



Cedar Hills Regional Landfill Community Meeting Notes April 25, 2018

King County Library Service Center • 960 Newport Way NW, Issaquah

In Attendance

King County Solid Waste Division staff

- Scott Barden; Assistant Operations Manager
- Laura Belt; Supervising Engineer
- Bill Berni; Operations Manager
- Neil Fujii; Facility, Engineering, and Science Unit Manager
- Toraj Ghofrani; Engineer III
- Kathy Hashagen; Facilitator
- Matt Manguso; Communications Specialist
- Pat McLaughlin; Division Director
- Mark Monteiro; Operations Supervisor
- Glynda Steiner; Assistant Division Director
- Dorian Waller, Intergovernmental Relations Liaison
- Polly Young; Program Manager

Other King County Staff

- Alan Painter, Community Services Area Manager

Bio Energy Washington (BEW) staff

- Kevin Singer, BEW Plant Manager

Interested parties

- | | | |
|----------------------|----------------------------|------------------|
| • Danielle de Clercq | • Rich Nelson | • Jim Schuyleman |
| • Alex Fedorov | • Philipp Schmidt-Pathmann | • Bob Shaw |
| • Edie Jorgensen | • Lori Smith | • Darrell Wilber |
| • Val Lycette | • Debby Schuyleman | |
| • Leslie Morgan | | |

Welcome and Introductions

(Kathy Hashagen)

Kathy Hashagen began the meeting by welcoming those in attendance, explaining her role as facilitator, and reviewing the agenda. Hashagen introduced Solid Waste Division Supervising Engineer Laura Belt.

Meeting Format, Reporting Landfill Concerns

(Laura Belt)

Belt introduced Solid Waste Division (SWD) and other King County staff in attendance, including Community Services Area Manager Alan Painter who invited neighbors to attend an upcoming King County Town Hall/Open House for the Four Creeks/Tiger Mountain Community as part of the King County Community Service Area Program. The meeting will be held

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Monday, May 21 from 7-9 p.m. at the Maywood Middle School, 14490 168th Ave. SE, Renton. In addition to hearing information on the King County Local Services Initiative and from a representative from the King County Sheriff's Department, King County Councilmember Reagan Dunn will also be speaking.

Belt then explained the purpose and format of the meetings, as well as meeting elements:

- Division staff provide information about recent and planned activities at the landfill, and the BEW plant manager will do the same regarding its activities
- Meetings occur twice a year in the spring and the fall
- Notes will be provided on the division's website that summarize issues discussed at these meetings; the notes are not intended to be verbatim transcripts

Belt also explained if neighbors need to report a landfill concern they should call the Solid Waste Division at 206-477-4466. It is important to call this number because that is how the division logs and documents calls. That number, as well as contact information for Bio Energy Washington, is available at every meeting on the green handout. If neighbors feel the situation is an emergency, they should call 911.

Construction and Environmental Monitoring Activities (Laura Belt)

Construction Updates on Area 7 and Area 8

Area 7 is currently the main disposal area that began receiving garbage in June 2010. Area 7 will continue to receive garbage until the next cell, Area 8, opens in early 2019. Currently the division is covering side slopes of Area 7 and is now in Stage 4 Closure. Stage 3 Closure was completed last summer.

Excavating work on Area 8, the new area, continues. So far 1.6 million cubic yards of soil have been excavated. A total of 1.8 million cubic yards of soil needs to be excavated, so there is still about 200,000 cubic yards of soil that need to be removed. Environmental controls will be placed in Area 8 once that excavation work is completed, and the division expects the new area will begin receiving waste in early 2019.

“Overarching” Project (Environmental Control Systems Modification Project)

This project evaluates the entire system of environmental controls at the landfill under one umbrella and has been an ongoing project for the past 4.5 years. This project is wrapping up and this meeting is the last time the division will report on it.

Landfill Gas

Part of the Overarching Project involved doing a thorough evaluation of the landfill gas collection system to see where there were opportunities to improve maintenance. The division

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will continue that maintenance work this year. A lot of that work involves replacing valves on wells and gas lines.

Perched Zone

As has been mentioned at previous meetings, there is a small, shallow groundwater zone that is in a tight, silty formation with minimal flow. The area has had some impacts from past landfilling activities. The division is working closely with the Washington State Department of Ecology and, at that agency's recommendation, is following the Model Toxics Control Act, which defines standards on how to investigate issues and set up cleaning. The division has taken the first step to do a "Remediation Investigation and Feasibility Study." A draft of that study was sent to Ecology, which responded with comments that recommended further investigation. The division is evaluating Ecology's recommendations and working to secure funding to address all of those recommendations. In the short term, the division has been able to address some of Ecology's recommendations with current funding, including decommissioning and removing old wells that are not functioning correctly and installing new wells. That work will begin as early as May. Though the Perched Zone is part of the Overarching Project, the division will continue to update neighbors on this at future meetings as part of the regular reporting on groundwater quality.

Groundwater Quality

The Regional Aquifer is the main focus of the division's groundwater monitoring. At Cedar Hills, groundwater flows from the south toward the north/northeast. The key component the division looks for is the quality of the water that leaves the landfill property. Currently that water quality is unchanged, has been consistent, and the division is meeting all regulatory limits.

There are more than 60 groundwater wells throughout the landfill that monitor groundwater. The division checks the water quality in 38 of those wells, including some wells in the southern portion of the landfill that show the quality of groundwater flowing onto the site from adjacent properties. The division has detected some changes in groundwater flowing onto the site from the south. These changes are not health compounds, but are more aesthetic that affect the appearance and taste of the water. By the time the water flows off-site, and no one can drink the water in between, none of those aesthetic qualities are showing up. We are watching this and wanted you to be aware of it.

The division also monitors four offsite drinking water wells once a year, and those are stable and consistent with quality standards.

All reports related to groundwater monitoring, including quarterly and annual reports, are available on the division's website https://kingcounty.gov/depts/dnrp/solid-waste/facilities/documents.aspx#cedar_reports.

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Comprehensive Solid Waste Management Plan Update

(Laura Belt)

At the last meeting, the division talked about how we are working with our 37 partner cities on updating the *Solid Waste Comprehensive Plan* (Comp Plan). The Comp Plan is the blueprint for how the division will manage the county's waste over the next 20 years. Current Interlocal Agreements dictate that the division will need to provide disposal services for partner cities through 2040.

There are three long-term disposal options presented in the plan:

- Develop additional capacity at Cedar Hills to maximize space there
- Export waste to an out-of-county landfill via rail
- Build a waste-to-energy (mass burn) facility somewhere in King County

With expanding capacity at Cedar Hills as one possible option identified in the plan, the division is looking at how that could be achieved. There has not been a decision made yet and won't be made until Comp Plan the adoption process is completed. Ultimately, the Comp Plan will need to be adopted by the county, cities, and then the state. There will be additional opportunities for people to comment on the plan, including when the cities and the King County Council begin looking at the plan later this year. The best way for landfill neighbors to comment will be when it is being reviewed by the King County Council or by cities. Check your city website or the Council's website (<https://www.kingcounty.gov/council.aspx>) for updates.

Operational Activities

(Scott Barden)

Safety

Barden began his portion of the meeting by explaining that the division had its safest year on record in 2017. The division uses the federal Occupation Safety and Health Administration (OSHA) safety metric called Days Away, Restricted or Transferred (DART) Rate to measure safety. Employees who become injured, unable to come to work, or who are put on restricted duty all effect the DART Rate. The lower that rate, the better, and in 2016 the DART Rate was 6.7. In 2017, that rate was 3.5. Barden said that is an impressive rate considering the amount of operations it conducts and the number of people the division employs, that is very good and the division wants that to continue.

Landfill Gas Technicians

In 2017 the division decided to have a landfill gas technician at the landfill during the evening and throughout the night. Those employees begin their shifts at 7:30 p.m. and work until 6 a.m. These technicians provide the division with a landfill gas presence in the event of a storm or power outage and are in communication with BEW so issues can be resolved as quickly as possible. The technicians also allow for real-time investigations of neighbor complaints, allows maintenance to be conducted in the evening, provides three more odor checks every day

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(conducted at 8 p.m., midnight, and 4 a.m.), and adds more oversight of the landfill gas operation. Traditionally there were no technicians onsite after hours and there was no landfill gas data for those times, so it allows for more monitoring of the landfill, which is a living, breathing thing subject to varying temperatures and weather conditions.

New Signs

Unfortunately the division has noticed evidence of people hunting on the landfill property. Hunting, as well as trespassing and discharging weapons, are prohibited at the landfill. There are signs at the landfill stating “no trespassing,” but they need to be updated so people explicitly know those activities are not permitted. The signs will be installed along the property fence line.

Vegetation and Road Maintenance

With the onset of summer, the division will hire six temporary employees to conduct standard vegetation maintenance around the perimeter of the landfill.

New Equipment

The division recently purchased a new compactor – CAT A36K – that is a 140,000 pound machine used to roll over and squish garbage to conserve airspace. The machine has had good uptime operation, and the division is happy with their purchase.

A new tipper was also purchased. A tipper is the machine that lifts and tips trailers so the garbage contained within can be emptied onto the active area of the landfill. The new tipper was purchased in the fall and provides redundancy to the two tippers the division currently has. Those machines were purchased in 2008 and have raised and tipped a lot of garbage in that time. Having a third tipper means the division can conduct maintenance on the other machines or divert traffic due to unwanted items being found in trailers without having to disrupt operations.

Neighbors are encouraged to request a landfill tour and the division is happy to provide those. Neighbors can call the Solid Waste Division if they would like to set up a tour.

Eastside Buffer Conditions and Purchase of Adjacent Properties

(Pat McLaughlin)

Division Director Pat McLaughlin provided context to neighbors by explaining that back in 1960 the King County Board of Commissioners provided a permit for landfill operations at Cedar Hills. It took five years before waste began to be landfilled. Through that process there was a special permit that, among other things, required the creation of a 1,000-foot buffer. The purpose of the buffer is to mitigate the potential of the operation to be a nuisance, reduce noise, odors, and visual disruption. The division wants to continue to be a good neighbor.

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However, sometime in the 1970s and 80s, waste was placed within the buffer. There is no record of exactly when or how this happened, but aerial photos from that time suggest that there was landfilling done in the eastside buffer. This potential buffer infringement aligns with about 25 different privately owned properties that have a buffer somewhere between 500-1,000 feet.

Over the past few years the division has acquired some of these properties. One was more than six years ago, and within the past year the division has acquired three more parcels. McLaughlin stressed that the division wants neighbors to remain at their homes for as long as they want to stay. These are your homes and the division wants to continue to be a good neighbor, but if any landfill neighbor in this area is interested in selling their homes, King County would be interested in talking to you about that. This is an opportunity, not a requirement. There are no plans for condemnation of properties. The process of selling your home to King County is similar to a normal house selling/purchasing process, with appraisals, inspections, etc.

The division has considered removing the waste that had been landfilled in the buffer. This is an expensive option and presents engineering challenges because the area is very steep. This option could also result in moving operations closer to neighbor homes, which could also cause impacts to neighbors. Another option would be to change the boundary requirements via a permit change. The division has a 1,000-foot buffer around 80 percent of the landfill.

Question and Answer

The following is a summary intended to capture the general content of the questions asked and the answers provided; not a verbatim transcript.

I live between two acquired properties. What will happen to those buildings and parcels?

- A large portion of the division's business is focused on recycling. Where applicable, the division will attempt to move those buildings where they could be reused for a different purpose. Otherwise, the division would demolish the buildings and recycle the contents so those materials could be reused. The land itself will be restored to a natural habitat.

I live about five miles away from the landfill and the smell is very strong. What are you doing about that?

- The Solid Waste Division receives waste every day during the daytime. The more garbage you landfill, the higher the waste pile gets. Every day the division covers three side slopes with soil and puts seven to nine tarps on top to contain odors. Tarps are unrolled at 5 a.m. so operations can begin at the time specified in the division's permit. The landfill and its odors are monitored throughout the day, with a neighborhood check in the morning and checking the landfill property five times a day for odors. Garbage odors can be smelled on the active area, but the division works daily to contain and mitigate those odors. Any odor complaints received are checked by our technicians so we can understand what neighbors are smelling

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and where it's coming from. If you detect an odor you should call the division immediately. The landfill is staffed 24 hours a day by technicians called Nasal Rangers who are trained in odor detection and response. All odor complaints will be checked, reported, and we will give you a call letting you know what we found.

There have been a lot of vibrations in our home on the west side and we would appreciate a response to that. Have you changed your operations?

- Scott said that he was not aware of any operational changes, but would get back to the neighbor. Scott also encouraged neighbors to call us to let us know about any issues you are having so we can check them out and determine a solution.

We have noticed a weird smell recently. It is not compost or gas, but more closely resembles dog excrement. Is there any different or unusual dirt you've used for cover? The smell is on the west side of the landfill and the south. It's been ongoing for several weeks.

- No, we have not made any changes to daily cover. Whenever you smell anything, please call us. It is best to call us immediately so we can check on it in real-time.

On December 6, a neighbor said she requested information about the history of the landfill Environmental Impact Statements. She didn't receive the information until March 23 and she thinks that is unacceptable.

- Thank you for bringing that to our attention. We will work with our public records request process to ensure information is provided in a reasonable time.

What is the Solid Waste Division's preference on the three long-term disposal options in the Comp Plan?

- Division Director McLaughlin explained that the division does not get to make that decision. Neither does the King County Executive, but the Executive does make a recommendation to the King County Council. That recommendation will come in late July. With the Executive's recommendation in hand, the Council will then make a decision. All three options work in the long-term, but the lowest cost alternative is to expand capacity at Cedar Hills. From a cost perspective that is the best option. From an environmental perspective, you can create energy from a waste-to-energy facility, but there are emissions that result from burning garbage. There are emissions at the landfill now, but we are able to capture those. There are environmental benefits of expanded capacity at Cedar Hills as well. From an environmental perspective, the preference is for expanded capacity. A third perspective to look at is project risk. To do a waste-to-energy plant, based on our current forecast, it would be among the largest plants in the world. It would need to have about a 5,000 ton a day capacity. We don't have a lot of experience in waste-to-energy, so there is some risk with that. We have 50 years

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of experience with landfilling. All that being said, McLaughlin said his personal opinion is that the best option, which includes a cost perspective that will keep rates low, have high environmental benefits, and will keep and manage our waste in our region, for now that option would be to continue developing landfill capacity.

If the division builds a new landfill area (Area 9) would you increase the height of the other areas?

- The short answer is yes. There are multiple options that provide the division with additional capacity. Most of them involve going back to the older areas that have settled and putting waste on top of the settlement.

Where would an incinerator be located?

- No decision about the location of an incinerator has been made.

What would happen to the ash generated by an incinerator?

- Ash from an incinerator would need to be landfilled. There are special requirements because the ash is classified different from other materials. We currently do not have the ability to landfill that ash at Cedar Hills.
- *Another meeting attendant said that ash could be used for other purposes and does not always have to be landfilled.*

Will the western buffer be reforested?

- As has been discussed at previous meetings, the division hired a forester to review the forest and they recommended taking out undergrowth but did not recommend replanting established trees because they felt those trees would not survive. Gradually, they said, the forest would switch from a deciduous to an evergreen forest. The forester periodically re-assesses the area on a two-year cycle, which is coming up. We can talk about their findings at the next meeting.

If you do move forward with the waste-to-energy option, would you dig up landfilled waste and use it as fuel?

- That could be done. The biggest benefit to waste-to-energy is preservation of green space. The division could remove waste where there are no liners, which were not required when that waste was landfilled years ago, but you do have to weigh the expense. Disposal cost of waste right now is about \$41 a ton. To process that same ton at a waste-to-energy plant would be about \$136 a ton. It works, but there's a cost. But this isn't just about money, our challenge is to balance the best decision for the region.

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With the direction of our prevailing winds (southerly), I'm against anything that will be carried by the wind (i.e., ash, odors, etc.).

- A decision on the long-term disposal options identified in the Comp Plan have not been made yet. McLaughlin said he shared a personal opinion on his preference to be responsive to those in attendance. Before any decision can be implemented, we first need to hear the Executive's recommendation (early July) before a decision is made, which is expected next year. Whatever option is recommended, I anticipate an environmental study would be done. We've done Environmental Impact Statements for the Comp Plan and the Site Development Plan, but there would need to be more studies done because it is essential to understand the possible impacts and how we would mitigate those.

I appreciate the division's efforts to bring on more landfill gas technicians, but I would like an assurance from the division that you are being honest with us about what you find when we call in an odor complaint.

- The division asks staff to report everything they smell. The division believes in being better today than yesterday. If we're not honest with ourselves then we can't get better. All odor complaints received and reported are public records and you can request those. We have a system that tracks customer interactions. If you call in a complaint, we do an investigation and then input that information into the system. You can request those and will see exactly what we put in there – when you called, what we found, how we responded, and all notes and findings. We can also do real-time reporting and give you a phone call so you can hear what we're putting in the report.

I've heard Sweden has to import waste to burn in their incinerators, is that true?

- One reason why waste-to-energy is so expensive is because it comes down to cost of energy. The Pacific Northwest has a lot of wind and hydro power that keeps our costs low. We can generate power with a waste-to-energy facility, but the value isn't enough to make a huge impact on the capital and operating costs. There are different dynamics in different regions that make it more or less feasible. In our case, what seems to make it most difficult and expensive is the relatively small amount of revenue we can get.

How do we influence the Comp Plan process?

- Follow the King County Council website to see when they will be discussing the Comp Plan. If you live in a city, your city will also have an approval process. We do not have those schedules because we do not know when the Council and cities will take action.

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What do you do with the comments on the Environmental Impact Statement (EIS)?

- All comments received on the Comp Plan are given a response. All those are placed in a “responsiveness summary” that addresses each and every comment. That becomes a public record. There will also be a Final EIS.

How long will Area 8 last?

- The division anticipates Area 8 would receive waste for approximately eight years.

If you construct an Area 9, how much longer will the landfill keep accepting waste?

- The division anticipates Area 9 would provide capacity until approximately 2040. A lot of it depends on the economy and recycling rates.

When will Area 7 close?

- The division expects Area 7 will stop receiving waste and will get an interim cover in the summer of 2019.

Can you stop the use of backup beepers by your contractors?

- We will follow-up with our contractors on that.

Bio Energy Washington (BEW) Plant Update

(Kevin Singer)

Plant Operations

Kevin Singer explained BEW has three core values – health and safety, environmental excellence, and continuous improvement. There are at least two qualified plant technicians on-site at all times. Staffing is 24 hours a day, seven days week, 52 weeks per year. Each gas plant technician undergoes a qualification process of at least 90-days before working without supervision. Minimum of two qualified plant technicians on-site at all times. BEW maintains a hotline for any concerns: 425-392-3918.

Health and Safety

No injuries were recorded at the plant in the past six months. BEW performed an industrial hygiene study to evaluate indoor air quality in our Generator House. Well within the National Institute for Occupational Safety and Health (NIOSH) standards for air quality. Some of the tested constituents were typical of engine exhaust: Carbon Monoxide, Carbon Dioxide, and Particulate Matter.

BEW continues to focus on proactive steps to prevent injuries that engage all employees. Examples include interactive safety training on topics such as, ladders, machine guards, and power tools.

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Environmental Compliance

Completed annual emissions testing that we were performing during the last community meeting in November 2017. Both the Generator House and Thermal Oxidizer met permit requirements. Plan to test again in November 2018.

We recognize the Solid Waste Division has environmental requirements that it must adhere to when collecting and delivering gas to BEW. We are fully supportive of the mission to minimize greenhouse gases to the environment and maximize renewable gas for beneficial use.

Continuous Improvement

Uptime for the plant in 2018 is 98 percent. This is our highest yearly uptime on record. Our single largest cause of outages remains loss of utility power, however Asplundh has been out for Puget Sound Energy to remove significant dead trees and overgrowth from power lines.

BEW recovered nearly 80 percent of all landfill gas delivered to BEW in 2017. Sixty-eight percent went to pipeline and the balance went to power generation.

BEW and the Solid Waste Division have continued daily coordination to help improve communications and share best practices routinely.

Internal Improvements

Installed a new Sulfur Removal media in March. Current performance looks very good in ability to scrub sulfur. Previous media removal was difficult adding both water to hydroblast and additional time. What we've learned from other similar applications is that this media has easier removal to eliminate excess water from hydroblasting and reduce time.

Trialed cleaner engine oil for our generator system. New oil contained less ash that would have improved particulate emissions and exhaust catalyst life. Oil did not perform adequately to justify using it.

Investigating strategies to increase flexibility around variable landfill gas quality. We have to compensate for different conditions (rain, barometer, pressure, etc.) and want to be able to recover as much gas as feasible.

Upcoming Projects

No significant modifications or changes planned that will adversely affect noise, odor, or the community. Most of our work involves inspections, routine maintenance, and changing media that scrubs the landfill gas.

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In May/June, we will be trialing a new engine oil vapor collection system to reduce oil being burned in the engine.

In July/August 2018, we will be replacing the insulation on the Thermal Oxidizer which is at end of life.

Question and Answer

When do scheduled maintenances occur?

- That's normally a day shift activity, and typical hours are 7:30 a.m. – 4 p.m.

When the plant begin operating?

- 2009

If the landfill closes in 2040, how long would BEW have a business there?

- We don't know that answer, but we know the landfill would continue to make gas and we would reclaim it as long as it does.

How clean is the gas you emit?

- We emit zero landfill gas from our plant. The two exhausts from the plant are waste gas burned in our thermal oxidizer and combustion gas exhaust from the generators. The Thermal Oxidizer combusts gas with a greater than 99% destruction rate and operates at over 1500 deg F. All emissions are below established permit limits set by the PSCAA. There is a candlestick flare that does operate intermittently.

You mentioned three percentages. What are those?

- The three percentages are the % of the total landfill gas methane recovered by BEW (80%), the % of the total landfill gas methane sent to the natural gas pipeline as renewable gas (68%), and the % of landfill gas methane utilized as fuel for power generation (12%). There is a gas meter we use to measure how much gas we get into the plant. We know how much gas is coming in, and we have a meter here at the output that we sell to PSE, who injects it into the Williams Northwest Pipeline. Incoming landfill gas is about half methane and the balance is carbon dioxide, hydrogen, oxygen, and trace amounts of other chemicals and its composition is always changing based on what people are disposing

How much gas do you collect from the landfill?

- BEW does not collect landfill gas. King County SWD answered this question: The Solid Waste Division builds a model to estimate how much gas disposed garbage will generate. Then the division will measure how much gas is collected. Our data shows we have a high 90 percent collection rate.