

DRAFT

To: Skamania County Community Development Department

Re: J.L. Storedahl & Sons Skamania Quarry Project DEIS

In this letter, we will focus our comments on the noise and traffic impacts from the J.L. Storedahl & Sons Proposed Skamania Quarry, which would be inflicted upon the residents and recreational users of this area. We will detail specific conflicts and compliance issues with the West End Community Comprehensive Subarea Plan (as amended through April 2018) and expose methodological flaws within the Draft Environmental Impact Statement (DEIS) and its technical appendices.

The purpose of a DEIS is to analyze and accurately depict the worst case adverse impacts. While some adverse noise impacts are depicted, they are understated, misleading, mask certain impacts and simply do not represent the worst case impacts.

While neither of us are acoustical engineers, we have experience researching, analyzing and commenting on noise impacts that would have been foisted upon residents from a variety of proposed industrial and commercial developments (wind turbines, adventure parks and quarries). I, Keith Brown, have a PhD and have taught measurement techniques, evaluation procedures and statistical analysis at major universities. If this DEIS was done by one of my graduate students, I would reject it and require them to redo it as it does not meet the standards for accurately and clearly measuring, projecting and communicating the catastrophic noise impact to these rural areas, which historically and presently have exceptionally low baseline noise levels. The introduction of 500 gravel trucks a day with the concomitant noise increase would shatter the rural character, peace and tranquility that residents value and is specifically protected in the West End Community Comprehensive Sub-area Plan (WECCSAP).

Vision Statement

West Skamania County will continue to be a predominately rural environment with large open tracts of field and forest lands with residential and limited small scale commercial development. Water quality and quantity will be maintained or improved, and wildlife will continue to abound. It will be a place where its residents can find refuge from the bustle and clamor of the urban and suburban areas of Clark County, Washington and Portland, Oregon. 2/27/07 – BCC Adopted Plan 5

Mission Statement

To promote conservancy by ensuring abundant natural spaces, preserving peace and quiet, protecting and maintaining air and water quality, and sustaining native flora and fauna. 2/27/07 – BCC Adopted Plan 5

General Goal 1. Primary Land Use:

Land developments within the West End Community shall be of a nature that promotes and enhances the rural and natural character of the community. This goal is premised upon the idea that certain qualities or values, which are viewed as “rural” by members of the West End community, should be preserved and enhanced. Those values include privacy; mixed residential, agricultural and forestry land uses; peace and quiet; lack of heavy traffic; clean air; clean water; wildlife and fish habitat; open spaces; recreational opportunities; and the least amount of governmental regulation consistent with preserving those and other values protected in the community subarea plan. 2/27/07 – BCC Adopted Plan 5

While the DEIS quotes from the vision statement and mission statement, it neglects to include the general goal 1 (Chapter 3, pages 3.4-32 through 34), it inaccurately states that with identified mitigation, “no significant noise impacts are anticipated”. This is contradicted by their own findings in Section 33 and Appendix E sound analysis. As will be demonstrated in the body of these comments, their findings are seriously flawed.

The WECCSAP dictates strict land-use goals to preserve the rural character, natural resources, and recreational value of the area. The DEIS reveals clear non-compliance with several core elements of this plan:

1. Non-Compliance with Rural Character Preservation: Subarea Plan Goal: **To preserve the quiet, rural, non-industrial character of the West End community.**
 - Quarry Conflict: Operating a 180-acre open-pit surface mine that introduces heavy industrial crushing, blasting, and **continuous haul-truck traffic directly violates the mandate to maintain a peaceful, rural residential environment.**

2. Non-Compliance with Recreational and Tourism Goals:

- Subarea Plan Goal: **To support and enhance recreational opportunities, recognizing tourism and outdoor recreation (e.g., Cape Horn Trail, Columbia River Gorge) as vital local assets.**
- Quarry Conflict: Forcing hikers to share narrow rural roads and a high-risk highway intersection (SR 14/Salmon Falls Road) with heavy industrial trucks **undermines the recreational infrastructure and discourages tourism.**

3. Non-Compliance with Environmental Protection Standards:

- Subarea Plan Goal: **To protect critical areas, pristine acoustic environments, and local air/water quality from degradation.**
- Quarry Conflict: The DEIS relies on industrial thresholds (WAC 60 dBA limits) rather than subarea plan goals aimed at protecting the low background ambient levels (as low as 28 dBA) native to the West End.

The Noise Report (Appendix E: Sound Analysis Report, January 2025) establishes existing ambient sound levels at seven Measurement Locations (ML1–ML7) representing residential properties and recreational areas. Ambient noise levels in these rural and natural environments are exceptionally low. For instance, at MA (Kellet Road residential area), the lowest daytime background ambient noise level was recorded at 28 dBA and averages 35 dBA. At MB (McCloskey Creek and Mabee Mines Road) it was 34 dBA and averaged 45 dBA (Appendix E, Table 4-2, Page 9).

Each 10 dB increase in sound is depicted as “only a doubling of loudness”, which suggests to the reader that it is not significant. Though by every federal and state standard, an increase over 10 dB is deemed to be a significant adverse impact. The increased noise levels along the proposed Storedahl Quarry gravel truck haul route would be devastating to the

residents living along these haul routes. **The increase in noise levels depicted in the report at residents' homes would be perceived as a doubling (10 dBA), tripling (15 dBA), quadrupling (20 dBA), and even an eight-fold increase at 30 dBA over existing measured ambient noise levels.**

Long-term sound measurements were done at two locations and 15-minute measurements were done at an additional four locations (page 33-7 through 33-10). All of these measurements were done at the busiest traffic time of the year (July 17 - July 20) around the time of the National Motocross Races. This skews the measurement of the ambient noise level that is experienced during the quieter times of the year and thus does not adequately depict the worst noise increases that will occur from the truck traffic. To address this deficit in the DEIS, long-term noise measurements need to be done in all of these six locations during the quietest time (due to decreased traffic levels) of the year.

Baseline vs Predicted Sound Levels - ALTERNATIVE Haul Route 1

On page 3.3-16, the DEIS states sound levels from truck traffic are expected to exceed day time levels by up to 30 dBA. This difference is apparently from Table 8-2, page 24 of Appendix E. They arrived at this number by subtracting the highest daytime Leq (39) from the gravel truck noise level of 69 dBA at sound analysis location AL1P1. **This masks the possible worst impact.** Using the lowest daytime Leq for this location of 28 dBA, results in a dBA of up to 41. **An increase of 40 dBA represents an sixteen-fold increase in perceived loudness to the human ear.** The reality is the baseline dBA will vary hour by hour and the DEIS needs to include a table showing the difference between baseline and increased noise from the expected number of gravel trucks passing by at each hour. This will likely vary from 50 to 100 trucks. A decrease in truck traffic from 100 to 50 will decrease projected dBA by only 3 dBA.

This noise from the gravel trucks would occur in peaks and waves throughout each day. The utilization of the highest Leq rather than using

the lowest Leq to represent ambient noise, occurs throughout the sound analysis and thus underestimates and misrepresents the possible level of noise increase. On the same Table 8-2, the existing measured daytime Leq is missing for location TP61, even though later in the sound analysis, in Table 8-5, for TR6 (which is actually the same residence as TP61...262 McCloskey Creek Road) it uses the nearest existing measured daytime Leq of 34-51. Had this been accurately displayed, the reader could have seen that the increase in sound at this location could be 71 minus 34, or **up to a 37 dBA increase**. The DEIS hides the fact that during the quietest periods of the day when ambient drops to 28-34 dBA, the quarry truck traffic will spike noise levels to an unmitigated increase of up to 37-41 dBA. Obviously, even from their flawed analysis, the Alternative 1 haul route increases would have a significant adverse impact and make this route untenable.

Low-Frequency Sound and Vibration: The report notes that heavy equipment and crushing generate substantial low-frequency noise. While the DEIS asserts that vibration levels will not exceed structural damage thresholds (Appendix E, Page 43), it glosses over the constant, low-frequency rumble that penetrates residential walls, **causing significant physiological and psychological annoyance to local homeowners**.

ALTERNATIVE Haul Route 2

On page 3.3-18, the narrative makes an unfounded assumption that three trucks which were traveling at an earlier location on Mabee Mines Road would continue up McCloskey Creek. This is a flawed assumption as the trucks could just have easily stopped along Mabee Mines or continued on Mabee Mines without turning off on McCloskey Creek. This essentially invalidates Table 8-5. Even if you accept their flawed assumptions, once again they have used the highest existing daytime Leq to depict increases of up to 15 dBA, while the use of the lower Leq yields a 20 dBA increase. Indeed, in Table 8-3, a 20 dBA increase can clearly be seen at location

T4A2. The truck traffic with noise mitigation is 58 minus existing Leq 38. While the narrative discounts this increase due to no heavy truck passing this location, that is indeed likely the case throughout most times of the day...and most certainly true during the typical slow traffic months. So this likely does represent worst case scenario.

The "Berm" Mitigation Illusion: The DEIS claims that with the construction of 15-to-20-foot perimeter noise berms, operational and truck traffic noise can be mitigated to meet the 60 dBA threshold (Appendix E, Table 8-3, Page 25). However, a reduction to 57–60 dBA still represents an increase of 15 to 26 dBA above the existing 34-45 dBA rural average acoustic environment. **In acoustics, a 15 dBA increase is perceived by the human ear as a tripling of loudness, a 25 dBA is a five-fold increase.**

Further, Table 8-5 assumes that McCloskey Creek Road, which is a private road at the locations measured, will become a “public” road, without any evidence that the county would make it a public road. Given that McCloskey Creek Road at these locations is a private road, the analysis should be based upon property lines, not set back to the location of the residence. Then likely, the dBA increase would be even greater as Table 8-2 showed a Leq from truck traffic at the 262 McCloskey Creek to be 71, which is an increase of up to 37. Although the noise from the truck traffic at the property line is likely as high as 79-82 dBA given that the property line is just 12.5 feet from the centerline of the private road. This would result in a potential increase of between 45 and 48 decibels.

The level of increase due to truck traffic at 592 Mabee Mines Road is depicted as 12 dBA and at 632 Salmon Falls Road as 11dBA (Table 8-8, pages 34 & 35). **There are at least two problems with this depiction.** The first is the existing noise levels are projected from truck traffic during the busiest time of the year, ignoring the majority of the year when there is much less traffic. Second, as admitted in the DEIS, during the traffic counts, no sound measurements were done, which is required by WSDOT and the Federal Highway Transportation Administration to validate the accuracy of the FHWA model for calculating traffic noise. As was stated before, long-term noise measurements at these locations during the

quietest time of the year to ascertain accurate ambient noise levels would reveal real impact and needs to be required. Then, the Cadna A model should be used to model road traffic and resulting noise increases at all locations.

Table 8-10, which depicts weekend peak hour sound levels, suffers from the same faults as Table 8-2 (described above), especially given the motocross traffic for the Nationals, which was occurring during this exact weekend. This can be clearly seen in the decreased traffic going from 215 vehicles on Salmon Falls Road to Canyon Creek Road to only 33 on Mabee Mines Road (Table 8-9, page 36). The 16 decibel increase on Mabee Mines Road may be a more accurate depiction of the increases which would be suffered on Salmon Falls residents during the quietest months of the year and times of the day.

The significant adverse impact of noise increases up to 20 dBA as depicted in the DEIS and likely exceeding 30 dBA if compared to ambient noise levels during the quieter times of the year make the Alternative 2 Route as untenable as Alternative 1 Route.

Traffic Impacts on Local Residences and Hikers

1. Truck Trips and Haul Routes

According to Appendix G: Transportation Impact Study (March 2026), the project will generate substantial heavy vehicle traffic.

- Trip Generation: Under Alternative 1, the quarry is projected to generate an average of 500 daily truck trips (250 inbound, 250 outbound) during standard operations (Appendix G, Page 23).
- The Haul Route: The primary haul route runs from the site via Mabee Mines Road, Salmon Falls Road, and onto State Route 14 (SR 14) (DEIS, Chapter 1, Page 5).

2. Impacts on Local Residences

- Safety and Congestion: Salmon Falls Road and Mabee Mines Road are narrow, winding, rural two-lane roads with minimal shoulders.

Introducing 500 heavy, multi-axle dump trucks/trailers per day heavily impacts local residential access. Given the curves and line-of-sight issues at many points along the haul route, residents will find it next to impossible to safely pull out of their driveways.

- Frequency of Disruption: Assuming a standard 10-hour operational day (7:00 AM to 5:00 PM), 500 daily truck trips breaks down to an average of 50 truck transits per hour. This means a massive, multi-axle aggregate truck will pass local residences or cross the hiker corridor at the SR 14 / Salmon Falls Road intersection every 1.2 minutes. During peak operational hours this can spike to 100 trucks per hour, or one truck every 36 seconds.
- Residences: At a rate of one truck every 36-72 seconds, local homeowners on Mabee Mines Road and Salmon Falls Road will experience a near-continuous low-frequency rumble and continuous exhaust brake and engine noise spikes from accelerating and decelerating on steep inclines exceeding 80–85 dBA. This rhythmic wave of rising and falling noise completely eliminates any intermittent "quiet periods" between trucks.
- Noise: Heavy trucks accelerating uphill and using engine brakes and down-shifting on steep grades introduce severe intermittent noise spikes (**frequently exceeding 80–85 dBA at residential setbacks**). The DEIS admits that off-site truck traffic will cause "significant noise increases" on public roads (Appendix E, Page 43, Summary "r"), but dismisses it because it does not cross the Federal Highway Traffic Administration (FHWA) Noise Abatement Criterion of 67 dBA. **This ignores the severe disruption to residential peace.**

3. Impacts on Hikers

- The SR 14 / Salmon Falls Road Intersection: This intersection is the primary access point for both the quarry haul trucks and hikers accessing the Cape Horn Trailhead.
- The Pedestrian Crossing Analysis (Appendix G, Page 28) evaluated the safety risks to hikers accessing the Cape Horn Trailhead. At 500 trucks a day, the probability of a hiker trying to cross SR 14 or

Salmon Falls Road at the exact moment a heavy truck is accelerating through the intersection skyrockets. **The 36-72 second interval creates an environment of perpetual conflict between heavy industrial machinery and pedestrian recreationists.**

- Ignoring Pedestrian-Truck Asymmetry: The software calculates vehicular delay but fails to simulate the psychological deterrence and physical safety impacts on hikers crossing an intersection utilized by hundreds of heavy trucks. The software treats a "pedestrian unit" abstractly, completely missing the severe safety friction that would occur at the Cape Horn Trailhead access point.

Methodological Flaws of the DEIS

1. Failure to Sample the "Slowest Seasons" (November through March)

An accurate Environmental Impact Statement must capture the true baseline conditions of an area. The DEIS fails this standard by skewing its data collection windows:

- Noise Baseline Flaw: Sound monitoring was conducted during periods when foliage was present and environmental noise (wind through trees, summer wildlife, existing seasonal traffic) was at its peak. **The DEIS completely failed to measure ambient sound levels during the slowest, quietest months (November through March).** In winter, deciduous trees drop their leaves, which drastically reduces the natural acoustic buffering of the forest. Consequently, the true winter ambient noise level is likely far lower than that portrayed. By failing to record winter baselines, the DEIS vastly underestimates the perceived loudness and seasonal propagation of quarry operations and hauling when the natural landscape is bare.
- Traffic Baseline Flaw: Traffic counts were executed during peak summer and early fall operational windows (Appendix G, Section 2, Page 12). **By failing to measure or balance these numbers against the slowest seasonal traffic periods (Late Fall/Winter), the DEIS lacks a legitimate yearly baseline, masking how**

disproportionately dominant the quarry's heavy truck traffic will be during months when local residential and recreational traffic naturally thins out.

2. Failure to Sample the "Slowest Times of Day" for Traffic

- Appendix G focuses heavily on the "PM Peak Hour" and "AM Peak Hour" of the adjacent street system to calculate the Level of Service (LOS) (Appendix G, Page 16-18).
- The Flaw: By evaluating impacts almost exclusively against periods when the roads are already busy with commuter and recreational traffic, the DEIS hides the true impact of the quarry during the "off-peak" or slowest times of the day (e.g., mid-morning and early afternoon). During these quieter hours, local residents experience wide-open, low-volume rural roads. Introducing a steady stream of heavy haul trucks during these off-peak windows completely alters the local traffic pattern. **The DEIS uses high commuter volumes to absorb the percentage increase of trucks mathematically, failing to disclose that during off-peak hours, quarry trucks will represent the vast majority of all vehicles on the road, drastically increasing noise and safety risks.**

3. Flaws in the Use of Federal Transportation Modeling Software

The transportation analysis relies heavily on federal modeling software methodologies (Highway Capacity Manual / Synchro) to prove that intersections will continue to operate at acceptable Levels of Service (Appendix G, Page 16-18). This modeling is inherently flawed for this specific site for several reasons:

- Inability to Model Heavy Truck Dynamics on Steep Grades: Standard federal transportation models are optimized for standard passenger vehicles or uniform commercial traffic on relatively flat terrain. They systematically fail to simulate the real-world operational degradation caused by multi-axle aggregate trucks accelerating from a dead stop on steep, winding rural inclines—such as turning from SR 14 onto Salmon Falls Road.

- The "Platoon" and "Queue" Underestimation: Federal Highway Capacity Manual (HCM) models assume that traffic flows smoothly and that trucks accelerate linearly. The software cannot accurately model the compounding traffic backup (queuing) that occurs when a heavy, slow-moving gravel truck takes up to 10–15 seconds to clear the intersection from a stop sign on the steep Salmon Falls Road incline.
- Underestimating "Gap Acceptance" and Sight Distance: The software assumes idealized driver behavior and linear acceleration characteristics. In reality, a heavy gravel truck requires a massively larger gap in oncoming SR 14 highway traffic to safely pull out than a standard vehicle. Appendix G includes a "Highway 14 Gap Analysis" (Appendix G, Page 31-32) which attempts to address this, but the underlying software models fail to accurately capture the compounding delays and safety hazards caused when high-speed highway traffic rounding tight Gorge curves is forced to suddenly brake for a slow-moving, accelerating quarry truck.
- Compounding Delay at 500 Trucks: At a volume of 500 trucks a day (one every 36-72 seconds), the software treats each truck as an isolated event. In reality, the massive "gap acceptance" delay required for a haul truck to safely turn onto SR 14 means that trucks will begin backing up behind one another. **This creates a continuous rolling wall of heavy vehicles, a physical reality that standard federal intersection software completely fails to simulate for steep, mountainous terrain.**

In summary, in this West End rural setting, a traffic noise increase of 10, 15, or 20 dBAs is catastrophic. The residents in this area enjoy an exceptionally low baseline noise level. That, in large measure, is why they live here and 250 of them gathered to participate in an over three year process of crafting the WECCSAP to protect this area. That is why they continue to show up in defiance of efforts to degrade the quality of life in this area. Introducing a continuous onslaught of gravel trucks with their incessant noise and inherent safety risks would shatter the rural character

that residents specifically pay a premium to experience. Even a 10 dBA increase is an adverse impact contrary to the WECCSAP. With the 15 dBA increase, the rural peace would be completely broken resulting in community outrage and mobilization. This crosses the legal threshold for substantial degradation in almost all state environmental policies. With the 20 dBA increases depicted in the DEIS, this lovely rural residential area would effectively become industrialized. It would sound like being directly next to a busy suburban commercial zone or major freeway. Even with windows shut, the low frequency rumble of heavy gravel trucks would actually vibrate through walls. Residents would feel like their property values are ruined and their health is under attack. This proposed quarry operation must be found to be not in compliance with the WECCSAP and due to the unavoidable and significant adverse impacts, must be denied a conditional approval.

Respectfully submitted,

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