

Long-Term Disposal Subgroup Meeting #4 Notes August 26, 2024 | 9-12p

Ice Breaker, Agenda Review, Recap Last Meeting, Subgroup Purpose/Role and Meeting Objectives (John Walsh)

- John Walsh ran the group through the agenda, purpose, housekeeping, etc.
- Patty Liu gave a recap of the previous meeting and turned it over to

Tetra Tech Presentation - Part One (everything but environmental)

- Christine Arbogast started out talking about the process of addressing questions and concerns from the subgroup and how they went about updating the assumptions they were using to respond to them.
 - Examples include:
 - Land acquisition cost for Mass Burn (WTE)
 - Increased cost to export ash from WTE
 - Updating the assumed per ton contract cost for Waste Export (WEBR)
 - Changing the assumptions around WTE revenues from energy sales due to the CETA (reducing those revenues to assume out of state sales)
 - How they will further clarify what the numbers mean in the environmental impact results (will be covered in the second part of the presentation).
 - **All of the concerns and Tetra Tech's responses are available on the KCSWD extranet site.**
 - Construction GHG impacts are not included in MSW-DST model
 - Puget Sound Clean Air Agency requirements will be included in the study
- Christine wanted to call out some of the more important cost assumptions that have been updated. WEBR is now approximately half the cost of WTE in 2040 dollars. They are outlined on the following slides.
 - Study will not include cost of decommissioning facilities, study parameters include years 2040-2060, facility is not anticipated to shut down during that time
 - Site acquisition costs now included.
 - Ash disposal costs have been updated
 - CCA costs have not been included given uncertainty around CCA's future, but estimates on potential impacts are included

Updated Mass Burn and WEBR Cost Comparison



Economic Subcriteria – Medium Tonnage (2040\$):

	WEBR	Mass Burn
Total Capital Costs	\$3,378,549	1,182,371,054
Annualized Capital Costs	\$337,855	\$86,707,211
Annual Operating Costs	\$71,817,560	\$53,863,170
Annual Disposal Costs (Residuals)	\$0	\$23,221,011
Annual Electricity Revenue	\$0	(\$7,336,453)
Annual Metals Recycling Revenue	\$0	(\$2,393,919)
Total Annual Costs ^{1, 2}	\$72,155,415	\$154,061,020

¹ WEBR = Equipment + Rail Transport + Disposal Costs.

² Mass Burn = Annualized Capital + Operating Costs + Disposal Costs – Revenue.

Updated Mass Burn and WEBR Cost Assumptions



- Costs associated with emergency/catastrophic failure addressed.
 - WEBR Transport and Disposal Costs previously based on most recent contract bids.
Update based on latest legacy contract rates for higher tonnage contracts.
 - \$60/ton (2023\$) for Medium and High Tonnage based on Snohomish at 700k+ TPY
 - \$65/ton (2023\$) for Low Tonnage based on Kitsap and Thurston counties at 220,000 and 206,000 TPY, respectively.
 - WEBR additional equipment costs included, labor and transport costs from MWP facility to IMF assumed to be similar between all options.
 - Mass Burn and other non-WEBR Option property acquisition added (at \$1,742,400/ac for upper end of acreage range).
 - Mass Burn Electricity Revenue reduced to \$0.02/kWhr (2023\$) based on current rate for Spokane WTE facility discounted for potential interconnect costs and transmission costs for interstate sales.
 - Mass Burn Ash WEBR Transport and Disposal rate of \$97/ton (2023\$) assumed based on input from Spokane WTE operator and existing WEBR contracts.
 - Mass Burn Metals Recycling Rate reduced per average rate provided by Spokane WTE operator (\$40/ton).
 - Cost projections performed for 2040 through 2060 assuming 30-year bond financing, 4% interest, 3.5% inflation rate.
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- WTE costs grow more slowly than WEBR over time since most of the cost is capital and is locked in when those costs are financed early in the process.
 - Christine went over the updated Social Impacts assumptions and findings:

Other Criteria Updates – Social Impacts



- Impacts on communities near IMF and around rail line to be considered when rail program selected.
 - Increased congestion near IMF and longer wait times at railroad crossings to be analyzed in project level SEPA analysis when location of Mixed Waste Processing Facility and IMF are identified.
 - Future siting for Mass Burn to identify communities around potential facility locations and transport corridors and evaluate per EPA's Environmental Justice Screening and Mapping Tool and Washington Environmental Health Disparities Map.
 - Environmental impacts will be greater for front line communities.
 - Economic impacts greater for low-income households because cost increases represent a higher share of their income than for other households.
 - Assumptions provided for truck trips to and from MWP facility to IMF or Mass Burn facility, disposal and recycling.
 - High, Medium and Low comparative impacts provided for other neighborhood impacts (air quality, odor, noise, groundwater).
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- Penny Sweet (Kirkland) asked if TT knew anything about the projected rates for the Seattle (SPU) WEBR contract and how that compares to the assumption used in the study
 - Bob Wallace said there is no information about SPU and that we should know more in 2025 and 2027 when SPU and other contracts are up for renegotiation. Feelings are that there won't be major jumps in the cost but that the railroads have a lot of negotiating power here so it's not something to speculate about too much.
 - Jon Gire (Bellevue) asked about metals coming out of WTE, how much is coming out and what the revenue is.
 - Metals recycling rate is at 5% and is based on the tonnage scenarios provided by KC-SWD and does not assume full recovery/capture. There is a discount to the value of the metals because they are pulled out post-mass burn process. This is based on info from Spokane facility.
 - Martin Pastucha (Renton) wondered if the electricity revenues were too low.
 - Christine said that this was based on CETA defining WTE produced energy as non-renewable and therefore not sellable from utilities to local retail customers, but interstate sales is allowable.
 - Martin Pastucha asked what the revenues would be if CETA rules were changed.
 - Christine said it would most likely increase the financial value of the energy from a WTE plant, closer to \$0.06-0.07/kWh
 - Meara Heubach (Renton) asked about WEBR and what rail lines we are assuming in the study. What are the rail impacts in terms of additional trains or longer cars...how will that impact the communities it runs through.
 - Bob Wallace said they are using the Argo yard and the Tukwila yard. The I-5 corridor rail is the one they are assuming. In the medium tonnage scenario we're looking at 35 double-stacked cars...when Bob asked the railroads about the impacts they said they would just tack that onto an existing train.

- Jessica Branom-Zwick started by speaking about the lifecycle assessment approach (LCA) and its benefits. She laid out how the impacts are split out between process, transport, and offsets. She explained how offsets are based on newly made energy (from WTE and WEBR) offsets the impact of existing energy sources and so discount the environmental impacts from the new source. Then she paused for questions about this approach.

Life Cycle Impacts and Offsets

Process

- **Direct impacts of operating the facility**, such as water use, fuel combusted onsite, air emissions, wastewater discharges, surface water discharges
- **Upstream impacts of external inputs needed to operate the facility:**
 - Grid electricity production (including associated upstream impacts of fossil fuels used to generate electricity)
 - Fossil fuels extraction, transport, and refining
 - Extraction and production of other material inputs and energy sources

Transport

- **Direct impacts of fossil fuel combustion**
- **Upstream impacts of grid electricity production** for EVs (including associated upstream impacts of fossil fuels use to generate electricity)
- **Upstream impacts of fossil fuels** extraction, transport, and refining
- Extraction and production of other transportation inputs and energy sources

Offsets

- Assumes that electricity and RNG sold by the facility will displace other energy generators (likely the highest cost generators). Both facilities sell energy.**
- Therefore, we offset (count as benefits) impacts avoided by reducing this product:
 - Grid electricity production **including upstream impacts (e.g., extraction and refining)** of fossil fuels used to generate electricity
 - Conventional natural gas production **including upstream impacts (extraction and refining)**
 - That is, other generators will reduce energy production by the amount WEBR/Mass Burn sell.
 - Mass Burn generates more energy than it consumes. Mass Burn reduces net fossil fuel demand while WEBR increases it.

Total Net Impact = Process + Transport – Offsets

- Jenna McInnis (Kirkland) asked what energy comes from WEBR
 - Jessica said that landfill gas (LFG) is captured. Half is used for making energy, the rest is refined to make Renewable Natural Gas (RNG) to be sold.
- Martin Pastucha asked about how LFG is accounted for in terms of pricing since he says Oregon has the same rules as WA.
 - Jessica said that the cost is not part of the environmental side; just whether the newly created energy was offsetting other existing energy (it is assumed that it is).
- Jessica continued her presentation with a discussion about the models and databased Cascadia used (peer reviewed models that are generally accepted).

Environmental Impact Parameters

Facility and Transport Assumptions

- King County Solid Waste Division (waste tonnage and composition)
- Republic Services, Waste Connections, Waste Management
- Union Pacific Railroad
- U.S. Energy Information Administration (electricity grid projections)
- Other sources used in cost modeling

Life Cycle Impact Factors: industry accepted models and databases

- **Municipal Solid Waste- Decision Support Tool (MSW-DST):** tool commissioned by EPA to evaluate environmental aspects of specific waste management strategies or existing systems in a life cycle assessment (LCA) optimization framework. Similar to EPA's WARM model but includes more impact categories.
 - **Ecoinvent** – LCA database that provides users with information on the environmental impact of their products and services.
 - **REET** – life cycle model from Argonne National Laboratory.
 - **Various literature sources** were used to fill in data gaps.
- Jessica spoke about the energy mix use in the Pacific Northwest and how they increase the renewable grid mix to match Washington specifically (since they have so much hydro power). The following slide also calls out the major impacts of those types of energy.

Energy Grid Mix

Energy Grid Assumptions

- The EIA is the only source that provides data projected out to the dates we needed.
- The EIA's most local projections are for the Pacific region, which includes WA, OR, CA, AK, and HI. Projections excluding AK and HI were not available.
- To provide some localization, because WA has a high percentage of hydropower, we used the renewable vs. non-renewable split projected for the EIA Pacific region and re-allocated the renewable split following the percentages described in the Study Environmental Impact Factors and Assumptions (Study Memo 5).
- The final percentages used in modeling are shown in the table on this slide.

Energy Grid Mix Used

Type	Energy Source	Modeled Grid Mix	Major impacts
Non-renewable fossil combustion	Residual oil	1.75%	NR energy, acidification, global warming, smog
Non-renewable fossil combustion	Natural gas	13.61%	NR energy, acidification, global warming, smog
Non-renewable fossil combustion	Coal	0.48%	NR energy, acidification, global warming, smog
Non-renewable non-combustion	Nuclear power	2.43%	NR energy
Renewable other combustion	Biomass	1.21%	Acidification, smog [note: biogenic carbon not counted to align with IPCC standards]
Renewable non-combustion	Hydroelectric	72.65%	Water consumption (evaporation from reservoirs)
Renewable non-combustion	Wind	7.42%	Minimal impacts
Renewable non-combustion	Solar PV	0.44%	Minimal impacts

- WTE generated more energy per ton of waste than WEBR; so WTE realizes more benefits to its environmental scores for this reason.

Mass Burn generates more energy per ton of waste than WEBR

- In WEBR, only putrescibles (e.g., food, yard waste, wood, and paper) can decompose into methane, and some of the methane escapes before landfill capping.
- In Mass Burn, both plastics and putrescibles are converted into energy products, so more energy is generated from the same ton of waste.
- To provide a direct comparison of the two, the energy ratios on this slide assume all captured LFG is used to generate electricity and none is refined to RNG

	High tonnage	Med tonnage	Low tonnage
WEBR: % of 1 ton that is putrescible	57%	51%	46%
Mass Burn: % of 1 ton that is putrescible or plastic	72%	70%	63%
Energy per ton from Mass Burn versus WEBR assuming all electricity (no RNG)	11.6 times more	17.0 times more	12.6 times more

- Aaron Moldver (Redmond) asked about why the low tonnage scenario assumes a lower energy per ton than the medium tonnage scenario.
 - Jessica responded by pointing out that it's the ratio of materials that produce energy in each scenario.

Mass Burn versus WEBR

- Mass Burn produces over **10 times** the amount of energy as WEBR for a given ton of waste
 - **More** energy produced = **Higher** offset electricity amounts = **More** fossil fuel use avoided
- Fossil fuel impacts include releasing **CO₂** (GHGs), **NO_x** and **VOCs** (smog), **SO_x** (acidification)
 - Impacts include **upstream production of fossil fuels** (extraction, transportation, refinement), in addition to direct impacts of combustion for energy
- **Much higher** energy offset amounts in Mass Burn = **Better scores** on most environmental criteria

- Jessica displayed this overview slide that showed where the impacts go in net good or net bad directions.

Comparison of Net Directional Impacts

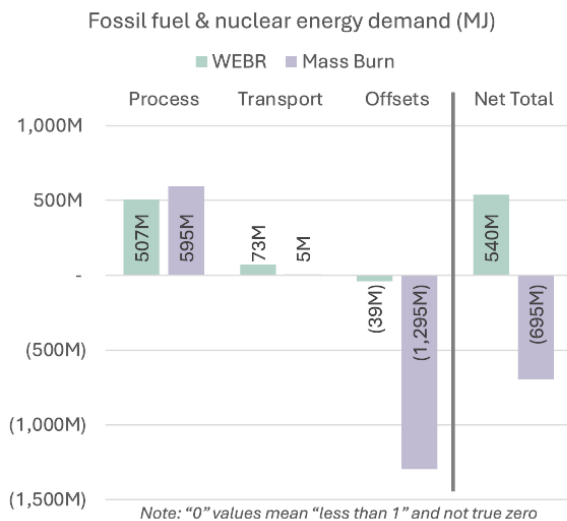
Environmental Factor	Units	WEBR Total	Mass Burn Total	Statement
Non-renewable energy demand	MJ	X	✓	Mass Burn generates so much energy that it offsets the fossil fuel and nuclear portion the electricity grid, creating a net decrease in non-renewable energy demand. WEBR does not.
Water consumption	L H2O	✓	✓	Both WEBR and Mass Burn reduce net water consumption, mainly through offsetting the hydropower component of the electricity grid. Because Mass Burn replaces so much more electricity, its net decrease is much larger than WEBR's.
Acidification potential (air quality)	kg SO2 eq	X	✓	Diesel usage from landfill equipment makes WEBR increase net acidification potential. Mass Burn generates so much energy that it offsets the fossil fuel portion the electricity grid, which creates a net decrease in acidification potential.
Eutrophication potential (water quality)	kg N eq	X	X	Both WEBR and Mass Burn increase eutrophication potential. Replacing grid electricity and conventional natural gas have minimal offsetting impact here.
Global warming potential (climate change)	MT CO2 eq	X	X	Both WEBR and Mass Burn increase global warming potential.
Smog formation potential (air quality)	kg O3 eq	X	✓	Fuel usage from rail transport makes WEBR increase impact. Mass Burn generates so much energy that it offsets the fossil fuel and biofuel portion the electricity grid, which creates a net decrease in smog formation potential.
Cancer Potential (human health)	CTUh	✓	X	Burning of plastics in Mass Burn releases toxic chemicals into the environment that has the potential to harm human health by increasing cancer

Positive values (X) mean the disposal option increases net impacts (bad result)

Negative values (✓) mean the disposal option decreases net impacts or has a minimal impact compared to the other option (good result)

- Jessica went through each of the environmental measures, breaking the impacts down into process, transport, and offset areas, then showing the net impact.

Impacts: Non-renewable (Fossil Fuel & Nuclear Energy) Demand (Energy Production)



Description: Measures fossil fuel (coal, natural gas, and oil) and nuclear energy from the point of extraction

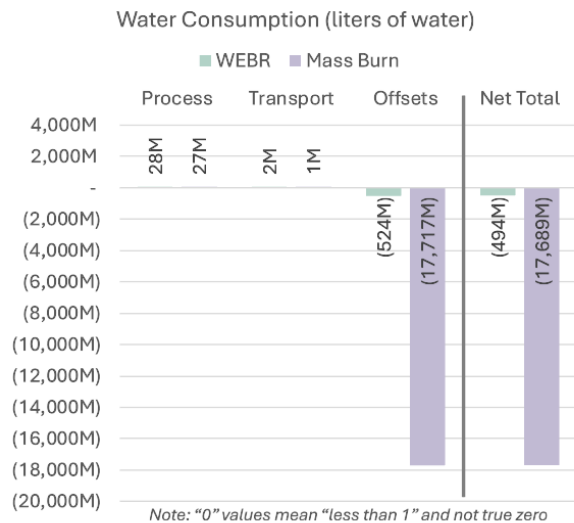
Comparison: Counting both energy inputs to process and transport and offsets from energy generated, WEBR increases non-renewable energy demand while Mass Burn reduces it.

Primary sources:

- WEBR: direct use of fossil fuels and electricity in landfill operations and transport (minimal offsets from electricity sold to grid)
- Mass Burn: use of fossil fuels and electricity during process; offsets from energy sold to the grid

- Jessica explained that the LCA of water consumption includes the impacts of keeping water out of watersheds that they usually flow to, in addition to consumption of water for processing and/or transporting of solid waste. It's up to us if we want to consider the "philosophical" impact of damming and pooling water—the dams for hydropower will exist with or without energy generation from WEBR or Mass Burn.

Impacts: Water Consumption



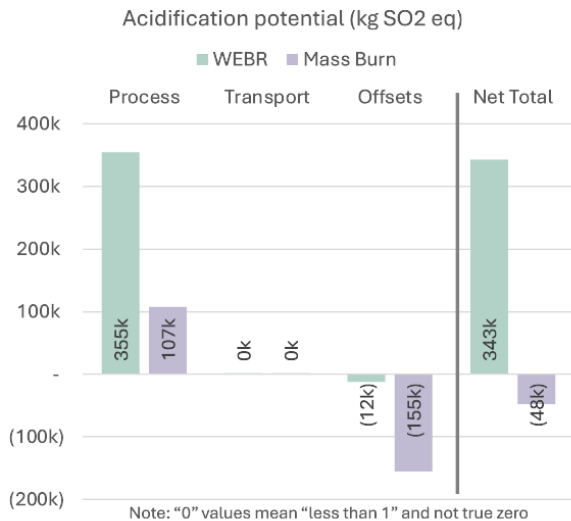
Description: Freshwater withdrawals which are evaporated, incorporated into products and waste, transferred to different watersheds, or disposed into the sea after usage.

Comparison: Both WEBR and Mass Burn reduce water consumption. Mass Burn reduced consumption by nearly 36 times more water than WEBR for the medium tonnage scenario.

Primary sources: Reduces evaporation from hydropower reservoirs by offsetting grid electricity. Mass Burn generates more energy than WEBR, and all Mass Burn energy is sent to the grid, while half of WEBR LFG is sent to the grid and half is refined into RNG. Also includes water usage at landfill and Mass Burn facilities.

- Micah Bonkowski (Redmond) asked if these offset calculations are being made as an offset to the energy offsets from a different market (given it is being sold in other markets). Also, it seems evaporation will be consistent because the dams are there already (and presumably not being dismantled).
 - Jessica said we were trying to make it as local as possible and we tried to lock those assumptions in early...so it might make water evaporation look worse than it would if it were offsetting energy in a different market.
- Jon Gire agreed that maybe we would be able to hold off on building another dam. He said he had the same dam questions as Micah.
- Jessica explained that the acidification coming from WEBR is mostly generated through the landfill equipment which runs on diesel fuel (SWD may require that landfill uses low sulfur and green diesel). Rail transportation also produces a small increase in acidification. Emission scrubbers were assumed for Mass Burn.

Impacts: Acidification Potential (Air Quality)



Description: Potential environmental damage (such as acid rain) caused by the release of acid-forming compounds into the atmosphere, primarily due to the burning of fossil fuels.

Comparison: WEBR increases acidification and Mass Burn reduces it. WEBR creates more than 7 times more acidification potential than the amount that Mass Burn reduces for the medium tonnage scenario.

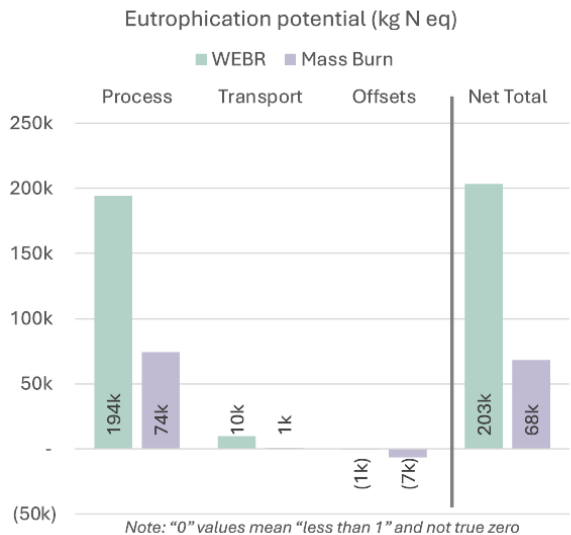
Primary sources: burning of fossil fuels and biomass.

- WEBR: fossil fuels for landfill equipment (on-road diesel)
- Mass Burn: process combustion (includes emissions scrubbers) and electricity inputs
- Offsets: fossil fuels for electricity generation

Notes:

- Rail transport has a relatively small contribution to acidification because locomotives use 70% low-sulfur diesel and 30% biodiesel.
- Cedar Hills uses R99 diesel (low-sulfur). WEBR acidification potential may be lower if the County required contracted landfills to use a lower sulfur diesel than assumed in the modeling.

Impacts: Eutrophication Potential (Water Quality)



• **Description:** Potential environmental damage (such as algae blooms) caused when bodies of water or soil become overly enriched with nutrients like nitrogen and phosphorous.

• **Comparison:** Both WEBR and Mass Burn increase eutrophication potential, but WEBR creates 3 times more eutrophication potential than Mass Burn for the medium tonnage scenario.

• **Primary sources:**

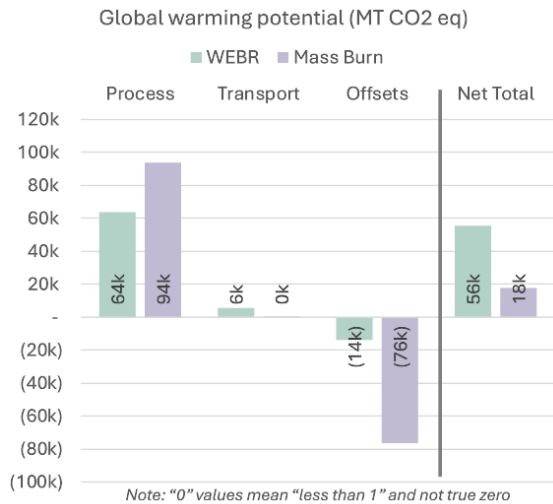
- WEBR: landfill leachate (from leachate collected and sent to water treatment plant and from fugitive emissions from liner leaks)
- Mass Burn: production of lime used as a process input

Note: While burning fossil fuels contributes to eutrophication, for these scenarios the impacts of leachate releases and lime production are far higher.

- Jessica explained that for WEBR wastewater treatment doesn't always get out all contaminants that cause eutrophication. For Mass Burn, the majority of eutrophication impacts come from the production of lime that is used as an input for Mass Burn facilities. For both options, these impacts wouldn't occur in King County.
- Micah Bonkowski asked how does that compare to, say, the eutrophication potential from agricultural practices?

- Paige Weiler from ERG said It is hard to compare the eutrophication potential between 1 unit of mass disposed and 1 unit of fertilizer applied. As a general statement - global fertilizer application/runoff has higher eutrophication potential than leachate emissions from liner leaks or effluent treatment.

Impacts: Global Warming Potential (Climate Change)



Description: Potential increase in the Earth's temperature due to greenhouse gases (GHGs) from human activities. The main greenhouse gas is carbon dioxide (CO₂), which is released primarily through the burning of fossil fuels. Another significant greenhouse gas is methane, which comes from the breakdown of organic materials in environments without oxygen, such as wetlands or landfills.

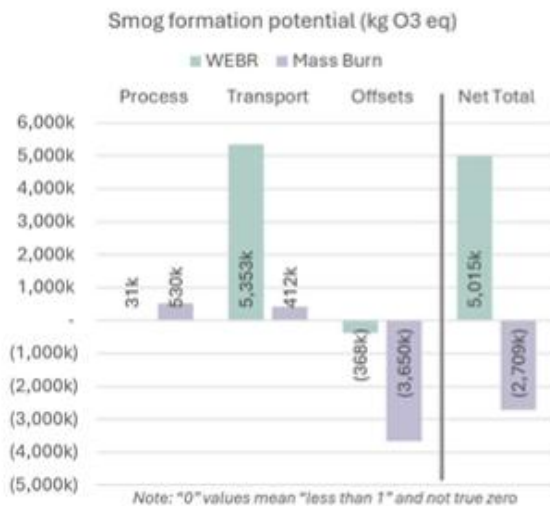
Comparison: Both WEBR and Mass Burn increase global warming potential, but WEBR creates more than 3 times more global warming potential than Mass Burn for the medium tonnage scenario.

Primary sources:

- WEBR Process: The portion of methane not captured as LFG in collection systems and fossil fuels used in landfill equipment and transport.
- Mass Burn: combustion of plastics in the facility.
- Avoided electricity offsets: reduced use of fossil fuels to generate electricity (including impacts of production)
- Avoided natural gas offsets: avoided production impacts by replacing conventional natural gas with RNG

Note: Following IPCC standards, CO₂ associated with burning organics is not counted toward global warming potential, and organics that do not decompose in the landfill are counted as a carbon sink.

Impacts: Smog Formation Potential (Air Quality)



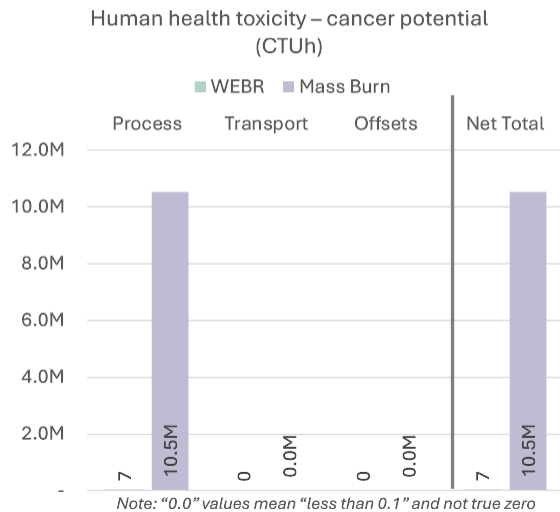
Description: The process by which certain chemicals (primarily NO_x and VOCs) in the atmosphere react with sunlight and heat to produce ground-level ozone (O₃), a major component of smog.

Comparison: WEBR increases smog formation potential while Mass Burn reduces it. WEBR creates nearly 2 times more smog formation potential than the amount that Mass Burn reduces for the medium tonnage scenario.

Primary sources: combustion of fuels like gasoline, diesel, and coal under certain conditions

- WEBR: diesel used in rail transport
- Mass Burn: offsets that reduce fossil fuel use to generated grid energy

Impacts: Cancer Potential (Human Health)



Description: The potential dangers to people's health associated with cancer from the release of toxic chemicals into the environment. CTUh represent impacts for the total human population per unit mass of chemical emitted.

Comparison: Mass Burn has the potential to cause 1.4 million times more cases of cancer than WEBR for the medium tonnage scenario because more toxic chemicals associated with cancer are released.

Primary sources: Combustion of plastics (such as in Mass Burn).

- Jessica explained that the Mass Burn Cancer Potential is higher than WEBR due to the combustion of plastics.
- Martin Pastucha asked about the newness of the technology assumed.
 - Jessica said the peer reviewed models and studies have not yet fully vetted the new technologies.
- Jon Gire asked about the local or global nature of the impact being measured here. Is it more localized to where the facility would be?
 - Paige Weiler said it is hard to say but thinks that it is more local than global.
- Rob Van Orsow (Federal Way) asked if the costs assumed the costs of permitting and siting.
 - Christine said those costs are included.

Conclusion (from Tetra Tech)

- Christine began the summary and wrap up slides

Mass Burn and Waste Export by Rail (WEBR) Evaluation Update Takeaways



- WEBR costs significantly lower than Mass Burn for study period.
- Assumed interstate sale of electricity for Mass Burn with CETA restrictions on electricity sales from WtE facilities to in-State retail customers.
- Environmental life-cycle analysis (LCA) based on sales of electricity to grid (both) and renewable natural gas (WEBR only) result in similar or lower environmental impacts for Mass Burn than WEBR for all subcriteria except for human health toxicity – cancer potential, where Mass Burn has higher impacts. LCA considered the upstream, direct, and downstream global impacts to process and transport waste and offsets for replacing grid electricity and conventional natural gas.
- ESJ considerations identified for future program implementation and siting.



Final Time for Questions with Consultants present

- Martin Pastucha asked what the study period was. He also wanted to know if WEBR exceeds the cost of WTE beyond the study period.
 - Christine said the study period covers the years from 2040 to 2060. She said the landfills have over 100 years of capacity, so WEBR is a long term viable option. They have projected costs out about 10 years beyond 2060 and there are additional costs in that period that would need to be accounted for.
- Meara Heubach asked about the assumptions on citing assumptions for Mass Burn (acreage and proximity to arterial roads).
 - Christine Arbogast we assumed 35 acres and no location for a cite.
- Rob Van Orsow asked the consultants if there are any game changers that would really move the numbers significantly based on the discussion here today?
 - Christine Arbogast tried assuming more revenue for WTE during the break and it did not make a significant change in the economics. So WEBR is definitely the lower cost option. The cost of WEBR contracts might be higher than we assume in the study, but probably not enough to make WTE competitive with WEBR.
- Martin Pastucha stated that Tetra Tech can't really make the assumption that WEBR is cheaper until one actually signs a contract for WEBR.
 - Christine and Bob said this is true, we can't know many details for sure until the future arrives or the county does an early export pilot or something along those lines.
- Aaron Moldver asked about transport options from transfer stations to either option. Is there a cost savings to be assumed from not using it the same way.
 - Pat McLaughlin said we would drive to a railhead in the local environs so the transport cost would be mostly immaterial unless we have to truck the material

outside the county. Pat said whichever our next option is, it will be more expensive.

City Discussion Time

- Jon Gire asked for some background on the conversations with power companies and others about the power revenue assumptions. He also suggested getting a letter from PSE and/or other authorities on whether the assumptions used in the report are correct.
 - Patty Liu talked about how CETA doesn't stop SWD from selling energy, but it does stop utilities from selling it to retail customers. SWD spoke with PSE and our internal legal team. Our legal team suggested that PSE might have an agenda in these discussions. TT spoke with Spokane several times. John Walsh said the federal PURPA regulations do require local utilities to buy it but CETA requires them to sell it to some commercial customers or outside the state. Because there would be transmission and interconnect costs, etc.
- Penny Sweet asked if this energy is considered dirty because of CETA?
 - John Walsh said yes, it is defined as non-renewable in CETA.
- Penny Sweet stated that she doesn't really buy into the offsets idea and that she wants to talk with SPU as soon as possible to negotiate a contract for WEBR together. She does worry about the capacity of the rail lines. But she feels like the railroads probably know what they are talking about. She does have some concerns about the rail infrastructure. She does feel pushed in a direction, not because of the county or even so much the report, but that there is a certain morality to consider.
- Micah Bonkowski wanted to know more about scale about the environmental categories because they are both interesting options and if we knew more about the scale of impacts in the study it would help us know how important those issues are. Will you need to go into the scale of those impacts in the SEPA environmental impact study (EIS)?
 - John Walsh said we didn't get more specific info about the scale of impacts from the consultants, but their models don't necessarily provide that information. We did go deep into the numbers trying to get to that but couldn't get a clear picture. We do hope to get more on this from the EIS work.
- Jon Gire said he is also skeptical of the energy offset scores. He said it isn't as though we would stop producing the other electricity that is "offset." He doesn't really believe those offset impacts will go away.
- Chris Searcy (Enumclaw) said he was also a bit lost of the evaporation measure. He didn't seem to think that just the high level + and - approach is not detailed enough.
- Micah Bonkowski asked whether it was a good idea to assume the current energy mix than the 2040 energy mix.
 - John Walsh said the EIA has a projected energy mix in their model and that since this energy wouldn't be used in state, we shouldn't tailor the energy mix to Washington State.
- Jon Gire said he wanted to bring up again some of the things Pat McLaughlin said about Re+ and the need to move forward with that. So he has concerns that the WTE cost will go up as we reduce tons and the opposite is true for WEBR.

- Meara Heubach wanted to understand more about the opportunities to provide input at the open houses and other points in the process. Rob Van Orsow said the county website also says the Comp Plan is moving out further than we thought.
 - Patty Liu said another good time was when the draft report comes out. She hopes for a 2-3 week comment period. Then the consultants will make final changes. The length of the EIS seems likely to push out the comp Plan timeline
- Rob Van Orsow asked about the budget for this study. It was budgeted for \$500,000 and have we blown that budget.
 - Patty Liu confirmed we are still within budget.
- Meara Heubach was suggesting that some folks on the city side might feel like things are moving too fast. What is the post-report timeline for decision making on LTD.
 - Patty Liu says after the final report is sent out, we will come talk to cities. The report is not the decision, just informing it. The SEPA process will be underway during this presenting period and could take more than a year. We will also be having Open House events and then after the final EIS is issued and after we have met with the cities, we will ask the cities (through MSWAC) to give us their preference. John Walsh will ask for letters of support to provide the Exec and Council so all this preceding process is about helping cities get the information they need so they can provide their preference.
- Linda Knight (Renton) asked about the timeline for the Workshops
 - Patty Liu said late-September or Early October and invites will come from Amy Ockerlander
- Linda Knight asked for a one-pager with laying out the timeline for when they will get information, when meetings are and opportunities for input, and when decisions will be made so everyone is on the same page and can plan ahead.
 - Patty Liu said we can provide that but that some dates (like the final timing of the EIS) will be TBD for the time being. John Walsh said we also need to get info from the cities about when they want us to come, Amy O. will help facilitate this.
- Meara Heubach said the environmental impacts can feel very different for different cities. Rail lines run through some ILA cities and not others. Likewise, siting a WTE facility is more likely to impact some cities more than others.
 - Patty Liu said county staff are happy to tailor topics of presentations to cities per their desire.
- Rob Van Orsow wanted to know how many rail cars (35 double-stacked) per day and how that stacks up with the train traffic already coming through. Is it a huge impact or relatively minor.
 - John Walsh said we would need to reach out to Bob Wallace to get an understanding of that, but that the railroads had said they would just add the new cars to existing trains rather than creating whole new ones.
- Micah Bonkowski wanted to know the same for WTE for ash and what not.
 - John Walsh said we would ask that too
- Rob Van Orsow asked about the environmental impacts of lime and when that is being used.
 - John Walsh said it was part of the eutrophication measure and was used in the WTE process.

- Jon Gire asked again about early export since it will be a part of both options. Should we be talking about that in terms of the comp Plan.
 - Pat McLaughlin said we might do some of that after we make the decision, and may consider some early export to help extend the life of the landfill and perhaps keep some of that capacity available for emergencies. However, if we do early export, we are paying for both WEBR early export AND extending the life of the landfill. Doesn't seem to pencil out but we can look into this again and what timing might make sense for early export, if any.
- Jon Gire and Micah Bonkowski both thanked the County staff for working with the consultant to get better and clearer answers for the study.
- Patty Liu wrapped things up talking about to-do items and reminding them that the Open House meetings are not a series and some of the info might be repetitive.