

**Cedar Hills Regional Landfill  
Fall 2022 Community Meeting  
Sept. 28, 2022  
Via Zoom Presentation**

Facilitator Kathy Hashagen 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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**Theresa Thurlow, Solid Waste Engineering Services Manager**

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**Scott Barden, Cedar Hills Landfill Operations Manager**

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The format is a webinar, and questions may be submitted to the Q&A. During presentations, video and audio sharing is disabled for viewers. Similar questions will be grouped together.

**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.

Many community members commented on the EIS for the Cedar Hills Site Development Plan. The decision on a preferred alternative is in final review and will be issued in the next few weeks. In this meeting we will discuss property acquisition along the east side of the landfill and information requested by the community. There will be a Q&A and open comment period at the end. We consider this engagement a critical part of our mission.

Kathy Hashagen noted that the audience can type questions as the presentation proceeds, and they will be addressed at the end. The best way to make sure question is considered is to put it in 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 75 percent of that is then delivered to PSE through the PSE and Williams pipeline. This renewable natural gas is used to produce renewable power for about 15,000 – 20,000 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.

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 has achieved 96 percent uptime, one of our highest, and is working for further improvement.

There have been sustained improvements in BEW's Generator House catalysts, and sulfur media change-outs are conducted routinely. BEW has worked with PSE to improve electrical reliability. The plant averages a daily production of 3,595 MMBtu/day.

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.

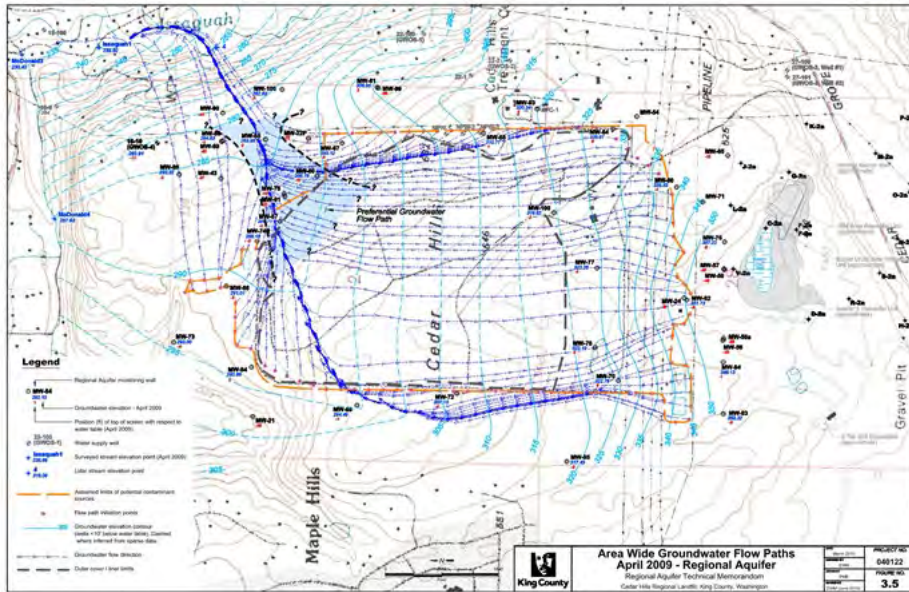
There is a planned annual emissions test on the Generator House and Thermal Oxidizer in the first week of November.

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.

### **Construction and Environmental Monitoring: Laura Belt**

One type of monitoring that occurs at the landfill is groundwater monitoring. SWD monitors some wells quarterly and some semiannually.

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 coming out of the northeast corner, and monitoring has shown that it meets drinking water standards.



We are working with the Washington Department of Ecology (Ecology) to implement recommendations on the perched zone along the east side of the site that was impacted by past landfill practices.

Ongoing and Upcoming Projects

- Area 7 closure construction was completed this month and we are now cleaning up and demobilizing from the site.
- We are conducting an electrical upgrade at the North Flare Station, which will also be moved further away from centralized operations. There will be new switches and controls and equipment will be in an enclosed building rather than the current small shed.
- The leachate lagoon improvement project is underway. The project will include adding a cover to the lagoon.
- We are adding additional extraction wells in several areas of the landfill due to water sometimes interfering with landfill gas extraction.
- There are ongoing maintenance projects on the landfill gas system including installation of an additional flare that will burn off low quality landfill gas that is not as useable for BEW's purposes.
- We are currently working with foresters from the Water and Land Resources Division of King County to plan buffer reforestation.
- SWD conducts continual evaluation of landfill gas flow and quality. We are working with a company that is putting together a pilot program for remote control valve adjustments that can be made rapidly based on conditions. This would provide quicker response time and help us more effectively extract gas.
- Next spring, we will be installing 20 more vertical wells and are in the process of getting that contract out to begin advertising. We are in the process of pilot testing some new valves and have been getting good readings. We are continuing to look at different technologies and strategies to help us detect problems and improve our work at the landfill.

**Property acquisitions: Theresa Thurlow**

On September 12, 1960, a special permit was approved that required a 1,000-foot natural buffer around the landfill. Around 1967, landfill activity encroached into that buffer strip. There was a legal settlement in 2000 that included the agreement that we would not place refuse or soil within 1,000 feet of the property line. Today, aerial footage shows that currently the point of greatest encroachment is approximately 462 feet. As properties in the buffer become available, the County looks at acquiring them in order to reestablish that 1000-foot buffer.

After acquisition of a property, the County assesses the infrastructure, identifies any hazards, and looks at possible reuse or repurposing of the property. A contractor dismantles any unneeded infrastructure; disposes of hazardous waste in accordance with regulations, and issues for resale any useable interior finishes. Anything identified as waste is disposed of in the landfill.

After deconstruction or relocation of a structure, the sites go through a transitional process. The site and structure are checked regularly by SWD staff to ensure no damage or vandalism has occurred. A consultant is then hired to assess the property and provide a planting plan. The County is under contract to maintain the parcel until it is planted with native vegetation and returned to a natural state.

**Landfill Operations: Scott Barden**

The Byers Intelligent Odor Control System has been fully operational at Cedar Hills Regional Landfill since April. The County uses the system to control and mitigate odors from the active area. Staff are still learning about the system and are working to maximize its benefit.

Puget Sound Clean Air Agency complaints attributed to Cedar Hills have declined over the past couple of years and staff believes the introduction of the Byers System has played a part.

In Area 8, gabion boxes have been buried and when this area is filled, staff will drill down to the boxes to connect the pumps used to manage leachate. Gabion boxes are traditionally used to stabilize hillsides and control mudslides; the idea for this technique comes from the Roosevelt landfill and our use of them is part of the County's continuous improvement effort. These boxes will help the water drain naturally through the rock to the bottom of the landfill where pumps will manage the leachate.

The annual vegetation control is currently behind schedule due to staffing shortages and this work will continue through the fall into early winter. There are normally summer hires to help with this, but it has been difficult to hire this season and there is currently only one staff member in this role.

After a pause for COVID-19, landfill tours will resume. The fall tour is scheduled for Oct. 8 at 9:00 a.m. Those who are interested can sign up for the tour by calling the hotline number at (206) 477-4466.

**Question and Answer Period****QUESTIONS FOR BEW****What happens to the waste from the biofuel purification?**

BEW works to minimize waste through the design of materials and processes. After waste minimization, they employ recycling of materials. For example, the activated carbon used in their process is recycled by the supplier when it is at the end of its life. Used lubricating oils are also recycled. When separation media reaches end of life, it is sent to be landfilled as non-hazardous waste.

## QUESTIONS FOR THE SOLID WASTE DIVISION

### **Can you point out the regional aquifer?**

The aquifer flows from the purple line. (See presentation page 11).

### **Where will the installation of the additional flare for low quality gas be? And will it be a 24-hour flare?**

We currently have a flare on the site that burns low-quality gas, and will be installing this additional one, called the migration control flare, next to it. This flare is designed to take in extracted low-quality gas barely generates a flame. It operates 24 hours per day, pulling in gas with 20 to 25 percent methane content that is not easy for BEW to process. It is a 24-hour flare.

### **Are the additional extraction wells because of fugitive gas leaks?**

No, they are to supplement the existing wells, because the current gas wells aren't performing as well as we would like to. The additional wells will help ensure that we are collecting all of the existing gas.

### **What areas are the vertical wells being installed in?**

In Areas 4, 5, 6, and 7.

### **Is the buffer zone going to be encroached on in the future?**

No. there has been no encroachment with either soil or refuse since 1967, and encroachment is prohibited due to the legal settlement reached in 2000. As noted, we will continue or work to reestablish the buffer.

### **If you're in violation of the buffer, why aren't you just condemning properties to obtain them?**

We have no intention of condemning properties but only to purchase from willing sellers. We are not required to acquire the properties and are prepared to continue operations if owners don't want to sell.

### **If you end up acquiring more properties, will you extend the landfill into those properties?**

Acquiring properties is an entirely separate process from operation of the landfill. They aren't part of the landfill and are zoned as their own parcels. Acquisition is not for the purpose of expanding landfill capacity, but for restoring the buffer between our operations and the neighboring community.

### **Does King County own the property or does the King County Solid Waste Division?**

King County owns Cedar Hills Regional Landfill.

### **Are you going to pump the perched groundwater out?**

The geological formation doesn't allow for effective pumping and has not produced good results when attempted, thus we are looking at other alternatives.

**Is there emission testing for chemicals in the low-grade flare and will this flare be tested?**

There are no testing requirements for open flares, and we do not do any chemical analysis. The flare will be installed according to regulations and will be considered an open flare.

**When will the landfill no longer be useable and what happens to solid waste after that?**

The timeline for closure of the landfill will depend upon which design alternative is selected from the new site development plan, which could extend capacity until as late as 2040. Another factor is how effective our region is in diverting resources from the landfill-- 70 percent of what goes to the landfill is recyclable and we are working to divert those materials. It is difficult to determine an exact date for closure because the site development alternative has not yet been selected and processes to divert waste from the landfill are still being developed. Burying the waste is an important part of our work but we also have important work in shaping policy and managing the closed landfill. We will still have a responsibility to receive and transfer waste for disposal by some method.

**What happens to the solid waste itself at Cedar Hills?**

Waste decomposes at different speeds depending on the material and environmental conditions. About 6 years ago, we dug up material from the 1960s and it included readable newspapers that had not broken down. It will be several decades before the waste is completely decomposed, even in the case of waste that has already been in place for several decades.

**Why not clean up the past refuse and restore the 1000 feet without acquiring the properties?**

Excavating the waste would be a difficult and expensive undertaking, particularly in regard to keeping environmental controls in place. It has been considered, but there were residents on the east side of the landfill that objected to us removing the refuse because it provided a sound barrier. If we can achieve the same end and keep the buffer, a better alternative is to purchase the properties as they become available.

**Will you be removing the mobile homes off the property to utilize them or leave them on the current premises? What is your timeline to remove the homes; and will you be removing foundations as well?**

This is part of our development plan. We don't have a timeline since there are a lot of moving pieces. We are working on the contract to remove the infrastructure from recent acquisitions, and it is not yet known when the contract will be in place. The foundations will be removed so that the land can return to its natural state.

**Are there still plans to cover the leachate ponds? What is the timeframe for the leachate covers?**

Yes. We are evaluating different cover options and strategies to install a cover. We just need to make sure they are all compatible and the cover is effective and safe. The covers will be installed during the construction of the leachate lagoon improvements, which is currently planned for 2024.

**The well house on 230th Ave SE falls in that buffer zone. What will happen to it, and will you leave it there so the water supply continues?**

The well house does not fall into the area that we have identified to re-establish the buffer. The well house will remain its current location.

**Would the Solid Waste Division be open to conducting a pyrolysis chemical plastic recycling trial to convert hard to recycle plastics into either fuel or plastic?**

Pyrolysis and gasification remain of interest to us for alternatives. We have studied those techniques in the past and will be studying them again.

**The perched zone has been an issue for a while. What happens if you can never clean it up?**

We tried a pump-and-treat method, which pumps groundwater out and puts it into a treatment system. Pumping it out is difficult due to the characteristics of the geologic formation. One alternative is treating the groundwater in place. There is also an approach called monitored natural attenuation, which monitors the naturally occurring degradation. The groundwater in the perched zone does not migrate off the Cedar Hills property. All of the alternatives will be reviewed by Ecology, and as the regulator, they will need to approve the technique chosen.

**Passage Point is within the new buffer zone; what will happen to this facility? Is the YWCA affected by the buffer zone acquisitions as well as private properties?**

No, not in the sense of acquisition and there's no intent to acquire the property. The County already owns the property, but the YWCA is allowed in King County code to be where they are. There is a specific exception that allowed for the facility, and it will remain.

**How many landfills are in the state of Washington and how many are public vs. privately owned?**

There are 17 open landfills in Washington. Of those, 11 are public and 6 are private. More information can be found [here](#).

**How is the study going to evaluate creating airline fuel and will the results be out this year? In addition, a recent report said that the amount of fuel created from organics is negligible in its ultimate impact to global warming. If this is true, is it effective to try it?**

The County is partnering with the Port of Seattle in a study that will take solid waste and turn it into reusable jet fuel. There is a plant in Nevada that is working on this, and we would like to evaluate its environmental and financial feasibility. The study from Nevada won't be released until 2023 and we are anxious to see the result of the study, particularly because it will coincide with our long-term planning.

There is no data to indicate how much fuel is being created from organics; the entire municipal solid waste stream can contribute.

**The existing gas flare emissions and odor travels into the west buffer and community. Are there plans to improve this and if not, why?**

We did air quality testing [during the EIS looking at the site development plan](#). The flares are designed to effectively break down the gas and we have not identified any problems with the quality of air in the neighboring community.

The Solid Waste Division takes odor and odor complaints very seriously. At the landfill, active areas are covered at the end of each working day to control odors and wind-blown litter and to reduce the potential for wildlife to get into and carry away garbage. SWD Operations staff are continually researching and testing other means by which landfill odor can be reduced.

Monitoring and investigation are additional means of odor mitigation at the landfill and inform new prevention strategies. On weekdays, specially trained staff conduct odor checks five times per day across the landfill and once per day through the surrounding neighborhoods. On weekends, odor checks are conducted across the landfill three times a day. In addition to these regularly scheduled checks, trained staff monitor areas commonly associated with previous odor complaints.

In 2021, SWD increased its neighborhood odor checks from 590 to 2,839. (In addition to the daily neighborhood odor checks, SWD staff perform odor checks four times per day near the homes of two Cedar Hills neighbors who have regularly reported odor problems).

In 2,400 instances (84.8 percent), no odors were detected. Odors that were detected were classified into four categories: Refuse, Compost, Manure, and Other. Examples of “other” odors include sewage, odor from the contaminated stormwater pond, chlorine, and unidentified odors. Data analysis of the 2021 neighborhood odor checks shows that refuse accounted for less than 3.6 percent of the odors detected.

**Will Cedar Hills Regional Landfill remain a transfer station even if waste is not buried there anymore?**

It is unlikely to be used as a transfer station but could function in some other capacity. No decisions have yet been made. We would have to continue operations to maintain the wastewater, ground water, and landfill gas systems which will be active even after we stop burying waste there.

**It has been stated for several years that 70% of the waste going to CHRL can be reused or recycled. Why hasn't the 70% number changed or gotten better?**

Talk isn't enough. We need action and action requires the community and region as a whole to be part of this effort. We are looking at ways to make it easier and more convenient to remove the barriers to reusing and recycling materials. We've seen small improvements over the years and the only way it'll get better is if we make substantial decisions around policy.

Part of this is finding ways to keep many of the items that end up in our landfills now processed as resources. This is what the Re+ initiative is for and in the coming months and years, you will learn more about those opportunities. This fall, we will divert tonnage from the landfill and send it to a mixed waste processing plant that can recycle up to 60 percent of the material.



**If the buffer zone was encroached in 1967, why have homes been allowed to be built there? Why did King County allow homes to be built in the encroached area as late as 2020?**

The homeowners have done nothing wrong. There is no reason to prevent them from building.

**How do you detect if the lining has been breached?**

We monitor the groundwater and the subsurface around the site. If we detect something, we then determine where it's coming from.

**The perched zone mitigation is a "good" trial for what would happen if the major aquifer became contaminated. If you can never find a solution for the perch zone, won't that be catastrophic if the aquifer becomes contaminated?**

This is highly speculative. The perched zone and the regional aquifer have different characteristics and would respond differently to treatment methodologies. In addition, the nature of any contamination would influence the success of different treatment methodologies.

**People who live near the landfill feel they are bearing a disproportionate share of the toxic burden and risk relative to the rest of KC. Equity is supposed to be a goal of King County, but it doesn't appear to be a consideration with respect to Solid Waste. Is King County leadership aware of this equity imbalance, and what can be done to rebalance the situation so that the toxic burden is shared more equitably?**

Equity is a strong commitment for the County. We acknowledge that the community around the landfill feels that they are burdened, and the reality is that this landfill serves more than just their neighborhood. It is understandable that some in the surrounding community feel this way.

One of the important improvements that has been added in the County process is that we conduct an equity impact review which will help us understand, as best as possible, the impacts with an equity lens. This way the community can help us understand how the various alternatives would impact them. This is a core part of our regular business now.

**How much of the waste we recycle ends up in the landfill? How much do you get from the Recycling centers? How much tons do we get in a year?**

People recycle materials that aren't recyclable and on average 10 percent of the tonnage sent to a recycling center is waste that ends up in the landfill. The only material that comes to the landfill is residual waste content.

About 90 percent of material sent to be recycled gets recycled.

**When the directive is to maximize the landfill, you've planned to increase the height of the landfill in some of the alternatives. Is there a maximum height that you'll stop at? Just wondering if you'll find a way to** Under the current site development alternatives, we will be moving facilities to create new

landfill space. The only other way to gain additional capacity is add to the height of the landfill. From the EIS, we evaluated different scenarios which will take some areas of the landfill from 750 to 830 feet.

**What is the name of the Oregon unsorted material recycling facility? Is that the incinerator plant outside of Salem?**

Georgia Pacific has developed a system called JUNO. It is located near Toledo, Oregon. It uses an autoclave which effectively acts like a pressure cooker and through pressure, steam, and sorting equipment, recyclable materials are recovered from municipal solid waste.

**Will the contact information from the speakers be included if there are follow up questions?**

Email addresses are provided at the top of this document.

**The EPA is looking at regulating PFAS. Once they're in place, will you need to test the leachate?**

Polyfluoroalkyl substances, or PFAS, is used to make materials waterproof or not sticky. We are currently convening a work group and caucuses to determine how we will deal with PFAS in the county and environment.

**Does the Byers system emit an odor?**

The system uses a solution called Ecosorb and comes up as a vapor. There may be a slight odor, but it is detectable only in the immediate vicinity of the system.

**Does the landfill have emergency evacuation plans in the event a fire breaks out at the landfill and/or if an outside wildfire/grass fire should hit the landfill and spread? How will communities be notified?**

Eastside Fire and Rescue (EFR) has authority and responsibility for firefighting at and around the landfill, including evacuation determinations. In situations like this, we work in partnership with other responders and local authorities. Both EFR and Solid Waste work with the King County Office of Emergency for community notifications.

## Comment Period

Brian Thomas thanked King County for having this session. He learned a lot and asked a lot of questions which have mostly been answered. He thought SWD had done a good job and again thanked the County for putting themselves out there.

[Nils?] Carlson shared his fascination with watching a King County meeting. He asked if King County is going to remove all of the buildings and turn it into landfill space and clarified that he was referring to a big building on the property. Pat said that the preferred alternative is to place it in the southern boundary of the landfill.

Sarah Frankum thanked SWD and shared that the work that has been done is very educational and that the County has made it interesting. She thanked the staff for their time and said to keep up the good work.

Meeting adjourned at 7:40.