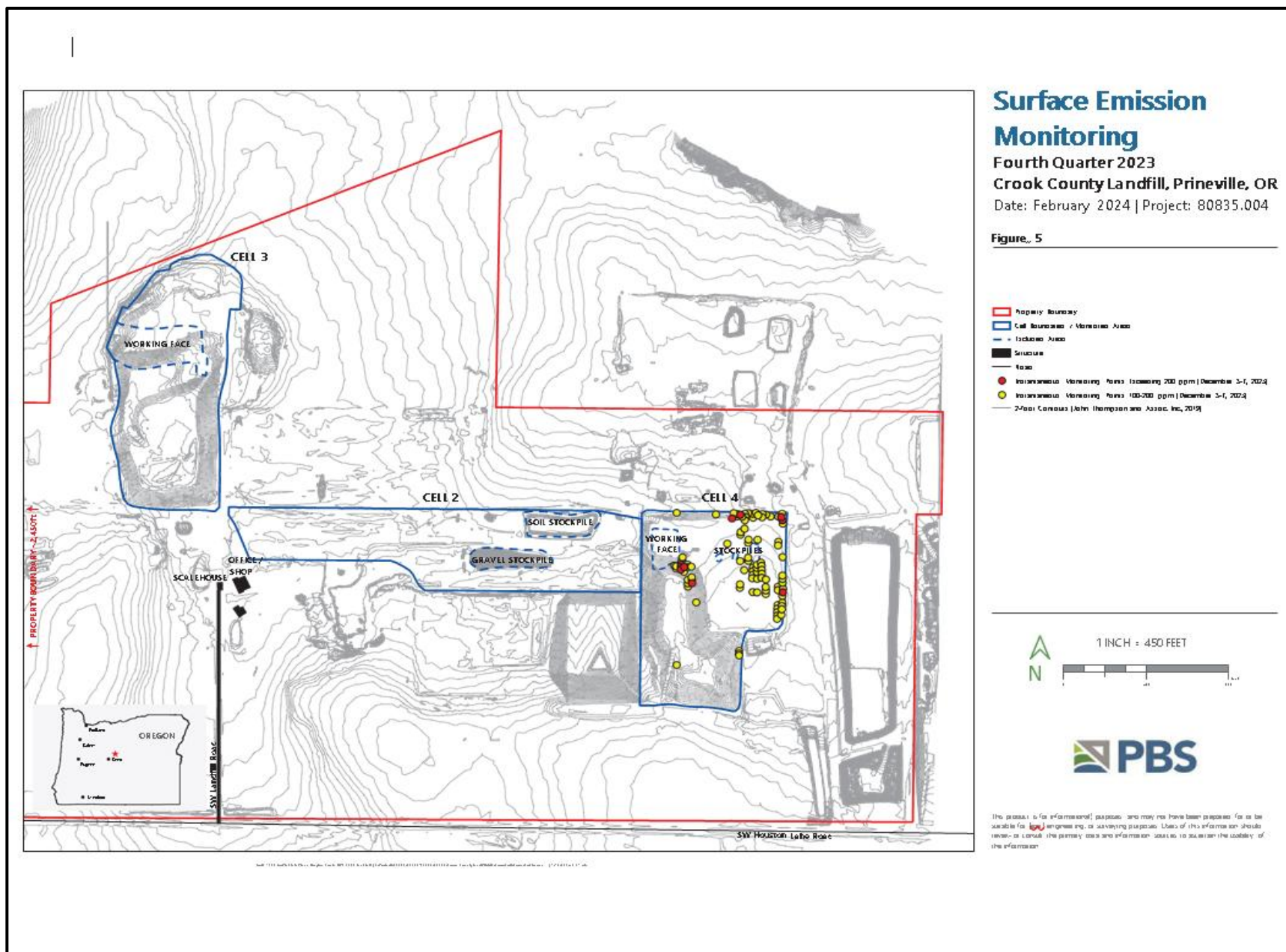




Exhibit B:

**Specifications, Cost Estimate and Drawings for
Gas Handling Equipment and Enclosed Flare**

(from Perennial Energy, July 11, 2024)



Flare Station Cost Estimate from Perennial Energy

Dated July 11, 2024

15 MMBtu/hr. Ultra-Low NOx Flare Station Estimated Price: \$840,000

Estimated Lead Time: 10 weeks for submittals; 30 to 40 weeks for delivery from approvals.

Includes 2 blowers sized for 400 SCFM each. Assuming Lone Star with their MC5 with surge less impellers. Also, the most expensive blower vendor these days. Atlas Copco will likely be a direct alternative for a lower cost.

Estimated Blower Performance: -45 inWC vac, 2.0 psig outlet (min. required for burner), 100F inlet, 100% RH.

Estimated blower motor: 40 HP, 480VAC/3ph (maybe 30 HP)

Estimated Flare Size: 78 in. OD x 27 ft. OAH; assume a 10 ft. x 10 ft. area for flare with a 5 ft. x 8 ft. area for the combustion air blower.

Combustion air blower motor: 30 HP, 480VAC/3ph Emissions: down to 0.025 lb./MMBtu NOx, 0.20 lb./MMBtu CO

Includes Allen-Bradley PLC, C-More EA9 HMI, ABB or AB drives, and standard PEI controls package.

Assume a single 200 A @ 480VAC/3ph/60Hz utility service Assume a 6" ANSI 125/150# flanged inlet connection.

Assume we'd supply all interconnection minus the interconnect conduit. We'll either supply cable and tray or we'll run conduit to edge of skid to be picked up by the electrician on site.

Colby Staggs

Application Sales Engineer



Direct: 417-505-7189

Cell: 901-300-0194

Main: 417-256-2002

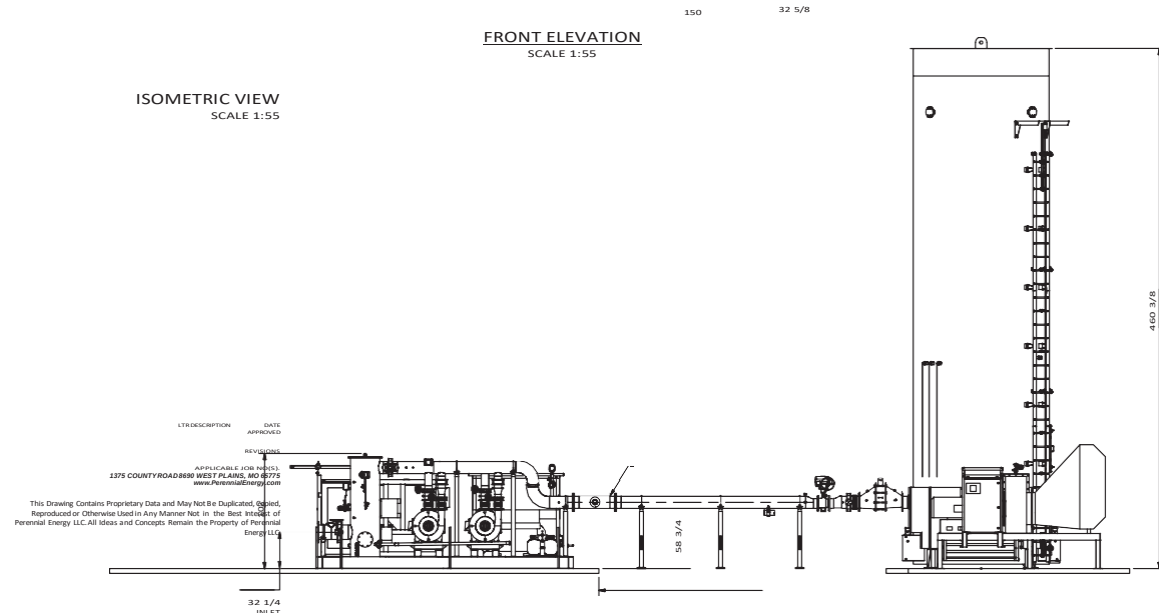
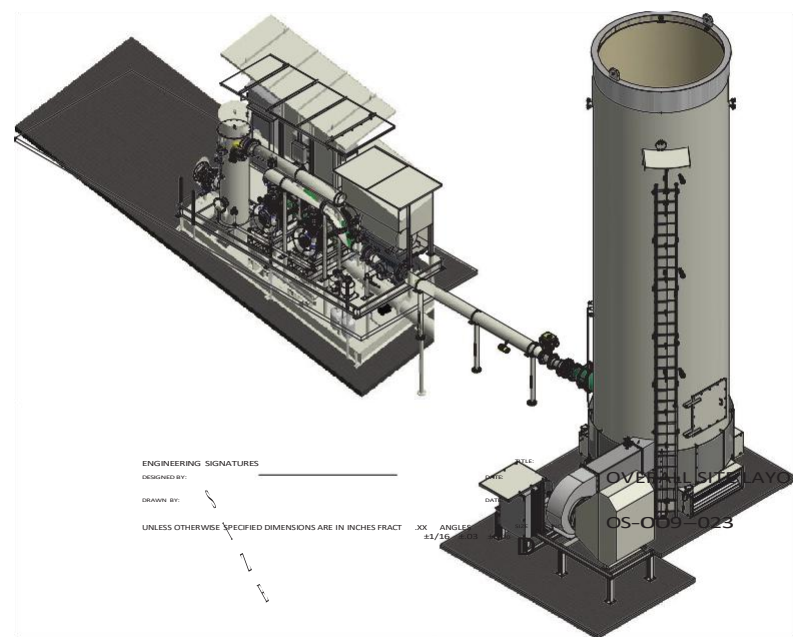
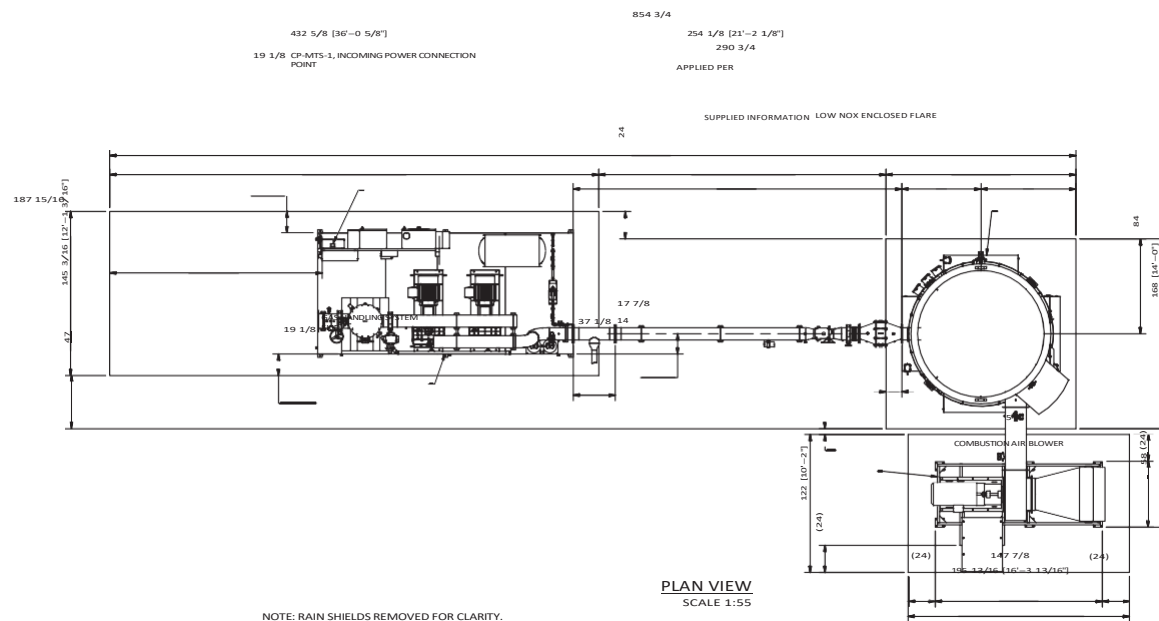




Exhibit C:

Request for Proposal Landfill Gas Utilization Project at Crook County Landfill

(Based on the RFP for a Landfill Gas Utilization Project that was issued by Deschutes County in 2022)



REQUEST FOR PROPOSALS LANDFILL GAS UTILIZATION PROJECT CROOK COUNTY LANDFILL CROOK COUNTY, OREGON

Crook County is soliciting proposals to develop, construct and implement a project for the beneficial use of landfill gas (LFG) generated at Crook County Landfill, located in Crook County, Oregon.

LFG conversion projects generating electricity, producing renewable natural gas or similar beneficial uses will be considered. Crook County will only consider technologies and developers with a proven and successful record of development and operation of LFG utilization projects in the United States.

Inquiries are to be referred to Jacquie Davis, Crook County Landfill Manager at: Phone: (541) 777-4566

Email: Jacquie.Davis@crookcountyor.gov

Note that no oral interpretations of this RFP will be made to any Proposer. Any oral discussion, explanation or instruction is not binding. Any information generated through Proposer inquiry will be shared with all Plan holders. All questions must be submitted in writing and directed to Jacquie Davis, Crook County Landfill Manager at Jacquie.Davis@crookcountyor.gov.

IMPORTANT: Prospective proposers MUST register using the Contact Information Form provided by Crook County. Any follow-up information (responses to questions, addenda, etc.) will only be distributed to registered plan holders. Failure to register will result in proposer disqualification.

Proposals must be received by 4:00 p.m. _____, 2024 and are to be submitted using one of the following formats:

Format 1: Direct submittal of one printed copy and one digital pdf copy addressed to Jacquie Davis, Crook County Landfill Manager at Crook County, 300 NE Third Street, Prineville, OR 97754.

Format 2: Email submittal of a digital pdf copy addressed to Jacquie Davis, Crook County Landfill Manager at Crook County, email: Jacquie.Davis@crookcountyor.gov. Note: Crook County assumes no responsibility for email submittals that are late due to internet outages or other technology problems.

A. COUNTY RESERVATIONS & REQUIREMENTS

Crook County reserves the right to reject any response to this Request for Proposals not in compliance with all prescribed procedures and requirements and to accept any submittal and



negotiate a final contract that is in the best interest of the County. Crook County reserves the right to waive irregularities or discrepancies in submittals if the County determines that the waiver is in the public's best interest. Crook County reserves the right to reject any and all submittals or to cancel this Request for Proposals if it is in the public's best interest to do so, as determined by Crook County.

Proposers are solely responsible for the cost of preparing their responses to this Request for Proposals. Crook County is not liable to any Proposer for any loss or expense caused by or resulting from the cancellation or rejection of a solicitation, bid, quotation, proposal, or award. This is not a contract offer and with this solicitation, the Proposer assumes any liability for the costs incurred in the preparation and transmittal of proposals in response to the solicitation.

Be advised that proposals and all documents submitted in response to this RFP are subject to public disclosure as required by applicable state and/or federal laws. If a Proposer intends to submit any information with their proposal which Proposer believes is confidential, proprietary, or otherwise protected from public disclosure (trade secret, etc.), in addition to identifying same in proposal transmittal letter, Proposer must separately bind and clearly identify all such material. The cover page of the separate binding must be **red**, and the header or footer for each page must provide as follows: "Not Subject to Public Disclosure." Where authorized by law, and at its sole discretion, Crook County will endeavor to resist disclosure of properly identified portions of the proposals.

Errors and omissions in this Request for Proposals shall be called to the attention of the Department of Solid Waste prior to the submittal due date so that an appropriate addenda or clarifications may be issued, if warranted. Failure to do so on the part of the successful Proposer (hereinafter referred to as the Developer) does not relieve him/her responsibility for a correct and completely finished project scope. Only a written interpretation or correction by addendum shall be binding.

B. AGREEMENT

The Developer shall be required to enter into a formal agreement for the subject services and to provide insurance certificates and other information required by the County. Any potential agreement resulting out of a negotiation phase following this RFP process will include specific contract terms pertaining to site use, financing, operations, regulatory compliance, compensation, ownership, security, insurance, indemnification, warranties, performance guarantees and conditions which reflect the unique nature of a LFG utilization project to be implemented by the Developer.

Respondents should outline any specific terms and conditions they would like the County to consider in the Proposal. Crook County reserves the right to include terms and conditions specific to an LFG utilization process in any potential agreement.

C. CONDITIONS OF WORK

Proposers are required, prior to submission of proposal, to carefully examine the requirements of this Request for Proposals, the conditions for the contemplated work and the level of effort required to implement the project.

Each Proposer must inform themselves of the conditions relating to the execution of the work and make themselves thoroughly familiar with all contract documents. Failure to do so will not relieve



the Proposer of his obligations to enter into a contract and implement the project in strict accordance with the contract documents.

Each Proposer must inform themselves on all laws and statutes, both Federal and State, relative to the implementation of the project, the execution of the work, the compliance with state and federal law, the employment of labor, worker health and safety, protection of public health, access to the work and similar requirements.

D. PROPOSAL QUALIFICATIONS

Crook County will only consider proposals that satisfy the following requirements:

- LFG conversion technologies proposed must have a proven record of operation with a minimum of three successful and current operations of commercial scale facilities in the United States.
- Proposer and development team have a proven record of successful implementation and ongoing operation of a minimum of three commercial scale LFG conversion facilities in the United States.

E. FACILITY BACKGROUND

Crook County Landfill is located about three miles southwest of Prineville, Oregon. The facility has been in continuous operation since before the 1970's and accepts MSW, construction/demolition debris, commercial waste, and industrial waste.

In 2023, the facility received approximately _____ tons of solid waste and is currently averaging about _____ tons of waste/day. The landfill has a remaining disposal capacity of over 100 years.

Crook County Landfill is permitted by the Oregon Department of Environmental Quality (DEQ) under Solid Waste Disposal Permit Number 74 and Title V Operating Permit Number _____. Copies of these permits can be obtained from the County.

The facility currently does not have an active LFG collection and control system (GCCS). The facility manages leachate through an on-site recirculation system which also provides for additional LFG extraction capacity when leachate pumps are not operating.

Utility infrastructure immediately adjacent to Crook County Landfill that may be available for wheeling of electricity includes a substation owned and operated by the local electrical power utility.

Crook County has current land use authority for LFG management facilities on the landfill site. The County will grant a property lease of up to 3 acres of County-owned land adjacent to the active area (Cell 4) of the Crook County Landfill as appropriate for the Developer's LFG utilization facility.

The Developer will be required to obtain appropriate land use and site plan approval through Crook County's Community Development Department for any additional acreage required or alternate.



location, as well as improvements contemplated, including any and all additional permits and approvals required for facility construction and operation.

It is important to note that there are private residences adjacent to Crook County Landfill and the County is sensitive to any impacts that may affect nearby residents.

F. LANDFILL GAS DATA

NOTE: LFG quantities and properties presented in this Request for Proposals are estimates. No express or implied warranty is made as to the accuracy or suitability of the data provided or if it being representative of future conditions.

The following information on LFG at Crook County Landfill is available:

- LFG generation modelling study conducted in 2024_ (*Crook County Landfill LFG Projection*, _____2024).
- Preliminary evaluation to characterize the quality of the facility's LFG for potential use for energy conversion conducted in 2024 (*Preliminary Landfill Gas Characterization*, PBS Engineering and Environmental, Inc., _____, 2024).
- 2023 Title V Tier II non-methanogenic organic compound (NMOC) emission rate calculations for Title V permit and New Source Performance Standards requirements (*Title V Tier II Non-Methanogenic Organic Compounds Emission Calculations*, PBS Engineering and Environmental, Inc., _____).

Additional information specific to Crook County Landfill may be available upon request and will be made available to all plan holders registered for the project. All plan holders registered for the project will be notified when additional materials are made available during the solicitation phase of this project.

G. SCOPE OF SERVICES

For the purposes of this solicitation, the Scope of Services includes, but is not limited to, the following general tasks and responsibilities to be undertaken by the Developer at no cost to Crook County:

- Financing of the LFG conversion project
- LFG conversion facility planning, design, permitting for project development and implementation (land use, construction, operation, etc.)
- LFG conversion facility construction, operation, maintenance, regulatory compliance, decommissioning at the end of service life.
- LFG and/or conversion product marketing, sale, and distribution



- GCCS operation, maintenance, expansion, and regulatory compliance. Proposers are advised that the State of Oregon has recently established new rules regulating the emission of methane gas from landfills (ORS Division 239) and expansion of the Crook County Landfill GCCS will be required to meet these rules. Additionally, improvements to the existing GCCS may be necessary to meet the Division 239 rules.
- Regulatory and permit compliance for LFG emissions, migration control and nuisance odor control.

H. COMPENSATION TO CROOK COUNTY

While Crook County's primary objective of this solicitation is to see beneficial use for LFG generated at Crook County Landfill, compensation to the County from revenue realized through the LFG conversion project will be a factor in considering proposals received. Compensation from the sale of LFG conversion products, the value realized from environmental attributes (renewable energy credits, carbon/greenhouse gas offset credits, renewable identification number, CALCFS credit, OR clean fuels program, etc.), and other incentives afforded from the conversion of LFG shall be considered in compensation proposals.

Assuming some level of compensation to Crook County in exchange for granting the Developer the right to operate the GCCS and receive and utilize LFG from Crook County Landfill for beneficial use, the Developer shall agree to compensate the County based on the quantity of LFG delivered to the Developer's facility, revenue generated from the sale of LFG conversion products or other mutually agreed upon metrics and revenue sharing arrangement.

I. PROPOSAL CONTENTS

The proposal shall, at a minimum, address each of the following items and be organized in accordance with this section.

1. Executive Summary

The Executive Summary shall provide an overall synopsis of the proposal including brief descriptions of the Proposer's experience and qualifications, financial strength, approach to GCCS operation and improvements and operation and the facility that the proposer is offering to implement.

2. Parent Company Confirmation

Crook County is seeking a guaranteed long-term LFG utilization project. A Developer who is wholly or partially owned by another corporation or other entity must submit a parent company confirmation to certify that any potential agreement with the Developer resulting from this RFP process will be co-signed by the Developer's parent company. A Developer who does not fall into this category must note that in their Proposal.



3. Proposer Experience and Qualifications

- a. A description of a minimum of three currently operating LFG conversion facilities where the Proposer served or currently serves as the project developer, owner and/or operator of the LFG conversion facility including:
 - A discussion of the current level of involvement the Proposer has in the operation and management of each facility.
 - Contact information for the landfill owners providing LFG to the Proposer's facilities.
 - A description of the LFG conversion facilities and processes, capacity, longevity of operation, conversion product metering and marketing, etc.
 - A description of compensation arrangements with the partner landfill facilities
 - A description of the arrangements with the partner landfill facilities for procurement of LFG, including identifying responsibilities for the operation and maintenance of the GCCS system, expansion responsibilities, cost-sharing arrangements, regulatory and permit compliance, etc.
 - A discussion of any regulatory or permit compliance issues including notices of non-compliance, violation, enforcement action, etc. issued to the owner or operator of the LFG conversion facilities or the host landfills.
 - List of firms that the Proposer teamed with for the implementation of the reference LFG conversion facilities (permitting, design, construction, operation, and maintenance)
- b. A discussion of any LFG utilization facilities developed, owned, and/or operated by the Developer that have been shut down within the last five years. The information should include dates of operation, reason for shut down, capacity, conversion technology, location, conversion product purchaser and landfill contact information.
- c. A discussion of the Proposer's implementation team for this project including, but not limited to business, financial and technology partners. If determined at proposal submittal time, technology and infrastructure providers, design and permitting consultants, LFG conversion facility operator, etc.

4. Project Approach

- a. A discussion of the Proposer's LFG conversion facility technology contemplated in response to this RFP, including a description of the conversion process and technology, infrastructure requirements and space needs.
- b. A discussion of the Proposer's LFG conversion facility impact mitigation strategies (lighting, noise, emissions, traffic, etc.)



- c. A discussion of the Proposer's approach to the planning, design, permitting, construction, and operation of the LFG conversion facility.
- d. A discussion of modifications/improvements that the Proposer foresees to the existing GCCS infrastructure and/or operation that should be considered for initial development and operation of the Proposer's LFG conversion facility and compliance with the recently promulgated ORS Division 239 rules.
- e. A discussion of the Proposer's approach to GCCS operation, regulatory monitoring, and compliance.
- f. A description of the Proposer's approach to LFG conversion product marketing and securing end use purchasers.
- g. A proposed schedule for project implementation includes milestone completion dates.
- h. A discussion of project lifespan and affecting factors.

5. Project Pro-Forma and Financial Information

- a. A detailed presentation of total estimated capital costs, project financing, debt service, fees, insurance, operations, and maintenance costs for the proposed LFG conversion facility and GCCS operation, expansion, and maintenance.
- b. A detailed discussion of LFG conversion product marketing, revenue projections and assumptions.
- c. A detailed discussion on County revenue sharing structure, projections, method of determination, and assumptions.
- d. A certified copy of the Proposer's two most recently audited year-end financial statements showing income, expenses, and outstanding debt.
- e. A list of any pending or recently completed litigation and parties in which the Proposer is the defendant and provides the amount of damages being contested.
- f. A list of any litigation in which the Proposer is a litigant and the amount of financial recovery being sought.

6. Proposal Security

A proposal bond or certified check in the amount of \$10,000 shall accompany each proposal. Bonds or checks shall be made payable, without condition, to Crook County. Crook County reserves the right to retain proposal securities of all reasonable proposals until 120 days after proposals are due. Proposal security for proposals deemed unacceptable shall be returned.



immediately to the Proposer at the time the determination is made. If a Proposer withdraws his proposal, fails to negotiate in good faith with Crook County, or if after the County and the Proposer agree on terms of a contract, the Proposer fails to sign a contract and provide any necessary bonds within 30 days after the contract has been presented to the Proposer, the entire amount of proposal security shall be forfeited to Crook County.

7. Model Agreement

If available, a model agreement for possible use as a basis for the development of an agreement between Crook County and the Proposer.

J. PROPOSAL SUBMITTAL SCHEDULE

Proposals must be received by 4:00 p.m. _____, _____ 2024 and are to be submitted using one of the following formats:

Format 1: Direct submittal of one printed copy and one digital pdf copy addressed to Jacquie Davis, Crook County Landfill Manager at Crook County, 300 NE Third Street, Prineville, OR 97754.

Format 2: Email submittal of a digital pdf copy addressed to Jacquie Davis, Crook County Landfill Manager at Crook County. Email: Jacquie.Davis@crookcountyor.gov. Note: Crook County assumes no responsibility for email submittals that are late due to internet outages or other technology problems.

K. SELECTION PROCESS

Submittals will be reviewed and evaluated by a multi-disciplinary committee of Crook County staff and a retained consulting firm. At the County's option, Proposers may be asked to provide a presentation to the evaluation committee. Proposers are not permitted to lobby County staff or selection committee members prior to the final selection.

Providing the committee arrives at a successful selection, the committee will enter contract negotiations with the successful Proposer. In the event the County is unable to come to an agreement on contract terms with the selected Proposer, at the County's option, the County may elect to enter into negotiations with an alternate Proposer.

Criteria that will be considered in the proposal evaluation process and weighted scoring include the following:

- Experience, qualifications and performance of the Proposer and team in the successful development, implementation, and operation of LFG utilization projects similar to the technology advanced in the proposal (30 points).
- Demonstration of successful and active projects of a similar nature, preferably with public sector landfills (30 points).



- Experience with GCCS operation, maintenance, construction, and regulatory compliance as part of the operation of LFG conversion facilities (25 points)
- Proposer's pro-forma and financial documentation (25 points).
- Proposer's overall approach to the project (25 points)
- Compensation proposal to Crook County (25 points).
- References for Proposer's LFG conversion facility projects (20 points).
- Quality, clarity, and organization of the proposal (20 points)



Appendix D - Rough Order of Magnitude Cost Estimate for Public Transfer Area



Crook County SWMP Update - CIP projects				
Phase 1 - Public Transfer Expansion only				
Planning ROM Construction Cost Estimates, Per AACE Class 5 Definition				
1.07.2025 (revised)				
Disclaimers and Assumptions:				
1. The ROM was developed based on AACE Class 5 definition.				
2. The ROM was developed based on 0% level of design effort.				
3.The numbers should be used for long-turn capital planning purposes only.				
4. Due to the current volatile bidding environment and market trends, JRMA cannot guarantee the accuracy of our ROM cost estimates. However, the expected accuracy range for the ROM cost estimate will be +200% to - 100% which will be based on information gathered from our recent projects and the data from the 2023 edition of RSMeans.				
5.The ROM cost estimate excludes any environmental remediations and any geotechnical remediation/site improvements related activities.				
	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Subtotal</u>
Mobilization and Demobilization	LS	\$1	\$20,000	\$20,000
Clear and Grub	LS	\$1	\$8,000	\$8,000
Demo Site (allowance)	LS	\$1	\$5,000	\$5,000
Excavation	CY	\$2,500	\$15	\$37,500
Landfill excavation	CY			\$0
Fill	CY	\$4,000	\$15	\$60,000
Compacted Gravel (Transfer Area)	SY	\$7,000	\$20	\$140,000
10' Transfer Trailer Top load wall	LF	\$200	\$1,000	\$200,000
Stormwater Treatment (Allowance)	AC	\$2	\$120,000	\$180,000
Hydroseeding (allowance)	LS	\$1	\$2,000	\$2,000
Signage (allowance)	Each	\$10	\$250	\$2,500
Striping (Allowance)	LS	\$1	\$4,000	\$4,000
Relocating Fire Burn Barrel Ashes Drop-Off	LS			\$0
Guard Rail Around the TS area	LF	\$300	\$45	\$13,500
Misc. Site Concrete/apron (Allowance), 15' wide x 100' x 8"	CY	\$40	\$800	\$32,000
Misc. Site Improvement (Allowance)	LS	\$1	\$20,000	\$20,000
			Subtotal	\$724,500
<i>CY = Cubic Yard, , SY = Sq. Yard, SF = Sq. ft., CF = Cubic ft., LF = Linear ft.</i>				
Total Construction Costs				\$724,500
General Condition	15.0%			\$108,675
Contractor's fee	7.0%			\$50,715
Insurance	1.0%			\$7,245
Bond	0.0%			\$0
Contingency	20.0%			\$144,900
			Subtotal	\$1,036,035
Indirect Cost (permits, design, testing/inspection, soil reports, surveys, construction management, legal fee, etc.)	20.0%			\$207,207
		TOTAL		\$1,243,242



Appendix E - Rough Order of Magnitude Cost Estimate for Recycling Depot



Crook County SWMP Update - CIP projects				
Phase 2 Only - Recycling Depot at Landfill				
Planning ROM Construction Cost Estimates, per AACE Class 5 Definition				
1.07.2025 (revised)				
Disclaimers and Assumptions:				
1. The ROM was developed based on AACE Class 5 definition.				
2. The ROM was developed based on 0% level of design effort.				
3. The numbers should be used for long-turn capital planning purposes only.				
4. Due to the current volatile bidding environment and market trends, JRMA cannot guarantee the accuracy of our ROM cost estimates. However, the expected accuracy range for the ROM cost estimate will be +200% to - 100% which will be based on information gathered from our recent projects and the data from the 2023 edition of RSMeans.				
5. The ROM cost estimate excludes any environmental remediations and any geotechnical remediation/site improvements related activities.				
	Unit	Quantity	Unit Price	Subtotal
Mobilization and Demobilization	LS	1	\$40,000	\$40,000
Clear and Grub	LS	1	\$15,000	\$15,000
Demo Site (allowance)	LS	1	\$8,000	\$8,000
Excavation	CY	4,500	\$15	\$67,500
Fill	CY	4,200	\$15	\$63,000
Compacted Grave (Lower Area)	SY	2,500	\$20	\$50,000
Compacted gravel (HHW)	SY	3,000	\$20	\$60,000
Asphalt Paving (Bulky)	SY	2,800	\$30	\$84,000
Compacted Gravel (Recycling)	SY	2,800	\$20	\$56,000
Other Asphalt Paving (Allowance)	SY	1,000	\$ 30	\$30,000
Site Retaining Wall 4' high	LF	1,000	\$300	\$300,000
Z-wall 8' high	LF	350	\$800	\$280,000
Stormwater Treatment (Allowance)	AC	2	\$120,000	\$240,000
Hydroseeding (allowance)	LS	1	\$3,000	\$3,000
Signage (allowance)	Each	20	\$250	\$5,000
Striping (Allowance)	LS	1	\$10,000	\$10,000
Pay Booth + Foundation	LS	1	\$50,000	\$50,000
Misc. Site Concrete/apron (Allowance)	CY	80	\$800	\$64,000
Misc. Site Improvement (Allowance)	LS	1	\$30,000	\$30,000
			Subtotal	\$1,455,500
<i>CY = Cubic Yard, , SY = Sq. Yard, SF = Sq. ft, CF = Cubic ft, LF = Linear ft.</i>				
Total Construction Costs				\$1,455,500
General Condition	15.0%			\$218,325
Contractor's fee	7.0%			\$101,885
Insurance	1.0%			\$14,555
Bond	0.0%			\$0
Contingency	20.0%			\$291,100
			Subtotal	\$2,081,365
Indirect Cost (permits, design, testing/inspection, soil reports, surveys, etc.)	20.0%			\$416,273
		TOTAL		\$2,497,638



Appendix F – Crook County Funding Reserves Background Memo



Crook County Funding Reserves

The **Government Finance Officers Association** (GFOA.org) represents public finance officials throughout the United States and Canada. The association's more than 20,000 members are federal, state/provincial, and local finance officials involved in planning, financing, and implementing governmental operations in each jurisdiction. The following are recommendations from the GFOA regarding funding.

There are two primary types of reserves: insurance and savings.

Insurance: Addresses the reserve's role in guarding against risks like revenue instability, catastrophic events, and cash flow instability.

Savings: Addresses a reserve's role in accumulating cash to pay for future costs that are not affordable within a single year's revenue. Capital assets are examples of such a cost.

GFOA's Fund Balance Guidelines for the General Fund best practice recommends that—at a minimum—general-purpose governments, regardless of size, maintain unrestricted budgetary fund balance in their general fund of no less than two months (17% of annual fund expenditures) of regular general fund operating revenues or regular general fund operating expenditures.

However, the GFOA recommends maintaining a target working capital balance based on the cash cycle⁵ (incoming revenues and outgoing expenditures), service demand, control over rates, and management control. From 2010 to 2018, Portland Metro established fees at its transfer stations to maintain a 14% fund balance. While Metro's 14% balance seems low, other considerations, such as ancillary sources of available revenue such as equipment and stabilization reserves, loans from other funds, and borrowing capacity were weighted to calculate the 14% level.

Funds for Multi-Year Capital Planning

GFOA recommends that state and local governments prepare and adopt comprehensive, fiscally sustainable, and multi-year capital plans to ensure effective management of capital assets. A prudent multi-year capital plan identifies and prioritizes expected needs based on a strategic plan, establishes project scope and cost, details estimated amounts of funding from various sources, and projects future operating and maintenance costs. A capital plan should cover five to 25 years or more⁶.

The GFOA recommends the following steps to establish a capital replacement reserve.

1. Identify the Assets / Equipment Needs
2. Determine the Financial Impacts – Estimate the future cost of the equipment/assets.
3. Prioritize the Capital Requests – Determine the year of replacement and amount to assess.
4. Develop a Comprehensive Financial Plan

The Figure on the following page is an example of an equipment replacement schedule for the Crook County Landfill.

⁵ <https://www.gfoa.org/materials/working-capital-targets-for-enterprise-funds>

⁶ <https://www.gfoa.org/materials/multi-year-capital-planning>





- The Landfill Equipment Replacement Schedule calculates the future cost of the assets by compounding the price paid for the current asset by an escalation factor (5% for this table).
- The Total Cost of Assets is the expected amount that will be expended to purchase the assets scheduled for replacement.
- Incoming Waste Tons that generate revenue are estimated for the respective years.
- The Cost per Ton is the additional amount added to the disposal fee to pay for equipment replacement annually. Over the ten-year schedule, the average cost per ton for equipment replacement is \$1.13.

Many jurisdictions segregate the amounts assessed for capital replacement in a separate fund as an encumbrance to ensure adequate reserves prior to purchasing the equipment.

Comparable Jurisdictions

The following jurisdictions utilize a multi-year approach to capital planning.

Oregon

1. Deschutes County (Knott Landfill)
2. Portland Metro (St. Johns Landfill (closed) and Transfer Stations Repair and Replacement)
3. Lane County (Short Mountain Landfill)

Washington

1. King County (Cedar Hills Landfill / Multiple Transfer Stations)
2. Pierce County (LRI Landfill)
3. City of Richland (Richland Landfill)

Other Jurisdictions

1. South Bayside Waste Management Authority in San Carlos, California (Transfer Stations and Material Recovery Facilities)
2. Ada County, Idaho (Ada County Landfill)
3. City of Laramie, Wyoming (Landfill and Collection Operations)