

**Cedar Hills Regional Landfill
Spring 2023 Community Meeting
March 29, 2023
In-person Presentation**

Facilitator Kalyn Brady opened the meeting. Tonight's speakers are:

Pat McLaughlin, Solid Waste Division Director

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Kevin Singer, Bio Energy Washington Plant Manager

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Laura Belt, Solid Waste Division Supervising Engineer

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Joseph Newton, Cedar Hills Regional Landfill Supervisor

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Introduction

Pat McLaughlin welcomed everyone. The goal of this semi-annual meeting is to provide an update on construction, environmental monitoring, and new technologies; to get feedback from members of the community; and to answer questions. Pat shared his excitement to have this meeting once again in-person and expressed gratitude to all those who came.

The Division staff work hard to manage the solid waste in King County and we will continue to improve in our everyday work. We appreciate the partnership we have with BEW and are happy to have Kevin Singer here.

The County is advancing an initiative called **Re+**, which refers to rethinking what we know as recycling. Re+ continues to build on the fundamentals of recycling – reduce, reuse, recycle – and seeking to amplify our efforts through policies and partnerships. We spend a lot of time trying to educate and inspire people to reuse, but the problem remains that 70 percent of materials coming into the landfill do not belong there.

We are trying to increase our capability to divert these materials from the landfill. Some of the materials, like food waste, attract pests and produce odors, and better things can be done with them than burying them. We want to add more incentives for recycling. Part of the approach to incentive comes at the legislative level; we've been doing legislative work with programs like Extended Producer Responsibility (EPR), which brings the missing component of producers to the table. Many producers do not recycle the materials they generate because they are not required to do so, and EPR seeks to change that. EPR has worked well with commodities such as e-waste and paint.

We are also looking at partnerships that bring new technologies forward to process these materials. Our most recent partnership is with Georgia Pacific to handle and sort our mixed solid waste to recover

reusable and recyclable materials. We are halfway through a three-month pilot that is showing a 45 percent recovery rate from the waste. Recovery rates typically run 55 to 60 percent. Technologies like this can mean less tonnage and food waste will come to the landfill. We are excited about these transformational opportunities and are encouraged by our partnerships with the cities to move this effort forward.

If there are concerns, call the 24/7 landfill hotline at 206-477-4466. There is always someone at the landfill.

Kalyn Brady noted that the audience can ask questions during the Q&A.

Bio Energy Washington (BEW): Kevin Singer

In 2008, a partnership was established between BEW, the Solid Waste Division (SWD) and Puget Sound Energy (PSE). The BEW plant recovers around 80 percent of methane from the landfill gas and converts it to renewable natural gas for beneficial use through a series of compression and separation processes. About 70 to 75 percent of that is then delivered to PSE through the PSE and Williams pipeline. The balance is used for power needed to run the BEW facility. This renewable natural gas is used to produce renewable power for about 15,000 to 25,000 homes a year. BEW's three core values are the safety and health of employees and the community, environmental excellence, and continuous improvement in every aspect of business.

At any time, those with immediate concerns regarding BEW operations should call 911. For questions about operations, there is a hotline at 425-392-3918 from which callers should expect a response within the week.

There is 24-hour continuous processing at the plant and there are always at least two qualified technicians on site. There have been no recordable injuries or environmental exceedances in the last 12 months, nor in several years. In 2022, BEW achieved 96 percent uptime, one of our highest levels, and is working for further improvement.

There have been sustained improvements in BEW's Generator House catalysts, and electrical reliability, and sulfur media change-outs are conducted routinely. The technologies are continuing to improve. The plant averages a daily production of 3,512 MMBtu/day. The historic high is about 4,200 MMBtu.

In November 2022, BEW completed its annual emissions test on the Generator House and Thermal Oxidizer.

No significant modifications or changes are planned that would adversely affect noise, odor, or the community. BEW will continue routine maintenance work, inspections, and media replacement to ensure reliable operations, and will continue to work to maximize recovery of methane from the processes. They are investing capital in insulation/cladding for large vessels. Where possible, BEW tries to ensure that media are reused.

Construction and Environmental Monitoring: Laura Belt

SWD has begun a pilot project for automated landfill gas well adjustments to allow us to quickly respond to changes in quality and flow. There's continual evaluation of gas flow and quality to identify needed

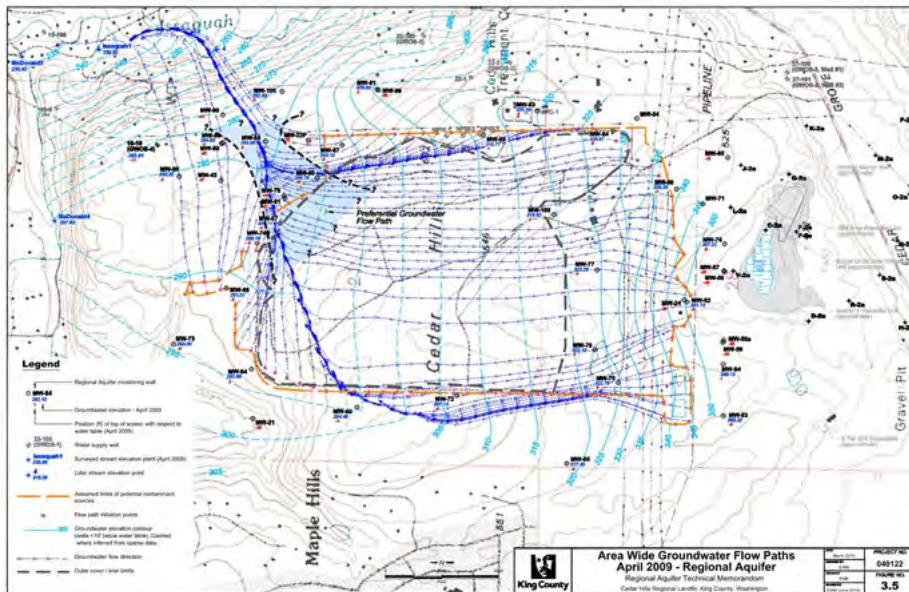
repairs and improvements. Without an automated system on the wells, there is a need to go out twice a month. If this pilot goes well, we will look at installing this system on all our wells.

We have installed vertical wells in Area 7 for extraction of landfill gas and leachate; they are all operational and some have the new system controls just described. Surface emissions are monitored quarterly in accordance with regulatory requirements, and we are exploring opportunities for quicker scans of the surface, potentially including drone technologies and other options.

Among the types of monitoring that occur at the landfill is groundwater monitoring. SWD monitors some wells quarterly and some semiannually. The groundwater has continued to remain consistent with historical reports.

The image below shows the water flowing from the south end of the landfill and exiting from the northeast corner of the site. The image shows some offsite wells; we monitor only the 48 wells on our site. We are particularly interested in the water that is leaving the site at the northeast corner, and monitoring has shown that it meets drinking water standards.

We are continuing work with the Department of Ecology to implement recommendations on the perched zone, an area impacted by past landfilling. There are some monitoring wells that have had some problems and we will likely replace or decommission a few wells across the site as part of regular maintenance. Some drilling activity associated with installation of replacement wells should be expected in the next year.



- The electrical upgrades at the North Flare Station to improve safety and maintenance accessibility are close to completion.
- We are investigating pretreatment testing for arsenic treatment to address wastewater permit conditions. We expect to do the first testing in summer 2023.
- There are upcoming repairs in the north buffer to address stream erosion.

- There are some upcoming maintenance projects on the landfill cover system to repair areas where gas has escaped. This is expected to occur during summer 2023.
- We are planning to install an additional flare for low quality landfill gas this summer. This will allow us to have more flow to these flares.

We are currently working with foresters from the County's Water and Land Resources Division to plan buffer reforestation on the west side of the property next year and will reach out to neighbors before we implement any plan.

We will also be moving offices and other facilities around Cedar Hills. The addition of Area 9 makes it necessary to move our offices off site until new permanent facilities are constructed. We will have additional trailers and construction of interim offices near the North Flare Station to start later this year.

The leachate lagoon improvement project is underway, and we are closing in on design. The project will include reconstruction of liners, installation of a cover, and aeration upgrades, all set to begin in 2024.

We have the permanent facility relocation site chosen and are entering the permitting process. The application has been submitted and it will become public for everyone to comment on. We are getting ready for Area 8 closure, with Stage 1 closure to be constructed in 2024. Area 9 is in preliminary design, with Stage 1 construction scheduled for 2024. We have also started planning to replace the four interior landfill gas headers in late 2024.

Landfill Operations: Joseph Newton

We are continuing daily odor control measures at the landfill. We purchased and installed new tarps at the beginning of the year. We are reviewing a new deployment system for the tarps that is safer for employees and we are conducting training for that system.

The Byers Vapor Phase System for odor control is mobile and is adjusted as the active face moves. Puget Sound Clean Air Agency (PSCAA) complaints attributed to Cedar Hills have declined over the past couple of years and staff believe the introduction of the Byers System has played a part. In 2021, there were 86 odor complaints attributable to the landfill and just 46 in 2022.

The annual vegetation control is occurring on schedule this year and we are in the process of hiring four summer hires to conduct vegetation control in the buffer and along fence line roads. They will also be doing some fence repairs.

Public tours are resuming at the landfill; spring tour is on April 22 at 9:00 a.m. and those who wish to attend can call 206-477-4466 to sign up.

We recently purchased six properties along the east side for continuing buffer reestablishment, and we have security patrols monitoring these properties three times a day between 9:00 p.m. and 5:00 a.m.

Kalyn Brady set the ground rules for the Q&A.

Question and Answer Period

QUESTIONS FOR BEW**Why is BEW not working with Cedar Grove to capture their gas?**

The gas produced by Cedar Grove is a different quality and type than what is utilized in BEW operations at Cedar Hills Regional Landfill. There are no plans to talk to Cedar Grove about methane collection.

QUESTIONS FOR THE SOLID WASTE DIVISION**How are you going to get people to recycle more? It's confusing.**

We need to remove confusion, make it more convenient, and help people understand that it makes a difference. SWD is working across jurisdictions and haulers to harmonize recycling practices across the region and to make sure people have a clear understanding of what's recyclable. Cities are trying to cater to their communities, but the reality is that it all goes to the same place.

Will more homes be bought in the east buffer?

There are 22 homes within the 1,000-foot buffer between private properties and active areas of the landfill where garbage was mistakenly buried at some point in the 1960s. King County is offering to purchase these homes to restore the buffer to 1,000 feet. Right now, the buffer is 500 to 600 feet for some of these homes, which is out of compliance with the permit. King County is happy to have neighbors stay but is willing to purchase these homes for fair market value and interested in talking to people who may want to consider selling.

Do we have existing infrastructure to support more recycling and composting?

For some commodities we do have markets and infrastructure, for some we don't. There needs to be a market demand for the materials, and that's where the partnerships and policy changes come in. If we can divert the tonnage, we can get it processed in a very contained way. We need to bring more capacity to the region to process those materials.

Pat stated that we prefer organics go someplace else. Cedar Grove expanded their capacity in the Leavenworth area so organics can now be taken there, which presents another alternative to their facilities here in Western Washington.

Could SWD change the hours when odor monitoring happens? Odors are usually worst in the morning and late at night.

Joseph said we can look into the possibility of changing our hours and frequency, although some of our schedule may be regulatory. The landfill gas team is staffed 24/7 and conducts regular checks along the neighborhood fences as well as in response to real-time complaints.

Is there a report available for the odor monitoring that we find?

As soon as we receive an odor complaint, a technician is dispatched to where the odor has been identified and logs it into the system.

We will not enter residents' homes but will check the property for odors using Nasal Ranger technology. Reports can be made available upon request.

Is there any technology for a monitor that could be put in a private home where the resident is experiencing what is believed to be landfill gas odor, so there would be a clue about duration and frequency of the issues?

Pat said that there are common sources of what could show up as methane gas or landfill gas, but these odors could also come from many in-home sources. There is no technology we are aware of to detect landfill gas, specifically.

Are there specific chemicals that are creating the odor? How does the Byers system detect them or bond to the molecules? Can we find out what specific chemicals are in landfill gas and use that for determining odors in the neighborhood?

The Byers system clings to the molecules in the odor and contains them. Byers makes technology specific to landfill sites and for monitoring gas and is designed to work as it is exhibited in that larger environment. Extensive analysis has been done with the system since it was deployed to fine tune its functions and its location at the landfill to provide the best outcomes.

During the preparation for the Environmental Impact Statement (EIS) for the Cedar Hills Site Development and facility relocation plan, SWD did an air quality study and installed monitors at various points in neighborhoods to try to detect landfill gas related to the landfill operations. There was very little activity recorded.

What's the difference between landfill gas and odors from Cedar Grove? Is there anyone who can determine the difference between the odors from Cedar Grove and the landfill?

Many of the odor complaints submitted to PSCAA for the Cedar Hills area are for "landfill or Cedar Grove," because complainants are uncertain about which is the source of the odor. SWD staff go through Nasal Ranger training to be able to distinguish certain odors and chemical compounds in garbage. Compost tends to have a "sweeter" smell than garbage. Those with odor concerns should call 206-477-4466.

In King County, waste bins for organics, garbage, and recycling are different colors depending on which hauler is servicing a given city or community. Is there a way to make all the bins the same color to reduce confusion?

People are welcome to go to www.publicinput.org/swd (through 4/30/23) to take a survey about food and yard waste disposal, and to provide comments about their views on cart colors and frequency of collection. We want to hear from people about their needs and opinions so we can advocate changes that better serve customers to the Washington Utilities and Transportation Commission (WUTC).

Can you recycle biodegradable cups and other items?

Generally, items like paper plates and cups are recyclable. Paper cups with a plastic lining, for example, cannot be put in a compost or recycle bin. When in doubt, it's best to dispose of an item in the garbage to avoid contaminating recycling.

Pyrolysis technologies that are an alternative to landfilling have many advantages, including sequestering carbon. Is there someone who can discuss a possible pilot project to explore this technology?

Yes, SWD will be looking into alternative technologies that can process waste as part of the Comprehensive Solid Waste Plan Update. Pat provided his contact information after the meeting.

Is BEW working with SWD to find out why the landfill gas collecting is declining? The vertical wells are filling with water. Do you know why? Are you calculating what you should be getting based on tonnage?

This is something that we are looking into. We calculate the model of landfill gas generation annually for our greenhouse-gas reporting, based on tonnage received.

We have completed a number of projects to maximize landfill gas collection, including cover repairs, well testing, and installation of dual-phase wells. These vertical wells are designed to collect liquid from the landfill, to allow for better landfill gas collection. The pumps that we installed for these vertical dual-phase wells were not able to reliably remove this liquid, so we are trying different pump types for future wells.

We are also looking into various technologies to improve our operation of the landfill gas wells and monitoring of the surface of the landfill. We have a pilot project for a automated well-control system that will adjust the wells more frequently than we can do manually. We are evaluating technologies to scan for surface emissions more rapidly and frequently. We want to be able to scan the surface quickly and reconcile it with a number on the ground. We want to be able to use this number to identify problem areas and make any necessary repairs quickly.

Are you working through a backwards calculation? What's the difference between the greenhouse gas emission and the gas generation collection?

Greenhouse gas emissions are calculated annually, by two different methods. One method models how much landfill gas is generated and subtracts the amount collected, which provides an emissions estimate. The second method takes the amount of landfill gas collected, assumes a collection efficiency, and uses the efficiency to back-calculate the amount generated. Then the emissions are calculated by subtracting the amount of gas collected from the new estimation of the amount generated.

What will the permanent facility that will be built at Cedar Hills as part of the site development plan be for?

SWD plans to construct a new maintenance facility for heavy equipment and office space to support landfill operations.

What is the plan for Area 9?

That is the last available area for development. The project entails moving support facilities, such as office spaces and maintenance facilities, that are currently at the Cedar Hills Regional Landfill so these areas can be used for disposal of garbage.

What's the plan for the next Cedar Hills?

Pat said there will be no further development after the site development plan is complete. By increasing recycling and the diversion of organic waste, the landfill could remain in operation a long time, but with fewer materials like food and yard waste that create odors. If diversion goals are not met, we predict the landfill will reach capacity by around 2040.

Within the next two years, there will be a Comprehensive Plan update that will present and study long-term disposal alternatives. A long-term disposal solution will take time to design and implement. It will not be development of another landfill, but there could be a waste-to-energy plant, and there are other technologies such as mass burn and pyrolysis [the breakdown of organic material, such as biomass, at elevated temperatures and in the absence of oxygen]. These facilities could be sited and built in King County or elsewhere.

How do you keep biodegradable waste out of the landfill? Is there a voucher system or something that could incentivize organics disposal? My rates have increased substantially after moving here because of how recycling and yard waste are charged in this area. How do we know they won't move costs to us and increase the charge for biodegradable waste when trash is reduced?

This is something we work on closely with WUTC. If haulers want a rate increase, they approach WUTC and must provide justification. There's a public comment opportunity for this request. Our goal is for rates to be tied to service levels, not the content of the collection. Our goal is to become a better advocate to make sure services make economic sense and costs are reasonable for our ratepayers as waste collection evolves.

What can SWD do about Cedar Grove and their lack of action on odor complaints?

We expect our processors to follow rules and to be good neighbors. When someone calls in a complaint, it's reasonable to expect a response. SWD will follow up with Cedar Grove and relay the concerns we heard tonight about odors, and to ask about their response plans.

Did Cedar Grove get SWD's old tarps that were used to cover the active landfill areas before being replaced?

No.

Why doesn't Cedar Grove pay for the organic product they are picking up and hauling? Why do residents have to pay?

This is a market solution. Right now, people are willing to pay them to collect it.

How are plastics being recycled? Have markets improved?

Pat referred to China Sword and the impact to recycling markets when the Chinese government stopped buying many recycled materials due to contamination. Capacity has now improved on the West Coast, paper mills have grown, and the haulers are delivering the materials locally to be recycled.

Is Ridwell actually able to recycle the materials they collect, like plastic bags?

Pat said Ridwell is a convenience service that collects materials for which there are markets. When collected in bulk, plastic bags can be recycled. King County does not have a collection program of plastic bags. Collection points for bags can be found [here](#).

How many of you live within 10 miles of Cedar Hills Landfill? Why are there no city representatives here? Do they know about the landfill operations and impacts to communities? Comment about how King County is better than extending the lifespan of the landfill. Shared frustration with the lifespan of the landfill and the effort to extend the landfill.

There is a need and opportunity for your voice and participation in the Solid Waste Advisory Committee. Cities, haulers, special interest groups, and citizens participate in this monthly meeting.

With global warming, what is the plan for mitigating fires at the landfill?

SWD has containment plans because there are risks on site and off site for fires. We've had a couple of fires over the years at the landfill. Because we have skilled equipment operators, we have been able to work alongside first responders. The Division coordinates with first responders on safety planning, and in the event of a fire or emergency, the first call is to Eastside Fire & Rescue and then we use available resources to contain it. SWD regularly trains on emergency response and conducts regular drills with staff to build proficiency and understanding of emergency protocols. This is tested once a quarter to keep us ready.

If SWD is partners with Cedar Grove, can they be invited to present and be part of the neighbor meeting?

We will invite them to the September meeting and encourage them to come.

How do you notify neighbors during an emergency? At what point are neighbors notified?

SWD collaborates with other emergency organizations, including King County Office of Emergency Management, to notify neighbors in the event of an emergency.

Is there a reason SWD doesn't clean up the encroached buffer and remove the legacy waste buried in the 1960s?

In 2010, we made a proposal to remove the waste in the buffer and install a liner. We received comments from the residents that they didn't want the buffer to disappear. Removal or cleanup is not a good option because it would be impossible to retrieve all the waste, and because removing the waste could destabilize the nearby cells. SWD continues to purchase properties in the buffer from willing sellers, and in 2022 completed purchase of four properties. We want to engage the community on the east side of the buffer zone about what the County will do with the properties. The idea is to return it to natural habitat, but this is a conversation we need to have.

Why are there odors coming from the landfill?

Odors are a product of the breakdown of refuse. Through landfill gas collection, the Byers odor system, maintenance of daily cover, and other mechanisms, SWD works extensively to control odors at the landfill.

What areas will be filled?

First, Areas 5 and 6. After the relocation, Area 9.

If all the recycling and composting comes to fruition, won't the landfill will take longer to fill? When you add to the areas that have already been closed, how will you keep that from creating odors when you uncover old waste?

As we move forward with Re+ efforts, we are adjusting tonnage forecasts down. This forecast is the base for our plans at Cedar Hills in future years. By increasing recycling and the diversion of organic waste, the landfill could remain in operation a long time, but with fewer materials like food and yard waste that create odors. As we add to older areas, we are not going to go in and remove the covers entirely. We are going to scrape them off as we go across. We are looking at ways for developing Area 9 so there is not a large and open area.

Comment Period

Comment on Cedar Grove's business practices.

Cedar Grove has their own mitigation practices.

Comment that the issue of trash is that it is out of sight out of mind among residents and cities that aren't near Cedar Hills.

There are twenty Solid Waste facilities across King County. Cedar Hills is not the same as our transfer stations, but because we have sites in these other communities, there is an awareness among the city leadership and other stakeholders not only of the waste system in our region, but also where the waste is ultimately headed.

Comment was shared on the limitations for disposal of fluorescent bulbs at transfer stations. Resident believes it is a bad policy for limiting florescent tubes daily.

We have the limit to make sure that we have capacity for all customers that come in. If you go to www.kingcounty.gov/what-do-i-do-with, you can find a facility in your area to dispose of the bulbs.

Comment shared that they don't believe the landfill will close by 2040. The County will continue to add waste.

Meeting adjourned at 8:28 p.m.