

Planning for the Future of Regional Waste Management

Frequently Asked Questions on the 2019 Comprehensive Solid Waste Management Plan

Responsible waste management is a top priority as we plan for the economic and environmental future of our region.

The *2019 Comprehensive Solid Waste Management Plan* (Comp Plan) adopted by the King County Council on April 24, 2019, was developed in close cooperation with local jurisdictions, private sector waste management experts, and the input of numerous stakeholders and community members. While it addresses many topics, the plan zeroes in on three key priorities:

- Increasing the regional recycling rate from the present 54 percent to 70 percent so these materials can be made into new products.
- Expanding and modernizing services at current garbage and recycling transfer stations, and adding new facilities in underserved areas such as northeast and south King County.
- Identifying how to dispose of garbage after 2028 when the currently built areas at the Cedar Hills Regional Landfill are expected to be full.

This document outlines responses to common issues and questions about the Comp Plan and landfill management.

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BIRD and WILDLIFE MANAGEMENT

What steps are taken to keep animals, especially large birds like eagles, out of the garbage at the Cedar Hills Regional Landfill?

Operations staff work closely with biologists from the consulting firm Innovative Wildlife Solutions to ensure bird and wildlife protection, and to deter scavenging by the animals. Active areas of the landfill are covered daily to keep animals and birds out of the garbage. Bird control techniques include trapping and culling, and deterrents such as scarecrows. Pyrotechnics are also used from time to time.

Eagles' dietary preferences are spawning trout and salmon, followed by other animals and carrion. They are mainly attracted to the landfill because of warmth and absence of human activity.

Eagles are protected under the Federal Bald and Golden Eagle Protection Act, so while our operations cannot harass or harm the birds, they can and do take steps approved by wildlife biologists to make the landfill a less desirable habitat option.

At the suggestions of neighbors, operations staff have also reached out to Seattle's Audubon Society and the Urban Raptor Conservancy for additional insight on eagle management. Staff will also tap the expertise of fish and wildlife managers in Alaska, where the bald eagle population is much larger.

Who determines if wildlife control progress is satisfactory?

The Comp Plan requires the Solid Waste Division to track and report on its bird management practices.

I suspect animals or birds are carrying landfill garbage onto my property. What do I do?

Landfill neighbors can call the division at 206-477-4466 to report issues.

BUFFERS/PROPERTY ACQUISITION/FORESTRY

How much buffer separates the landfill from nearby properties?

When the Cedar Hills Regional Landfill was originally permitted in the early 1960s, County Commissioners decided it should have a 1,000-foot-buffer instead of the 250 foot buffer required by state laws in place at the time.

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Was there ever encroachment on the buffer?

Aerial photos from 1966 show that garbage was buried within the 1,000-foot-buffer on the eastern boarder near 22 homes. There is no county record to indicate why that was done.

Is King County acquiring homes from property owners near the area where the buffer was reduced?

King County has already worked with willing sellers to purchase their homes, and our offer remains open to the other property owners in that particular area who would be interested in selling.

Are there any efforts to improve the buffer zone?

Yes. Long term efforts to improve the quality of the buffer include working with a landscape architect from King County Roads to add more trees to the western buffer, and maintaining/restoring the size of the east buffer by acquiring properties from willing sellers along the east buffer.

COMMUNITY ENGAGEMENT

What does King County do to understand landfill neighbor concerns?

Staying connected with the public, and especially our facility neighbors, is core to our commitment to customer service excellence. Examples of our community engagement since the beginning of 2018 include a 60-day public comment period on the Comp Plan that coincided with a well-advertised online open house and three in-person open houses including one for landfill neighbors.

Over the past year and a half, there was one public landfill tour; three semi-annual landfill neighbor meetings; a scoping Open House and 30-day comment period for facilities relocation at the landfill, a scoping notice sent to 3,700 people; participation in a councilmember's open house last October 2019 for landfill neighbors; public notification plus a two-week comment period on a proposal to temporarily extend hours at Cedar Hills during the Viaduct closure; nine e-newsletters to 590 neighbor subscribers and two mailed letters to about 900 neighbors; and multiple correspondence, phone calls, and face-to-face conversations with neighbors.

How do the public or cities give feedback to the division?

The division has two advisory committees – the Metropolitan Solid Waste Advisory Committee ([MSWAC](#)) and the Solid Waste Advisory Committee ([SWAC](#)). MSWAC comprises staff and elected officials from the cities that participate in the county's regional solid waste system. MSWAC members are appointed by their respective cities. SWAC members are appointed by the Executive and confirmed by the King County Council. SWAC members represent the diverse interests of residents,

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waste management companies, the recycling industry, public interest groups, labor, local elected officials, recyclable markets, and manufacturers located in King County. SWAC would be the committee landfill neighbors could serve on.

Are community members invited to serve on the committees or attend the meetings?

MSWAC and SWAC monthly meetings are open to the public, and agendas are typically published a week in advance. Minutes are taken at every meeting to summarize presented material, document deliberative discussion of committee business, and to record motions approved by the committee. Meeting minutes from the prior month are presented to committee members for review, and members have the opportunity to request amendments and corrections before minutes are approved by the chair.

Landfill neighbors have served on SWAC in the past and we are currently recruiting for a specific committee vacancy to be filled by a landfill neighbor. Serving on the committee does require a commitment – meetings are held each month, usually in downtown Seattle at King Street Center. Although no landfill neighbors have yet expressed an interest, we are hopeful that we will soon benefit from their additional perspective on this important advisory committee.

I've heard there has been legal action against the landfill in the past. What's the history there?

Cedar Hills was originally permitted at a time when there were few regulations in place to govern the design and operation of landfills. There were also very few neighbors around the facility when it first opened in 1965. Since then, environmental regulations have become increasingly rigorous. As the community around the landfill grew, expectations for how essential public facilities should operate were also raised substantially.

Our regulators and elected officials today hold Cedar Hills Landfill accountable for meeting stringent environmental and operational requirements, and for taking all reasonable measures to reduce impacts to the community.

Regrettably, problems with landfill operations in years past prompted legal action by people who lived nearby. We've taken a number of corrective actions to address the issues that led to legal settlements, and we are committed to honoring the terms of these agreements moving forward.

We have and will continue to honor our settlement agreements.

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COMP PLAN ADOPTION and SITE DEVELOPMENT

What is the current situation with regard to capacity at the Cedar Hills Regional Landfill?

According to population and economic projections, and current recycling rates, the existing cells at the Cedar Hills Regional Landfill will be full around 2028. The Comp Plan directs King County to extend the life of the landfill and gives us the needed time to identify and evaluate the best future disposal alternatives.

How is King County planning to further develop the landfill?

As part of a [site development plan](#), King County's Solid Waste Division is studying alternatives to maximize the capacity of the Cedar Hills Regional Landfill to meet the county's disposal needs as recommended in the King County Council approved *2019 Comprehensive Solid Waste Management Plan*. We are preparing an environmental impact statement (EIS) that is scheduled for public review and comment in fall 2020.

King County will not expand the landfill beyond its current boundaries. Our long-term plan centers on extending the life of the landfill by maximizing capacity on the existing footprint. This would entail building a new cell, relocating support facilities to a different location on the landfill property, and using that space for solid waste disposal. This could extend the landfill's operational life from 7-18 years and provide enough of a planning window to have a new alternative in place when the landfill closes.

What long-term waste disposal alternatives were considered in the Comp Plan?

The Comp Plan presented Waste-to-Energy and waste export by rail as alternatives to further landfill development. These alternatives are workable options that come with tradeoffs around cost, environmental impact, community impact and risk.

A Waste-to-Energy (mass burn facility), which would incinerate garbage to generate electricity, offers opportunities to explore advanced technologies for waste disposal. It is the most technically and financially complex option outlined.

Rail transport to an out-of-county landfill is a viable alternative. The City of Seattle transports its collected waste to landfills in eastern Washington and Oregon. But rail capacity has limitations, and the increasing demand for rail transport among both public and private entities as our region keeps growing adds uncertainty to the cost and feasibility of this option.

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After considering the alternatives, the Comp Plan recommends that the Cedar Hills Landfill be further developed, maximizing its capacity as we continue working with public and private partnerships to increase the volume and value of recycling. Further development of the landfill is the most cost-effective and feasible option to serve our region's need for responsible waste disposal at this point in time.

The Cedar Hills Regional Landfill will eventually fill up. Future Comp Plan updates will explore alternatives for when local landfill capacity is no longer available.

Will the Cedar Hills Regional Landfill ever be allowed to build above its current permitted height?

It's important to emphasize that the landfill currently has permitted height requirements, and that King County would not violate the terms of permits or settlement agreements around landfill development, including height limitations. Any future development at the landfill would be subject to a project planning and permitting process that would involve public notification as well as the opportunity to provide comment or input that would inform design guidelines.

How can I get more information on the Solid Waste Comp Plan?

People can read the Comp Plan online at www.kingcounty.gov/SWDCompPlan.

COST and FINANCES (Comp Plan Alternatives)

What is the cost difference between the three disposal options identified in the comp plan?

The financial and environmental costs of the viable disposal alternatives were evaluated in the Comp Plan, which is outlined in Table 6-1 on Page 162.

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Table 6-1. Comparison of key disposal option characteristics (planning level estimates)

Comparative Attribute	Further Develop Cedar Hills	Waste Export To An Out-of-County Landfill	Waste To Energy Facility
<i>Cost per Ton¹</i>	\$41	\$55	\$136
<i>Life Cycle Greenhouse Gas Emissions (EPA's WARM Model)</i>	(134,000) ² MTCO ₂ e	(78,000) ² MTCO ₂ e	12,000 to 80,000 ³ MTCO ₂ e
<i>Annual Greenhouse Gas Emissions (EPA's eGGRT)</i>	91,000 ⁴ MTCO ₂ e/year	91,000 ⁴ MTCO ₂ e/year	1,200,000 MTCO ₂ e/year
<i>Recycling Rate</i>	No change	No change	2% increase
<i>Risks</i>	SEPA, Permitting	Rail Capacity, Control	Siting, Sizing

1 Estimated cost per ton in 2029.

2 WARM model calculation for 2029. (King County SWD). For more information, see Appendix D.

3 WARM model calculation. (Normandeau 2017).

4 Landfill options show estimated emissions in 2029.

Extending the life of the landfill is the most cost-effective and has the lowest climate impact while we plan for the future of regional waste management after the landfill is full.

ENVIRONMENTAL HEALTH

What about the health and safety of neighbors?

The Cedar Hills Regional Landfill is staffed 24/7 with skilled professionals who are trained and certified in the best management practices established by the Solid Waste Association of North America, or SWANA. By far the most commonly reported issue is odor.

Protecting our workers and the public is a top priority. Our landfill operations are subject to permit conditions and regulations by Public Health – Seattle & King County, the US Environmental Protection Agency (EPA), Puget Sound Clean Air Agency (PSCAA) and the Washington State Department of Ecology to safeguard public health, the environment, and the nearby community. SWD Operations is responsible for ensuring compliance for 33 groundwater monitoring wells near an aquifer, seven stormwater monitoring points, and over 700 gas wells.

We regularly monitor and report on the quality of the air, groundwater, leachate (landfill wastewater) and stormwater, and we restrict or prohibit the disposal of many types of waste that could be harmful or toxic.

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Greater detail about our environmental monitoring is available in the Cedar Hills Landfill 2018 Annual Report, which is online at <https://your.kingcounty.gov/dnrp/library/solid-waste/facilities/CHRLF-annual-report-2018.pdf>. People can also call us at 206-477-4466 to request an emailed or paper copy.

What does King County do to reduce impacts of the landfill to nearby communities?

To control odors and reduce potential for wildlife to get into and carry away garbage, the active areas at the landfill are covered before the end of each working day. Staff also monitor for odors, and specially trained Nasal Rangers on staff do around-the-clock odor checks five times a day. People who notice odors, or any other issue they feel is related to the landfill operations, can call the Solid Waste Division at 206-477-4466 to get a response right away. People should always call 911 first if they believe there is a potential emergency, or a risk to public safety, health or property.

Are there unlined areas at the landfill?

Environmental controls have been in place at Cedar Hills since the 1980s, and that includes installation of protective bottom linings, as well as covering refuse areas daily to reduce impacts like odors and birds. There are two unlined areas of the landfill – the Main Hill and the Southeast Pit. Both are located on the east side of the landfill and were developed before regulations requiring bottom liners were established. Those two areas are equipped with environmental controls, including having a cap on top to prevent infiltration, as well as leachate and landfill gas collection.

LANDFILL COVER MATERIAL

What type of cover material is used at the landfill?

King County takes daily action to prevent odors, control wildlife, and deter rodents and pests by covering active areas of the landfill daily. The cover also improves gas collection, which works on a vacuum system.

Active area side slopes are covered with soil, and a thick, durable cloth tarp is placed on the top at the end of each working day. When the tarp is covering the area, the landfill gas collection pipes are operating on a vacuum to capture landfill gas and send it to Bio Energy Washington for processing.

The type of cover the division is allowed to use is decided by regulators. The Comp Plan directs King County to implement best practices around landfill cover, which is consistent with our current practices, but includes additional reporting requirements.

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LANDFILL GAS MANAGEMENT

What is the status of energy recovery at the landfill now?

It's important to point out that innovation is already happening at our current facilities. Through partnerships with Puget Sound Energy and Bio Energy Washington, landfill gas collected at Cedar Hills produces enough renewable energy to heat 19,000 homes annually, which reduces greenhouse gas emissions and supports broader County goals to address climate change. Some of the gas produced is converted to electricity, some gas is cleaned of impurities and returned to the regional pipeline.

Revenue from the landfill gas-to-energy partnership brought in \$8 million in 2017 which helps offset solid waste disposal operational costs.

How is landfill gas managed?

High-tech equipment is used to monitor, control, and measure the landfill gas characteristics and volume as it is captured within the vacuum-based system. King County performs quarterly surface scans of the landfill to seek out potential fugitive emissions and address them as appropriate. It is the frequent re-evaluation of the system performance and maintenance that ensures the system is well-managed and functions optimally.

Once collected, landfill gas is conveyed via pipeline to Bio Energy Washington for processing. Some of the gas is converted to electricity for use on site by Bio Energy Washington, however most is cleaned of impurities and made into compressed natural gas and sold to Puget Sound Energy.

While international standards for measuring landfill gas vary from country to country, in the U.S., the EPA serves as the chief regulator and establishes the measurement models. To inform the most accurate data points for input to the EPA models, King County conducts periodic waste characterization studies.

What about landfill gas odors?

At Cedar Hills, all supervisors, leads and landfill gas operators have been trained to recognize odors and evaluate the source and concentration levels of reported and detected odors. The training also features tools and techniques specifically designed to counteract desensitization to certain odors. The landfill gas staff has developed a site-wide monitoring program to include daily site-wide odor observations five times a day, day and night. These observations are recorded on paper as well as in an electronic database.

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Anyone who detects the smell of natural gas, or believes there is a gas leak or any other emergency related to landfill operation should call 911.

ODOR MANAGEMENT/AIR QUALITY

How is air quality managed around the landfill, especially controlling odors?

The Cedar Hills Regional Landfill is staffed 24/7 with skilled professionals who are trained and certified in the best management practices established by the Solid Waste Association of North America, or SWANA. Around-the-clock odor checks are conducted five times a day on and offsite on weekdays and three times a day on-site on weekends by operations experts trained in odor detection. In addition to these regularly scheduled checks, specially trained staff monitor areas commonly associated with prior odor complaints.

What tools or monitoring devices are used to detect and control odors?

The division uses Nasal Ranger training and technology to monitor and detect odors. The Nasal Ranger system is used across many sectors including state and local governments, wastewater treatment operations, landfill operations, environmental health agencies, and even police departments to determine presence and strength of odors. Use of the equipment takes the subjectivity out of odor measurement and provides a consistent standard for field staff to document odor strength. The Nasal Ranger training data is even used as a guide for regulatory enforcement in some jurisdictions.

Prevention is our most effective strategy. To control odors, and reduce potential for wildlife to get into and carry away garbage, the active areas at the landfill are covered before the end of each working day.

Who permits air quality for the Cedar Hills Regional Landfill?

Puget Sound Clean Air Agency (PSCAA) serves as the regulator over SWD's operations for all matters relating to air quality. People can call PSCAA to report complaints, but we also ask that they call our 24/7 hotline at 206-477-4466 so we can diagnose and correct any issues that might be related to landfill operation.

How many odor complaints were reported in the past year?

Puget Sound Clean Air Agency reported 160 complaints called in in 2018. By contrast, in 2018 the division received 14 complaints to SWD's odor hotline. An analysis of the 2018 neighborhood odor checks confirms that refuse accounts for less than five percent of the odors detected.

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Though neighbors always have the option to contact PSCAA, we encourage them to contact us as well because if there is a problem related to our operation, we can take corrective action right away.

I live near the landfill. If I detect odors of garbage or natural gas, who do I call?

Anyone who detects the smell of natural gas, or believes there is a gas leak or any other landfill-related emergency should call 911.

Neighbors are encouraged to report a non-emergency problem by calling our 24/7 hotline at 206-477-4466. Complaints to the issue-reporting hotline receive immediate response.

RECYCLING RATES

How does the Comp Plan address recycling?

The Comp Plan identifies strategies for how the County will manage recycling for the next six to 20 years. Developed with the division's partnering cities and two advisory committees, a main priority of the 2019 Plan is how to achieve a 70 percent recycling rate.

The current recycling rate in King County is 54 percent, far exceeding the national average of 34 percent. But we can do more. We estimate as much as 70 percent of what goes to the landfill every day – about 95 semi-truckloads – is recyclable or reusable material.

What are some specific examples of recycling actions outlined in the Comp Plan?

The 2019 Plan provides a menu of recycling actions cities and the county can take to enhance recycling in their jurisdictions.

For example, about a third of the material that goes to the landfill is food waste that could be composted and used to nourish crops and return nutrients to the soil. King County convened an Organics Summit earlier this spring comprised of cities, haulers, waste management experts and academics to identify strategies to develop markets for this material.

Construction and demolition waste (C&D) makes up one-third of the solid waste generated in the county. King County requires that readily recyclable C&D materials (metal, cardboard, wood, concrete, asphalt, brick and drywall) be recycled, which furthers the division's Zero Waste and carbon emissions reduction efforts. In 2018, the division added an additional C&D recycling facility to the privately managed locations that manage C&D, bringing the total number of approved facilities to fourteen.

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Education is also part of our strategy. A record 245 King County schools (more than 151,000 students) are currently participating in the Green Schools program that helps teach students important lessons on recycling and conservation. New features of the program include a food rescue initiative that diverts unopened and uneaten food from being wasted. In 2018, nearly 13,000 of food and drinks were rescued and redistributed to communities in need.

Finally, we're making our services more accessible and affordable as part of our commitment to equity and social justice. The new Cleanup LIFT program, modeled after Metro Transit's Orca LIFT, provides a \$12 discount to low-income self-haul customers who recycle yard waste, clean wood and refrigerant-type appliances at a County recycling and transfer station.

Which areas have the highest recycling rates?

Recycling rates vary among our regional communities. Single family recycling rates range from a high of 65 percent in some areas to as low as 34 percent. For multi-family housing, rates range from 61 percent to as low as 5 percent.

Education is an important part of recycling, as is ongoing coordination with haulers and cities. People can make the biggest environmental impact by recycling right. That means making sure recyclable materials are empty, clean and dry before being put in the bin.

SEISMIC CONCERNS

Are there known faults on or close to the landfill?

The design of the Cedar Hills Regional Landfill design was evaluated and approved by the State for seismic stability. While it is true that Cedar Hills Regional Landfill is in a seismic impact zone, there has been no displacement on fault lines in the vicinity of the landfill during the Holocene period, which encompasses the past 11,000 years. The seismic design of landfills is governed by the State's requirements of "Subtitle D" (40CFR258).

WASTE-TO-ENERGY

Is King County considering a Waste-to-Energy facility?

King County is open to the possibility of new technologies for regional waste management, and future comprehensive plan updates could further explore new alternatives, including a Waste-to-Energy option. But without further development, the landfill is currently slated to reach capacity by 2028 and an eight-year time frame to site, permit, build, finance and commission a complex facility is not realistic. A Waste-to-Energy facility still requires landfill disposal capacity.

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What about the possibility of a waste-to-energy facility in the future after Cedar Hills is full?

The Comp Plan directs King County's Performance, Strategy, and Budget (PSB) office to work with the Solid Waste Division to prepare a progress report by December 31, 2021 on long-term disposal options.

Concurrently, PSB is managing a consultant contract for a waste-to-energy study that was completed in October 2019. The study will help inform future work.

In consultation with our city partners, it is anticipated that the post-Cedar Hills disposal method will be selected as part of the next Comp Plan update. We will begin that update in 2021.

King County is open to the possibility of new technologies for regional waste management, and future comprehensive plan updates could further explore new alternatives, including a Waste-to-Energy option.

We recognize many in our region are supporters of this option, and invite them to engage in with other stakeholders and community members in regional discussions around future planning efforts.

WATER QUALITY/AQUIFER

What steps does King County take to protect water quality?

The division is responsible for routine water quality monitoring and reporting on 68 groundwater wells onsite and around the site perimeter.

A regional aquifer flows beneath portions of the Cedar Hills Regional Landfill from the South to the Eastern border. SWD monitors the regional aquifer at 19 wells on a quarterly basis and monitors an additional 14 wells semi-annually. Incoming water quality is impacted by the former Queen City Farm, a Superfund site Boeing is responsible to clean up, which is located just to the south of Cedar Hills. Our monitoring shows that groundwater leaving the landfill site is in compliance with federal drinking water standards.

I heard that an aquifer near the landfill is at risk of contamination by 2058. Is that true?

No. The aquifer beneath the landfill is not at risk of contamination in 2058 because action is underway now to address legacy contamination that originated at a Boeing-managed Superfund site south of the landfill. A remediation study is being developed to identify the most appropriate cleanup actions of the historic contamination and to ensure it doesn't leave the site. Portions of the study have already been approved by Ecology while exploration of additional efforts is pursued.

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The former Queen City Farm, now a Superfund site Boeing is responsible to clean up, was found to have contributed to historic contamination discovered at Cedar Hills in the 1980s that was confined to areas of the landfill that continue to be closely monitored. King County continues to send our quarterly groundwater reports and annual reports to the EPA and Boeing.

Alternate formats available: 206-477-4466, TTY Relay: 711