Mike Kaputa, Director
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SEPA Responsible Official
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411 Washington St. Suite 201
Wenatchee, WA, 98801

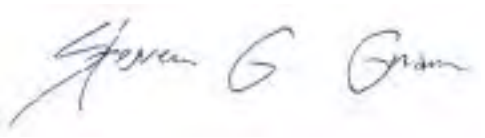
RE: Mission Ridge Master Planned Resort Expansion Draft Environmental Impact Statement (DEIS)

Dear Mr. Kaputa,

Thank you for the opportunity to comment on this DEIS. I have spent the past year researching this proposed development's impacts and studying the on-the-ground conditions to make informed comments to help bring the best available science to this process. Part of my ground-truthing and attempt to assess baseline conditions was conducting a trail camera survey in and around the project area: Friends of Mission Ridge, Trail Camera Survey (this document is included after my comments).

I have read through every page of the DEIS and nearly every page of the thousands of accompanying Appendices. The following (100 pages of comments) are remarks given from a line-by-line reading of the documents. I've added footnotes that include relevant and referenced documents, studies, etc. that support my comments. I have submitted this as one continuous document, but for ease of use by the agency, I could supply these as separate attachments. Please let me know if you would prefer this for ease of use.

Sincerely,



Steven G. Gnam
Cashmere, WA
October 19th, 2025

MISSION OF THE DEIS

An Environmental Impact Statement (EIS) should be a **fact-based** document that identifies the probable significant adverse impacts from the Proposed Project and alternatives. The EIS also looks at ways to avoid, minimize, or mitigate impacts.

OVERVIEW

Unfortunately, many sections of this DEIS read like the marketing and promotional materials put out by the developer. The DEIS should not be an extension of the marketing put out on the Applicant's behalf. Rather, this DEIS should reveal the actual impacts this development would have on the environment and community, and then offer clear and practical ways to try and mitigate those impacts. The consistent use of subjective language in the DEIS, paired with the Applicant's claims made without supporting facts, is misleading to the public and decision-makers reading this document. I've done my best to highlight specific instances of this throughout the DEIS.

Worse than subjective and persuasive language is a pattern of errors and missing information. This is quite troubling in a DEIS, especially for a project of this scale and consequence. While mistakes, especially in the draft version of an EIS, are expected. However, the myriad of mistakes I've found are unacceptable for a SEPA document and not what the public expects, making it hard for the public and for agencies to make fact-based decisions about the merits of this project. The consequences of these errors are immense. For instance:

1. The engineering consultants missed that the level of service (LOS) described in the Traffic Impact Analysis (TIA) would require Squilchuck Road/Mission Ridge Road/(and eventually the new access-easement road) to be wider than the current road widths. Instead, they offer the current road width as sufficient, which erases the developer's need to do any meaningful improvements along the entire traffic corridor that the developer is responsible for under MPR rules. All of the impacts are scaled to fit the smaller road width and don't accurately describe the true impacts.
2. The natural resources consultants undercounted the aspen grove to just under the PHS threshold. This removed the aspen grove from further scrutiny, though it would be negatively impacted by the Applicant's activities. Additionally, they made claims that were easily disproven, such as: "there are no pika, golden eagles, or goshawks in the project area (citing it's not the right habitat)". They also downplay the role the project area plays for deer and elk in fawning/calving, wintering, migration, and summer use. All of these claims are false.

3. In the policy consistency section (4.4.3.2), the consultants used many regional planning documents (Stemilt-Squilchuck Community Vision Report, WRIA 40A, Stemilt-Squilchuck Recreation Plan, etc.) and concluded that all these documents are supportive of this project, endorsing high-density, urban-style development in the upper basins. To come to this conclusion, they had to ignore the major themes and thesis of those documents and just cherry-pick a few sentences to fit the developer's narrative and goals.

ETHICS/STANDARDS

While I'm not sure it's possible, I recommend that the SEPA official encourage a more unbiased, fair look at these issues by requiring the Applicant to hire new consultants to get a fresh set of eyes on this material. This wide range of errors and omissions requires an audit. It appears conclusions (no impacts likely) were decided before any assessments were made, if the assessments were done at all. As you will see in some of my comments and with evidence provided in the Trail Camera Survey, it appears that many times, either no site visits were made, or woefully inadequate ones were used. I'm afraid that perverse incentives have corrupted this process, as it doesn't make sense that members of the public, like myself, can find so many mistakes. I tried to be gracious at first, applying the adage, "assume a mess up, before a cover up"; however, all of the mistakes I've found bend towards downplaying the impacts of this development, and require less mitigation from the Applicant. This uncanny bias is totally unprofessional and unacceptable in a SEPA document like this. All these errors and omissions, and misleading language–aimed at downplaying the impacts of this development, or over-hyping its benefits (without proof)–should be corrected.

AVOID, MINIMIZE, COMPENSATE

In the framework of SEPA mitigation, you first try to avoid the impacts in the first place, minimize them, and only then figure out ways to repair and compensate. This document rarely employs the earlier steps in this framework (avoiding and minimizing) and often jumps to anemic mitigation offers. Almost all the mitigation offers are vague, like saying "Best Management Practices (BMPs)", but with little description about what the Applicant would be required to do. Given the Applicant's history of non-compliance (as outlined throughout this document and in the attached NON-COMPLIANCE doc), mitigation needs to be fully outlined with measurable outcomes.

PURPOSE & NEED

The project makes the following claims as to why they "need" to build this expansion. Strangely, the solution they offer: building a massive urban-style development, with

the attending traffic of 10k vehicle trips/day, won't solve the stated problems they claim to have, and in many cases would exacerbate these issues:

- *Insufficient on-site parking facilities to meet peak demand*
- *Undersized and crowded beginner skier terrain*
- *Lack of recreation options for non-skiers*
- *Lack of on-site overnight accommodations*

SEPA requires a range of alternatives to a project. This DEIS offers only the full project as is and a no-action alternative. **This is a lack of alternatives**. Not to do the Applicant's homework for them, but below are some reasons why this project is unnecessary, or able to be achieved through alternatives:

- *Insufficient on-site parking facilities to meet peak demand*

1. Like in wildlife management, there is a carrying capacity[1] for recreation, often called 'over tourism[2]'. And acknowledging that you have a carry capacity (ie, peak demand) is not a bad thing that needs to be resolved. In recreation management, for instance, parking capacity is a tool that can be used to cap crowding, to allow for a higher quality user experience. Mission Ridge claims to already do this by raising ticket prices and limiting the number of tickets, stating it reduces congestion on the mountain. Choosing quality over quantity[3]. If the Applicant cares about visitor experience, they would use things like parking capacity as an asset and as a way to control crowding. Instead, their proposal would double the number of skiers on the ski hill. A summary of 24 ski area expansions across the Western US[4] shows that the community's sentiment around ski area expansions is generally negative and not something they would welcome. **"Impacts to community structure that were perceived to be undesirable by current residents; an erosion of community identity; and a loss of sense of place."**

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[1] Burns, R. C., & Arnberger, A. (2010). Social Carrying Capacity Challenges in Parks, Forests, and Protected Areas: An Examination of Transatlantic Methodologies and Practices on JSTOR. *International Journal of Sociology*, 30. https://www.jstor.org/stable/20788553

[2] Pikkemaat, B., Bichler, B. F., & Peters, M. (2020). Exploring the crowding-satisfaction relationship of skiers: The role of social behavior and experiences. *Journal of Travel & Tourism Marketing, 37*(8-9), 902-916. https://doi.org/10.1080/10548408.2020.1763229

[3] @missionridge. (2025, October 8). In September, we sold out of Premier Passes for the season. This coming winter, we'll continue to limit the availability of lift tickets on our most popular days… [Instagram post]. https://www.instagram.com/missionridge/

[4] Smith, J. W., & Guadarrama, U. (2020). *Social Impacts of Expanded Ski Resort Operations on Forest Service Lands*. Institute of Outdoor Recreation and Tourism, Utah State University.

"Peak demand" is subjective and not accurate when looking at public demand for recreation. Larger trends suggest more people are shifting away from resort skiing and the high-cost, infrastructure-dependent kinds of recreation[5] this development is offering (alpine roller coasters, etc.), to more wildlife-focused[6] and self-directed forms of recreation. These kinds of recreation are lower in cost (fewer barriers to entry) and have a lower environmental impact. SEPA requires low-impact alternatives as part of the DEIS, and exploring alternatives to just resort skiing and high-end amenity-based recreation would be a good alternative for an MPR. Adding more parking would not only contribute to crowding by attracting more people, but also increase the environmental impact. In the case of this project, they forecast to double the number of visitors on the ski hill (+100,000 visitors) but not double the amount of new skiing. This will increase crowding even more, contradicting the very thing they say they are setting out to solve.

2. The Applicant also owns Section 13, which straddles Mission Ridge Road and is kitty-corner to this proposed development. Adding parking on Section 13 would be more efficient for visitors (it's on the way to the ski area, instead of having to drive a mile further past the ski area as proposed), but it would also require far less modification of the environment–a great SEPA alternative! This would also satisfy the tenets of SEPA mitigation to first **AVOID**, then **MINIMIZE**, before needing to **COMPENSATE** for damages. Why create the biggest possible impact to solve a problem when it can be solved way more easily and less destructively? Please make the Applicant explore required alternatives like this in the DEIS.

• *Undersized and crowded beginner skier terrain*

3. First, the new development offers a trivial amount of beginner ski terrain (check the acreage of proposed green runs on their maps). Second, generations of Mission Ridge skiers have been able to learn to ski at Mission Ridge. My two-year-old daughter skied from the top of Mission Ridge (Chair 2) and was never impacted by crowding or undersized beginner ski terrain. Additionally, many folks I talk to in the Wenatchee area cite ticket prices, not terrain, as their limiting factor

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[5] Pröbstl-Haider, U., Gugerell, K., & Maruthaveeran, S. (2022). Covid-19 and outdoor recreation – Lessons learned? Introduction to the special issue on "Outdoor recreation and Covid-19: Its effects on people, parks and landscapes". *Journal of Outdoor Recreation and Tourism*, *41*, 100583. https://doi.org/10.1016/j.jort.2022.100583

[6] U.S. Department of the Interior. (2017, September 7). *New 5-year report shows 101.6 million Americans participated in hunting, fishing & wildlife activities* [Press release]. https://www.doi.gov/pressreleases/new-5-year-report-shows-1016-million-americans-participated-hunting-fishing-wildlife

in participation in resort skiing at Mission Ridge. Also, what happens when you expand, and then it gets crowded again? Keep expanding? At some point, you have to acknowledge that you've hit carrying capacity and expanding is not the way forward. Past proposals, from their master plans, show Mission Ridge wants to create ski lifts further in Stemilt Basin. Endless growth is not the only way to operate a ski area. Many alternative models[7] don't rely on chasing expansions or high-end real estate amenities[8]. These alternative models of ski area operation could be added as SEPA alternatives.

• *Lack of recreation options for non-skiers* (should read: "for non-*RESORT SKIERS*)

4. This is categorically false as the Mission Ridge area is regularly used by: hikers, backpackers, runners, mountain bikers, paragliders, hunters, fishers, roller-ski-skaters, road bikers, bird-watchers, cross-country skiers, snowshoers, and more. In fact, only a small percentage of the community are resort skiers; the vast majority do other activities, including winter activities in the Mission Ridge environs. The misleading part of this claim is that this development would severely degrade all other forms of recreation, through crowding, displacement, traffic, and environmental degradation. To sacrifice so much for one small sliver of a user group (resort skiers) at the expense of all of the other user groups is not a good justification.

• *Lack of on-site overnight accommodations*

5. This is not entirely true. Some visitors to Mission bring RVs and campers to the ski area and stay overnight in the lot. The remaining visitors who need overnight accommodations drive a short distance and patronize the area's hotels, motels, condos, and short-term rentals. When these folks return to town, they also give restaurants, sporting goods, and grocery stores business. While it's understandable that the Applicants would like to pocket this revenue for themselves, the current structure helps spread economic opportunities throughout the community. It's not the job of the state, county, or agencies to prop up a solo developer's financial ambitions, especially at the cost to the greater community.

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[7] Hetzenauer, K., Pikkemaat, B., & Albinsson, P. A. (2022). Exploring strategies of small ski areas with different destination governance structures: A comparative case study. *Journal of Outdoor Recreation and Tourism*, *40*, 100561. https://doi.org/10.1016/j.jort.2022.100561

[8] Moscovici, D. Ski Resort Closures and Opportunities for Sustainability in North America. *Land*, *11*(4), 494. https://doi.org/10.3390/land11040494

Some Alternatives they could offer to solve their problems:

- **ALTERNATIVE 1** Restructure the business[9] into a non-profit or public-benefit corporation. This way, instead of focusing on maximizing revenue for an out-of-town developer, they could create a new mission statement[10] (which could be: *provide the community with the lift-served skiing while balancing the greater needs of the community*).

- **ALTERNATIVE 2** Change the project objectives. With the impacts of climate change[11], resort skiing[12] and luxury resort living in beetle-killed forests may be a pastime of an earlier era. Trends in PNW climate[13] will make snow[14] and snowmaking less reliable. Fire risks will elevate with increased frequency and

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[9] Morellato, M. (2025). *Community ownership in winter recreation and tourism: Ski hills and club fields* [Conference presentation]. School of Hospitality and Tourism, Auckland University of Technology. https://hdl.handle.net/20.500.14394/49683

[10] Gärber, M., Casagrande Bacchiocchi, S., Elsen, S., Cavrini, G., & Zerbe, S. (2018). Social, economic and ecologic benefits of small ski resorts: A local resilience model for the Alps? *International Snow Science Workshop Proceedings 2018, Innsbruck, Austria*, 537-541. Montana State University Library. https://arc.lib.montana.edu/snow-science/item/2592

[11] University of Washington Climate Impacts Group. (n.d.). *Washington State Climate Resilience Strategy: Appendix A – Washington Climate Projections: Summary by Region*. Prepared for the Washington State government. University of Washington Climate Impacts Group, Appendix A: Washington climate projections.

[12] Scott, D., & Steiger, R. (2024). How climate change is damaging the US ski industry. *Current Issues in Tourism, 27*(22), 3891-3907. https://doi.org/10.1080/13683500.2024.2314700

[13] Mote, P. W., Hamlet, A. F., Clark, M. P., & Lettenmaier, D. P. (2005). Declining mountain snowpack in western North America. *Bulletin of the American Meteorological Society*, 86(1), 39–49. https://doi.org/10.1175/BAMS-86-1-39

[14] Graves, D. (2008). *Analysis of Climate Change and Snowpack on Columbia Basin Tribal Lands*. The Columbia River Inter-Tribal Fish Commission.

intensity of fires[15]. Part of building resilience in our communities is adapting to climate change[16] and not ignoring it or placing ourselves in harm's way.

- **ALTERNATIVE 3** Use Section 13 to expand parking. Provide a gondola to shuttle folks from the new parking to the existing ski area, and create ski runs from the ski area down into Section 13. There are already mountain bike trails weaving through Section 13 (*Stranger* being one of the most well-known trails there). This use of Section 13 could increase some recreation options for non-skiers (they could continue to build out more mountain biking trails) while limiting the footprint of urban-style development into core deer and elk habitat in the upper Stemilt-Squilchuck. Also, using Section 13 would make it much easier (and cheaper) to bring up PUD utilities. Additionally, the proposed Nordic trails could go here. The Nordic ski trail proposed on Section 19 is short, on a steep slope, switch-backing too often, and using the squiggles to make up for the lack of distance. This is not what Nordic skiers want. Plain has an excellent Nordic ski trail system; Leavenworth, Echo Ridge, and of course, the Methow are all top-notch local Nordic venues. If the Applicant really cared about providing Nordic skiing, they would use the existing Beehive Irrigation Grade and Devil's Spur trail where road beds already exist at more appropriate grades for Nordic skiing (easy for grooming with the ski area close by), with the benefit of meeting the SEPS Alternative standard, of achieving project goals with less impacts.

I'm curious to see what alternatives the Applicant will come up with, as they are required to by SEPA.

IMPLICATIONS FOR FUTURE CHELAN CO. PROJECTS

WAC 197-11-060 // Content of environmental review.
(d) A proposal's effects include direct and indirect impacts caused by the proposal. Impacts include those effects resulting from growth caused by a proposal, as well as t**he likelihood that the present proposal will serve as a precedent for future actions…**

The County needs to assess the future risks it would be opening itself up to by approving this proposal. There are many other private sections of land (surrounded by public land) in Chelan County that could be transformed into MPRs or other high-

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[15] Abatzoglou, J. T., & Williams, A. P. (2016). Impact of anthropogenic climate change on wildfire across western US forests. *Proceedings of the National Academy of Sciences*, *113*(42), 11770-11775. https://doi.org/10.1073/pnas.1607171113

[16] Burakowski, E., & Magnusson, M. (2012). *Climate Impacts on the Winter Tourism Economy in the United States*. Natural Resources Defense Council & Protect Our Winters. https://vitalcommunities.org/wp-content/uploads/2019/10/Burakowski-et-al.-2012-Climate-impacts-on-the-ski-industry.pdf

density development. By okaying a project like this, where community consensus (ie, Stemilt Partnership-"no urban-style development in the upper basins"), wildlife impacts, fire, and landslide risks are great, it will create a precedent that will be hard to say no to other ill-conceived, high-risk projects across the rugged terrain of Chelan County. This risk analysis, examining the precedent consequences, needs to be conducted by the County as part of the DEIS process.

NEED TO COMBINE THE FS ASSESSMENT INTO THIS DEIS

WAC 197-11-060(d)ii // Content of environmental review.
(d) Phased review is not appropriate when:
(ii) It would merely divide a larger system into exempted fragments or avoid discussion of cumulative impacts

By separating (or waiting till a later phase) certain portions of the Forest Service review of this project (described in ES-9 through ES-12, pages 35-38), this DEIS avoids the discussion of cumulative impacts by spreading them out between multiple documents and processes, and timescales. A full integration of NEPA and SEPA should be presented to the public (at the level of EIS) to give a complete picture of the impacts of this project. Not everyone who follows along will pick up the Forest Service assessment down the road. Furthermore, the Forest Service may decide its 'fragment' of the project only requires an EA, thereby diminishing the apparent impacts of the project, when the project should be presented to the public as one contiguous project where cumulative impacts can be assessed (WAC 197-11-060).

For instance, this DEIS talks about the access road, but does not go into great detail about how the Forest Service will essentially need to give away ~25 acres of public land to a private party through an [unnecessary] easement. This discussion would be of great interest to the public, who have shown that "Keeping Public Lands in Public Hands" and "Not One Acre" are some of the most vocal and bipartisan movements of our time. The DEIS should then describe how the Applicant would then offload his responsibility of maintenance of this road back to Chelan County taxpayers (which should not be permissible under MPR rules). This access road impact, the Forest Service Biological Assessment, impacts to unsurveyed old growth forest on Section 30, impacts to the Clara Lake TH-parking lot, and the discussion of land swap of Section 25 need to be included in this DEIS.

LACK OF CONSULTATION WITH KITTITAS & GRANT COUNTIES

WAC 197-11-060 // Content of environmental review.

4) Impacts. (b) **In assessing the significance of an impact, a lead agency shall not limit its consideration of a proposal's impacts only to those aspects within its jurisdiction, including local or state boundaries** (see WAC 197-11-330(3) also).

I'm assuming (maybe?) consultation was done with Douglas County regarding light pollution and PUD water usage from the Eastbank Aquifer; it appears our neighbors to the East and South were left out of this crucial process. These are communities that use Mission Ridge for recreation, who can see it from their living rooms, and utilize its resources, and should be fully apprised of this development. Grant and Kittitas County members of the public and their county governments, and non-profit organizations should have had sufficient public notice and access to the full comment period, like the residents of Chelan County did for this comment period. We sometimes forget that Mission Ridge is also the closest backyard mountain of Quincy, Moses Lake, and Ellensburg. Folks in these communities go camping, hunting, and recreating on Mission Ridge and will be impacted by this development. Kittitas County residents, in particular, need to be aware of the water and wildlife impacts, as the elk that winter in their community may breed and give birth where this development sits. The well water this development proposed to use comes from the aquifer that sits under Mission Ridge and is likely connected to the Kittitas County side. Surface waters like Swift, Boulder, Pearson, and Naneum creeks (and their attending feeder springs) on the Kittitas side are likely connected to this aquifer and negatively impacted by any drawdown from the Chelan County side. These hydrological relationships need to be studied and included in this DEIS, and the impacted communities need to be consulted on the next round.

LACK OF CONSULTATION WITH TRIBES

Nowhere in the DEIS is it clear that Tribes were properly consulted. Where are the assessments on this project to treaty-protected Colockum elk and deer, forest grouse? Where is the tribal assessment of First Foods? Whitebark pine, huckleberry, and grouse-whortleberry are all important First Foods, but no assessment is included in this DEIS. This DEIS should contain sections from the Yakima, Wenatchee, and/or Confederated Colville Tribes with their assessments so the public can use that information (in addition to the consultant-paid contractors) to understand the cultural importance of the landscape and how it could be impacted by this development.

COMPLIANCE (or lack of)

This DEIS downplays many impacts across all sections with token phrases, like "BMPs will be followed." The problem with this reliance on BMPs is a trust that the Applicant will follow through and do the right thing. Unfortunately, the Applicant has a documented history of non-compliance regarding state laws, federal laws, and not following the special use permit/land use agreements which they fall with the Ski

Area. The Applicant has also been documented doing environmental damage on Section 19, as documented by operating heavy machinery within wetlands (see attached NON-COMPLIANCE doc). These recent and recurring patterns of damaging natural resources are relevant to this SEPA process as they challenge the normal assumptions that an applicant would act in good faith and follow the guidelines in the EIS.

In the one example of this Applicant's violations: they cut an illegal road (without a special use permit) across steep slopes, they severed the roots of a tree with over a 40" DBH, and cut down and bulldozed other trees with 30" DBH (NON-COMPLIANCE doc). After they got caught and stopped construction of the road, they didn't do any mitigation work afterward. They have had seven years to decommission this "temporary road," reseed it with native plants, deal with the spreading invasive weeds (knapweed and thistle), re-contour and repair eroding slopes. Instead, the Applicant has done nothing. The Applicant's behaviors of non-compliance make mitigation meaningless if not followed. This pattern of non-compliance should be discussed in this DEIS as part of full disclosure of impacts and guide mitigation measures, and how much onsite-oversight is needed.

Past compliance by the Applicant informs the likelihood of impacts to the environment and whether adherence to the guidelines laid out in documents like this DEIS will be followed. I argue that because of these past violations of rules and damages to the environment revealed in the attached NON-COMPLIANCE doc, this DEIS should instead rely heavily on **AVOID or DENY** actions since we cannot trust the Applicant to follow through with **MINIMIZE and COMPENSATE** for the harms they would cause.

I believe that **the DEIS must contain a section listing the Applicant's prior environmental damages and disregard for their SUP/Land Use Agreement to adequately inform the public and agencies making decisions about the impacts of this project.** These infractions are relevant to this decision-making process, to this DEIS, and though unsavory for the Applicant, should be fully disclosed. The DEIS is supposed to be a disclosure document, and the Applicant's non-compliance behaviors are relevant: they give the public and agencies a clear picture of both current conditions, but likely future impacts (mitigation compliance).

The other takeaway is that, because of the Applicant's past non-compliance behaviors, the highest level of scrutiny is needed. So far, this Draft EIS does not contain the highest level of scrutiny. In places, it is inaccurate, too general, and over-reliant on vague mitigation (BMPs). We cannot assume compliance by the Applicant in this

document, and the DEIS must be written and organized in a way that factors this in. The safest way to account for this pattern of non-compliance behavior and lack of robust mitigation solutions is to require the highest level of scrutiny on this DEIS, and in the recommended areas, require new studies/assessments for many of the missing data gaps across many domains relevant to this project.

VOLUME II - MAPS & FIGURES - MASTER MAP

It would be helpful to have a single master map that definitively shows where all the construction activities, buildings, access roads, ski towers, ski lifts, ski area access roads, etc, are going to be. Keeping all the other detailed maps is good, but having a master map would be useful. This master map should be very clear, probably a satellite layer (Some of the maps in the DEIS that use satellite imagery as the base map, but use too opaque layers so that you can't orient yourself). You need to be able to see through the layers to see the natural features while also seeing the infrastructure overlay.

Perhaps the better form for this master map would be an online, GPS version with layers that you can turn on and off, and with a slider to adjust opacity. If creating an interactive, accurate map is not feasible, then the DEIS should provide all the GPS points, tracks, layers, etc., so that readers can upload them into mapping software, like GAIA, OnX, Google Earth, to be able to see and measure how close infrastructure will be to sensitive sites like riparian zones, wetlands, 21" DBH trees, etc. While it's understandable that some of the infrastructure/design could change, the current lack of a cohesive map and GPS coordinates leaves too much up to speculation. Given the Applicant's past violations (see NON-COMPLIANCE doc), we need a higher level of accountability and a higher-resolution evaluation of this project.

For the public and agencies to make good decisions, we need to know exactly where the access road will be, where all the parking lots, condos, footprint of ski lifts, administrate roads, etc., are going to be. The public and agencies need to know exactly which resources will be damaged, and not left to rely upon the word of the Applicant to do the right thing down the road, and be left in the dark.

Volume II, Page 6, Figure 2.2 Existing Facilities. This map should show the illegal road that the Applicant cut across Section 24.

Volume II, Page 8, Figure 4.1-1b Geologic Mapping… This map should include the illegal road as its erosional impacts are likely relevant to landslides and slope stability. Also, the illegal road may not be fully aligned with the developer's final

driveway alignment. The misalignment would be important to understand how wide the final impacts of both roads would be.

Volume II, Page 10, Figure 4.1-2a Steep Slope. This map needs to change the color and outline thickness of the project area, as it obscures the more important elements in the map, like the developer's driveway (access road) across Section 24, the location of homes, etc.

Volume II, Page 12, Figure 4.1-3a Proposed Project Area Erosion Hazards. This map needs to change the color and outline thickness of the project area, as it obscures the more important elements in the map, like the developer's driveway across Section 24, the location of homes, etc.

Volume II, Page 14, Figure 4.1-4 Landslide History in Utility Corridor. The color of the landslides needs to stand out from the background, a faded satellite basemap. As is, it's a little murky, and it would be very easy using Red, or another color, or a separate basemap to show this clearly.

Volume II, Page 21, Figure 4.2-6 Anticipated Fire Behavior Around Proposed Project. This map is misleading in a few ways and should either be corrected or omitted, as I'm not sure how useful it is. It assumes fuel breaks will lower the risk[17] of wildfire. This is misleading in two ways. Removing trees from a forest can increase fire severity[18] and can give people a false sense of security, while not increasing safety.

While the details of this topic are highly nuanced, and context-dependent, the basic observations are that logging[19]/thinning as a tool for a fire break can 'backfire' by altering the microclimate (hotter, drier, windier conditions), increasing surface fuels with fast drying fine fuels (grasses) which can lead to faster fire spread in opened canopies, and higher severity in logged areas. This is backed by research and analysis of even some of our recent fires, like the 2014 Carlton Complex, where it was

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[17] John Muir Project. (2024). Fuel reduction logging increases wildfire intensity: Fact sheet. https://johnmuirproject.org/wp-content/uploads/2024/04/JMP-fact-sheet-thinning-and-fire-28Feb24.pdf

[18] Thompson, J. R., Spies, T. A., & Ganio, L. M. (2007). Reburn severity in managed and unmanaged vegetation in a large wildfire. *Proceedings of the National Academy of Sciences*, *104*(25), 10743-10748. https://doi.org/10.1073/pnas.0700229104

[19] Plotkin, R., & Boan, J. (2024, August 14). Will logging more in healthy forests reduce wildfire risk? *David Suzuki Foundation*. https://davidsuzuki.org/expert-article/will-logging-more-in-healthy-forests-reduce-wildfire-risk/

assessed that intensively managed (thinned/logged) forests burned at higher severity[20] than unmanaged areas due to drier understories and increased wind penetration[21]. The takeaway: logging/thinning amplified fire behavior under extreme weather.

The other issue this map fails to address is that in an area like Mission Ridge, which regularly experiences moderate to high winds, is the ember cast and spot fire potential[22][23]. This ember cast erases the protective illusion of "natural fuel breaks" as embers rain down and start fires far (up to 10 miles![24]) in front of the leading body of the fire. Depending on the wind spot fires could propagate miles in front of the main fire. Just as with our recent and ongoing Labor Mountain and Lower Sugarloaf fires, the Incident Commander said that these fires experienced spot fires that were out a mile from the leading edge of the fire. Putting comments like "low risk to evacuation as natural fuel breaks exist" is misleading, but also potentially dangerous. These spot fires could close off potential escape routes. Residents need to know that in a wind-driven fire, in a high-risk fire zone, they should not assume they will be safe because the fire is in one cardinal direction or another.

The last issue with this map is that some of the most severe fires in WA State history come from Easterly winds[25]. While winds from the NW/NNW/N are most common, dry easterly winds form when a low-pressure system moves in off the Coast, and Higher Pressure in the center of the state moves to the west, carrying with it dry, low-

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[20] Zald, H. S. J., & Dunn, C. J. (2018). Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape. *Ecological Applications, 28*(4), 1068–1080. https://doi.org/10.1002/eap.1710

[21] Banerjee, T., Linn, R., Haupt, S. E., & Khanna, V. (2020). Sensitivity of fuel structure and fire behavior to forest thinning in a pine forest: A coupled LES-wildfire simulation approach. Fire Safety Journal, 113, 102976.

[22] Albini, F. A. (1983). *Potential spotting distance from wind-driven surface fires* (Research Paper INT-309). United States Department of Agriculture, Forest Service, Intermountain Forest and Range

[24] Lareau, N. P. (2025). Plume Dynamics Drive Extreme Long-Range Spotting During California's Dixie Fire. *Journal of Geophysical Research: Atmospheres*, 130(9), e2024JD043167. https://doi.org/10.1029/2024JD043167

[25] Mass, C., D. Ovens, and N. Gilbert, 2025: The Meteorology of Large Wildfires over Western Washington and Oregon. *Weather and Forecasting*, **40**(11), 2201–2220. https://doi.org/10.1175/WAF-D-25-0020.1

humidity air[26]. If a fire starts or is propagated during this pattern of easterly winds, egress to the East could be deadly.

Volume II, Page 23, Figure 4.2-8 …Streams & Wetlands Missing a Non-fish-bearing perennial stream on Section 30, and a wetland in Section 19 (see PHS map later in this document of FOMR Trail Camera Survey for approx. location)

Volume II, Page 25, Figure 4.2-12 General Routes of Egress in Dual Emergency. This is a deceptive, misleading, and dangerous map. To suggest that up to 7,812 people (that's the full bed capacity of the resort) could safely exit the resort on what? Old ATV and motorcycle trails? Will everyone at the resort be required to own an off-road vehicle? Will the egress route be paved? Will it be wide enough to foster a massive migration in the event of an emergency? This map makes it look like there is a good, reasonable, and safe egress, when these are just lines on a map. Given that people's lives could be a risk, assuming they are fine until they need to utilize this "general egress route" is reckless to have included this in the DEIS.

Volume II, Page 26, Figure 4.3-1 …Viewshed. In addition to this map, a map showing the extent of how far light pollution could be seen would be useful. This light pollution map should include Quincy, Ellensburg, the top of Badger Mountain, and Manastash Ridge. I've seen and had night sky gazing impacted by Mission Ridge's night skiing lights from as far away as Chumstick Mountain, Entiat Ridge. The new development with year-round lights and additional night skiing would intensify this effect of glare for night sky viewers.

Volume II, Page 28, Figure 4.4-2. …Rec Planning Please give a definition or map key to the colored Zones on the map. What do they mean? Folks should have this and not have to go back and refer to the Stemilt-Squilchuck Recreation Plan to decode.

Volume II, Page 31, Figure 5.2-1 Squilchuck & Stemilt Sub-watersheds. This map should include the connection of the aquifer to water resources in Kittitas County. If those are not clear, then it needs to be studied: Does the water in the project area connect hydrologically to water resources on the Kittitas County side?

Volume II, Page 33, Figure 5.3-1 Surface Water Overview. This map is missing a key Non-fish-bearing perennial stream on Section 30

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[26] Cramer, O. P. (1957). *Frequency of dry east winds over northwest Oregon and southwest Washington* (Research Paper No. 24). Pacific Northwest Forest & Range Experiment Station, U.S. Department of Agriculture Forest Service.

Volume II, Page 37, Figure 5.3-3 Surface Waters and Proposed Development. This map is missing a key Non-fish-bearing perennial stream on Section 30 and a wetland on Section 19, near the base of the two chairlifts coming together. Please survey and add these to the map.

Volume II, Page 39, Figure 5.4-2 Elk and Mule Deer Range - Calving in Project Vicinity. This is a necessary map. However, it's inaccurate and does not reflect the on-the-ground conditions or best available science. The attached FOMR Trail Camera Survey[27] shows that elk calving and mule deer wintering are happening in much more of the project area (almost the entire area) than is reflected in this map. The FOMR study should be just a starting point to begin a new round of inquiry into the elk calving, mule deer winter (and should include migratory routes as well). Many of the wildlife habitat models used and the wildlife studies cited to make this map are outdated. In the past five years, miles and miles of former elk and deer habitat have been fenced off in adjacent areas. This has dramatically changed both the availability of habitat and also shifted movement and migration patterns across the landscape. A comprehensive new study must be conducted to understand these new conditions to establish a baseline before moving forward with the project. This new wildlife study (or better yet, studies) should incorporate much of the transportation/utility corridor as well, since the added traffic of 10,000 vehicle trips per day will fundamentally impact wildlife, through mortality, displacement, and additional human disturbance. This new study/series of studies should also be multi-year to find an average of wildlife presence, use, and behaviors. A single-season study is limited in that a single year could have been a high snow year, and the animals may use different migration routes and wintering areas. To rule out seasonal variability, a multi-year study is needed.

Volume II, Page 39, Figure 5.4-2 Elk Summer Habitat in Project Vicinity. Again, a very important map, but not factual or reflective of the on-the-ground use by elk in the summer. Please read the above comment and the FOMR Trail Camera Survey[28] for reference.

Volume II, Page 42, Figure 5.4-5 Invasive Species Infestation. This is missing many infestations of the noted invasive species along the illegally cut road. Also, the name "unofficial or service road" should be changed to make clear that the road in its

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[27] Gnam, S., & Rolfs, M. (2025). 2024–2025 Trail Camera Wildlife Survey: Friends of Mission Ridge – Wildlife Survey in the Stemilt-Squilchuck Basins, https://www.friendsofmissionridge.com

[28] Gnam, S., & Rolfs, M. (2025). 2024–2025 Trail Camera Wildlife Survey: Friends of Mission Ridge – Wildlife Survey in the Stemilt-Squilchuck Basins, https://www.friendsofmissionridge.com

current form is illegal and should not be on the landscape. "Illegal road cut by Applicant" or "unpermitted road cut by Applicant" would be a second choice.

Volume II, Page 43, Figure 5.4-6 Special Plant Features in Project Vicinity. First off, this map is missing so many large trees >32" DBH in Section 30 (and likely on Section 19) where ski runs, service roads, nordic trails, and a 4.2-million-gallon snowmaking reservoir are proposed. These large trees need to be mapped and identified so that the public and agencies are aware of what the actual impacts of this project are. The bigger question is, why is >32" DBH used? Shouldn't trees >21"DBH be used as these are what qualify for old-growth forest on the east side of the Cascade Crest? Please re-map to reflect the conditions east of the crest. Why are PHS Snags and Logs not included in this map? Please survey those areas to include these unique features, as many of them will be threatened by the developer's roads, snowmaking reservoir, etc.

While on the topic of PHS, many other PHS habitat features are missing: cliffs, talus, and shrub-steppe. These need to be surveyed and added to the maps as well.

Also, it is quite hard to see the green dots of large trees on the map. The color of the trees should be different than the background to not obscure their locations on the background of a green satellite map–the goal is not to hide trees on the map but to let us see them.

Volume II, Page 43, Figure 5.4-6 Special SEPA Botany Existing Conditions in Project Vicinity. This map is confusing and perhaps misleading. First, why not show the actual full envelope of the project area, as in the prior map 5.4-6. Second, this map is missing many stands of whitebark pine. This map should expand to show the full project area as 5.4-6 and contain a new WBP survey to include the missing portions, including the obvious large tracts in the southern portion of the project area.

Volume II, Page 48, Figure 5.6-3 …Transportation Infrastructure… This map should contain the current illegal road footprint and then the actual footprint (including 200' slope cuts) of the proposed "access road." This map should make it clear that a portion of the current Mission parking lot will turn into the developer's driveway, and the new access road doesn't stop at the edge of the parking lot. We need to know how much of the current parking lot will be taken up as the developer's driveway. Additionally, there is no Egress route(s) shown on this map. Where will those footpaths be? ATV trails? or roads be?

MAPS & FIGURES - OMISSIONS

Mission Ridge Parking Lot - Squilchuck & Lake Creek Crossings
There should be a clear, detailed map that shows the design, dimensions, and impacts that the developer's driveway/access road would have on the existing ski area parking lot on public land. How many parking spots will this driveway consume? How close does it get to both fish-bearing creeks? Yes, Lake Creek has fish in it. Photograph further down in comments. Please include this map and attending information in the DEIS.

Illegal Road
Related to this, the Applicant has omitted a detailed assessment of the illegal road that they carved across Forest Service section 24, as part of the SEPA checklist. A full assessment of this illegal road is required to assess baseline conditions on the site. SEPA demands that the current conditions be assessed to be able to differentiate between the impacts of proposed actions. Simply mentioning the road in DEIS documents and calling it an unofficial, administrative, or service road is disingenuous. A full assessment of this illegal road needs to be done. The road impacts wildlife in many ways increased hiking, biking, and pets (as noted in the FOMR Trail Camera Survey). The road also needs an invasive weed survey. This weed-infested road bed is missing from the map "Existing Invasive Species" Figure 5.4-5 (the illegal road bed contains knapweed (Centaurea diffusa), Canadian thistle (Cirsium arvense), and Oxeye daisy). The road also needs an erosion assessment (slopes are actively sluffing and contributing to erosion), and a look at the stream crossings (which still have silt fencing collapsed into them, seven years later, serving no purpose, while the road bed stuffs over the fabric into the stream). Additionally, a tree assessment is needed as multiple trees over 21" are still being impacted by this road and are falling into the road or impacted through erosion or roots being exposed. The alignment of this road must also be shown on this master map and shown in its relationship to where the Applicant wants to put the driveway to the development (it appears the two are not in alignment). What is the total footprint of the two roads, including their spoils and erosion cuts?

DEIS Comments / Arranged by Section, Page #

ES-1, Page 27 Text box "Outside of the Project Area" Calling all these "improvements" is misleading. Causing 10,000 vehicle trips per day and then having to mitigate for that new traffic increase is not an improvement. That's the bare minimum expectation that if you snarl up traffic with congestion that you have to mitigate it. Don't frame that as a gift to the community by calling it an improvement.

From a local perspective, traffic and congestion will increase, even with intersection "improvements". This is misleading and should be called "Traffic mitigation, PUD mitigation", etc. It's also misleading since the applicant does not actually propose to improve the Squilchuck/Mission Corridor but leave the road width as is (28 ft). The increased traffic will change the level of service on these roads and will necessitate a wider road, with actual 'improvements' to passing lanes, shoulders, wildlife crossings, culvert replacement, etc. These "improvements" are missing from the developer's proposal and are necessary by law.

ES-3, Page 29 "The DEIS considers improvements to the…" "improvements" is subjective, inaccurate, and misleading. Taking water from an already over-allocated water basin WRIA-40a, is not improving anything except for the developer's income. Take out this subjective language.

ES-6, Page 32 "This DEIS reviews all areas of the affected environment associated with the Applicant's proposal, including those that occur outside of the Project Area." This is not true. As mentioned earlier, little to no attention is given to the impacts that this project would have on residents and water in Kittitas, Grant, or Douglas Counties. This wider impact area needs to be assessed under WAC 197-11-060(b). The edge of the development is very close to the Kittitas County boundary (much closer than Wenatchee is to the project area). Residents in Kittitas County would be impacted as they recreate on top of Naneum Ridge, as well as light pollution impacts seen as far as Ellensburg and the Manastash Ridge Observatory. Kittitas County residents who hunt, ORV, and recreate on top of Mission Ridge need to be properly consulted and brought into this public process. Also, likely, the aquifers in the Stemilt/Squilchuck are hydrologically connected to the aquifers, springs, and surface water on the Kittitas County side. Have any water studies been done to understand the likely interconnectedness of those water systems? This EIS assessment must include those to either confirm or deny that impacts on the Stemilt/Squilchuck side could directly impact the Kittitas County side.

To my knowledge, no outreach or education was done to include those surrounding communities or their representatives, and therefore, this public comment period is not honestly capturing input from impacted parties. Additionally, the County governments of Kittitas County, its relevant boards should have been notified and allowed time to engage their citizens in this process. I have found no evidence or public messaging to suggest that this has happened. The same should be said for Douglas and Grant counties, as residents there will likely be impacted by visual disturbances in the form of light pollution, and folks impacted who recreate on Naneum Ridge/Mission Ridge. This may require a restart of the comment period process to include the surrounding

impacted communities, not just Chelan County residents, who will see their backyard mountain transformed by thousands of year-round residents, and the impacts that could stem from this development (including impacts on fire, water, and wildlife in the region).

ES-6, Page 32 Again, using the term "infrastructure improvements" is subjective, misleading, and inaccurate. While some of the necessary mitigation for this project may require building new infrastructure, some of these infrastructure "improvements" may decrease the very resources they are using and cause a drop in quality of life for residents. Please remove this misleading language; doing required mitigation is not improving anything, it's compensation for the damages and impacts that the project burdens our environment and community with.

ES-7, Figure ES-2, Page 33
In the NW portion of the Proposed Project Area, the boundary arbitrarily leaves out Squilchuck Creek. This omission does not make sense as the illegal road that was cut cast spoils all the way down to the creek. The much larger proposed access road would certainly cast a wider footprint than a single-pass excavator. Please update the actual boundary of the project area to contain areas that will be directly altered by the proposed development.

ES-8, Page 34 "PURPOSE & NEED" This section reads a lot more like "Purpose and Want." The applicant uses a lot of persuasive and misleading language in this section to convey that *they need* this project, but offers very little proof. Instead, the takeaway from the details of this project appears to be something the applicant WANTS, but does not need. At the 2025 Pybus Forum, a member of the public asked the developer if Mission Ridge would go away (go out of business) if this "expansion" didn't happen. Larry said no, the ski area is doing fine financially. While this is a departure from the narrative that the ski area had been telling the community for years, "that the ski area would go under unless they did this expansion", this most recent comment from the owner suggests otherwise. Framing the information in the DEIS and in this section of the Executive Summary using language that comports with the Applicant's viewpoint is not in keeping with the spirit of SEPA. The public and agencies need an unbiased, fact-based disclosure document. Please make it clear where many of the reasons behind this project are purely the applicant's claims. The DEIS should not be endorsing these claims, if they are even relevant at all. Especially as many of them (as discussed in the opening section of this document) are not backed by any evidence.

"Expand Mission Ridge as part of an MPR to enhance existing services and provide year-round outdoor recreation opportunities. Current limitations that impede resort operations…" So many subjective and possibly false and misleading claims in this section that either need to be removed or edited.

- **Enhancing services** is subjective, as this will degrade many services in the area, including resort skiing, as overcrowding is often seen in a negative light by participants.
  - Providing year-round recreation is both unnecessary, as the public does this without any rollercoasters, zip lines, or "amenities" up there. This goal of providing **year-round recreation** is also counter to the special use permit/land use agreement by which Mission Ridge operates under, stating ski area operations are only to be conducted, "from the Saturday immediately prior to Thanksgiving ("First Skiing Day") through April 30 - see ATTACHED 2005 WDFW Mission Ridge Land Use Agreement. The idea behind this year-round restriction is due to sensitivity to wildlife issues. WDFW doesn't want additional recreational pressure on wildlife during critical times of migration, calving, and breeding. Why would the Applicant disrespect this, knowing full well that this project lies within an area that WDFW has long identified as important to wildlife (since 1953, when the land was purchased to protect Colockum Elk)? This attempt to circumvent their current SUP/Land Use Permit and create year-round recreation is part of a disturbing pattern of non-compliance with their SUP/Land Use Agreement (see **attached document NON-COMPLIANCE document**).
- They say that these impede resort operations, but offer no empirical proof to back up these claims? On the surface, this seems ludicrous, as any business would love to be busy, operating at full capacity, and most would call that a success. This document should represent reality, not a wish list from the developer. Either reframe their points as "the Applicant claims" or have them provide supporting facts and figures to back them up. If the Purpose & Need section comes down to just being a Want v. Need situation, the public deserves to know this. Past comments from the Ski Area and developer made it sound like Mission Ridge would go away if this expansion didn't occur (even citing this reason in the 2020 FS EA, but never offering proof). Recently, the developer's tune has changed and said Mission Ridge would be fine financially if this development didn't go through (remarks from 2025 Feb Pybus). These are important points that the public needs to know about "the Why" of this project. Is it just a developer's ambition, or is this some legitimate need? Please clarify.

ES-8, Page 34 Chelan County Code (CCC; 11.89, Master Planned Resorts Overlay District) "…without significant adverse effects on natural and environmental features,

cultural or historic resources" The very fact that this project needs an EIS ("the Proposed Project is likely to have a significant adverse impact on the environment and requires an EIS." ES-8) should disqualify this project from MPR status.

ES-14, Page 40 "Mitigation, both proposed by the Applicant and requested by Chelan County helps lessen these impacts." Mitigation requires compliance. SEPA allows agencies to consider past compliance as a factor in how or if mitigation offered would be sufficient. Unfortunately, Mission Ridge Ski Area/The Applicant has a history of non-compliance that ranges from cutting roads and conducting construction activities without special use permits, driving heavy machinery into wetlands, violating their SUP by restricting public access on public lands, and damaging the environment. Please see the **attached Non-Compliance document** for more details of these activities. The Applicant's past behaviors need to be investigated, cataloged, and factored into this DEIS, as many of these mitigations and BMPs look good on paper but are meaningless if not followed. The NON-COMPLIANCE document is a good start, but relevant agencies need to follow up to investigate further, as this is likely the tip of the iceberg.

SEPA's guiding philosophy is to make sure agencies identify and consider environmental consequences before acting, and then avoid, minimize, repair, reduce, or compensate for impacts — and deny the action if impacts cannot be adequately mitigated. Given the history of not following rules or doing mitigation after damaging the environment (NON-COMPLIANCE doc), relying on mitigation is not ideal, and denial of this project seems logical.

Many changes will need to be made to the Executive Summary, with just a few mentioned here. More discussion of these areas will be discussed further below.

ES-14, Page 40 "Major Conclusions" As will be discussed and evidence presented further in this document, WATER, TRAFFIC, and WILDLIFE will likely need to be added to the list of items that will have probable significant adverse impacts.

ES-14, Page 40 Land use is not consistent with local planning. One of the key findings of the Stemilt Partnership was that "urban-style development was not appropriate in the upper basins." Also, the WRIA-40a assessment found that the basin is 50% over-allocated in water resources. This project is not consistent with that. Also, Chelan County Code 11.78.010 (B): "the county has determined that mule deer and elk winter range and migration corridors are habitats of local importance." This would place the project area as a FISH AND WILDLIFE HABITAT

CONSERVATION AREAS OVERLAY DISTRICT (FWOD) per Chelan County Code, and not green-light an urban development on top of it.

Table ES-3, Groundwater & Surface water, Pages 42 & 43 PFAS (forever chemicals) contamination has been found on Section 25 in a soil sample taken from a ski run. See ATTACHED **PFAS Soil Test**. This indicates that ski area activities, likely from racing ski waxes and possibly snow-making activities, have contributed to this contamination and must be explored before further ski runs are permitted. The extent of PFAS contamination is unknown and should be studied to see how widespread the contamination is. It has made its way into snowmelt, waterways, or plants and animals in the ski area and surrounding areas.

Also, given the Applicant's history of NON-COMPLIANCE, this PFAS issue must be resolved on the existing ski area, BEFORE they are given more terrain to spread PFAS on. We don't want the public, wildlife, or water to be exposed to further PFAS contamination. Additionally, as cleanup of these toxic substances will be needed before further permit approvals, we don't want the developer to skip town and leave the community with a Superfund site to clean up. To minimize risks to the community, the Applicant should resolve all PFAS issues on the existing ski area ASAP.

Table ES-3, Page 43, Lake Creek, which runs through the ski area and under the proposed development driveway, contains fish. [attached photo of fish in Lake Creek upstream of the parking lot] For a more complete survey, electroshocking and or E-DNA testing should be done to determine which fish species are present.

trout in Lake Creek, 2025

Table ES-3 Page 44, Section 5.11 Climate Change. I will address this further in the Climate Change and Traffic sections, but their Greenhouse Gas (GHG) assessments are not accurate and offer no quantitative measurements.

2.1 Applicant Project Objectives, Page 54: "enhance existing services and provide year-round outdoor recreation opportunities." Enhancing existing services is very subjective, and I've yet to hear from any members of the public who think doubling the crowding at the ski area is an enhancement of services at the ski area. In fact, a summary of 24 ski area expansions across the Western US[29] shows that the community sentiment around expansions is negative and not something they would welcome.**"Impacts to community structure that were perceived to be undesirable by current residents; an erosion of community identity; and a loss of sense of place."** A more accurate description would be "doubling the number of users of the ski area". Keep it factual and not subjective. "Providing year-round outdoor recreation opportunities" & "lack of recreation options for non-skiers" is very misleading, as currently many forms of recreation occur in the project area: biking, hiking, running, hunting, birdwatching, snowshoeing, and cross-country skiing, etc. This project will largely conflict with these existing forms of low-impact recreation. Acting like this development is filling a vacuum is disingenuous.

Page 54 CCC (11.89, Master Planned Resorts Overlay District). Per the code, the purpose of an MPR is "to enhance and diversify the recreational and economic opportunities in Chelan County through the development of master planned resorts that complement the natural and cultural attractiveness of the area without significant adverse effects on natural and environmental features, cultural or historic resources." Given that the ski area already exists and charges users for resort skiing is one form of recreation. Adding more of the same of "pay to play" forms of recreation does not diversify recreation, it consolidates it to where one private entity profits instead of allowing public lands to be enjoyed by many different user groups who span the socioeconomic spectrum. Given the composition of the greater Wenatchee area, and the small percentage of residents and visitors who resort ski, the proposed development does not cater to, or reflect the recreation needs or demands of the community. At numerous public forums, the public has complained that ticket prices are cost-prohibitive to many people and families in the area. Will the new development lower the cost for users? Will they charge less for having 'more amenities'? This is not likely. So, with an anticipated higher price for tickets (and perhaps parking?), this development would not cater to the existing user groups but

[29] Smith, J. W., & Guadarrama, U. (2020). *Social Impacts of Expanded Ski Resort Operations on Forest Service Lands*. Institute of Outdoor Recreation and Tourism, Utah State University. Prepared for Valley Advocates for Responsible Development.

further stratify and isolate users to only serve wealthy patrons, which does not diversify recreation. Furthermore, all of this development of new amenities would come at a cost to culture (small-town ski area feel) and would definitely have negative impacts on the environment. None of these things is consistent with the MPR requirements outlined above.

"Undersized and crowded beginner skier terrain." Somehow, this doesn't make any sense, as generations of new skiers have learned to ski and have grown up skiing with the existing ski area. Adding 100,000 more skiers, and a trivial ~2% more new ski terrain, with only some of it being beginner terrain, will actually increase crowding for all skiers. This logic is so flawed that it should be removed from the document, as it is false advertising.

2.3.1.1 Outdoor Recreation Facilities, Page 57 "select trails used during the snow-free seasons" "camping, horseback riding, zip lines, and alpine coasters" "snowmobiles" This goal of providing **year-round recreation** is counter to the special use permit/land use agreement by which Mission Ridge operates under, stating ski area operations are only to be conducted, "from the Saturday immediately prior to Thanksgiving ("First Skiing Day") through April 30. The idea behind this year-round restriction is due to sensitivity to wildlife issues. WDFW doesn't want additional recreational pressure on wildlife during critical times of migration, calving, and breeding. Why would the Applicant disrespect this, knowing full well that this project lies within an area that WDFW has identified as important to wildlife (enough so to have seasonal restrictions)? This attempt to circumvent their current SUP/Land Use Permit and create year-round recreation is part of a disturbing pattern of non-compliance with their SUP (see **attached document NON-COMPLIANCE document**).

2.3.1.4 Utilities…Potable Water Supply, Page 60. Before wells are drilled it the hydrology of the area needs to be studied to understand if waters on the Squilchuck-Stemilt side of Mission Ridge are connected to the Kittitas County side of the mountains (WAC 197-11-060(b)). It seems likely that the aquifer that would supply water for this development would be connected to the Kittitas County side, which is

LAND USE AGREEMENT
WINTER SKI AREA

THIS AGREEMENT is entered into this 12th day of July, 2005 by and between **THE STATE OF WASHINGTON, THE DEPARTMENT OF FISH AND WILDLIFE**, hereinafter referred to as "WDFW" and **MISSION RIDGE RESORT, INC.**, a Washington corporation, whose address is P. O. Box 1668, Wenatchee, Washington 98807, hereinafter referred to as "Grantee."

WHEREAS, WDFW owns certain real property situated in the Counties of Chelan and Kittitas, State of Washington, to wit:

TOWNSHIP 21 NORTH, RANGE 15 EAST, W.M.

Section 25; the East half of the East half of Section 27; the North half of the North half of Section 35;

WHEREAS, said lands were acquired in 1953 by WDFW's predecessor with sportsmen's funds granted through the Federal Aid to Wildlife Restoration Act of 1937 for the management of wildlife, wildlife habitat and recreational hunting;

WHEREAS, WDFW manages said lands subject to the requirements of said Federal Aid Act as administered through the U.S. Fish and Wildlife Service contract attached hereto as Attachment A, to preserve and protect, among other species, the Colockum elk herd, the survival of which depends upon a twice-yearly migration free of human encroachment and disturbance through said lands;

WDFW Land Use Agreement. Explicitly states the primary importance of preserving wildlife species, especially the Colockum elk herd.

in the water-stressed[30] Yakima River basin[31]. While it appears that the Eastbank Aquifer has enough water to supply PUD's anticipated needs for the coming decades, that assessment of water quantity cannot be made in the upper Squilchuck-Stemilt basins. In fact, the latest water analysis for WRIA 40a stated that the basins are 50% over-allocated, meaning that there is not enough water to meet current water users. How would allowing these new uses for the development, even up to 90 acre feet per year, be responsible? The Department of Ecology recently had to restrict surface water usage in the Yakima Basin/Kittitas County due to water scarcity. Just because we are in the PNW, and the Columbia River flows nearby, does not mean that there is

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[30] Washington State Department of Ecology. (2025, October 1). *Dwindling water supplies force new restrictions in Yakima Basin beginning Oct. 6*. Retrieved from https://ecology.wa.gov/about-us/who-we-are/news/2025/oct-1-dwindling-water-supplies-force-new-restrictions-in-yakima-basin-beginning-oct-6

[31] Branstetter, R., Stephenson, J., Pierce, A. L., & others. (2011). *Steelhead Kelt Reconditioning and Reproductive Success: 2010 Annual Report*. U.S. Department of Energy, Bonneville Power Administration. https://www.researchgate.net/publication/281208979_Steelhead_Kelt_Reconditioning_and_Reproductive_Success_2010_Annual_Report

abundant water for use in the upper basin. To protect senior water rights users and to avoid stealing water from Kittitas County users, a comprehensive water study that traces the capacity and footprint of the aquifer under Mission Ridge is needed to avoid a catastrophic water depletion (like what is happening in the Yakima basin).

2.3.1.4 Utilities…Transportation, Page 62 "two lanes (each 12-feet wide), shoulders with ditches (each approximately 4-feet wide)" This "access road," which should be more accurately described as the "developer's driveway," (the Applicant already has access to their property from the Stemilt side) is not wide enough to accommodate the level of service they have described in their TIA. They need to recalculate the road dimensions and engineering so that we know how much bigger these slope cuts how, how much more spoils, and the footprint of this driveway will be.

The access road would require two stream crossings (non-fish-bearing perennial streams discussed in Section 5.3) on USFS land. Lake Creek contains fish (photo evidence provided above in my comments) and should be surveyed to establish which species are present.

2.3.1.4 Utilities. Fire Protection, Page 63 "fuel breaks & defensible space" This assumes fuel breaks will lower the risk[32] of wildfire. This is misleading in many ways. Removing trees from a forest can increase fire severity[33] and can give people a false sense of security, while not increasing safety.

While the details of this topic are highly nuanced, the basic observations are that logging/thinning as a tool for a fire break can 'backfire' by altering the microclimate (hotter, drier, windier conditions), increasing surface fuels with fast drying fine fuels (grasses) which can lead to faster fire spread in opened canopies, and higher severity in logged areas. This is backed by research and analysis of even some of our recent fires, like the 2014 Carlton Complex, where it was assessed that intensively managed

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[32] John Muir Project. (2024). Fuel reduction logging increases wildfire intensity: Fact sheet. https://johnmuirproject.org/wp-content/uploads/2024/04/JMP-fact-sheet-thinning-and-fire-28Feb24.pdf

[33] Thompson, J. R., Spies, T. A., & Ganio, L. M. (2007). Reburn severity in managed and unmanaged vegetation in a large wildfire. *Proceedings of the National Academy of Sciences*, *104*(25), 10743-10748. https://doi.org/10.1073/pnas.0700229104

(thinned/logged) forests burned at higher severity[34] than unmanaged areas due to drier understories and increased wind penetration[35]. The takeaway: logging/thinning amplified fire behavior under extreme weather.

The other issue this map fails to address is that in an area like Mission Ridge, which regularly experiences moderate to high winds, is the ember cast and spot fire potential[3637]. This ember cast erases the protective illusion of "natural fuel breaks" as embers rain down and start fires far (up to 10 miles![38]) in front of the leading body of the fire. Depending on the wind, spot fires could propagate miles in front of the main fire. Just with our recent and ongoing Labor Mountain and Lower Sugarloaf fires, the Incident Commander said that these fires experienced spot fires that were out a mile from the leading edge of the fire. Putting comments like "low risk to evacuation as natural fuel breaks exist" is misleading, but also potentially dangerous. These spot fires could close off potential escape routes. Residents need to know that in a wind-driven fire, in a high-risk fire zone, they should not assume they will be safe because the fire is in one cardinal direction or another.

2.3.1.4 Utilities…Snowmaking, Page 63 "new reservoir…would hold 4.2 million gallons of water." Given the recent findings of PFAS contamination in the ski area (see attached PFAS report), an intensive study is needed to understand the source(s) and how widespread it is. Before green-lighting further snowmaking use, a known spreader of PFAS[39], this problem needs to be understood, as the cleanup costs and damage to the environment will only increase if further PFAS spread is allowed. This

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[34] Zald, H. S. J., & Dunn, C. J. (2018). Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape. *Ecological Applications, 28*(4), 1068–1080. https://doi.org/10.1002/eap.1710

[35] Banerjee, T., Linn, R., Haupt, S. E., & Khanna, V. (2020). Sensitivity of fuel structure and fire behavior to forest thinning in a pine forest: A coupled LES-wildfire simulation approach. Fire Safety Journal, 113, 102976.

[36] Albini, F. A. (1983). *Potential spotting distance from wind-driven surface fires* (Research Paper INT-309). United States Department of Agriculture, Forest Service, Intermountain Forest and Range

[38] Lareau, N. P. (2025). Plume Dynamics Drive Extreme Long-Range Spotting During California's Dixie Fire. *Journal of Geophysical Research: Atmospheres*, 130(9), e2024JD043167. https://doi.org/10.1029/2024JD043167

[39] Carlson, G. L., & Andersen, M. (2025). Tracking environmental contamination from multiple sources of per- and polyfluoroalkyl substances. *Environmental Research*, *276*, 121470. https://doi.org/10.1016/j.envres.2025.121470

DEIS needs to reveal the baseline conditions of the project area and the anticipated future conditions and impacts from this development. Studies need to be done to understand is the PFAS contamination is linked to snowmaking in the ski area or to ski waxes? Is the contamination limited to ski runs or off-piste areas as well? How many PFAS are in the Section 25 area of the project area, so that trends can be measured from pre- and post-development activities? PFAS are a major threat to human health and need to be fully cataloged and understood, as they have been detected on the Mission Ridge Ski Area. Also, why is the developer proposing this reservoir on public land, in the middle of an elk calving and migration area? It almost appears that to bolster his "open space" acreage count, he is offloading infrastructure like this onto public land. This is not a good use of public land.

2.3.1.4 Construction Methods, Page 64

All of these construction areas need to be mapped out. Every road, temporary road, staging areas, the temp roads needed to put in chairlifts, the chairlift tower footprints, and ski lines all need to be mapped out so we know where the impacts are going to be and what resources will be impacted. Given the Applicant's past behavior (ie, cutting a road across public land without a special use permit), the highest level of scrutiny is needed. On the illegal road, they cut across steep slopes, they severed the roots of a tree with over a 40" DBH, and cut down and bulldozed other trees with 30" DBH (NON-COMPLIANCE doc). They didn't do any mitigation work after. We cannot assume compliance, so we need to determine what impacts are likely to occur. We need to know EXACTLY where they want to drive heavy machinery. We also need to know EXACTLY where every tree over 21" DBH is. These must be shown in relation to homes, parking lots, ski runs, glades, etc.

"In the Mission Ridge MPR proposal, the Applicant states that the proposed design intends to maintain the feel of the Cascade Mountains by minimizing disturbance and retaining as much natural vegetation as possible." Take out this persuasive marketing jargon, please. If they wanted to maintain the feel of the Cascades, they wouldn't put a massive development in the heart of Mission Ridge. Also, if they are interested in trying to retain as much natural vegetation as possible, then they wouldn't propose this. Please take out this greenwashing.

"Disturbed areas not permanently converted to developed areas would be revegetated with native plant species." Doesn't seem honest when they haven't revegetated the illegal road they cut with native plants (and have had seven years to do it).

"Scree slopes would also be smoothed as necessary to create a well-contoured surface." First, you need to be clear about the difference between scree and the basalt talus present on

site. There is very little scree in the area and quite a lot of basalt talus (judged by its size and, most importantly, for the interstitial spaces it creates). We need to know every square inch of scree, talus, basalt, and forest topsoils that they want to compact, disturb, and move. This needs to be quantified and shown clearly on maps. The basalt talus in particular is a very important wildlife habitat, as noted in the FOMR Trail Camera Survey[40].

2.3.1.4 Affected Environments Summary, Pages 85 & 86.
Missing issues like viewshed and light pollution[41], communities in Douglas, Grant, and Kittitas counties will also be impacted (WAC 197-11-060.4(b))

Missing issues of increased fire risk, Kittitas County, Blewett Pass, Liberty, Malaga, & Cashmere, and other adjacent communities could be negatively impacted, particularly depending on the direction of wind. These communities need to be consulted and impacts measured. If a fire starts because of this development, and/or from the added population of people it either attracts or its residents, that is a new impact that wouldn't have happened if this development had never gone in.

Missing issues surrounding recreation, these same communities: Kittitas County, Blewett Pass, Liberty, Malaga, & Cashmere will have impacts felt from spillover of recreation, displacement of recreation users, impacts to wildlife, etc. The scale of this development and the thousands of people it plans to host and attract will fundamentally impact a greater area than the listed impact zones.

On a higher level, the impacts of this development will impact statewide, and even out-of-state recreation users who come to the Colockum to hunt and camp. The light pollution originating from this project will ripple out into distant communities and locations like the Alpine Lakes Wilderness Area (The light pollution would be visible from many popular peaks and bivy/camping locations in the Alpine Lakes Wilderness and possibly even the Glacier Peak Wilderness). The increased ski run lighting and newly added sources of year-round lighting would diminish night sky gazing[42] and wilderness qualities in the region. These are not just aesthetic impacts but also impact

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[40] Gnam, S., & Rolfs, M. (2025). 2024–2025 Trail Camera Wildlife Survey: Friends of Mission Ridge – Wildlife Survey in the Stemilt-Squilchuck Basins, https://www.friendsofmissionridge.com

[41] Chepesiuk, R. Missing the Dark: Health Effects of Light Pollution. *Environmental Health Perspectives*, *117*(1), A20. https://doi.org/10.1289/ehp.117-a20

[42] Balafoutis, T., Skandali, C., Niavis, S., Doulos, L. T., & Zerefos, S. C. Light Pollution Beyond the Visible: Insights from People's Perspectives. *Urban Science*, *9*(7), 251. https://doi.org/10.3390/urbansci9070251

human health[43] and well-being in a variety of ways. This diminishes community health and quality of life in the region.

The popular Washington Backcountry Discovery ORV route winds down Liberty-Beehive Road onto Squilchuck Road–how will the added traffic of 10k vehicle trips per day impact these users? Please consider the wider geographic range of impacts in future versions of the DEIS.

2.6 Alternatives…, Page 87 As I discussed in my intro, there is no range of Alternatives as required by SEPA. It doesn't seem like the developer has taken a serious effort to consider other ways to achieve their objectives. Perhaps part of the solution would be refining their objectives, or exploring options that could be: **"feasibly attain[ed] or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation".**

4.1.3 Geologic Hazards…landslide risk, Pages 100 - 106. The landslide risk in the project area is currently higher than the landslide risk rating that was facing the Oso, WA[44] community before that devastating day in Washington state history. It would be reckless and foolhardy to put a community of thousands of people in harm's way in this high of a landslide-prone area.

4.2 Fire Risk, Graphic 4.2-1, Pages 111, 112 This graphic is helpful, but inaccurate and needs to be adjusted to probably have RED ARROWS on all domains shown. As discussed earlier in these comments (pages 5 & 6), and backed by numerous peer-reviewed fire studies and postmortem analysis, fire risk can actually increase post-fuel treatment/tree removal[45] due to factors of increasing wind speed[46], lowering relative

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[43] Motta, M. E. (2024). We're all healthier under a starry sky. *AMA Journal of Ethics, 26*(10), E804-810. https://doi.org/10.1001/amajethics.2024.804

[44] Seattle Times Staff. (2014, March 29). *Oso landslide: What happened when the slope fell into the Stillaguamish River*. The Seattle Times. https://special.seattletimes.com/o/html/localnews/2023259205_mudslidenarrativexml.html

[45] Millikin, R.L., Braun, W.J., Alexander, M.E., & Fani, S. (2024). The Impact of Fuel Thinning on the Microclimate in Coastal Rainforest Stands of Southwestern British Columbia, Canada.

[46] Parsons, R.A., Pimont, F., Wells, L., Cohn, G., Jolly, W.M., de Coligny, F., Rigolot, E., Dupuy, J.-L., Mell, W., & Linn, R.R. (2018). Modeling thinning effects on fire behavior with STANDFIRE. *Annals of Forest Science*, 75, 7. https://doi.org/10.1007/s13595-017-0686-2

humidities[47] of closed canopy forests, and increasing the fast-drying fine fuels like grasses on the forest floor. Saying that "high risk fire areas will decrease by 28%" is inaccurate and not backed by any of the research papers you will find cited in my comments. As noted by Incident Commanders on the Labor Mountain and Lower Sugarloaf Fires, the spread of those fires and the inability to stop the fires from crossing large swatches of "defensible space, fire lines, transmission lines as wide as ski runs" had nothing to do with personnel available or water availability. The reason those two fires jumped "defensive lines" was due to terrain (steep, rugged like Mission Ridge), weather (high winds, low humidities), and fuels (not just trees, but plentiful fine fuels like grasses, which can ignite quickly from ember cast). The IC on those fires mentioned spotting of the fires and spreading outside of containment lines (slop-over), jumping outside of back-burned areas, and igniting new fires a mile ahead of burned-out areas. This graphic lulls you into thinking it's a safe area because they have a fire station or a parking lot. When the nearby dry, beetle-killed forest surrounding this development ignites, and strong winds rain down embers, no amount of thinned forest or parking lots will keep all structures or people safe. This is a recipe for a disaster on the scale of Paradise, California, and trying to sugarcoat it is disingenuous and doesn't match the reality of trying to place thousands of people in a fire-prone, fire-impacted landscape. Please update these graphics to match the reality of the risk posed to folks who would be up there.

Using the access road as a justification to lower the fire risk is not accurate for many reasons. While the presence of roads could allow a fire truck to put out some fires, some of the time, statistically, the presence of roads actually increases[48] the probability of forest fires[49]. [Also, the Project Area Access Road will not be increased to 28 feet wide, because first of all, that's how wide the current Mission Ridge Road already is, and second, it will need to be much wider to accommodate the traffic numbers as described in the TIA.]

Another missing component to this Fire Risk section is what the contingency plan is for the thousands of people who would be placed under Level 3 Evacuation? Where

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[47] Del Campo, A.D., Otsuki, K., Serengil, Y., Blanco, J.A., & Wei, X. (2022). A global synthesis on the effects of thinning on hydrological processes: Implications for forest management. *Forest Ecology and Management*, Jun 2022.

[48] Morrison, P.H. 2007. *Roads and Wildfires*. Pacific Biodiversity Institute, Winthrop, Washington. 40 p.

[49] Narayanaraj, G., & Wimberly, M. C. (2012). Influences of forest roads on the spatial patterns of human- and lightning-caused wildfire ignitions. *Applied Geography*, *32*(2), 878-888. https://doi.org/10.1016/j.apgeog.2011.09.004

would they go? Who would house the thousands of people displaced? Is there a plan to open up the Town Toyota Center with thousands of cots and blankets? What is the contingency plan for when the inevitable happens?

4.2.1.2 Shelter in Place, Page 114 As discussed earlier in my fire comments on pages 5 & 6, this strategy of sheltering in place could be a suicide mission. Look at the Broadview fire in the foothills of Wenatchee, embers from that fire (fueled by burning grasses in way mellower terrain) burned homes in suburban areas. Wind-driven embers went far across town and ignited buildings far in front of the active fire line (reports were that embers crossed the Columbia River). Thinking that staying put and waiting out the ensuing ember storm is reckless.

4.2.1.3 Winds & Topography, Page 115 As discussed on pages 5 & 6 of my comments, while knowing where the prevailing winds come from is useful, it does not mean that the most devastating fire in that area couldn't come from the South or East, as I noted in the research that suggest depending on the location of an approaching Pacific low-pressure system, winds will not be aligned with the typical N/NNW orientation. Instead, these drier east winds have historically led to some of the largest fires in PNW history.

4.2.1.3 Fuels Management…, Pages 115, 116 As discussed on pages 5 & 6 of my comments, fuel management/thinning/treatment can actually exacerbate fire behavior[50] and intensity and should not be used reasoning for lowering fire risk. The literature and past fire behaviors do not support this. Using this argument to justify building in a fire-prone/high-risk environment is not just bad science; it's dangerous to life and property. Please either remove these sections or correct them with the information I shared on Pages 5 & 6.

4.2.1.3 Emergency Access…, Page 117 *"However, the Proposed Project includes emergency services being provided on-site, thereby reducing the risk associated with a single pathway."* This is misleading. Having a single fire station or a couple of sheriff's vehicles will not solve or necessarily reduce risk if the egress route is compromised. It just means they, too, may be endangered with the rest of the resort community stuck up there. Don't allow this misleading information to try and cover up what could be a catastrophic arrangement caused by a single viable egress. Again, the recent examples of the Labor and Sugarloaf fires jumping containment lines were not because of a lack of personnel, but a combo of Red Flag Conditions and terrain. For the safety of first

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[50] Banerjee, T. (2020). Impacts of forest thinning on wildland fire behavior. *Forests*, 11(9), Article 918. https://doi.org/10.3390/f11090918

responders, IC has to pull personnel out of those zones, as there is nothing they can do to stop a rapidly spreading fire in those dangerous conditions. The solution is not more staff, or imaginary "defensive spaces," but adequate and multiple options for egress, or not place thousands of people in harm's way to begin with.

4.2.2.1 Fire Behavior…, Pages 120 - 126 This section tries to evaluate fire risks in the different sectors surrounding the proposed development. It is flawed as it falsely claims things like a fuel break, ski runs, fuel treatments, mastication, etc., will stop fire spread. These are glaring errors, already addressed by the research cited on pages 5 & 6 of my comments, but worth restating here. It assumes fuel breaks will lower the risk[51] of wildfire. This is misleading in two ways. Removing trees from a forest can increase fire severity[52] and can give people a false sense of security, while not increasing safety.

While the details of this topic are highly nuanced, the basic observations are that logging/thinning as a tool for a fire break can 'backfire' by altering the microclimate (hotter, drier, windier conditions), increasing surface fuels with fast drying fine fuels (grasses) which can lead to faster fire spread in open canopies, and higher severity in logged areas. This is backed by research and analysis of even some of our recent fires, like the 2014 Carlton Complex, where it was assessed that intensively managed (thinned/logged) forests burned at higher severity[53] than unmanaged areas due to drier understories and increased wind penetration[54]. The takeaway: logging/thinning can amplify fire behavior under extreme weather.

The other issue is that in an area like Mission Ridge, which regularly experiences moderate to high winds, this greatly increases the ember cast and spot fire

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[51] John Muir Project. (2024). Fuel reduction logging increases wildfire intensity: Fact sheet. https://johnmuirproject.org/wp-content/uploads/2024/04/JMP-fact-sheet-thinning-and-fire-28Feb24.pdf

[52] Thompson, J. R., Spies, T. A., & Ganio, L. M. (2007). Reburn severity in managed and unmanaged vegetation in a large wildfire. *Proceedings of the National Academy of Sciences*, *104*(25), 10743-10748. https://doi.org/10.1073/pnas.0700229104

[53] Zald, H. S. J., & Dunn, C. J. (2018). Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape. *Ecological Applications, 28*(4), 1068–1080. https://doi.org/10.1002/eap.1710

[54] Banerjee, T., Linn, R., Haupt, S. E., & Khanna, V. (2020). Sensitivity of fuel structure and fire behavior to forest thinning in a pine forest: A coupled LES-wildfire simulation approach. Fire Safety Journal, 113, 102976.

potential[5556]. This ember cast erases the protective illusion of "natural fuel breaks" as embers rain down and start fires far (up to 10 miles![57]) in front of the leading body of the fire. Look at the Labor fire where it crossed hundreds of acres of rocky slopes (like Mission's basalt) fields with ease. Those rocky sections did not serve as fire breaks. Depending on the wind, spot fires could propagate miles in front of the main fire. Just as with our recent and ongoing Labor Mountain and Lower Sugarloaf fires, the Incident Commander said that these fires experienced spot fires that were out a mile from the leading edge of the fire. Putting comments like "low risk to evacuation as natural fuel breaks exist" is misleading, but also potentially dangerous. These spot fires could close off potential escape routes. Residents need to know that in a wind-driven fire, in this high-risk fire zone, they should not assume they will be safe because the fire is in one cardinal direction or another.

The last issue with assuming that a fire is one direction or another is that some of the most severe fires in WA State history come from Easterly winds[58]. While Winds from the NW/NNW/N are most common on Mission Ridge, dry easterly winds form when a low-pressure system moves in off the Coast, and Higher Pressure in the center of the state moves to the west, carrying with it low-humidity air[59]. If a fire starts or is propagated during this pattern of easterly winds, egress to the East could be deadly. Depending on the position of the low-pressure center, the winds can change and swirl from almost any direction. You don't get to pick the timing of when a catastrophic fire starts, so pretending you'll know which direction it blows in is not good preparation.

It is arrogant to think that all you need to make this new expansion village safe is enough thinning and the bare minimum of a fire station on site. You don't need to look further than the ongoing Labor Mountain and Lower Sugarloaf Fires in Chelan

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[55] Albini, F. A. (1983). *Potential spotting distance from wind-driven surface fires* (Research Paper INT-309). United States Department of Agriculture, Forest Service, Intermountain Forest and Range

[57] Lareau, N. P. (2025). Plume Dynamics Drive Extreme Long-Range Spotting During California's Dixie Fire. *Journal of Geophysical Research: Atmospheres*, 130(9), e2024JD043167. https://doi.org/10.1029/2024JD043167

[58] Mass, C., D. Ovens, and N. Gilbert, 2025: The Meteorology of Large Wildfires over Western Washington and Oregon. *Weather and Forecasting*, **40**(11), 2201–2220. https://doi.org/10.1175/WAF-D-25-0020.1

[59] Cramer, O. P. (1957). *Frequency of dry east winds over northwest Oregon and southwest Washington* (Research Paper No. 24). Pacific Northwest Forest & Range Experiment Station, U.S. Department of Agriculture Forest Service.

County. Both of these fires were the highest level of priority in the nation, receiving a Complex Incident Management Team (Type 1). Even with thousands of firefighters, endless air support, numerous roads, transmission lines as wide as ski runs, and back-burned fire breaks, the fire jumped across all of these, and there was nothing any firefighters could do. These fires could not be stopped in Red Flag Conditions, and were only slowed down and able to be steered in optimal conditions. Also, during those wind-driven runs, the Incident Command needs to call firefighters out of harm's way so they aren't consumed by flames. In a wind-driven fire on Mission Ridge, it would not be safe for the IC to send firefighters to protect lives and structures, especially with only one road in and out.

Relying on "fire breaks" is delusional. Fire doesn't care if you label your efforts fuel treatment, thinning[60], etc. Removing trees opens the canopy and allows sunlight to reach the forest floor, where grasses and other flammable fuels will grow. The open forest dries quicker and allows for higher winds. You don't need trees to have a large fast fast-moving fire. On the 2025 Lower Sugarloaf Fire, the fire spread rapidly across hundreds of treeless acres. The 2025 Labor Mountain Fire spread across acres of open rocky terrain with little to no trees. The 2013 Colockum Tarps, 2014 Carlton Complex, 2015 Sleepy Hollow, 2020 Cold Springs, 2021 Red Apple Fire, and so many more show that you don't need trees to have a fire spread rapidly, threaten, and burn down homes, and pose a danger to humans. This argument needs to be removed as it is illogical and unscientific.

Taking a deeper look at the Labor Fire, which had given firefighters a month's prep before it reached Blewett Pass/Hwy 97. Despite plenty of time for fuel prep, mastication, endless firefighting resources, and a wide-paved road with options for firefighter egress (not a dead-end), the fire still jumped the Highway 97. Not only did the fire cross the highway, but it crossed it continuously over a span of 4 miles. So, nowhere along this four-mile stretch of Highway 97 did the "fire break" of a road, or the presence of firefighters, water trucks, hoses, etc., suffice to stop the advance of the fire. (It should be noted that Highway 97 is wider than the proposed access road and the current Mission Ridge road, with much more shoulder work that has removed vegetation as well.) So please don't use the flawed logic that the road network[61], ski runs, or fuel breaks will do anything. These are Band-Aids, and really an effort by the

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[60] Banerjee, T. (2020). Impacts of forest thinning on wildland fire behavior. *Forests*, 11(9), Article 918. https://doi.org/10.3390/f11090918

[61] K Bowring, S. P., Li, W., Mouillot, F., Rosan, T. M., & Ciais, P. (2024). Road fragment edges enhance wildfire incidence and intensity, while suppressing global burned area. *Nature Communications*, *15*, 9176. https://doi.org/10.1038/s41467-024-53460-6

developer to lull the County, investors, and Mission Ridge Skiers into thinking that this project to put thousands of people into the center of a dry, steep, windy, fire-prone landscape is safe. Please take this misleading language out of the DEIS.

"**Aerial resources would be able to effectively deploy water or retardant** either directly on the fire or to further reinforce the internal **road network's fuel break capabilities**." As we saw in both the recent Labor and Sugarloaf fires, there were many, many days that aerial resources were not able to fly due to high winds and smoke obscuring the terrain, making it too dangerous to fly. Take this misleading language out.

None of this is to say that the Applicant shouldn't put forward robust "FireWise" strategies. Not having trees close to homes, using fire-resistant materials, using prescribed burns[62], and having an on-site fire station are all good ideas, and I encourage them to include all of these in their fire plan and more. However, trying to hide behind those practices and pretending they will lower the risk of a catastrophic fire is not accurate; it's misleading, and could lead to a very dangerous outcome where people's lives are at risk if they are lulled into thinking it's safe when it is not.

MISSING FROM FIRE RISKS

Missing from this fire risk chapter is the increased fire risk that this development would pose to surrounding communities: Squilchuck, Stemilt, Malaga, Colockum, Tarpiscan, etc. Currently, no one lives year-round in the Squilchuck basin above 3,700 feet in elevation. This development would add thousands of people living up to 5,000 feet in elevation. This would increase the probability of a human-caused fire[63] into an entirely new zone that has not burned in many decades. This historically unburned area is ripe for a large, catastrophic fire, and recent beetle kill and drought stress[64] have killed and weakened many trees on Mission Ridge. These new (in the past year largely) beetle kill outbreaks need to be studied and quantified to understand how they shape the fire danger on Mission Ridge. Past assessments do not include the most recent forest health picture up there and need to be updated to reflect not only the best available science, but also for human safety concerns. Knowing that there are

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[62] Gordon, L., Evans, M.J., Zylstra, P., & Lindenmayer, D.B. (2025). Trends and Gaps in Prescribed Burning Research. *Environmental Management*, Jan 2025

[63] Balch, J. K., Bradley, B. A., Abatzoglou, J. T., Nagy, R. C., Fusco, E. J., & Mahood, A. L. (2017). Human-started wildfires expand the fire niche across the United States. *Proceedings of the National Academy of Sciences*, *114*(11), 2946-2951. https://doi.org/10.1073/pnas.1617394114

[64] Gnam, S., & Rolfs, M. (2025). 2024–2025 Trail Camera Wildlife Survey: Friends of Mission Ridge – Wildlife Survey in the Stemilt-Squilchuck Basins, https://www.friendsofmissionridge.com

very new sources of dry and dead fuels in the forest changes the fire risk equation. The DEIS needs to contain a study that factors in the new reality on the ground and forecasts its impacts into the future for proper emergency management planning to keep the community safe from fire. The probability of new ignition and impacts to each of these communities needs to be studied and disclosed in the DEIS. This new fire assessment should also be weighed in light of climate change, which looks to exacerbate fire danger in the region.

Another factor not considered in the Fire Section is the impact that having a high-density urban development would have on prescribed burns and natural burn cycles. In a rural setting (RR20), it wouldn't be unreasonable to either try to protect intermittent structures, evacuate people, etc. However, in high-density urban style, like this development structure, protection and evacuation are almost impossible to carry out. What this leads to is a lack of allowing nearby and necessary prescribed burns and/or natural fire cycles. This is in turn, will impact a larger landscape by withholding fire as a treatment and a natural part of forest ecology. These impacts also need to be studied in this DEIS.

4.2.2.2 Secondary Access, Pages 126 - 131

Page 126 Torrence Engineering developed five route options based on minimum design criteria, which specified the road must be 28 feet wide, paved, have a maximum slope of 8-12 percent, and be open and maintained year-round.

The secondary access/egress needs to be studied and re-engineered to be able to meet the criteria of the TIA traffic numbers. 28 feet wide does not meet the level of service of the traffic described in the TIA. Please redesign the 5 route options to include the updated specifications consistent with WA State DOT design for roads/highways that would have the anticipated level of service described in the TIA.

Page 127 All route options would rely, at least in part, on crossing property that is not owned by the Applicant, which provides complicating access, permitting, and ownership factors through which the reasonableness of the alternative should be considered.

This argument should be removed as the preferred route crosses public land (Forest Service) and will require an easement across "property that is not owned by the Applicant." It is more reasonable to explore options where existing road beds are (from the Stemilt Basin), as the Applicant has had heavy machinery and logging equipment drive onto Section 19 from the Stemilt side. Somehow, the Applicant was able to arrange that. This is a disingenuous argument that should be removed from the DEIS, and it has no merit.

Page 130, Chelan County development standards (Chapter 15.30 CCC) include requirements for connectivity and secondary access in new development. As described in CCC 15.30.230(4), interconnectivity of communities is a recognized objective and priority of Chelan County, and secondary access is required for projects that are projected to have more than 400 average daily trips, a condition which the Proposed Project meets.

This section should be highlighted, made big and bold, as it is a key point that secondary access for this level of traffic is necessary.

Page 130, however, the Applicant is proposing that secondary access is impractical. When secondary access is impractical, "then wider road widths to assure maneuverability of emergency vehicles shall be allowed."

What is more impractical? Cutting a new road with 200' road cuts (~25-acres of damage) across public land–where the Applicant doesn't have an easement? Or using existing road beds that have been recently used to access the property with logging trucks and heavy machinery, where the Applicant has already gained permission to access Section 19. While it may be inconvenient to acknowledge this truth, it is not impractical. Using the reasoning that secondary access is "impractical" is dishonest. The only thing impractical about road access is slicing a road across public land where no road is needed.

Also, the Applicant doesn't seriously commit to the "impractical" argument because they don't offer a wider road width for the "one-way" access road going up Squilchuck/Mission Ridge Road and across Forest Service Land. The road width they propose, 28 feet, is exactly how wide the current roads are. Additionally, the access road they propose across Forest Service road would be the same width (not wider than 28 feet and would be insufficient to meet the requirements of the TIA anticipated traffic, and for the claim that secondary access is impractical, thereby requiring a wider single road. This shows that the Applicant is either not serious about these claims or needs to take a closer look at what the existing conditions are, what the county code is, and what their engineers have come up with.

Page 130-131 key consideration for the secondary access requirement hinges on whether or not said access is "practical" under CCC. For purposes of the reasonable alternatives analysis required by WAC 197-11-440(5), Chelan County also must consider the "reasonable" standard required under SEPA. Per WAC 197-11-786, a Reasonable Alternative means "an action that could feasibly attain or approximate a proposal's objectives, ***but at a lower environmental cost or decreased level of environmental degradation.*** *Reasonable alternatives may be those over which an agency with jurisdiction has authority to control impacts, either directly or indirectly through the requirement of mitigation measures." For this DEIS, the review also must be informed by consideration of whether a given alternative is on the same site as the proposal. WAC 197-11-440(5)(d).*

What causes more environmental degradation?

A. Using existing roads to access a property
B. Cutting a new road across a very steep forested slope (over 25 acres of impact, with 200-foot road cuts–though likely need to be larger as the Applicant did not factor in proper levels of traffic into road design for the proposed width of the road, or the fact that they claim to lack secondary access).

What is reasonable is to have the Applicant use what is already available, which is the existing road system coming from the Stemilt Basin. The Applicant has proved, as recently as last year, that these roads are not only passable, but that access can be granted by the different ownership the road passes through. The Applicant had logging trucks and heavy machinery come in and out of his property on these roads (see the driving heavy machinery through the wetlands on Section 19 of the Non-Compliance doc).

Page 131. In their evaluation, AEGIS provided its analysis of relevant CCC to support this assertion. In part, AEGIS concludes: "[…] consistent with CCC Section 15.30.230(4)(B), we find secondary access is not practical. Additionally, given the unusual circumstances of the site, such as the remoteness of the development and extreme terrain, no logical location for access for future connectivity with a The surrounding property is apparent. Therefore, consistent with CCC Section 15.30.230(4)(B), interconnectivity is not provided, and Section 15.30.230(4)(A) should not apply." EcoSign (2022) and AEGIS (2023) also determined that secondary access was not practical, due mostly to the volume of excess cut material that would need to be hauled off-site, and many of the underlying properties not being owned by the Applicant. AEGIS further notes that Options 2-5 all loop back to Squilchuck Road, so do not provide a wholly separate and distinct access route, but instead only partially accomplish the secondary access goal. With Option 1, they note that the route is shown to join an extension of Upper Wheeler Road on State-owned lands. "From that intersection down to Loop Road, the existing 1.65 miles of the road is unpaved and appears to ***involve at least one turn with an inside radius of less than 20 feet.*** *Therefore, we find the route as presented in Option 1 would not achieve code compliance." Finally, AEGIS also suggests that the Fire Protection Plan should be considered toward the assessment of secondary access.*

This turn with the inside radius of less than 20 feet is not an unsolvable problem. This has an easy road engineering solution, on a slope that is not that steep (especially when compared to the myriad of engineering issues that would come from a road with over 200ft slope cuts: landslides, rockfall, avalanches, etc.). In fact, widening this one turn to meet code requirements would be far easier and cause far less environmental damage than trying to cut/widen a new access road across a steep slope that has near-vertical sections. This bad-faith argument should not be entertained in the DEIS as it is misleading and misrepresents the actual options available (and erases the lowest-hanging fruit of alternatives, which is required by SEPA). To assume that this one turn is a deal breaker and remove it from the Alternative list is a serious dereliction of duty by AEGIS. I suggest that the County

request that a new firm do these assessments, a firm that will apply the rigor and honesty that is needed for a fair SEPA assessment.

3. The greatest risk to the public from lack of secondary access would occur during a wildfire. However, the greatest wildfire risk is unlikely to create a critical egress risk.

See the above comments about the error in using wind direction as predictive of the probability of catastrophic fire. Remember, in high winds, ember cast can come in from any direction, making the risk quite high. Having one road into the development could cause a bottleneck for escape, for emergency vehicle access, and could prove deadly if the route is blocked and residents are trapped. However, fire risk is not the only issue of having one access road, particularly the access road that the Applicant is proposing. The access road across the steep slope from the Ski Area parking lot to Section 19 would pose unique risks as a sole ingress/egress. Earthquakes, landslides, and avalanches would all make that steeper terrain (200ft + road cuts) a far more dangerous route and susceptible to obstruction, closing off access, than the mellower route option using existing road beds into the Stemilt basin. The Stemilt basin option would have almost no overhead hazards and does not cross as steep slopes, eliminating avalanche risks and almost all landslide risks. If public safety is a concern, then the Stemilt basin route would not only be safer, it would spread the traffic from the Squilchuck basin across to the Stemilt basin, would could be lifesaving in a natural disaster.

4.2.3.2 Impacts…Fire…Vegetation.. Defensible Space, Pages 135 - 140

It is foolish and dangerous to think that all you need to make this new expansion village safe is enough thinning, fuel breaks, mastication, etc.. You don't need to look further than the 2025 Labor Mountain and Lower Sugarloaf Fires in Chelan County. Both of these fires were the highest level of priority in the nation, receiving a Complex Incident Management Team (Type 1). Even with thousands of firefighters, endless air support, numerous roads, clear-cut transmission lines as wide as ski runs, and back-burned fire breaks, the fire jumped across all of these, and there was nothing any firefighters could do. These fires could not be stopped in Red Flag Conditions, and were only slowed down and able to be steered in optimal conditions. Also, during those wind-driven runs, the Incident Command needs to call firefighters out of harm's way so they aren't consumed by flames. In a wind-driven fire on Mission Ridge, it would not be safe for the IC to send firefighters to protect lives and structures, especially with only one road in and out.

Relying on "fire breaks, fuels thinning, etc," is delusional. Fire doesn't care if you label your efforts fuel treatment, thinning[65], etc. Removing trees opens the canopy and allows sunlight to reach the forest floor, where grasses and other flammable fuels will grow. The open forest dries quicker and allows for higher winds. You don't need trees to have a large fast fast-moving fire. On the 2025 Lower Sugarloaf Fire, the fire spread rapidly across hundreds of treeless acres. The 2025 Labor Mountain Fire spread across acres of open rocky terrain with little to no trees. The 2012 Table Mountain, 2013 Colockum Tarps, 2014 Carlton Complex, 2015 Sleepy Hollow, 2020 Cold Springs, 2021 Red Apple Fire, and so many more show that you don't need trees to have a fire spread rapidly, threaten or burn down homes, and pose a danger to humans. This argument needs to be removed as it is illogical and unscientific.

Another data point to examine is the fire behavior of the 2012 Table Mountain Fire. This fire crossed large vegetation-free zones of basalt on the SW flank of Mission Ridge and burned right to the ridge crest. Ember cast is a far more important variable to consider than "fuel breaks." In an area like Mission Ridge, where high and gusty winds are common, ember cast will likely be the deciding factor on fire spread, not "fuel thinning."

Taking a deeper look at the Labor Fire, which had given firefighters a month's prep before it reached Blewett Pass/Hwy 97. Despite plenty of time for fuel prep, mastication, endless firefighting resources, and a wide-paved road with options for firefighter egress (not a dead-end), the fire jumped the highway. Not only did the fire cross the highway, but it crossed it over a span of 4 miles. So, nowhere along this four-mile stretch of Highway 97 did the "fire break" of a road, or the presence of firefighters, water trucks, hoses, etc., suffice to stop the advance of the fire. (It should be noted that Highway 97 is wider than the proposed access road and the current Mission Ridge road, with much more shoulder work that has removed vegetation as well.) So please don't use the flawed logic that the road network[66], ski runs, or fuel breaks will do anything. These are placebos and really an effort by the developer to lull the County, investors, and Mission Ridge Skiers into thinking that this project to put thousands of people into the center of a dry, steep, windy, fire-prone landscape is safe. Please take this misleading language out of the DEIS.

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[65] Banerjee, T. (2020). Impacts of forest thinning on wildland fire behavior. *Forests*, 11(9), Article 918. https://doi.org/10.3390/f11090918

[66] K Bowring, S. P., Li, W., Mouillot, F., Rosan, T. M., & Ciais, P. (2024). Road fragment edges enhance wildfire incidence and intensity, while suppressing global burned area. *Nature Communications*, *15*, 9176. https://doi.org/10.1038/s41467-024-53460-6

4.3 Visual, Pages 147 - 159

The KOPs should be expanded to include neighborhoods like Fancher Heights, Badger Mountain, Burch Mountain, Airport area, and the Ellensburg area **(WAC 197-11-060.4(b)).** The current KOP locations seem to be quite low in elevation and don't represent the full visual impacts that this development would pose. Please include places that are higher up and more accurately show the impact and are not obscured by the foothills or existing light pollution in town.

The impacts[67] of light and glare are not studied in how they will impact the areas' dark skies of places outside of the Wenatchee area and the greater astronomy community (places like the Manastash Stash Ridge Observatory). I've enjoyed stargazing and watching meteor showers and aurora lights from places such as Naneum Ridge, Little Annapurna, Badger Mountain, Burch Mountain, Entiat Ridge, and Wenatchee Mountain. In all of these places, additional year-round light pollution and night skiing lights would diminish the opportunity to see the beauty of the night sky. The Visual Impacts section needs to be updated to reflect the broader harm that this development would cause not just to Wenatchee area residents but to the larger regional footprint.

Additionally, the impacts of light pollution on wildlife[68] are not seriously considered in the DEIS and must be addressed. Light pollution harms bats[6970], insects, migratory birds[71], and many mammal species. Mission Ridge is home to many species, year-

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[67] Candolin, U., & Filippini, T. (2025). Light pollution and its impact on human health and wildlife. *BMC Environmental Science*, 2, Article 1. https://doi.org/10.1186/s44329-025-00017-7

[68] Longcore, T., & Rich, C. (2004). Ecological light pollution. *Frontiers in Ecology and the Environment*, 2(4), 191–198. https://doi.org/10.1890/1540-9295(2004)002[0191:ELP]2.0.CO;2

[69] Stone, E. L., Harris, S., & Jones, G. (2015). Impacts of artificial lighting on bats: A review of challenges and solutions. *Journal of Mammalogy*, Article S1616-5047(15)00023-3. https://doi.org/10.1016/j.mambio.2015.02.004

[70] Seewagen, C. L., & Adams, A. M. (2021). Turning to the dark side: LED light at night alters the activity and species composition of a foraging bat assemblage in the northeastern United States. *Ecology and Evolution*, *11*(10), 5635-5645. https://doi.org/10.1002/ece3.7466

[71] Horton, K. G., Buler, J. J., Anderson, S. J., Burt, C. S., Collins, A. C., Dokter, A. M., Guo, F., Sheldon, D., Tomaszewska, M. A., & Henebry, G. M. (2023). Artificial light at night is a top predictor of bird migration stopover density. *Nature Communications*, *14*, 7446. https://doi.org/10.1038/s41467-023-43046-z

round and migratory[72] , that would be negatively impacted by this added light pollution[73]. The impacts of this need to be studied and addressed in the DEIS.

4.4.1 Land & Shoreline Use, Pages 161 - 162

gated, administrative access road originating from the existing parking lot…

This is not accurate. The gated road is an illegal road, cut by the Applicant without a special use permit (see attached NON-COMPLIANCE document). The DEIS shouldn't mislead and cover up both the origin and the current state of that road. It is not an administrative road as it was never permitted, and it is still unauthorized. However unsavory it may be for the Applicant, the truth about this road must be included in the DEIS, and the fact that the Applicant has not done any restoration or efforts to rectify their illegal activity should be noted, as they are relevant to the impacts that should be described in the DEIS as the existing baseline conditions. The Applicant's role in carving the illegal road is also relevant, as they will help the public and agencies in determining how well future mitigation efforts will be followed by the Applicant.

4.4.1 WDFW & DNR Exchange, Page 162

This section does not reflect the current status of the "land exchange" or the most recent comments from WDFW staff regarding this issue. At a September 27th, 2025, public hearing, WDFW noted that the land swap is not being further explored as costs to the agency would be close to one million dollars. A price that, in addition to other factors, makes the land swap untenable and not further explored. It was also discussed that to do this swap, there would need to be WDFW commission support. Given the following factors, it is highly unlikely that a land swap would ever occur:

1. The political climate and bipartisan support for public lands are high. This is especially true for sportsmen & women who would not look kindly on losing a section of land purchased from Pittman-Robertson Act funds, purchased for the explicit use of wildlife conservation, habitat preservation, and hunting use.
2. The Friends of Mission Ridge Trail Camera Survey found that, contrary to claims that Section 25 is degraded habitat, it's a vibrant and critical part of the Colockum

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[72] Burt, C. S., Kelly, J. F., Trankina, G. E., Silva, C. L., Khalighifar, A., Jenkins-Smith, H. C., Fox, A. S., Fristrup, K. M., & Horton, K. G. (2023). The effects of light pollution on migratory animal behavior. *Trends in Ecology & Evolution*, *38*(4), 355-368. https://doi.org/10.1016/j.tree.2022.12.006

[73] Van Doren, B. M., Horton, K. G., Dokter, A. M., Klinck, H., Elbin, S. B., & Farnsworth, A. (2017). High-intensity urban light installation dramatically alters nocturnal bird migration. *Proceedings of the National Academy of Sciences*, *114*(42), 11175-11180. https://doi.org/10.1073/pnas.1708574114

Elk and Wenatchee Mountains Mule deer population. Additionally, it appears nesting Golden Eagles and Goshawks are in the area. This section has likely become more valuable as a habitat as time has gone on.

3. The land swap would require a transfer of equivalent habitat. Section 25 contains threatened Whitebark Pine, steep, cool north-facing forests, many springs, and elk wallows. The proposed DNR parcels within the 2012 Table Mountain burn scar are far more homogeneous, south-facing, and lack many of the key habitat features that make Section 25 a unique and important wildlife habitat.

"The local community has stated, in no uncertain terms, that protection of water resources in this area is a paramount concern and the conservation of wildlife resources – including essential habitat – is a high priority supported by a variety of interests and critical to maintaining the way of life in the community. As a result of Their hard work, four sections (approximately 2,560 acres) adjacent to or near the proposed…project were purchased by the Washington State Department of Wildlife for the sole purpose of protecting and conserving the valuable habitat from conversion and development, interruption of wildlife corridors, human disturbance, noise pollution, and the destruction of wildlife habitat.[74]"

4.4.1 Stemilt-Squilchuck Community Vision Report, Page 165
The key findings of this report are: **New development–especially in the upper watershed–will increase pressure on wildlife, heighten wildfire risk, and negatively impact water resources.**

"The upper watershed cannot support urban-level development."

The values, findings, and guiding principles of the Stemilt-Squilchuck Community Vision Report are in order of priority:

1. protecting water resources;
2. conserving wildlife resources; and
3. maintaining and enhancing recreational access.

However, later in section **4.4.3.2 Impacts**…the Applicant's consultants came to this conclusion in the DEIS: *"The Proposed Project would be consistent with the vision and recommendations of the Stemilt-Squilchuck Community Vision Report related to protecting water and wildlife resources and recreational access."* - page 170 DEIS.

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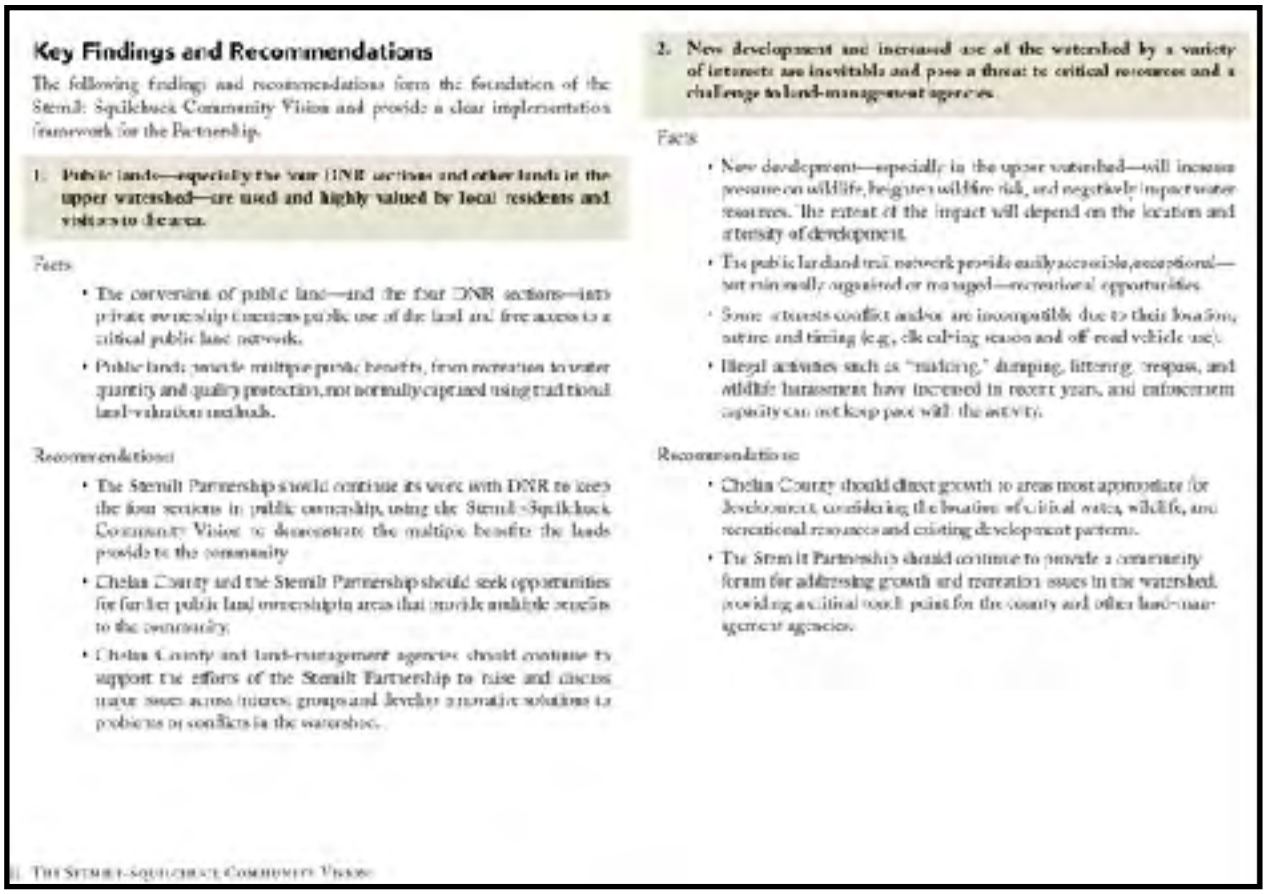
[74] 2019 letter from Attorney, Claudia Newman, on behalf of Wenatchee Sportsman's Association to Chelan County regarding the adjacent parcel, Section 17, with similar wildlife concerns and observations as this Section 19 development.



Key Findings and Recommendations

The following findings and recommendations form the foundation of the Stemilt-Squilchuck Community Vision and provide a clear implementation framework for the Partnership.

1. Public lands—especially the four DNR sections and other lands in the upper watershed—are used and highly valued by local residents and visitors to the area.

Facts

- The conversion of public land—and the four DNR sections—into private ownership constrains public use of the land and free access to a critical public land network.
- Public lands provide multiple public benefits, from recreation to water quantity and quality protection, not normally captured using traditional land-valuation methods.

Recommendations

- The Stemilt Partnership should continue its work with DNR to keep the four sections in public ownership, using the Stemilt-Squilchuck Community Vision to demonstrate the multiple benefits the lands provide to the community.
- Chelan County and the Stemilt Partnership should seek opportunities for further public land ownership in areas that provide multiple benefits to the community.
- Chelan County and land-management agencies should continue to support the efforts of the Stemilt Partnership to raise and discuss major issues across interest groups and develop innovative solutions to problems or conflicts in the watershed.

2. New development and increased use of the watershed by a variety of interests are inevitable and pose a threat to critical resources and a challenge to land-management agencies.

Facts

- New development—especially in the upper watershed—will increase pressure on wildlife, heighten wildfire risk, and negatively impact water resources. The extent of the impact will depend on the location and intensity of development.
- The public land trail network provides easily accessible, exceptional—but minimally organized or managed—recreational opportunities.
- Some activities conflict and/or are incompatible due to their location, nature and timing (e.g., elk calving season and off-road vehicle use).
- Illegal activities such as "mudding," dumping, littering, trespass, and wildlife harassment have increased in recent years, and enforcement capacity can not keep pace with the activity.

Recommendations

- Chelan County should direct growth to areas most appropriate for development, considering the location of critical water, wildlife, and recreational resources and existing development patterns.
- The Stemilt Partnership should continue to provide a community forum for addressing growth and recreation issues in the watershed, providing a critical touch point for the county and other land-management agencies and agencies.

No where in the findings & recommendations does this report endorse this kind of urban-style development in the upper basins. Page 8, Stemilt-Squilchuck Community Vision Report

Re-read the quotes (and priorities) from above, and tell me how you can say that is consistent. This is ludicrous, and whichever consultant wrote this section should be removed from the DEIS process. This is not a simple mistake or misreading; it's a complete misrepresentation to fit the Applicant's goal, while ignoring the will of the community partnership. The county cannot allow this kind of misrepresentation in a DEIS.

This development is clearly proposing urban-level density. And that urban-level development is not approved in the Stemilt-Squilchuck Community Vision Report. "Maintaining and enhancing recreation access" could be stretched to fit parts of this project, but not at the expense of water and wildlife. Also, enhancing recreation access cannot be done at the expense of degrading current recreation, which I lay out in the recreation section. It's deemed unacceptable and inconsistent with the report. Not only is this contrary to the findings of this report, but also to the hard work and

collaborative efforts of the Stemilt Partnership. Please correct this section to reflect the key findings and recommendations from this report:

FINDINGS:
"New development and increased use of the watershed by a variety of interested are inevitable and pose a threat to critical resources and a challenge to land-management agencies."

RECOMMENDATIONS:
"Chelan County should direct growth to areas most appropriate for development, considering the location of critical water, wildlife, and recreational resources, and existing development patterns."

None of these finding and recommendations from the Vision Report give a green light for a development such as this; in fact, they suggest against it. This development would go against the will of groups like the Stemilt Partnership, collaborative efforts that have decided that no one user group should monopolize resources in the Stemilt-Squilchuck; instead, careful and thoughtful use of resources is warranted, as all groups are impacted by others' actions. For Mission Ridge to abandon the collaborative in pursuit of their own selfish interests erodes community trust. It's a further insult to the community to then pretend to have the endorsement from the very institutions they are burning.

4.4.1 Critical Areas, Page 168 - as required by the WA State GMA

"…the county has determined that mule deer and elk winter range and migration corridors are habitats of local importance"[75] -11.78.010 Designation and identification. Chapter 11.78 FISH AND WILDLIFE HABITAT CONSERVATION AREAS OVERLAY DISTRICT (FWOD)

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[75] Chelan County Code, Title 11.78: Fish and Wildlife Habitat Conservation Areas Overlay District (FWOD). Code Publishing Company, current through Resolution 2025-76 (passed September 9, 2025). Retrieved from https://www.codepublishing.com/WA/ChelanCounty/html/Chelco11/Chelco1178.html

Given the findings of the recent FOMR Trail Camera Survey[76], I recommend that Chelan County consider either immediately:

1. Conducting further research to understand the extent of wildlife migration use and wintering use in these sections over the course of a multi-year study to rule out seasonal variability.
2. Designation of Sections 19, 24, 25, & 30 as a critical area - FWOD per the evidence provided in the FOMR survey

4.4.3.2 Zoning, Planning, & Policy Consistency, Pages 170 - 173

4.4.3.2 WRIA 40A, Page 171

This is a cherry-picking of the WRIA report and does not comport with the on-the-ground reality of water users in the basin. WRIA-40A actually says **the basin's water is 50% over-allocated**. Other evidence points to this, too, as the Beehive Irrigation District has made irrigation cuts nine out of the past ten years, and a 75% irrigation cut in 2025. Does this suggest that there is abundant water in the basin?

Using snow-making as a reason that it will be additive is problematic. PFAS were found within Mission Ridge's current ski run (see attached PFAS report). If snowmaking is spreading these PFAS, then quality issues would trump quantity. Spreading PFAS would be detrimental to the entire watershed water supply for domestic and irrigation users. This PFAS problem needs to be studied and resolved before the Applicant can claim that snow-making is a positive to the water equation.

4.4.3.2 Project Area Character, Pages 172 - 173

Maintain rural character while allowing development to take advantage of natural amenities. The perceived "urban-type" character of the Proposed Project would be offset by preservation of open space, clustering of the most intensive activities at the Village Base area, design of human-scale buildings, and an architectural style appropriate to the mountain setting, and other measures required by Chelan. County's MPR code.

This is a very subjective section with some nonsensical language that should be removed. 'Maintain rural character' while allowing 'urban type' development? "Human-scale building" as opposed to…elephant-sized? Some of the buildings proposed by the Applicant are far larger than human-scale and appear to be larger than the county code would allow for. These building heights need to be identified clearly in the DEIS. This project does nothing to enhance or maintain rural character–

[76] Gnam, S., & Rolfs, M. (2025). 2024–2025 Trail Camera Wildlife Survey: Friends of Mission Ridge – Wildlife Survey in the Stemilt-Squilchuck Basins, https://www.friendsofmissionridge.com

it degrades it with urban-style development. No amount of open space can offset the impacts of traffic and the thousands of people, noise, light pollution, etc, that would come with this development. Degrading the character of the area is not new with these kinds of developments/proposals. A meta-analysis of 24 ski area expansions showed that:

"impacts to community structure that were perceived to be undesirable by current residents; an erosion of community identity; and a loss of sense of place." -*Social Impacts of Expanded Ski Resort Operations on Forest Service Lands*[77]

This research-backed statement goes against the subjective claims made in this section, with no evidence provided to support it. Expansion efforts like this consistently degrade the character of the area, which is not consistent with MPRs.

Table 4.4-1. Summary of Proposed Project Consistency with Chelan County Comprehensive Plan Goals and Policies for MPRs, Pages 175 - 178
Contrary to what the DEIS portrays, this development would actually go against many of the Land Use Goals in Chelan County's Comprehensive Plan, MPR rules, and the GMA. Chelan County has adopted the GMA, which aims to reduce the environmental impacts on our communities. MPRs can be a sneaky way to get around the GMA. This development doesn't meet the requirements of an MPR and must be evaluated for its impacts with or without MPR designation (as it's not a given at this stage of the DEIS process).

Land Use Goal LU 3: Protect water quality and quantity: "The protection of water quality and quantity is important for public health, the local economy, the environment, and helps to maintain the high quality of life." Policies include supporting watershed plans, monitoring programs, education, enforcement against illegal discharges, and septic system repairs.

Land Use Goal LU 4: Preserve the integrity of significant natural, historic, and cultural features: Encourages compatible development, minimizing impacts to natural/scenic features for aesthetic and environmental benefits.

Environment Element: Aligns with **GMA Goal 10**, protecting critical areas (wetlands, habitats, floodplains, geohazard zones) and open spaces to reduce

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[77] Smith, J. W., & Guadarrama, U. (2020). *Social Impacts of Expanded Ski Resort Operations on Forest Service Lands*. Institute of Outdoor Recreation and Tourism, Utah State University. Prepared for Valley Advocates for Responsible Development, Driggs, ID. Retrieved from https://extension.usu.edu/gnar/news/ski_impact_assessment

pollution, preserve rural character, and support recreation/physical activity (e.g., trails reducing vehicle emissions).

GMA Goal 10: Environment. Protect and enhance the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.

Natural Resource Lands Element: Designates and protects agricultural/forest/mineral lands, promoting conservation easements and best management practices.

"diversity of recreation"

This development would negatively impact the diversity of recreation by a de facto privatization of public lands (turning acres of public land into a developer's driveway) and degrade recreation for non-ski users through increased fees, crowding[78], and loss of backcountry access. This development would take away free public parking spaces at the current ski area and "replace" them with more parking on the Applicant's private land. Not only are these new parking spaces further from places like the existing ski area and Lake Clara TH, but they could also turn their parking into pay-for-park at the discretion of the Applicant. The proposed development would add thousands more visitors who would degrade existing recreation[79] users like hunters, birders, hikers, etc., with more users and disturbance to wildlife. Just the added traffic alone would decrease recreational use on the Squilchuck and Mission Roads by cyclists and roller skiers who favor the road as a safe, low-traffic area to train and play.

CCC 11.89.040(3) "MPRs should not occur in areas…[of]…forest lands of long-term commercial significance…unless a finding can be made that the land is better suited in the long-term for development as an MPR"

The FOMR Trail Camera Survey strongly reinforces the value of keeping Section 19 as Commercial Forest land. All of the existing wildlife habitats (Goshawk nesting, wetlands, elk calving, deer fawning, deer & elk migration, deer & elk wintering, old growth trees, etc.) could be preserved through the current land designation. The FOMR survey shows that development is not compatible and would severely degrade

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[78] Rupf, R., Haegeli, P., Karlen, B., & Wyttenbach, M. (2019). Does Perceived Crowding Cause Winter Backcountry Recreationists to Displace? *Mountain Research and Development, 39*(1), R60–R70. https://doi.org/10.1659/MRD-JOURNAL-D-18-00009.1

[79] Bernard, K., & Minehart, K. (2024). A geospatial analysis of equitable recreation access on public lands: A case study in the American West. OSF Preprints. https://doi.org/10.31235/osf.io/s96bd

critical wildlife habitat. Additionally, keeping the land in commercial timber harvest is in line with the community consensus of the findings of the Stemilt Partnership (Stemilt-Squilchuck Community Vision). The commercial timber designation also extends to fire risks and the utility of having land that can be successfully used for regular prescribed burning to protect the larger community from catastrophic fires, rather than increasing risks by eliminating this option (and adding ignition sources, and another zone that would be incompatible with active fire management).

"protection of critical areas" (CCC 11.78.010)

As stated above[80], it is clear that Section 19 and its relationship to the surrounding public land sections are important to wildlife. This importance has likely only increased as development and conversion fencing off of Section 17 (and many other acres in the Stemilt basin). Wildlife habitat in the Stemilt-Squilchuck is shrinking, and fenced-off areas limit wildlife movement. Migration corridors could have either changed or increased with these recent developments. Chelan County needs to assess the project area in light of the FOMR study.

"preservation of the area's rural character or natural resource uses"

As stated in so many places throughout my comments, this development would only degrade the area's rural character and natural resources.

Policy LU 13.6: Necessary capital facilities, utilities and services may be provided to a MPR by outside service providers, including municipalities and special service districts, provided that all costs associated with service extensions and capacity increases directly attributable to the MPR are fully born by the resort, and provided that such facilities and utilities serve only the MPR and/or urban growth areas.

The Applicant does not appear to want to comply with this policy, as they have not seriously offered to make any material improvement to the Squilchuck/Mission Ridge road–claiming they would widen it to 28 feet, which is the current width. Regarding the access road across Forest Service Section 24, they plan on gaining the easement from the Forest Service, then signing it over to the county, so that the county can deal

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[80] **"…the county has determined that mule deer and elk winter range and migration corridors are habitats of local importance**" -11.78.010 Designation and identification. Chapter 11.78 FISH AND WILDLIFE HABITAT CONSERVATION AREAS OVERLAY DISTRICT (FWOD)

with all the maintenance (which would be substantial, including avalanche control, rock and land slides, etc). Neither of these approaches fits the MPR requirements.

Additionally, the Applicant first provided space for a fire station on the development's property, but no actual fire station. Instead, saying Chelan County could build one if it wanted. How generous! The MPR is clear that the cost must be borne by the Applicant. I'm sure there are more costs that the Applicant is trying to outsource to the Chelan County taxpayers, which should be scrutinized and made clear in the DEIS.

This is just one of many criteria in which the Applicant has shown that this proposed project does not meet MPR status.

5.1 Air - Quality & Greenhouse Gas Emissions, Pages 180 - 184
This section is quite dismissive of the impacts of this project on air quality and greenhouse gas emissions (GHG). It appears that these DEIS assessments need to be redone, as the conclusions they come to are not logical and are missing key data required by SEPA.

Missing from this section is an analysis of non-exhaust traffic-related sources of air pollution. "These non-exhaust particles are estimated to contribute almost equally to traffic-related Particulate Matter emissions. Non-exhaust particles can be generated either from non-exhaust sources such as brake, tire, clutch, and road surface wear or already exist in the form of deposited material at the roadside and become resuspended due to traffic-induced turbulence."

The climate chapter in the DEIS states GHGs will increase and then concludes, "overall, the impacts from additional visitation and use of the MPR are anticipated to be minor at the scale of the project."

This conclusion is meaningless as they don't provide a quantitative analysis. Provide a clear, documented GHG inventory (metric tons CO_2e) for: (a) construction (machinery, embodied emissions in materials), (b) operations (building energy, snowmaking energy, lifts, maintenance), and (c) vehicle miles traveled by visitors and employees (the DEIS lists ADT increases but does not translate into CO_2e). If quantification is claimed to be infeasible, the DEIS must explain why and what proxies were used. (DEIS lists ADTs but stops short of converting that to GHGs)

SEPA requires lead agencies to consider the range of probable impacts (including long-term) and to use best available science in the analysis. WAC 197-11-060 requires

impacts “over the lifetime of a proposal” to be considered. Quantification is a standard way to meet that duty when it is reasonably feasible.

Mitigation is vague and non-committal, e.g., "potential" installation of electric vehicle charging stations and solar panels (page 295), with reliance on general permit compliance. No specific, enforceable measures address quantified reductions (e.g., low-emission vehicles, carbon offsets). Adaptation to climate impacts (e.g., reduced snowpack affecting snowmaking/water supply) is noted as beneficial via project features like artificial snowmaking (pages 294-295, 196), but without analysis of resilience under high-GHG scenarios or alternatives.

SEPA requires EISs to discuss mitigation that could reduce significant impacts (WAC 197-11-440), including specific, feasible measures for GHG/climate. The DEIS's deferral to permitting violates SEPA's upfront disclosure requirement, as seen in Lands Council v. Washington State Parks (2008), where vague mitigation was insufficient.

5.2 Groundwater, Pages 185 - 199

Connected surface waters are those in hydraulic continuity with groundwater, meaning that the withdrawal or recharge of groundwater may affect the flow of a surface water body. An affected groundwater boundary does not exist for the proposal in the same way as affected surface water features, which are mapped by federal and state agencies. The full extent of affected groundwater from the proposal can be estimated by starting with the surface water drainage in which the proposal is located and then considering ways in which the proposal might affect subsurface conditions downgradient or downstream.

This section is missing the connection of groundwater underneath the project area and its connection to down-gradient waters emerging on the Kittitas County side. It is quite likely that the aquifer underneath the project area is hydrologically/hydraulically connected to surface waters that emerge on the Kittitas County side of Mission Ridge. This relationship needs to be studied and assessed, as it would be necessary to know the impacts on both wildlife and water users on the Kittitas County side. Furthermore, it illustrates another issue in which Kittitas County government and residents should be fully consulted and apprised of the impacts from this development, though stemming from Chelan County, which would impact their resources and quality of life.

This section seems to ignore the current conditions in the WRIA 40A by not acknowledging the finding that the basin is 50% over-allocated in water resources. This assessment of baseline conditions also tracks with the regular water cuts to senior water rights holders in the Beehive Irrigation District. Somehow, this section

paints a picture that all is well, and taking more water out of the basin would be fine, contrary to the reality on the ground.

5.2 Groundwater & 5.3 Surface Water

Missing from this section are the impacts that this development would have on the overlapping irrigation districts in the region.

The current undeveloped upper basins of the Stemilt-Squilchuck forest help protect water quality in the region. There are 10 irrigation reservoirs and four irrigation districts that service 5,400 acres of farmland. The orchards in the watershed produce 34 million pounds of cherries each year, resulting in $76 million of economic impact. This safeguards over 1,000 seasonal jobs in the orchards. - *2008 WSU economic study, from the 2021 Community Forests Report*

Undercounting wetlands/riparian areas because they are covered by Basalt
An aspen grove growing up through the middle of a barren basalt patch, the sound of gurgling water underneath rocks, but no visible water. The basalt can be many feet thick, insulating cool, moist ground, or covering up riparian/wetland zones from the surface. The presence of all these species shows that there is more than meets the eye and that many places under the basalt may be hiding functional wetlands and streams. Just because you can't see it, doesn't mean it isn't there. The clues are pointing toward valuable water resources that are not being accounted for, and that will be negatively impacted if layers of basalt are scraped away to make smooth surfacing, etc. These basalt areas need to be studied carefully to understand what lies beneath, as the clues of aspen groves and gurgling water, and frog croaks, point to a cool, moist environment, hidden by a blanket of black rocks.

PFAS & Contaminants of Emerging Concern (CECs)[81]
A 2025 soil test from Section 25 on a Mission Ridge Ski Area ski run found high levels of PFAS (see attached PFAS REPORT). These PFAS are likely from ski area activities and could be spreading from soil into plants, animals, groundwater, and surface water. Similar ski-area-related PFAS contamination at Park City made its way

[81] Zahmatkesh, S., Bokhari, A., Karimian, M., Abdul Zahra, M. M., Sillanpää, M., Panchal, H., Alrubaie, A. J., & Rezakhani, Y. (2022). A comprehensive review of various approaches for treatment of tertiary wastewater with emerging contaminants: What do we know? *Environmental Monitoring and Assessment*, *194*(12), 884. https://doi.org/10.1007/s10661-022-10503-z

into the area's aquifers[82]. If PFAS contamination is linked to snowmaking[83] , then this project would have a dramatic impact on both surface waters and groundwater. The DEIS needs to:

1. Describe baseline conditions. What is the current PFAS situation at Mission Ridge, in the project area, and how widespread is the contamination? Is it limited to ski runs? Is it found in the snowmaking reservoir? Is it being spread through other channels? Can it be detected in snowmelt? Surface waters? Is it being ingested by plants or wildlife in the area?
2. Describe what future snowmaking, ski area use would do in spreading PFAS, and what mitigation the Applicant would offer to combat the spread of PFAS from harming plants, wildlife, and water resources in the Stemilt-Squilchuck.

Impacts from LOSS[84]/Wastewater

Contaminants of Emerging Concern (CECs)[85] are contaminants, both natural and synthetic, that may cause ecological or human health effects and are not widely regulated[86]. CECs found in wastewater include, but are not limited to, pharmaceuticals, personal care products (e.g., synthetic fragrances, antibacterial compounds), plasticizers, food additives, flame retardants, microparticles, and per- and polyflouryl alkyl substances (PFAS).

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[82] Jag, J. (2024, April 15). Ski wax contaminated Park City's aquifers with 'forever chemicals.' It could cost millions to clean up. *The Salt Lake Tribune*. https://www.sltrib.com/news/environment/2024/04/15/skis-snow-forever-chemicals-water/

[83] Carlson, G. L., & Andersen, M. (2025). Tracking environmental contamination from multiple sources of per- and polyfluoroalkyl substances. *Environmental Research*, *276*, 121470. https://doi.org/10.1016/j.envres.2025.121470

[84] Wilschnack, K., Cartmell, E., Yates, K., & Petrie, B. (2024). Septic tanks as a pathway for emerging contaminants to the aquatic environment–Need for alternative rural wastewater treatment? *Environmental Pollution*, *362*, 124988. https://doi.org/10.1016/j.envpol.2024.124988

[85] Zahmatkesh, S., Bokhari, A., Karimian, M., Abdul Zahra, M. M., Sillanpää, M., Panchal, H., Alrubaie, A. J., & Rezakhani, Y. (2022). A comprehensive review of various approaches for treatment of tertiary wastewater with emerging contaminants: What do we know? *Environmental Monitoring and Assessment*, *194*(12), 884. https://doi.org/10.1007/s10661-022-10503-z

[86] Bothfeld, F. (2021). *Contaminants of emerging concern and wastewater treatment* (Publication No. 21-10-006). Washington State Department of Ecology. https://apps.ecology.wa.gov/ecy/publications/summarypages/2110006.html

The assumption that treated water percolating into the soil from either LOSS or Wastewater systems[87] would be clean is erroneous and goes against new research[88]. Therefore, the assumptions in these sections that there would be no significant impact on the ground and surface waters are false. The applicant needs to provide mitigation of these substances (PFAS, pharmaceuticals, etc.) from contaminating the environment.

The 1986 FEIS from the Constellation Resort (also proposed on Section 19) found that the soils were not conductive to Large-Onsite-Septic Systems (LOSS) and that a Wastewater Treatment Plant (WWTP) was not acceptable as the flows in the Squilchuck Creek were not sufficient to dilute affluent. The soil hasn't changed since then, and Squilchuck Creek likely has less flow than in the 1980's. This DEIS is dismissive of these findings.

Missing Data from 5.3 Surface Waters

It appears there is a missing wetland on Section 19, as described and shown in a drone photograph in the FOMR Trail Camera Survey. Additionally, there is a perennial non-fish-bearing stream not shown on any maps on Section 30 that should be surveyed and included in this DEIS assessment.

The wetlands on Section 19 that are slated to be filled in and destroyed by the Applicant are known amphibian breeding ponds (before the Applicant's ownership of Section 19, direct observations were made that they were used by species of frogs for breeding). With nearby sightings of Western toads, salamanders, and a possible Columbia spotted frog at Wheeler Reservoir, more research is needed to understand which species of amphibians are using these wetlands to fully understand the impacts and inform mitigation.

5.4 Plants & Animals, Page 213 - 239

Overview

The assessment of impacts to Plants & Animals as described in this section is woefully inadequate. Anemic at best, deceptive at worst. According to SEPA laws,

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[87] Arvaniti, O. S., Fountoulakis, M. S., Gatidou, G., Kalantzi, O., Vakalis, S., & Stasinakis, A. S. (2024). Perfluoroalkyl and polyfluoroalkyl substances in sewage sludge: Challenges of biological and thermal treatment processes and potential threats to the environment from land disposal. *Environmental Sciences Europe*, *36*(1), 1-16. https://doi.org/10.1186/s12302-024-01031-3

[88] Monk, J. R., Hooda, P. S., Busquets, R., & Sims, D. (2025). Occurrence of pharmaceuticals, illicit drugs and PFAS in global surface waters: A meta-analysis-based review. *Environmental Pollution*, *378*, 126412. https://doi.org/10.1016/j.envpol.2025.126412

agencies must consider context and intensity, including site-specific habitat loss, fragmentation, and cumulative/long-term effects, and may find significance where a project degrades critical areas, sub-herds, local breeding/roosting sites, or key movement corridors. SEPA requires agencies to consider short- and long-term and cumulative impacts, including those likely to arise or exist over the lifetime of a proposal (in this case, a 20-year construction phase, and decades beyond in the operation phase). Agencies should not limit their review to only the impacts within their own jurisdictional boundaries. In this case, only impacts to Chelan County are considered, where this project's light pollution, wildlife, recreation, and wildfire impacts would certainly extend into neighboring Kittitas County.

"As noted previously, many animals will leave the construction area to avoid the disturbance and occupy similar adjacent habitats, which are relatively abundant in the study area and surrounding lands" Page 223

Elk are highly mobile and capable of finding alternative routes between summer and winter ranges. page 225

Mule deer are highly mobile and capable of finding alternative routes. Page 225

The DEIS tries to diminish the impacts of wildlife by suggesting they will just leave the area and be fine. This is not the measurement in which to determine impacts. "Significance" is the key quality to measure (ie, will the proposed action cause probable significant adverse impacts on the quality of the environment).

This definition of significant impacts[89] (WAC 197-11-794) is not limited to population-level impacts; it can include localized harm, such as destroying habitat or affecting sub-herds or sub-groups of animals, if the impact exceeds a moderate threshold, considering factors like intensity, duration, context, and cumulative effects.

The applicant's dismissal of impacts is consistently framed in two arguments:

1. Individual animals are mobile and can flee from impacts
2. There is adequate adjacent habitat

The applicant does not give sufficient evidence for these claims, and this is not what SEPA asks for. This dismissive language undermines the EIS process, giving a false sense to readers of the DEIS that this project would cause minimal impacts, while offering no true mitigation for their proposed actions.

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[89] **WAC 197-11-794**. Washington Administrative Code. Definition of "Waters of the State." Washington State Legislature, https://apps.leg.wa.gov/wac/default.aspx?cite=197-11-794.

One goal of mitigation should be as close to no net loss of ecological function as possible. To achieve this, first you need to understand the baseline conditions. Then you try to avoid impacts; if you can't avoid, minimize; and if there is no way to minimize, then compensate. This mitigation sequence is rarely engaged in this section, as the applicant fails to acknowledge impacts or cites inaccurate, misleading, or broad claims to obscure their likely impacts. The County needs to demand that the applicant apply a good-faith effort to do the additional studies recommended throughout the following pages, and correct erroneous information, for the public and agencies to gain an accurate assessment of this project's impacts so that appropriate mitigation efforts can be proposed.

Eliminating wildlife habitat through displacement is the same as destroying it, and the harm to wildlife can be significant. "Significant impacts" is the key quality to measure (ie, will the proposed action cause probable significant adverse impacts on the quality of the habitat, which in almost all cases significantly impacts wildlife).

Displacing wildlife is a significant harm to those wildlife. Destroying habitat shrinks the areas where animals can live. Shrinking habitat doesn't need to be direct mortality to negatively impact wildlife. Just shrinking available habitat can increase disease risk among wildlife[90]. For deer and elk facing hoof disease, blue-tongue, and chronic wasting disease, this is a non-trivial threat. Shrinking habitat also reduced genetic diversity[91], impacting wildlife's ability to survive and adapt to future conditions. Taken cumulatively, this shrinking of habitat reduces the size of animal populations, reduces genetic diversity, causes impediments to migration and adaptation in the face of climate change and other pressures[92]. In short, reducing habitat takes away the ability for animals to be resilient. This is a significant impact (WAC 197-11-794).

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[90] Barbier, E. B. (2021). Habitat loss and the risk of disease outbreak. *Journal of Environmental Economics and Management*, *108*, 102451. https://doi.org/10.1016/j.jeem.2021.102451

[91] Pinto, A. V., Hansson, B., Patramanis, I., Morales, H. E., & van Oosterhout, C. (2024). The impact of habitat loss and population fragmentation on genomic erosion. *Conservation Genetics, 25*(1), 49–57. https://doi.org/10.1007/s10592-023-01548-9

[92] Population Matters. (2024, August 30). Running out of room: Humans encroaching on wildlife habitats. Population Matters. https://populationmatters.org/news/2024/08/running-out-of-room-humans-encroaching-on-wildlife-habitats/

Title 197, Chapter 197-11, Section 197-11-794. Washington Administrative Code. Washington State Legislature.

(1) "Significant" as used in SEPA means a reasonable likelihood of more than a moderate adverse impact on environmental quality.
(2) Significance involves context and intensity (WAC 197-11-330) and does not lend itself to a formula or quantifiable test. The context may vary with the physical setting. Intensity depends on the magnitude and duration of an impact. The severity of an impact should be weighed along with the likelihood of its occurrence. An impact may be significant if its chance of occurrence is not great, but the resulting environmental impact would be severe if it occurred.

Missing from this Section - Plants & Animals

The DEIS is missing any analysis that quantifies the impacts this development would have on birds and other wildlife from glass collisions[93], pet mortality[94], impacts from pesticides[95], insecticides, rodenticides[9697], and disruption from light pollution[98].

It also appears that nowhere in the DEIS are the traffic increases (~10,000 vehicle trips per day) factored into how this would impact wildlife[99] along the entire project/

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[93] Seewagen, C. L., & Sheppard, C. (2019). *Bird collisions with glass: An annotated bibliography*. American Bird Conservancy, The Plains, VA. https://abcbirds.org/wp-content/uploads/2020/10/Glass-Collisions_Bibliography-October-2019.pdf

[94] Trouwborst, A., McCormack, P. C., & Camacho, E. M. (2020). Domestic cats and their impacts on biodiversity: A blind spot in the application of nature conservation law. *People and Nature*, *2*(1), 235-250. https://doi.org/10.1002/pan3.10073

[95] Wan, N., Fu, L., Dainese, M., Kiær, L. P., Hu, Y., Xin, F., Goulson, D., Woodcock, B. A., Vanbergen, A. J., Spurgeon, D. J., Shen, S., & Scherber, C. (2025). Pesticides have negative effects on non-target organisms. *Nature Communications*, *16*(1), 1-16. https://doi.org/10.1038/s41467-025-56732-x

[96] Thompson, C., Sweitzer, R., Gabriel, M., Purcell, K., Barrett, R., & Poppenga, R. (2013). Impacts of rodenticide and insecticide toxicants from marijuana cultivation on fisher survival rates in the Sierra National Forest, California. *Conservation Letters*, 0, 1–12. https://doi.org/10.1111/conl.12038

[97] NAKAYAMA, S. M., MORITA, A., IKENAKA, Y., MIZUKAWA, H., & ISHIZUKA, M. (2018). A review: Poisoning by anticoagulant rodenticides in non-target animals globally. *The Journal of Veterinary Medical Science*, *81*(2), 298. https://doi.org/10.1292/jvms.17-0717

[98] Evans Ogden, L. J. (1996). *Collision Course: The Hazards of Lighted Structures and Windows to Migrating Birds*. Fatal Light Awareness Program (FLAP), 3. University of Nebraska - Lincoln, DigitalCommons. https://digitalcommons.unl.edu

[99] Benítez-López, A., Alkemade, R., & Verweij, P. A. (2010). The impacts of roads and other infrastructure on mammal and bird populations: A meta-analysis. *Biological Conservation*, *143*(6), 1307-1316. https://doi.org/10.1016/j.biocon.2010.02.009

utility corridor from the development down into Wenatchee. A full assessment needs to be done throughout Squilchuck Canyon up to the project area to determine baseline conditions. Wildlife surveys need to be conducted to know where the animal crossings and migration routes[100] are that will be bisected and/or impacted by this level of traffic. Squilchuck Creek should be fully assessed as well, since we know that compounds (like 6PPD-quinone) emitted from tires work their way into waterways and are damaging and deadly to certain species like salmonids[101] and amphibians. Only after a full assessment is done can we begin to talk about what mitigation would look like.

The DEIS is silent on the impacts this development would have on endemic plants like Lewisiopsis tweedyi. Lewisiopsis tweedyi grows throughout the project area and will be disrupted by excavation, grading, shaping, and contouring activities. Provide a damage assessment and mitigation strategy for native, endemic, and special plant species in the project area.

Friends of Mission Ridge Trail Camera Survey
This survey showed that many of the assertions in the DEIS are false and misleading when it comes to the plants and animals section. This could be an over-reliance on outdated models and studies. This 2024-2025 trail camera survey showed that species the DEIS claims are absent from the project area are actually present.

Pika, Goshawks, Golden Eagles, Summer Elk, Mule Deer fawning, Elk calving, Mule deer and elk wintering, migration corridors, all found within the project area, but either omitted or severely downplayed in the DEIS.

These findings suggest that further studies need to be done to gain an accurate assessment, and perhaps new consultants are required for an honest, unbiased assessment of the baseline conditions. It is likely that, since many of the source materials were made (ie, outdated wildlife studies) that major changes in the Stemilt basin (Section 17 being fenced off) have shifted wildlife use.

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[100] McCorquodale, S. M. (2013). A brief review of the scientific literature on elk, roads, & traffic. Washington Department of Fish and Wildlife.

[101] Tian, Z., Zhao, H., Peter, K. T., Gonzalez, M., Wetzel, J., Wu, C., Hu, X., Prat, J., Mudrock, E., Hettinger, R., Cortina, A. E., Biswas, R. G., Crizóstomo Kock, F. V., Soong, R., Jenne, A., Du, B., Hou, F., He, H., Lundeen, R., . . . Kolodziej, E. P. (2021). A ubiquitous tire rubber–derived chemical induces acute mortality in coho salmon. *Science*. https://doi.org/abd6951

Please read the FOMR Trail Camera Survey and note the recommendations and findings within.

These adjacent lands contain potentially suitable habitat and migration corridors. (e.g., riparian corridors) that are similar to habitats in the study area. page 222

As noted in the FOMR Trail Camera Survey, there is no similar adjacent habitat. The steep, north-facing, road-less, surface water rich, heterogeneous ecosystems of the project area are not found anywhere else on Mission Ridge. Even the flawed wildlife maps attached show that high-quality elk habitat is limited in the area. Cool, timbered, north-facing slopes are rare on Mission Ridge. Most of these north-facing habitats are interrupted by roads, and only the proposed project area contains one of the last intact patches of undisturbed habitat in this upper elevation environment.

Overall, construction impacts on commonly occurring terrestrial animal species are expected to occur. However, as noted previously, many animals will leave the construction area to avoid the disturbance and occupy similar adjacent habitats, which are relatively abundant in the study area and surrounding lands. page 223

The FOMR survey found that ongoing summertime use at the ski area appears to be displacing wildlife. This is consistent with wildlife literature[102], but the effects and impacts of this are not well-documented at Mission Ridge. To understand the baseline condition in the project area, we need to know: how does Mission Ridge's summertime operations (outdoor concerts, Chair 5 Pub) impact local wildlife? This is necessary not only to establish baseline conditions but could also help more accurately predict impacts for the proposed development.

The lack of specificity in this DEIS section appears to be purposefully opaque to hide what resources will actually be impacted and to take the Applicant off the hook for any meaningful mitigation measures. Case in point. The Aspen grove in the center of the development is described as oddly 0.9 acres, just under the PHS level of designation of important habitat at one acre.

Findings: 1) A small (0.9-acre) aspen stand would be partially eliminated during construction of the main access road. Because that stand it stands less than 1 acre in size, it does not meet WDFW's definition of a priority habitat. Page 227

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[102] Zeller, K., Ditmer, M., Squires, J., & Barber, J. (2025). *How human-generated noise disrupts wildlife: The unseen impact of outdoor recreation* (Science You Can Use Bulletin, Issue 71). U.S. Department of Agriculture, Rocky Mountain Research Station. https://www.fs.usda.gov/rm/pubs_journals/rmrs/sycu/2025/sycu_71_2025_human_noise.pdf

Buried in the DEIS appendix, and confirmed in the FOMR trail camera survey with drone-GPS measurements, the aspen grove was measured at ~1.5 acres. Why is this not in the main body of the DEIS? This may be incompetence, but it seems to be part of a pattern of omitting or fudging things that would be inconvenient for the Applicant. If possible, I suggest the County require new consultants to conduct fieldwork to ensure unbiased and factual assessments for the Plants and Animals Section. I think the entire Plants and Animals section needs an audit. It should be redone, restudied, and reassessed (by third-party analysis if possible) to take into consideration the clear bias, errors, and omissions the DEIS is fraught with.

Another example in this vein of convenient omissions. By saying there are no pika in the project area ("too low of elevation" without providing any evidence), the Applicant removes the responsibility to do any mitigation for any of the dozen plus pika colonies within Section 19, not to mention the pika colonies that would be impacted in Section 25. All of these colonies would likely be negatively impacted by the new ski run grading of basalt, destroying their homes, the introduction of domestic pets as predators, the installation of access roads, ski lift towers, etc, that would destroy and/or compromise pika habitat. All of these impacts are ignored and left out. The FOMR study definitely showed that the basalt fields of Mission Ridge are home to pika.

Washington's Department of Fish & Wildlife ranks pika as a Species of Greatest Concern. The center of the proposed development would obliterate pika habitat, while the proposed grading of basalt talus for ski runs and trails would further destroy pika homes[103]. The pika of Mission Ridge is likely an island population, isolated from gene flow with populations in the Cascades. The American pika is a highly sensitive species, territorial, with a low reproductive rate and limited dispersal ability. Pika require a moderate amount of snowpack to provide insulation during the winter months; decreasing snowpack because of rising temperatures and shifting precipitation patterns with more rain than snow will negatively impact this species. Pika do not hibernate and rely on 'haystacks' of dried vegetation collected all summer. Climbing temperatures have been forcing pika populations to higher elevations and into basalt fields with deep interstitial spaces where they can regulate temperature. At Mission Ridge, they have no more mountain to climb, and ski area activities already compromise many basalt fields in the resort's Special Use Area, so any destruction of habitat will negatively impact this isolated population.

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[103] Monk, E. M., & Ray, C. (2022). Revisiting talus and free-air temperatures after 50 years of change at an American pika (Ochotona princeps) study site in the Southern Rockies. *PLOS Climate, 1*(7), e0000049. https://doi.org/10.1371/journal.pclm.0000049

Importance of the Basalt/Talus fields as a unique wildlife habitat.

Due to the large extent of talus habitat present in the Project Area and the lack of impacts expected on wildlife species associated with talus, overall impacts are expected to be minor. Page 227

The basalt fields in Sections 19, 25, and 30 qualify as an important PHS feature. The definition according the the WDFW[104] is: homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of **basalt**, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

These basalt fields are not surveyed or identified as PHS habitat or as wildlife habitat. Much of the basalt in the project area would be disturbed, removed, or functionally impaired by the described construction activities of the Applicant. By definition, these talus fields should be large; chopping them up and shrinking them would diminish their habitat qualities. Furthermore, justifying that it's okay to destroy this PHS habitat feature because there is a "large amount present in the Project area," is not a valid claim. That reasoning doesn't track with any PHS habitat; you don't get a free pass to cut down old growth and aspen groves, or destroy wetlands, just cause there are a lot of other ones around. The first step in this process is to assess what the wildlife uses. Why are there aspen growing out of the talus? Could there be a wetland or riparian habitat underneath? Why do I hear water running and frogs croaking from within the talus? After the assessment, you can then talk about the damage you want to do and then assess what mitigations are necessary.

One of the key points behind talus as a wildlife habitat is that it contains interstitial spaces that can be used for wildlife. Rocks that are densely packed together, or finer rocks, do not offer these cavities that serve as wildlife habitat. Construction activities don't even need to remove or scrape talus to destroy its habitat potential. Heavy machinery simply driving over it could compress and remove the interstitial spaces (like many of the ski runs on the current Mission Ridge Ski Area) and remove them as viable wildlife habitat. The Applicant has done zero research or field assessments on the wildlife value of the basalt talus. This needs to be rectified, especially since the cutest animal[105] on Mission Ridge, the pika, relies on this talus for all aspects of its life.

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[104] Washington Department of Fish and Wildlife. (2008). *Priority Habitat and Species List*. Olympia, WA: Author. 291 pp.

[105] Okay, that's subjective. But my 6-year-old daughter thinks it's true.

Pika[106], however, are not the only creatures that need or use the basalt talus[107]. It is possible that rare, and species of concern, like Larch mountain salamanders and Western toads are using basalt fields. Bats are also likely using basalt talus fields as a stable temperature refugia and hibernacula. Other species, from insects to reptiles (I found a Northern alligator lizard in the talus on Mission Ridge, Sept 2025), use the interstitial spaces for habitat. In the project area on a basalt field in Section 30, I also found an icebug[108] (ice crawler)–typically found only in the high parts of the Cascades near permanent snow and ice fields[109]. This wingless insect did not fly or get blown in but is likely part of a previously unknown population on the mountain. The icebug is an indicator species; it tells you that year-round cold temperatures are present. But where?

The lack of curiosity by the Applicant or natural resource consultants about the current baseline conditions in the project area is stunning. How are aspen growing up through the middle of a barren basalt patch? How do pika survive our hot summers in these barren-looking basalt patches? How do these moisture-loving and cool-loving species thrive in the basalt? The basalt can be many feet thick, insulating cool, moist ground, or covering up riparian/wetland zones from the surface. The presence of all these species shows that there is more than meets the eye. Nowhere in the DEIS is the value of the basalt fields explored. This DEIS needs to contain robust studies evaluating the project area and contain assessments of all the species that are using the basalt. Otherwise, how can we know the impacts? It appears from the Applicant's plans that many of the basalt areas are in danger of disruption from construction and operational activities. These areas need to be assessed. And just in case aspens and pika are not enough to get you into basalt…

Basalt continued…Scholarly Articles on Bats Roosting in Talus

Just a cursory survey of research will point you to the value of our basalt/talus as habitat for bats. In fact, talus appears to be a better habitat than caves when it comes

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[106] Benedict, L. M., Wiebe, M., Plichta, M., Batts, H., Johnson, J., Monk, E., & Ray, C. (2020). Microclimate and summer surface activity in the American pika (Ochotona princeps). *Western North American Naturalist, 80*(3), 316–329. https://scholarsarchive.byu.edu/cgi/viewcontent.cgi?article=2586&context=wnan

[107] National Park Service. (2025, January 3). *Talus Slope: Grand Teton National Park*. Retrieved from https://www.nps.gov/places/talus-slope.htm

[108] verified ID by an entomologist at WSU

[109] Buczkowski, G. (2017). Conservation Biology of Ice Crawlers (Grylloblattids) in the Pacific Northwest. Purdue University, Department of Entomology. Retrieved from https://www.entm.purdue.edu/ants/ice-crawlers.php

to temperature regulation (likely making it ideal for ectotherms, hibernation, and brumation) and resilience to common bat diseases like white-nose syndrome. The following studies are reasons why the basalt talus fields should be assumed to be bat hibernacula and studied to either verify or falsify such an assumption. The consequences of such research are important as WA State PHS says that regular concentrations in naturally occurring breeding areas and other communal roosts for big-brown bat, myotis bats, or pallid bat would be considered as PHS. A similar review of talus-related research would reveal that many other species (insects, pollinators, amphibians, reptiles, etc.) are using talus as wildlife habitats[110]. Some of the research I've found suggests[111] that the thermo-regulating properties of talus will make it an even more important habitat in the future because of climate change. So the question for this DEIS: why have the basalt fields in the project area not been evaluated for wildlife habitat?

1. Blejwas, K. M., Pendleton, G. W., Kohan, M. L., & Beard, L. O. (2021). The Milieu Souterrain Superficiel as hibernation habitat for bats: Implications for white-nose syndrome. Journal of Mammalogy, 102(4), 1110–1127. https://doi.org/10.1093/jmammal/gyab050

Summary: This study used radiotelemetry and acoustic monitoring in Juneau, Alaska, to show **that little brown bats (Myotis lucifugus) hibernate in talus fields rather than caves**, with eight of ten tracked bats using MSS hibernacula. These sites offer stable, cool microclimates (near 100% humidity, temperatures warmer than ambient but below freezing at shallow depths), reducing white-nose syndrome risks due to dispersed roosting.

2. Moosman, P. R., Warner, D. P., Hendren, R. H., & Hosler, M. J. (2015). Potential for monitoring Eastern Small-footed Bats on talus slopes. Northeastern Naturalist, 22(1), 1–13. https://doi.org/10.1656/045.022.0102

Summary: This research piloted techniques to monitor Eastern small-footed bats (Myotis leibii) on Virginia talus slopes, finding bats roosting in shallow crevices from March to October. Mist-netting and visual searches **confirmed talus as a key non-**

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[110] Colorado Natural Heritage Program. (2009). *Survey of critical biological resources in Boulder County, Colorado: 2007-2008* (BoulderCoReportFINAL_6-26-2009.pdf). Colorado State University. https://cnhp.colostate.edu/wp-content/uploads/download/documents/2009/BoulderCoReportFINAL_6-26-2009.pdf

[111] Shoo, L. P., Storlie, C., Williams, Y. M., & Williams, S. E. (2010). Potential for mountaintop boulder fields to buffer species against extreme heat stress under climate change. *International Journal of Biometeorology*, 54(4), 475–478. https://doi.org/10.1007/s00484-009-0286-4

hibernation roost, with quadrat surveys estimating 196–343 bats in a 3-ha slope, suggesting talus as an alternative to cave hibernacula.

3. Moosman, P. R., Marsh, D. M., Pody, E. K., Dannon, M. P., & Reynolds, R. J. (2020). Efficacy of visual surveys for monitoring populations of talus-roosting bats. Journal of Fish and Wildlife Management, 11(2), 597–608. https://doi.org/10.3996/122019-NAF-002

Summary: This study evaluated visual surveys for Eastern small-footed bats (Myotis leibii) on Virginia talus slopes, confirming high detection probabilities for roosting bats in crevices. **Talus surveys revealed bats using these sites over caves,** with abundance varying by site characteristics, offering a viable monitoring method for rock-roosting species.

4. Gaulke, S. (2018). Bat hibernation in talus slopes. University of Montana Conference on Undergraduate Research (UMCUR), 327(4).

Summary: This undergraduate research in Montana **used acoustic detectors on talus slopes to record bat activity (20 kHz and 40 kHz species) during winter, indicating hibernation in talus rather than caves**. Limited recordings showed fall swarming and winter activity, **suggesting talus as a critical hibernacula for multiple bat species amid white-nose syndrome concerns.**

5. Neubaum, D. J. (2018). Use of talus and other rock outcrops by bats in western Montana. Montana Natural Heritage Program Report.

Summary: This report documents radio-tagged little brown bats (Myotis lucifugus) roosting in high-elevation talus fields in Colorado during autumn, likely for hibernation, with only 35% of cave/mine surveys finding bats. **It suggests that talus provides better habitat than caves** in western Montana, though quantification is ongoing.

Given that regular concentrations of bat roosting and hibernacula are PHS habitat features, it appears some bat surveys/monitoring are due.

Missing or Insufficient Analysis of Species in the Plants & Animals Section
Deer & Elk // more research needed: While the FOMR Trail Camera Survey was a decent attempt to try and get a recent snapshot of on-the-ground conditions in the project area, it still falls short of providing a clear view of the baseline conditions facing the project area's deer and elk. Multi-year wildlife studies are necessary to rule out or understand seasonally variable. What are patterns of use in high snow years? In low snow years? What are the migratory behaviors, etc, to help identify migratory routes, calving and fawning areas, foraging and security habitats? Ideally, these studies would be a blend of GPS collar data, trail camera, and other methods. These new studies need to focus on deer and elk use in the project area and along the traffic corridor of Mission Ridge Road and Squilchuck Road. The claims that equivalent adjacent habitat exists should also be studied (where are these habitats?), as should the DNR parcels be studied that were proposed for the Section 25 land swap.

The FOMR trail camera survey highlighted a few study design/methodology variables to keep in mind for future studies. If you look at many of the past Colockum GPS elk colored studies, the project area did not show the high-elk-use that was documented in the trail camera study. This could be for a few reasons.

1. **Conditions could have changed.** When past studies were done, Section 17 wasn't entirely fenced off. Higher human use in some areas may be displacing animals, etc.
2. **Selection bias.** When selecting animals for radio collaring, it is often done in an open wintering range. This selection bias may sample only a sub-herd of animals that happened to be in the location from which researchers were recruiting animals. If a population of elk and deer overwinters in a more closed canopy forest structure (as the FOMR survey showed), then you may never have the opportunity to dart and collar those animals, leaving a gap in your data. This is where a trail camera survey could actually be more accurate than a GPS collar survey.
3. **Study design matters**. Setting trail cameras to a grid v. setting trail cameras to the landscape features used by wildlife makes all the difference in the world. Different goals, different study design. In the case of a project like this, you may want to understand the actual wildlife use of the area, not conduct a 'double-blind placebo-controlled study'. Future studies/assessments should be designed to give the most complete picture of animal use and movement in the landscape.

The recurring argument in this DEIS is that animals can run and fly away from the impacts of this development. It's a lazy way of not claiming responsibility for your

actions. Being mobile does not make you immune to the destruction of your preferred habitat. If mule deer and elk are using this area regularly (see 2025 FOMR Trail Survey) and in some years, year-round, then it appears to be the current best habitat for those animals. If they wanted to be somewhere else, they are mobile and would move. However, it could be the case that winter use is because this is not the best habitat, but the only habitat left for them. Perhaps premium wintering grounds (low snow, south-facing, low-disturbance lands) do not exist anymore for these animals, and they are forced to pick secondary habitats like this? Another theory is that evolution has favored a variety of behaviors in the Colockum Elk and Mule Deer Herds. Some of the deer & elk migrating en masse to low elevation lands near the Columbia or Colockum Wildlife areas, and others staying higher year-round. This may be an adaptive behavior that builds resiliency in the herds and helps disperse disease, pests, and predation. In the likely upcoming spread of deadly wildlife diseases like CWD, Blue-tongue, Hoof Disease, etc., this diversity of wildlife behaviors on a diversity of habitats may be what allows these species to persist into the future. Cutting off migration corridors, destroying habitat, adding Steven's Pass level traffic, and urban-style density into a rural-undeveloped upper basin could be detrimental to the future health of wildlife. It's up to us now to ensure greater genetic diversity and diversity of behaviors for future generations to enjoy wildlife as well. By even acting to protect this habitat of elk and deer, we help all the species that call those lands home.

Mission Ridge Ski Area Parking Lot // PFAS, Culverts, & Fish

The current condition of the culverts is unknown. Further, no design specifications are available.

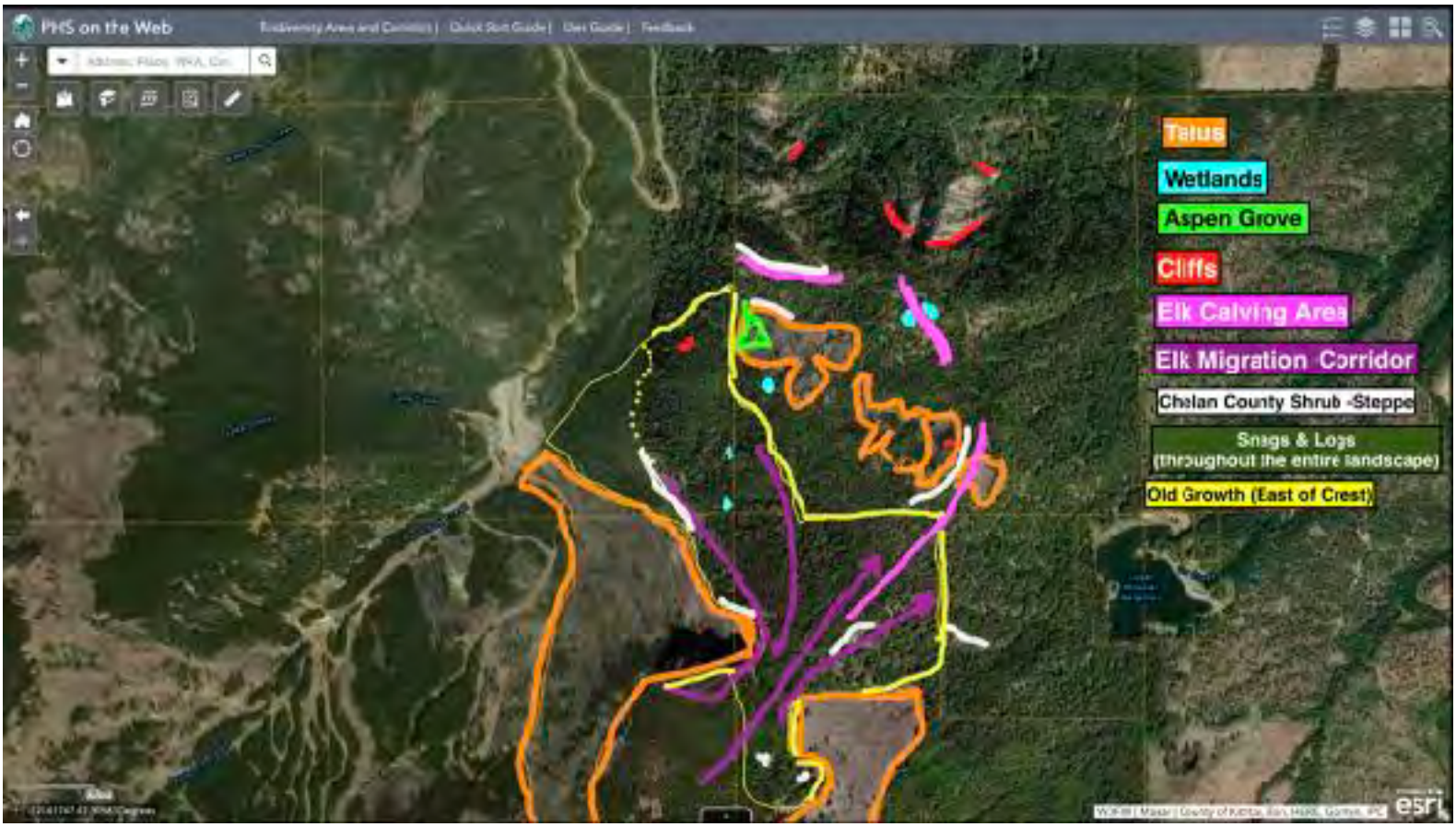
An assessment of how the developers assess road cutting across the existing Mission Ridge Ski Area parking lot (and fish-bearing Lake & Squilchuck Creeks) needs to be done. This cannot be pushed out to later phases. SEPA impacts need to be cataloged now so that impacts can be understood. The DEIS often refers to Lake Creek as not having fish. On ~ page 20 of this document is a picture of a trout visible in Lake Creek above the parking lot culvert. An easy way to survey this would be using electroshocking surveys and/or E-DNA testing. The state of the culverts is needed. Are they adequate to handle anticipated floods (via climate change projections), fish passage, and erosion control? Additionally, with the discovery of PFAS located at Mission Ridge Ski Area (see attached PFAS report), it should be assumed that the parking lot may contain PFAS in its soils and that any soil modification should be first tested for PFAS to understand whether there are PFAS in the soil. This is necessary so as not to inadvertently liberate these PFAS downstream into Lake or Squilchuck Creeks.

In 2025, Mission Ridge is adding unknown fill/spoils and expanding their parking area (which would become the location of the developer's driveway/access road). Mission Ridge has no permit to do these earth-moving activities (which could contain PFAS) within the riparian buffer of fish-bearing Squilchuck Creek, which is only ~50 feet from these spoils. A 2025 nearby soil sample (see attached PFAS REPORT), on a ski run, was analyzed by a third-party EPA-certified lab. The results were high levels of PFAS in the soil–the PFAS composition seemed to match what would be expected from ski area activities. In the SEPA process, current conditions need to be assessed. Are PFAS in the soils of the parking lot? Will this project's proposed actions disturb or spread PFAS? A full assessment of the PFAS problem needs to be included in the DEIS.

Priority Habitats and Species Lists/Map Updates, Page 216
On page 216 of the DEIS, the document briefly mentions only two PHS Habitat Features, talus and snags/logs. The Plants & Animals section reveals that it has done nothing to account for these features in the project area. There is no mapping and/or assessment of the impacts and damages this development would have on them, and they have not offered any meaningful mitigation solutions.

Importantly, many PHS Habitat Features are missing from this DEIS assessment:

Wetlands (at least one in Section 19 - see FOMR survey)
Cliffs - below 5,000 feet, along the access road in FS Section 24
Elk Calving Areas - throughout the area
Elk Migration Corridor-
Chelan County Shrub-Steppe
Old Growth (East of the Crest)



Updates needed to be made to the PHS map, also a PHS Map would be a very relevant map for the Figures in this DEIS

Cascade Red Fox

Cascade red fox is unlikely to occur in or near the Project Area. Page 224

During the winter of 2024/25, a set of fox tracks (Canidae, direct registering foot pattern; photograph in the FOMR Trail Camera Survey), at 5,500ft was discovered in the project area. Further study should be done to rule out the presence of Cascade Fox in the area. As foxes are mobile, and Cascade Red Fox have been detected near Steven' Pass, then further study is needed to determine their presence within the project area.

Western Toad

Potential impacts on the western toad habitat are expected to be minimal. Page 225

I've seen Western Toads in Squilchuck State Park, which touches the project area. To assume that impacts will be minimal when you don't know the extent of their presence in the project area is dishonest. Given the proximity of known sightings, it is likely that Western Toads would use some of the many wetlands in the Project Area/ Section 19 for breeding. Until those areas are surveyed during Western Toad breeding season, you cannot in good faith say impacts would be minimal.

Dusky grouse & Sooty grouse. Breeding areas, regular concentrations for PHS

Although the project would have some limited impacts on riparian and wetland habitats that could support dusky and sooty grouse, those impacts would require mitigation under federal, state, and local regulations. Page 226

Almost every trip I made into the project area to conduct the FOMR Trail Camera Survey, I encountered Dusky or Sooty grouse (I still call them Blue grouse, lumper, not a splitter) year-round. The birds were most abundant in the open forested sections, primarily on semi-open ridgelines, but also utilizing foraging areas along basalt fields, and in thicker forests when seasonal berries were ripe under forest cover.

While riparian and wetland habitats may be important for these grouse, that was not the habitat they were most observed or documented. A new assessment needs to be done to assess the use and population of these grouses within the project area to know what impacts there would be on them from this development.

Old Growth Trees (>21" DBH) & Snags Not Sufficiently Surveyed

USFS also noted that much of the study area had been affected by prior timber harvest

activities in the mid-20th century (USFS, 2020)…The USFS conducted plant surveys on National Forest and WDFW lands in the Project Area and documented 207 vascular plant taxa (USFS, 2020) - 5.4.1 Plants & Animals. Page 215, 2025 DEIS

The USFS plant-tree assessment (assuming mostly gleaned from the 2020 FS EA) is surprisingly and wildly inaccurate. Many places within the project area have over 10 trees per acre of >21" DBH qualifying for east-side old growth status–complete with decadence and numerous snags. These areas are not marked on PHS maps, and many of these large trees are missing from DEIS maps. There are trees in the project area that have over 40" DBH and almost a quarter of a section in Section 30 (NW portion), which appears to be completely ignored in the USFW plant survey or any maps in this DEIS. This area contains a plethora of trees over 21", 30", and some trees over 40" DBH. This location is where the Applicant proposes a 4.2 million-gallon snowmaking reservoir, ski runs, access roads, buried infrastructure, nordic ski trails, etc. The USFS survey cannot be relied on, as it is clear that it needs to have a third-party assessment to document all the greater than 21" DBH trees that exist in the project area that have not been accounted for in any of these DEIS documents.

A quick walk along the outside perimeter of Section 19 will show you two things. Looking into Section 19, you can see large stumps, evidence of past logging activity. Contrast that with everything on the surrounding Forest Service Sections 30 & 24, and on Section 25 (WDFW), you will find many old-growth trees, but almost no sign of stumps or prior logging activity on the public land portions of the project area. To say the area had been affected by prior timber harvest only appears to apply to the private land, Section 19, and not the remainder of the project area. This either appears to be an artifact of surveying from a desk, or from trying to paint a picture where there are no >21" DBH trees in one of the highest concentrations of old-growth trees in the project areas that would be most impacted by the Applicant's proposal. Throughout this DEIS the they refer to the forests in the project area as being post-harvest, or anything but old-growth. This is not true for the public land portion of the project area and shows a lack of boots-on-the-ground surveying.

Whitebark Pine (WBP) - an ESA Threatened Species

Assessment focus: Potential for impact on whitebark pine population due to continued maintenance.
Findings: "Impacts on the entire local population of whitebark pine would be minor. Page 224"

"Population-level impacts" is not the criterion to measure impacts under SEPA. "Significant impacts" is the key quality to measure (ie, will the proposed action cause probable significant adverse impacts on the quality of the environment).

>40" DBH Larch on Section 30. This is an area on Forest Service land where many great trees (and snags) live. The DEIS falsely claims that past logging activities have eliminated these large trees. That claim only appears to hold for Section 19.

>40" DBH Doug Fir–likely to be taken out by the 4.2-million gallon snowmaking reservoir; among many large trees over 21" DBH in Section 30 that are missing from all DEIS maps and assessments

This definition of significant impacts (WAC 197-11-794) is not limited to population-level impacts; it can include localized harm, such as destroying habitat, and if the impact exceeds a moderate threshold, it considers factors like intensity, duration, context, and cumulative effects.

Also, where is the evidence for this claim? With the increase of active and widespread infestations of pine beetles (2025 FOMR Trail Camera Survey), glading and ski area activities on the current Mission Ridge Ski Area, blister rust, and drought stress, the future of whitebark pine is not ensured. A new study needs to be done on Mission Ridge whitebark pine to do a health assessment and habitat study that looks at the

current conditions and the likely future conditions in the face of climate change. Saying that whitebark pine will be fine, contrary to the current conditions, is reckless for a protected and threatened species.

Many of the planned ski runs, including the proposed Chair 5 ski runs, run right through thick patches of WBP. It should be noted that in the 2020 FS EA, the Applicant stated their commitment to WBP, citing their attempt to get certification as a WBP-friendly ski area (2020 FS EA). When Whitebark Pine Foundation was asked what was Applicant's status was in pursuing the certification, which would include actually implementing WBP-friendly policies and education, then the Applicant stopped the process. Apparently, they had got the green-washing[112] benefit for the 2020 FS EA and didn't need to follow through. Please don't indulge them in suggesting "The Applicant has made efforts to promote the conservation of whitebark pine" (page 224) because they told you so. Using the euphemism "construction activities would potentially be in conflict with" instead of saying ~1/3 of WBP would be cut down due to design plans and construction activities is dishonest.

What happens when WBP starts growing in ski runs? On the access road? Next to infrastructure? What is the plan? The Applicant would likely try to remove any WBP seedlings from ski runs, access roads, etc, throughout the duration of the life of the development; this damage is not accounted for.

Also, the Applicant's mitigation solution to plant a higher ratio of WBP seedlings per every adult tree taken seems like a generous solution, but functionally is not an equivalent mitigation. A mature WBP can be hundreds of years old. They are a slow-growing species and take decades before they are cone-bearing. WBP is considered a keystone and foundation species. When mature whitebark pine stabilizes soils, regulates runoff, slows the progression of snowmelt, and provides nutritious seeds for numerous species of wildlife. The conditions in which some of the mature WBP grew up, which the Applicant would cut down, are different from today's climate. A mature tree has had a hundred-plus years to set an extensive root network to adapt to drought, high winds, disease, and other stressors. A patch of newly planted WBP does not have the same ecological impact and function as one single, well-established, mature WBP. Future conditions on Mission Ridge with climate change may make smaller trees with less root structure more vulnerable to high temperatures and variable precipitation. Using an arbitrary ratio does not cover up the sins of removing

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[112] Mission Ridge Ski & Board Resort. (2025). *Our vision*. https://expansion.missionridge.com/our-vision/

mature WBP from the landscape. It is possible that planting thousands of new WBP could never restore conditions and the services that WPB provide currently on the mountain as a keystone species.

Also, nowhere in this DEIS is an assessment of forest health and current conditions facing WBP. Recent beetle kill outbreaks on Mission Ridge have ravaged stands of WBP (see FOMR survey). Cone-bearing trees that survived blister rust are now dying from a likely combo of drought stress and beetle kill infestations. It could be that smaller, isolated stands of WBP (like those proposed to be removed by the Applicant) are key to the success of WBP on Mission Ridge. If the homogeneous stands in the upper elevations are severely impacted by beetle kill, these isolated mid-elevation, mature trees may be needed for future recruitment (seeds being dispersed by Clark's nutcrackers or human aid). The argument that it's okay to cut these down cause there are a bunch nearby is completely out of sync with the reality on the ground. Give the WBP's ESA status, its unique position on Mission Ridge–being far to the east of the other populations in near the crest of the Cascades, and its known presence in the project area, and the request for "takes"(including in the proposed access road corridor), WBP need a full assessment in and around the project area to understand the current state of WBP on Mission Ridge and what likely future conditions will be.

Northern Goshawk

Findings: The study area has very little old forest structure, and impacts to lower quality goshawk habitat would not negatively impact goshawk populations. Page 226

This is false. A probable goshawk nesting site was located on multiple trips to the project area & goshawks were documented during the breeding season on trail cameras (2025 FOMR Trail Camera Survey). Additionally, the study area contains many large trees and a complex, closed canopy, multi-layered forest. The absence of surveys of these east-side old-growth forests within the project area needs to be addressed.

American Marten

Assessment focus: Potential for reduced habitat quantity and quality. // Findings: 1) Suitable habitat for American marten is limited in much of the study area due to the history of timber harvesting and forest management. Page 226

This is false. While Section 19 has had historic logging activity, there is no visible evidence (stumps, old road beds) on much of Sections 30 & 25. In fact, marten tracks were found on Section 25 during the winter of 24/25 (2025 FOMR Trail Camera Survey)

Golden Eagle

Other PHS Animal Species // Assessment focus: Potential Species include golden eagle, flammulated owl, whiteheaded woodpecker, roosting concentrations of bat species, and wolverine. // Findings: Because of the low probability of occurrence in the study area, there would be no effect on these species. Page 227

The FOMR Trail Camera Survey found many instances of both juvenile (recently fledged) and adult golden eagles in the project area during nesting season, suggesting a nearby nest. Golden eagles are highly sensitive to disturbance[113] , and the activities of this development would negatively impact golden eagles, especially when it comes to disturbance from nesting. Eagles are also vulnerable to other threats from this development, like an increased use of rodenticides, which is shown to work its way into predators and scavengers.

Wolverine

Other PHS Animal Species // Assessment focus: Potential Species include golden eagle, flammulated owl, whiteheaded woodpecker, roosting concentrations of bat species, and wolverine. // Findings: Because of the low probability of occurrence in the study area, there would be no effect on these species. Page 227

Also missing from this DEIS assessment is wolverine (Gulo gulo). Note wolverine (Gulo gulo), a federally threatened and state candidate species; we initially listed it in the earlier assessments; however, because of a sole claim, it was removed from any assessments.

Wolverines were erroneously removed from this list during the study because of what the Special Use Permit manager for Mission Ridge (Schuur 2024) said. He remarked that they don't occur in the study area and provided no evidence. How would he know? Wolverines naturally occur at low densities and are hard to detect. One must scrutinize his claim, firstly, as Schuur is not a wolverine expert, and second, he is the FS official managing Mission Ridge's special use permit. Mission Ridge pays the Forest Service a good chunk of change every year for the SUP. He was also aware of the Ski Area cutting the illegal road and did not do anything about it. You could say there is a conflict of interest with his statements. More importantly, his claim doesn't hold up to recent nearby wolverine observations and known wolverine habits.

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[113] Spaul, R. J., & Heath, J. A. (2016). Nonmotorized recreation and motorized recreation in shrub-steppe habitats affects behavior and reproduction of golden eagles (Aquila chrysaetos). Ecology and Evolution, 6(22), 8037-8049. https://doi.org/10.1002/ece3.2540

Wolverines are wide-ranging, covering up to 40 miles a day[114]. A wolverine could easily travel from known sighting locations[115] (Icicle Creek and the Stuart Range) and reach Mission Ridge in a day. In addition to being wide-ranging, dispersing sub-adults will often venture far outside of known home ranges to seek a mate or find unoccupied habitat. The abundance of pika, ground squirrels, marmots, and ungulates on Mission Ridge could make it suitable wolverine habitat. Mission Ridge has long-lasting north-facing snow and cold interstitial spaces in talus-boulder fields that could even work for denning habitat. The discovery of an ice bug (2024 - on Section 30) highlights the presence of this suitable cold habitat on Mission Ridge.

As wolverines in the Cascades reclaim former habitats and disperse, habitats outside the core of their range could become increasingly more important to dispersing juvenile wolverines. These adjacent habitats near core ranges offer habitat opportunities to individuals, which increases the genetic diversity and overall population of wolverines in the Cascades.

Migratory Birds (Chelan County Species of Local Importance), Page 228
Briefly touched on in the DEIS, but does not quantify or accurately describe impacts. Firstly, none of the old-growth habitats, snags are discussed. Not included are impacts from light and noise pollution. Light pollution from adding year-round lighting for 4,000 people, the additional ski slope lighting (which should be only used in winter, but as Mission Ridge has shown, they sometimes turn them on in summer for 'special events'). Light disrupts migrating birds, and Mission Ridge sits on the edge of a flyway that is heavily used by migrating birds. Skirting the edge of the Cascade Range along the Columbia Trench. Glass collisions are also a major killer of migratory birds. This development, both in the construction and operations phase, would have many glass surfaces that can kill and injure birds. These glass surfaces/windows need to be added up to estimate how many birds would be impacted annually. In addition, mitigation strategies should be offered as they are well-known.

Native Pollinators/Insect Aggregations
Where are the native pollinator assessments for the project area? How will destroying their habitat, adding light pollution, pesticides, herbicides, etc. Impact them. Many times during field walks in the project area, numerous bumblebee species were encountered, including Bombus melanopygus. Bombus occidentalis, the Western

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[114] Alaska Department of Fish and Game. (n.d.). *Wolverine species profile*. Retrieved October 16, 2025, from https://www.adfg.alaska.gov/index.cfm?adfg=wolverine.printerfriendly

[115] Cascades Wolverine Project. (2025). *Community observations*. Retrieved October 16, 2025, from https://cascadeswolverineproject.org/community-observations/

bumblebee, has been seen close to the project area. A recent survey in Chelan County found eight new native bee species![116] Adequate field surveys (during the proper times of year) are needed to understand which rare and endemic native pollinators are in the project area.

Mass insect aggregations (ladybug, flying ants, wasps, etc.) have been noted along the high points of Mission Ridge. While these locations are outside of the project area (but not the study area), the DEIS should assess how the year-round light pollution will disrupt insect patterns[117], which then cascades throughout the ecological food web.

Loss of Biodiversity

Nowhere in this DEIS is a discussion or assessment of how this development will impact biodiversity. Developments like this are known to fragment habitat, impair migration, introduce invasive species, and many more actions that add up to the "death by a thousand cuts" to biodiversity. WDFW emphasizes biodiversity as a value to uphold, and this development needs to conduct a biodiversity assessment on its impacts. I'll end the Plants & Animals section with a quote from the WA Department of Fish and Wildlife website[118]:

"Like many places across the globe, Washington is experiencing unprecedented biodiversity loss (PDF). Human population growth and climate change are driving factors for landscape changes affecting biodiversity in Washington. Many plant and animal species in Washington are at risk or in need of conservation attention in the face of mounting obstacles like habitat loss and degradation, drought and wildfires, rising sea levels, increased erosion, acidifying and warming water bodies, pollution, wildlife disease, and invasive species."

5.5.4.3 Impacts…Open Space, Page 244

Ski runs create openings in the forest that can function as foraging habitat for several species, including elk and deer, and can act as fuel breaks within the contiguous canopy.

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[116] https://sefs.uw.edu/2025/08/new-and-rare-bees-documented-in-washington-state-by-dr-autumn-maust-sefs-alumna/

[117] Mathews, F., Roche, N., Aughney, T., Jones, N., Day, J., Baker, J., & Langton, S. (2015). Barriers and benefits: Implications of artificial night-lighting for the distribution of common bats in Britain and Ireland. *Philosophical Transactions of the Royal Society B: Biological Sciences, 370*(1667), 20140124. https://doi.org/10.1098/rstb.2014.0124

[118] Washington Biodiversity Council. (2007). *Washington's biodiversity: Status and threats*. Washington State Department of Printing. https://rco.wa.gov/wp-content/uploads/2019/07/BiodiversityStatusThreats.pdf

As noted in the FOMR trail cam survey, the ski runs do not appear to function as a foraging habitat, as summertime use of the ski area causes a disturbance effect that displaces deer and elk. Acting like ski runs is beneficial, and adding to habitat is disingenuous and not in line with the evidence. Additionally, the claim of ski runs being fuel breaks is debunked in many parts of my comments, citing real-world examples of recent fires jumping 'fuel break' ski run widths and bigger. Please take out this misinformation.

5.6 Transportation, Pages 246 - 259

It seems hard to justify the claim that adding twice the level of traffic of the AADT of Blewett or Stevens Pass onto the smaller, rural, dead-end Squilchuck/Mission Ridge Road would add no significant or adverse impacts. Looking deeper into this, it makes even less sense. The Applicant does not seem to factor their TIA findings with State/DOT/County regulations, which would require a widening of the road to accommodate this level of service. Missing from their assessment is the extra widening that should come from not having a secondary egress. Also missing are the dangers and consequences of having 200-foot road cuts (which will need to be bigger since the proposed road is not up to the LOS described in the TIA. Where is the avalanche mitigation plan that would be needed to safely control slides on those steep road cuts throughout the winter? Where are the wildlife studies along the road corridor that this LOS would impact? Where are the safety studies that show the increased risk to school children who use bus stops along the route? How does ~10,000 vehicle trips per day impact them? Missing too are the recreationalists that will be impacted either by decreased safety or displacement who use this current low-traffic rural road for biking, running, roller-skiing, etc.? This section needs a reboot that incorporates the actual impacts that would occur in the traffic corridor and from the increased traffic.

5.7.1 Utilities. Sewer, Pages 262

As noted in my 5.2 comments, the DEIS is missing the impacts or mitigation for hazardous substances[119] being released into the water via "treated" wastewater.

Road Maintenance, Page 263

No description of what the county's added responsibilities and costs would be to maintain the developer's driveway, the access road across Section 24. This needs to be fully assessed and disclosed for Chelan County taxpayers. This section of road–serving as the developer's driveway could be one of the steepest, most expensive

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[119] Monk, J. R., Hooda, P. S., Busquets, R., & Sims, D. (2025). Occurrence of pharmaceuticals, illicit drugs and PFAS in global surface waters: A meta-analysis-based review. *Environmental Pollution*, *378*, 126412. https://doi.org/10.1016/j.envpol.2025.126412

AMERICANS PARTICIPATING IN OUTDOOR RECREATION ANNUALLY SPEND

	GEAR, ACCESSORIES & VEHICLES	TRIP RELATED	TOTAL
CAMPING	$31,271,150,466	$135,591,624,999	$166,862,760,465
FISHING*	$11,867,866,850	$23,908,960,290	$35,775,827,140
HUNTING*	$15,059,527,274	$11,318,772,808	$27,378,300,082
MOTORCYCLE RIDING	$11,726,560,701	$47,428,610,964	$64,155,171,665
OFF ROADING	$15,820,274,534	$35,996,107,369	$51,816,382,103
SNOW SPORTS	$12,530,215,740	$63,190,342,318	$72,720,558,058
TRAIL SPORTS	$25,340,546,675	$176,144,141,213	$201,484,687,885
WATER SPORTS	$28,049,400,203	$110,611,644,906	$138,671,610,172
WHEEL SPORTS	$15,857,894,193	$82,864,146,456	$98,722,040,651
WILDLIFE WATCHING	$12,272,757,581	$17,947,854,866	$30,220,612,447
TOTAL	$154,108,963,838	$702,301,504,848	$646,816,470,686

ANNUAL OUTDOOR RECREATION SPENDING DIRECTLY GENERATES

	RETAIL SPENDING	JOBS	SALARIES & WAGES	FEDERAL TAXES	STATE & LOCAL TAXES
CAMPING	$166,862,760,465	1,442,578	$50,684,832,121	$12,354,768,124	$11,163,923,797
FISHING*	$35,775,827,140	287,554	$10,396,316,565	$2,340,830,252	$2,360,193,833
HUNTING*	$27,378,300,082	194,975	$7,415,896,807	$1,607,179,525	$1,689,967,918
MOTORCYCLE RIDING	$64,155,171,665	465,163	$16,373,883,658	$4,548,055,280	$4,213,340,506
OFF ROADING	$51,816,880,143	364,432	$15,408,780,534	$3,890,794,938	$3,758,450,666
SNOW SPORTS	$72,724,560,866	694,916	$24,105,487,200	$6,310,064,064	$5,995,666,28
TRAIL SPORTS	$201,486,687,385	1,792,093	$60,719,155,234	$14,632,710,478	$13,505,799,914
WATER SPORTS	$139,671,610,172	1,224,579	$40,893,099,709	$10,615,742,659	$9,807,721,190
WHEEL SPORTS	$98,727,040,651	647,559	$22,543,151,616	$7,600,352,736	$6,370,832,370
WILDLIFE WATCHING	$30,220,612,447	235,823	$8,205,004,980	$2,306,091,464	$1,853,449,833
TOTAL	$646,810,170,688	7,567,969	$247,865,259,816	$63,312,301,734	$59,319,667,630

Outdoor Industry Association Report

stretches of road to maintain in the county's portfolio. Not only would it carry the risks of rock and landslides, this high elevation stretch would require diligent winter snow removal, and likely regular avalanche mitigation, as the 200ft+ slope cuts are very steep and create immense overhead hazards. This needs to be fully assessed and made transparent in the DEIS.

5.10 Recreation, Pages 285 - 290

This DEIS is dismissive of recreation impacts to other user existing groups using the area, and only props up the Applicant's narrative that it's all 'rainbows & unicorns' for the community. This is countered by research into the actual impacts of ski area expansion. A meta-analysis of 24 ski area expansions in North America showed that

impacts were perceived to be undesirable by current residents, driven by an erosion of community identity and a loss of sense of place[120].

The impacts on recreation would be great. These impacts would come in both direct and indirect[121] forms. Direct through crowding[122] and displacement[123]. The indirect impacts from the displacement of wildlife would eventually impact hunters, wildlife watchers, birders, etc. The impacts to recreation would first be local, site-specific, but then, over time, would include regional impacts.

The claims that this development is enhancing recreation is very much out of touch with local and national trends[124][125]. When I speak to people who no longer ski at Mission Ridge, ticket price (and gear costs) are the number one factor in not resort skiing at Mission Ridge. Since COVID, we have seen that economics dictates people need more FREE (or low-cost) access to the outdoors and activities, not more high-cost amenities.[126]

The lands around Missing Ridge are used by a wide range of user groups/stakeholders/recreationalists. To be dismissive of these current users, not accounting for them in this is insulting. It reminds me of the comment that Larry, the Applicant/

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[120] Smith, J. W., & Guadarrama, U. (2020, October 15). *Social impacts of expanded ski resort operations on Forest Service lands*. Institute of Outdoor Recreation and Tourism, Utah State University. https://extension.usu.edu/gnar/news/ski_impact_assessment.pdf

[121] Hansman, H. (2021, Fall). Drawing the line: Ski area expansions. *Winter Wildlands Alliance, Trail Break*. Retrieved from https://winterwildlands.org/ski-area-expansion-drawing-the-line/

[122] Nickerson, N. P. (2016). *What we know about crowding and visitor experiences* (White Paper 2016-14). Institute for Tourism and Recreation Research, University of Montana. https://scholarworks.umt.edu/itrr_pubs/340

[123] Rupf, R., Haegeli, P., Karlen, B., & Wyttenbach, M. (2019). Does perceived crowding cause winter backcountry recreationists to displace? *Mountain Research and Development, 39*(1), R60–R70. https://doi.org/10.1659/MRD-JOURNAL-D-18-00009.1

[124] Outdoor Industry Association. (2025). Welcome to Outdoor Industry Association. https://outdoorindustry.org/

[125] Bruton, M. (2023, February 28). Outdoor recreation industry sees significant growth with changes in consumer behavior sparked by Covid-19. *Forbes*. https://www.forbes.com/sites/michellebruton/2023/02/28/outdoor-recreation-industry-sees-significant-growth-with-changes-in-consumer-behavior-sparked-by-covid-19/

[126] Karnowski, S. (2023, August 25). US Forest Service rejects expansion plans of premier Midwest ski area Lutsen Mountains. *AP News*. https://apnews.com/article/skiing-lutsen-minnesota-midwest-environment-tribes-2bc349874a347010f4a84881db6ebf9d

Developer, made at the Feb 2025 Pybus Forum. When asked about someone's concern about how this would impact Squilchuck State Park, Larry replied that it wouldn't, and that no one uses Squilchuck SP anyway. His comment was met with boos and jeers. The bikers, sledders, hikers, horseback riders, and walkers knew better. However, I think it's forgivable. How would he know? He doesn't live here. For the community that lives here and relies on these lands, we require the DEIS to do a full assessment of the impacts to recreation and not be dismissive like Larry was.

While it is easy to quantify the ticket/pass holders at the ski area, dispersed recreation users are harder to quantify. This DEIS needs to do its due diligence by surveying and measuring these other user groups in the impacted project area for a true assessment of how this development would impact them.

RECREATION - Impacts to the Colockum Wildlife Area[127] & Hunting

Residents in this region report a high rate of participation in walking/day walking along trails (91%), partaking in picnics and cookouts (70%), and general leisure (71%) (Eastern Washington University, 2022). Over half (51%) of residents reported participation in tent camping in developed areas, while 47% reported tent camping in undeveloped areas. Snow and ice activity participation rates are also relatively high, with 43% participating in snowshoeing, 35% in sledding and inner tubing, 32% in Nordic skiing, and 30% in alpine skiing or snowboarding at developed facilities.

The stats shared above are a great indication of how resort skiing/snowboarding is the SMALLEST user group of the recreationalists surveyed. A 2022 Outdoor Industry Association report[128] found that activities like skiing (cross-country and alpine/downhill) decreased while activities like archery and hiking increased. This development would hurt wildlife-related recreation[129], which encompasses a far larger demographic than resort skiers. The impacts would be great in both the direct displacement of these user groups and then by proxy, the displacement of the wildlife that would be displaced and impacted by the shrinking of their habitat.

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[127] Arlettaz, R., Patthey, P., & Braunisch, V. (2013). Impacts of outdoor winter recreation on alpine wildlife and mitigation approaches: A case study of the black grouse. In C. Rixen & A. Rolando (Eds.), *The Impacts of Skiing and Related Winter Recreational Activities on Mountain Environments* (pp. 137-154). Bentham eBooks.

[128] Outdoor Industry Association. (2022). *2022 outdoor participation trends report*. Outdoor Industry Association. https://outdoorindustry.org/wp-content/uploads/2015/03/2022-Outdoor-Participation-Trends-Report-1.pdf

[129] U.S. Department of the Interior. (2017, September 7). *New 5-year report shows 101.6 million Americans participated in hunting, fishing & wildlife activities* [Press release]. https://www.doi.gov/pressreleases/new-5-year-report-shows-1016-million-americans-participated-hunting-fishing-wildlife

This urban-style development is trying to cater to one of the smallest demographics of recreation users in the area. National trends are towards lower-cost, self-directed recreation experiences[130], not pay-to-play like this development. To sacrifice so much, so few does not make good sense. The crowding and displacement of other user groups outweigh the benefits that would only go to a small and niche user group. The other missing aspect from the DEIS is the character of recreation, not just the other user types. Many people I speak to refer to solitude and wilderness-like experiences in the Upper Stemilt/Squilchuck, Mission Ridge, and the project area. While not explicitly managed for such "wilderness characteristics," these current conditions are not in the DEIS and should be part of the baseline assessment, which is necessary under SEPA.

Mission Ridge resort is open to visitors from November through April.

While the above statement should be true, it is not. Mission Ridge has been operating year-round, contrary to their Special Use Permit and Land Use Agreement with WDFW. Mission Ridge has opened the Chair 5 Pub, conducts food & beverage sales, and hosts outdoor concerts throughout the summer. Not only is this in violation of their permits, but it displaces[131] wildlife[132] , as shown in the FOMR Trail Camera Survey.

RECREATION - 5.10.3.1 Impacts from Construction, Page 187

Availability of recreation amenities: Proposed Project construction would not result in closure of any recreation areas or public lands. It would not meaningfully reduce the availability or capacity of the region's trailheads, trails, campgrounds, or other recreation facilities.

The development would take away most of the parking spots for the Clara-Marion Lake/Squilchuck TH. It would also add immense congestion in the form of 10,000 new vehicle trips per day. Lake Clara could pump up visitation to look more like Colchuck Lake or Snow Lakes in the Enchantments. The parking capacity of the new

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[130] Pröbstl-Haider, U., Gugerell, K., & Maruthaveeran, S. (2022). Covid-19 and outdoor recreation – Lessons learned? Introduction to the special issue on "Outdoor recreation and Covid-19: Its effects on people, parks and landscapes". *Journal of Outdoor Recreation and Tourism*, *41*, 100583. https://doi.org/10.1016/j.jort.2022.100583

[131] Beaupre, C., Bevan, A., Young, J. R., & Blecha, K. A. (2025). Recreational trail traffic counts and trail proximity as a driver of ungulate landscape utilization. *Ecosphere, 16*(6), e70305. https://doi.org/10.1002/ecs2.70305

[132] Eisen, H., Morgan, D., Paul, K., & Boyd, K. (2021). *Environmental Impacts of Winter Recreation: A Comprehensive Survey*. Sierra Nevada Alliance. Retrieved from https://sierranevadaalliance.org/wp-content/uploads/2024/03/Winter_Rec_Science_2021.pdf

development (~5,500 vehicles) would allow for a massive amount of new use. The DEIS comments are not based on reality, and these impacts on existing recreation needs need to be researched.

RECREATION - Summary of Impacts from Construction, Page 289

In summary, with proper construction-related mitigating conditions (see Section 5.10.3.4), there would be no significant adverse construction-related impacts on existing recreation areas, the quality of recreation amenities, or the availability of recreation amenities from the Proposed Project.

This statement is wildly false. The noise, traffic, and disruption along the Squilchuck/ Mission Ridge Road corridor, all the way up to the parking lot, will add disturbance to people's recreation activities, where most people seek solace from industrial sounds. This development will create 20 years' worth of construction noise and traffic. Additionally, many recreation user groups specifically use the paved road sections for road biking, roller skating, etc. These users will also be impacted. Nowhere are these impacts quantified in the DEIS.

RECREATION - 5.10.3.2 Impacts from Operation, Page 289

The proposed expansion of the Mission Ridge ski area would enable the resort to operate year-round.

This year-round operation goes against the Special Use Permit and Land Use Agreement that the ski area operates under on public lands.

It would increase the resort's covered acreage by more than 1,000 acres, bringing 18 new alpine ski runs, new lifts, a snow tubing area, hiking and biking trails, as well as camping, horseback riding, zip lines, and an alpine coaster.

The resort's acreage would go up, but there is some miscounting in the 1,000 acres. They need to differentiate between terrain that is already lift-accessible. Also, expanding the SUP is not the same as how much new ski terrain there will be. This is a disingenuous figure.

The expansion would also introduce a Nordic skiing trail system.

The Nordic ski trail system? How about how many kilometers of Nordic skiing? Will it be groomed? Skate, classic, snowshoe use? Calling it a system, when it's one contrived, swith-backing squiggle on the map is dishonest. Plain has a Nordic ski trail system, as does the Methow. This is a single trail used for marketing purposes. If they really cared about Nordic, they would use the Beehive Irrigation grade and Devil's spur trail, where road beds already exist at more appropriate grades for Nordic skiing,

with the benefit of meeting the SEPS Alternative standard, or achieving goals with less impact.

The expansion of the resort would increase the quantity, quality, and range of recreational activities in ski area. The addition of more alpine ski runs, and the introduction of a Nordic ski trails system would increase the supply of recreational amenities during the snow season, while potential amenities such as an alpine coaster, zip lines, horseback riding, camping, and hiking and biking trails would add recreational opportunities during the summer and shoulder seasons.

The above statement reads like it is coming from the Developer's marketing department. Remove this subjective language. As discussed elsewhere in the section, the trend for outdoor recreation is towards lower-cost, self-directed recreation opportunities. This project goes in the other direction, but at the expense of existing forms of lower-impact, lower-cost recreation. No one is begging to have parking on private land, and their ski ticket prices to be raised–that's what this project offers.

One potential adverse impact of this expansion may be the elimination of some areas currently used for backcountry skiing, as these areas are developed for downhill and cross-country skiing. Backcountry skiing would still be available adjacent to and nearby the project area, but skiers may have to travel further to reach these areas. This impact would be minor, however, as the increase in available recreation amenities from the Proposed Project expansion would increase, and opportunities for backcountry skiing would continue to be available in the region.

The impact on backcountry skiers would not be minor. Firstly, why were local backcountry ski groups not consulted (El Sendero & Cascade Backcountry Alliance)? Second, backcountry skiers may not care about "increased recreation amenities" at the development. In fact, most backcountry skiers (a group that is growing faster than resort skiers) seek backcountry experience to get away from human-built environments and the noise and amenities resorts offer. This paragraph is insulting and dismissive to the backcountry community. It also fails to recognize backcountry snowshoers who make up a good chunk of backcountry users on Mission Ridge. This DEIS needs to quantify the current use of the area by backcountry snow users, and then ask them what the impacts would be. Not dismissing them as 'they'll be okay, they can go somewhere else." Completely inappropriate language and logic in a DEIS.

Access to existing recreation areas: The proposed expansion of the resort is expected to increase the number of visitors to the area over time, which could increase traffic in the area and potentially reduce the availability of parking at nearby trailheads. However, newly constructed roadways to the park and improved access to Squilchuck State Park because of intersection improvements should address any potential local traffic impacts to existing recreation facilities. Impacts to parking availability at trailheads would likely be minimal compared to current use patterns during most of the recreation season.

What is the actual number of visitors projected? 100,000 new skier visits per year, but how about in the off or shoulder seasons? How would this number change as climate

change decreases skiers and increases other forms of non-snow recreation? The amount of traffic projected on the Squilchuck Road corridor (~10,000 vehicle trips/ day) is a non-trivial amount. This DEIS trivializes it by saying impacts to traffic and parking availability would be minimal without offering any evidence. Look at nearby places like Icicle Creek, Snow Creek TH, and Stuart Lake TH. The traffic and related issues with that traffic and congestion are immense: human waste strewn through the travel corridors, lack of safe egress during emergencies, and decreased visitor experiences due to crowding. This development would likely add more traffic than those popular places see. With that, the attending problem sets would likely come with it. Please do a better job and fully assess the impacts on recreation with the estimated new visitors and traffic.

Quality of recreation amenities: The introduction of new lifts to the Mission Ridge ski area under the proposed expansion would benefit recreation participants. Increased access to new and existing ski routes may decrease the time it takes visitors to return to higher elevations and expand their choices of recreation, therefore increasing visitor enjoyment. Additionally, an increase in capacity would reduce congestion within the ski area, leading to a more positive experience for existing and future recreation participants. Although demand is likely to continue to grow over time

Quality is a subjective measurement best defined by visitors' surveys and recreation management research that has quantified these qualitative measurements. This DEIS does not do any of the necessary analysis to make an informed statement about this. Take the above paragraph "decrease time…to higher elevations." Let's break that down:

To ski at the new expansion area, here's what you need to do: drive a mile further past the existing ski area, hop on a magic carpet or surface lift, to get across parking areas and/or around condos and hotels, before stepping onto your first chairlift. Now, ride the chair up to ~5400 feet to the ski run back to the original Mission Ridge Ski Area, to then get on another lift, Chair 1, to get to Chair 2, to get you to higher elevations on the mountain.

Hmmm, "decrease time…to higher elevations."

"increase in capacity would reduce congestion"

The expansion plans to add 100,000 new skiers (double the current number), but not double the amount of new skiing. That will increase crowding/congestion.

While it's clear that the expansion will not even deliver on the promise of increasing quality for resort skiers, will it somehow increase the quality of recreation for non-

skiers? Not likely, but this needs to be studied and not left up to speculation, as is common in the DEIS.

Summary of Impacts from Operations, Page 290

From an operations impact perspective, the project would benefit recreation users by increasing the overall supply of recreation amenities in the area due to the introduction of new recreation facilities during winter and expanding park operations into summer seasons without impacting the supply of recreation amenities in surrounding areas. Therefore, with proper operation-related mitigation conditions (see Section 5.10.3.4), there would not have significant adverse operation-related impacts on existing recreation areas, the quality of recreation amenities, or the availability of recreation amenities recreation from the Proposed Project.

This is riddled with errors, like much of the recreation section. Statements and claims, not supported with evidence and are counter to common sense. Inappropriate for a DEIS. Please read the footnotes in my comments for research-backed information on this topic.

5.10.3.3 Indirect Impacts from Operation

No indirect impacts from operation of the Proposed Project on availability of recreation amenities, access to existing recreation areas, or quality of recreation amenities were identified.

Wow, NO indirect[133] impacts[134]? See page 26 of this document (2.3.1.4 Affected Environments Summary, Pages 85 & 86), as well as Pages 74-77.

The impacts of this development on all forms of recreation would be great. These impacts would come in both direct and indirect[135] forms. Direct impacts through crowding[136] and displacement[137]. The indirect impacts from the displacement of wildlife would eventually impact hunters, wildlife watchers, birders, etc. The impacts to recreation would first be local, site-specific, but then, over time, would include

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[133] Candolin, U., & Filippini, T. (2025). Light pollution and its impact on human health and wildlife. *BMC Environmental Science, 2*(1), Article 1. https://doi.org/10.1186/s44329-025-00017-7

[134] National Geographic Society. (n.d.). *Light pollution*. National Geographic. https://education.nationalgeographic.org/resource/light-pollution/

[135] Hansman, H. (2021, Fall). Drawing the line: Ski area expansions. *Winter Wildlands Alliance, Trail Break*. Retrieved from https://winterwildlands.org/ski-area-expansion-drawing-the-line/

[136] Nickerson, N. P. (2016). *What we know about crowding and visitor experiences* (White Paper 2016-14). Institute for Tourism and Recreation Research, University of Montana. https://scholarworks.umt.edu/itrr_pubs/340

[137] Rupf, R., Haegeli, P., Karlen, B., & Wyttenbach, M. (2019). Does perceived crowding cause winter backcountry recreationists to displace? *Mountain Research and Development, 39*(1), R60–R70. https://doi.org/10.1659/MRD-JOURNAL-D-18-00009.1

regional impacts. This DEIS is dismissive of recreation impacts to other user existing groups using the area, and only props up the Applicant's narrative that it's all 'rainbows & unicorns' for the community and recreationalists.

The claims that this development is enhancing recreation is very much out of touch with local and national trends[138]. When I speak to people who no longer ski at Mission Ridge, ticket price (and gear costs) are the number one factor in not resort skiing at Mission Ridge. Since COVID, we have seen that economics dictates people need more FREE (or low-cost) access to the outdoors and activities, not more high-cost amenities.[139]

5.11 Climate Change. Pages 291 - 297

Wow, this was a particularly anemic section. Lots of missing analysis here. This section of the DEIS states GHGs will increase and then concludes, "overall, the impacts from additional visitation and use of the MPR are anticipated to be minor at the scale of the project."

RCW 70A.05.040

Incorporation of current and future climate change impacts by state agencies. State agencies shall consider current and future climate change impacts to the extent allowed under existing statutory authority and incorporate climate resilience and adaptation actions as priority activities when planning, designing, revising, or implementing relevant agency policies and programs. Agencies shall consider: The integrated climate change response strategy when designing, planning, and funding infrastructure projects; and incorporating natural resource adaptation actions and alternative energy sources when designing and planning infrastructure projects.

WAC 197-11-060

Content of environmental review.

(a) SEPA's procedural provisions require the consideration of "environmental" impacts (see definition of "environment" in WAC 197-11-740 and of "impacts" in WAC 197-11-752), with attention to impacts that are likely, not merely speculative.

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[138] Bruton, M. (2023, February 28). Outdoor recreation industry sees significant growth with changes in consumer behavior sparked by Covid-19. *Forbes*. https://www.forbes.com/sites/michellebruton/2023/02/28/outdoor-recreation-industry-sees-significant-growth-with-changes-in-consumer-behavior-sparked-by-covid-19/

[139] Karnowski, S. (2023, August 25). US Forest Service rejects expansion plans of premier Midwest ski area Lutsen Mountains. *AP News*. https://apnews.com/article/skiing-lutsen-minnesota-midwest-environment-tribes-2bc349874a347010f4a84881db6ebf9d

(See definition of "probable" in WAC 197-11-782 and 197-11-080 on incomplete or unavailable information.)
(b) In assessing the significance of an impact, a lead agency **shall not limit its consideration** of a proposal's impacts only to those aspects within its jurisdiction, including local or state boundaries (see WAC 197-11-330(3) also).
(c) **Agencies shall carefully consider the range of probable impacts, including short-term and long-term effects.** Impacts shall include those that are **likely to arise or exist over the lifetime of a proposal or, depending on the particular proposal, longer**.
(d) A proposal's effects include direct and indirect impacts caused by a proposal. Impacts include those effects resulting from growth caused by a proposal, as well as the likelihood that the present proposal will serve as a precedent for future actions…

RCW 43.21C.031
Significant impacts.
(1) An environmental impact statement (the detailed statement required by RCW 43.21C.030(2)(c)) shall be prepared on proposals for legislation and other major actions having a **probable significant, adverse environmental impact**…
(2) An environmental impact statement is required to analyze only those probable adverse environmental impacts which are significant…**Discussions of significant short-term and long-term environmental impacts…**

WAC 197-11-752
Impacts.
"Impacts" are the effects or consequences of actions. Environmental impacts are effects upon the elements of the environment listed in WAC 197-11-444.

WAC 197-11-960
Environmental checklist.
2. Air (a.) What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

The DEIS conclusions on climate change are meaningless as they don't provide a quantitative analysis. The Applicant needs to provide a clear, documented GHG inventory (metric tons CO_2e) for: (a) construction (machinery, embodied emissions in materials), (b) operations (building energy, snowmaking energy, lifts, maintenance), and (c) vehicle miles traveled by visitors and employees (the DEIS lists ADT increases but does not translate into CO_2e). The City of Wenatchee voluntarily undertook this process of qualifying GHGs, finding that ninety-five percent of greenhouse gas

emissions generated in Wenatchee are coming from energy use in homes and buildings, and fuel from automobiles[140]. This SEPA analysis needs to contain a similar GHG inventory report. If quantification is claimed to be infeasible, the DEIS must explain why and what proxies were used. (DEIS lists ADTs but stops short of converting that to GHGs).

SEPA requires lead agencies to consider the range of probable impacts (including long-term) and to use best available science in the analysis. WAC 197-11-060 requires impacts "over the lifetime of a proposal" to be considered. Quantification is a standard way to meet that duty when it is reasonably feasible.

Mitigation is vague and non-committal, e.g., "potential" installation of electric vehicle charging stations and solar panels (page 295), with reliance on general permit compliance. No specific, enforceable measures address quantified reductions (e.g., low-emission vehicles, carbon offsets). Adaptation to climate impacts (e.g., reduced snowpack affecting snowmaking/water supply) is noted as beneficial via project features like artificial snowmaking (pages 294-295, 196), but without analysis of resilience under high-GHG scenarios or alternatives.

SEPA requires EISs to discuss mitigation that could reduce significant impacts (WAC 197-11-440), including specific, feasible measures for GHG/climate. Ecology guidance and the GAP Rule require mitigation planning for emissions, such as efficiency standards or offsets. CCC 13.04.050 mandates mitigation in SEPA determinations. The DEIS's deferral to permitting violates SEPA's upfront disclosure requirement, as seen in Lands Council v. Washington State Parks (2008), where vague mitigation was insufficient.

How will climate change alter skiing at the ski area? You can't rely on snowmaking to get your way out of climate change.

Average annual temperature in Chelan County is expected to increase 4.6Åã F and 5.9Åã F by the 2050s and 5.8Åã F and 9.7Åã F by the 2080s under a low and high GHG scenario respectively, relative to historical conditions (see Figure 5.11-1). Warming is expected in all seasons, with the most warming in summer months. Extreme heat events are expected to become more frequent and extreme cold events are expected to become less frequent (Chelan County 2020).

The intersection of climate change and wildfire is one of the areas of significant risk, along with increased population from the Proposed Project, that is an unavoidable impact.

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[140] City of Wenatchee. (2023). *City of Wenatchee 2023 Community Greenhouse Gas Inventory*. Prepared by Parametrix in collaboration with Our Valley Our Future and Sustainable NCW.

Snowpack is expected to further decline with warming in the future. Mission Ridge currently receives approximately 200 inches of snowfall annually (Mission Ridge, 2023). In Chelan County, average spring snowpack is projected to decline 26.9 percent and 33.5 percent by the 2050s under a low and high GHG scenario, respectively. Total runoff in August, which includes any surface water flows in addition to subsurface runoff in shallow groundwater, is projected to decline 20.4 percent and 26.1 percent by the 2050s under a low and high GHG scenario, respectively. The decrease in spring snowpack and summer streamflows pose challenges in the future for water supply in Chelan County.

Snowmaking requires cold temperatures, with temperatures in the mid-20s or cooler for reliable snow. Why isn't there a realistic assessment in this DEIS of what snowpack and snowmaking would like 10, 20, 30, 50 years out? What kind of business would invest millions in infrastructure when the writing is on the wall that the golden goose is melting? The public needs this DEIS to give site-specific assessments on the viability of skiing and snowpack in this MPR proposed zone, as it greatly changes the cost/benefit ratio, if, for instance, we sacrifice a lot for skiing, but then don't even get skiing.

Intersection of Climate Change and Recreation: Climate Refugees

As climate warms people will change their recreation patterns[141]. Ski area use in winter will decrease[142] as snowpack shrinks[143] and seasons are shorter[144]. Summer use may be driven up by people acting as climate refugees, seeking cooler temperature at higher elevations. The problem with this forecasted higher recreation use in snow-free months is the contradiction with the SUP/Land Use Agreements that Mission Ridge operates under, which explicitly say no use in summer months to reduces disturbance with elk and deer calving and fawning. As climate warms, wildlife will also seek out these higher, north facing slopes for refuge.

5.11.5.6 Plants and Animals, Page 297

Impacts from extreme weather events within the Proposed Project Area and surrounding areas would be adverse and could be short- or long-term causing minor to major impacts on Aquatic

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[141] Wilkins, E. J., & Horne, L. (2024). Effects and perceptions of weather, climate, and climate change on outdoor recreation and nature-based tourism in the United States: A systematic review. *PLOS Climate, 3*(4), e0000266. https://doi.org/10.1371/journal.pclm.0000266

[142] Mitterwallner, V., Steinbauer, M., Mathes, G., & Walentowitz, A. (2024). Global reduction of snow cover in ski areas under climate change. *PLOS ONE*, *19*(3), e0299735. https://doi.org/10.1371/journal.pone.0299735

[143] Milman, O. (2024, March 2). *Ski resorts' era of plentiful snow may be over due to climate crisis, study finds.* The Guardian. https://www.theguardian.com/environment/2024/mar/02/ski-resorts-snow-global-warming-study

[144] Climate Impact Lab. (2018, February 8). America's shrinking ski season. EPIC—University of Chicago. https://impactlab.org/news-insights/americas-shrinking-ski-season/

Resources. Because of these changes, the ecosystems that salmonids and other Aquatic Resources rely on will be altered and populations may be negatively impacted. The heavier rain, decrease in snowpack, and reduced summer flows will result in changes to seasonal streamflows that salmonids rely on for cool water, flood refuge, and habitat forming processes. The increase in wildfires, floods, and intense precipitation events will also pose harm to salmonid species with increased sediment entering the river. Mitigation measures are proposed to address the impacts to plants and animals and discussed in greater detail in Section 5.4 Plants and Animals.

Wildlife and climate change (only salmonids would be impacted?) This DEIS doesn't spend any time looking at anything else than salmonids? This is a major omission in this DEIS. Questions that need to be asked:

How will climate change impact deer and elk in the Stemilt-Squilchuck and on Mission Ridge? Will habitat in and around the project area become more less valuable to them? How will climate change alter the plant communities that these animals rely on for both food and shelter? Will cheat grass and other invasive, less nutritious plants encroach into higher elevations? Will the impacts of this development be beneficial or harmful in light of these findings?

These questions could, and should, be applied to a myriad of species to understand what are the impacts are. Not to do your homework for the consultants, but let's take a look at how climate change could alter habitat for species that are temperature sensitive like pika[145].

Other scientists have already acknowledged the importance that boulder fields at higher elevations could play as a stable, cooler temperature refugia[146] for species trying to escape heat stress from climate change[147]. A large portion of the basalt talus in Section 19 would be moved, disrupted, altered, graded–changing or eliminating the deep interstitial spaces that make it such a special habitat. The project area aims to expand the ski area's footprint within WDFW Section 25, which has vast, ungroomed basalt fields (some of the last remaining in the Mission Ridge Ski Area Special Use

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[145] Kulig, E. N., Van Gunst, J., Hernandez, M. J., Luong, Y., Villaseñor, M., Crowhurst, R. S., Epps, C. W., & Castillo Vardaro, J. A. (2025). Climate drives genetic diversity loss in American Pika (Ochotona princeps) populations in the Great Basin. *Journal of Mammalogy*, *106*(4), 933-943. https://doi.org/10.1093/jmammal/gyaf021

[146] Smith, A. T. (2020). Conservation status of American pikas (Ochotona princeps). *Journal of Mammalogy*, *101*(6), 1466-1488. https://doi.org/10.1093/jmammal/gyaa110

[147] Shoo, L. P., Storlie, C., Williams, Y. M., & Williams, S. E. (2010). Potential for mountaintop boulder fields to buffer species against extreme heat stress under climate change. *International Journal of Biometeorology*, 54(4), 475–478. https://doi.org/10.1007/s00484-009-0286-4

Permit Area). Grooming, grading, and compacting these basalt talus can render them unviable as habitat compared to the airy spaciousness that exists in undisturbed talus, which gives it the interstitial, subterranean spaces so critical for small animals like pika[148].

Pika are a great example of a startling omission from this DEIS, both in the Plants & Animals Section and in this Climate Change section. Climate change will negatively impact pika[149] making them extremely vulnerable in the future. Pika have small home ranges, are poor dispersers, and need extended snow cover which is projected to decline with climate change. Even in the absence of snow, they inhabit a unique niche of rocky talus with access to meadow-like vegetation. No where in the DEIS is any of this discussed. It is shameful to omit such a glaringly obvious, and insanely cute creature from the assessments in the DEIS.

CLIMATE CHANGE - PLANTS

The DEIS is silent on how climate change would impact plant species in the project area. Here are some example questions the DEIS should be looking into:

Will climate change increase the range and health of aspen groves in the project area? What about native and endemic plants in the project area like Lewisiopsis tweedyi? How will climate change impact forest pests like pine beetles? Which plant diseases would you expect to see increase as a result of climate change? Will the changes in forecasted precipitation levels make a meaningful difference to drought-stressed trees in the region?

Climate change will greatly impact water resources yes, and this section does a paltry job of even addressing it, barely paying it lip service. Climate change will impact every aspect of plants and animals in the future. It can exacerbate drought stress, disease, pests, etc.

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148 Beever, E. A., Wilkening, J. L., Billman, P. D., Thurman, L. L., Ernest, K. A., Wright, D. H., Gill, A. M., Craighead, A. C., Helmstetter, N. A., Svancara, L. K., Camp, M. J., Bhattacharyya, S., Fitzgerald, J., Hirose, J. M., Westover, M. L., Gerraty, F. D., Klingler, K. B., Schmidt, D. A., Ryals, D. K., . . . Wilson, K. C. (2023). Geographic and taxonomic variation in adaptive capacity among mountain-dwelling small mammals: Implications for conservation status and actions. *Biological Conservation*, *282*, 109942. https://doi.org/10.1016/j.biocon.2023.109942

149 Morgan, H., & Krosby, M. (2017). *Nooksack Indian Tribe Natural Resources Climate Change Vulnerability Assessment*. Climate Impacts Group, University of Washington. Retrieved from https://cig.uw.edu/wp-content/uploads/sites/2/2018/01/Glossy-Species-Fact-Sheetscompressed.pdf

Climate change will alter the plant communities (WBP, aspen[150], endemic plants), fire patters, and will cause some species to win others to loose. This DEIS says nothing about any of it. This DEIS section reads like the plot of the film "Don't Look Up"—ignore it and maybe it will go away.

CLIMATE CHANGE - Landslide/Natural Disaster Risks

Climate change is expected to increase both the frequency and magnitude of floods in and around Chelan County with the changes in precipitation events and runoff volumes. In Chelan County, total cool season (October to March) runoff is projected to increase 27 percent and 39 percent by the 2050s and 43 percent and 74 percent by the 2080s for a low and high GHG scenario, respectively (Chelan County, 2020a).

How would this impact the steep slopes of the proposed access road? Will avalanche danger also change? How would this work for the safety of that route as the only egress/ingress?

CLIMATE CHANGE - Snowmaking/Wastewater as an additive argument?
Acting like 'treated' wastewater coming from LOSS/WWTP is additive and beneficial is concerning and does not track with a growing body of evidence that says the contrary[151]. Wastewater often contains harmful chemicals and residues from human use. These compounds are not removed or made safe after LOSS[152]/WWTP processes. This DEIS needs to stop ignoring the scientific evidence and account for the actual impacts that wastewater would have in the basin.

Contaminants of Emerging Concern (CECs) are contaminants, both natural and synthetic, that may cause ecological or human health effects and are not widely regulated. CECs found in wastewater include, but are not limited to, pharmaceuticals, personal care products (e.g., synthetic fragrances, antibacterial compounds), plasticizers, food additives, flame retardants, microparticles, and per and polyflouryl alkyl substances (PFAS).

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[150] Singer, J. A., Turnbull, R., Foster, M., Bettigole, C., Frey, B. R., Downey, M. C., Covey, K. R., & Ashton, M. S. Sudden Aspen Decline: A Review of Pattern and Process in a Changing Climate. *Forests*, *10*(8), 671. https://doi.org/10.3390/f10080671

[151] Yang, Y.-Y., Toor, G. S., Wilson, P. C., & Williams, C. F. (2016). Septic systems as hot-spots of pollutants in the environment: Fate and mass balance of micropollutants in septic drainfields. *Science of the Total Environment, 566–567*, 1535–1544. https://doi.org/10.1016/j.scitotenv.2016.06.043

[152] Wilschnack, K., Cartmell, E., Yates, K., & Petrie, B. (2024). Septic tanks as a pathway for emerging contaminants to the aquatic environment–Need for alternative rural wastewater treatment? *Environmental Pollution*, *362*, 124988. https://doi.org/10.1016/j.envpol.2024.124988

Using water, then polluting it is not a smart strategy for climate change, especially in light regional water shortages.[153]

5.11 Climate Change, Recreation, Pages 291 - 297

*Climate change **is not expected to affect the following resource areas** and were not included in this analysis: Visual Resources (Section 4.3), Land and Shoreline Use (Section 4.4), Transportation (Section 5.5), Utilities and Public Services (Section 5.6), Noise (Section 5.7), Cultural (Section 5.8), and **Recreation (Section 5.9).***

Climate change will definitely impact recreation. As climate changes people will adapt and change when, where, and how they recreate. Climate change is already altering and closing down some ski areas because of a lack of, or inconsistent snow.

"More than half of the ski resorts in North America have closed since the early building booms, many facing a warming climate and pressures to find water to make artificial snow. Researching and documenting all resorts between 1969–2019, we find that 59% of all resorts in North America have closed since the resort boom of the 1960s and 70s (65% in the United States, 31% in Canada)." [154]

"The US ski industry has collectively lost $5 billion from 2000-2019 as a result of climate change from human activities, and could lose another $1 billion a year in the 1950s depending on global emissions reduction efforts. Winter activities that once boosted local economies are now seeing a drastic loss in numbers of tourists and visitors." [155]

Mission Ridge cannot rely on snowmaking if temperatures rise above freezing. In fact, snowmaking is optimal when temperatures are in the mid/lower 20ºF and only produces low-quality snow when the temperatures rise to 28ºF[156]. The anticipated temperature rise at Mission Ridge will make snowmaking useless even while natural

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[153] Fitzgerald, E. (2025, August 9). Eastern Washington's rapidly declining groundwater highlighted in new study. *Washington State Standard*. https://washingtonstatestandard.com/2025/08/09/eastern-washingtons-rapidly-declining-groundwater-highlighted-in-new-study/

[154] Moscovici, D. Ski Resort Closures and Opportunities for Sustainability in North America. *Land*, *11*(4), 494. https://doi.org/10.3390/land11040494

[155] Yalof, R. (2025, March 6). The impact of climate change on the US ski industry. *Earth.Org*. https://earth.org/the-impact-of-climate-change-on-the-us-ski-industry/

[156] Crystal Mountain Resort. "Snowmaking at Crystal: Investing in the Future." Crystal Mountain Resort, https://www.crystalmountainresort.com/. Accessed 15 Oct. 2025.

snow continues to fall. Most years, winter storms come in close to the freezing point (32ºF), so a 5-degree increase in temperatures (conservative temperature rise in some models) would change the snow pattern on Mission one from snow to rain (as we already sometimes see in mild winters).

5.12 Cumulative Impacts, Pages 298

It appears that Cumulative Impacts were not considered in many sections (Climate Change, Recreation, Impacts to Plants & Animals, Water Use, etc.). This is a glaring omission and must be factored in for future drafts of the EIS. When impacts are assessed for an individual proposed action, they may be determined to be less than significant, but when considered cumulatively with the impacts of other actions, especially over a period of time, they can be significant. The Washington State Environmental Policy Act (SEPA) requires that agencies address cumulative impacts:

RCW 43.21C.030
(f)Recognize the worldwide and long-range character of environmental problems.

WAC 197-11-060 // Content of environmental review.
(c) Agencies shall carefully consider the range of probable impacts, including short-term and long-term effects. Impacts shall include those that are likely to arise or exist over the lifetime of a proposal or, depending on the particular proposal, longer.
(d) A proposal's effects include direct and indirect impacts caused by a proposal. Impacts include those effects resulting from growth caused by a proposal, as well as the likelihood that the present proposal will serve as a precedent for future actions…

WAC 197-11-060 // Content of environmental review.
(d) **Phased review is not appropriate when:**
(ii) It would merely divide a larger system into exempted fragments or avoid discussion of cumulative impacts;

It also appears that this project has tried to separate the impacts they would have on the Forest Service portion of the project area, and the surrounding portions on private and WDFW. This phased review is not appropriate for this project. The public and agencies need to have the complete, combined picture of impacts together in one EIS, not spread between a County EIS and a Forest Service EA or EIS. This should be presented to the public in one document, as the entirety of the project needs to be assessed, not fragmenting impacts across multiple SEPA/NEPA processes.

Cumulative Impacts & Wildlife

The wildlife that use the project area do not all stay in the project area. For the migratory deer and elk, how to changes to their habitat impact them in light of this development? For instance, does losing more wintering ungulate habitat due to Helion, Microsoft data centers, development in Malaga (not implying any of these are negative developments, just that they have an impact, especially when taken together and viewed cumulatively), and other forecasted developments diminish the Colockum elk herds or Wenatchee Mountains mule deer? How do they adapt to this loss? Does squeezing them from both sides, on the summer range and the winter range have an impact on herd health or size? What trends in land development across their migration routes and used habitats are likely in the coming 20 years? What happens if the Applicant begins to develop Section 13? Will the policy decision of this MPR create a precedent (WAC 197-11-060(d)) that would further impact wildlife in the project area? How would converting this forested piece of land into possible residential land use impact wildlife?

The cumulative impacts are not limited to wildlife. Regarding water and power use, how are the increases in data center water and power usage likely to impact the project? Will this create any issues with the supply of these resources? Do rapidly declining water supplies[157] in nearby (and likely interconnected) areas indicate future conditions? Will Chelan County (and/or the Eastbank Aquifer) play a role in propping up or helping other struggling water-scarce areas in Washington[158]? These cumulative impacts need to be studied.

6.2.1 Consultation…United States Forest Service, Page 306

The Federal consultation is in progress, and a final biological assessment (BA) is in development from the USFS. The impacts associated with plants and animals are likely mitigated below a level of significance, and we do not anticipate federal consultation to change this determination.

WAC 197-11-060 // Content of environmental review.
(d) **Phased review is not appropriate when:**
(i) The sequence is from a narrow project document to a broad policy document;

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[157] Washington State Department of Ecology. (2025, October 1). *Dwindling water supplies force new restrictions in Yakima Basin beginning Oct. 6*. https://ecology.wa.gov/about-us/who-we-are/news/2025/oct-1-dwindling-water-supplies-force-new-restrictions-in-yakima-basin-beginning-oct-6

[158] Vestal, S. (2025, July 9). *WSU study offers detailed look at declining groundwater in regional aquifer system*. Washington State University Office of Research. https://research.wsu.edu/news/wsu-study-offers-detailed-look-at-declining-groundwater-in-regional-aquifer-system

(ii) It would merely divide a larger system into exempted fragments or avoid discussion of cumulative impacts;

Separating the Forest Service assessment from this EIS is not appropriate under WAC 197-11-060. This masks the full impacts of the project, by making a piecemeal of assessment, giving the appearance of fragmented impacts, instead of the SEPA required discussion of cumulative impacts.

Additionally the with the ESA-protected, white-bark pine in the project area and the projected need for multiple "takes" within the proposed easement road corridor, this project should move into an automatic EIS for the Forest Service.

6.2.8 Public Involvement, Page 309

WAC 197-11-060 // Content of environmental review.
4) Impacts. (b) **In assessing the significance of an impact, a lead agency shall not limit its consideration of a proposal's impacts only to those aspects within its jurisdiction, including local or state boundaries** (see WAC 197-11-330(3) also).
(c) Agencies shall carefully consider the range of probable impacts, including short-term and long-term effects. Impacts shall include those that are likely to arise or exist over the lifetime of a proposal or, depending on the particular proposal, longer.
(d) A proposal's effects include direct and indirect impacts caused by a proposal. Impacts include those effects resulting from growth caused by a proposal, as well as the likelihood that the present proposal will serve as a precedent for future actions

LACK OF CONSULTATION WITH KITTITAS & GRANT COUNTIES

While I'm sure (maybe?) consultation was done with Douglas County regarding light pollution and PUD water usage from the Eastbank Aquifer, it appears our neighbors to the East and South were left out of this crucial process. The communities that use Mission Ridge for recreation, who can see it from their living rooms, and utilize its resources, should be fully apprised of this development. Grant and Kittitas County members of the public and their county governments and non-profit organizations should have had sufficient public notice and access to the full comment period, like the residents of Chelan County did for this comment period. We sometimes forget that Mission Ridge is also the backyard mountain of Quincy, Moses Lake, and Ellensburg. Folks in these communities go camping, hunting, and recreating on Mission Ridge and will be impacted by this development. Kittitas County residents, in particular, need to be aware of the water and wildlife impacts, as the elk that winter in their community may breed and give birth where this development sits. The well water this development proposed to use comes from the aquifer that sits under Mission Ridge and is likely connected to the Kittitas County side. Surface waters like Swift,

Boulder, Pearson, and Naneum creeks (and their attending feeder springs) on the Kittitas side could be connected to this aquifer and negatively impacted by any drawdown from the Chelan County side. Given Kittitas counties precarious situation with having a state-ordered emergency suspension of all surface water use in the Yakima Basin[159]. It would seem reckless to proceed with a water-hungry project that could further deplete water resources that may be connected to Kittitas County. These hydrological relationships need to be studied and included in this DEIS, and the impacted communities need to be consulted.

TRIBAL CONSULTATION (WAC 197-11-060.4(b))

Lack of consultation with Tribes? Where is the section where the public gets to see the input from the Tribes highlighting their concerns and the way this project could impact Treaty Rights and Tribal resources?

APPENDIX A - 2020 FS EA

This document has some errors and omissions that shouldn't be relied on without scrutiny.

APPENDIX J - 2019 Economic Significance Report

This Economic Significance Report reads more like marketing or" greenwashing" material. This is inappropriate in an SEPA document where a project like this could cause significant ecological harm. The report also does not factor in the negative impacts that this project could have and what that would take away from other current existing economic engines in the region. The current undeveloped upper basins of the Stemilt-Squilchuck forest help protect water quality in the region–an ecosystem service not factored into this economic report.. A 2008 WSU economic study fount that, "there are 10 irrigation reservoirs and four irrigation districts that service 5,400 acres of farmland. The orchards in the watershed produce 34 million pounds of cherries each year, **resulting in $76 million of economic impact.** This safeguards over 1,000 seasonal jobs in the orchards." This means that the economic impact of just the cherries in the watershed is much higher than the economic impact of this development. And this study is almost 20 years old! How would the development cut into these existing forms of revenue? PFAS found in the current ski area needs clean up. What if these harmful substances work their way into the watershed? How would that subtract from the economy of the area?

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[159] Source ONE News staff. (2025, October 6). *Kittitas County reportedly 'days away' from running out of water; State orders emergency shutdown*. Ellensburg Daily Record. https://www.yoursourceone.com/columbia_basin/kittitas-county-reportedly-days-away-from-running-out-of-water-state-orders-emergency-shutdown/article_1f918a81-9fb2-49aa-a903-058bd444b26e.html

The economic impact report should be updated with the following things in mind:

1. Flaws in Methodology
The report traces inter-industry linkages but assumes fixed production coefficients, infinite supply elasticity, and no behavioral responses—leading to inflated multipliers. This is particularly problematic for tourism and construction sectors, where they ignore things like non-local suppliers, double-counting induced effects, and failing to account for opportunity costs. Unlike computable general equilibrium (CGE) models, which simulate market adjustments, IMPLAN treats economies as linear, overestimating impacts by 20-50% in tourism studies.

2. Failing to Consider Disruptions and Broader Variables
The report's "contributions" framing deliberately excludes negatives, presenting a one-sided narrative that ignores GMA/SEPA mandates for comprehensive impact assessment (RCW 36.70A.070; WAC 197-11-060). Key omissions:

3. No accounting for public expenditures—e.g., expanded fire/medical services (new station noted in DEIS), road upgrades, or water/sewer strains from 886 units and commercial space (as noted before, treated affluent, which contains contamination that will need to be cleaned up or will degrade drinking and irrigation water eventually). Property taxes may not cover these; similar resorts show net fiscal drains due to service demands.

This report is not a neutral analysis but promotional material, funded by the Applicant, that hypes jobs/output while suppressing trade-offs. Its linear optimism fails economic rigor—not factoring in substitutions (e.g., visitors shifting from other amenities in the downtown Wenatchee core) and net present value. For GMA/SEPA compliance, it violates requirements for balanced fiscal/environmental review, potentially misleading permitting (Chelan County Code 11.89). Real-world ski expansions often yield mixed results: unemployment rises in locals, environments degrade, and climate erodes returns ($5B U.S. losses[160]).

Recommendations for a Future Economic Impact Study
A credible study should be independent and not influenced by the developer (e.g., by WA Department of Commerce, WSU, etc.), use dynamic tools, and integrate SEPA/GMA elements into the following structure:

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[160] Peterson, B. (2024, February 29). Climate change cost U.S. ski industry billions, study says, and future depends on emissions. *AP News*. https://apnews.com/article/ski-industry-climate-change-financial-losses-b2ccf6cee991cee723c97b5f951dbf29

Balanced Cost-Benefit Framework: Employ CGE models for market feedback, valuing ecosystem services (e.g., habitat at $50-100/acre/year via USDA tools) and climate risks (e.g., $1B asset loss probability via IPCC scenarios).

Full Variable Inclusion: Model disruptions—e.g., wildfire probability (20-30% higher post-expansion), housing affordability impacts (rents +15-20%), and cumulative effects with regional growth. Include sensitivity tests (±20% on visitation/costs).

Data Transparency: Verify baselines (e.g., actual 2024 visits ~100,000-120,000 via NSAA); disclose assumptions (e.g., 30-40% leakage rate).

Equity Focus: Assess distributional effects (e.g., low-wage seasonal jobs vs. high-end housing benefits) and alternatives (e.g., eco-tourism without full buildout).

Long-Term Horizon: 50-year outlook (20-year build out, 30 years of operation), factoring decarbonization (e.g., electric snowmaking costs, transition to EVs).

This approach would yield a more accurate and useful impact estimate, informing the public about the true economic costs/benefits of this project.

Mission Ridge NON-COMPLIANCE

A Disturbing Pattern of Violations With No Consequences

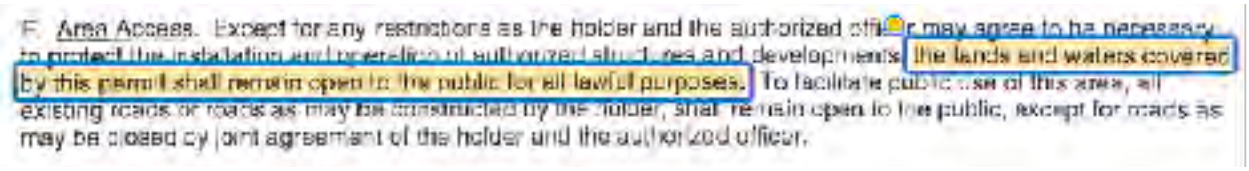
Compliance is the good-faith effort to follow the rules, and then if rules are broken, to attempt to mend and repair. Compliance is also a legal requirement with all permit requirements and conditions imposed by Chelan County, USFS, and other agencies The Developer who owns Mission Ridge Ski Area also owns Section 19, and Section 13, has demonstrated repeated patterns of non-compliance with permit requirements imposed by regulatory agencies. Including:

1. Violations of the Special Use Permit LEA410104, which authorizes Mission Ridge to operate a winter ski resort on public land (infractions ongoing)
2. Ignoring all jurisdictional requirements for construction of a temporary road that roughly follows the proposed driveway alignment to the development. (2018, impacts ongoing)
3. Driving heavy machinery into wetlands on Section 19. No wetland buffers were delineated or respected. (2024/25)
4. Not obtaining permits for earth-moving work within the riparian buffer zone of Squilchuck Creek (2025)
5. Damages to the public land with PFAS contamination

These instances and patterns of non-compliance need agency follow-up and oversight. A discussion of each example of non-compliance follows:

1. VIOLATIONS OF SPECIAL USE PERMIT LEASE.

The Special Use Permit is clear that the holder has non-exclusive use of the SUP area and that the land is to remain open to the public for all lawful purposes.


F. Area Access. Except for any restrictions as the holder and the authorized officer may agree to be necessary to protect the installation and operation of authorized structures and developments, the lands and waters covered by this permit shall remain open to the public for all lawful purposes. To facilitate public use of this area, all existing roads or roads as may be constructed by the holder, shall remain open to the public, except for roads as may be closed by joint agreement of the holder and the authorized officer.

excerpt from Special Use Permit

The wording of the Off-Season Access Policy section of the website suggests that the non-exclusive concessionaire has the authority to allow or disallow entry onto the public land where they operate.

www.missionridge.com

Mission Ridge should not have the authority to permit or deny access to the public land on which they operates. The SUP is clear that the permit is nonexclusive. It is reasonable that the permit holder could protect their improvements from trespass or damage, but they should not have the power to control access to the public land.

E. Nonexclusive Use. This permit is not exclusive. The Forest Service reserves the right to use or permit others to use any part of the permitted area for any purpose, provided such use does not materially interfere with the rights and privileges hereby authorized.

excerpt from Special Use Permit

There are several recent incidents when Mission Ridge acted in a manner more consistent with a private property owner than a non-exclusive use concessionaire. They have closed access to the entire SUP area over localized issues and they even have closed the parking lot to paying customers only. A few examples follow:

2016 - entire SUP 2000 acres closed, “KEEP OUT” over localized landslide

gated parking lot

2021 - Total area closure due to construction of new chair 2

No parking except for ticket holders. Sandwich board sign in the parking lot

In addition to assuming authority of access to the public lands of the SUP area, the holder is creating landscape-wide rules that they may not have the authority to enact or enforce. An example of this is the drone policy, which was recently updated on their website:

Drone Policy

Due to safety and privacy concerns, Mission Ridge prohibits the operation or use on or above Resort property of unmanned aerial systems, or drones, by the general public – including model aircraft by recreational users and hobbyists – without the prior written authorization from Mission Ridge. This prohibition includes drones used for filming or videotaping, as well as any drone use by media or journalists operating above or within the area boundaries. This prohibition extends to any devices launched or operated from Resort property, as well as any launched from private property outside of the Resort boundaries. Please contact a resort Marketing representative at 509-663-6543 or marketing@missionridge.com, if you have any questions or if you seek prior authorization to operate any such devices. Any authorized operation of drones on or above Resort property will be governed by Federal Aviation Administration (FAA) rules and regulations, local law enforcement, and / or U.S. Forest Service rules, as well as those policies separately established by this Mission Ridge, which may include certification, training, insurance coverage, indemnification requirements, and waivers or releases of liability. Any violation of this policy may involve suspension of your access privileges to the Resort, or the revocation of your season pass, as well as confiscation of any prohibited equipment, and may subject violators to any liability for damages, including, but not limited to, damages for trespass, violations of privacy, and physical injuries to persons and/or property, as well as legal fees.

www.missionridge.com

It seems reasonable to require, as a condition of purchasing a lift ticket, that the ticket holder agree not to use a drone. But to assume authority over airspace, which is already controlled by the FAA, seems inappropriate. Especially when FAA rules already dictate how you can operate a drone around people or infrastructure. Unless there is a Temporary Flight Restriction in place, the airspace around Mission is open to lawful drone flight. Also, and maybe more importantly, please notice in the drone policy that the SUP area is referred to as "resort property", again subliminally communicating the idea that the public land is actually owned and controlled by the permit holder. The only "resort property" is the physical improvements installed by the holder. None of the land is resort property; it is all public property. And the airspace is public and regulated by the FAA.

Further to the permit holder acting as if the public land on which they operate is exclusive to their use, the holder threatens on their website to trespass violators of their rules from the entire SUP area. If someone breaks a rule at Mission Ridge, it makes sense that the ski area can deny that person lift services and building entry. However, denying them entry to the entire public land SUP area is not reasonable, and the holder should not be allowed to do this. The website is specific about the threat of trespass:

> **The ski area may remove/trespass persons from the permit area for the following acts/behaviors:**

from www.missionridge.com

In addition to this declaration on the website, the following trespass notice was found on the ground under chair one, which suggests that the ski area is actually exercising this self-proclaimed authority:


MISSION RIDGE

NOTICE OF

TRESPASS WARNING

Mission Ridge issued trespass notice to a member of the public

Another activity that is barred under threat of trespass is unauthorized overnight parking or camping. The non-exclusive concessionaire should not have the authority to deny camping on the public land on which they operate.

Excerpt from www.missionridge.com under rules of use

The language used by the permit holder implies they have exclusive permission and authority over the SUP area. This attitude and these actions are not consistent with the intent of the SUP, which was to allow operation of a ski resort (at the time, this was for the benefit of the community, not for private profit) while also keeping the public land open for all legal uses to the public.

2. VIOLATIONS OF 2017 TEMPORARY ROAD CONSTRUCTION REQUIREMENTS

A USFS Decision Memo was issued in 2017 citing categorical exclusions and declaring the intention of the Forest Service to issue a special use permit allowing construction of a temporary road. Following this, in 2018 WDFW issued a Determination of Nonsignificance and Adoption of Existing Environmental Document (Categorical Exclusion) accepting the conclusions of the USFS documents and described the project and requirements as follows:

The major components of the temporary road project are comprised of the following:

1) New special use permit for USFS land (Appendix C of this SEPA checklist)
2) Temporary road footprint:
    a. approximate length up to 0.67 miles
    b. approximate width of temporary road surface up to but not exceeding 16 feet
    c. approximate ground disturbance not exceeding 1-acre
    d. two temporary bridges placed on temporary supports (above ordinary high water)
3) Assessment of geologic risk and feasibility of an expansion area road

4) Soil erosion control and rehabilitation

Trees greater than 8 inches diameter at breast height (DBH) would not be removed, however some trees less than eight inches DBH and shrubs may need to be cleared. The temporary road will fall within the proposed expansion area road corridor width of 32 feet and length of 0.67 miles. This would allow the trackhoe to avoid larger trees and minimize vegetation removal to the extent practicable while minimizing the final length of the road.

The temporary road would require two stream crossings, one at each end of the route (Figure 2 – Figure 4). Temporary bridges set on temporary supports above the ordinary high water mark (OHWM) would be used at both crossings. Both temporary bridges would be designed with hydraulic capacity to pass the 100-year flood event (Q_{100}) and associated debris flow.

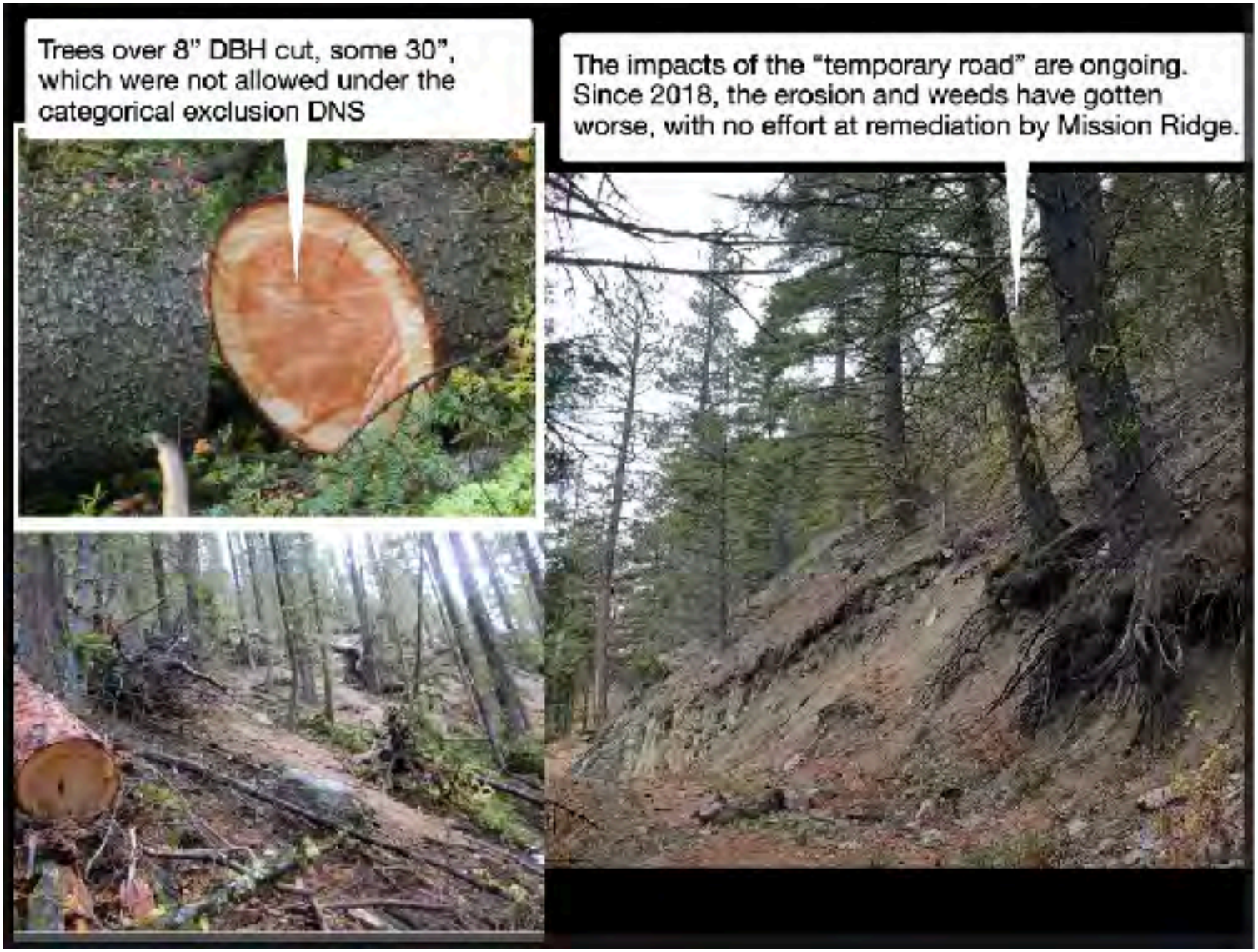
-2018 WDFW DNS

The DFW Determination of non-significance DNS/Adoption18-051: Mission Ridge Temporary Road cited ground disturbance less than 1 acre, work monitored by an approved archaeologist, bridges designed and constructed to protect two streams, removal of no trees over 8" DBH, and installation of erosion control measures. The Small Project Internal Scoping Request and CE Tracking Form listed plant and soil rehabilitation requirements including "*rehabilitated by covering with organic material, seeded using a native seed mix approved by the District botanist and drainage features installed as necessary*…". However, none of these measures were followed.

- A new Special Use Permit was never issued
- Project duration has exceeded one year
- Ground disturbance exceeded one acre
- The road was not constructed in the proposed alignment
- Bridges were not constructed
- Trees over 8" DBH were removed (some over 30" were cut)
- Erosion control was not implemented and cut spoils were cast downhill

- Organic material, seeding, and drainage features not installed

These violations exist on the ground and should be verified and recorded by County and Forest Service personnel. Beehive Irrigation District discussed this road construction thoroughly in their March 20, 2020, public comment letter to the USFS during the draft Environmental Assessment public comment period. Since the road construction failed to comply with any of the mitigating permit requirements, the project is out of compliance with the categorical exclusion requirements. The road was never officially permitted.



Part of the roadbed of the illegal road is cracking and sloughing downslope. One of many ongoing erosion features that are actively impacting forest health, and in some locations, within the riparian buffer of Squilchuck Creek.

Proposed alignment in blue, actual temporary road alignment in red. From 2018 GN Northern Feasibility-Level Geo study of proposed access road (appx A)

47.29625, -120.37869

47.29655, -120.37783

heavy machinery tire tracks visible in and around the wetlands

3. SECTION 19 WETLAND VIOLATIONS

The Applicant drove heavy machinery drive right into two wetlands.

1. **There are no buffers around the wetlands**, and no wetland delineation markings can be seen in the photos. Flagging or stakes would be visible in the high-resolution images. The tire tracks go right through the wetland area; logging and mastication occur up to the edge and into the wetlands.

These wetlands, and their seasonal surface waters, are known native amphibian breeding ponds. Over a decade ago, before the previous owner, breeding frogs (likely Pacific tree frogs) were found in these ponds every year. Species of salamanders and toads may also use the seasonal surface waters for breeding, as adult specimens have been found nearby. Recent wetland surveys done for the expansion have chosen the driest period of the year, and would not have found breeding amphibians in those surveys.

3. Impacts (altering the ecological function of the wetlands)
a. Removing adjacent tree cover: increasing the temperature and evaporation rate of the wetlands
b. Adding masticated pine materials could alter the pH and water chemistry of the wetlands
c. Driving heavy machinery compacts wetland soils

4. MISSION RIDGE WORKING WITHIN THE SQUILCHUCK CREEK BUFFER WITHOUT PERMITS

On numerous occasions in 2025, Mission Ridge was operating heavy machinery, doing earth moving, and in one case diverted Squilchuck Creek (inadvertently into one of their construction trenches). This rerouting of the creek took silt-laden waters and deposited them back into the creek. In all these cases, there no permits, erosion control/silt fencing, or oversize from agencies.

5.

In 2025, Mission Ridge is adding unknown fill/spoils and expanding their parking area (which would become the location of the developer's driveway/access road). Mission Ridge has no permit to do these earth-moving activities (which could contain PFAS) within the riparian buffer of fish-bearing Squilchuck Creek, which is only ~50 feet from these spoils.

V. LIABILITIES

A. Third Party Rights. This permit is subject to all valid existing rights and claims outstanding in third parties. The United States is not liable to the holder for the exercise of any such right or claim.

B. Indemnification of the United States. The holder shall hold harmless the United States from any liability from damage to life or property arising from the holder's occupancy or use of National Forest lands under this permit.

C. Damage to United States Property. The holder shall exercise diligence in protecting from damage the land and property of the United States covered by and used in connection with this permit. The holder shall pay the United States the full cost of any damage resulting from negligence or activities occurring under the terms of this permit or under any law or regulation applicable to the national forests, whether caused by the holder, or by any agents or employees of the holder.

PFAS CONTAMINATION - DAMAGES TO PUBLIC LANDS

Ski Area Operations appear to be adding high levels of PFAS into ski run soils. A full assessment of how widespread this PFAS contamination is needed. Is this from snowmaking? Ski waxes? The ski area should not be allowed to move more soil, risking contaminating waterways, until this PFAS contamination is cleaned up, to reduce spreading. It would be catastrophic for orchardists, residents, and wildlife if PFAS were to contaminate either the surface waters or aquifers in the Squilchuck basin; this issue needs to be rectified ASAP.

PFAS - "Forever Chemicals" detected at high levels on Mission Ridge Ski Area.

More sampling is needed to understand the scope of the contamination, which could impact soil, water, plants, wildlife and humans. PFAS exposure may lead to various health issues, including increased cholesterol levels, reproductive effects, developmental delays in children, and a higher risk of certain cancers such as kidney and testicular cancer.

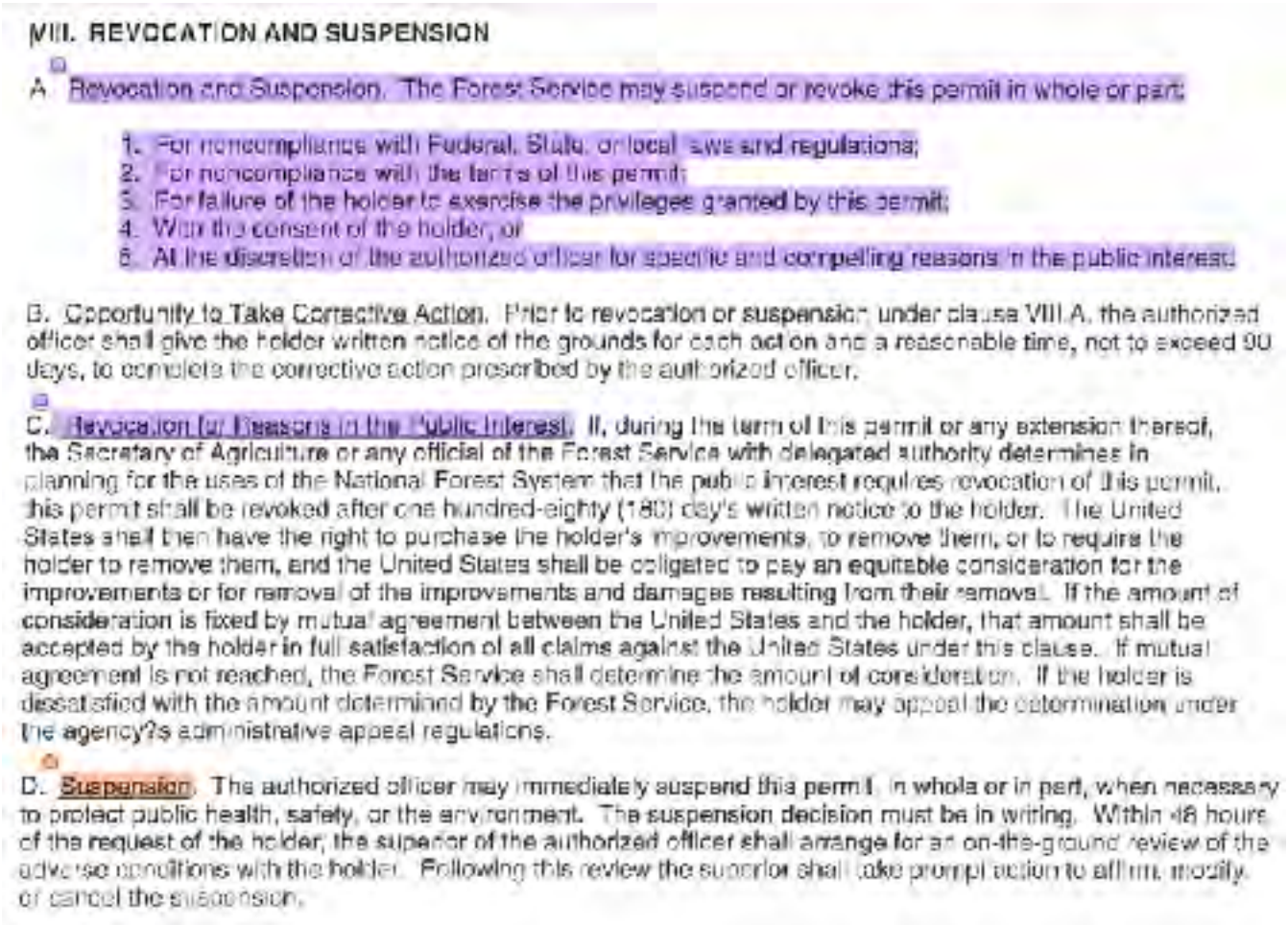
Table 2. Summary of drinking water health advisories and preliminary groundwater cleanup levels, PFAS	EPA Proposed MCLG	EPA Proposed MCL	DOH Drinking Water SAL (ppt)	Ecology TCP Preliminary Cleanup Level for Groundwater (ppt)	PFAS - Soil Sample Mission Ridge (converted from ug/Kg to ppt)
Perfluorooctanoic acid (PFOA)	0 ppt	4 ppt	10	10	220
Perfluorooctane sulfonic acid (PFOS)	0 ppt	4 ppt	15	15	230
Perfluorobutane sulfonic acid (PFBS)	1.3 (unitless)	1.3 (unitless)	345	345	ND - no detection
Perfluorohexane sulfonic acid (PFHxS)			88	88	ND
Perfluorononanoic acid (PFNA)			9	9	210
Hexafluoropropylene oxide dimer acid (HFPO-DA) GenX			NE	24	ND
Perfluorobutanoic acid (PFBA)	—	—	NE	8000	ND

DOH: Department of Health
EPA: Environmental Protection Agency
MCLG: Maximum contaminate level goal
MCL: Maximum contaminate level
NE: Not established
SAL: State action level

TCP: Toxics Cleanup Program
1 MCLG and MCL values for PFOA and PFOS are established as concentrations. The MCLG and MCL for PFNA, PFHxS, PFBS, and GenX are given as a Hazard Index. Hazard Index = [GenX conc. (ppt) / 10 ppt] + [PFBS conc. (ppt) / 2000 ppt] + [PFNA conc. (ppt) / 10 ppt] + [PFHxS conc. (ppt) / 9.6 ppt]

AGENCIES RESPONSIBILITY

The special use permit/land use agreement under which Mission Ridge operates is clear; the SUP may be revoked for non-compliance and/or public interest. It can also be suspended immediately to protect public health and the environment (ie. PFAS). The troubling pattern of noncompliance by Mission Ridge not only damages the environment (and our shared resources like water and wildlife) but also limits public access to public lands. Furthermore, these violations and their attending silence from managing agencies erode public trust. When the guardians and stewards who hold our land and wildlife in trust for the citizens instead bend to the will of a private developer, our faith in these agencies diminishes. The very reason USFS and WDFW exist is to serve the public, not to cater to special interests. We expect Agencies to protect the public from private entities like this, who would squander the commons for their own private gain. Please step up and use your authority to **revoke their SUP until restoration and mitigation of these highlighted violations are fully achieved**. In the future, it's clear that more agency oversight is needed (with this current owner of the ski area) to make sure that violations like this do not run rampant on our public lands.



VIII. REVOCATION AND SUSPENSION

A. Revocation and Suspension. The Forest Service may suspend or revoke this permit in whole or part:

1. For noncompliance with Federal, State, or local laws and regulations;
2. For noncompliance with the terms of this permit;
3. For failure of the holder to exercise the privileges granted by this permit;
4. With the consent of the holder; or
5. At the discretion of the authorized officer for specific and compelling reasons in the public interest.

B. Opportunity to Take Corrective Action. Prior to revocation or suspension under clause VIII.A, the authorized officer shall give the holder written notice of the grounds for such action and a reasonable time, not to exceed 90 days, to complete the corrective action prescribed by the authorized officer.

C. Revocation for Reasons in the Public Interest. If, during the term of this permit or any extension thereof, the Secretary of Agriculture or any official of the Forest Service with delegated authority determines in planning for the uses of the National Forest System that the public interest requires revocation of this permit, this permit shall be revoked after one hundred-eighty (180) day's written notice to the holder. The United States shall then have the right to purchase the holder's improvements, to remove them, or to require the holder to remove them, and the United States shall be obligated to pay an equitable consideration for the improvements or for removal of the improvements and damages resulting from their removal. If the amount of consideration is fixed by mutual agreement between the United States and the holder, that amount shall be accepted by the holder in full satisfaction of all claims against the United States under this clause. If mutual agreement is not reached, the Forest Service shall determine the amount of consideration. If the holder is dissatisfied with the amount determined by the Forest Service, the holder may appeal the determination under the agency?s administrative appeal regulations.

D. Suspension. The authorized officer may immediately suspend this permit in whole or in part, when necessary to protect public health, safety, or the environment. The suspension decision must be in writing. Within 48 hours of the request of the holder, the superior of the authorized officer shall arrange for an on-the-ground review of the adverse conditions with the holder. Following this review the superior shall take prompt action to affirm, modify, or cancel the suspension.

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

[redacted]

Generated 6/17/2025 5:06:58 AM

JOB DESCRIPTION

Soil

JOB NUMBER

590-31159-1

Eurofins Spokane
11922 East 1st Ave
Spokane WA 99206

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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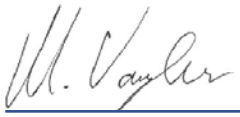
Authorization



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6/17/2025 5:06:58 AM

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Table of Contents

Job Narrative
590-31159-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 5/30/2025 9:00 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.3°C.

PFAS
Method 1633_Final: The continuing calibration verification (CCV) associated with batch 320-856364 recovered above the upper control limit for Nonafluoro-3,6-dioxaheptanoic acid (NFDHA). The samples and method blank (MB) associated with this CCV were non-detects, the low level laboratory control sample, laboratory control sample, and laboratory control sample duplicate (LLCS/LCS/LCSD) were within control limits for the affected analyte; therefore, the data have been reported: MR#1 47.28108, -120.40638 (590-31159-1), (CCV 320-856364/13), (LCS 320-856143/3-A), (LCSD 320-856143/4-A), (LLCS 320-856143/2-A) and (MB 320-856143/1-A).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: [redacted]
Project/Site: Soil

Job ID: 590-31159-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-31159-1	MR#1 47.28108, -120.40638	Solid	05/29/25 10:00	05/30/25 09:00

Definitions/Glossary

Client: [redacted]
Job ID: 590-31159-1
Project/Site: Soil

Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: [redacted]
Project/Site: Soil

Job ID: 590-31159-1

Client Sample ID: MR#1 47.28108, -120.40638
Date Collected: 05/29/25 10:00
Date Received: 05/30/25 09:00

Lab Sample ID: 590-31159-1
Matrix: Solid
Percent Solids: 78.3

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.39		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluoropentanoic acid (PFPeA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorohexanoic acid (PFHxA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluoroheptanoic acid (PFHpA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorooctanoic acid (PFOA)	**0.22**		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorononanoic acid (PFNA)	**0.21**		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorodecanoic acid (PFDA)	**0.94**		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluoroundecanoic acid (PFUnA)	**0.27**		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorododecanoic acid (PFDoA)	**0.44**		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorotetradecanoic acid (PFTeDA)	**0.32**		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorooctanesulfonic acid (PFOS)	**0.23**		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorononanesulfonic acid (PFNS)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		0.39		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		0.39		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		0.39		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluorooctanesulfonamide (PFOSA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
N-methylperfluorooctane sulfonamide (NMeFOSA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
N-ethylperfluorooctane sulfonamide (NEtFOSA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	ND		0.97		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	ND		0.97		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1

Client: [redacted]
Project/Site: Soil

Job ID: 590-31159-1

Client Sample ID: MR#1 47.28108, -120.40638
Date Collected: 05/29/25 10:00
Date Received: 05/30/25 09:00

Lab Sample ID: 590-31159-1
Matrix: Solid
Percent Solids: 78.3

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		0.19		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
3-Perfluoropropylpropanoic acid (3:3 FTCA)	ND		0.39		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
3-Perfluoropentylpropanoic acid (5:3 FTCA)	ND		0.97		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	ND		0.97		ug/Kg	☼	06/08/25 19:59	06/09/25 10:47	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*99.4*		*8 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C5 PFPeA	*82.7*		*35 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C5 PFHxA	*106*		*40 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C4 PFHpA	*86.1*		*40 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C8 PFOA	*99.4*		*40 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C9 PFNA	*88.1*		*40 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C6 PFDA	*75.8*		*40 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C7 PFUnA	*74.5*		*40 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C2 PFDoA	*52.1*		*40 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C2 PFTeDA	*64.6*		*20 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C3 PFBS	*79.6*		*40 - 135*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C3 PFHxS	*81.3*		*40 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C8 PFOS	*79.2*		*40 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C8 FOSA	*60.0*		*40 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
d3-NMeFOSAA	*56.8*		*40 - 135*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
d5-NEtFOSAA	*54.4*		*40 - 150*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C2 4:2 FTS	*112*		*40 - 165*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C2 6:2 FTS	*134*		*40 - 215*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C2 8:2 FTS	*102*		*40 - 275*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
13C3 HFPO-DA	*93.9*		*40 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
d7-N-MeFOSE-M	*47.4*		*20 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
d9-N-EtFOSE-M	*44.3*		*15 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
d5-NEtPFOSA	*52.3*		*10 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*
d3-NMePFOSA	*50.3*		*10 - 130*	*06/08/25 19:59*	*06/09/25 10:47*	*1*

Client: [redacted]
Project/Site: Soil

Job ID: 590-31159-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Lab Sample ID: MB 320-856143/1-A
Matrix: Solid
Analysis Batch: 856364

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 856143

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.40		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluoropentanoic acid (PFPeA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorohexanoic acid (PFHxA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorooctanoic acid (PFOA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorononanoic acid (PFNA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorodecanoic acid (PFDA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorododecanoic acid (PFDoA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorotridecanoic acid (PFTrDA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorotetradecanoic acid (PFTeDA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluoropentanesulfonic acid (PFPeS)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorononanesulfonic acid (PFNS)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorododecanesulfonic acid (PFDoS)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		0.40		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		0.40		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		0.40		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluorooctanesulfonamide (PFOSA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
N-methylperfluorooctane sulfonamide (NMeFOSA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
N-ethylperfluorooctane sulfonamide (NEtFOSA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	ND		1.0		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	ND		1.0		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 320-856143/1-A
Matrix: Solid
Analysis Batch: 856364

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 856143

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		0.20		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
3-Perfluoropropylpropanoic acid (3:3 FTCA)	ND		0.40		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
3-Perfluoropentylpropanoic acid (5:3 FTCA)	ND		1.0		ug/Kg		06/08/25 19:59	06/09/25 09:25	1
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	ND		1.0		ug/Kg		06/08/25 19:59	06/09/25 09:25	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*103*		*8 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C5 PFPeA	*106*		*35 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C5 PFHxA	*96.1*		*40 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C4 PFHpA	*90.1*		*40 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C8 PFOA	*89.9*		*40 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C9 PFNA	*96.0*		*40 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C6 PFDA	*74.4*		*40 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C7 PFUnA	*92.6*		*40 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C2 PFDoA	*72.7*		*40 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C2 PFTeDA	*67.7*		*20 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C3 PFBS	*112*		*40 - 135*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C3 PFHxS	*91.5*		*40 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C8 PFOS	*72.2*		*40 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C8 FOSA	*66.6*		*40 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
d3-NMeFOSAA	*72.5*		*40 - 135*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
d5-NEtFOSAA	*73.6*		*40 - 150*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C2 4:2 FTS	*99.3*		*40 - 165*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C2 6:2 FTS	*104*		*40 - 215*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C2 8:2 FTS	*106*		*40 - 275*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
13C3 HFPO-DA	*91.7*		*40 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
d7-N-MeFOSE-M	*57.5*		*20 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
d9-N-EtFOSE-M	*49.3*		*15 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
d5-NEtPFOSA	*42.9*		*10 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*
d3-NMePFOSA	*41.3*		*10 - 130*	*06/08/25 19:59*	*06/09/25 09:25*	*1*

Lab Sample ID: LCS 320-856143/3-A
Matrix: Solid
Analysis Batch: 856364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 856143

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	5.00	4.45		ug/Kg		89	70 - 140
Perfluoropentanoic acid (PFPeA)	2.50	2.17		ug/Kg		87	60 - 150
Perfluorohexanoic acid (PFHxA)	2.50	2.28		ug/Kg		91	65 - 140
Perfluoroheptanoic acid (PFHpA)	2.50	2.37		ug/Kg		95	65 - 145
Perfluorooctanoic acid (PFOA)	2.50	2.27		ug/Kg		91	70 - 150
Perfluorononanoic acid (PFNA)	2.50	1.92		ug/Kg		77	70 - 155
Perfluorodecanoic acid (PFDA)	2.50	2.90		ug/Kg		116	70 - 155

Client: [redacted]
Project/Site: Soil

Job ID: 590-31159-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 320-856143/3-A
Matrix: Solid
Analysis Batch: 856364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 856143

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	2.50	2.23		ug/Kg		89	70 - 155
Perfluorododecanoic acid (PFDoA)	2.50	2.47		ug/Kg		99	70 - 150
Perfluorotridecanoic acid (PFTrDA)	2.50	2.47		ug/Kg		99	65 - 150
Perfluorotetradecanoic acid (PFTeDA)	2.50	2.69		ug/Kg		107	65 - 150
Perfluorobutanesulfonic acid (PFBS)	2.22	1.85		ug/Kg		83	65 - 145
Perfluoropentanesulfonic acid (PFPeS)	2.35	2.30		ug/Kg		98	55 - 160
Perfluorohexanesulfonic acid (PFHxS)	2.28	2.08		ug/Kg		91	60 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.39	2.30		ug/Kg		96	65 - 155
Perfluorooctanesulfonic acid (PFOS)	2.33	2.07		ug/Kg		89	65 - 160
Perfluorononanesulfonic acid (PFNS)	2.41	2.02		ug/Kg		84	55 - 140
Perfluorodecanesulfonic acid (PFDS)	2.41	1.96		ug/Kg		81	30 - 140
Perfluorododecanesulfonic acid (PFDoS)	2.43	1.85		ug/Kg		76	25 - 160
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	4.69	4.19		ug/Kg		89	60 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	4.76	3.56		ug/Kg		75	55 - 200
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	4.80	4.40		ug/Kg		92	70 - 150
Perfluorooctanesulfonamide (PFOSA)	2.50	2.44		ug/Kg		97	70 - 140
N-methylperfluorooctane sulfonamide (NMeFOSA)	2.50	2.46		ug/Kg		98	70 - 155
N-ethylperfluorooctane sulfonamide (NEtFOSA)	2.50	2.44		ug/Kg		97	70 - 140
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.50	2.53		ug/Kg		101	65 - 155
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.50	1.99		ug/Kg		80	65 - 165
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	12.5	11.6		ug/Kg		93	70 - 140
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	12.5	13.1		ug/Kg		105	70 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	1.88	1.90		ug/Kg		102	70 - 145
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.37	2.44		ug/Kg		103	70 - 160
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.50	2.03		ug/Kg		81	30 - 140
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.50	2.47		ug/Kg		99	60 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.50	1.81		ug/Kg		72	60 - 155

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 320-856143/3-A
Matrix: Solid
Analysis Batch: 856364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 856143

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)			2.34	2.12		ug/Kg		91	70 - 150		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			2.36	1.96		ug/Kg		83	45 - 160		
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)			2.23	1.81		ug/Kg		81	70 - 140		
3-Perfluoropropylpropanoic acid (3:3 FTCA)			5.00	4.74		ug/Kg		95	45 - 130		
3-Perfluoropentylpropanoic acid (5:3 FTCA)			12.5	9.80		ug/Kg		78	60 - 130		
3-Perfluoroheptylpropanoic acid (7:3 FTCA)			12.5	9.29		ug/Kg		74	60 - 150		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*102*		*8 - 130*
13C5 PFPeA	*78.4*		*35 - 130*
13C5 PFHxA	*97.7*		*40 - 130*
13C4 PFHpA	*87.8*		*40 - 130*
13C8 PFOA	*97.2*		*40 - 130*
13C9 PFNA	*94.0*		*40 - 130*
13C6 PFDA	*79.0*		*40 - 130*
13C7 PFUnA	*87.6*		*40 - 130*
13C2 PFDoA	*74.8*		*40 - 130*
13C2 PFTeDA	*63.3*		*20 - 130*
13C3 PFBS	*108*		*40 - 135*
13C3 PFHxS	*88.0*		*40 - 130*
13C8 PFOS	*96.4*		*40 - 130*
13C8 FOSA	*91.2*		*40 - 130*
d3-NMeFOSAA	*82.1*		*40 - 135*
d5-NEtFOSAA	*103*		*40 - 150*
13C2 4:2 FTS	*107*		*40 - 165*
13C2 6:2 FTS	*105*		*40 - 215*
13C2 8:2 FTS	*96.0*		*40 - 275*
13C3 HFPO-DA	*85.1*		*40 - 130*
d7-N-MeFOSE-M	*80.9*		*20 - 130*
d9-N-EtFOSE-M	*72.3*		*15 - 130*
d5-NEtPFOSA	*52.2*		*10 - 130*
d3-NMePFOSA	*52.9*		*10 - 130*

Lab Sample ID: LCSD 320-856143/4-A
Matrix: Solid
Analysis Batch: 856364

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 856143

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			5.00	4.00		ug/Kg		80	70 - 140	11	30
Perfluoropentanoic acid (PFPeA)			2.50	2.27		ug/Kg		91	60 - 150	4	30
Perfluorohexanoic acid (PFHxA)			2.50	2.15		ug/Kg		86	65 - 140	6	30
Perfluoroheptanoic acid (PFHpA)			2.50	2.26		ug/Kg		91	65 - 145	4	30
Perfluorooctanoic acid (PFOA)			2.50	2.35		ug/Kg		94	70 - 150	3	30

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCSD 320-856143/4-A
Matrix: Solid
Analysis Batch: 856364

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 856143

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorononanoic acid (PFNA)	2.50	2.09		ug/Kg		84	70 - 155	8	30
Perfluorodecanoic acid (PFDA)	2.50	2.34		ug/Kg		94	70 - 155	21	30
Perfluoroundecanoic acid (PFUnA)	2.50	2.18		ug/Kg		87	70 - 155	2	30
Perfluorododecanoic acid (PFDoA)	2.50	2.51		ug/Kg		101	70 - 150	2	30
Perfluorotridecanoic acid (PFTrDA)	2.50	2.15		ug/Kg		86	65 - 150	14	30
Perfluorotetradecanoic acid (PFTeDA)	2.50	2.45		ug/Kg		98	65 - 150	9	30
Perfluorobutanesulfonic acid (PFBS)	2.22	1.95		ug/Kg		88	65 - 145	5	30
Perfluoropentanesulfonic acid (PFPeS)	2.35	2.09		ug/Kg		89	55 - 160	10	30
Perfluorohexanesulfonic acid (PFHxS)	2.28	1.95		ug/Kg		86	60 - 150	6	30
Perfluoroheptanesulfonic acid (PFHpS)	2.39	2.16		ug/Kg		90	65 - 155	6	30
Perfluorooctanesulfonic acid (PFOS)	2.33	1.97		ug/Kg		85	65 - 160	5	30
Perfluorononanesulfonic acid (PFNS)	2.41	1.90		ug/Kg		79	55 - 140	6	30
Perfluorodecanesulfonic acid (PFDS)	2.41	1.76		ug/Kg		73	30 - 140	11	30
Perfluorododecanesulfonic acid (PFDoS)	2.43	1.57		ug/Kg		65	25 - 160	17	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	4.69	4.49		ug/Kg		96	60 - 150	7	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	4.76	3.99		ug/Kg		84	55 - 200	11	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	4.80	4.21		ug/Kg		88	70 - 150	4	30
Perfluorooctanesulfonamide (PFOSA)	2.50	2.35		ug/Kg		94	70 - 140	4	30
N-methylperfluorooctane sulfonamide (NMeFOSA)	2.50	2.43		ug/Kg		97	70 - 155	1	30
N-ethylperfluorooctane sulfonamide (NEtFOSA)	2.50	2.34		ug/Kg		94	70 - 140	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.50	2.45		ug/Kg		98	65 - 155	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.50	2.11		ug/Kg		84	65 - 165	5	30
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	12.5	11.7		ug/Kg		94	70 - 140	1	30
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	12.5	12.7		ug/Kg		102	70 - 135	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	1.88	1.67		ug/Kg		89	70 - 145	13	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.37	2.38		ug/Kg		101	70 - 160	3	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.50	2.29		ug/Kg		92	30 - 140	12	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.50	2.28		ug/Kg		91	60 - 150	8	30

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCSD 320-856143/4-A
Matrix: Solid
Analysis Batch: 856364

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 856143

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)			2.50	1.83		ug/Kg		73	60 - 155	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)			2.34	2.14		ug/Kg		92	70 - 150	1	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			2.36	1.66		ug/Kg		70	45 - 160	17	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)			2.23	1.89		ug/Kg		85	70 - 140	4	30
3-Perfluoropropylpropanoic acid (3:3 FTCA)			5.00	4.96		ug/Kg		99	45 - 130	5	30
3-Perfluoropentylpropanoic acid (5:3 FTCA)			12.5	9.91		ug/Kg		79	60 - 130	1	30
3-Perfluoroheptylpropanoic acid (7:3 FTCA)			12.5	9.66		ug/Kg		77	60 - 150	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*106*		*8 - 130*
13C5 PFPeA	*78.3*		*35 - 130*
13C5 PFHxA	*96.9*		*40 - 130*
13C4 PFHpA	*99.9*		*40 - 130*
13C8 PFOA	*91.0*		*40 - 130*
13C9 PFNA	*94.5*		*40 - 130*
13C6 PFDA	*80.3*		*40 - 130*
13C7 PFUnA	*83.0*		*40 - 130*
13C2 PFDoA	*59.4*		*40 - 130*
13C2 PFTeDA	*58.5*		*20 - 130*
13C3 PFBS	*102*		*40 - 135*
13C3 PFHxS	*96.5*		*40 - 130*
13C8 PFOS	*84.4*		*40 - 130*
13C8 FOSA	*72.2*		*40 - 130*
d3-NMeFOSAA	*73.3*		*40 - 135*
d5-NEtFOSAA	*79.3*		*40 - 150*
13C2 4:2 FTS	*105*		*40 - 165*
13C2 6:2 FTS	*90.3*		*40 - 215*
13C2 8:2 FTS	*90.0*		*40 - 275*
13C3 HFPO-DA	*87.1*		*40 - 130*
d7-N-MeFOSE-M	*62.5*		*20 - 130*
d9-N-EtFOSE-M	*53.1*		*15 - 130*
d5-NEtPFOSA	*46.9*		*10 - 130*
d3-NMePFOSA	*47.9*		*10 - 130*

Lab Sample ID: LLCS 320-856143/2-A
Matrix: Solid
Analysis Batch: 856364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 856143

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)			0.800	0.765		ug/Kg		96	70 - 140
Perfluoropentanoic acid (PFPeA)			0.400	0.347		ug/Kg		87	60 - 150
Perfluorohexanoic acid (PFHxA)			0.400	0.392		ug/Kg		98	65 - 140

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 320-856143/2-A
Matrix: Solid
Analysis Batch: 856364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 856143

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroheptanoic acid (PFHpA)	0.400	0.395		ug/Kg		99	65 - 145
Perfluorooctanoic acid (PFOA)	0.400	0.352		ug/Kg		88	70 - 150
Perfluorononanoic acid (PFNA)	0.400	0.361		ug/Kg		90	70 - 155
Perfluorodecanoic acid (PFDA)	0.400	0.516		ug/Kg		129	70 - 155
Perfluoroundecanoic acid (PFUnA)	0.400	0.356		ug/Kg		89	70 - 155
Perfluorododecanoic acid (PFDoA)	0.400	0.421		ug/Kg		105	70 - 150
Perfluorotridecanoic acid (PFTrDA)	0.400	0.337		ug/Kg		84	65 - 150
Perfluorotetradecanoic acid (PFTeDA)	0.400	0.445		ug/Kg		111	65 - 150
Perfluorobutanesulfonic acid (PFBS)	0.355	0.316		ug/Kg		89	65 - 145
Perfluoropentanesulfonic acid (PFPeS)	0.376	0.304		ug/Kg		81	55 - 160
Perfluorohexanesulfonic acid (PFHxS)	0.365	0.346		ug/Kg		95	60 - 150
Perfluoroheptanesulfonic acid (PFHpS)	0.382	0.395		ug/Kg		104	65 - 155
Perfluorooctanesulfonic acid (PFOS)	0.372	0.372		ug/Kg		100	65 - 160
Perfluorononanesulfonic acid (PFNS)	0.385	0.308		ug/Kg		80	55 - 140
Perfluorodecanesulfonic acid (PFDS)	0.386	0.236		ug/Kg		61	30 - 140
Perfluorododecanesulfonic acid (PFDoS)	0.388	0.172	J	ug/Kg		44	25 - 160
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	0.750	0.741		ug/Kg		99	60 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	0.762	0.717		ug/Kg		94	55 - 200
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	0.768	0.715		ug/Kg		93	70 - 150
Perfluorooctanesulfonamide (PFOSA)	0.400	0.435		ug/Kg		109	70 - 140
N-methylperfluorooctane sulfonamide (NMeFOSA)	0.400	0.422		ug/Kg		106	70 - 155
N-ethylperfluorooctane sulfonamide (NEtFOSA)	0.400	0.404		ug/Kg		101	70 - 140
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.400	0.385		ug/Kg		96	65 - 155
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.400	0.394		ug/Kg		98	65 - 165
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	2.00	2.09		ug/Kg		105	70 - 140
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	2.00	2.22		ug/Kg		111	70 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	0.300	0.296		ug/Kg		99	70 - 145
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.378	0.433		ug/Kg		114	70 - 160
Perfluoro-3-methoxypropanoic acid (PFMPA)	0.400	0.332		ug/Kg		83	30 - 140

Client: [redacted]
Project/Site: Soil

Job ID: 590-31159-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 320-856143/2-A
Matrix: Solid
Analysis Batch: 856364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 856143

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-4-methoxybutanoic acid (PFMBA)	0.400	0.355		ug/Kg		89	60 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.400	0.281		ug/Kg		70	60 - 155
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	0.374	0.304		ug/Kg		81	70 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	0.378	0.170	J	ug/Kg		45	45 - 160
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	0.357	0.349		ug/Kg		98	70 - 140
3-Perfluoropropylpropanoic acid (3:3 FTCA)	0.800	0.665		ug/Kg		83	45 - 130
3-Perfluoropentylpropanoic acid (5:3 FTCA)	2.00	1.81		ug/Kg		91	60 - 130
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	2.00	1.53		ug/Kg		76	60 - 150

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C4 PFBA	*103*		*8 - 130*
13C5 PFPeA	*103*		*35 - 130*
13C5 PFHxA	*93.8*		*40 - 130*
13C4 PFHpA	*95.9*		*40 - 130*
13C8 PFOA	*108*		*40 - 130*
13C9 PFNA	*94.8*		*40 - 130*
13C6 PFDA	*63.9*		*40 - 130*
13C7 PFUnA	*71.1*		*40 - 130*
13C2 PFDoA	*46.5*		*40 - 130*
13C2 PFTeDA	*44.5*		*20 - 130*
13C3 PFBS	*109*		*40 - 135*
13C3 PFHxS	*83.4*		*40 - 130*
13C8 PFOS	*70.7*		*40 - 130*
13C8 FOSA	*49.4*		*40 - 130*
d3-NMeFOSAA	*51.3*		*40 - 135*
d5-NEtFOSAA	*41.3*		*40 - 150*
13C2 4:2 FTS	*88.1*		*40 - 165*
13C2 6:2 FTS	*105*		*40 - 215*
13C2 8:2 FTS	*83.4*		*40 - 275*
13C3 HFPO-DA	*90.7*		*40 - 130*
d7-N-MeFOSE-M	*34.1*		*20 - 130*
d9-N-EtFOSE-M	*28.6*		*15 - 130*
d5-NEtPFOSA	*34.8*		*10 - 130*
d3-NMePFOSA	*35.8*		*10 - 130*

Lab Chronicle

Client: [redacted]
Project/Site: Soil

Job ID: 590-31159-1

Client Sample ID: MR#1 47.28108, -120.40638

Lab Sample ID: 590-31159-1

Date Collected: 05/29/25 10:00

Matrix: Solid

Date Received: 05/30/25 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	3550C		1			855987	06/06/25 13:10	JCB	EET SAC

Client Sample ID: MR#1 47.28108, -120.40638

Lab Sample ID: 590-31159-1

Date Collected: 05/29/25 10:00

Matrix: Solid

Date Received: 05/30/25 09:00

Percent Solids: 78.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1633 Shake			2.62 g	5.0 mL	856143	06/08/25 19:59	F1D	EET SAC
Total/NA	Analysis	1633		1			856364	06/09/25 10:47	SS	EET SAC

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: [redacted]
Project/Site: Soil

Job ID: 590-31159-1

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-27
ANAB	Dept. of Defense ELAP	L2468	01-20-27
ANAB	Dept. of Energy	L2468.01	01-20-27
ANAB	ISO/IEC 17025	L2468	01-20-27
Arizona	State	AZ0708	08-11-25
Arkansas DEQ	State	88-0691	05-18-26
California	State	2897	01-31-26
Colorado	State	CA00044	08-31-25
Florida	NELAP	E87570	06-30-25
Georgia	State	4040	01-29-26
Illinois	NELAP	200060	03-31-26
Kansas	NELAP	E-10375	10-31-25
Louisiana	NELAP	01944	06-30-25
Louisiana (All)	NELAP	01944	06-30-25
Maine	State	CA00004	04-14-26
Massachusetts	State	M-CA044	06-30-26
Minnesota	NELAP	2749448	12-31-25
Nevada	State	CA00044	07-31-25
New Jersey	NELAP	CA005	06-30-25
New York	NELAP	11666	04-01-26
Ohio	State	41252	01-29-26
Oregon	NELAP	4040	01-29-26
Texas	NELAP	T104704399-23-17	05-31-26
US Fish & Wildlife	US Federal Programs	A22139	04-30-26
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442023-16	02-28-26
Virginia	NELAP	460278	03-14-26
Washington	State	C581	05-06-26
West Virginia (DW)	State	9930C	02-01-26
West Virginia DEP	State	422	03-28-26
Wisconsin	State	998204680	08-31-25
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: [redacted]
Project/Site: Soil

Job ID: 590-31159-1

Method	Method Description	Protocol	Laboratory
1633	Per- and Polyfluoroalkyl Substances by LC/MS/MS	EPA	EET SAC
3550C	Percent Moisture	SW846	EET SAC
1633 Shake	Shake Extraction with SPE	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

[redacted]

Chain of Custody Record

eurofins | Environment Testing America

Eurofins Spokane
11922 E 1st Avenue

Spokane, WA 99206-5302
phone 509.924.9200 fax 509.924.9290

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other

Eurofins Environment Testing America

Client Contact	Project: [redacted]	Site Contact:	Date:	COC No:
Your Co [redacted]	Email:	Lab Contact:	Carrier:	of COCs
Address	Tel/Fax:			TALS Project #:
City/Sta	Analysis Turnaround Time			Sampler:
(xxx) xx	☐CALENDAR DAYS ☐WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client:
Project Name:	☐ 2 weeks			Lab Sampling
Site: MR#1	☐ 1 week			Job / SDG No.
PO #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Sample Specific Notes:
MR#1 47.28108 -120.40538	5/29/25	10AM						

590-31159 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.		Cooler Temp (°C): Obs'd. 4.3 Corr'd. 4.3		Therm ID No. IR-5
Relinquished by: [redacted]	Company:	Date/Time:	Received by: Zachary Seloff	Company: EET YAK	Date/Time: 5/29/25 1800
Relinquished by:	Company:	Date/Time:	Received by:	Company: EET SPO	Date/Time: 5/30/25 900
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

eurofins | Environment Testing

11922 East 1st Ave, Spokane, WA 99206 / Tel: (509) 924-9200 / Lab ID No C838

Per- and Polyfluoroalkyl Substances (PFAS) By EPA Method 533

Report of Analysis

Date Collected: (MM/DD/YY) 01/28/25	System Group Type: (circle one) [A] B Other:
Water System ID Number: 07741W	System Name: Syringa Heights Mobile Home Park
Lab Number / Sample Number: 094 / 92421	County: Spokane
Sample Location: Reservoir before distribution	Source Number(s): (list all sources if blended or composited) S01
Sample Purpose: (check appropriate box) ☒ RC Routine Compliance (satisfies monitoring requirements) ☐ C Confirmation (confirmation of chemical result)* ☐ I Investigative (does not satisfy monitoring requirements) ☐ O Other (specify does not satisfy monitoring requirements)	Date Received: (MM/DD/YY) 01/31/25 Date Analyzed (MM/DD/YY) 02/07/25 Date Reported: (MM/DD/YY) 05/22/25 COMMENTS:
Sample Composition: (check appropriate box) ☒ S Single Source ☐ B Blended (list source numbers in 'Source Numbers' field) ☐ C Composite (list source numbers in 'Source Numbers' field) ☐ D Distribution Sample	Sample Type: (check one) ☐ Pre-treatment/Untreated (Raw) ☒ Post-treatment (Finished) ☐ Unknown or Other Sample Collected by: (name) Phone Number:
Send Report to: Tshimakain Creek Labs LLC 5505 E. Broadway Ave, Suite 102 Spokane Valley WA 99212	Bill to. (client name)

REQUIRED ANALYTICAL RESULTS

DOH #	CONTAMINANT	DATA QUALIFIER	RESULTS	SDRL	SAL	UNITS	EXCEEDS SAL? (X if Yes)	METHOD/ INITIALS
0434	(PFOA) Perfluorooctanoic acid		ND	2	10	ng/L		533 / Y5FM
0433	(PFOS) Perfluorooctanesulfonic acid		ND	2	15	ng/L		533 / Y5FM
0431	(PFHxS) Perfluorohexanesulfonic acid		ND	2	65	ng/L		533 / Y5FM
0432	(PFNA) Perfluorononanoic acid		ND	2	9	ng/L		533 / Y5FM
0429	(PFBS) Perfluorobutanesulfonic acid		ND	2	345	ng/L		533 / Y5FM
0430	(PFHpA) Perfluoroheptanoic acid		ND	2	n/a	ng/L		533 / Y5FM
0435	(PFHxA) Perfluorohexanoic acid		ND	2	n/a	ng/L		533 / Y5FM
0436	(PFDA) Perfluorodecanoic acid		ND	2	n/a	ng/L		533 / Y5FM
0437	(PFUnA) Perfluoroundecanoic acid		ND	2	n/a	ng/L		533 / Y5FM
0438	(PFDoA) Perfluorododecanoic acid		ND	2	n/a	ng/L		533 / Y5FM
0445	(ADONA) 4,8-Dioxa-3H-perfluorononanoic acid		ND	2	n/a	ng/L		533 / Y5FM
0446	(9Cl-PF3ONS) 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid		ND	2	n/a	ng/L		533 / Y5FM
0447	(HFPO-DA) Hexafluoropropylene oxide dimer acid		ND	2	n/a	ng/L		533 / Y5FM
0448	(11Cl-PF3OUdS) 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid		ND	2	n/a	ng/L		533 / Y5FM
0450	(4:2FTS)1H,1H, 2H, 2H-Perfluorohexane sulfonic acid		ND	2	n/a	ng/L		533 / Y5FM
0451	(6:2FTS)1H,1H 2H, 2H-Perfluorooctane sulfonic acid		ND	2	n/a	ng/L		533 / Y5FM
0452	(8:2FTS)1H,1H, 2H, 2H-Perfluorodecane sulfonic acid		ND	2	n/a	ng/L		533 / Y5FM

Eurofins Spokane
11922 East 1st Ave
Spokane, WA 99206
Phone: 509-924-9200 Fax: 509-924-9290

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Arrington, Randee E	Carrier Tracking No(s): N/A	COC No: 590-11147.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Randee.Arrington@et.eurofinsus.com	State of Origin: Washington	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - Washington		Job #: 590-31159-1
Address: 880 Riverside Parkway,	Due Date Requested: 6/12/2025			Preservation Codes:
City: West Sacramento	TAT Requested (days): N/A			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Soil	Project #: 59004229			Other: N/A
Site: N/A	SSOW#: N/A			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1633_Final/1633_Shake Standard List	Moisture	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MR#1 47.28108, -120.40638 (590-31159-1)	5/29/25	10:00 Pacific	G	Solid			X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	6/2/25 14:30	ERSPA		6.2.25 945	EBSAK
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: 27168024	Cooler Temperature(s) °C and Other Remarks: 5.7c

Ver: 10/10/2024

6/17/2025

Login Sample Receipt Checklist

Client: [redacted]

Job Number: 590-31159-1

Login Number: 31159

List Source: Eurofins Spokane

List Number: 1

Creator: Desimone, Carson

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: [redacted]

Job Number: 590-31159-1

Login Number: 31159
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 06/03/25 12:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	2716804
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Isotope Dilution Summary

Client: [redacted]
Project/Site: Soil

Job ID: 590-31159-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA	13C7PUA
Lab Sample ID	Client Sample ID	(8-130)	(35-130)	(40-130)	(40-130)	(40-130)	(40-130)	(40-130)	(40-130)
590-31159-1	MR#1 47.28108, -120.40638	99.4	82.7	106	86.1	99.4	88.1	75.8	74.5
LCS 320-856143/3-A	Lab Control Sample	102	78.4	97.7	87.8	97.2	94.0	79.0	87.6
LCSD 320-856143/4-A	Lab Control Sample Dup	106	78.3	96.9	99.9	91.0	94.5	80.3	83.0
LLCS 320-856143/2-A	Lab Control Sample	103	103	93.8	95.9	108	94.8	63.9	71.1
MB 320-856143/1-A	Method Blank	103	106	96.1	90.1	89.9	96.0	74.4	92.6

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	C3PFBS	C3PFHS	C8PFOS	PFOSA	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(40-130)	(20-130)	(40-135)	(40-130)	(40-130)	(40-130)	(40-135)	(40-150)
590-31159-1	MR#1 47.28108, -120.40638	52.1	64.6	79.6	81.3	79.2	60.0	56.8	54.4
LCS 320-856143/3-A	Lab Control Sample	74.8	63.3	108	88.0	96.4	91.2	82.1	103
LCSD 320-856143/4-A	Lab Control Sample Dup	59.4	58.5	102	96.5	84.4	72.2	73.3	79.3
LLCS 320-856143/2-A	Lab Control Sample	46.5	44.5	109	83.4	70.7	49.4	51.3	41.3
MB 320-856143/1-A	Method Blank	72.7	67.7	112	91.5	72.2	66.6	72.5	73.6

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS	M262FTS	M282FTS	HFPODA	NMFM	NEFM	d5NPFSA	d3NMFSA
Lab Sample ID	Client Sample ID	(40-165)	(40-215)	(40-275)	(40-130)	(20-130)	(15-130)	(10-130)	(10-130)
590-31159-1	MR#1 47.28108, -120.40638	112	134	102	93.9	47.4	44.3	52.3	50.3
LCS 320-856143/3-A	Lab Control Sample	107	105	96.0	85.1	80.9	72.3	52.2	52.9
LCSD 320-856143/4-A	Lab Control Sample Dup	105	90.3	90.0	87.1	62.5	53.1	46.9	47.9
LLCS 320-856143/2-A	Lab Control Sample	88.1	105	83.4	90.7	34.1	28.6	34.8	35.8
MB 320-856143/1-A	Method Blank	99.3	104	106	91.7	57.5	49.3	42.9	41.3

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = 13C2 4:2 FTS
M262FTS = 13C2 6:2 FTS
M282FTS = 13C2 8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA

Mission Ridge Trail Camera Survey

2024 - 2025 Wildlife Survey in the Stemilt-Squilchuck Basins

August 2025 Contact: info@FriendsofMissionRidge.com Authors: Steven Gnam & Mike Rolfs

Executive Summary - Trail Camera Survey

In August 2024, Friends of Mission Ridge (FOMR) initiated a wildlife survey using 19 trail cameras to monitor public lands within the proposed Mission Ridge Ski Area Expansion. The primary goal of this survey was to provide empirical evidence, identify the presence or absence of species, gather insights into patterns of wildlife movement, and document behaviors (such as feeding, rutting, and fleeing). This ongoing camera survey has revealed abundant and diverse wildlife species using critical habitats such as deer and elk migration corridors, fawn and calving areas, ungulate breeding grounds, wetlands and riparian zones, golden eagle and goshawk nesting areas, and regularly used dusky grouse habitats. The survey findings suggest that the proposed Mission Ridge development would have significant adverse impacts on local wildlife and vital habitats.

This brief and limited trail camera survey has shown that many of the assertions in the Plants & Animals section of the 2025 Mission Ridge Expansion Master Planned Resort Draft Environmental Impact Statement (DEIS) are false. High-quality habitat exists within the expansion's project area, and adjacent equivalent habitat is limited and may not exist elsewhere. WDFW, Chelan County Department of Natural Resources, Tribes, agencies, and stakeholder expertise and comments are crucial for accurate assessments within the DEIS.

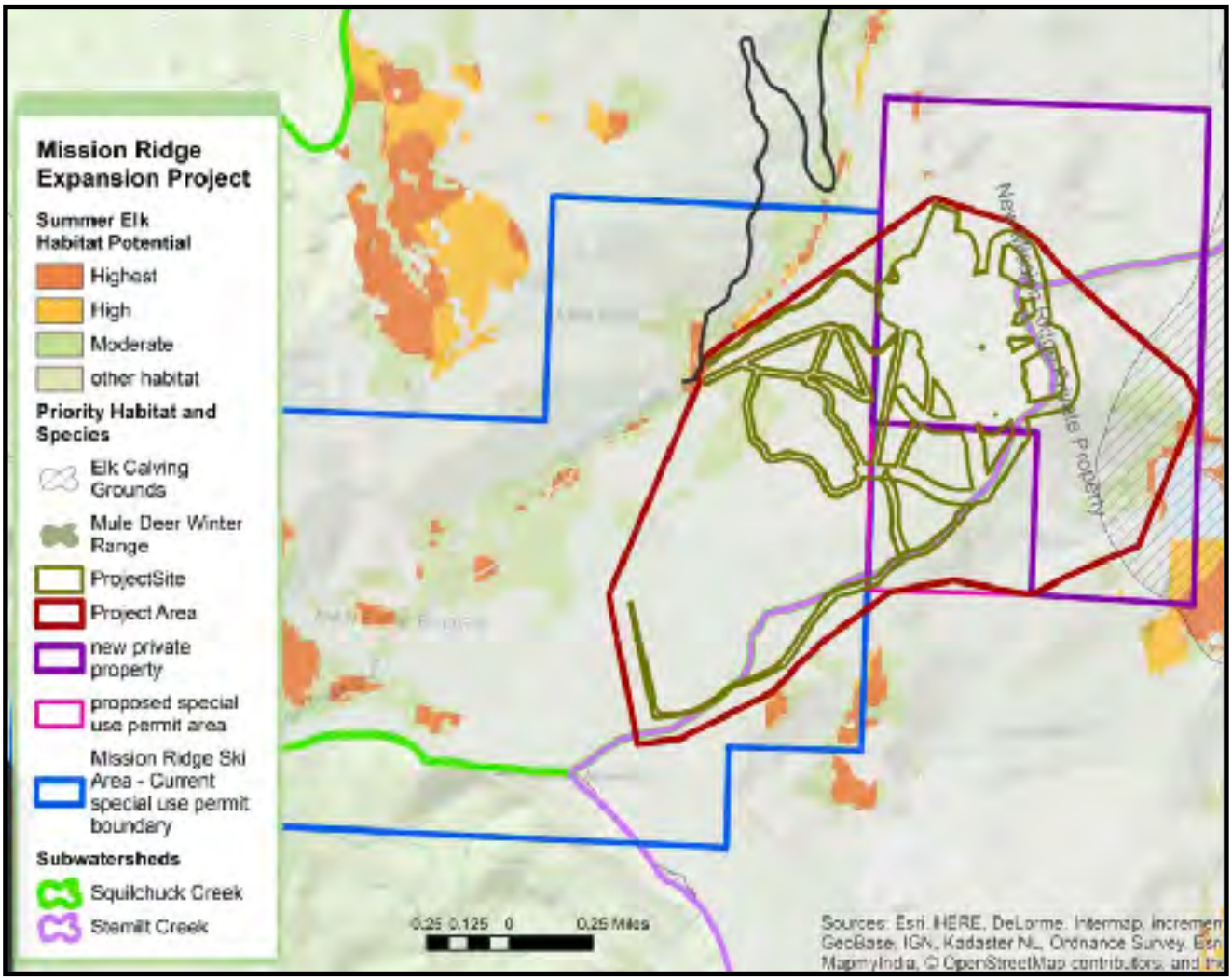
Photo 1 - Cow elk with newborn calf in the project area, walking from Section 19 onto Section 30. This is the site of a proposed 4-million-gallon snowmaking reservoir.

The FOMR trail camera survey was inspired by data gaps found in past planning documents regarding wildlife use in the proposed development area. These data gaps have persisted, and incorrect claims have been made in the 2025 DEIS. These false claims misguide agencies and stakeholders about the actual ecological impacts of the development. The core claim of the DEIS is that the development will cause minimal impacts to wildlife or habitat and that suitable replacement habitat is nearby. Since the DEIS doesn't acknowledge these impacts, it offers no practical mitigation measures. Below are four clear examples of false or misleading claims contained in the 2025 DEIS:

1. "There are **no wintering deer and elk** in the project area" *(Appendix F-9 - Section 2.1.1.3)*
2. "The study area is on the margin of the American pika (Ochotona princeps) range and is **likely too low in elevation for pika**" *(Appendix F-32 - Section 4.1.1.1)*
3. "The study area has **very little suitable habitat for northern goshawk nesting"** *(Appendix F-54, Section 4.2.1.3)*
4. "The study area is either **outside [Golden Eagle] range or lacks suitable habitat.**" *(F-45, Section 4.1.1.3)*

Photo 2 - Immature Golden Eagle after taking a bath in an elk wallow on Section 25. June 13, 2025. Indicates that a nesting site could be nearby. The cliffs of Section 25 are a suitable nesting habitat. *(Appendix F-45)*

Background - "The Map is Not the Territory"[1]



DEIS Map 5.4-3 This map, used for forecasting impacts to wildlife in the DEIS, portrays virtually no high-quality summer elk habitat in the project area. Only a portion of the elk calving grounds is shown on the eastern-most edge of the project area. The location of the elk calf shown in **Photo 1 & Photo 3** are not designated as elk calving grounds on the map. Overall, this map data, and others in the DEIS, contrast with the findings of this trail camera survey, not showing the extent of elk calving ground, mule deer wintering areas, or high-quality summer elk habitat in the project area.

Numerous planning documents covering the Stemilt-Squilchuck basins[2], including the 2025 DEIS for the Mission Ridge Expansion, rely heavily on wildlife habitat mapping models to make key planning decisions. Maps like the **DEIS Map 5.4-3** are used as

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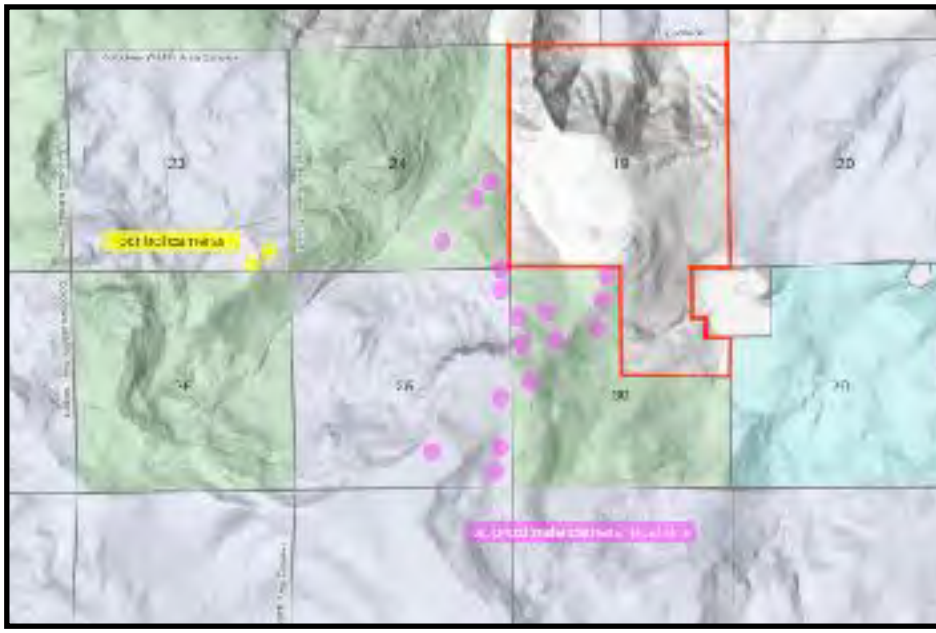
[1] Our perceptions, models, and representations of reality are not reality itself. Simplified abstraction (model or map) of a complex territory and mistaking the map for the actual territory can lead to poor judgment and incorrect conclusions. Phrase attributed to the philosopher/engineer Alfred Korzybski.

[2] https://www.co.chelan.wa.us/files/community-development/documents/Mission%20Ridge/11%20Appendix%20E%20Aquatics%2C%20Wildlife%2C%20and%20Botany%20Resources%20Report.pdf

information to guide agencies and the public's decision-making. However, many of these mapping models do not match on-the-ground reality[3]. FOMR members with decades of experience and observations in these landscapes have noticed a mismatch between what the models say and what the ground-truth is. These ground observations indicate that high-use wildlife habitats are missing from these maps. Conversely, these maps sometimes designate poor habitat as high quality. For example, Map 5.4-3 denotes a strip of the highest quality elk habitat along the edge of the Mission Ridge parking lot, even though it is clearly not. Something is wrong with these models, and these maps do not offer real-world utility. Many variables can influence a model's accuracy and usefulness[4]. Does the model account for human disturbance, or the distance from roads and trails, something that should be done for deer and elk habitat modeling (but not considered in Map 5.4-3)? Is the resolution high enough to make site-specific decisions? Regardless of the variables accounted for in a model, validation is essential. Models should be treated as hypotheses, not facts, and require verification through field surveys. The above DEIS map and other habitat models like those used in the DEIS are misleading, which is why Friends of Mission Ridge felt a trail camera survey was needed to verify wildlife presence and use within the project area.

Map 1 - 3km disturbance zone used as a range in which to place trail cameras around the proposed development



Map 2 - Trail camera locations within the survey area

[3] Barry, S., & Elith, J. (2006). Error and uncertainty in habitat models. *Journal of Applied Ecology*, *43*(3), 413-423. https://doi.org/10.1111/j.1365-2664.2006.01136.x

[4] Johnson, C.J. & Gillingham, M.P. (2004). Mapping uncertainty: sensitivity of wildlife habitat ratings to expert opinion. Journal of Applied Ecology, 41, 1032–1041.

Trail Camera Survey Project Description

FOMR placed 19 cameras within a 3-kilometer perimeter around the center of the proposed 7,812-bed development (see above Maps 1 & 2). To create parameters in which to do the trail camera survey, FOMR consulted the scientific literature[5]. Studies offered varied distances at which wildlife are impacted or displaced by human disturbance. With species like golden eagles[6] being displaced up to 20km from human infrastructure, and others like deer and elk ranging from 1-5 km[7]. FOMR chose a 3-km distance, and acknowledged that this disturbance buffer is conservative and does not account for the edge of the development, the top of the new ski runs or chairlifts, or the fact that some of the human disturbance to wildlife may come from recreation and dispersed use that spreads from planned ski and summer trails. Also missing from this survey is the disturbance zone along the Squilchuck Road corridor to reflect the impacts that ~10,000+ cars/day would have on the wildlife.

Photo 3 - Elk calf within the 3km disturbance buffer of the proposed 7,812-bed village

[5] Wearn, O. R., & Glover-Kapfer, P. (2019). Snap happy: camera traps are an effective sampling tool when compared with alternative methods. *Royal Society Open Science*, 6(3), 190036. https://royalsocietypublishing.org/doi/10.1098/rsos.190036

[6] Maynard, L. D., Lemaître, J., Therrien, J., & Lecomte, N. (2025). Vulnerability and behavioral avoidance of Golden Eagles near wind farms during the breeding season. *Environmental Impact Assessment Review*, *112*, 107843. https://doi.org/10.1016/j.eiar.2025.107843

[7] Benítez-López, A., Alkemade, R., & Verweij, P. A. (2010). The impacts of roads and other infrastructure on mammal and bird populations: A meta-analysis. *Biological Conservation*, *143*(6), 1307-1316. https://doi.org/10.1016/j.biocon.2010.02.009

Photo 4 - Mule deer foraging near the proposed 4-million-gallon snow-making reservoir. Deer and elk were frequently documented feeding in these forest openings during the snow-free season. This highly used foraging area was marked as the lowest quality habitat use in multiple maps and models used in the DEIS.

Photo 5 - Goshawk bathing in elk wallow. June 30, 2025. A likely nesting site was located in the project area, near the border of Sections 30 & 19, on multiple trips in 2025. The DEIS claims, "Because the study area has very little suitable habitat for northern goshawk nesting, impacts to northern goshawk by project operation are unlikely to negatively impact goshawk populations." *(Appendix F-54)*

Photo 6 - Bull elk using the same meadow as the mule deer above. This area was used regularly for feeding and as a travel corridor for much of the year.

Care was taken not to check cameras too often, and on every trip into the project area, other data was collected, including tracks and signs (animal beds, tree rubs, scat), and sound observations (bird and animal calls). The FOMR survey utilized trail cameras shooting primarily high-resolution 4k video to aid species identification and to catalog behaviors. This survey focused on the public land that would be impacted. However, by observing animals moving in and out of the private land section, the data collected provides insight into how Section 19 is being utilized by wildlife. The cameras were placed starting in August 2024. Cameras were also placed in adjacent but similar habitats on Section 23 as a control and to compare differences. The following observations were collected during the 12-month survey period.

Results

The trail cameras documented year-round use by elk and mule deer, alongside other species. Golden eagles and goshawks were documented on trail cameras multiple times using elk wallows for drinking and as bird baths. The survey results underscore the need for further investigation into the impacts of proposed development on wildlife populations, particularly concerning the false assumptions made in the DEIS. The migration corridor is a heavily used critical wildlife habitat.

Trail cameras detected the following animals in the project area:

Rocky Mountain Elk
Mule Deer
Mountain Lion
Black Bear
Bobcat
Coyote
Pika
Weasel
Skunk
Marmot
Golden-Mantled Ground Squirrel
Douglas Squirrel
Chipmunk
Bushy-tailed Woodrat
Mice
Golden Eagle
Goshawk
Dusky Grouse
Robin
Dark-eyed Junco
Hummingbird
Clark’s nutcracker
Yellow-rumped warbler
Black-headed Grosbeak
Bluebird
Rock Wren

The following species were detected by tracks, visual sighting, or by ear:

Goshawk (nesting)
Pileated woodpecker
Coopers hawk
American Kestrel
Common Poorwill
icebug (Grylloblattidae)
Bumblebees (many spp.)
American marten tracks (winter)
Fox tracks (winter)
Northern Flicker
Barred Owl (calls)
Pacific Wren

Photo 7 - Pika

Photo 8 - Weasel

Photo 9 - Coyote

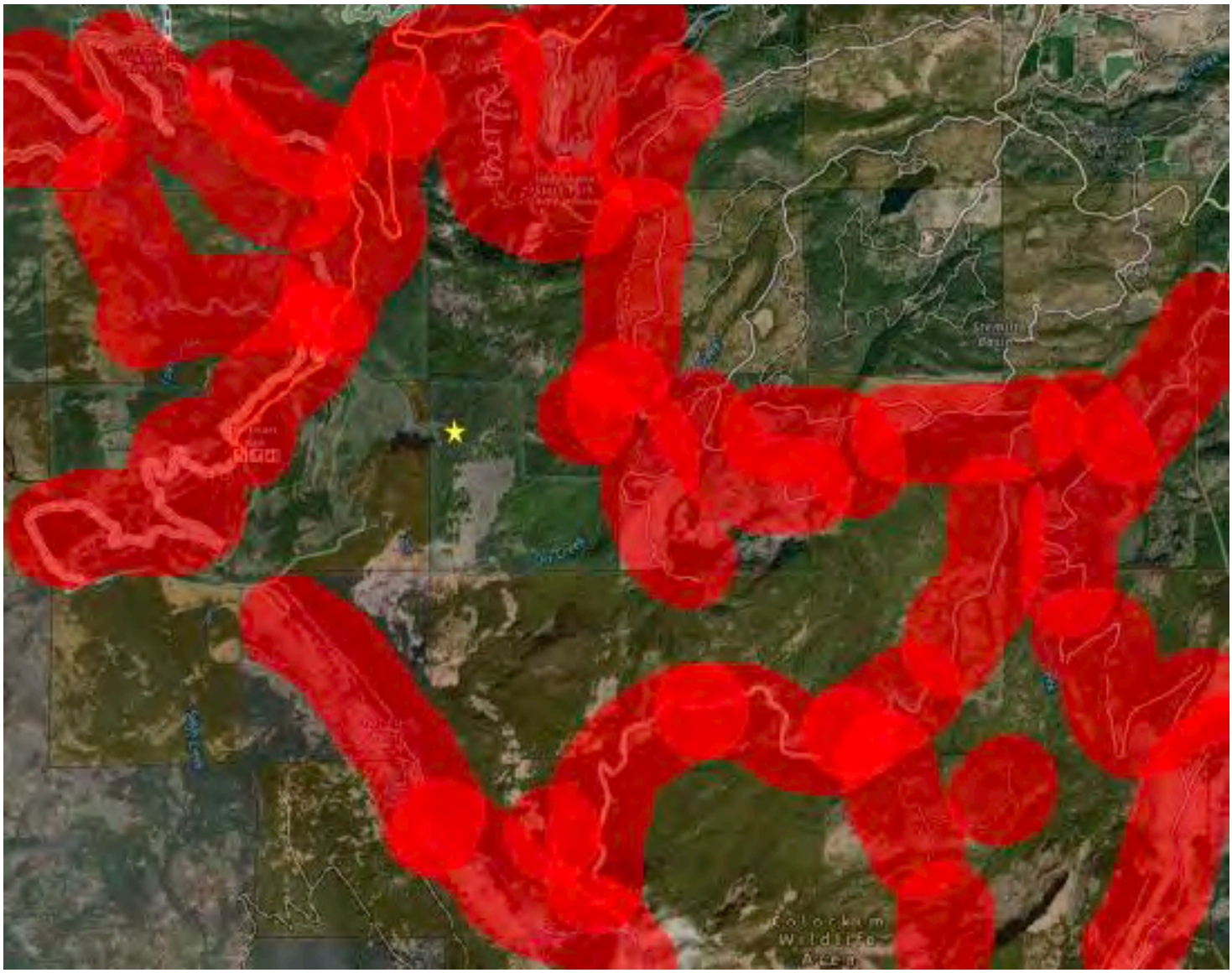
Discussion

Trail cameras are a useful tool to gain an understanding of the presence of wildlife[8]. They can be used to verify or falsify modeling hypotheses (habitat maps), and more importantly, accurately indicate the presence of species and show how those species are using the landscape. Trail cameras have limitations and will almost always under-represent both the number of species and the quantity of individuals present on a landscape.

It is clear from the trail cameras and on-the-ground tracks and signs that sections surrounding Section 19: Sections 24, 25 & 30 contain wildlife migration routes, travel corridors, feeding areas, bedding areas, fawn and calving zones, and ungulate breeding habitat.

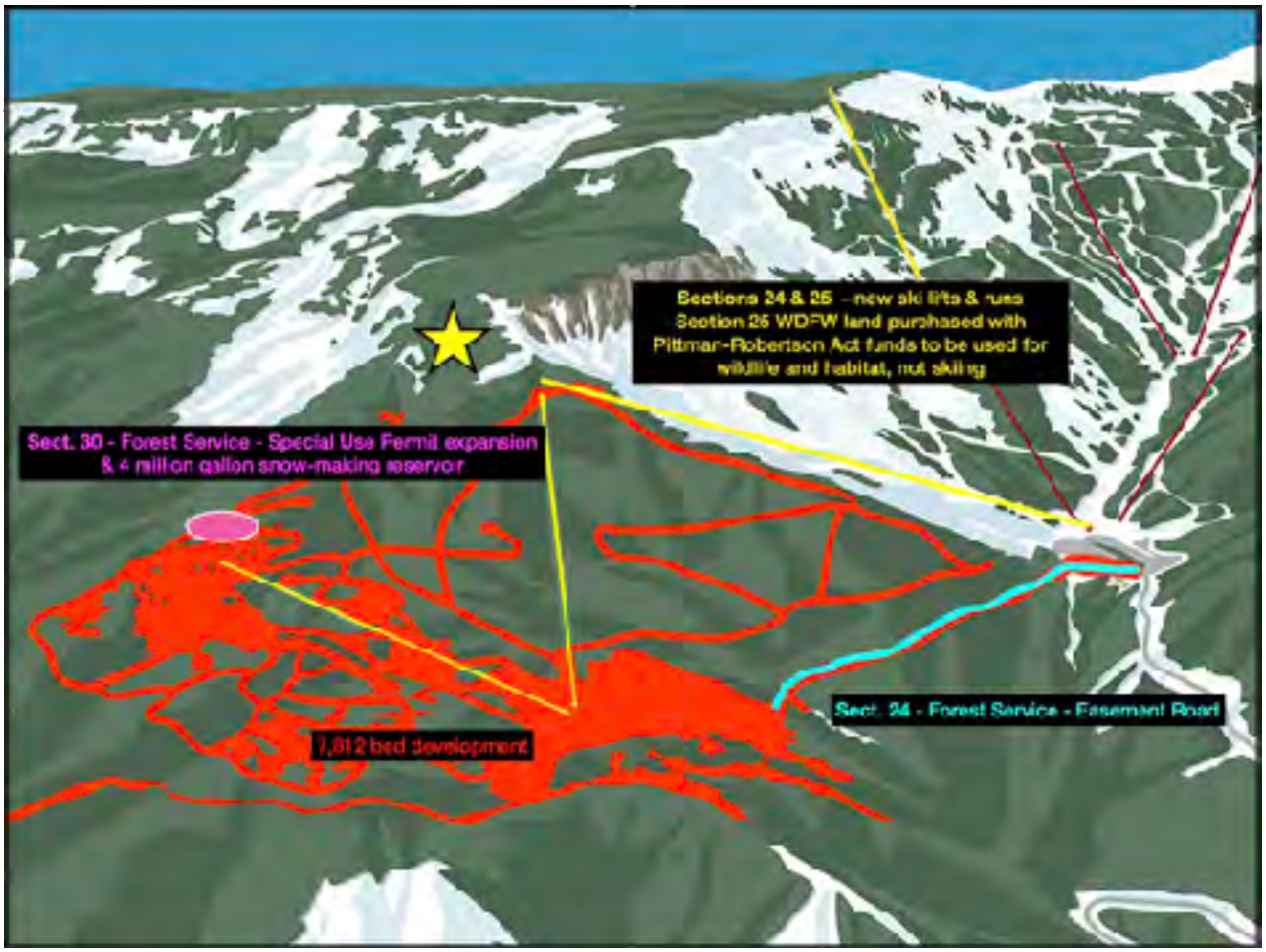
Photo 10 - Marten tracks in Section 25

[8] Blount, J. D., Chynoweth, M. W., Green, A. M., & Şekercioğlu, Ç. H. (2021). Review: COVID-19 highlights the importance of camera traps for wildlife conservation research and management. *Biological Conservation*, *256*, 108984. https://doi.org/10.1016/j.biocon.2021.108984



Map 3 - 500-meter buffer around roads and trails in the Upper Stemilt-Squilchuck

Why is this such a wildlife-rich area? These sections contain a diverse range of habitats: cool north-facing slopes, mature forests with complex horizontal structure and closed overhead canopy, old-growth forests interspersed with open grassy meadows, shrub steppe, springs, cliffs, talus, and aspen groves. The diversity of habitats allows for a diversity of wildlife species.



Map 4 - For ungulates and larger mammals in particular, the abundance of talus fields (and cliffs) creates a barrier. Most large animals avoid traveling through the loose talus and seek firmer footing to avoid the cattle-guard-like danger of talus. Adjacent terrain, with compact soil (yellow star above), often contains well-used travel routes that serve as migration and travel routes across the landscape. The yellow star on Map 4 (above) denotes a high-use travel corridor that is irreplaceable.

Photo 11 - Bull elk on the highly used travel corridor, denoted by the yellow star in the above maps

The Last Undisturbed Habitats[9]

The maps[10] above illustrate how important the project area's wildlife corridors and unbroken habitat are. Per this trail camera survey, the bottleneck area (yellow star) contained the highest levels of wildlife traffic, by all species. This wildlife corridor is used as a migration route for animals moving between low and high elevations. This corridor is also used on a near-daily basis by many of the species detected. Contrary to the claims in the DEIS, there is no equivalent cool, north-facing habitat for these animals to be displaced to. If this development is allowed, this habitat will shrink, and there will be only one remaining undisturbed ridgeline left in the upper basin. Habitat to the West is already impacted by the ski area, the popular Clara & Marion Lakes, Squilchuck Trail, and the motorized Liberty-Beehive Road and Mission Ridge Trail. To the East are vast basalt fields, and past this basalt, just one more timbered ridge that connects the lower basin to the upper. However, this eastern ridge is surrounded by roads emanating from Wheeler Reservoir, Upper Basin Loop Road, and Pole Flat Road, which reduce habitat value and increase disturbance.

Photo 12 - Mule deer on Section 23 before summer construction activities at the Ski Area started.

[9] Beaupre, C., Bevan, A., Young, J. R., & Blecha, K. A. (2025). Recreational trail traffic counts and trail proximity as a driver of ungulate landscape utilization. *Ecosphere*, 16(6). https://doi.org/10.1002/ecs2.70305

[10] Preisler, H. K., Ager, A. A., & Wisdom, M. J. (2013). Analyzing animal movement patterns using potential functions. *Ecosphere*, *4*(3), 1-13. https://doi.org/10.1890/ES12-00286.1

Control Cameras - Section 23

Control cameras were placed in Section 23 between the ski area and Clara & Marion Lakes. This area has open ridgelines, nearby water, and security habitat. The control area is "high-quality elk summer habitat" according to DEIS Map 5.4-3 (page 4), and the control cameras were the closest FOMR cameras to the largest patch of "highest quality habitat" shown on the DEIS map. The control area had signs of repeated deer & elk spring, summer, and fall use, including well-worn beds, seasonal scats, rub trees, and game trails similar to those found on Sections 24, 25, & 30. The control cameras documented many mule deer, coyotes, black bears, and a mountain lion in the springtime. Despite the map designation as "high-quality elk summer habitat", no elk were observed by the control cameras. (This further illustrates the importance of ground-truthing the habitat models.)

Animal detections on the control cameras dropped off to near zero by mid-summer. The absence of animal detections appeared to coincide with the operation of heavy machinery and work site disturbances associated with Mission Ridge's snowmaking pipeline replacement project adjacent to Squilchuck Creek on nearby Mimi ski run. Simultaneously with the construction project, the Chair 5 pub opened for summer business with live outdoor music. This lull in control area wildlife detection contrasted with the near-constant high use documented by the cameras in the proposed expansion area in sections 24, 25, & 30. Note that despite the high wildlife use, the proposed expansion area in these sections is generally designated as the lowest rating of habitat on the DEIS maps.

We suggest that the reason for abandonment of the control area was not a habitat problem, but that disturbances from the Mission Ridge Ski Area caused wildlife to discontinue use in the area. Scientific literature suggests that deer[11] & elk can be displaced 1-5 kilometers by infrastructure and human disturbance[12]. The control area, unbeknownst to us, ended up being within 1km - 0.5 kilometers of the disturbances this summer at Mission Ridge. The eastern-most trail camera in the project area, on Section 24, was approximately 0.5 kilometers from the ski area. This project camera detected high wildlife use in the spring and tapered off as summer disturbances at the ski area increased. This observation supports the hypothesis that summertime ski area activity displaces wildlife. Cameras further from the ski area, 1 kilometer and beyond, in the project study area, did not show this profound downward trend in wildlife detections. We suggest that this evidence suggests causation, matching the literature which describes human disturbances on wildlife, and we believe that the impacts of Mission Ridge's summertime disturbances should be further studied.

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[11] Gamo & Beck 2017 — Energy Disturbance and Productivity of Mule Deer Habitat in Sage-Grouse Core Areas (Rangeland Ecology & Management) https://www.uwyo.edu/esm/_files/docs/beck/docs/publications/gamo-and-beck-rem-2017.pdf

[12] Benítez-López, A., Alkemade, R., & Verweij, P. A. (2010). The impacts of roads and other infrastructure on mammal and bird populations: A meta-analysis. *Biological Conservation*, *143*(6), 1307-1316. https://doi.org/10.1016/j.biocon.2010.02.009

The other takeaway from the control trail cameras on Section 23 is that the assertion made throughout the 2025 DEIS (Appendix F - Plants & Animals) "*that suitable, equivalent habitats exist adjacent to the project area*" appears to be false. The DEIS assumes that any displaced wildlife from Section 19 and the surrounding areas will be fine since they have other equally good places to go. If this were true, and other habitats were equal, they would already be a high-use, occupied habitat. The fact that Sections 24, 25 & 30 are currently highly used indicates either that they are already ideal habitats for the animals or that they are subpar habitats, and that the wildlife have been pushed out of other ideal habitats. Recommending "the animals can just go somewhere else" ignores the actual impacts of destroying wildlife habitat[13] and the harm that displacing animals has. This approach is reckless and does not comport with common sense or the massive body of evidence that suggests otherwise.[14]

Photo 13 - Nocturnal elk use on the "temporary road." Most elk detections through the project area were in the daylight, except for those closest to Mission Ridge Ski Area, where nighttime detections more frequently occurred.

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[13] Tilman, D., May, R. M., Lehman, C. L., & Nowak, M. A. (1994). Habitat destruction and the extinction debt. *Nature*, *371*(6492), 65-66. https://doi.org/10.1038/371065a0

[14] Haddad, N. M., et al (2015). Habitat fragmentation and its lasting impact on Earth's ecosystems. *Science Advances*, 1(2), e1500052. doi:10.1126/sciadv.1500052.

Section 19 - Private Land -

While this camera survey did not include cameras on the private land of Section 19, some cameras were placed right on the boundary of Section 19. The migration routes, calving and fawning areas, and high detection areas near the private property boundary show that animals are coming and going from Section 19. Cameras on the boundary of the property detected a solo cow elk traveling back and forth onto Section 19 for two weeks before eventually leading a newborn calf onto Section 30 (Photo 1 - page 2). The primary attributes of the terrain that wildlife use to get in and out of Section 19 are:

- a riparian corridor around a perennial spring to the West
- open grassy feeding areas, a ridgeline migration route, and a corridor passing a spring that runs through an old roadbed on the Southern boundary

These findings should drive future study into the elk calving use in Section 19 and help update the PHS map-elk calving layer to show that elk are using a portion of Section 19 for calving. Additionally, young mule deer fawns were detected on both the Western and Southern boundaries of Section 19.

“Temporary Road” - Section 24

In 2018, the Mission Ridge Ski Area built a road[15] from the existing ski area parking lot, crossing Forest Service Section 30, to the developer's private property on Section 19. Trail cameras placed along the road provided the following information: the road is used by elk, deer, coyotes, and black bears. The road crosses mule deer fawning habitat, close to the boundary of Section 19 (see above Photo 13). Much of the elk use was at night, likely due to proximity to the Ski Area, the increase in human use of this road, and the Mission Ridge/ Squilchuck Road.

Human use on the road was observed year-round, with heavy use in winter, as people appear to use the road to walk dogs almost daily[16] from the ski area RV-camping section of the parking lot. The roadbed, for the first quarter mile, was commonly littered with dozens of domestic dog scats. During these heavy human-use periods, wildlife use was low and pushed further from the parking lot. Mule deer continued to be observed along the road into January 2025 despite deep snows. In the snow-free months, the roadbed was used almost weekly by hikers and occasional mountain bikers. The now seven-year-old “temp

[15] The road was built without a special use permit and was to be decommissioned after one year. Seven years later, it is still impacting the landscape and wildlife through erosion, invasive weeds, and human and pet use. https://wdfw.wa.gov/sites/default/files/sepa/2018/18051dns.pdf

[16] Gompper, M. E. (Ed.). (2013). Free-Ranging Dogs and Wildlife Conservation. Oxford University Press.

road" continues to impact the landscape[17]. Ongoing problems such as erosion, invasive weeds (knapweed and thistle), and increased recreation impacts to wildlife are occurring in an otherwise road and trail-free zone.

Photo 14 - mule deer winter use on the "temporary road"

Photo 15 - newborn mule deer fawn crossing the temp road near Section 19

Photo 16 - Elk in waist-deep snow near the proposed development

Photo 17 - Mule deer in the middle of winter, Squilchuck basin. Mule deer and elk are commonly encountered in the project area (up to 5500') during winter months in all but the deepest snow years.

[17] FOMR walked the 'temp road' with the Forest Service Supervisor, District Ranger, and Mission Ridge Special Use Permit Officer. FOMR asked them to enforce the terms of their Decision Memo and to see if they would ask Mission Ridge Ski Area to partake in any rehabilitation: weed management, reseeding, erosion control, etc. The Forest Service and Mission Ridge have not indicated any intention to do any of the mitigation work required under the Decision Memo.

Winter Use by Deer & Elk Within the Project Area

The 2025 DEIS states, “there are **no wintering deer and elk** in the project area[18].” However, deer and elk are commonly encountered in the upper basin year-round (see photos 16 & 17 above). While many wildlife habitat models place wintering deer and elk only at low-elevation, south-facing slopes, this does not describe what is found on Mission Ridge. While the majority of Mission Ridge elk and deer migrate to lower elevations in the winter, sub-herds in the upper Stemilt-Squilchuck have a different pattern. The pattern observed with these winter deer and elk is that they either use windswept ridges[19] or thick closed canopy forest[20], traveling between tree wells to survive the deep snow. They appear to seek out lichens and browse on trees and shrubs. While none of the prior wildlife models for Mission Ridge capture this wildlife use, past observations and current trail camera footage show this wintertime use up to 5,500 elevation during the 2024/2025 winter.

What are deer and elk doing in waist-deep snow on thick forested North-facing slopes[21]? Could these animals be displaced from other ideal winter grounds by human development[22]? Or is this a behavioral strategy to avoid predators? Either way, nature would favor a variety of wildlife behaviors on a landscape (ie, migratory and resident animals) as they would be adaptive for long-term species survival[23]. A harsh winter could kill off resident ungulates, or disease (Chronic Wasting Disease, Hoof Disease) could decimate the migratory populations. By having alternative wintering habits, these herds' behaviors could help them adapt to future conditions. We have a responsibility to preserve habitat and wintering grounds for both of these kinds of behaviors, which will help the long-term viability of the Colockum Elk herd and mule deer on Mission Ridge.

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[18] 2025 DEIS *Appendix F-9 - Section 2.1.1.3*

[19] Thomas, J. W., Leckenby, D. A., Henjum, M., Pedersen, R. J., & Bryant, L. D. (1988). *Habitat-Effectiveness Index for Elk on Blue Mountain Winter Ranges*. General Technical Report PNW-GTR-218. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

[20] Gilbert, S. L., Hundertmark, K. J., Person, D. K., Lindberg, M. S., & Boyce, M. S. (2017). Behavioral plasticity in a variable environment: Snow depth and habitat interactions drive deer movement in winter. *Journal of Mammalogy*, *98*(1), 246-259. https://doi.org/10.1093/jmammal/gyw167

[21] Cook, J. G., Irwin, L. L., Bryant, L. D., Riggs, R. A., & Ward, J. T. (1998). Thermal Cover Needs of Large Ungulates: A Review of Hypothesis Tests. In Transactions of the 69th North American Wildlife and Natural Resources Conference. National Council for Air and Stream Improvement, La Grande, Oregon.

[22] Prokopenko, C. M. (2016). Multiscale habitat selection and road avoidance of elk on their winter range. Master’s thesis, University of Alberta, Department of Biological Sciences.

[23] Courtemanch, A. B., Kauffman, M. J., Kilpatrick, S., & Dewey, S. (2017). Alternative foraging strategies enable a mountain ungulate to persist after migration loss. *Ecosphere*, 8(6), e01855. https://doi.org/10.1002/ecs2.1855

Impacts of the Proposed Development

The impacts of the "Mission Ridge Ski Area Expansion" would be immense. The development plans for an urban-style village, with a sleeping capacity of up to 7,812 people, attending traffic of over 10,000 vehicles per day[24], outdoor concerts, alpine roller coasters, and more. The impacts of noise and light pollution, a shift from primary day-use in the winter to year-round use, the spillover of pets[25], recreation, pesticides[26], rodenticides[27], and human disturbance into surrounding public lands would be incomparable to anything in our region.[28]

This development would fundamentally alter the landscape of the upper Stemilt-Squilchuck basins. The development would likely cause displacement through disturbance. Direct habitat destruction would shrink the available areas for species to live. Habitat loss is considered one of the greatest threats to biodiversity[29]. Habitat loss due to avoidance behaviors is effective habitat loss**.** While the focus of this trail camera survey has been mostly on mid to large-sized animals, it is clear that many smaller species, from rare and native bumble bees to icebugs, frogs, toads, snakes, and salamanders, would also be impacted by the development. The developer plans to grade and shape talus fields[30] for homesites, the urban village, and ski runs. The destruction of the talus habitat will directly destroy the homes of pika[31], bats[32], and other creatures that rely on the talus for cover and thermal refuge.

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[24] McCorquodale, Scott M. "A Brief Review of the Scientific Literature on Elk, Roads, & Traffic." March 2013. Washington Department of Fish and Wildlife.

[25] Loss, S. R., Will, T., & Marra, P. P. (2013). The impact of free-ranging domestic cats on wildlife of the United States. *Nature Communications*, *4*(1), 1-8. https://doi.org/10.1038/ncomms2380

[26] Douglas, M. R., Baisley, P., Soba, S., Kammerer, M., Lonsdorf, E. V., & Grozinger, C. M. (2022). Putting pesticides on the map for pollinator research and conservation. *Scientific Data*, *9*(1), 1-15. https://doi.org/10.1038/s41597-022-01584-z

[27] Nakayama SMM, Morita A, Ikenaka Y, Mizukawa H, Ishizuka M. A review: poisoning by anticoagulant rodenticides in non-target animals globally. J Vet Med Sci. 2019 Feb 28;81(2):298-313. doi: 10.1292/jvms.17-0717. Epub 2018 Dec 27. PMID: 30587672; PMCID: PMC6395208.

[28] The Wildlife Society, Habitat Loss & Fragmentation (2017). https://wildlife.org/wp-content/uploads/2017/05/FactSheet-Fragmentation_FINAL.pdf

[29] Pimm, S. L., Jenkins, C. N., Abell, R., Brooks, T. M., Gittleman, J. L., Joppa, L. N., Raven, P. H., Roberts, C. M., & Sexton, J. O. (2014). The biodiversity of species and their rates of extinction, distribution, and protection. *Science*, 344(6187), DOI: 10.1126/science.1246752.

[30] Shoo, L. P., Storlie, C., Williams, Y. M., & Williams, S. E. (2010). Potential for mountaintop boulder fields to buffer species against extreme heat stress under climate change. *Biological Conservation*, 54(4), 475-478. https://doi.org/10.1007/s00484-009-0286-4

[31] Benedict, L. M., Wiebe, M., Plichta, M., Batts, H., Johnson, J., Monk, E., & Ray, C. (2020). Microclimate and summer surface activity in the American pika (Ochotona princeps). *Western North American Naturalist*, 80(3), 316-329. https://doi.org/10.3398/064.080.0303.short

[32] Moosman, P. R., Marsh, D. M., Pody, E. K., Dannon, M. P., & Reynolds, R. J. (2020). Efficacy of visual surveys for monitoring populations of talus-roosting bats. *Journal of Fish and Wildlife Management*, 11(2), 597–608. https://doi.org/10.3996/1944-687X.2020-103

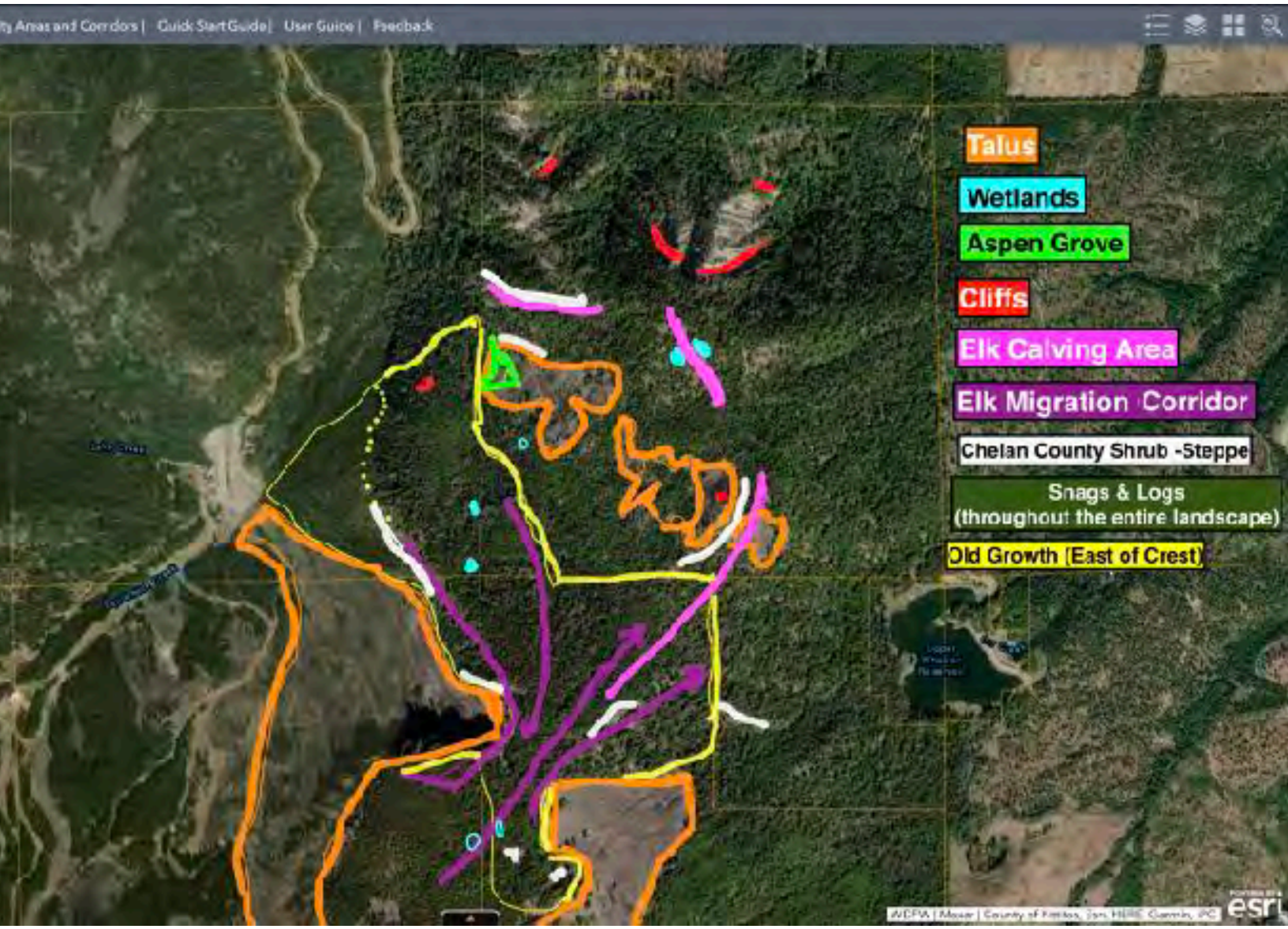
The DEIS falsely asserts that the planned “open space” areas (areas not paved over) will be suitable habitats. It claims the proposed ski runs will also improve foraging habitat for deer and elk. If this were the case, the current Mission Ridge Ski Area would have abundant deer and elk foraging on the ski runs. However, deer and elk signs and sightings on ski runs are infrequent. The reason for their absence is not because of forage availability; it's human disturbance: disturbance from outdoor concerts, construction/maintenance activities with heavy machinery, trucks driving up service roads, recreationalists, and pets accessing the ski area. Wildlife will not only abandon habitats over disturbance, but they can be physiologically stressed enough by the disturbance that it can be measured[33]. The DEIS dismisses the impacts that human disturbance has on wildlife and asserts, without evidence, that the animals will use new ski runs, be unaffected by 10,000 cars/day, or can move to adjacent equivalent habitat.

Photo 18 - Bull elk foraging on WDFW Section 25

[33] McCorquodale, Scott M. 2013. “A Brief Review of the Scientific Literature on Elk, Roads, & Traffic.” Washington Department of Fish and Wildlife. “Elk exhibited elevated fecal glucocorticoids during high non-hunting recreational activity, indicating psychological stress from regular vehicle use.”

Recommendations - Updates to PHS Maps

The marked up map below contains suggested edits to the WA Department of Fish and Wildlife Priority Habitats and Species Map. For example, stands of East-side old-growth (10 trees over 21” DBH per acre) were measured, but no old-growth was noted on the map. Particularly devoid of big tree information is the Forest Service’s Section 30, where ski runs, access roads, and a 4 million-gallon snowmaking reservoir are proposed to go in where multiple 40”+ DBH trees reside.



Map 5 - Suggested updates to the WADFW Priority Habitats and Species Map

Recommendations - Scrutiny

This trail camera survey showed how many of the claims in the DEIS are false or misleading. This is a troubling pattern that calls into question the validity of the other ecological assessments presented by the developer that are included in the DEIS. These errors and omissions of important data highlight the need for a high level of scrutiny and third-party, on-the-ground verification. Other examples not covered in this paper are:

- under-counting the size of an aspen grove (suspiciously at 0.9 acres) just below the Priority Habitats and Species threshold (measured to be ~1.7 acres via a drone survey).
- DEIS wetland survey omitted one or two perennial wetlands and a perennial stream within the project area.
- DEIS contends that the project area is too low for pika, but there are at least a dozen active pika haystacks visible in the proposed village footprint (identified via drone) on Section 19 talus.

Photo 19 - It is possible to identify pika haystacks via drone survey. Note the fresh green vegetation denoting active use.

Photo 20 - One of a dozen pika haystacks visible via drone on Section 19 where the DEIS states: "the study area is on the margin of the American pika (Ochotona princeps) range and is **likely too low in elevation for pika**" *(Appendix F-32 - Section 4.1.1.1)*

Recommendations - Future Studies, Gaps in Research

1. What are the impacts of summer use at the ski area on the area's wildlife? Specifically, does summer operation of the Chair 5 pub/Midway Lodge, and summer maintenance and construction activities displace or impact wildlife use? It appears this summer's activity did not undergo any additional environmental review. Answers to these questions would help provide some insight into how the proposed development would impact adjacent wildlife habitat. A trail camera study within the ski area could help understand how much wildlife use is occurring in and around the ski area. The DEIS claims that cutting ski runs helps deer and elk by providing forage. To test their hypothesis, research could be done on the existing ski runs.

Photo 21 - The impacts are light & noise pollution are well known. While past attempts to expand summer ski area operations were stopped due to impacts, this did stop Mission Ridge from expanding its 2025 summer activities.

Photo 22 - Heavy machinery operated along ski runs, 0.5 km away from the control cameras.

2. What is the role of talus fields in offering habitat for not only pika, but also bats[34], reptiles, amphibians, and insects? Interstitial spaces underneath the talus provide a stable thermal refuge–up to 86°F temperature difference[35] from the ambient air! The presence of aspen growing out of basalt talus, the sound of springs gurgling underneath talus, and the presence of icebugs[36] suggest that underneath these talus slopes is a cool, moist, wetland/riparian-like environment suitable for many species. These cool, moist, stable areas will likely become more important as climate change warms these slopes. Acoustic sensors and/or radar could detect bat usage of talus fields. E-DNA testing of springs seeping out of talus fields could help identify species using those subterranean spaces.

Photo 23 - Drone image of the main aspen grove on Section 19. Aspens growing out of the talus are a clue that near-surface water exists under the basalt.

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[34] McEwan, A. L., & Bachen, D. A. (2017). Use of Talus and Other Rock Outcrops by Bats in Western Montana. Montana Natural Heritage Program, Natural Resource Information System, Montana State Library.

[35] Varner, J., & Dearing, M. D. (2014). The importance of biologically relevant microclimates in habitat suitability assessments. *PLoS ONE*, 9(8), e107201. https://doi.org/10.1371/journal.pone.0107201

[36] Buczkowski, G. (2017). Conservation biology of ice crawlers (Grylloblattids) in the Pacific Northwest. Purdue University. Retrieved from www.entm.purdue.edu/ants/ice-crawlers.php

Photo 24 - Widespread beetle kill on top of Mission Ridge, September 2025. New outbreaks of beetle kill are devastating stands of whitebark pine, lodgepole pine, and other tree species on the upper mountain. How will this impact wildlife?

3. What are the historic trends, anticipated future conditions, and cumulative impacts that are facing the wildlife on Mission Ridge? Will future condition makes this undisturbed high elevation habitat more valuable? A larger meta-analysis needs to be done to factor in the nearby habitat loss through things like orchard development (ie. Section 17), what is the development future of nearby Section 13–owned by the same developer, increased impacts of recreation, climate change impacts, beetle kill outbreaks, drought stress, the encroachment of wildlife disease (Chronic Wasting Disease and Hoof Disease), etc. All these variables interplay and will determine the health of the landscape and wildlife.

4. To monitor the presence of arboreal species, setting up trail cameras on large snags, hollow tree cavities, etc., would help detect the presence of wildlife not captured on camera near ground level and pointed at game trails. This may be a low-cost, non-invasive way to detect marten, fisher, etc, compared to using bait stations, winter tracking, or other traditional and reliable methods.

5. With an anticipated traffic load of roughly 10,000 vehicle trips per day, wildlife surveys targeting migration routes[37] and frequent crossing should be conducted along Mission Ridge Road & Squilchuck Road[38]. These surveys would need to be done year-round to identify seasonal hotspots. The projected traffic from the development will be roughly double the average traffic of Stevens Pass or Blewett Pass. Those traffic numbers will greatly impact wildlife movement and mortality within the Squilchuck Road corridor. These surveys would help to understand wildlife movements that could be used to inform mitigation efforts like signage and wildlife crossing structures.

6. The seasonal wetlands, shown in the DEIS, on Section 19 are known amphibian breeding ponds. However, it is unknown exactly how many species of amphibians use these wetlands. In addition, there is an uncatalogued wetland on Section 19 (Photo 25, below) and an unmapped perennial stream on Section 30. The perennial stream appears to be an important water source for the calving area/travel corridor/migration route in that area. Both are absent from the DEIS Wetland Survey. Nearby sightings of salamanders, boreal toads, and a possible Columbian spotted frog at Wheeler Reservoir suggest that further study is warranted. Amphibian surveys or E-DNA could help understand which species are using these areas.

Photo 25 - Drone photo of a perennial wetland not marked on any of the DEIS wetland surveys.

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[37] Rowland, M. M., Wisdom, M. J., Johnson, B. K., & Penninger, M. A. (Year). *Effects of Roads on Elk: Implications for Management in Forested Ecosystems*. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. La Grande, Oregon.

[38] Gucinski, Hermann, Brookes, Martha H., Furniss, Michael J., & Ziemer, Robert R. (2001). *Forest Roads: A Synthesis of Scientific Information*. General Technical Report PNW-GTR-509. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Photos from the Trail Camera Survey

Photo 26 - mule deer on migration corridor along basalt field of Section 25/30

Photo 27 -black bear on Section 24

Photo 28 -snowshoe hare

Photo 29 - black bear cub

Photo 30 - red-tailed hawk at elk wallow

Photo 31 - adult golden eagle at an elk wallow, Section 25

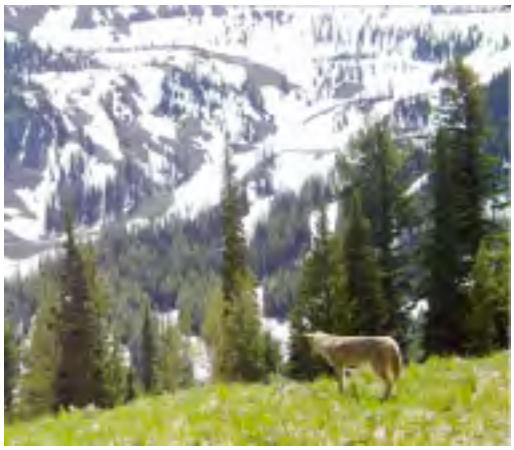

Photo 32 - coyote, control camera

Photo 33 - bobcat

Photo 34 - black bear, Section 23, control camera

Photo 35 - marmot

Photo 36 - bobcat, Section 30

Photo 37 - yellow-rumped warbler

Photo 38 - dusky grouse

Photo 39 - elk feeding along a riparian zone in the project area, Section 25

Photo 40 - elk calf and and cow elk, Section 25

Photo 41 - black bears, Section 25

Photo 42 - mountain lion, Section 23, control camera

Photo 43 - cow elk, on the boundary of Section 30/Section 19