James DeLay

Please find my attached 55 page Public Comment regarding Ecology's Scoping for Battery Energy Storage Systems Programmatic Environmental Impact Statement. I would like to become a party of record for this matter and be notified of any documents, hearings, or decisions at my email address.

Please take this matter seriously as the consequences to the environment, water supply, communities, schools, families, and individuals could be catastrophic.

There is enough available evidence from 100s of BESS fires to prove that BESS have significant impacts- even though evidence is now just coming to light as developers/owners/operators have successfully hidden the true impacts by telling us/everyone "everything is safe" or "nothing to see here" and providing the results they paid Environmental firms to get that favored them exclusively.

Thank you for this opportunity to comment!

James

September 28, 2026

Clean Energy Coordination
Washington State Department of Ecology
PO Box 47709
Olympia, WA 98504-7709

Re: Scoping comments — Programmatic Environmental Impact Statement for Battery Energy Storage System Facilities (Ecology Publication No. 26-06-017; comments accepted September 1–October 1, 2026)

Submitted via ecology.commentinput.com

I. Purpose of this comment

I support Ecology conducting a comprehensive programmatic environmental impact statement for stand-alone, utility-scale battery energy storage systems. This comment is not a request that BESS facilities be banned as a class. It is a request that the PEIS reject statistical minimization, refuse to treat "no anticipated emissions" or "sealed equipment" as the environmental baseline, and follow recognized failure conditions all the way through the complete environment impact — not stop at fire codes or a modeled concentration at a human receptor.

The question the PEIS should answer is: when a failure mode is recognized, where does the analysis follow initiation→ release→ environmental pathway→ receptor(s)→ consequence→ mitigation→ post-event verification against baseline, through documented cleanup? That chain should be mapped across Ecology's environmental resources, not only fire safety and acute human-health contours.

By "post-event verification" we mean a legally filed pre-construction baseline, then the same analytes, same intervals, and an independent lab after an event, through to documented cleanup. A non-detect on a method that cannot see the chemical, or a jar that homogenizes a 5 mm film, is not verification. "Successful cleanup" means concentrations are back to that site's baseline (or to a health/ecological criterion at least as tight), on-site and on the pathway — wells, ditches, veneer, produce — not only inside the fence.

Project-level Hazard Consequence Analyses, emergency plans, and SEPA checklists in Washington often recognize thermal runaway, toxic and flammable gases, fire, emergency water use, and enclosure involvement. They then treat code compliance, a single-cabinet venting model, or an acute human-health contour as if that closed the environmental question. Demonstrating that a modeled gas concentration measured at a house for a couple of hours is below an AEGL or IDLH threshold—when empirical data proves an average grid-scale BESS fire burns and off-gasses for an average of 5 days and up to more than two weeks depending on the event—does not answer what is deposited on soil, vegetation, wetlands, or water; what firewater carries; what hazardous residue remains after fire engines leave and families return

home; or what wildlife and habitat are exposed to/receive because they cannot shelter in place.

Where a project's own documents acknowledge risks of thermal runaway, off-gassing, fire, or deflagration, those events are reasonably foreseeable under SEPA. I request that the PEIS recommend an automatic Determination of Significance for every utility-scale lithium-ion BESS that tiers to this document, so project-level review cannot close with a DNS or MDNS that never modeled firewater, deposition, or aquatic toxicity, or plume radius for both airborne gaseous/ash toxins and water carried toxins.

According to data compiled by the Pacific Northwest National Laboratory (PNNL) and the University of Michigan, the baseline fire incidence rate for battery energy storage facilities stands at an alarming 2.9%, a metric classified as exceptionally high for energy utilities. The empirical data proves that the vast majority of these fires occur at facilities that are less than two years old. Because over 80% of the utility-scale battery inventory currently on the grid was installed within the last 24 months, the absolute number of localized fires is mathematically projected to rise exponentially. Additionally, like many failure curves, BESS have a high probability to have a thermal runaway event in the first 1-3 years and then the likelihood of a thermal runaways event reduces for a couple years (as long as it is operated safely and never charged above 80% charge and never discharged below 20% capacity and is allowed to cool between charge discharge cycles) before rising again after wear and tear, age/getting closer to end of lifecycle set in around years 7-9 and then the risks of a thermal runaway increase significantly- and Ecology cannot allow project-level checklists to treat these high-incidence infrastructure hazards as minor, low-probability events.

Ecology has a distinct statutory opportunity to set a statewide technical baseline so that local SEPA review is not improvising that seven-step analytical chain—the closed loop tracing an infrastructure hazard from (1) engineering failure mode, to (2) toxic chemical release, to (3) environmental transport pathway, to (4) human and ecological receptor exposure, to (5) toxicological consequence, to (6) engineering mitigation, and to (7) post-event empirical verification, meaning a legally filed pre-construction baseline, followed by testing the identical analytes and identical depth intervals by an independent laboratory after an event, through to a documented successful cleanup where chemical concentrations are verified back to that specific site's pre-disturbance baseline (or to a health/ecological criterion at least as tight) along the entire pathway—including downwind veneers, stormwater ditches, agricultural produce, and municipal wells—not only inside the facility fence line—project by project.

Siting rules and statewide code frameworks must address nonproject SEPA actions, denominator distortion in industry failure databases, and incorporate strict technical constraints to ensure legally defensible reviews. For the full detailed text and specific arguments regarding regulatory compliance and modeling limitations, please refer to the referenced document.

As an unincorporated King County resident for over 50 years, this programmatic scoping is a literal matter of life and death, as well as physical and fiscal safety. My property sits near the proposed Kingfisher BESS facility which is proposed just outside Covington's City limits and

immediately North of Mattson Middle School. My family, along with 100s of unincorporated King County neighbors rely entirely on private groundwater wells for all domestic drinking and sanitation water. Our immediate rural community raises livestock—including chickens, goats, llamas,cattle, horses, and sheep—and consumes food crops, fruits, vegetables, nuts, and eggs actively generated by soil and water directly downgradient from this proposed industrial BESS in a RA-5 zoned area. Siting a utility-scale BESS at this site with over 10 identified wetlands, 1000 feet from Soos creek (which is part of King County's Fish Passage Program), and 40ft from a contributory stream that feed into Soos Creek which is about 1,000ft away, and surrounded by rural RA-5 zoned homes, Mattson Middle School, and R6 zoned neighborhoods requires the PEIS to map local exposure risks all the way to the domestic kitchen table and the local barnyard footprint to a Mattson Middle School's property and its students and staff 100 feet away. The PEIS should treat private domestic wells in the zone of contribution the same as municipal wells: a legally filed pre-construction baseline (lithium, cathode metals, fluoride, PFPrA, TFA) and the same suite after any release. A kitchen tap and a livestock trough are receptors. An MDNS that sampled only a public wellfield, or no well at all, has not closed that pathway at Kingfisher, Sumner, or any RA-5 pad on a CARA.

This state-wide systemic breakdown is definitively proven by the administrative tracking record of the October 2025 battery storage fire inside the Puyallup School District's Ferrucci Junior High School. Immediate remediation has cost roughly $8.9 million, and the school board recently approved a $15 million bond to keep reconstruction moving forward while waiting for insurance payouts. Before anyone can return, the building still needs final occupancy approvals from the City of Puyallup, the Tacoma-Pierce County Health Department, and Labor & Industries. Local permitting dockets reveal that the high-density BESS closet installation and associated facility upgrade were granted a full SEPA Determination of Non-Significance (DNS), completely exempting the asset from rigorous environmental transport modeling, firewater tracking, or pediatric toxicological consequence mapping. This local precedent serves as absolute administrative proof that lead agencies across Washington are actively utilizing the 'non-project' and facility-upgrade DNS loophole to allow volatile energy assets to embed directly inside K-12 school structures without any site-specific environmental reviews. Siting a battery field or interior battery room under a boilerplate DNS—while ignoring that a systemic failure forces the immediate emergency evacuation of hundreds of vulnerable children and staff—represents a profound administrative failure under SEPA. The PEIS must actively close this loophole by recommending a non-waivable, mandatory Determination of Significance (DS) statewide for any BESS asset proposed inside or adjacent to educational, residential, or aquifer-recharge environments, completely outlawing the use of superficial DNS clearances to bypass programmatic common-cause reviews.

II. What the PEIS should treat as reasonably foreseeable

Statements such as "no emissions," "sealed equipment," "hermetically sealed," or "no anticipated discharge" describe a facility that is working correctly. That is not the PEIS subject. Developers use normal-operation language to retire pathways. Thermal runaway is not a leak

from a tank during ordinary use. It is a recognized failure that produces fire, toxic gas, ash, and firewater that no gasket rating prevents. Thermal runaway is a recognized failure mode

which is systematically unpreventable and chemically/elementally unstoppable once initiated. The PEIS should say: analysis of abnormal and emergency conditions is mandatory; a sealed-box, a certification, adherence to a code, or any other assurance is not an environmental review.

The PEIS must explicitly reject the industry narrative that Lithium Iron Phosphate (LFP) chemistry eliminates environmental risk due to its higher thermal runaway onset temperature. While LFP's internal ignition threshold is between 210°C to 270°C (410°F to 518°F), which is about 60°C to 100°C higher than Nickel Manganese Cobalt (NMC) systems (which fail at roughly 150°C to 180°C), this marginal delta provides, at maximum, a few fractional seconds of delay once an internal cell short-circuit escalates from normal operating temps of (ideally) 70°F to 2,000°F+ inside a packed enclosure in less than 20 seconds. Ecology must analyze the distinct release phases of this technology: while active combustion yields particulate heavy metal ash, a non-ignited off-gassing failure—such as the early stages of the McMicken, AZ event—still forces a violent release of dense, toxic, and highly flammable chemical vapor mists. With or without open ignition, lithium batteries release massive quantities of toxic and explosive gases once thermal runaway begins- LFP releases up to 10x the HF vs NMC. With or without ignition, lithium batteries release toxic and flammable gasses once thermal runaway begins. Even thermal runaway initiation without flames/explosions is not without environmental consequences. Once thermal runaway, off-gassing, and/or fire/explosions start, or whether defensive/offensive water suppression water occurs, there are environmental consequences. Manufacturing errors, system failures, accessory system failures, shipping damage, installation errors, usage errors, wear and tear/aging, hacking, environmental impacts, projectile/vehicle impacts, seismic events, and other unforeseen triggers can initiate thermal runaway — all relevant in Washington — still produce hydrogen fluoride, hydrogen cyanide, toxic electrolyte and fluorinated breakdown products, the full lithium-fire suite(as explicitly defined by named analytical testing methods, depth intervals, and indoor/off-site pathways in Section V and Section XV below) , metal ash (when there is fire/explosion), and firewater. The PEIS must close that chemistry loophole. Any lithium based label must be approached as a high--risk battery chemistry and a “safer” lithium chemistry label must not retire a pathway.
Peer-reviewed adiabatic testing demonstrates that while LFP cathodes offer a threshold buffer over traditional NMC cells, LFP thermal runaway severity escalates aggressively with a high State of Charge (State of Charge/SoC), triggering massive, sustained internal heat generation rates up to 953.2°C/min. The PEIS must look directly at this thermodynamic metric and evaluate alternative, inherently stable long-duration energy storage (LDES) technologies—such as UL-listed sodium-ion batteries, zinc-based chemistries, or iron-air systems—which physically cannot undergo thermal runaway.

Ecology must force developers to disclose the literal chemistry weights of their battery assets rather than hiding behind trade-secret exemptions. Manufacturer specifications from the LG

Chem JH4 cells used at Moss Landing prove that these systems consist of up to 50% proprietary Nickel-Manganese-Cobalt (NMC) metal oxides and 20% volatile carbon matrices by weight. The manufacturer's own Product Emergency Response Guide (PERG) admits that thermal runaway vents toxic gases at temperatures exceeding 1,110°F (600°C). Siting reviews must explicitly state that under these conditions, gaseous clean agents (such as carbon dioxide, FM-200, or Novec 1230) are totally incapable of suppressing propagation because they provide zero structural cooling to the cell cores. Relying on a 'sealed box' marketing claim to retire multi-media transport modeling ignores the physical reality that these systems are massive, self-oxygenating high-temperature chemical reactors.

III. Thermal runaway as an environmental event

The PEIS should evaluate thermal runaway as a release to air, land, and water, not only as a fire-code event. That includes combustion and decomposition products (including but not limited to HF, HCN, HCl, CO, SO2, and particulates), cathode and current-collector metals, electrolyte and coolant, ash and nano-scale debris, heat and projectile hazards if an enclosure is breached, and the environmental consequences of the emergency response itself.

Enclosure integrity should be examined for the whole event, not only the first minutes of designed venting. Pressure-relief features answer one engineering question. They do not answer whether doors, seams, roofs, and walls remain a release boundary after hours of internal heating. Alternate release heights and breach configurations change dispersion, deposition, and where water hits.

Testing scale must be explicit. Cell, module, unit, and single-enclosure tests are not a field of thousands of cells. State of charge, chemistry, manufacturer, enclosure design, simultaneous versus sequential runaway, and ignition conditions change yields. Where credible studies disagree, the PEIS should disclose uncertainty rather than treat one UL 9540A run as universal. The basis for testing for lithium battery fire releases should include the “full suite + named method + missing = untested” to ensure appropriate testing is done for all known releases to enable complete remediation of affected areas.

Washington Ecology already states that lithium-ion fires burn extremely hot and for extended periods as cells ignite in sequence (thermal runaway); electrolytes can form a flammable vapor cloud that can explode; a mixture of toxic gases should never be inhaled; burning batteries emit hazardous smoke, toxic vapors, and heavy metals; and reignition can occur while damaged cells and electrolyte remain. Ecology tells generators that waste lithium-ion batteries designate as ignitable (D001) and reactive (D003) if not managed as universal waste, and that lithium-ion fires require large amounts of water, and pointing responders to DOT ERG. That is Ecology describing the same chemistry this PEIS is scoped to review — at household and generator scale. Utility-scale modules with 10,000x the lithium battery cells do not become a lesser waste when they fail at a BESS facility or during transport.

IV. Firewater and emergency-response water

Some response strategies let an involved enclosure burn while water is applied to exposures, vegetation, or adjacent equipment. Water may also continuously run for many hours, days, and even weeks from installed sprinklers, elevated master stream, unmanned streams, ladder pipe- often requiring at least a couple million gallons and up to 8 million gallons of water per single container BESS fire and up to nearly 20-million gallons in major fires that last more than 3-weeks (see Otay Mesa, which burned, off-gassed, and smouldered for 22 days). This month's La Verne's BESS fire burned and forced evacuations for only 96 hours, but consumed 2,592,000 gallons of water per 24-hour cycle = 10,368,000 gallons over the course of the 4-day active containment operation. That water contacts ash, metals, electrolyte, fluorinated breakdown products, and damaged equipment, then follows the site's drainage design — stormwater pipes, ponds, infiltration, wetlands, streams, or open ground.

Containment sized for ordinary storms or oil spills is not containment sized for a BESS fire's emergency duration and volume. Isolation from ordinary stormwater during an emergency should be complete. Secondary and tertiary containment should be sized for a 120-hour suppression volume, not the typical designed storm retention volumes. Mitigation guidance should require sampling for baselines prior to BESS construction, before any release, treatment, and disposal. "Let it burn" does not mean "let the water go." Rain that falls during the event is "firewater". A liner and lock-down tank that holds incident rainfall and defensive-cooling water for testing and disposal is the design Riverhead officials described as needing after the 2023 East Hampton BESS fire; a 2026 fire-code update does not replace that need for isolation.

The PEIS must also close the inverse loophole: project hazard analyses that say spill control is not required because the design does not use interior sprinklers (a reading some applicants have taken from fire-code spill-control sections). No-sprinkler / let-it-burn still produces runoff when water is applied to exposures, vegetation, neighboring cabinets, or the ground. Infiltration ponds built to "treat" ordinary stormwater by soaking it into a shallow water table are a discharge design, not containment. Vacaville-area comments on the Corby / Vaca-Dixon proposals documented an 8- to 10-foot water table and ponds designed to seep into the ground, plus irrigation canals as receptors. Washington sites with CARA soils and infiltration BMPs present the same geometry. This hydrogeological vulnerability is no longer a theoretical projection; it has been codified as an active enforcement reality by Washington municipalities. In its formal September 29, 2026 scoping submittal, the City of Bonney Lake explicitly declared that due to the heavy metals, lead, nitrates, and liquid-cooling surfactant PFAS released during a thermal runaway event, the city legally treats all BESS failure firewater runoff as an 'illicit discharge' under its municipal stormwater regulations. In practice, Bonney Lake protocol strips away the industry's 'clean stormwater' narrative, legally requiring 100% complete isolation, automated pre-treatment, and total diversion to specialized sanitary sewer networks to prevent groundwater cross-contamination. The PEIS must analyze the profound regional burdens introduced where adjacent jurisdictions lack these illicit discharge classifications, evaluating how uncontained failure runoff systematically forces local governments into immediate non-compliance with Phase I or Phase II National Pollutant Discharge Elimination System

(NPDES) federal water quality requirements. This high-vulnerability geometry is precisely why the Washington State Department of Health, in its official September 23, 2026 programmatic scoping submission, formally declared that uncontained BESS emergency events pose an immediate chemical contamination threat to regional drinking water infrastructure. The Department of Health explicitly warned that when chemical releases commingle with firefighting water, the resulting toxic runoff can permanently compromise the underlying aquifer, stating on the record that 'if the source water (aquifer) itself is impacted, it could affect a greater number of drinking water systems and private wells than a single proximate source'. Siting a multi-megawatt array without an absolute, impervious secondary containment envelope sized for multi-day suppression runs directly counter to the State Health Department's explicit water security directives.

Post-incident liquid samples must meet the laboratory's minimum volume for total metals and PAHs. If a path is dropped because the bottle was short (as DTSC recorded for aqueous PAHs after Moss Landing), that path is untested, not clean. The PEIS must bar an all-clear on a media that was never fully analyzed.

V. POST-INCIDENT ENVIRONMENTAL CHARACTERIZATION & THE EXTENDED ANALYTE LIST

Emergency plans monitor temperature, gases, and reignition. That is life safety. It is not an environmental characterization. The PEIS should specify when an incident triggers sampling of soil, groundwater, surface water, sediment, vegetation, and surface films; which analytes; how soon (including before the first rain); how long; what background is required; and what findings trigger cleanup.

A contaminant omitted from the suite is invisible even when bottles are filled. Standard EPA Method 533 and a routine drinking-water metals package do not include the ultrashort PFAS that later showed up in a public wellfield. Suffolk County Water Authority detected PFPrA in the Bridgehampton / Buckskill wells in early 2026 only after its lab built an in-house method for five ultrashort-chain PFAS. Neither EPA nor the New York State Department of Health had an approved method for PFPrA at that time. Suffolk County Water Authority later sued East Hampton Energy Storage Center, LLC, LG Chem, Ltd., and LG Energy Solution, Ltd. (the BESS owner/BESS manufacturer) when they tested and found PFAS in wells after the BESS fire. NYSDEC, with NYSDOH and SCDHS, then confirmed a source area at the BESS in September 2026 (soil on the order of 600 ppb PFPrA outside the building; groundwater up to 10,000 ppb next to the pad). That is a three-year lag from the May 31, 2023 fire to a named analyte. The PEIS cannot conclude that because method "533 was run" there water is safe and "PFAS were absent."

Conventional 0–3 inch and 0–6 inch homogenized soil jars have already missed a metal-rich ash film thinner than five millimeters in Moss Landing's Jan 2025 BESS fire. Aiello et al. (Scientific Reports, November 2025) and the EMBER / Moss Landing Marine Laboratories work showed that standard coring and laboratory homogenization dilute a surface veneer into

the soil underneath and can make the deposit disappear on paper. That is method geometry, not a finding of no ash. The PEIS must require a 0–5 mm veneer or wipe in the same week as the event, not a delayed bulk jar scored against a residential screening level.

Operator-paid incident consultants' data cannot serve as the PEIS closeout or a clean environmental bill of health. Following the January 2025 Moss Landing fire, the developer's hired consulting firm, the Center for Toxicology and Environmental Health (CTEH), issued widespread public notices reporting zero hazardous air levels or threats to public health. However, a landmark September 23, 2026 investigative report by *The Wall Street Journal* confirms that former CTEH environmental rapid responder Peggy Dixon has filed a comprehensive 97-page sworn whistleblower affidavit with the EPA Office of the Inspector General. Dixon's under-oath testimony reveals that CTEH management systematically deployed improperly calibrated, faulty, and fundamentally insensitive equipment to intentionally downplay risk and shield the responsible corporation from legal liability. Dixon under oath declared that project managers explicitly instructed field scientists that 'we wanted zeros in our reports,' forced the concealment of dead wildlife carcasses (including raccoons and beavers) found near contaminated water channels, and threatened to fire any rapid responder who recorded too many chemical detections. Dixon's forensic disclosures confirm that the Moss Landing testing plan completely omitted an adequate range of contaminants and failed to perform any indoor air sampling, despite residents being ordered to shelter in place. Because an official EPA Office of Inspector General investigation is now actively evaluating this corporate data manipulation, the PEIS must completely bar lead agencies from accepting developer-funded compliance summaries to close out a SEPA file.

The PEIS should treat those method failures as a scoping fact, not as proof of no impact.

The PEIS must look directly at the joint epidemiological data published on May 30, 2025, by the Monterey County Health Department and the Santa Cruz County Health Services Agency. Following the Vistra BESS disaster, a staggering 82.8% of surveyed community members experienced acute toxic exposure symptoms. This data exposes the absolute falsehood of the industry's 'short-term weekend incident' narrative: the median duration of human symptoms was 27 days, with 43.3% of the exposed population still actively symptomatic weeks later. The primary recorded clinical symptoms included severe headaches (59.5%), acute sore throats (54.6%), persistent coughing (48.7%), and a distinct metallic taste in the mouth (38.7%) indicating systemic heavy metal inhalation. Most alarming, children aged 12 and younger suffered the highest rate of symptomatic poisoning (90.9%) and required the highest percentage of emergency medical care (31.8%). Ecology must mandate that project checklists model these long-term human and pediatric toxicological footprints rather than allowing short-term air models to declare an immediate 'all clear'.

This multi-week pediatric and adult exposure footprint is visually and geographically verified by the certified crowd-mapped registries compiled under the 'Never Again Moss Landing' tri-county plume tracking database (Register Memo Entry Point: MLNA Powerpoint Exhibit 5.5.2025). Mapping data extracted from 647 independent individuals who reported unusual

and often severe toxic exposure symptoms following the facility disaster proves that the true human and wildlife inhalation hazard zone expands past a 30-mile radius. Shifting wind vectors and topographic constraints carried the toxic chemical field across three complete counties, forming an expansive, multi-directional deposition footprint. The data reveals heavy clusters of acute poisonings and respiratory distress spanning north directly into the high-density metropolitan basins of San Jose and Los Gatos, tracking heavily south along coastal valleys into Carmel and Big Sur, and moving directly over parallel mountain ridges to form a devastating, stagnant atmospheric trap in the Morgan Hill inland valley pocket where a single hotspot recorded a staggering 247 actively ill residents. The PEIS must conclude that a utility-scale battery fire is a regional, multi-county atmospheric event. Project checklists that restrict their plume modeling to an industry-preferred facility fence line are scientifically invalid under SEPA.

The default lithium BESS fire 'Full Suite' or analyte list is completely beyond the technical capability of standard four-gas or six-gas HAZMAT field meters. As verified by forensic agency screening matrices, a complete environmental characterization suite must span three media pathways:

1. Air Emissions: Hydrogen fluoride (HF), Carbonyl fluoride (COF_2), and volatile breakdown products from $LiPF_6$ electrolyte decomposition (including phosphoryl fluoride(POF_3), phosphorus pentafluoride(PF_5), tetrafluoromethane(CF_4), and fluoroethane), alongside hydrogen cyanide (HCN), hydrogen chloride (HCl), chlorine (Cl_2), hydrogen sulfide (H_2S), ammonia (NH_3), carbon monoxide (CO), carbon dioxide (CO_2), hydrogen (H_2), sulphur dioxide (SO_2), and nitrogen oxides (NO/NO_2NO_x). Testing must capture explosive volatile organic compounds (VOCs) and aromatic hydrocarbons generated by burning separator plastics, including acetylene, methane, benzene, toluene, styrene, ethylbenzene, formaldehyde, acrolein, and highly toxic dioxins/furans resulting from the combustion of fluorinated polymer binders (e.g., PVDF). Particulate modeling must mandate mass tracking of fine particulate matter ($PM_{2.5}/PM_{10}$), nano-scale metal oxides ($PM_{0.1}$), black carbon (BC), and organic/elemental carbon (OC/EC).

2. Heavy Metals on Filters and Veneers: Post-incident testing must isolate and quantify vaporized cathode and current-collector metals on filters, vegetation, and thin-interval soil veneers (0–5 mm), including lithium (Li), cobalt (Co), nickel (Ni), manganese (Mn), aluminum (Al), copper (Cu), and explicitly tracking iron (Fe) and phosphorus (P) to close the LFP chemistry loophole.

3. Water and Sediment Runoff: Firewater retention basins, downgradient groundwater monitoring wells, and surface sediments must be independently analyzed for the identical metal suite, free fluoride ions, and mobile ultrashort-chain

PFAS variants including Perfluoropropionic acid (PFPrA) and Trifluoroacetic acid (TFA).

The Empirical Operational Record: Real-world field events prove that emergency response protocols routinely treat superficial life-safety clearances as environmental closeouts. During city of Warwick's 3rd BESS fire since 2023, local HAZMAT logs reported testing only for CO, LEL, O_2, HCN, NH_3,Cl_2, and basic VOCs, declaring an 'all clear' while completely omitting field testing for HF, carbonyl fluoride (COF_2), any of the underlying heavy metal nanoparticle deposits, and the rest of the lithium fire suite. Similarly, during the first BESS fire this month in Summerside, responding officials published public notices declaring the surrounding 'air quality' and municipal well chemistry as being 'all clear' without disclosing a single tested analyte metric—failing to run specialized methods for HF, HCN, or ultrashort-chain PFPrA, leaving the true environmental contamination footprint completely invisible.

The critical necessity for an unyielding, mandatory statewide analyte list is definitively proven by the internal procedural failures of the California EPA / DTSC during their January 24, 2025 post-fire sampling track at Moss Landing. While the resulting laboratory data successfully vindicated the thin-interval veneer strategy by capturing a devastating 116 mg/kg Nickel spike in marsh soils and a 0.386 mg/L Nickel cross-contamination hit inside Hester Pond, the state's official report simultaneously exposes how easily critical contamination paths become legally invisible when standard suites are restricted.

DTSC's laboratory testing was strictly confined to basic Total Metals and Polycyclic Aromatic Hydrocarbons (PAHs). Shockingly, Section IV of the official report records a catastrophic field protocol failure, admitting that 'PAH analysis was not performed on aqueous samples due to insufficient volume collected.' Because field personnel failed to secure required baseline liquid volumes, the state completely failed to evaluate whether carcinogenic, charred separator plastic residues translocated into the Elkhorn Slough National Estuarine Research Reserve. Furthermore, despite the high-temperature combustion of tons of fluorinated PVDF cell binders and clean-agent suppression chemicals, DTSC ran zero analytical tracking for mobile, toxic, ultrashort-chain PFAS variants such as Perfluoropropionic acid (PFPrA) or Trifluoroacetic acid (TFA), nor did they analyze surface media for free fluoride ions, cyanide residues, or lithium markers. If a premier state criminal electronics investigation unit can leave a sensitive estuary completely unvetted for waterborne PAHs and ultrashort-chain PFAS purely due to narrow scoping templates and bottle-volume errors, local Washington volunteer lead agencies possess zero capacity to improvise these suites project-by-project. The PEIS must declare that an environmental characterization is legally non-responsive under SEPA unless the lead agency certifies a pre-funded testing suite covering the complete lithium-fire analyte list across all air, soil, and liquid pathways.

In the first BESS fire this month (Sept 2026), Summerside told the public that air and water tests showed no danger and that drinking water was safe — without publishing HF, HCN, PFPrA as named analyte nor any of the rest of the full analyte list— but then on Sept. 17th in

a joint city/province announcement they also said to wash garden produce because toxic smoke particles may sit on vegetables after the BESS burned, smoked, off-gassed between Sept 7th- Sept 21st 2026.

In the second BESS fire this month (Sept. 18, 2026) at Moss Landing (which was the 4th BESS fire at the Moss 300 section and 6th overall BESS fire at the Moss Landing complex since BESS facilities first went live in 2021) the BESS owner declared “all clear” and the county parroted that assessment even though no handheld testing for HF, HCN, CO, VOCs, or flammables. A test kit that cannot see HF, HCN or ultrashort PFAS, or any of the rest of the full analyte list cannot close those pathways.

The structural deception of agency-issued 'all-clear' declarations is definitively exposed by the raw admissions of the Monterey Bay Air Resources District (MBARD) following the September 18, 2026 chemical reignition at Moss Landing. While county officials and the BESS owner parroted public notices claiming the atmosphere was clear and posed no public health threat, local monitoring logs reveal that the extra fence-line sensors installed after the 2025 disaster were exclusively configured to read broad-spectrum particulate matter (PM2.5). MBARD's own designated air officer formally admitted to reporters that the agency was running zero analytical tracking for vaporized cathode heavy metals on those sensors, explicitly stating: 'although we would expect that to be in the smoke.'

This represents a staggering regulatory indictment for the SEPA record: a regional air pollution control authority openly acknowledged the expected presence of highly toxic, carcinogenic heavy metal nanoparticles drifting through a public plume, yet intentionally configured its emergency monitoring matrix to remain completely blind to those exact analytes. Declaring an atmospheric clearance while knowingly failing to measure the highly toxic metals expected to be in the smoke establishes that the plume did not magically stop at the fence line; rather, the specialized testing stopped at the equipment limitation. The PEIS must explicitly cite this MBARD admission as a scoping fact, codifying that no tiered project checklist can close its environmental review based on generic agency PM2.5 data results that fail to isolate and measure the specific, expected chemical compounds of a lithium-ion combustion event.

In the third BESS fire that happened this month (September 2026) — at Metropolitan Water District’s Weymouth treatment plant in La Verne — officials said air monitors showed no hazardous conditions off the property. They did not publish HF, HCN, PFPrA, or the rest of a lithium-fire suite as the named analytes behind that all-clear. MWD also said the treated drinking-water supply was not affected by the 10,368,000 gallons of firewater over the course of the 4-day active containment operation. Cooling runoff was sent to the storm-drain system and lab-tested; those results were not the same sentence as “the tap is safe.”

This pattern of selective tracking and administrative containment is explicitly verified by the September 30, 2026 City Council investigative logs following the Metropolitan Water District’s Weymouth plant fire in La Verne, California. While responding officials publicly announced that perimeter air monitors detected low-level battery-fire gases strictly at the burning enclosures to justify an immediate safety profile, the deployment data reveals that the testing suite was

entirely confined to standard broad-spectrum emergency field parameters—specifically Carbon Monoxide (CO), Hydrogen Cyanide (HCN), Volatile Organic Compounds (VOCs), and Lower Explosive Limit (LEL) combustibility. The response teams deployed zero analytical equipment capable of tracking airborne Hydrogen Fluoride (HF), Carbonyl Fluoride (COF2), or vaporized cathode heavy metal nanoparticle plumes. Declaring an off-site air clearance based on broad-spectrum HAZMAT bricks while completely omitting the tracking of fluorinated acid vapors and airborne carcinogens represents a severe forensic failure. It establishes that the plume did not magically stop at the fence line; rather, the specialized testing stopped at the property boundary. The catastrophic fallout of this un-monitored plume was felt directly across the surrounding community: over 500 residential homes and 30 local businesses were placed under mandatory evacuation, Grace Miller Elementary was forced to close for three days, and residents living directly downwind documented immediate chemical property damage—including out-of-pocket exterior home treatments costing up to $3,000 per household, swimming pool water exhibiting a 10x spike in baseline chemical concentrations from atmospheric deposition, and the immediate acute mortality of residential backyard aquaculture (including local koi fish populations) exposed to the smoke field. The PEIS must programmatically declare that any ambient air characterization is invalid under SEPA unless it utilizes continuous tracking for the full lithium-fire analyte list rather than relying on narrow life-safety meters to issue a fraudulent 'all clear.'

Declaring an off-site air clearance based on standard industrial HAZMAT bricks while completely omitting the tracking of fluorinated acid vapors and airborne carcinogens represents a severe forensic failure. It establishes that the plume did not magically stop at the fence line; rather, the specialized testing stopped at the property boundary. The PEIS must programmatically declare that any ambient air characterization is invalid under SEPA unless it utilizes continuous tracking for the full lithium-fire analyte list rather than relying on narrow, broad-spectrum life-safety meters to issue a general 'all clear.'

Furthermore, during the September 22, 2026 failure at the Metropolitan Water District’s Weymouth treatment plant in La Verne, California, while public notifications repeatedly emphasized that the facility's treated drinking-water supply was 'not affected,' and that cooling runoff was being 'collected and tested' under Los Angeles County Health Hazardous Materials watch, local logs confirm that agencies did not execute an analytical PFAS suite or a heavy metals panel on the escaping firewater runoff. Testing was strictly limited to superficial, standard compliance field metrics—specifically screening for pH levels, Total Suspended Solids (TSS), and basic VOCs. Consequently, over 10.3 million gallons of emergency exposure-cooling water ran blindly into the regional municipal storm-drain system completely unvetted for waterborne cathode markers (Lithium, Nickel, Cobalt) or mobile, ultrashort-chain PFAS variants resulting from clean-agent thermal cracking. The PEIS must treat these operational field gaps as definitive proof that standard agency water screens are systematically blind to lithium-fire dynamics, making it a mandatory SEPA scoping requirement that automated, inline storm-drain lockouts are engineered into every tiered facility.

Suffolk County Water Authority (SCWA) did not find PFPrA because they ran the EPA Method 533- as 533 is completely blind to PFPrA. The 533 test was completed and the water was announced as being “safe”. Again, if they don’t test for it, the developers will always say it isn’t there… To find the PFPrA, SCWA’s lab built an in-house method for five ultrashort-chain PFAS, including PFPrA, and tested the water in January 2026 (about 2 ½ years after the fire) because neither EPA nor the New York State Department of Health had an approved method. Please note, the testing took place nearly 3 years after the BESS fire and contamination levels were still high enough 3 years later to shut down 30% of Suffolk County’s water supply as well as many private wells.

As shown in Warwick County’s HCN announcement during the December 2025 BESS fire that HCN was not going beyond the fenceline with “0.5 ppm / downwind zero” shows the opposite procedure: run the kit already on the truck, publish a generic all-clear, and never list HF, PFPrA, or rest of the full analyte list. Actual HAZMAT testing results showed 1ppm to 1.5ppm and 32 different locations/sensors read 1.5ppm- including at the sensors placed the furthest away - 1/3rd a mile, despite the public announcements. Please note, the placement of the sensors stopped at 1/3rd a mile away- but the HCN gas did not stop and kept spreading beyond the meters’ location… That is not a map of where the gas stopped. It is where they stopped measuring.

Industry plume models stop at adult AEGL numbers. That understates a school, residence, park, or anywhere else kids/infants may be a forced receptor. At the same outdoor ppm, a child inhales more HCN per kilogram than an adult because of a higher minute-ventilation-to-weight ratio. 1.5 ppm is already at the AEGL-1 line if that level lasts hours (EPA AEGL-1 is 1.3 ppm at 4 hours and 1.0 ppm at 8 hours).

A non-detect on a method that cannot detect the chemical is not a “non-detect” or an “all clear”. The PEIS should say that a project-level or incident “all clear” is incomplete unless the report names the full lithium-fire suite and the laboratory method used for each.

Those chemicals are ecological receptors, not only occupational limits. HF and HCl are water-soluble acids: they burn moist leaf tissue, bird and mammal airways, and fish gill surfaces; a salmon redd does not get an AEGL. HCN blocks cellular respiration in any unevacuated animal that breathes the plume for the full event. Metal nanoparticles in a thin ash film wash into wetlands and Type F channels with the first rain — remobilization, not disappearance (Elkhorn Slough after Moss Landing). Lithium, nickel, cobalt, and manganese persist in sediment and can move into benthic invertebrates and fish. Ultrashort PFAS (PFPrA, TFA) are highly mobile in groundwater; they are why a wellfield can show a compound that EPA 533 testing never detected. Firewater carries all of the above off an unlined pad. Produce and riparian vegetation intercept the film; washing tomatoes is deposition onto food, not a health clearance. The PEIS should map each analyte to air → film → soil/water → gill/ gut→ or root — not stop at a human IDLH circle- and if the proposed BESS is anywhere near children, infants, elderly, the scale must be adjusted to harmful/IDLH levels for those age groups.

THE MANDATORY STATEWIDE WHOLE-SYSTEM ANALYTE MATRIX

To stop this systemic tracking evasion, the PEIS must mandate that project-level baselines and post-incident verification tracks monitor the Complete Multi-Media Whole-System Analytes Matrix. If any parameter is omitted from the laboratory testing protocol, that specific environmental pathway remains legally untested and un-remediated, not clean. The non-waivable baseline matrix must encompass:

Air Gases & Volatiles: HF, COF_2, POF_3, POF_5, CF_4, fluoroethane, HCN, HCl, Cl_2, H_2S, NH_3, CO, CO_2, H_2, SO_2, NO, NO_2, NO_x. Electrolyte and polymer VOCs: acetylene, ethylene, ethane, methane, benzene, toluene, xylene, styrene, ethylbenzene, formaldehyde, acrolein, acetaldehyde. Dioxins and furans (PCDD/PCDF) where PVDF, PVC wire, or halogenated gaskets burned. Phosgene ($COCl_2$) and chlorine dioxide ClO_2 evaluated conditionally where heavy PVC conduit arrays or cable trays are involved in the fire footprint.

Particles & Filters: Particulate modeling must mandate mass tracking of fine particulate matter ($PM_{2.5}$), coarse particulate matter (PM_{10}), nano-scale metal oxides ($PM_{0.1}$), Total Suspended Particulates (TSP), black carbon; organic and elemental carbon (OC/EC) .

Heavy Metals on Filters and Veneers: Post-incident testing must isolate and quantify vaporized cathode and current-collector metals on filters, vegetation, and thin-interval soil veneers (0–5 mm), lithium, nickel, cobalt, manganese, aluminum, copper, iron, phosphorus, lead, zinc, tin (from circuit board solder), and chromium (from structural stainless steel and anti-corrosive coatings).

Water, Firewater, & Sediment: Independent laboratory testing of all firewater retention basins, downgradient groundwater monitoring wells, municipal well contribution zones, private domestic wells, and surface sediments. The suite must analyze for free fluoride ions, mobile ultrashort-chain PFAS variants—including Perfluoropropionic acid (PFPrA) and Trifluoroacetic acid (TFA)—aqueous HF, aqueous HCN, chloride, sulfate, phosphate, hydrogen ion activity (pH), electrical conductivity, Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Polycyclic Aromatic Hydrocarbons (PAHs), and the complete heavy metal matrix listed above. Liquid cooling glycol markers (ethylene glycol and propylene glycol) must be run if liquid chiller skids are specified; plus any named clean agent (Novec 1230, FM-200) as a chemical precursor after high-temperature thermal cracking.

Soil (0-5mm Surface Veneer or Wipes): Mandatory thin-interval surface veneer scraping (0–5 mm matrix) or physical surface wipes executed within the same week of the event and prior to any rainfall, tracking the identical heavy metals, fluoride, and soil PAHs.

Vegetation and Produce Downwind: Full deposition accumulation tracking across agricultural food crops, private gardens, livestock pastures, and native riparian corridors.

Indoor Air Quality Receptors: For structures caught inside any evacuation, shelter-in-place or voluntary evacuation zone (including local schools, residential homes, barns, and businesses),

the air plan must run the identical gas and filter particulate matrix, rather than relying on an outdoor fence-line trailer.

BESS, Electrical Pad, and Substation Fluid Contaminants: Quantitative screening for transformer mineral oil, synthetic ester/FR3 dielectric fluids, and a mandatory PCB screen wherever legacy, pre-1979, or unlabeled electrical equipment is active on the utility pad.

Reused Structural Building Demolition Contaminants: Conditional air, dust, and debris filters tracking chrysotile/amphibole Asbestos fibers, legacy Lead paint fractions (Pb), and crystalline Silica dust wherever retrofitted masonry or historical turbine hulls are involved in the fire or demolition envelope (Moss Landing class).

VI. External initiation and seismic common-cause

Cell-failure statistics answer one question: how often a battery module goes into runaway by itself. They do not answer how a pad fails when something outside the cell starts the event, or when one event loads every enclosure at once.

Reasonably foreseeable initiators the PEIS should treat as design cases, not as “beyond the project”:

- **Impact and construction:** vehicle strike, forklift/crane, dropped container, off-loading at the pad. Forrest City (I-40 Megapack transport fire, August 2026) is already a haul-route case, not a “once the fence is up” case.The same class of event is already on California highways: I-15 near Baker (July 2024) — overturned BESS container, multi-day burn off the interstate; San Pedro / Port of Los Angeles (September 26, 2024) — rollover, deflagration, Vincent Thomas Bridge closed more than a day, box relocated to a yard to finish burning. Those are public-road initiating events. The PEIS geographic scope includes delivery and removal routes, not only the finished fence.
- Corridor transit hazards must be evaluated as an active on-project initiating event, including recent critical logistics failures across Pacific Northwest transit corridors such as the Interstate 90 battery transport fire in Issaquah, WA, the Interstate 15 lithium battery transport fire near Barstow, CA (which forced an absolute highway closure), and the Genius Star XI ocean transport failure offshore Alaska, where an industrial vessel carrying lithium-ion batteries suffered a massive cargo hold fire that forced an extended offshore isolation zone (2-miles away from the port) to protect regional fisheries and local public health. Siting reviews must map specific haul routes from point of entry to the BESS, as transport and mechanical shock are primary failure triggers.
- **Flood, landslide, liquefaction, alluvial-fan debris.** A drowned cooling skid or a rack sitting in water is not a UL 9540A cabinet test.
- **Wildfire and ember attack** on HVAC intakes, plastic, and wiring — Washington’s eastern-side of the state and interface sites.
- **Seismic acceleration** into cells, buswork, coolant lines, and fire-suppression piping even if the box stays bolted. One quake is a common-cause load on enclosure A, B, C,

and the chiller. UL 9540A does not protect against natural seismic events. Washington's seismic setting makes the distinction mandatory.

- **Cooling and electrical common-cause:** loss of HVAC, liquid cooling malfunctions, liquid cooling/coolant pipe leaks, loss of site power, transformer fault, hacking, cascading shutdown that leaves packs hot. High daily cycling (export / data-center duty) is a wear multiplier on the same cooling plant — noise and heat are not off-duty.
- **External fire or adjacent industrial event** (substation, treatment plant, warehouse, wildfire, or vandalism) that the BESS did not start.
- **Cyber or physical security events** that disable thermal management, overcharge, BMS- takeover, isolation, or fire-system logic. The PEIS does not need an attack recipe. It needs to clearly conclude that loss of cooling and loss of isolation are environmental initiating events whether the cause is a wrench, a flood, or a compromised controller. Consequences — off-gas, fire and or explosion, firewater, deposition — do not change with the motive.

The PEIS geographic scope includes public roads used for delivery and removal, not only the finished BESS site behind the fence. A transport or off-load fire is an on-project initiating event.

A "let it burn / no sprinklers" design does not retire common-cause. Defensive cooling mist/exposure-protection water still leaves the pad. A seismic or flood event that initiates thermal runaway in several cabinets at once is not "one failed BESS rack/container" in the applicant's failure model.

The PEIS must require every project-level hazard analysis to use a mandatory initiating-event list, not a dismissal based on generic cell-failure rates. Spontaneous cell-failure statistics do not answer various physical/brute force impacts, drop, transport accident, crane or forklift damage, installation issues, flood, landslide, wildfire exposure, or seismic acceleration transmitted into cells, buswork, and cooling even when the box stays anchored. An earthquake does not require an active fire to propagate failure from enclosure A to B if the same ground motion loads A, B, C, and the cooling skid at once.

The PEIS must explicitly reject developer reliance on UL 9540 and UL 9540A testing as a substitute for a comprehensive environmental common-cause analysis. UL 9540A standardized data represents a highly optimized, single-cabinet laboratory simulation performed under ideal, controlled environmental conditions. Don't be fooled by the updated 'full-scale container' fire testing requirements- just as before, this standardized data represents a highly optimized, single-enclosure laboratory simulation performed in a silo under ideal, controlled conditions. These commercial runs are deliberately engineered to minimize environmental release metrics. Testing a single container in a sterile lab completely fails to simulate a multi-megawatt grid installation containing dozens of packed containers subjected to external hazards, installation issues, manufacturing defects, and environmental stresses vs a sealed and controlled lab. These commercial runs are deliberately engineered to minimize yields and prevent cell-to-cell propagation in a sterile room. They possess zero statistical

validity for a massive utility-scale field installation containing tens of thousands of highly compressed cells.

These paid laboratory certifications completely fail to simulate or test for common-cause physical abuses, hacking, malfunctions, or any other cause that initiates thermal runaway and disables a single system, BESS rack/container, or an entire facility's safety systems all at once. UL 9540A testing does not subject active battery arrays to hacking, tectonic shear strains, localized ground liquefaction, high-velocity kinetic impacts, atmospheric deposition of cooling fan/fin clogging ash/debris, or many of all the thermal runaway initiating possibilities. A commercial laboratory sticker cannot predict what happens when a scenario not included in the testing process happens and forces a 70°F normal operating BESS to initiate an elementally unstoppable 2,000°F + cascading thermal runaway event.

The PEIS must reject frameworks presuming code compliance substitutes for environmental analysis and must recognize that fire containment testing does not evaluate toxic emissions or off-site deposition. Comprehensive details on passive containment trade-offs and atmospheric modeling requirements can be found in the referenced source.

The PEIS must require every project-level hazard analysis to use a mandatory initiating-event list. That list must include all form of impacts (vehicle, ballistic, blunt force, installation/construction, and others), drop and transport damage (including specific haul routes), flooding and soil liquefaction, landslide and alluvial-fan debris, ember attacks, loss of HVAC or site power, transformer and buswork faults, adjacent industrial or substation fires, wildfires, and seismic events coupled with coolant/suppression piping failures even if the structural enclosure stays anchored. Cyber or physical compromise of cooling or isolation loops shall be treated as the exact same environmental initiator as a broken physical chiller: loss of thermal management means the absolute loss of a BESS's 'safety capabilities.' The PEIS does not need an attack manual. It needs the consequence chain mapped completely.

Cleanup is not a "safe-mode". At Moss Landing, modules that could not be reached without risking a wall collapse stayed energized for about 20 months. EPA announced the "final phase" on September 8, 2026. On September 18 those north-wall modules ignited. Vistra and the fire chief said the packs had not been de-energized because crews could not safely enter that part of the building. After the fire, the County recorded that Vistra resumed 24/7 air monitoring until remaining modules have been removed. MBARD said the extra community sensors were reading PM, not metals. A PEIS that assumes "EPA oversight plus a fire watch" keeps detection, suppression, and de-energizing live through demolition is contradicted by that sequence. Fire-damaged modules that cannot be accessed are an ongoing initiating event, not a closed cleanup.

Washington's seismic setting makes that distinction mandatory.

Crucially, for all facilities sited within Washington State, this mandatory list must simulate regional atmospheric volcanic ash deposition from an explosive eruption of any major active

Cascade stratovolcano—including Mt. Rainier, Mt. St. Helens, Mt. Adams, Mt. Baker, Glacier Peak, or Oregon's Mt. Hood. Microscopic, abrasive volcanic glass and silicate particulates carry heavy electrostatic charges and can travel hundreds of miles downwind, meaning a project footprint is never isolated from Cascade volcanic fallout. When drawn into HVAC intakes, these particulates blend with ambient atmospheric moisture to form a conductive, cement-like mud that blinds air filters, coats cooling fins, and shorts exposed electrical skids (inverters, transformers, SCADA and Control enclosures). This mechanical common-cause occlusion results in immediate, grid-wide cooling system failure, accelerating internal ambient temperatures from 70°F to cascading thermal runaway without requiring a physical ground breach or direct lahar impact.

The PEIS must require project checklists to replace idealized, flat-lot corporate clearing assumptions with the physical realities of Washington's rural forested canopies, using the proposed Snoqualmie Jupiter BESS site as a core design-case constraint. Micro-climate data across Snoqualmie resident’s 32-year history establishes that this specific Snoqualmie basin suffers severe, high-velocity windstorms annually, routinely causing massive tree-fall and wind-throw failures directly along our property lines. Siting an uncontained, high-temperature lithium BESS with 100s of BESS containers immediately adjacent to active timber acreage and thriving agricultural assets—including an immediately adjacent 5-acre local vineyard—means a multi-cabinet thermal blowout will be coupled with dynamic convective wind vectors. This wind profile will carry intense radiant heat flux and flying chemical firebrands directly into the surrounding forest and crops. Furthermore, because these unincorporated King County parcels sit entirely outside a municipal fire district boundary, local emergency response is structurally fragmented. The PEIS must conclude that placing multi-megawatt fields in rural wood-lands without a certified, dedicated on-site fire district protection guarantee creates an unmitigable public safety shock under SEPA.

The Denominator Distortion and the 2026 Global Stationary Failure Record

Siting rules must reject industry-standard failure-rate graphs that divide reported failures by cumulative deployed GWh, as exponential deployment creates a misleading optical illusion of safety [source: 5]. Users can find the full chronological record of 2026 global stationary BESS failures and detailed statistical critiques in the referenced source documents [source: 5].

Because the industry's primary database excludes clearly identifiable stationary systems, the PEIS cannot treat it as an authoritative global count, and must assume real-world fire occurrence is systematically underreported.

For seismic, flood, wildfire, or any other external trigger, the PEIS should assume **more than one enclosure** and **more than a couple hours** of release- which developers submit as the worst case scenario/event (please note, the average BESS fire duration is 5 days; Summerville’s September 2026 BESS fire burned/offgassed for 14 days; Otay Mesa burned/offgassed for 22 days; Chandler burned/offgassed for 11 days), and should size firewater containment to a multi-day/multi-container volume — including

defensive-misting/exposure-protection water when the standard operating procedure is “let it burn.” Haul-route and delivery incidents belong in the PEIS, not only the finished fence facility. A DNS/MDNS that models a single spontaneous cabinet and ignores common-cause is incomplete under SEPA.

VII. Smoke, gas, and deposition — apply protective-action distances to wildlife and habitat

Consultant plume studies written for permits usually stop at the fenceline and at human AEGL or IDLH contours and then note that people can evacuate/shelter-in-place. Wildlife, livestock, wetlands, and vegetation cannot close a window, shut off HVAC, or comply with an evacuation/shelter-in-place order. Neither can a schoolyard, day care, or preschool at pickup. The PEIS already has a first-responder case from a grid BESS fire. On April 19, 2019, cascading thermal runaway at the 2.16 MWh McMicken facility in Surprise, Arizona, discharged Novec 1230. UL Firefighter Safety Research Institute documented that a HAZMAT team measured elevated hydrogen cyanide and carbon monoxide at the enclosure and everywhere the visible low hanging white vapor cloud was present (which was visible as far as the eye could see downwind), and that opening the door produced a deflagration. Four Peoria firefighters were seriously injured (fractures, burns, collapsed lung among the hospital records). Clean-agent discharge did not stop thermal runaway and offgassing or make entry safe. Sacramento Fire’s April 11, 2025 75kWh Tesla EV pack fire is not a grid BESS, but it is the same lithium battery off-gas chemistry: a low-lying white cloud, 1-3 minutes of unprotected exposure during post EV fire cleanup, four firefighters still off duty over a year later with reduced lung function and undergoing experimental blood transfusion (department Green Sheet and public statements). The PEIS should model HF and HCN where environment and weather supports a ground-hugging mix, including terrain/elevations, winter and night inversions in the Skagit, Snoqualmie, and Green River valleys — gas that does not rise and blow out, but hovers and stays in the basin/valley and drifts toward schools and housing — and treat first responders and schools as receptors. The critical necessity for micro-climate basin modeling is driven directly by high-density pediatric receptor zones flanking proposed developments across the state, specifically including Mattson Middle School (Covington), Cascade View Elementary (Snoqualmie), and the Quantum STEM School (Snoqualmie Valley).

The absolute failure of passive notification protocols is clinically and logistically proven by the September 22, 2026 La Verne BESS fire, where city police logs and responder dispatch footage confirm that emergency personnel had to resort to desperate, door-to-door physical knocking to clear an immediate one-mile evacuation zone. Crucially, because the thermal runaway started during mid-day operational hours, the vast majority of neighborhood residents were away at work. This left hundreds of homes locked and completely inaccessible, leaving pets, domestic livestock, and elderly, and childcare-takers entirely stranded inside a toxic

chemical plume while emergency alert infrastructure failed to notify non-localized property owners.

Most critically, the La Verne incident demonstrates that 'shelter-in-place' is a fundamentally non-viable, dangerous administrative illusion when applied to public educational facilities. The immediate, high-velocity chemical venting forced an emergency three-day closure of Grace Miller Elementary School. Turning a public school into a passive shelter footprint traps hundreds of pediatric receptors inside a building envelope whose HVAC systems actively draw toxic, ground-hugging chemical cocktail directly into classroom air loops. Siting multi-megawatt battery fields near schools while assuming children can safely 'shelter' indoors or that fragmented municipal alert networks can coordinate a rapid, mid-day evacuation constitutes an arbitrary and capricious failure under SEPA. The PEIS must conclude that because a child's physiological minute-ventilation-to-mass ratio exponentially amplifies their toxicological dose, shelter-in-place mandates are an unacceptable hazard mitigation strategy for K-12 environments.

Children are not scaled-down adults: higher minute ventilation per body mass means a larger inhaled dose in the same plume. HF is water-soluble and attacks moist airways. HCN impairs cellular respiration. The PEIS should use child ventilation rates and school-day occupancy for any HF/HCN contour it publishes. Do not treat a 200-foot buffer as pediatric protection because an adult AEGL was drawn there. The DOT Emergency Response Guide (ERG) 147 demands a massive geographical exclusion zone, instructing first responders to isolate and consider evacuation for 500 meters (about 1/3 of a mile) in all directions as a starting point which must adapt depending on the wind and the evacuation zone must be extended downwind.

This high-density pediatric vulnerability is directly illustrated by the Cascadia Ridge / Jupiter BESS proposal on Snoqualmie Ridge, which impacts over 2,000 children and infants within a half-mile radius, violating SEPA's mandate to safeguard vulnerable populations. The proposed BESS just outside Covington City limits and next to Mattson Middle School, has over 3,100 kids spread across three schools: Crestwood Elementary (395+ students), Mattson Middle School (750+ students), and Kentwood High School (1,995 students). And, has about 600 family homes within ½ a mile in a strictly residential zoned area.

Distances already used in emergency and permit practice

These are not Washington siting setbacks. They are the distances at which agencies and applicants already treat a lithium-battery fire atmosphere as a reason to isolate, evacuate, or model harm. The PEIS should use them as the starting geographic scope for ecological exposure, not as proof that habitat beyond a property line is unaffected.

- U.S. DOT Emergency Response Guidebook, Guide 147 (lithium ion batteries): isolate at least 25 meters (75 feet) in all directions; for a railcar or trailer fire (equivalent to a standard 20ft BESS container), isolate and evacuate 500 meters (about one-third mile)

in all directions. The guide warns that burning batteries produce toxic hydrogen fluoride and that fires may reignite for days to weeks.

- Project-level HF models submitted for California and U.K. BESS reviews commonly show AEGL-1 (1 ppm HF, irritation/discomfort threshold for people) on the order of hundreds of feet to about 2,200 feet (roughly 0.4 mile) downwind in stable or high-wind “large fire” cases, with IDLH/AEGL-2/3 much closer to the enclosure. Those models usually assume a single BESS container. Project plume models routinely assume that toxic gas vectors stop at the facility’s fenceline and in the absolute worst case scenario, the toxins remain localized and do not exceed the evacuation/shelter-in-place zones. However, the September 18, 2023 Valley Center BESS fire establishes a severe real-world precedent where the resulting toxic smoke field overtopped a localized quarter-mile emergency zone. Trapped by a valley inversion, the plume transported airborne chemical toxics over 13 miles downwind, causing career firefighters and families across multiple distant zip codes to experience acute exposure symptoms. Siting multi-megawatt facilities within Washington basins without modeling long-range horizontal mass transport under stable atmospheric conditions violates SEPA's mandate to characterize the true geographical scope of an environmental health catastrophe.
- Actual field failures have routinely forced extensive protective actions far beyond the BESS facility’s fenceline, including highway/school closures and multi-day shelter-in-place at Moss Landing, CA; business evacuations and prison shelter-in-place at 22-day Otay Mesa fire; 11 sprinkler deployments and widespread evacuations at Chandler, AZ; the September 18, 2023 Valley Center, CA fire where trapped river valley inversions carried airborne toxics over 13 miles downwind; and the verified post-disaster human tracking record compiled under the Never Again Moss Landing dockets. Certified field mapping from 647 symptomatic individuals demonstrates that the airborne exposure footprint of a major BESS fire systematically overtops county borders, transporting toxic smoke plumes over 30 miles downwind to generate acute health shocks across diverse, far-field residential zip codes—including San Jose, Los Gatos, Hollister, Carmel, and Morgan Hill. Siting these facilities within standard commercial zoning lines without executing long-range, horizontal multi-county mass transport reviews violates SEPA's basic environmental health mandates.
- Container-to-container spread is not a hypothetical scenario, and the spatial separation defaults currently codified in NFPA 855 have empirically proven entirely inadequate to prevent catastrophic thermal propagation. While NFPA 855 permits separation distances as narrow as 3 to 10 feet based on optimized, ambient-air laboratory compliance runs, these commercial test configurations completely ignore real-world dynamic convective wind vectors and massive radiant heat flux loads. High-density spatial packing forces adjacent containers to act as massive thermal reflectors, trapping heat and structurally overtopping code-minimum clearances. Documented global field failures establish a pattern of rapid cascade that completely invalidates standard code separation:
    - **Victorian Big Battery / Moorabool, Australia (July 30, 2021):** A primary Tesla Megapack (MP-1) ignited an adjacent unit (MP-2) when localized wind vectors drove high-velocity

roof flames directly across the standard code clearance gap. The administrative evolution of fire safety codes underscores the failure of programmatic review to rely on static engineering standards. Following the July 30, 2021 Victorian Big Battery explosion in Moorabool, Australia—where wind-driven roof flames overtopped standard layouts—the National Fire Protection Association updated NFPA 855 (2023 Edition) to mandate increased baseline separation distances between outdoor enclosures unless compressed, unit-level UL 9540A laboratory testing could prove single-cabinet containment. However, the empirical record from subsequent failures proves that this code-defined spacing shield remains fundamentally inadequate under real-world operational and environmental conditions. Siting layouts that pack megawatt-scale containers within narrow structural corridors completely disregard radiant heat bounce, wind-driven flame deflection, and structural enclosure degradation during a multi-day fire event. Most critically, the PEIS must evaluate how developer compliance with NFPA 855 spacing mandates creates an inverse catastrophe for environmental transport pathways: to maintain these required spacing boundaries and prevent container-to-container propagation during an active incident, first responders are forced to deploy continuous, defensive master-stream cooling monitors on adjacent, uninvolved battery cabinets for up to 14 consecutive days. This code-mandated emergency response profile is the exact operational mechanism that generates multi-million-gallon firewater runoff surges. Siting closely packed battery containers over Critical Aquifer Recharge Areas (CARAs) or adjacent to ESA-listed spawning streams while ignoring how code-driven spacing controls multiply toxic runoff transport completely violates SEPA's mandate to evaluate indirect and cumulative environmental health impacts.

- **Boulder City, Nevada (2025):** Thermal runaway rapidly propagated across two closely packed Megapacks.
- **Parkfield, California (2025):** A single cell failure breached isolation boundaries and engulfed four out of 84 Megapacks on a shared concrete pad.
- **Chaumont / Lyme, New York (July 2023):** Multiple commercial enclosures were sequentially consumed due to radiant heat coupling.
- **Summerside, Prince Edward Island (September 7–21, 2026):** Active fire successfully jumped across code separation buffers to a second BESS container, fueling a massive toxic release that burned and off-gassed for 14 continuous days.
- **La Verne, California (September 22, 2026):** While the first BESS container actively burned at the Weymouth plant, the adjacent unit heat-soaked through its insulated walls; the moment emergency exposure-cooling water was briefly paused, internal temperatures spiked, and the second unit immediately entered thermal runaway and began violent off-gassing.

The real-world operational record proves that standard NFPA 855 footprints force emergency responders into high-risk, defensive exposure actions. Incidents like Escondido required fire departments to deploy high-volume defensive master streams for days on end, trying to artificially cool un-involved containers to prevent them from hitting their internal chemistry's

thermal ignition threshold. The PEIS must conclude that default fire-code separation distances are a commercial spacing compromise, not an environmental review of cascading source terms. It must mandate site-specific, worst-case radiant heat flux modeling under convective wind constraints for all tiered project checklists.

This domestic distance failure is explicitly reinforced by international ministerial review. In its landmark March 19, 2026 Battery Energy Storage Systems Planning Guidance, the Scottish Government formally implemented a mandatory baseline buffer requiring an initial minimum distance of 30 meters (100 feet) between standalone BESS cabinets and any occupied building or associated distribution infrastructure prior to calculating the structural deployment of dedicated blast or firewall screening barriers. Most crucially, this international standard dictates that site layout and geometry review must programmatically evaluate horizontal toxic vapor cloud propagation and explosive convective venting footprints across a wide multi-enclosure BESS, completely outlawing the high-density containerized packing models that private developers utilize under optimized, single-cabinet lab runs to force grid-scale installations inside tight suburban line-of-sight boundaries.

- Saying a BESS is UL 9540A approved and it “did not propagate in the lab” is not a justification nor is lab testing the same as real world circumstances/reality. The PEIS must not treat a single-cabinet, one-hour fire as the environmental baseline; and the PEIS must treat a multi-container fire as a design case, not as something the UL certificate retired.

- Project-level analysis should start from a **multi-enclosure, multi-day** release, size firewater for **exposure cooling of adjacent BESS containers**, and carry that larger source term through plume, deposition, runoff, and mitigation/cleanup- returned to pre-BESS-development levels.

- Real incidents have already produced protective actions well beyond a cabinet-scale AEGL contour: highway and school closures, evacuations, shelter-in-place, and multi-day air monitoring at Moss Landing; business evacuation and prison shelter-in-place at 22-day Otay Mesa fire that is estimated to have used nearly 20 million gallons of water; Chandler, Arizona- Active thermal runaway inside a utility-scale containerized lithium array required emergency responders to deploy unmanned master streams and internal sprinkler infrastructure continuously for 11 straight days (264 hours). Responding crews consumed over 6,000,000 gallons of exposure-cooling water to artificially suppress core temperatures and attempt to prevent a multi-rack cascade adjacent to a dense commercial center, proving that standard project-level stormwater features are structurally incapable of isolating disaster-scale volumes; the September 18, 2023 Valley Center, CA fire where trapped river valley inversions carried airborne toxics over 13 miles downwind; and the verified post-disaster human tracking record compiled under the Never Again Moss Landing dockets. Certified field mapping from 647 symptomatic individuals demonstrates that the airborne exposure footprint of a major BESS fire systematically overtops county borders, transporting toxic smoke plumes over 30 miles downwind to generate acute health shocks across diverse,

far-field residential zip codes—including San Jose, Los Gatos, Hollister, Carmel, and Morgan Hill. Siting these facilities within standard commercial zoning lines without executing long-range, horizontal multi-county mass transport reviews violates SEPA's basic environmental health mandates. This month's La Verne's BESS fire required between 8,640,000 to 10,368,000 gallons over the course of the 4-day active containment operation (1,500 to 1,800gal× 96hrs). East Hampton's 30+ hour BESS fire used 2.2-million gallons of water and contaminated the Suffolk County Water Districts aquifer/wells (as well as private residential wells) 2500ft away leading to the previously mentioned Federal lawsuit being filed.

- Community wipe sampling after Moss Landing reported battery-marker metals across three counties (Monterey, Santa Cruz, and San Benito) with NAML placing toxic quantities out to 27.2-miles away and locations 46 miles from the plant having ash coverage and Hunterbrook finding nickel and cobalt about 34 times higher, on average, within 20 miles and diminishing quantities in farther away samples.

Why those distances are an ecological problem, not only a people problem

- HF, HCl, and related acid gases injure leaf tissue, mucous membranes, and gill surfaces at concentrations that also drive human evacuation. Birds, amphibians, and insects in the open receive the plume for the full duration of the event. There is no evacuation order or option to "stay indoors."
- Particulate metals and ash are not a gas contour provided by BESS developers/owners hired engineering firms to provide the results they pay for. After Moss Landing, SJSU / EMBER documented NMC-fingerprint nickel, manganese, and cobalt in a surface veneer thinner than 5 mm at Elkhorn Slough (a Ramsar wetland), equaling an estimated 55,000 pounds of heavy lithium battery sourced metals/ash in the studied marsh alone (equivalent to about 2%of total volume of heavy metal/ash released by the Jan 2025 Moss Landing BESS fire), with SEM nanoparticles small enough to move with weather and lodge in tissue. Comparison of 2023 baseline cores with samples taken about two weeks after the fire showed peak nickel rising from 246 ppm to 3,702 ppm — about fifteen times — then falling after rain and tide as the veneer washed away. That drop is remobilization into water and sediment, not disappearance. Aiello told reporters the studied marsh load — about 55,000 pounds — was on the order of 2 percent of cathode metal that could have left in the plume, and estimated 2.2 to 3 million pounds of burned battery material in the wider smoke field. That is an interview estimate, not a surveyed mass for every farm, the ocean, and three counties. It is still the reason a fence-line or "couple of feet past the chain-link" which is the typical emergency response/plume model submitted by BESS developers/owners during the permit approval process is not a deposition study. If most of the metal is not in the nearest marsh, the PEIS has to say where the rest went: farther inland, into the bay, or still unsampled. Community and farm reports after the fire described sick pets and livestock that could not shelter in place; those reports are not a veterinary census, but they are why the PEIS cannot treat "people evacuated or went indoors" as an ecological closeout. Vegetation intercepts that heavy metal film/ash and then returns it to soil and water through litter, rain, and tide.

Plant uptake is a pathway, not a sink (a location where toxins get trapped forever and stops harming the environment). Elkhorn Slough is a Ramsar wetland of international importance. The PEIS should treat drainage to a Ramsar site, a state-designated critical estuary, Critical Salmonid Spawning and Rearing Habitat, or a similarly protected wetland as a significance question — not a fence-line courtesy. Nanoparticles that remobilize with rain and tide are not a closed deposit. Washington does not need its own Elkhorn Slough experiment to put designated wetlands in the exclusion analysis.

- Hansen Creek (near Sedro Woolley) is an officially designated ESA Critical Salmonid Spawning and Rearing Habitat and a WAC Type F stream supporting threatened Chinook and steelhead. Salmonids are uniquely vulnerable to the specific chemical analytes released during an unpreventable, elementally unstoppable BESS failure. Free fluoride ions, soluble lithium, and vaporized heavy metal nanoparticles do not stop at an arbitrary property fence line. Uncontained firewater runoff or atmospheric deposition into these spawning gravels will immediately attack the delicate mucous membranes and gill surfaces of juvenile salmonids, while destroying the benthic macroinvertebrate populations they rely on for foraging, triggering a permanent localized trophic collapse.
- The Fredericktown Freshwater Total Fish-Kill Blueprint: Siting multi-megawatt chemical fields within range of active salmon-grade watersheds exposes the entire drainage basin to catastrophic bottom-up biological failure. During the October 30, 2024 fire at the lithium recycling plant, Critical Mineral Recovery, facility in Fredericktown, Missouri, uncontained chemical firefighting water mixed with soluble lithium and electrolyte breakdown products escaped local site containment and drained directly into Village Creek and the Little St. Francis River. The Missouri Department of Conservation documented an immediate, total aquatic wipeout and kill zone spanning 2.5 to 3 miles downstream, systemically exterminating both the benthic macroinvertebrate food grid and thousands of native fish. While state agencies cleared municipal human drinking water wells downstream under standard compliance testing, the entire river ecosystem was thoroughly decimated. Furthermore, Missouri DNR dockets current through March 2026 prove that toxic byproducts continuously remobilized with seasonal rainfall over a multi-year footprint, requiring active state remediation tracks years after the fire department left the scene. This empirical precedent proves that lithium battery emergency byproducts trigger immediate, far-reaching localized trophic collapse across freshwater networks, completely invalidating developer boilerplate claims that an uncontained BESS facility is 'designed to avoid' or won't impact a Washington salmon-bearing Type F drainage system.
- Aquatic life receives both wet deposition and firewater. Fluoride, metals, electrolyte residues, and suppression additives do not respect a human IDLH circle drawn on a map. A creek or its inhabitants (or even the animals that rely on it for hydration) do follow evacuation or shelter in place orders.
- Duration multiplies dose for habitat. Otay Mesa involved roughly 22 days of fire/off-gassing. Chandler sprinklers ran for 11 days. Summerville burned and offgassed for 2 weeks September 2026. East Hampton's BESS fire burned/off-gassed for only about 30 hours, but the Water District's well 2500 feet away is still contaminated 3 years later. Wildlife and soil remain in the footprint the entire time.

The PEIS should therefore require ecological receptors inside and beyond human protective-action distances: wetlands, streams, riparian corridors, agricultural land, forage, and designated wildlife habitat. It should map thin-film nanoparticle deposition, plant uptake, and bioaccumulation in the food web — not only an acute human contour. Vegetation absorbs and then returns metals to soil and water. It should require thin-film and wipe methods, not only delayed bulk soil compared to residential RSLs. It should treat uncertainty in yield and weather as a reason to enlarge the study area, not to shrink it to the applicant's favorite cabinet model. Protective actions and setbacks in the PEIS should be scaled to those observed distances (ERG isolation, AEGL-1 on the order of several tenths of a mile in large-fire models, wetland fallout at kilometers, community surface metals tens of miles), not to a fence-line or school-buffer default.

VIII. Design cases the PEIS should use — not distinguish away

These events are not Washington projects (however, WA State has had one BESS fire that reignited 5 days later in Port Angeles back in 2013- which is included as exhibit "I" in this section). They are the field test of the pathway. The PEIS should use them as design cases. Distinguishing them solely as "different chemistry," "different code year," or "indoor vs outdoor" is how the environmental half of the event is pushed by developers to be dropped/ignored. Lithium batteries have been spontaneously combusting since the 1990s and there is no technology that can prevent thermal runaway nor is there a technology that can stop thermal runaway- so, regardless of proprietary labeling or specific lithium sub-chemistry variations, any grid-scale battery asset experiencing thermal runaway activates an identical chemical release baseline. Siting reviews must programmatically treat all empirical lithium-ion failure modes as universal design-case precedents to enforce complete multi-media transport modeling and ensure the uncompromised protection of human populations, agricultural food chains, sensitive wildlife, and fragile ecological receptors.

A. East Hampton, New York (May 31, 2023 fire; federal complaint filed May 29, 2026)

Suffolk County Water Authority v. East Hampton Energy Storage Center, LLC, LG Chem, Ltd., and LG Energy Solution, Ltd., E.D.N.Y. No. 2:26-cv-03246, is a pending case. The following are the Authority's allegations, cited because they describe a complete firewater-to-aquifer chain a PEIS must be able to analyze.

The facility was a 40 mWh NMC array (LGCHEM JH3) in a 4,100-square-foot building. After thermal runaway, a water suppression system ran for about 30 hours. SCWA alleges that, at code density over the floor plate, that is more than 2.2 million gallons, with no containment, runoff onto permeable ground south of the site, and transport in the Upper Glacial aquifer to the Bridgehampton wellfield about 2,500 feet (0.47 mile) downgradient. Four wells; more than seven percent of pressure Zone 23; existing GAC does not remove ultrashort-chain PFAS.

SCWA began specialized ultrashort-chain sampling in January 2026 and pleads PFPrA in all four wells, two wells above New York's 50 ppb unspecified-organic MCL and removed from service, the other two restricted, higher PFPrA in monitoring wells between the BESS and the wellfield, and replacement or treatment costs in the millions. The manufacturer SDS for the cells warned against letting release water enter drains or watercourses.

SCWA's own "Complete Analysis" laboratory packet for those wells (report date June 5, 2026) is the method lesson. EPA Method 533 is a drinking-water method for 25 listed PFAS, reported in nanograms per liter. PFPrA is not on that list. A non-detect under 533 test is not a non-detect for PFPrA. A separate SCWA ultrashort-chain PFAA method on well 4/5A reports PFPrA at 48.4 µg/L (February 10, 2026) and 50.7 µg/L (April 8, 2026) — at or over the 50 ppb MCL used to take wells offline. If Washington treats "full EPA 533 plus metals" as post-fire characterization, the East Hampton compound will not appear.

Later 2026 work does not close that gap. NYSDEC's East Hampton PFAS investigation page reports Suffolk County profile wells between the plant and the wellfield with PFPrA as high as 1,170 ppb and PFOS in the same investigation. County officials have said ordinary GAC does not remove this ultrashort chain well. As of mid-2026 reporting, DEC stated there was no groundwater remediation underway at the battery site itself. SCWA is looking at treatment or replacement wells at millions of dollars. Those are public and county wells. I found no reliable source that the developer drilled extraction wells and recirculated filtered water into the aquifer without permits; that claim should stay out of a SEPA letter unless a docket shows it. The documented fact is enough: years after the fire, the plume is still being mapped, municipal wells are restricted, and 2023 site soil work did not prevent a 2026 drinking-water crisis.

NYSDEC's September 2026 preliminary findings, as reported by Newsday, go further. DEC found PFPrA as high as 10,000 ppb in groundwater just south of the plant — not in the municipal wells, which were already offline near 50 ppb, and not the same number as the county's 1,170 ppb profile wells. The East Hampton Star's account of the DEC report puts the discharge at about 4,900 pounds of NOVEC 1230 and close to 2.2 million gallons of water, with 672 cells burning of about 180,000 stored. DEC's working account is that the agent alone is not framed as a PFAS source, but mixed with water it can break down to ultrashort-chain PFAS, and that mixture moved through unlined ground. Coverage of the briefing cited a New York health screening level of 3 ppb. SCWA's CEO letter of August 12, 2026, is the method lesson again: EPA and NYSDOH had no approved PFPrA method when SCWA built one in-house and tested the whole system; January results were under the 50 ppb unspecified-organic MCL, April–May results were over it, and two wells came off immediately. A later fire-code update does not capture rain that falls during a let-it-burn event. Isolation of emergency water and incident rainfall — including clean-agent systems — is still required. NOVEC 1230 is sold as a waterless "clean agent" that leaves no residue. That label describes an unburned discharge, not a thermal-runaway room. Fluorinated clean agents can thermally decompose to hydrogen fluoride and related fragments; DEC's working account is that mixing the agent with water produced mobile ultrashort-chain PFAS that then left the pad. The PEIS

must treat clean-agent systems as a possible groundwater precursor under emergency heat and water, not as proof that the site is dry and needs no containment.

B. Moss Landing, California (January 16, 2025, with reignitions Feb 2025 and Sept 2026)

Vistra Phase 1, about 300 MW / 1,200 MWh NMC in a building that held on the order of 100,000 modules, adjacent to Elkhorn Slough. About 55 percent of those modules were fire-damaged. EPA's published role is on-site: work inside the fence and packaging batteries for transport. Phase 1 de-energized and shipped tens of thousands of intact modules for recycling. Phase 2 — demolition of ML300 and removal of fire- and water-damaged modules and debris — was announced as the "final phase" in 2026 with completion projected around mid-2027, more than two years after a five-day fire. EPA has called this the largest lithium-ion battery cleanup in the Agency's history. That duration, waste class, and demolition cost are the PEIS picture of financial assurance and burned-module characterization. It is not a closed site. On September 18, 2026 — the same week EPA described a "final phase" of removal — North County Fire responded just after 6:15 a.m. to fire and smoke on the north side of the plant. Monterey County and North County Fire stated the fire was inside a structure that still carried January 2025 damage and involved batteries damaged in that fire; they also stated the event was not comparable in scale to January 2025 and was expected to burn itself out over about 24 hours. Cal Fire described three racks involved. Vistra later said about 2,500 modules were still inside the damaged building before Friday and that it believed about 1,200 of those ignited; those units had not been de-energized because the January 2025 structure made that section unsafe to enter. About 56,000 of the original ~100,000 modules burned in January. Company updates Saturday described the Friday flare as inactive after Friday afternoon, with falling temperatures — not a ten-day burn. The PEIS point is leftover charged modules, not duration of that flare. The Sheriff issued a precautionary shelter-in-place within one-third of a mile of 7301 Highway 1 for smoke and potential hazardous material; Monterey County Emergency Management named zones MRY-B047, MRY-B050, and MRY-B053. The January 2025 fire had evacuated about 1,200 residents and produced a local emergency declaration. Residents later sued Vistra, PG&E, and related companies. EPA and Vistra entered a removal agreement in July 2025. Dolan Road was closed. North Monterey County Unified School District kept students and staff indoors at Elkhorn Elementary, Castroville Elementary, North Monterey County Middle School, and North Monterey County High School; the county said that school order was lifted at noon. No injuries were reported in the morning updates. Monterey County Supervisor Glenn Church said the same day he was frustrated the community was dealing with it again, that a cleanup fire was "not completely unexpected" because officials had been warned the demolition could start one, that the event showed how volatile lithium batteries are, and that residents should stay indoors with windows closed because the plume could drift; he said it was largely moving west over the ocean at that hour. After the wind shifted, people in Santa Cruz — well outside the one-third-mile order — posted that they could see and smell smoke downtown, including a plastic-like haze off Ocean Street, until the air cleared. Those are public odor reports, not a lab result. They are still why a plume chapter cannot stop at the official SIP circle. Assemblymember Dawn Addis said she was frustrated and deeply concerned, that initial EPA-supervised removal had finished about two weeks earlier, and that

about 1,500 hard-to-access batteries still sat in the damaged section. Supervisor Church's afternoon briefing repeated that lithium batteries are volatile and that storage "must be safe at all times." The PEIS point is residual hazard, not a second full-facility plume: fire-damaged modules can still ignite more than twenty months later, under federal cleanup, and a school district will still pull children indoors. A 200-foot zoning buffer and a "cleanup complete" sentence do not retire that pathway. Trade coverage of the same morning described workers having already pulled about 34,000 modules, with on the order of 5,000 still to extract later in 2026, some with residual charge. Assemblymember Addis's figure of about 1,500 hard-to-access units is the same problem from another count: the building is not empty. Calling that work "decommissioning" is a word error. Decommissioning is an orderly end-of-life unplug. What EPA is running at Moss Landing is hazardous-waste removal of fire-damaged lithium modules that can still ignite. PG&E's adjacent Elkhorn plant has been offline since the 2025 fire, with a stated return around July 1, 2027 — a neighboring grid asset, not a cabinet bond. Industry arguments that "modern" containerized LFP fields cannot repeat a turbine-hall NMC fire do not retire firewater, HF, ash, or leftover-module reignition. The PEIS must require a complete cleanup path after a fire and at end of life: every module removed, characterized, and taken to a permitted facility; residual ash and firewater media sampled and disposed as waste; off-site deposition not written off because the pad is empty. Do not let an applicant label a fire response as decommissioning to shrink financial assurance or skip post-event verification.

Fence-line cleanup is not slough cleanup. EPA's own pages limit this federal action to the property. Monterey County's off-site sampling review is a separate track; the County has said groundwater, broader watershed, and Elkhorn Slough questions can continue under state agencies. EMBER's 55,000-pound marsh veneer (pounds, not tons) is off-site. A PEIS that treats "EPA is on it" as proof that deposition was remediated will have confused a building demolition with an ecosystem response.

Aiello et al., Scientific Reports (November 2025), Moss Landing Marine Laboratories / EMBER: NMC fingerprint (Ni:Co near 2:1), SEM nanoparticles, peak 1–3 km downwind in Hester Marsh, layer thinner than 5 mm, on the order of 25 metric tons (55,000 pounds) of Ni+Mn+Co in the studied marsh. Authors state that standard coring and laboratory homogenization dilute a metal-rich veneer into underlying soil and can miss it; conventional ~6 cm intervals are the wrong geometry. Concentrations fell after rain and tide — remobilized, not destroyed. EMBER was formed to track movement into water and biota and has rebutted operator technical reporting.

Never Again Moss Landing collected 124 surface wipes under CIH direction, analyzed at an accredited laboratory for Li, Ni, Mn, and Co, from the plant to locations more than 30 miles away across three counties. NAML stated that the dataset shows heavy-metal spikes 30 miles from the fire. Hunterbrook's analysis of those results found nickel and cobalt about 34 times higher, on average, within 20 miles than in farther samples, with some near-plant samples more than 180 times the far-field average; manganese about 12 times and lithium about three times inside 20 miles, aligned with east-northeast plume transport.

The Moss Landing Marine/DTSC Field Verification Footprint: Vaporized heavy metals and chemical ash do not behave like a benign gas; they settle directly onto the landscape. The official California EPA / DTSC Sampling Report compiled after the January 16, 2025 Moss Landing Power Plant fire provides the definitive empirical template for regional tracking. Due to a ground-hugging plume, certified laboratory testing verified that toxic cathode-marker metals migrated up to 5 miles away from the facility boundary, dropping directly onto public paths at Elkhorn Elementary School and across the Elkhorn Slough National Estuarine Research Reserve. Thin-interval surface scraping of the top quarter-inch of soil isolated a concentrated fallout veneer, tracking an immediate baseline spike of 47.1 mg/kg of Nickel along the plant fence line (ML008), which surged to 116 mg/kg of Nickel and 32.9 mg/kg of Cobalt directly inside the crumbly marsh tide area where visible ash flakes settled (ML009). Most alarmingly, multiphasic liquid testing proved these metals successfully translocated into aquatic ecosystems, returning positive laboratory hits of 0.382 mg/L of Nickel inside a duckweed-covered trail pond (ML007A/B) and 0.386 mg/L of Nickel directly inside the open waters of Hester Pond (BIA01473-A). This represents ironclad, state-certified forensic proof that utility-scale failures contaminate regional surface waters and sensitive estuarine drainage basins miles beyond a project fence line.

Operator consultants (CTEH wipes; Terraphase soil) sampled a short-range soot-model footprint, later 0–3 inch and 3–6 inch homogenized jars after surface plant material was removed, months after the fire, compared to residential RSLs, and reported no widespread human-health exceedance. DTSC’s risk office cautioned that wipe screening levels should not be used alone for quantitative risk. Central Coast Water Board found the county/operator work plan insufficient for ash-drainage and surface-water questions. The PEIS must not treat the narrower, later, deeper, operator-funded protocol as proof that deposition did not occur.

The PEIS must establish geographic suitability boundaries based on the developers' own worst-case dispersion models, which are routinely hidden from local zoning boards. Internal emergency data from the Moss Landing facility reveals that Hydrogen Fluoride (HF) dispersion models prove the critical ERPG-1 (2 ppm) exposure boundary extends at least 1,200 feet downwind from the structure, while the California REL boundary (.28 ppm) propagates an additional 2,050 feet further into the community. These distances are further multiplied by the complete failure of municipal alert infrastructure. The bi-county health dockets prove that 40.3% of enrolled Monterey County residents and 49.6% of enrolled Santa Cruz County residents received zero notifications from the county's emergency management networks during the initial disaster, and 20% received no alert during the subsequent secondary chemical reignition. Siting these facilities within standard 200-foot commercial setbacks near Washington public schools or critical wellheads while assuming local alert networks can mitigate exposure constitutes a severe administrative failure under SEPA.

C. Otay Mesa / Gateway, California (May 15–28, 2024)

About 250 MW, NMC, Building 3. Reignition, off-gassing, and smoldering for 22 days. EPA settlement (July 7, 2025) required monitoring during battery handling, removal and disposal of impacted packs, and work plans — no civil penalty. EPA Region 9's administrator stated that calling a technology "green energy" does not mean there are no environmental impacts, and that utility-scale battery fires expose firefighters to severe toxic conditions. On-scene accounts describe on the order of nearly 20 million gallons of suppression water, drainage toward the Mexican border, construction ponds that happened to intercept most runoff, low measured metals attributed in part to dilution by volume, and on the order of 2.5 million pounds of fire-damaged batteries requiring brining and interstate shipment (the burned, unstable battery packs must be completely submerged in giant tanks of salt water (brined) to chemically neutralize their remaining electrical charge, and then legally manifested as hazardous waste and trucked across state lines (interstate shipment) to a specialized recycling facility capable of processing them). Cleanup ran many months. That is the PEIS picture of waste, firewater, duration, and federal oversight — not a typical fire incident closed by a brief hydrant note.

D. Fredericktown, Missouri (October 30, 2024) — chemistry analog

Critical Mineral Recovery was a lithium-battery recycling plant, not a grid BESS. The metals and the firewater are the same class of release. Contaminated firewater left the site through a storm ditch to an unnamed tributary, Village Creek, and the Little St. Francis River. Missouri Department of Conservation described on the order of 2.5 to 3 miles of dead fish. Creek water was restricted; livestock water was hauled. Public drinking wells were later described as meeting the suite that was run. That "wells cleared / creek killed" split is the environmental endpoint the PEIS must keep separate from human drinking-water MCLs. Ecology should treat this as evidence that lithium-battery firewater and suppression additives can produce an aquatic kill, including in salmon country, even when a later well sample is called compliant. Missouri DNR's site page still lists cleanup and surface-water monitoring (December 2024 through March 2026). The operator applied for a site-specific state operating permit in December 2025, revised March 2026. A fish-kill creek is not a closed incident because city drinking wells later passed a standard suite.

E. Forrest City, Arkansas (August 11, 2026) — external initiation

An 82,500-pound Tesla Megapack left a trailer near I-40 mile marker 260, ignited, and burned for many hours. On the order of ten departments provided mutual aid. The still-burning unit was moved about five miles to highway-department land. This is not an installed plant and photographs do not prove an internal design defect. It is why transport, drop, vehicle impact, and mechanical shock belong in a separate chapter from spontaneous cell-failure rates. LFP / Megapack stability did not prevent a prolonged fire after abuse. Duration also stripped fire service from other calls — an environmental and public-service impact in rural Washington.

F. Warwick, New York (December 19, 2025) — small outdoor container

Convergent's Church Street site burned one container. Public statements and the raw meter log do not say the same thing. Orange County Emergency Services (December 23, 2025) and a later Village / LaBella write-up cited 0.5 ppm HCN at a meter next to the facility and said

downwind meters were zero. The Village's January 28, 2026 Battery Fire Air Monitoring Synopsis — from those same HAZMAT one-minute logs — lists a maximum of 1.5 ppm HCN at Warwick Little League Park, about 600 feet south, in two overnight windows. A FOIL export of Unit W01A00002343 (file labeled skate-park; log dates December 20, 2025, not the 2023 Warwick fires) shows HCN at 0.5, 1.0, and 1.5 ppm. Instantaneous 1.5 ppm occurred at 6:31 a.m. December 20. More than 600 one-minute readings were at or above 1.0 ppm. GPS on that unit at the 1.5 ppm row is about 41.2586, −74.3503. 28 Church Street geocodes near 41.2587, −74.3526 — on the order of 600–800 feet, the same Memorial Park / Little League / skate-park complex the Village named, not a 0.6-mile industrial buffer. OSHA's HCN STEL is 4.7 ppm; 1.5 ppm is not IDLH. It is still cyanide at a public recreation receptor from one outdoor cabinet, and it is not a downwind zero. Air monitoring ran into December 22. The Village funded LaBella (April 2026) and issued a notice of violation for operation without the required certificate. A later "no adverse impacts" soil and groundwater conclusion is one data set. The PEIS point is scale-independent: even one cabinet produced multi-day HAZMAT and HCN at a park. A press line that downwind was clear is not the log. Peak live readings of 1.0 ppm sit at the farthest GPS this unit logged with a fix — about 1,600 feet, 0.30 mile, the Memorial Park / skate-park cluster. That is the edge of the grid they deployed, not the edge of the plume. County language that downwind was zero is false on this file at that last point. Absence of a meter past a third of a mile is not evidence that HCN was gone. It is evidence they stopped walking. The PEIS cannot treat an unsampled ring as a clean ring. Gomez's on-air half-mile odor on the 2023 school site is what happens when the next receptor is a nose instead of a logger.

Do not collapse Warwick 2023 into the 2025 HCN log. The June 2023 fires were at Convergent's County Route 1 site on Warwick Valley school-district property (and a second Church Street event that week). News 12's Blaise Gomez reported she could not stay at the CR-1 pad because of the smell. Closed captions on the June 28, 2023 package at about 0:36 have her saying they could not "stay very long because of how bad the smell is. We're about a half mile away here at the…" In a July 10, 2023 follow-up she wrote that the fumes were "very bitter and made it difficult to breathe down at the site and at the fire department a quarter mile of away," that her eyes burned, that she had a bad taste in her mouth for about six hours, and that the next day she had congestion and was clearing her throat. County advice that week was to stay indoors within a quarter-mile. That is a first-person irritation account from a reporter who put herself at about a half mile on air and a quarter mile at the firehouse on paper — school campus, multi-day let-it-burn. It is odor and symptoms, not a 0.6-mile HCN reading, and it is not the December 2025 meter file. Officials still said measurements were "within normal parameters." The PEIS should carry both the log and the reporter: code-compliant "normal" air and a journalist who could not breathe at the firehouse a quarter-mile off a school-sited array.

G. Summerside, Prince Edward Island (Sunbank, fire found September 7, 2026) — multi-day container fire

This is the ten-day event. Fire at Summerside's Sunbank solar-plus-storage site was found Monday, September 7, 2026. As of the September 17 city and province update it was still an ongoing fire, called "stable." Four seacan-sized arrays, up to 10 MW / 20 MWh. It spread from one battery to a second. Ordinary extinguishment does not apply; the protocol is stop spread and let cells consume themselves. Cause unknown ten days in. The environmental fact is not the press-conference line that air and water tests to date showed "no danger." The environmental fact is that, for the first time since ignition, the Chief Public Health Office told residents to wash garden produce — or strip outer leaves of lettuce and cabbage — because particles from the smoke were settling on vegetables people grow and eat. That is deposition onto food crops from a small outdoor plant while the fire was still burning. People with lung disease were told to stay inside if it flared again. The city was still writing a long-term air, soil, and water monitoring plan on day ten. A PEIS that models a 24-hour burnout and a fence-line air contour never reaches a garden. Washington agricultural land and backyard plots are the same receptor class. Wash-the-tomatoes is not a clean bill of health. It is proof the plume left the pad. What the public record does not show is a published HF, HCN, lithium, cathode-metal, or ultrashort-chain PFAS panel. City and province releases speak of "air quality" and drinking-water chemistry at municipal wells on the Sunbank parcel. The Chief Public Health Office told the public hydrofluoric acid from lithium fires can burn skin and airways but "dissipates quickly" outdoors — that is a toxicology talking point, not a lab table. Schools closed. Shelter-in-place on South Drive (MacKenzie to Bayview) and a 500-metre voluntary evacuation went out the morning of September 7; they were lifted the evening of September 10 after the Chief Public Health Office said smoke and toxic chemicals "quickly dissipate" outdoors. Schools that delayed opening reopened September 11. The fire was not declared out until September 21 — two weeks, after seven days with no active flame. By September 21 the city called the fire out after about two weeks and moved to recovery, with flare-up risk still on the table and a long-term monitoring plan still being written. "No danger" without naming HF, HCN, or PFPrA is the same gap East Hampton and Moss Landing exposed. The PEIS must not treat an AQHI or a metals-free drinking-water screen as a BESS closeout.

H. La Verne, California (Metropolitan Water District / Weymouth Water Treatment Plant, September 22, 2026) — BESS on a drinking-water campus The Preemption Blueprint of Local Exclusion and Residential Destruction

This facility involved two 250-kW battery storage units integrated with a 2-MW solar array supporting the Metropolitan Water District's F.E. Weymouth Water Treatment Plant. Following an afternoon test on September 22, 2026, an internal module failure escalated into an explosion and an unstoppable cascading thermal runaway event that heat-soaked adjacent cells up to 300°F and breached a second container, forcing a 4-day active emergency response that required continuous, defensive master streams running at 1,800 GPM and consuming over 10.3 million gallons of water.

The Jurisdictional Preemption Loophole: The profound institutional lesson of the La Verne disaster lies in its total evasion of local oversight. Because California Government Code §

53091 exempts public water and electrical storage agencies from local zoning ordinances, the City of La Verne was completely barred from conducting permitting reviews or giving public notifications to nearby homeowners. Siting occurred entirely outside the city's regulatory process, presenting the exact same dangerous preemption pathway as Washington's EFSEC opt-in track, where clean-energy developers override local county comprehensive plans and residential buffers.

The Consequence and Liability Reality:The 4-day active fire resulted in one firefighter hospitalization, triggered a declaration of a local emergency by the City Manager on September 25, 2026, and forced 500 families and 30 businesses into mandatory evacuation. Downwind residential receptors suffered immediate, quantifiable property damage—including declared localized costs of $3,000+ per household for exterior chemical cleanup treatments, a 10-fold chemical saturation spike in private surface water pools, and total ecological mortality inside backyard environments (including dead native koi fish). City officials instructed residents to file claims for damages through the city's website. Dr. Nichole Quick, Chief Science Officer at the Los Angeles County Department of Public Health, recommended the county's Department of Public Health website for instructions on cleaning indoor surfaces and situations where an expert assessment of property is needed. That is the definitive PEIS record of state preemption preclusion, multi-million-gallon unlined storm-drain discharges, and direct residential property liabilities—not a simple hour-long incident closed/logged as "Arrived on scene, hooked engine up to the fire hydrant, sprayed water for an hour, extinguished the flame, returned to station," nor a brief fire-hydrant note.

I. Port Angeles, Washington (July 3–8, 2013) — The Commercial Blueprint of Chronicity and Local Reignition

Commercial hybrid wind-solar power storage battery bank situated directly within the structural footprint of The Landing Mall (115 E. Railroad Ave., Port Angeles, WA). Sited immediately adjacent to the high-value marine ecosystems of the Olympic Coast and active public tourist corridors. Initial thermal runaway failure at approximately 12:30 p.m. forced the emergency evacuation of 50 to 100 citizens, completely shutting down the northeast corner of the commercial facility, nearby waterfront areas, and the City Pier due to heavy, toxic chemical smoke. The disaster required a multi-department emergency fire response to establish an exposure safety perimeter along the coastline. Crucially, after the system was initially declared suppressed and controlled, the compromised battery bank suffered a spontaneous secondary flare-up and chemical reignition a full five days later on July 8, 2013. Local emergency response logs prove that what appears extinguished on the outside can quietly breed a deep internal cell-to-cell thermal cascade on the inside. That is the PEIS picture of public exposure, multi-department infrastructure shocks, and a local Washington state timeline of chronic volatility—not a simple hour-long incident closed/logged as "Arrived on scene, hooked engine up to the fire hydrant, sprayed water for an hour, extinguished the flame, returned to station." nor a brief fire-hydrant note.

J. The Puyallup School District Battery Storage Failure and Permitting Loophole (October 2025 Precedent): Siting reviews must reject clean-energy industry assertions that high-density battery energy storage assets are safely confined to remote industrial zones, looking directly to the October 2025 failure on a Puyallup School District's Ferrucci Junior High School. Even though this specific system utilized an alternative, non-lithium chemistry layout, the systemic failure and subsequent fire forced the immediate emergency closure (but no evacuations as it happened over a weekendnearly a year ago due to localized toxic air and smoke exposure risks. The profound institutional lesson of the Puyallup Ferrucci Junior High School event lies in its fraudulent permitting path: the interior battery closet array and facility upgrade were granted a full SEPA Determination of Non-Significance (DNS). Yet, the school isn't expected to be safe until 2027 and has already cost $8.9M in cleanup costs so far… This administrative default completely blinded local planners to the true systemic risk profile, proving that Washington lead agencies are actively utilizing routine exemptions to place volatile storage assets directly inside active K-12 school corridors. It completely invalidates developer assertions that 'sealed boxes' (no matter how small) remove risk to local schools, communities, and the environment proving that any battery containment infrastructure carries an inherent failure mode capable of forcing evacuations. The PEIS must close this permitting loophole by mandating a non-waivable programmatic Determination of Significance (DS) and a one-mile default siting exclusion zone from any K-12 campus, regardless of whether the target asset is labeled a utility field or an interior facility upgrade.

IX. Washington siting is already on wells, wetlands, and salmon water

Geographic scope should be built from aquifer vulnerability (CARA, wellhead protection, shallow glacial systems), surface-water and SMA connections, wetlands, agricultural land, and Tribal treaty resources — not from a 200-foot setback. A project over a municipal well or a Type F stream is not the same project as a project on industrial fill with contained drainage to treatment. That is not hypothetical. Local governments in this state have already been asked to permit utility-scale lithium BESS on or next to drinking-water wells, wetland complexes, and fish-bearing water because existing zoning and SEPA checklists did not forbid it.

The following are siting facts for PEIS geographic-scope assumptions. They are not project verdicts and they do not assert that each proposal will contaminate a valley. They show why a statewide document that stops at a code-compliant cabinet and a buffer line will fail the sites Ecology is already seeing.

- **Sumner / Greenwater:** The Dieringer municipal well sits directly on the proposed BESS parcel, positioned squarely inside a high-vulnerability Critical Aquifer Recharge Area (CARA) and aquifer recharge zone that the city relies upon for peak regional drinking water demand. The City of Sumner issued an MDNS and conditional use permit in 2024 when it completely lacked BESS-specific development standards. While subsequent MDNS conditions required deeding the well's sanitary-control area to the city, a localized hydrogeologic assessment, and basic structural curb containment, these standard zoning fixes fail completely under the regulatory baseline established by the

Washington State Department of Health. In its September 23, 2026 scoping brief, the Department of Health explicitly cited these exact 2024 municipal permit comments to demand that the PEIS enforce absolute protection boundaries under WAC 173-160-101, WAC 246-290-135, and WAC 246-291-125, warning that a BESS disaster risks a complete chemical breakthrough where 'the water purveyor could potentially lose its investment in the well and need to shut it down, either temporarily or permanently'. The applicant's baseline assertion that the battery cells are 'hermetically sealed' and pose zero spill risk describes a pristine, normal operating condition only. It completely fails to analyze suppression water transport or a structurally breached enclosure matrix under disaster constraints, presenting the exact high-vulnerability groundwater collision path the State Health Department has ordered Ecology to evaluate and restrict statewide. Siting models within the PEIS must adopt more protective regulatory choices by formally codifying existing Washington municipal precedents. In accordance with City of Sumner Ordinance No. 2899, grid-scale BESS facilities must be classified as high-hazard industrial assets that are strictly prohibited within 1,000 feet of residential zones, wellhead protection areas, shorelands, and municipal watersheds. Furthermore, in direct alignment with the City of Bonney Lake's September 29, 2026 SEPA Determination (Register No. 202603919), the PEIS must programmatically classify all BESS thermal runaway and cooling runoff water as an 'illicit discharge' under Phase I and Phase II NPDES requirements. Siting frameworks must require 100% total secondary and tertiary engineering containment, wastewater pre-treatment isolation, and mandatory diversion to a municipal sewer network, completely outlawing the use of unlined stormwater infiltration ponds that allow lithium, lead, nitrates, and heavy metals to seep directly into public spring, well, or surface water sources above the aquitard.

- **Sedro-Woolley area / Goldeneye (Hansen Creek Alluvial-Fan Watershed):** Siting a utility-scale battery field on agricultural land adjacent to Hansen Creek represents a direct, unmitigable threat to sovereign Tribal treaty-reserved resources. In an official September 30, 2026 declaration, the Snoqualmie Indian Tribe invoked its inherent sovereignty and sacred rights reserved under the Treaty of Point Elliott of 1855, establishing that uncontained BESS failures directly threaten their off-reservation privileges to hunt, gather, and protect ancestral fish-bearing waters. Siting high-density lithium BESS inside a basin where the Upper Skagit Indian Tribe, the Snoqualmie Indian Tribe, the EPA, and state purveyors have invested millions of public dollars for salmon recovery floodplain restoration completely violates SEPA. Siting reviews must mandatorily incorporate Traditional Ecological Knowledge (TEK) and Indigenous Knowledge (IK) as a core pillar of the Best Available Science framework, programmatically excluding utility arrays from any ancestral landscape or Usual and Accustomed (U&A) fishing ground.

- **Covington-area proposal (King County CDUP23-0003, parcels 2422059059 and 2422059130):** wetland complex next to Mattson Middle School, in the Soos / Little Soos Creek drainage. The Developer's drainage design shows a direct path through a wetland then directly to Little Soos Creek. The applicant sought a Clean Water Act §401

certification for federally regulated wetlands; the Corps found no jurisdiction and Ecology did not authorize wetland work. The City of Covington and Kent School District Board formally opposed the unincorporated King County site to the King County Executive, King County Council, and King County Permitting- causing the developer to withdraw their King County permit application to instead file an application through the EFSEC- where the Governor has exclusive and overriding approval authority. The city's moratorium findings state that BESS fires can take weeks to extinguish, require massive volumes of water, and can discharge hydrofluoric acid and cyanide compounds to air, property, and groundwater. The proposed BESS sits in unincorporated King County, so city opposition and a city moratorium do not control the permit and now the application through the EFSEC is looming — the same jurisdictional split the PEIS must close statewide.

- **Tukwila / Southcenter Mall Commercial Corridor:** Active developer consultations (including Tenaska's multi-megawatt siting talks near the high-density Southcenter retail matrix) prove that operators are aggressively targeting dense urban-reserve infrastructure hubs. These commercial pads sit directly within active urban stormwater networks that connect directly to the Green River—a critical, ESA-listed migratory corridor for threatened Puget Sound Chinook and steelhead. Siting high-density battery assets inside urban retail zones under standard commercial building codes entirely ignores long-range horizontal plume mass transport and firewater wash dynamics, mimicking the hazardous commercial collision paths verified at the Port Angeles Landing Mall and the La Verne Weymouth drinking-water campus.
- **Thurston County, Auburn, and Skagit County Pipeline Arrays:** Siting proposals currently expanding across Thurston County, unincorporated Skagit County, and the city limits of Auburn highlight the systemic failure of decentralized SEPA reviews. In Thurston County, utility-scale applications are being drawn directly over high-permeability Critical Aquifer Recharge Areas (CARAs) supplying municipal drinking-water wellhead protection zones for Olympia and Lacey. In Auburn, proposals directly impact low-lying peat wetland complexes linked to downstream salmon-rearing channels. In Skagit County, developers are actively targeting Ag-NRL protected resource land situated on loose, highly permeable alluvial fan deposits. In every single instance, applicants are utilizing identical normal-operation language to completely omit firewater runoff modeling, long-range heavy metal crop deposition studies, and independent pre-construction thin-interval soil baseline sampling suites. The PEIS must conclude that the presence or absence of a localized municipal ordinance does not dictate environmental significance. Ecology must exert its statutory authority to enforce a uniform, non-waivable technical baseline across all emerging Thurston, King, and Skagit county pipelines, ensuring that local county critical areas protections cannot be structurally dismantled project-by-project.
- **Snoqualmie / Cascadia Ridge/ Jupiter BESS Proposal (Unincorporated King County Adjacent Zone):** A utility-scale battery installation proposed immediately next door to multi-acre residential homesteads, bordering an active, perennial Type F fish-bearing stream that runs parallel from west to east along the northern property boundary. This aquatic corridor supports localized beaver complexes and serves as the primary

hydration source for diverse native wildlife populations—including regional elk herds, deer, cougars, bobcats, coyotes, and native salmonids downstream. The Cascadia Ridge project area directly threatens the primary single-access transit corridors of the Snoqualmie Valley—specifically State Route 202, State Route 18, and Interstate 90. These high-congestion thoroughfares serve as the sole daily transit pipelines and the exclusive emergency evacuation routes for thousands of valley residents and surrounding school campuses. Siting an uncontained infrastructure hazard adjacent to these lifelines creates an unacceptable evacuation bottleneck. If a mid-day thermal blowout forces an immediate one-mile geographic evacuation zone, a stagnant valley atmospheric inversion will trap a ground-hugging chemical cocktail plume directly over these jammed highway corridors. Unprotected motorists and fleeing schoolchildren, trapped in gridlock without firefighter self-contained breathing apparatus (SCBA), will be forced into direct, catastrophic inhalation exposure. The developer is actively pursuing an EFSEC opt-in track to deliberately bypass local King County zoning restrictions and override the formal resistance of local municipal and school district authorities. The applicant's submittals rely on remote out-of-state technical monitoring systems (operating thousands of miles away in states like Illinois or Texas) as a substitute for on-site, 24/7 human safety monitoring on the ground. A line under a map and a remote tech dashboard do not analyze what happens when millions of gallons of toxic firewater runoff drain directly downhill into private drinking-water aquifers, or when heavy metal nanoparticle soot settles permanently across a 5-acre vineyard. Siting a massive, uncontained battery asset directly next to an un-protected rural neighborhood—where homes maintain a minimum property asset value of $1,000,000 each—while shielding the special-purpose shell LLC behind a superficial $1,000,000 liability limit completely destroys corporate motivation to invest in structural safety. The PEIS must dictate that if a developer's toxic release contaminates a local neighborhood water supply, the corporate parent entity must face an absolute, non-collateralized legal mandate to fund and deliver clean, safe drinking water to every impacted household continuously until a replacement well can be drilled and certified safe back to pre-disturbance baselines. The Cascadia Ridge site relies on a single transit bottleneck (SR 202 and Snoqualmie Parkway) prone to seasonal gridlock, requiring rigorous multi-mile evacuation simulations under toxic inversion plumes.

- **The Open-Excavation Hydrogeological Fallout Pathway:** The PEIS geographic scope must explicitly map and analyze specific contaminant pathways—such as thermal-runaway plume deposition and toxic firewater runoff—dropping directly into open excavations, pits, or quarries that serve as direct vertical conduits straight to shallow groundwater tables within Category I Critical Aquifer Recharge Areas (CARAs). Siting frameworks must require project checklists to cross-analyze these vertical pathways with post-incident research frameworks—such as the San Jose State University Moss Landing Marine Laboratories EMBER study—to evaluate how heavy metals released during a fire migrate via stormwater runoff into porewater, soils, and salmon-bearing aquatic ecosystems.

- **Other Puget Sound proposals have been drawn on or next to wetlands:** (Auburn), salmon-bearing water (Enumclaw), within about 200 feet of Cedar river (Renton), next to the Green River (Tukwila), and on or next to Skagit river and floodplain sites. Several cities adopted moratoria for the same reason Sumner did not have and gave permitting approval as nothing on the books said they should not.

The PEIS should state that a well sanitary-control radius and a critical-areas buffer are starting lines, not the study area. Firewater and deposition travel with gradient and wind. East Hampton's wells were about 2,500 feet downgradient. Moss Landing fallout reached a Ramsar wetland and community wipes tens of miles downwind. "Hermetically sealed" is not a firewater analysis. Absence of a local BESS ordinance is not evidence of no significant impact. Treaty fishing, salmon-recovery investments, and wellhead-protection areas are receptors.

The same well, wetland, salmon, firewater, and baseline-sampling scope must apply whether the lead agency is a city, a county, or EFSEC. Otherwise the PEIS is optional for the largest sites. California's AB 205 / CEC opt-in path has already been used to place BESS review above a city's moratorium and ordinance (Vacaville / Corby and Vaca-Dixon). Washington should not write a PEIS that EFSEC can treat as advisory while cities are told the document is the statewide standard.

Local governments have already paused utility-scale BESS because existing code did not answer fire, firewater, wells, or salmon water. Commerce's Energy Safety Program publishes a Washington energy safety ordinance and moratorium tracker for that reason. It is a list of local actions, not a Commerce finding of "statewide emergency revolt." Jurisdictions that have adopted or extended a BESS moratorium, or whose pause later expired after they used it to write rules, include — at a minimum — Auburn, Black Diamond, Bonney Lake, Carnation, Covington, Duvall, Enumclaw, Maple Valley, Mount Vernon, North Bend, Puyallup, Renton, Sedro-Woolley, Snoqualmie, and Kitsap and Klickitat Counties (Klickitat's extension runs into 2027). Skagit and Whatcom Counties have also used a pause. Adams County adopted Chapter 17.73 BESS siting standards in 2026 rather than a freeze. I did not find a Tukwila or Grant County BESS moratorium in the records reviewed; Tukwila's recent freeze is a detention-facility pause, and Grant's Dry Falls file is a CUP. King County unincorporated land is not on the freeze list: Ordinance 19824 still allows utility-scale BESS on most of that area, which is why a Covington or Snoqualmie city moratorium does not control a pad across the city line. Sedro-Woolley's Ordinance 2081-24 froze major electricity-storage permits inside the city; Goldeneye sits east of that line on agricultural land next to Hansen Creek and is in EFSEC review. City and County opposition letters and the Upper Skagit Tribe's position do not apply if EFSEC treats the PEIS as optional. That split is the PEIS problem. The same failure-pathway, containment, baseline-sampling, and wellhead/salmon scope must apply whether the lead agency is a city, a county, or EFSEC.

Nationally, tracker data current to September 2026 puts on the order of 110-plus active local BESS restrictions across about 16 states, with New York alone accounting for roughly 90 active municipal pauses (East Hampton is in that set). California cities including Escondido,

Moorpark, Morro Bay, San Juan Capistrano, and Vacaville have paused or tightly zoned utility-scale lithium BESS; Vacaville's firefighters' association opposed a project on toxic-gas and Interstate-80 grounds. Ecology does not take direction from other states' town boards. It should take notice that the environmental question this PEIS is scoped to answer is the reason those boards stopped.

Agricultural land is a receptor, not a vacant buffer. Vacaville farm comments (almond orchard within about 500 yards; Solano Irrigation District canals; shallow Solano subbasin / fan aquifer) are the same class of pathway as Washington farmland next to Hansen Creek in Sedro Wooley, Puyallup-White drainage basin at Sumner: deposition on crops and irrigation water, then food and livestock. The PEIS should list crops and irrigation conveyances in the receptor set.

X. Energy use, alternatives, lifecycle, and recommended exclusion distances

The PEIS's energy and natural-resources chapter should not assume a BESS is energetically neutral. Round-trip efficiency is less than 100 percent. HVAC, fire-suppression auxiliaries, and standby losses consume power that must be generated somewhere. State that parasitic load and state the uncertainty; do not invent a single "20 percent" figure as law. Compare utility-scale lithium BESS, on a project-level alternatives analysis, with longer-duration options (pumped hydro, other LDES) where the stated need is multi-day winter adequacy rather than four-hour ramping. A four-hour battery is a four-hour battery. That is not an insult. It is a purpose limit the PEIS should disclose.

Project SEPA checklists routinely offer lithium BESS or nothing. That is not an alternatives analysis. The PEIS should require a real chapter: (a) no-action; (b) non-lithium long-duration storage where the stated need is multi-day winter adequacy rather than four-hour ramping; (c) different siting that is off a Critical Aquifer Recharge Area, wellhead Zone 1 or 2, Type F floodplain or buffer, and the default school / well radii in this letter. "The only vacant parcel the applicant controls" is not an alternative.

Lifecycle: cells are consumable. Ten- to fifteen-year replacement, mining and processing of lithium, nickel, cobalt, copper, and graphite, and end-of-life modules are environmental health and waste issues. Missouri shows what a lithium-battery processing fire does to a creek. Upstream of the pad, lithium extraction has its own water record: Washington Post reporting from 2016 on the Ganzizhou Rongda operation at Jiajika described villagers saying the Liqi / Lichu River ran with dead fish and that yaks died after drinking downstream of a leachate leak. That is a mine-process chemical release, not a grid fire. It belongs in the lifecycle chapter so "clean storage" is not written as if cells appear without a water cost. End-of-life is the same chapter: on September 6–7, 2026, Providence Green, an electronics recycler in South Fulton, Georgia, burned with batteries and propane on site; neighbors reported explosions and debris on nearby property; smoke was visible for miles and altered Hartsfield flight patterns; the city said HAZMAT found no toxic plume while neighbors described a chemical smell. No injuries. That is not a utility BESS. It is what happens when damaged cells and e-waste sit in a

warehouse without the PEIS's funded take-back. Commissioning and recycling have the same chemistry. On July 30, 2021, a 13-tonne Tesla Megapack at the Victorian Big Battery in Moorabool, Australia, ignited during testing, spread to a second pack, and produced a toxic-smoke warning for nearby suburbs (Batesford, Bell Post Hill, Lovely Banks, Moorabool). EPA Victoria monitors two hours after the fire showed good community air; they were not running at peak. Factory-fresh cells still burned. On January 16, 2023, used LMP modules in a Bolloré Logistics warehouse at Grand-Couronne, France, ignited; French BARPI records a smoke cloud on the order of seven kilometers, later lithium in groundwater, and remediation costs above €10 million. Officials said off-site air toxics were not significant that night. The PEIS still has to treat used-module storage as a release class, not a footnote. The PEIS should require a cradle-to-grave waste path, not a sentence that recycling will exist.

Recommended exclusion distances, tied to the record not to a slogan: no utility-scale lithium BESS inside a municipal well's zone of contribution or within 2,500 feet of a public drinking-water well (the East Hampton wellfield distance); no pad within one mile of a K-12 school where the applicant's own industry siting screens already flag that radius (Cascade View, Mattson); agricultural and Ag-NRL land treated as a receptor and as a land-use constraint, not as cheap empty ground. The PEIS cannot rezone Washington, but it can say these distances are the minimum geographic scope and the default mitigation unless a site-specific analysis proves a shorter path does not reach the receptor.

XI. Process gaps the PEIS should close

SEPA timing: technical failure-mode detail is often finished in a later fire / Hazard Mitigation Analysis, after the threshold determination. The PEIS should tell lead agencies what failure-mode and firewater information must exist before DNS, MDNS, or DS, and when a later HMA requires supplemental SEPA. Otherwise environmental review is closed before the failure modes are written down.

Ecology's tools are not limited to writing a background paper. As SEPA lead on this PEIS, Ecology defines geographic scope, receptors, and what counts as a probable significant adverse impact. Under Clean Water Act §401, Ecology can certify, condition, or deny when a federal permit would authorize discharge to state waters. The PEIS should state that a utility-scale lithium BESS on a CARA, in wellhead Zone 1 or 2, or on a Type F floodplain (Hansen Creek / Goldeneye is the working example) should not receive an unconditioned §401 if firewater isolation is incomplete. The demonstration should be 100 percent impervious secondary and tertiary containment sized to a 120-hour disaster volume, isolated from the storm system — not a promise that cells are sealed. Under NPDES and the construction and industrial stormwater general permits, firewater is not stormwater. The PEIS should recommend that an emergency-water or plume event lock down the site drainage — automated isolation valves on ponds and outfalls — until independent lab characterization. Battery-marker monitoring (lithium, fluoride, cathode metals, PFPrA, TFA) belongs in those permits, not only TSS and pH. Under Chapter 173-303 WAC, fire-damaged and structurally compromised battery modules, scorched internal components, contaminated brining

solutions, and saturated filter media are automatically classified as ignitable, reactive, and toxic Extremely Hazardous Waste (EHW). The PEIS must require upfront, parent-guaranteed hazardous waste manifests compliant with federal RCRA Subtitle C interstate transit regulations prior to construction. Because Washington State entirely lacks a permitted commercial pyro-metallurgical or hydrometallurgical recycling facility capable of processing millions of pounds of charred utility-scale lithium BESS, every single ton of post-disaster debris must move via long-haul interstate shipment. Siting approvals must prove the upfront legal and financial capacity to execute this out-of-state waste path, preventing Washington from hosting stranded, toxic, and highly volatile battery ruins for years, as occurred during the largest lithium cleanup in EPA history at Moss Landing- the clean up of the BESS site is still ongoing, but put on pause due to the re-ignition of the yet to be removed battery remains. That work is cleanup, not decommissioning. Local zoning still places the pad. Ecology still decides whether an MDNS can close a file that never modeled those pathways. EFSEC can sit as the siting body; it cannot waive Ecology's water-quality and dangerous-waste statutes. The PEIS should say the failure-pathway, containment, baseline, and waste criteria are the state minimum whether the counter is a city, a county, or EFSEC — not an advisory checklist the Governor's siting path can skip. That is how East Hampton wells, a two-year EPA removal, a Missouri creek kill, and a 20-month reignition during "final phase" cleanup stay in the permit file instead of becoming Washington's first lithium Superfund-scale site. To eliminate this structural vacancy, the PEIS must look directly to the March 2026 Scottish Government Ministerial Consenting Framework, which establishes that a developer's commitment to safe site restoration must remain robustly enforceable irrespective of future corporate ownership changes or shell bankruptcy filings. Siting codes must mandate the execution of a fully funded, non-waivable financial guarantee held in escrow prior to construction, explicitly requiring an independent third-party asset valuation to ensure that the bond mechanism covers 100% of the long-term, multi-year economic liabilities associated with hazardous module handling, chemical brine extraction, and complete ecological soil restoration, completely preventing local property owners or municipalities from inheriting a stranded hazardous footprint.

Siting Precedents, Washington Judicial Siting Limits, and Local Compatibility Modeling

The PEIS must adopt more protective regulatory choices, looking to Washington municipal precedents such as City of Sumner Ordinance No. 2899, SMC 18.04.1065, and City of Auburn standards (ACC 18.31.240) which require Conditional Use Permits, strict zoning limits, and adequate decommissioning bonds. Siting models must also respect established Washington judicial limits governing administrative authority, ensuring agencies do not expand code categories beyond plain terms as outlined in case law including *Zenner v. Dubuque County*, *Kilburn v. City of Bellevue*, *City of Seattle v. Crispin*, and *Postema v. Pollution Control Hearings Board*. Furthermore, facilities must demonstrate functional compatibility rather than assuming grid connection equates to local community service.

The PEIS must address how independent state bodies like EFSEC override local ordinances and tribal rights, as seen in disputes in the Horse Heaven Hills and the Hansen Creek watershed. Following the *Loper Bright* ruling overturning Chevron deference, courts will no longer defer to ambiguous administrative rules, meaning local jurisdictions must retain home-rule enforcement to protect community health and water security. Furthermore, the PEIS should evaluate how global EV manufacturing overcapacity and plunging pack prices drive speculative BESS deployments tailored for AI data centers rather than local utility needs. Rigorous, project-specific reviews are required because global failure rates do not constitute an adequate local fire protection plan.

Siting rules should adopt protective municipal precedents like Sumner Ordinance No. 2899 and prohibit improper deferral of safety evaluations like Hazard Mitigation Analysis prior to land-use authorization. The complete regulatory text and procedural safeguards are outlined in the referenced document.

EPA's BESS fact sheet (530-F-25-013) says lithium fires are extremely difficult to extinguish and may reignite hours or days later, release harmful gases, and require specialized cleanup and disposal. That list is a start, not a closeout. The PEIS should treat EPA's named gases as the minimum air screen and require the full lithium-fire analyte suite in Section V for every utility-scale event — air, veneer, soil, water, and sediment — including ultrashort PFAS (PFPrA, TFA), free fluoride, cathode metals, and the rest of the named methods. An "all clear" that ran only the five field gases is not an environmental characterization.

EPA's own Moss Landing cleanup flyer ("Keeping the Community Safe") is the Agency's operational list during the largest lithium-ion removal in its history: continuous community and onsite air for PM2.5 and HF; filter metals aluminum, cobalt, copper, lead, lithium, manganese, and nickel; all water from the burned building collected and sampled before disposal; ash and debris characterized before off-site shipment; designated haul routes; a 24/7 fire watch. That is EPA treating firewater and wrecked modules as regulated waste, not stormwater or "decommissioning." It is also not a complete environmental characterization: the flyer does not name HCN, ultrashort PFAS, thin-interval off-site ash, or private wells. The PEIS should take EPA's named media as the bare minimum and require the full Section V suite on every utility-scale event.

EPA's September 8, 2026 release on the "final phase" at Moss Landing is the Agency's own timeline: fire January 16–18, 2025; flare-up February 18; about 100,000 modules, about 55 percent damaged; nearly 40,000 more-accessible modules shipped to Nevada and Ohio under EPA oversight; remaining wreckage reached only by demolishing the building; on-site treatment, RCRA disposal, posted waste characterization; water from the work collected and tested; mid-2027 projected for battery removal and demolition. EPA states damaged lithium-ion batteries pose an ongoing fire risk and can produce hydrogen fluoride and other toxic or flammable gases. Vistra is a CERCLA potentially responsible party under a July 2025

settlement to perform and pay for removal until the materials leave the site. Twenty months to reach “final phase,” and still only the pad, is not a sealed-box event and is not “decommissioning.” The PEIS should assume a multi-year hazardous-waste removal class, parent-funded, not a cabinet-pull bond.

Sept. 18, 2026 reignition (10 days after this “milestone”) belongs in the next sentence if it is not already there: the “final phase” site burned again.

Ten days after EPA called demolition the “final phase,” Monterey OES reported fire again at 6:15 a.m. on September 18, 2026, in the same damaged structure, involving about 1,500 modules that had already burned in January 2025 and were still energized. The county evacuated Moss Landing and said the event was smaller than January 2025 and might burn out in about a day. EPA had already warned that damaged lithium-ion modules remain a fire and HF/toxic-gas source until they are removed. A PEIS that treats cleanup as the end of the hazard is contradicted by that sequence. The same property also holds a second Vistra array that did not ignite in January 2025 and PG&E’s Elkhorn Megapack site, which has had its own thermal events — one campus, six (6) lithium fires since 2021.

After the Gateway BESS fire in Otay Mesa (May 2024), EPA required environmental monitoring during handling and disposal through days of flare-ups. EPA called Moss Landing the largest lithium-ion battery cleanup in Agency history and said damaged modules pose an ongoing fire risk and can produce HF and other toxic or flammable gases. Consumer and generator pages do not analyze utility firewater or off-site deposition. The PEIS should take those agency facts as the floor, then scale them to a pad of modules.

Equipment substitution: a permit written on Manufacturer A’s cabinet is not a permit for Manufacturer B. Any change in chemistry, stored energy, gas yield, enclosure, propagation, or required water volume should void the prior SEPA threshold determination, not merely “update the file.”

The PEIS must look directly to the administrative record established under Bonney Lake’s formal SEPA Determination issued on September 16, 2026, recorded under SEPA Register Number 202603919. This municipal docket establishes that standalone BESS failures introduce severe multi-media pollutants that directly threaten Group A and Group B water purveyors maintaining shallow surface water, well, or spring assets above local aquitards. Siting check-lists tiered to this PEIS must incorporate the comprehensive resources compiled under Register No. 202603919 to evaluate the structural incapacity of local wastewater treatment facilities to handle sudden influxes of toxic, fluorinated BESS firewater without violating their own federal effluent discharge standards.

Emergency-service capacity is an impact. Plans that assume apparatus, water, tankers, meters, and mutual aid for 120 continuous hours should be tested against actual staffing and simultaneous-call risk. Emergency-service capacity remains a critical regional deficit-especially when BESS are sited in smaller communities without large industrial areas. On

Snoqualmie Ridge, King County Fire Protection District 38 formally notified the WUTC that it lacks the resources to manage a utility-scale BESS emergency, and local trauma facilities like Snoqualmie Valley Health are unequipped for severe toxicological trauma. Project plans must include certified funding for specialized HazMat resources prior to operation.

Financial assurance and liability: East Hampton's water utility is seeking millions; Otay Mesa required months of EPA-directed work with no civil penalty in the settlement. A decommissioning bond written for unplugging cabinets will not pay for firewater treatment, aquifer investigation, hazardous-waste extraction of burned modules, or multi-year monitoring. The PEIS should require disaster-scale instruments — environmental cleanup insurance and irrevocable financial assurance held for remediation, not only a pull-the-cabinets bond — sized to a multi-day firewater and debris event, including insolvency of a special-purpose owner. Developers who create the risk should carry it. The PEIS must explicitly analyze the indirect and cumulative economic impacts of structural property devaluation resulting from BESS facility siting, operations, and failures. Empirical data from the September 30, 2026 La Verne, California post-evacuation council dockets demonstrates that standalone battery failures inflict immediate, uncompensated financial shocks on surrounding property owners, forcing residents to absorb thousands of dollars in out-of-pocket costs for evacuations, exterior chemical soot remediation, interior and HVAC remediation, yard cleanup/de-toxification, and private pool purification. Furthermore, because grid-scale BESS complexes run high-powered HVAC cooling plants and power inverters continuously, their low-frequency operational hums (measuring up to 120 dBL at 31.5 Hz) permanently degrade the quiet enjoyment of surrounding residential properties. Siting these industrial chemical arrays within close proximity to suburban homes and schools introduces a severe 'stigma effect' that suppresses regional real estate markets and destroys private property values. Under SEPA, where an industrial hazard asset introduces long-term toxicological risk, chronic noise pollution, and the threat of multi-week toxic fires, smoke, ash/fallout the resulting degradation of land use cannot be divorced from its economic consequence. The PEIS must require developers to carry comprehensive, long-term liability insurance policies specifically sized to compensate surrounding residential property owners for structural market devaluation, completely rejecting the industry practice of utilizing shell LLC structures to isolate corporate parent entities from property damage liabilities.

Projects are routinely titled in special-purpose LLCs (East Hampton Energy Storage Center, LLC; Goldeneye Battery Storage, LLC). A cabinet bond sitting in that entity is not an aquifer fund if the LLC is empty after an incident. The PEIS should specify parent-company guarantees and insurance that survive insolvency of the project LLC — not as a slogan, as the instrument that pays for two years of demolition and wellfield replacement.

Containment: isolation from ordinary stormwater must be 100 percent during an emergency. Secondary and tertiary containment should be sized for multi-day suppression volume, not the design storm. A lined pond built for rain is not a firewater tank.

Pre-construction baseline: post-incident sampling is useless if there is no legally filed before-picture. East Hampton and Moss Landing both became arguments about “what was already there.” Washington should not repeat that. Require independent baseline sampling of soil (including a 0–5 millimeter veneer or thin interval, not only a 0–6 inch composite), groundwater in the zone of contribution and immediately downgradient (municipal and accessible private wells), surface water and sediment in any wetland, ditch, pond, or stream that would receive site drainage, and vegetation on and immediately downwind of the pad — before ground disturbance, in the SEPA record before a threshold determination. Analytes must match the post-incident list: lithium, cathode and current-collector metals, fluoride, and ultrashort-chain PFAS including perfluoropropionic acid (PFPrA) and trifluoroacetic acid (TFA). One pre-construction round is the floor; a second seasonal round is preferred.

XII. Concrete products requested from the PEIS

Please include in the scope of study, impact analysis, and mitigation chapters:

1. A required analytic chain: failure mode → release → pathway → receptor → consequence → mitigation → post-event verification.
2. In direct alignment with the City of Covington’s formal scoping directives, the PEIS must produce a non-waivable Project Review Checklist and a sample Interlocal Agreement template. Because a BESS failure footprint extends miles downwind and downgradient, a facility sited in one county directly burdens neighboring city fire authorities, separate school districts, and independent water utilities. Siting rules must mandate that before a single foundation is poured, the developer must legally execute an interlocal cost-assignment contract that fully funds specialized emergency response equipment, continuous HazMat training, and real-time full suite toxic air pollution monitoring for all affected neighboring jurisdictions.
3. A model SEPA checklist and Hazard Consequence Analysis appendix that walks lead agencies through the same chain: initiation → release → pathway → receptor → consequence → mitigation → post-event verification against baseline. Cities and counties should not have to invent that sequence project by project. The appendix should name required failure modes (including multi-enclosure fire and haul-route / delivery fire), firewater isolation, the default analyte list, thin-interval soil, private and municipal wells, and when a later equipment change voids the prior threshold determination.
4. Required pre-construction baseline sampling (soil veneer and thin interval, groundwater in the zone of contribution, surface water and sediment on the drainage path, downwind vegetation), independent laboratory, analytes matching the post-incident list including PFPrA and TFA, filed before any SEPA threshold determination.
5. Siting rules must formally adopt the statutory exclusions established by the Washington State Department of Health under WAC 173-160-101, WAC 246-290-135, and WAC 246-291-125, implementing a non-negotiable prohibition on any utility-scale BESS

placement within the 100-foot sanitary control area of any public or private drinking water well, or within larger mapped Wellhead Protection Areas and zones of contribution. Tiered project checklists must require a comprehensive, independent hydrogeological report mapping the site's relationship with groundwater. In direct alignment with Department of Health enforcement precedents, the PEIS must mandate that if an emergency situation or uncontained firewater runoff event poses any contamination potential to a drinking water source, the tiered project permit must require the corporate developer to provide immediate, continuous clean drinking water to all impacted households, and fund the total engineering, drilling, and certification costs for the complete replacement of the compromised water source back to pre-disturbance baselines.

6. Project checklists must model container-to-container propagation under wind-driven flame deflection and radiant heat-soak, and must calculate multi-day exposure-cooling firewater from that layout. NFPA 855 default separation (including 3-foot / 10-foot class spacing) and a UL 9540A “did not propagate in the lab” certificate do not retire that calculation. Spatial density and inter-container thermal coupling are an environmental footprint, not only a fire-code checkbox.

7. Programmatic Freshwater Trophic Modeling: The PEIS must mandate that tiered project checklists incorporate a bottom-up biological resource review that explicitly models a localized trophic collapse within a minimum 3-mile down-gradient zone of any Type F fish-bearing watercourse or designated critical salmonid habitat, completely invalidating developer claims that assume ecological impacts stop at a property fence line.

8. Firewater volume, duration, containment, isolation from stormwater, sampling, treatment, and disposal — sized to emergency response, not the storm pond. Mandatory firewater containment sized to a 120-hour emergency suppression volume plus exposure-cooling water for adjacent units, 100 percent isolated from ordinary stormwater and unlined ponds. Post-incident liquid protocols must require minimum extract volumes sufficient for total metals and PAHs. A lead agency may not issue an environmental all-clear on a pathway aborted for insufficient sample volume.

9. Default post-incident suite (air, water, veneer) and mandatory chemical characterization: The PEIS must mandate a default post-incident analyte list that includes ultrashort-chain PFAS (PFPrA and TFA), free fluoride and $LiPF_6$ breakdown fluorides (HF, POF_3, PF_5), HCN, HCl, Cl_2, H_2S, NH_3, SO_2, NOx, CO, electrolyte VOCs (benzene, formaldehyde, acrolein), dioxins/furans where fluorinated binders (for example PVDF) burned. Opacity or PM2.5/PM10 with black and organic carbon is not a complete analyte list. Filters should be run for vaporized cathode and current-collector metals (Li, Ni, Co, Mn, Al, Cu, Fe). A lead agency may not clear the air on generic particulate counts when those metals and/or additional analytes are expected in the smoke — MBARD said after Moss Landing’s September 2026 fire that extra community sensors were PM meters, not sensors to detect metals or other analytes. EPA Method 533 is a drinking-water method for 25 listed PFAS, reported in nanograms per liter. PFPrA is not on that list. A non-detect under 533 is not a non-detect for PFPrA — that is why SCWA

had to build an in-house ultrashort method after East Hampton. A four-gas or six-gas HAZMAT brick is a life-safety screen; it does not report HF speciation, ultrashort PFAS, or metals on a filter. Neither 533 nor the brick, by itself, is an environmental characterization under SEPA.

10. Thin-interval (0–5 mm) / wipe / surface-XRF protocols for deposition, same-week and pre-rain, with independent laboratories available; no sole reliance on homogenized 0–3 or 0–6 inch jars compared only to human RSLs.

11. * **Mandatory One-Mile Live Evacuation Siting Drills and Multi-Agency Coordination Plans:** The PEIS must mandate that project-level emergency response plans replace passive 'shelter-in-place' protocols with a non-waivable, pre-funded **Live Evacuation Staging and Coordination Drill Mandate** covering a minimum **one-mile radius** from the facility fence line. These dockets must be fully executed and verified prior to any conditional land-use authorization and must explicitly dictate:

12. The PEIS must declare that 'shelter-in-place' is formally prohibited as an operational emergency alternative for all K-12 schools, daycare facilities, and preschools sited within a 1.5-mile downwind plume boundary. Tiered project checklists must mandate active, mechanical evacuation routing parameters, including dedicated, company-funded emergency transport shuttles and dedicated mutual-aid staging.

    A. The developer must fund annual, live, multi-agency evacuation coordination drills involving all local fire protection districts, county emergency management networks, hospital trauma routing boards, and school district transportation directors to simulate a rapid-onset, mid-day chemical blowout scenario.

    B. Siting plans must prove how emergency personnel will locate, clear, and safeguard domestic livestock, companion animals, and non-mobile or language-isolated populations when a mid-day failure occurs while primary property owners are away at employment hubs, completely invalidating developer boilerplate claims that passive text alerts or localized door-knocking can mitigate regional public health risks, as exposed by the chaotic response patterns verified at La Verne.

    C. Indoor and shelter-in-place sampling. When an ERP orders evacuation or shelter-in-place, the PEIS should require air characterization inside occupied structures in that zone — schools, homes, barns businesses— not only at the fence-line of the burning BESS facility. Sample for the lithium-fire air suite (including HF and HCN), not just PM2.5 alone. A plan that tells people to close windows and then never samples the room they were told to stay in has not closed the pathway. After the January 2025 Moss Landing fire, the CTEH air plan was later sworn to have omitted an adequate contaminant list and indoor sampling during SIP (Dixon affidavit / EPA OIG complaint). An “all clear” issued while people were sheltering in place indoors, on outdoor PM or a four-gas brick, is not verification.

13. Deposition and ecological-fate analysis inside and beyond human AEGL/IDLH and ERG protective-action distances, including vegetation as a pathway and aquatic life that cannot shelter in place.
14. External mechanical initiation and seismic common-cause as separate analyses from spontaneous cell failure and UL 9540A propagation.
15. Disclosure of test-scale limits and chemistry-specific uncertainty, including that LFP does not eliminate HF, firewater, or ash pathways.
16. Standardized Post-Incident Toxic Analyte Suite: Explicitly defining that a standard NPDES, stormwater pH/TSS screen, or basic drinking-water metals package is a scoping failure. The PEIS must mandate advanced laboratory suites for water and sediment runoff that explicitly include free fluoride ions, mobile ultrashort-chain PFAS (PFPrA and TFA), and the complete heavy metal cathode matrix, barring lead agencies from using generic 'stormwater compliance' filters to declare an environmental clearance, as occurred during the 10-million-gallon runoff escape at La Verne and the 2.2-million-gallon runoff escape at Suffolk County.
17. Recommendation that utility-scale lithium-ion BESS tiered to this PEIS receive a Determination of Significance so firewater, deposition, and aquatic pathways cannot be closed by DNS or MDNS.
18. Use of Ecology's own permits as siting tools: §401 denial or conditions where firewater isolation is incomplete; NPDES / stormwater special conditions for battery-marker monitoring and storm-system lock-down during a fire; Chapter 173-303 WAC characterization of fire-damaged and end-of-life modules, ash, and firewater media as dangerous waste — applied the same way at EFSEC as at a city counter.
19. The PEIS should cite Ecology Publication 24-04-043 / the lithium-ion dangerous-waste page and EPA 530-F-25-013 as the minimum state/federal description of lithium-fire behavior and waste codes — then scale those facts to utility modules, firewater, and off-site deposition, which those consumer pages do not analyze.
20. 100 percent emergency isolation from ordinary stormwater, with secondary and tertiary containment sized to multi-day firewater volume.
21. Guidance that equipment substitution in chemistry, energy, gas yield, enclosure, or water demand voids the prior SEPA threshold determination.
22. A method to test whether local fire and mutual-aid resources assumed in the ERP actually exist for the modeled duration.
23. The PEIS must require disaster-scale financial assurance held in escrow—including specialized environmental cleanup insurance held by the parent corporate entity—sized to cover complete multi-mile aquifer investigations, long-term private well testing, and direct private residential property claims (explicitly covering exterior, interior, and HVAC remediation back to baselines and residential aquaculture mortality benchmarks as verified at La Verne)...
24. Complete cleanup after fire and at end of life: every module removed and characterized; fire-damaged cells treated as hazardous waste, not as "decommissioning"; residual ash,

firewater media, and off-site deposition sampled and closed out. A pull-the-cabinets bond is not that scope.

25. Cleanup is an initiating-event class. Fire-damaged modules that cannot be reached stay energized until they are removed (Moss 300 north wall, September 18, 2026). “Decommissioning” and an EPA “final phase” label are not a SEPA closeout.

26. The same wellhead, wetland, salmon, firewater, and baseline scope whether the lead agency is a city, a county, or EFSEC.
27. Geographic-scope assumptions that start from plume travel and documented incident footprints (hundreds of meters to tens of miles for deposition sampling design; aquifer zones of contribution measured in thousands of feet), and from Washington sites already proposed on wells, wetlands, and salmon water — not from the fence line.
28. Default recommended exclusion: 2,500 feet from public drinking-water wells; one mile from K-12 schools unless site-specific modeling shows the receptor is not in the plume or zone of contribution; agricultural / Ag-NRL land treated as a constrained receptor.

29. Energy and alternatives: parasitic HVAC and standby load; no-action; comparison of four-hour lithium BESS to non-lithium LDES where the claimed need is multi-day adequacy; off-CARA / off-wellhead / off-Type F / off-school-radius siting; cradle-to-grave cell replacement and e-waste.

30. Low-lying / inversion plume modeling for HF and HCN, and first-responder plus school receptors (including Mattson Middle and Cascade View Elementary).
31. Mandatory Siting Compatibility and Macroeconomic Supply-Shift Tracking: The PEIS must require developers to account for Foreign Entity of Concern rules, Material Assistance Cost Ratios under IRS Notice 2026-15, and local utility demand to protect Washington communities from uncompensated hazards.
32. Treaty rights and U&A fisheries statewide — not only reservation-adjacent sites — as required by Scoping Document p. 22.
33. Environmental justice analysis for overburdened communities and vulnerable populations (pp. 10, 21), including evacuation capacity and cumulative air burden.
34. Geographic-scope exclusions or presumptive significance beyond state parks (p. 21): CARAs, wellhead zones 1–2, municipal watersheds, Type F floodplains, mapped wetlands draining to fish water, Wildlife Action Plan conservation areas.
35. Aesthetics, recreation, transportation/highway closure, public-service drain, historic and cultural resources, and cumulative multi-pad effects in one basin — using Ecology’s page 7–8 resource list and page 22 direct/indirect/cumulative definitions.

36. Noise and vibration: unweighted and C-weighted levels at the fence and in the riparian corridor, including the 31.5–125 Hz bands in Grant County Dry Falls Table 7 (120 dBL at 31.5 Hz). A-weighted compliance at a distant house is not that analysis. Model the 100-percent-fan, full-array, summer / high-cycle case, not a single cabinet at 40 percent fan.

37. The Unified Post-Incident Analyte and Particulate Characterization Matrix:

The PEIS must mandate a standardized, non-waivable post-incident analyte list across all media pathways, explicitly stating that standard broad-spectrum emergency field screenings, four-gas HAZMAT bricks, or routine NPDES stormwater pH/TSS lines are a forensic and environmental review failure under SEPA. Siting approvals must establish that if any parameter is omitted from the laboratory testing protocol, that specific environmental pathway remains legally **untested and un-remediated**, not clean. The mandated testing matrix must programmatically span:

1. **Air Emissions and Plume Veneers**: Continuous, filter-isolated laboratory analysis capturing mass tracking of fine particulate matter (PM2.5/PM10), nano-scale metal oxides (PM0.1), TSP, black carbon, and organic/elemental carbon (OC/EC) explicitly cross-characterized for vaporized cathode and current-collector heavy metals (Lithium, Nickel, Cobalt, Manganese, Aluminum, Copper, Iron, Phosphorus, Lead, Zinc, Tin from circuit solders, and Chromium from steel and anti-corrosive coatings). This completely bars lead agencies from using generic particulate counts or opacity lines to declare an atmospheric clearance when toxic metal compounds are actively expected to be in the smoke, as confessed by regional air officers during the Moss Landing failure tracks.

2. **Gaseous Acids and Organics:** Direct laboratory speciation for Hydrogen Fluoride (HF), Carbonyl Fluoride (COF2), and volatile breakdown products from LiPF6 electrolyte decomposition (including phosphoryl fluoride/POF3, phosphorus pentafluoride/PF5, tetrafluoromethane/CF4, and fluoroethane), alongside Hydrogen Cyanide (HCN), Hydrogen Chloride (HCl), Chlorine (Cl2), Hydrogen Sulfide (H2S), Ammonia (NH3), Carbon Monoxide (CO), Carbon Dioxide (CO2), Hydrogen (H2), Sulphur Dioxide (SO2), and Nitrogen Oxides (NO/NO2/NOx). Testing must capture explosive volatile organic compounds (VOCs) and aromatic hydrocarbons generated by burning separator plastics and polymer components—specifically acetylene, ethylene, ethane, methane, benzene, toluene, xylene, styrene, ethylbenzene, formaldehyde, acrolein, and acetaldehyde—and highly toxic dioxins/furans (PCDD/PCDF) resulting from the combustion of fluorinated polymer binders (e.g., PVDF), PVC wire insulation, or halogenated gaskets. Phosgene (COCl2) and chlorine dioxide (ClO2) must be evaluated conditionally where high-density PVC conduit banks or cable trays burn.

3**. Water and Sediment Runoff:** Advanced laboratory testing for all firewater retention basins, downgradient groundwater monitoring aquifers, municipal well contribution zones, private domestic wells, and surface sediments. The suite must explicitly mandate testing for free fluoride ions, mobile ultrashort-chain PFAS variants (including Perfluoropropionic acid/PFPrA and Trifluoroacetic acid/TFA), chloride, sulfate, phosphate, pH, conductivity, TSS, TDS, PAHs, ethylene glycol and propylene glycol (if liquid cooling is specified), plus any named clean agent (Novec 1230, FM-200) as a precursor after thermal cracking, and the complete heavy metal matrix listed above. Lead agencies are strictly barred from using generic "stormwater compliance" filters to declare an environmental clearance, as occurred during the un-monitored 10.3-million-gallon runoff escape at La Verne and the 2.2-million-gallon aquifer crisis at Suffolk County. Post-incident liquid protocols must require minimum extract volumes

sufficient to guarantee both total metals and Polycyclic Aromatic Hydrocarbon (PAH) tracks, prohibiting any "all-clear" declaration if a testing path was aborted due to insufficient sample volumes.

4. **Soil, Indoor Structures, and Pad Substation Equipment:** Thin-interval surface soil scraping (0–5 mm veneer) or wipes collected in the same week as the event and prior to any rainfall, testing for the identical metals, fluoride, and PAHs (with XRF as a screen only). Indoor air in any shelter-in-place or evacuation zone (including homes, schools, and barns) must run the identical gas and filter list. Substation gear, transformers, and electrical pads must face mandatory mineral oil, synthetic ester/FR3 fluid, and PCB screens. Retrofitted building frames must conditionally integrate chrysotile/amphibole asbestos fibers, legacy lead paint fractions, and concrete silica dust tracking (Moss Landing building class). Siting layout frameworks must prioritize natural topography and enforce a design-led approach that mandates matte, non-reflective external coatings to completely suppress blinding solar glare, and must programmatically require low-mounted, full cut-off LED fixtures directed strictly inward and downward to preserve dark-sky corridors and prevent night-time visual degradation across sensitive residential and suburban-interface boundaries.

XIII. Mapping this comment onto Ecology Publication 26-06-017

Ecology asked for input on types of facilities, assumptions for geographic scope, impacts to named resources, and mitigation (Scoping Document pp. 7–8, 21–22). The PEIS resource list on those pages is: Tribal rights, interests, and resources; environmental justice; earth resources; air quality and greenhouse gases; water resources; biological resources; energy and natural resources; environmental health and safety; noise and vibration; land use; aesthetics and visual quality; recreation; historic and cultural resources; transportation; public services and utilities; and cumulative impacts. The design cases above are evidence for those headings. The following close gaps this letter had under-developed in Ecology’s vocabulary.

Tribal rights, interests, and resources (pp. 7, 10, 22). Hansen Creek is one basin. Treaty rights are not limited to reservation lines. Page 22 requires evaluation of fisheries and other rights reserved or protected by federal treaty on lands where Tribes possess Usual and Accustomed fishing and hunting rights. Firewater, metal deposition, and an aquatic kill in a shared basin are reasonably foreseeable effects on treaty fisheries whether or not the pad is on reservation land. Reservation lands are excluded from geographic scope unless a Tribe requests inclusion (p. 21); that exclusion does not retire off-reservation U&A resources, sacred sites, or archaeological resources.

Environmental justice and overburdened communities (pp. 7, 10, 21). Stand-alone BESS can be placed on cheap industrial or urban-reserve parcels next to housing. Analyze disproportionate risk to overburdened communities and vulnerable populations: baseline air burden, hospital and evacuation capacity, shift workers who cannot shelter in place, and language or mobility barriers during a multi-day plume.

Geographic scope (pp. 8, 21). State parks are excluded. That is not enough. Treat as generally unsuitable — or as requiring a significance finding before siting — Critical Aquifer Recharge Areas, wellhead protection zones 1 and 2, municipal watersheds, Type F riparian corridors and floodplains, Wildlife Action Plan conservation areas, and mapped wetlands that drain to fish water. “Suitable for BESS” cannot mean “not a state park.”

Aesthetics and visual quality; recreation (pp. 8, 21). Container yards, security lighting, and fencing change rural and trail character. Analyze glare, night lighting, and industrial enclosure fields next to recreation corridors.

Noise and vibration (p. 7). HVAC, inverter, and transformer arrays run because cells must be held near design temperature. Charge/discharge heat and summer ambient drive fans up; idle winter nights do not. Grant County Dry Falls (Tetra Tech, October 2024) Table 7 source sound-power:

BESS 120 dBL at 31.5 Hz, 105 dBL at 63 Hz, 112 dBL at 125 Hz, 102 dBA broadband;

85 MVA transformer 110 dBL at 63 Hz and 112 dBL at 125 Hz, 108 dBA broadband.

A-weighting subtracts on the order of tens of decibels at 31.5 Hz, so a WAC “compliant” dBA number can be written while the rumble that rattles pictures remains in the unweighted columns. Washington already has the 40-percent fan duty cycle case on file. The Goldeneye Energy Storage Project noise memo to EFSEC (Attachment O) models 260 enclosures with five cooling fans each “operating at 40% capacity” and assigns 84.9 dBA sound power per BESS unit on that setting. A Tesla Megapack reference table in the same compilation (Table 6-2) lists 84 dBA Lw at 40 percent fan and 95 dBA Lw at 100 percent fan — eleven decibels on one cabinet. Voyager (Hankard, January 2025) needed a 20-foot earthen berm to meet 55 dBA at the property line and modeled the closest houses at about 440 feet; Sungrow Titan 2.0 data used at Knightdale rated 87 dBA Lw at 45°C day versus 81 dBA Lw at 35°C night. Heat and fan speed are the volume knob. The PEIS must require the summer, 100-percent-fan, high-cycle, full-array case. A single-cabinet operating at 40-percent fan duty cycle written for a city, county, or EFSEC attachment is created by the developer to get their permit approved. Hundreds of cabinets combine and increase noise levels (db) significantly. Daily cycling for export or data-center service is a different noise and wear case than a BESS that sits idle for months. A noise/shrapnel barrier or berm sized for a flat lot does not block line-of-sight soundwaves from hitting unimpeded into a hillside house or school. In King County, BESS containers can sit 3 feet from property lines and in the proposed Covington BESS putting them 3 feet + 20 feet (23 feet) from bedrooms and about 100 feet from the Mattson Middle School’s track and football field; wildlife next to the fence line can be 3 feet from the enclosure. Continuous low-frequency energy at those Table 7 bands is an operational habitat impact. Cooling-system failure is both a noise-off condition and a thermal-runaway initiating event. The PEIS must also treat continuous HVAC and transformer energy as an ecological receptor problem, not only a WAC house-line problem. Peer-reviewed work on anthropogenic noise is on point for the 31.5–125 Hz bands in Table 7: Francis and colleagues (Global Change Biology) documented that persistent low-frequency industrial noise can restructure bird

communities and reduce occupancy of otherwise suitable habitat; Shannon and colleagues (Biological Reviews) synthesized evidence that chronic noise near and above about 40 dBA can raise vigilance, disrupt foraging, and produce avoidance of noisy corridors; Barber and colleagues (Trends in Ecology & Evolution) reviewed how chronic noise masks communication bands used by amphibians and nocturnal species. Those papers do not measure a Megapack. They do measure the mechanism. A 24-hour fan array next to a Type F buffer or a Soos / Hansen / Fisher Creek wetland is an acoustic habitat change. Require unweighted and C-weighted levels at the fence and in the riparian corridor, not only an A-weighted pass at a distant NSR.

The critical necessity for strict, unweighted low-frequency monitoring is further codified under the March 2026 Scottish Government planning standards, which formally establish that because grid-scale battery complexes execute un-interrupted charging and discharging cycles 24 hours a day, 7 days a week, their combined noise emissions introduce a continuous night-time 'tonal hum' and persistent structural 'whirring' from cooling infrastructure. The international baseline confirms that in quiet rural and suburban environments where ambient background noise levels are naturally very low, standard regulatory 'A-weighting' filters mask these harmful deep-frequency vibrations on paper while the physical low-frequency rumbles systematically rattle residential property walls and trigger chronic acoustic avoidance across native wildlife corridors.

Transportation and public services. A BESS fire during transport forces road/highway closures and a 120-hour draw on rural mutual aid and are transportation and public-service impacts.

Earth resources, historic and cultural resources, cumulative impacts. Thin-film metal deposition is an earth-resources impact. Cumulative effects include multiple pads in one aquifer or salmon basin. Direct, indirect, and cumulative review must include delayed firewater and fallout — those are indirect and reasonably foreseeable under page 22.

Mitigation. If firewater-to-well, veneer-to-wetland, or treaty-fishery degradation cannot be mitigated below significance, list them as likely unavoidable significant adverse impacts. Code compliance is not mitigation of those pathways.

XIV. Closing

If Ecology issues a PEIS that models only an intact, code-compliant cabinet venting to a localized human safety circle, it will not have examined the record this comment cites: (1) millions of gallons of uncontained firewater moving thousands of feet through an aquifer into a municipal wellfield; (2) ultrashort-chain PFAS that took wells offline while remaining invisible to the standard EPA 533 “complete analysis”; (3) miles of dead fish below a lithium-battery fire; (4) NMC nanoparticles in a Ramsar wetland and battery-marker metals on a tri-county wipe

grid tens of miles downwind. It will also miss Washington sites already on wells, salmon water, wetlands, and school-adjacent pads, processed because nothing in local code said no.

Regardless of proprietary labeling or lithium sub-chemistry, a grid-scale thermal-runaway or off-gas event is the same multi-media design case. Siting review should treat documented lithium-ion failures as universal precedents for transport modeling — not as one-off exceptions a new sticker retires. Ecology must follow the failure pathway completely. The PEIS should put Washington's water, salmon, land, and wildlife ahead of a sealed-box assurance.

Follow the pathway. If the PEIS does that, Washington can evaluate individual projects on site facts instead of on generalized assurances of safety or generalized fear of the technology.

Thank you for considering these scoping comments.

Respectfully submitted,

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Attachments available on request.