HALVERSON | NORTHWEST
LAW GROUP

February 22, 2013

Kittitas County Board of Commissioners
Kittitas County Courthouse Room 110
Ellensburg, WA 98926

Re: Notice of SEPA Appeal
Cascade Field and Stream Conditional Use Permit (CU-11-00003)

Dear Commissioners:

Dean and Daniel Tonseth, David Holmquist, Margaret Towle and Ken Fyall hereby appeal the Mitigated Determination of Nonsignificance issued by SEPA responsible official dated February 8, 2013, with respect to Cascade Field and Stream Conditional Use Permit (CU-11-00003). Attachment A.

The appeal issues include but are not limited to the following:

1. MDNS was improperly issued without comment as required by SEPA regulations. SEPA responsible official obtained additional significant environmental information in form of a report prepared by Arthur M. Noxon, PE, dated October 15, 2012. Optional DNS process under WAC 197-11-355 requires recirculation of notice and opportunity to comment by agencies and the public.

2. Environmental Checklist and information was incomplete and inadequate for meaningful analysis, comment or threshold determination. See Appellant's Comment Letter dated January 13, 2012. Attachment B.

3. MDNS sets forth vague, unclear and incomplete mitigation and conditions. See paragraphs 1, 2, 3, 5, 7, 8, 9 and 11.

4. MDNS improperly defers evaluation and assessment of impacts related to transportation, lead management practices, specific water and septic standards, cultural and historic resources, outdoor lighting and noise mitigation.

5. Environmental review and information fails to contain sufficient substantial evidence upon which to make informed determinations regarding probable significant adverse environmental impacts.

6. Noise study fails to identify specific location and design parameters for noise attenuation.

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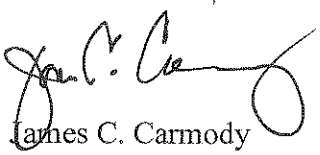
Included with this Notice of Appeal is the required $500.00 filing fee.

Very truly yours,
HALVERSON | NORTHWEST LAW GROUP P.C.



James C. Carmody

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State Environmental Policy Act
MITIGATED DETERMINATION OF NONSIGNIFICANCE

Description: Cascade Field and Stream Conditional Use Permit (CU-11-00003) is a request for a Conditional Use Permit for the placement of a shooting range in the Agriculture 20 zone.

Proponent: Chris Cruse, authorized agent for Cascade Field and Stream, property owner.

Location: The project is located on Hayward Road, approximately 1.33 miles south from its junction with Bettas Road, Cle Elum, WA, located in a portion of the East ½ of Section 21, T19N, R17E, W.M. in Kittitas County. Map number: 19-17-21000-0001.

Lead Agency: Kittitas County Community Development Services

The lead agency for this proposal has determined that the proposal will not have a probable significant adverse impact on the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030 (2) (c) and WAC 197-11. This decision was made after review of a SEPA environmental checklist and other information on file with the lead agency, after considering voluntary mitigation measures which the lead agency or the applicant will implement as part of the proposal, and after considering mitigation measures required by existing laws and regulations that will be implemented by the applicant as part of the Kittitas County permit process. The responsible official finds this information reasonably sufficient to evaluate the environmental impact of this proposal. This information is available to the public on request.

The lead agency has determined that certain mitigation measures are necessary in order to issue a Mitigated Determination of Non-Significance (MDNS) for this proposal. Failure to comply with the mitigation measures identified hereafter will result in the issuance of a Determination of Significance (DS) for this project. The mitigation measures include the following:

Transportation

1. The site is accessed from Hayward Road which is a primitive road and receives minimal maintenance. Improvements to Hayward Road will not be required because the Average Daily Traffic is expected to remain below 100. If future traffic to the club raises the ADT above 100, mitigation to offset the impacts of the increased traffic may be required.

2. Access to Hayward Road shall be from Bettas Road. The club shall implement procedures to prevent users from accessing Hayward Road from SR 10.

Land & Air

3. The U.S. Environmental Protection Agency's Best Management Practices for Lead at Outdoor Shooting Ranges manual shall be strictly adhered to.

4. If the applicant plans to burn trees or debris from the property, the applicant shall obtain a burn permit from the Department of Ecology. Only natural unprocessed vegetation may be burned in an outdoor fire. It is the applicant's responsibility to contact the Department of Ecology regarding this permit.

Water & Sewer

5. Any future development requiring water or septic will be required to meet the newest requirements of Kittitas County Public Health Department, Washington State Department of Health and/or Washington State Department of Ecology effective at the time of development.

6. Activities such as road widening, stump pulling and clearing grading and fill work and utility placements may require an NPDES Construction Stormwater Permit issued by the Department of Ecology prior to start of construction. This permit requires the preparation of a Stormwater Pollution Prevention Plan. It is the applicant's responsibility to contact the Department of Ecology.

Fire & Life Safety

7. Fire danger restrictions will be in place and adhered to at the same level as those for the adjacent Department of Natural Resources (DNR) land.

Cultural Resources

8. The applicant shall immediately contact the Washington State Department of Archaeology & Historic Preservation, and the Yakama Nation if any items of possible cultural or historic significance are encountered during construction activities. Work shall be immediately halted with the area and a large enough perimeter established in order to maintain the integrity of the site.

Light & Glare

9. All outdoor lighting shall be shielded and directed downward to minimize the effect to nearby residential properties.

Noise

10. Development and construction practices during building of this project shall only occur between the hours of 7:00 am to 7:00 pm to minimize the effect of construction noise on nearby residential properties

11. Berms and other noise deflecting construction, as described in the Noise Study prepared by Acoustical Engineer dated 10-15-12, shall be implemented to deflect the noise from surrounding residences.

The above stated mitigation conditions listed above will be provided within conditions of the decision of the conditional use permit approval.

Responsible Official: Robert "Doc" Hansen

Title: Planning Official

Address: Kittitas County Community Development Services
411 N. Ruby Street, Suite 2
Ellensburg, WA. 98926
Phone: (509) 962-7506 Fax: (509) 962-7682

Date: February 8, 2013

This Mitigated DNS is issued under WAC 197-11-355 and WAC 197-11-390; the lead agency will not act on this proposal for 10 working days. Any action to set aside, enjoin, review, or otherwise challenge this administrative SEPA action's procedural compliance with the provisions of Chapter 197-11 WAC shall be commenced on or before 5:00 pm, February 22, 2013.

Pursuant to Chapter 15A.04.020 KCC, this MDNS may be appealed by submitting specific factual objections in writing with a fee of $500.00 to the Kittitas County Board of Commissioners, Kittitas County Courthouse Room 110, Ellensburg, WA 98926. Timely appeals must be received within 10 working days, or no later than 5:00 PM, February 22, 2013. Aggrieved parties are encouraged to contact the Board at (509) 962-7508 for more information on appeal process.

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"Building Partnerships – Building Communities"

NOTICE OF DECISION SEPA ACTION AND PUBLIC HEARING

To: Interested County Departments & Agencies with jurisdiction
Adjacent Property Owners
Applicant

From: Robert "Doc" Hansen, Planning Official

Date: February 8, 2013

Subject: Cascade Field & Stream Conditional Use Permit (CU-11-00003)

Please find the attached Mitigated Determination of Nonsignificance (MDNS) for the above referenced project. A Notice of Application for the submitted application was mailed on December 16, 2011.

NOTICE IS HERBY given that pursuant to 43.21(C) RCW, Kittitas County Community Development Services did on February 8, 2013 make a Mitigated Determination of Non-Significance (MDNS) for the Cascade Field & Stream Conditional Use Permit. The proposal is a request for a Conditional Use Permit for the placement of a shooting range in the Agriculture 20 zone. The project is located approximately 1.33 miles south from its junction with Bettas Road, Cle Elum, WA, located in a portion of the East ½ of Section 21, T19N, R17E, W.M. in Kittitas County. Assessor's map number: 19-17-21000-0001. The complete application file may be viewed at Kittitas County Community Development Services, 411 N. Ruby St. Suite 2, Ellensburg, WA 98926. Staff Planner: Lindsey Ozbolt.

Any action to set aside, enjoin, review, or otherwise challenge such administrative SEPA action on the grounds of noncompliance with the provisions of chapter 43.21RCW shall be commenced on or before February 22nd, 2013 at 5:00 p.m. to the Kittitas County Board of Commissioners, Rm. 108, County Courthouse, Ellensburg, WA 98926. Appeals of SEPA threshold determinations shall be consolidated with appeals of final permit approval, according to 15A.04.020, Chapter 43.21C RCW and Chapter 15.04 KCC (such as a decision to require particular mitigation measures or to deny a proposal). A single simultaneous hearing before one hearing body will consider the agency decision on a proposal and any environmental determinations made, with the exception of the appeal, if any, of a threshold determination of significance.

NOTICE IS HEREBY given that a hearing on said application before the Kittitas County Hearing Examiner has been scheduled for **February 28th, 2013** at 6:00 p.m. in the Kittitas County Courthouse Auditorium, Ellensburg, WA. 98926. Anyone with an interest in this matter is urged to attend said hearing where testimony will be taken. Written comments will be received and documents may be viewed at the above address prior to the hearing. Interested persons are encouraged to verify prior to attending.

ACOUSTICAL ENGINEER

Arthur M. Noxon, PE
ACOUSTIC, NOISE AND VIBRATION CONTROL
engineering survey and analysis, project design and management

10/15/2012

Jeff Slothower, Attorney
LWHSD, LLP
201 W 7th Ave
Ellensburg, WA 98926

RE: Cascade Field and Stream Club

Cascade Field and Stream Club ("CFSC") has requested a conditional use permit ("CUP") (the "2011 Application") to allow the club to operate a shooting range open to members and invited non members on their property on Hayward Road in unincorporated Kittitas County. Accompanying the application was a SEPA (State Environmental Policy Act) Checklist, which acknowledged the potential for noise impact and included a noise study prepared by Dr Piacsek (2003).

Documents which oppose the creation of a shooting range on the site were submitted in response to this application, in which various acoustic issues were raised. *A list of documents used in this report are found in Appendix 1.* This report addresses and resolves objections raised with respect to the environmental noise impact from the proposed shooting range. By adding basic noise mitigation measures to the property, noise impact on surrounding residential property can be reduced to meet or fall below environmental noise acceptability standards. The Executive Summary below is supported by a series of engineering Sections found in the *Appendix*.

A) Executive Summary

The applicant included in their submittal a noise report done by Dr. Andrew Piacsek to satisfy the requirement that noise impact be included in the SEPA Checklist for this proposed change in land use to allow CFSC to locate a shooting range on their property. Objections based on noise were raised in the form of comments submitted in response to the land use application. Each of these comments is acknowledged and responded to below:

1) Response to comments and inclusion of suggested additional work needed before any evaluation of any proposed fit between the proposed shooting range and the livability aspects of the surrounding homes.

2) The definition of livability in the vicinity of a shooting range is given, followed by measurements and calculations which define the extent of site modification needed to fit the proposed shooting range to the livability standard.

3) Mitigations are discussed which describe the site modifications needed to fit the shooting range into the ambience of the neighboring community during the most quiet times of the day, which is when there is no wind noise nor is there the operational wind turbine noise.

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B) Overview of Concerns Raised about Shooting Range Noise

Comments have been submitted which question noise aspects of the CFSC shooting range. Those from attorneys James Carmody, Travis Misfeldt, Roger Leed, acoustic engineer Jerry Lilly and David Holmquist represent the basic issues, which are listed below and accounted for in the following section.

1) Attorney James Carmody: The Jan 13, 2012 letter refers to Mr Lilly's report, comments on the number of gunshots used for testing, Peak detection, Class of receiver property, proposed violation of 80 dB,A measurement and that a comprehensive noise study be done.

2) Attorney Travis Misfeldt: The Dec 16, 2003[1] letter does not mention Mr. Lilly's report. It is an independent response to the application. It does ask for a more complete, EIS type noise impact analysis, specifically that the then existing environmental conditions be quantified and then the impact to this conditions be quantified.

3) Attorney Roger Leed: The Dec 16, 2003[2] letter is also a response to the earlier 2003 Application. He comments on the Piacsek report, questioning his qualifications to produce a noise study. He presents a noise study done by VGO, an acoustic engineering group in Oregon, for another shooting range in Washington which recommends noise limits for shooting ranges. Mr. Leed also asks that the applicant submit a noise study, done by a qualified acoustic engineer, which includes an inventory of all firearms that will be used on the range and their impact on the ambience of the surrounding environment.

4) Acoustic Engineer Jerry Lilly: submitted comments in a report dated Dec 13, 2003[3] in which he reviewed acoustic aspects of the application. He did not visit or make tests at the site or immediate neighborhood. His report is basically a review of the Piacsek report, plus a review of a number of concepts or topics on psychoacoustics (the science covering how humans perceive and interpret the sounds they hear). He states that the Washington state noise regulations WAC 173-60-050 are based on EDNA (Environmental Designation for Noise Abatement) criteria which limits the maximum noise exposure allowed to impact neighboring property based on the use of the property, which in this case is Class C for industrial property. Mr. Lilly states that lacking any other directive (in the Washington state noise code) the absolute maximum (dB,Peak) noise level produced by gunfire should be used to establish environmental acceptability. He also suggests that a comprehensive ambient (background noise level) noise study be done.

5) David Holmquist: Suggests that the applicant did not supply evidence that the proposed use will not be detrimental to existing uses in the surrounding neighborhood, that a qualified acoustic engineer conduct a noise study, questions mitigation value due to limiting time of day for shooting and cites the VGO noise study to justify the implementation of a one mile buffer between homes and the shooting range.

This report provides a noise impact study and relied, in part, on an ambient noise study taken on 2005, a survey of gunfire from the shooting range at various distances and directions and a noise impact

[1] This letter was a comment to an application submitted by CFSC in 2003. That application was not processed. The application is referred to as the "2003 Application."

[2] Id.

[3] Id.

assessment. In addition, other issues raised in comments which responded to the application are addressed.

C) Responses to Comments

Numerous topics with respect to noise were brought up in the comments both in favor and against locating the shooting range as proposed. Each has been recognized and responded to in the following section.

1) Background Ambient Noise Study

Several documents were submitted in opposition of the shooting range, including letters from attorneys James Carmody, Travis Misfeldt, Roger Leed and acoustic engineer Jerry Lilly. One comment in common was that they asked for a background noise study.

Acoustic engineer Arthur Noxon, PE of Oregon completed an extensive background noise study throughout the neighborhood of the proposed shooting range as presented in his report dated 10/24/2005.

The 2005 background noise study took place before any wind turbines were in the area. It is included in *Appendix 2*. Background noise levels in the area around the proposed shooting range registered between 40 and 45 dB(A) during quiet morning and evening hours of the day, with no wind.

2) Qualifications of Dr. Piacsek

Questions were raised by Attorney Leed as to the qualifications of Dr. Piacsek to do the noise study used in the application. His resume was not attached to his initial noise study. It is available on line and a copy of it is contained in *Appendix 3*. He has both a Master's and PhD degrees in Acoustics. He teaches physics, does acoustic research and publishes papers on his studies. He was well qualified and equipped to measure the noise impacts of gunfire.

3) Measurement Units in Dr. Piacsek Noise Report

Concerns have been raised by acoustic engineer Jerry Lilly about the units of measurement used Dr. Piacsek. A review of his report is contained in *Appendix 4*. He measured the noise of gunfire using dB (A,Peak) and added a few measurements using the Impulse setting, dB (A, Impulse). Acoustic Engineer Jerry Lilly reviewed his report and suggested that the readings should have been made in dB (Peak) instead of dB(A, Peak). The difference between these two measurements is about 1 dB, which is negligible from any practical point of view. Unfortunately, when a non-acoustic trained person reads the Lilly report it can appear to say that Dr. Piacsek simply took the wrong measurements, when in reality he took essentially the same measurement. See the Review of Dr. Piacsek's Noise Study in *Appendix 4*.

A second issue occurs here. Measuring the dB (Peak) values of gunfire is an OSHA type of noise measurement, used when risk of hearing damage is being assessed. In this situation, environmental noise is being assessed and the standard unit of measurement is dB(A,Fast). Fortunately there are mathematical relationships between all these forms of measurement. The result from one form of measurement can be easily converted to any other, hence there is no problem with the type of measurement made by Dr Piacsek. *Appendix 5* contains an explanation with calculations that explains more about this conversion process.

4) Single vs Multiple Gunshots

Concerns were raised that not enough gunshots were used. Each gunshot was recorded. There was only one shot per data point. It is my experience that the variation between multiple identical gunshots at a fixed distance is about 3 dB. The purpose for the noise study was to develop a general idea about the noise from gunfire as it is heard at neighboring properties.

His measurements coincide with typical gunfire noise measurements at a distance. During my background noise study at the shooting range I also measured the noise from rifle fire at distances from the firing point at the range and my data is consistent with that obtained by Dr. Piacsek. See *Appendix 5*.

5) Noise Level of 80 dB at Neighboring Home

Noise levels measured by Dr. Piacsek near the closest homes to the north and south of the range registered in the range of 80 dB(A,Peak). Comments point out these two measurements and propose that this noise level is too loud. The standard for measuring hearing risk is dB (A, Peak). The standard for measuring environmental noise is dB(A,Fast), including the impulsive sounds from shooting ranges. These are different types of noise readings and cannot be confused or misused.

The dB(A,Peak) reading can be mathematically converted to a dB(A,Fast) reading by subtracting 30 dB. To the uninitiated the 80 dB(A,Peak) measurement seems to be an alarming noise level for a home. However, that same sonic event when measured by an environmental sound meter will actually register the event to be in the range of 50 dB(A,Fast) which is in the range of acceptability for community noise exposure to that from a shooting range. See *Appendix 6C*.

6) WAC Noise Code Applicability

Baul Bennet, PE states that WAC noise code applies to existing, not new shooting ranges. A careful reading of the language of the code does not reveal any opportunity for differentiation by the noise code as is applies to the exemption of gunfire noise emitted from existing or new shooting ranges. WAC 173-60-050 (1, b) is the shooting range exemption clause for the Washington state noise code. It states that sounds created by the discharge of firearms on authorized shooting ranges shall be exempt from WAC 173-60-040 between the hours of 7 am to 10 pm. See Appendix

7) Audible Gunfire Miles Away

Comments include the observation that the noise of gunfire on the proposed shooting range site is plainly audible for miles. There is a difference between being able to hear a shooting range miles away and living next to a shooting range. At a distance of over a mile, atmospheric effects which include being downwind and overhead thermal inversion layers do act to turn sound back towards the ground which otherwise would have escaped into the sky.

The ability to hear a distant gun range also depends on the local background noise levels. This type of noise exposure may be audible but it has been dulled out by the atmospheric absorption of higher frequencies of the sound, replacing the uncomfortable sounding crack of a nearby shot with the dull, non-threatening thud of a distant shot. The livability standard is not compromised just because someone can hear the distant thud of gunfire at a shooting range.

8) VGO Noise Study

Comments include a 1997 noise study on a shooting range in Washington by VGO. The report cites that they measured a loud rifle in the 100 to 116 dB,A range (dB(A,Peak). The photo of their test shows they were behind the shooting range, not to the side. See *Appendix 6* for a discussion of the VGO report. Directional diagrams are commonly available for pistols and rifles. They show how loud the gun is in different directions. These diagrams regularly demonstrate that the noise from gunfire when measured behind the gun is 10 to 15 dB lower than when measured to the side of the gun. It is also 10 dB louder when measured along the line of fire compared to when measured to the side. This means they would have measured around 116 + 15 = 130 dB(A,Peak) at 50' to the side of their unspecified rifle or 125 dB(A,Peak) at 100' to the side which is close to the Piacsek report which documented 130 dB(A,Peak) at 100' to the side.

VGO report suggests the upper limit of 57 dB,A should be used for gun noise exposure at the nearest outdoor use area, which is achieved if the shooting range is out in the open and located 1 mile away. This recommendation can be calculated based on the expansion of sound from 50' to one mile plus the typical atmospheric attenuation effects of 2 to 3 dB/1000 feet. The next sentence of the VGO report states that "Any hilly terrain between the shooting range and any proposed use area would increase the sound loss and reduce the distance of separation required."

The presently proposed shooting range has homes on the order of one mile distant in any direction. Homes to the east and west are located over hilly terrain. Homes to the north and south are located along the slightly sloping, fairly flat ridge top. Based on measurements and calculations, see *Appendix 7*, the VGO report appears to confirm that the proposed shooting range location is appropriate.

9) Property Classification

The WAC noise code is a property line nose code and provides for different noise limits depending on the type of property the noise comes from and again, the type it impacts. The comments against the proposed shooting range location are based on the concept that a home located on a huge piece of land means the entire piece of land is classified as residential, regardless what the land is being used or not used for. See *Appendix 8.*

The proposed shooting range site is bounded by property lines. A neighboring property owner claims that all of their property is residential because there is a home located on it. On the surface, this might seem to be a reasonable claim but in fact the claim is unreasonable because the home is located over one mile away from the property line, across barren undeveloped land. Another comment brings up the issue of possible future residential developments on property located next to the shooting range, where the developed land is next to the shooting range. In land use decisions, it is the issue of currently existing, not potential future developments that must be considered.

10) Proper Units of Measurement for Noise similar to a Shooting Range

Noise from gunfire off shooting ranges is exempt from noise regulations. However, it is of interest to evaluate how much noise comes off a shooting range when determining the livability aspect of locating a shooting range near existing homes. Acoustic Engineer Jerry Lilly commented in his review of Dr. Piacsek's noise study for Attorney Leed that the WAC noise code does not specifically define what units the noise off a shooting range or other similar sounding noise source should be measured in. He

recommends that lacking guidance, the most conservative test be used in the interest of public welfare, which is the Unweighted, Peak type of noise reading. Detailed study of the noise code however reveals that it does specify the type of test to be done.

The WAC noise code defines an impulse noise, an impulse sound level meter and differentiates it from a sound level meter. The code does not specify when an impulse should level meter should be used. However, the code does specify what type of sound meter is to be used for enforcement of the noise code: It is a Type 1 or 2 sound level meter, that complies with ANSI S1.4.1971 performance standards, and set to the A weighting. The noise code defines the not-to-exceed levels during any given hour, with overage allowances for short duration noise. Of particular interest here is that the regular noise code can be exceeded by 15 dB for an aggregate of 90 seconds in any given hour as measured by the above defined meter. The ANSI compliant meter has two measuring speeds Fast and Slow. Fast is always used for environmental noise readings.

The WAC noise code in effect states that an impulse noise is measured by a sound meter set to dB(A,Fast). A sound meter set to dB(A,Fast) will measure a short lived noise, like gunfire, at a level that is 30 dB below the dB(A,Peak) level. Dr. Piacsek measures gunfire noise at 80 dB(A,Peak) near a home to the south and another to the north, both about one mile away. This corresponds to the WAC defined sound meter registering 50 dB(A,Fast) for the same event, at the same time. This reading is well below even the most protective noise limit of 55 dB(A,Fast) for daytime noise.

11) Property Line Noise Level

The WAC noise code is also based on noise crossing between two types of property. Comments promote the idea that a large piece of undeveloped land is residential Class A because a house is located on the land, even though it may be one mile or more from the property line in question.

The shooting range may fall under the Commercial (recreational) land use Class B. Comments suggest that it is an Industrial (hearing protection) land use Class C. The conservative case would be Industrial next to Residential and the property line limit is 60 dB(A,Fast). There is an allowance for short periods of noise during the hour where the noise exceeds the limit. Noise can exceed the limit by 15 dB(A,Fast) for an aggregate of not more than 90 seconds during any given hour.

A gunshot measured by a dB(A,Fast) sound meter requires $1/8^{th}$ second to take the reading. There can be an aggregate of 90 seconds of noise that exceeds the standard noise limit by 15 dB(A,Fast). This can be created by 90 x 8 or 720 gunshots during any given hour, or on average, one gunshot every 5 seconds.

If the limit is 60 dB(A,Fast), and 15 dB(A,Fast) is added, then we have each shot at the property line limited to 75 dB(A,Fast) which is equivalent to 75 + 30 = each shot not exceeding 105 dB(A,Peak) at the shooting range property line. The property line is typically about 500 to 600' from gunfire locations. Noise measurements include 130 dB(A,Peak) @ 100'. At 500' the noise will be lowered by 20 Log (500/100) = 14 dB, which is 130 – 14 = 116 dB(A,Peak), only 10 to 12 dB louder than state noise code for equivalent noise.

In general, 10 to 12 dB mitigation is needed to limit noise to comply with State noise code at it's property line, which is a mile from the nearest home, for a shooting range that is exempt from the state noise code.

D) Livability Fit for Shooting range

The noise from gunfire on approved shooting ranges during the daytime is exempt from noise regulation. However, there is the issue of livability with respect to homes in the neighborhood of the shooting range. Usually people think about how loud some thing is. But what they are actually talking about is how loud it is compared to the background noise level. The noise of an air conditioner may be unnoticed on property located near a freeway but deemed to be loud if it is located in the quiet of a rural residential setting. So, it is with shooting ranges.

1) Gunfire and Background Noise Levels

The livability at home which neighbors a shooting range depends on how loud the noise from the shooting range is compared to the background ambient levels. Dr. Piacsek measured both how loud gunfire at the range is and what the background noise levels were in various directions and distances around the propose shooting range site.

In addition I made a set of measurements, again on how loud gunfire is at various distances from the range and of the ambient noise levels at residential locations around the shooting range. Noise fills the air of the area surrounding the proposed shooting range due to high flying and low flying airplanes overhead and traffic on the various roads that run through the area. The train also is noisy but intermittent and excluded from ambient noise tests.

Ambient noise tests were done when the wind was still or at a very low speed, years before the population of wind turbines were added to the area. When the wind blows, the ambience raises due to wind noise and wind turbine noise. When the wind is still, as in early mornings and evenings, the ambience returns to the baseline quiet, which is what is has been measured. The result of the tests are that the background noise during the quiet times of the day average 40 dB,A while ranging between 35 and 45 dB,A. Refer to *Appendix 1*.

2) Livability Standard

Noise regulations place upper limits on intruding noise. Some are based on absolute noise level and others are based on relative noise level. So it is for livability standards and shooting ranges. The VGO engineering report cited in a number of comments suggested that the noise from shooting ranges should not exceed 57 dB,A. This suggestion is an absolute noise limit.

Tests have been done which show that the impulse noise, specifically from dog barking and gunfire are livable if the intruding noise near the home is less than 5 dB (A,Fast) above the background noise level around the home. The units of (A,Fast) means the spectrum of the intruding noise has been (A) adjusted to correspond to the efficiencies of human hearing and the event averaging time is set to $1/10^{th}$ second (Fast). This means the intruding noise levels from the shooting range should be no louder than 45 dB (A,Fast) for the quietest locations and 50 dB(A,Fast) for the noisier locations around the range.

3) Mapping the Livability Standard

Dr. Piascek report combined with my own noise studies provides sufficient information with which to predict how loud gunfire at the range will be near the neighboring homes compared to the quiet times of the day. The noise of gunfire to the east and west is heavily attenuated by the rough terrain and the

background noise is raised in these directions because the roads nearby run in the north south direction. There is no livability risk to the east or west of the proposed range site. See *Appendix 8.*

However, the closest homes to the north and south, although over one mile away, are at risk with respect to meeting the livability standard. The terrain is slightly sloping, smooth and flat. To achieve the livability standard to the north and south, a reduction of shooting range noise by 12 dB is needed.

4) Mitigation to Achieve Livability

The noise off the shooting range is 12 dB over the livability standard for closest homes to the range along the ridge. Background noise levels are 40 dB,A and the livability standard would be for gunfire noise to not exceed +5 dB or 45 B,A. Based on measurements and calculations, the noise of gunfire registers 57 dB(A,Fast). Although it meets the VGO recommendation, because of the level of quiet in this area, the current recommendation is to reduce the noise levels from 57 to 45 dB,A, a noise reduction of 12 dB,A.

Shooting range mitigation for noise frequently appears as a sound berm. Other sound attenuation measures can be taken near the source of the gunfire noise, in addition. Berms can provide up to 25 dB,A attenuation. Here we need the attenuation of 12 dB,A for gunfire.

5) Mitigation Specified

All firing points in a shooting range at fixed locations and the direction the gun is aimed is limited. Because the location of the gunfire noise is known and controllable, the sound path between the noise source and receiver is also known. Mitigation can be predictably applied to this type of situation.

The basic mitigation used in shooting range projects are berms. How high a berm has to be primarily depends on how close it is to the shooter. To achieve 12 dB attenuation of gunfire, a berm that is 150' away from the point of gunfire has to be about 15' high, see table below.

Distance	300'	150'	80'	40'	20'
Height	20'	15'	12'	10'	8'

Other forms of mitigation can also be used. A sound absorbing wall can be used. The problem with most sound absorbing surfaces is that they are not strongly held together and they decompose under the shock wave pressures of nearby gunfire. However, if the surface is located about 10' away from the blast of gunfire, the pressures are low enough that the material can withstand the loads without decomposing.

Another form of mitigation is to reflect the noise away from the undesired direction. These reflecting walls need no sound absorption on their surface and can be located closer to the source of the noise. The noise could be reflected to the east or west because sound attenuation is so strong in these directions. The wall needs to have an STC 25 or better rating, which would be a metal stud wall covered with Hardy board to the outside, plywood to the inside and building insulation within the stud cavity.

Mitigation is also accomplished by locating firing points over sound absorbing areas, typically dug out ditches filled with gravel, drained at the bottom for water control. Typically 3' wide and 2' deep is sufficient to remove 4 to 6 dB of noise from gunfire.

Usually mitigation is accomplished by means of a combination of efforts. Often preliminary efforts produce valuable results but not enough. Secondary mitigation measures are developed and implemented. A third round of work can also produce useful results. Noise control in shooting ranges can be an ongoing evolution because how the range is setup is to some degree itself an ongoing evolution.

E) Conclusions

For the most part the shooting range is well fit to its proposed location, from a noise control perspective. The range does need to be physically developed in coordination with the range staff and an acoustic engineer so that cost saving opportunities can be implemented before the work begins. The requirement for a 12 dB attenuation of noise from the range in either a north or south direction is achievable by using any number of noise control methods.

As a suggestion, if a berm system is to be used, it should run along the northern property line and down Hayward Rd for the upper 25% of the property, stopping at the entrance. On the other side of the entrance, the berm would start at Hayward Road and run along the SW side of the 4 wheel drive road that runs diagonally through the property. The long rifle range firing point does need to be wrapped by a berm to block the expansion of noise to the south. The material in the NE corner of the property could be used as a berm resource.

Frequently, ranges are built out of a number of shooting galleries that are separated by and outlined with berms. This type of construction reduced visibility across the range site but increases mechanical separation between adjacent shooting areas. Regardless of how the range is planned, each step in the evolution of the range should be with the signed approval of an acoustical engineer, including follow up tests at the nearby properties to the north and south.

Respectfully Submitted

Art Noxon

Arthur Noxon, PE
State Licensed Acoustical Engineer

REGISTERED PROFESSIONAL ENGINEER
1964
OREGON
Dec. 31, 1984
ARTHUR M. NOXON
RENEWS: 12/31/12

Appendix - Section 1: List of Documents Reviewed for this Report

Preliminary Noise Measurements… dated Nov 1, 2003 by Andrew Piacsek, PhD of Central Wash Univ

Report to Roger Leed dated Dec 13, 2003 by Jerry Lilly, PE of JGL Acoustics Inc, Issaqua, WA

Firing Range Noise Study dated June 30, 1997 by VGO Engineers, Lake Oswego, OR

Exhibit 25, Appl. No. 2003-01, State of Washington by Mark Bastasch of CH2M Hill, Corvallis OR

Comment Letter dated Jan 13, 2012 by James C Carmody of Velikanje Halverson PC, Yakima, WA

Washington State Noise Codes, WAC 173-58-xxx and WAC 173-60-xxx

Comment Letter dated Dec 16, 2003 by Travis W Misfeldt of Velikanie, Moore & Shore, Yakima, WA

Comment Letter dated Dec 16, 2003 by Roger Leed, PS of Seattle, WA

Comment letters dated Jan 13 and 16, 2012 by David Holmquist

Numerous comment letters dated Jan xx, 2012 by neighbors and concerned parties

EllensBurg Trap and Skeet Noise Study dated June 12, 2003 by W. Kaminski, PhD, Cent Wash Univ

Presentation slides, Exhibit 9 dated Aug 27, 2003 by Jerry Lilly PE of JGL Acoustics Inc, Issaqua, WA

Kittitas County Noise Code, Title 9 Public Peace, Safety and Morals, Chapter 9.45 Noise.

Proposed Gun Range in Bret Pit, Grand Coulee Dam dated 7/15/2003 by Art Noxon, PE, Eugene, OR

Environmental Impulse Noise Study, May 1991 by R. Niedzielski for Minn Pollution Control Agency,

Appendix - Section 2: Ambient Noise Readings around gun range in 2005 (prior to wind turbines)

A total of 24 noise readings were taken of the rural environment that surrounds the shooting range location on Wed evening and Thurs morning, Oct 19 and 20, 2005. Each data run lasted at least 5 minutes. Transient, extra loud noise due to overhead airplanes, trains or vehicles passing by were excluded from the ambience measurements. No wildlife noise was noted besides one groundhog and a few birds passing overhead.

The readings measured were Leq, L1, L10, L50 and L90. Leq is essentially the time averaged noise level. L90 identifies the noise level that equaled or was exceeded 90% of the time during the time period of each 5 minute test. In most cases the Leq and L90 are within a few dB of each other which illustrates how steady the quiet is in this area.

The noise is measured in terms of dB(A,Fast). People hear bass range sounds (below middle C) with less efficiency than treble range sounds, and so the "A weighting" is used to simulate human hearing. Sound levels generally range between 10 and 110 dB(A). Examples include whispering at 35 dB(A), conversation at 60 dB(A), face to face yelling at 90 dB(A).

The noise study covered the accessible parts of an elliptical area that is 4 miles in the N/S direction by 2.5 miles in the E/W direction, centered on the shooting range. Noise readings were taken along a north-south line made accessible by the north end of Thorp Rd near Hwy 10, Hayward Road, between Hwy 10 and Bettas Road and along Bettas Road, between Horse Canyon and Hwy 97. A few east-west readings were also taken. One along Horse Canyon Rd, at Puckerbush Ranch, near Hwy 97 and another was taken off Hwy 10, up a gravel road, near where it crosses Swauk Creek, about ¾ mile WNW of the end of the Kittitas Reclamation District ("KRD") North Branch Canal.

Thrs evening, Oct 20, 2005,	**Time**	**Duration**	**Leq**	**L90**	**Notes**
Entrance to Gun Range	5:10	5m3s	43.8	38.7	Hwy 84
Hayward Rd cross Canal	5:30	5m9s	40.3	37.7	
1616 N Thorp, Rosehill Farm	5:45	1m59s	51.6	43.8	Airplane
1616 N Thorp, Rosehill Farm	6:05	5m19s	45.0	39.4	Hwy 10
Hayward Rd cross Canal	6:20	5m19s	43.7	39.6	
Entrance to Gun Range	6:35	5m22s	49.2	41.1	
Hayward, 4wd gate, 1500' N of PL	6:40	4m32s	39.4	37.1	dist plane
+ 1000' Bettas, Aspen Ranch ent.	6:50	5m6s	39.7	36.4	
-1500' S of Quarry on Bettas, house	7:00	5m11s	38.6	36.8	
1 mile S of 97 on Bettas	7:15	5m8s	43.5	37.9	Hwy 97

Fri Morning, Oct 21, 2005.	Time	Duration	Leq	L90	Notes
500' S of Hwy 97 on Bettas	6:55	5m8s	53.9	38.1	Hwy 97
1 mi S of Hwy 97 on Bettas	7:15	5m11s	41.2	37.2	Hwy 97
3111 Bettas	7:30	5m8s	39.4	38.1	
Aspin Ranch road and Bettas	7:45	5m18s	42.5	36.8	2 high jets
Hayward, between PL and Bettas, at gate	7:55	5m20s	41.5	38.6	
At Gun Range Entrance	8:05	5m15s	39.7	38.8	Hwy 10
Hayward at canal	8:15	5m26s	40.5	38.8	Hwy 10
700' off Hayward towards Overlook	8:30	2m42s	61.4	55.3	Train, +69.3
In middle of Overlook, 4 pipers, 3 jets	8:35	5m4s	44.1	41.2	Plane noise
1616 N Thorp, Rosehill Farm	8:55	5m6s	44.7	41.1	
3000' off Hayward, along canal at Swauk	9:15	5m16s	38.4	36.8	
Off Hayward, at Overlook	9:45	5m22s	45.3	41.1	Hwy 10
Hayward at canal	9:55	5m9s	38.8	37.9	Hwy 10
Hayward at Gun Range entrance	10:00	5m9s	38.0	37.2	Hwy 10
Hayward, 4wd gate, 1500' N PL	11:35	5m11s	40.6	36.9	
Bettas Rd, Alpine Ranch	11.45	5m9s	40.0	36.8	
3111 Bettas Rd	11:50	5m40s	39.3	36.7	
1.3 mi S of Hwy 97 on Bettas	12:00	5m4s	38.4	36.8	Hwy 97
1.0 mi S of Hwy 97 on Bettas at sign	12:10	5m26s	43.5	38.2	Hwy 97

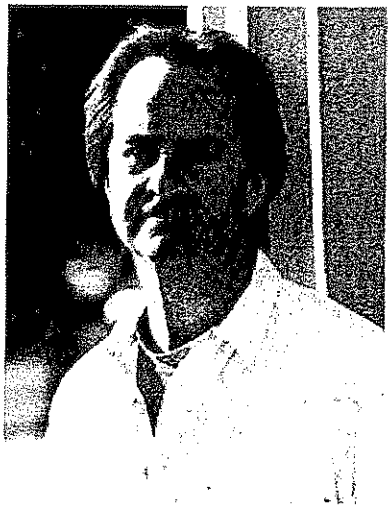
The baseline noise floor in this area is due to noise existing in the natural environment plus traffic on the nearby roads. To the northeast lies Highway 97. To the southwest lies Highway 10, train tracks and a little further, the freeway, I-90. Traffic from each of these noise sources is clearly audible as the source of the basic background noise. On top the ridge, near the shooting range, the distant din of noise fills the air but without a sense of direction. In areas not so high and equidistant from the 3 roads, the background noise source is easily recognized to be from the nearby road(s).

The quietest background noise readings Leq of 38 to 39 dB(A) were near the shooting range and equidistant from all roads. Areas more directly exposed to traffic noise registered Leq of 45 to 46 dB(A). Note that in most cases L90 is just a few dB below Leq, which means the quiet is fairly steady. Overall, the ambient noise level during quiet daytime hours is Leq 40 dB,A with 5 dB variation due to proximity to roads

Since this data was taken in 2005, wind turbines were added to the site and the surrounding properties. Now the wind turbine noise dominates the neighborhood ambience. However, during the still air times of the day, wind turbines do not operate and the ambience returns to the existing levels such as were measured here.

Appendix - Section 3: Resume of Dr. Piacsek

The qualifications of Dr Piacsek to do the noise study and report were not included in his report. It is readily available on line and is presented here. He has a Master's degree in Acoustics from Penn State, as does the acoustic engineer Jerry Lilly. Additionally, he has a PhD in Acoustics from Penn State. He researches and is well published in any number of acoustical areas.



Andy Piacsek

Assistant Professor

Coordinator,STEP Bridging Program for Transfer Students

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Educational Background

B.A., Physics, Johns Hopkins University, 1986

M.S., Acoustics, Penn State University, 1991

Ph.D., Acoustics, Penn State University, 1995

Teaching

These are the classes that I teach on a fairly regular basis:

- PHYS 101 Introductory Astronomy
- PHYS 103 Physics of Musical Sound
- PHYS 111-113 Introductory Physics
- PHYS 181-183 General Physics
- PHYS 351-352 Analytical Mechanics
- PHYS 361 Computational Physics
- STEP 301 Bridging Seminar I - Research Opportunities
- STEP 302 Bridging Seminar II - Research Skills
- I have also taught seminars for the Douglas Honors College and the Science Honors program.

Research Interests

My primary area of interest and expertise is physical acoustics, which is the study of mechanical waves and related phenomena. I am interested in waves of all kinds, from sound waves in a trumpet to sonic booms to tsunamis; that such disparate phenomena are united by similar mathematics is especially intriguing. Most of my experience is theoretical: I like to develop and work with computer models to explore how one thing depends on another. However, I am currently developing an acoustics laboratory at CWU to study vibrations in unusual structures and to investigate the properties of musical instruments.

Another area of interest is the epistomological basis of science, the role of science and society, and how to improve scientific literacy and understanding among non-scientists. I am interested in the ways in which society develops its perceptions of science, including the perseverance of pseudo-scientific and unscientific beliefs. My main work in this area is developing curriculum at the university level that specifically addresses our understanding of how science works and why this is important.

Selected Publications and Presentations

undergraduate co-authors are underlined

- Piacsek, A., "Numerical modeling of weak shock propagation: Past, present, and future," *J. Acoust. Soc. Am.*, **125**, 2599 (2009). *[invited]*
- Piacsek, A., "My voice looks like that? A hands-on, textbook-free approach to learning physics," presented at the 11th Annnual meeting of the Northwest Section of the American Physical Society, Vancouver, B.C. (2009). *[invited]*
- Piacsek, A., "Numerical simulation of sonic boom propagation through atmospheric turbulence," *J. Acoust. Soc. Am.*, **124**, 2591 (2008).
- Piacsek, A., Locey, L., and Sparrow, V., "Time-domain modeling of atmospheric tubulence effects on sonic boom propagation," 29th AIAA Aeroacoustics Conference, Vancouver, BC, paper 3032 (2008). [pdf]
- Locey, L., Sparrow, V., and Piacsek, A., "Sonic boom post processing to include atmospheric turbulent effects," 29th AIAA Aeroacoustics Conference, Vancouver, BC, paper 3035 (2008).
- Piacsek, A., "Investigating musical sound as a model for the scientific process," *J. Acoust. Soc. Am.*, **123**, 3519 (2008). *[invited]*
- Piacsek, A., and Wright, I., "Effectiveness of physlet computer animations for enhancing student learning of acoustic principles in a course for non-science students," *J. Acoust. Soc. Am.*, **121**, 3157 (2007).
- Smith, A., and Piacsek, A. "Elastic and vibrational properties of a regular tensegrity structure," *J. Acoust. Soc. Am.*, **119**, 3390 (2006).
- Piacsek, A., and Wagner, G., "Environmental impact of modern wind farms," *J. Acoust. Soc. Am.*, **115**, 2414 (2004).
- Piacsek, A., "Using acoustics to lure high school students into a career in science," *J. Acoust. Soc. Am.*, **114**, 2311 (2003).
- Grogan, J., Braunstein, M., and Piacsek, A., "An experimental study of changes in the impulse response of a wood plate that is subject to vibrational stimulus," *J. Acoust. Soc.* Am., **113**, 2315 (2003).
- Piacsek, A.A., "Using computers to overcome math-phobia in an introductory course in musical acoustics," *J. Acoust. Soc.* Am., **112**, 2344 (2002).
- Piacsek, AA, "Atmospheric turbulence conditions leading to focused and folded sonic boom wave fronts," *J. Acoust. Soc.* Am., **111** , 520-529 (2002). [pdf]
- Piacsek, AA, and Roberts, K., "Influence of wall curvature on the resonance behavior of glass bowls," Proc. of 17th International Congress on Acoustics, Rome (2001).
- Piacsek, AA, "Measurements of wineglass resonance using a fiber-optic probe," *J. Acoust. Soc.* Am., **108**, 2623 (2000).
- Piacsek, A. A., "Nonlinearity vs. diffraction within a focusing weak shock," *J. Acoust. Soc.* Am., **99**, 2539 (1996).
- Clarke, D. B., Piacsek, A. A., White, J. W., "Propagation of signals from strong explosions above and below the ocean," *J. Acoust. Soc.* Am., **99**, 2525 (1996).

Appendix – Section 4: Review of Dr. Piacsek Noise Study

This is a review of Andrew Piacsek's Noise Study of gunfire from the shooting range measured at numerous locations around the shooting range. Ambient noise for each reading was also measured and reported. The lowest ambient noise reading reported was 45 dB(A). Six of the tests registered a background noise level of 50 dB(A) or less and two tests were above 50 dB(A).

Wind is always a factor to be considered when making noise measurements. Seven tests had NR (No Reading) for wind speed. Standard recommendation is to not measure noise when the wind is over 10 mph (Oregon DEQ NPCS-1 Sound Measurement Procedures Manual). A total of 8 out of the 16 measurements note that wind speed exceeded 10 mph. Wind creates noise which raises the background noise level. During my own background noise tests in the same area there was no wind and the readings were usually less than 40 dB(A) unless highways 97 or 10 were nearby, which raised the background noise levels.

Sound intensity diminishes with the expanded surface of a spreading sound wave. This report uses the correct calculation of -20 Log(r/ro) to account for the effect of geometric spreading over flat hard ground. This calculation is normally used to predict the noise impact on neighboring sites. When the actual noise is measured at these sites, the geometric spreading prediction is usually additionally reduced due to the effect of attenuation of sound as it passes through the atmosphere and over the ground.

It can additionally reduced or amplified due to terrain effects such as a berm reduces sound while the raised ground of an amphitheater increases sound. Over large distances, one mile and more, wind and thermal gradients also have an impact, increasing or decreasing the noise at the receiving property, but these effects are normally not included in noise impact studies.

In all cases, except those measurements along Thorp Hwy, the measured noise levels were significantly louder (over 10 dB) than the ambience. This means that the gunfire noise measured was the noise of the gunfire itself, and not the noise of the gunfire + ambience.

This report did register both the A weighted, Fast, Peak and Impulse (35ms averaged) sound levels. The sound level impact predictions in the report were based only on the A weighted Peak SPL, sound pressure level. Recommended measurement for environmental situations is to use dB(A, Fast) and to not use Peak measurements. However, Peak an Fast data can be converted one to the other.

The Actual Loss (measured SPL @ 100' minus measured SPL @ receiver distance) was always more than the Spread Loss (calculation based only on the effect of distance: 20 Log 100/receiver distance), which is how field data of this sort usually is. The natural mitigation effects, which include atmospheric damping, soft ground, irregular ground, sound reflecting rocks and the rise and fall of the ground level account for the difference between the measured Actual Loss and the calculated Actual Loss.

Dr. Piacsek took noise readings of gunfire in dB,A, Peak. Acoustic engineer Jerry Lilly's recommended dB,Peak or un-weighted measurements be applied to the exceeding section of the code. I monitored gunshots at the range and recorded simultaneously the dB,Peak and the dB,APeak readings. The dB,Peak was about 2 dB stronger than dB,A,Peak for the largest bore gun, and less for regular rifles. All in all, making measurements in dB Peak vs dBA, Peak is a relatively insignificant difference, and essentially a mute point.

Appendix - Section 5: Sound Level Conversion Process

Impulse: In the WAC and many other noise codes the word "impulse" means a very short lived loud sound. It includes a rapid sequence of very short lived sounds that occur within one second. A noise impulse is measured with a Peak Hold sound meter setting, which is Unweighted. An impulse or peak sound meter shall be peak or impulse, unweighted sound level meter capable of measuring impulse sound with type 1 or 2 meter compliant to ANSI S1.4-1971.

It is important to differentiate between the word "impulse" used interchangeably to describe the "peak" noise level of a very short lived sonic event and the "Impulse" form of sound measurement, particularly available on older style sound meters, where the sound reading is averaged over 35ms. This time averaging reflects the time it takes for our hearing system to collect sound, the Haas Effect. The Impulse measurement is generally not used for environmental work.

A sound meter set to Impulse (not Peak) averages sound energy over a 35ms time window. If it is used to measure a gunshot that lasts as long as 0.35ms then it will register a noise level that is 10 Log 0.35/35 = -20 dB below the actual peak noise level of the gunshot. On a few occasions Dr. Piacsek measured both Peak and Impulse levels of gunshots. There is a 20 to 25 dB difference between dB,Peak measurements and dB,Impulse measurements in Dr Piacsek's data and the averaging of a short lived gunshot noise over 35ms accounts for the difference.

The consensus is that environmental noise measurements of gunshots and other similar type noises are done using a sound meter set to "dB(A, Fast)", which has an averaging time of $1/8^{th}$ second.

The Impulse reading has a short time averaging time window, the Haas sound fusion time window, 35ms. The difference between Impulse (35ms average) and Fast (1/8 second average) readings for a very short lived noise pulse is related to the ratio of the width of their averaging time windows. The Fast reading is averaged over more time than the Impulse reading. The difference between the two readings can be calculated; 10 Log (35ms/125ms) = -5.5 dB. If we have the dB(A,Impulse) reading of a gunshot, we can subtract 5.5 dB from it to get the dB(A, Fast) equivalent reading.

The difference between Lpeak and Lfast is 10 Log (0.35/125) = - 25.5 dB. This can vary between -25 and -30 dB depending on how short or sharp is the noise of the gunshot. I measured an independent set of tests on this shooting range, some 300' to the side of the firingpoint of a with a powerful 30.06 rifle. It registered Lpeak 114.7 dB, Lpeak 112.9 dB,A and Lmax (Fast) of 82.8 dB,A. The difference between Lpeak dB and Lmax dB(A,Fast Hold) was 30.1 dB which includes a – 2 dB difference between weighted and A weighted measurement of the noise from small arms.

In general, Peak noise readings of gunfire will be 30 to 35 dB louder than if the measurement was made with a sound meter set at dB(A,Fast). Specifically, the noise of gunfire measured by Dr Piacsek at 80 dB(A,Peak) will register around 50 dB(A,Fast) on a sound meter set up for environmental noise testing.

Appendix - Section 6: Evaluation of Acoustic Engineer Jerry Lilly's Report

Mr Lilly was asked to review and comment on Dr Piacsek's noise study report. He addressed the following points, which are responded to.

1) Qualifications: Dr. Piacsek is well qualified to make and report on the measurements he took. He has a PhD in Acoustics. He has performed numerous acoustic tests and written a number of papers related to acoustics. See *Appendix 2.*

2) Units of Measurement: Dr. Piacsek took measurements in dB(A, Peak). Engineer Jerry Lilly reviewed his noise study and suggested that the units of measurement should be dB(Peak), which is an unweighted version of the dB(A,Peak) reading. With gunfire, there is negligible difference between dB(Unweighted, Peak) and dB(A weighted, Peak) noise measurements. The work by Dr. Piascek essentially complies with the recommendation by Engineer Jerry Lilly. See *Appendix 5.*

I have measured rifle reports on numerous occasions and find there is negligible difference between dB(Unweighted,Peak) and dB(A,Peak) readings. These two readings differ only in accordance with the amount of energy contained in the noise below 250 Hz, which for small caliber arms such as rifles is negligible. For example, high power rifle shots simultaneously registered 139 dB(Unweighted, Peak) and 138 dB(A weighted, Peak), during work on the Environmental Noise Study: Proposed Gun Range in Bret Pit, Grand Coulee Dam, Washington State, 7/15/2003 by Arthur Noxon).

3) Environmental Measurement of Gunshots:

Engineer Jerry Lilly reported that the Washington noise code did not specify what type noise reading should be used for assessment of noise similar to gunfire and that gunfire noise levels are reported in terms of dB(Unweighted,Peak) by the manufacturers. His recommend using dB(Unweighted,Peak) for environmental noise measurements.

There are two areas of concern with respect to human exposure to noise. One is OSHA, on-the-job noise exposure, which is measured in dB(Unweighted, Peak) noise levels. Gun manufacturers are primarily concerned with OSHA based noise exposure, how loud gunfire is at the ear of the shooter, and provide that type of information. The other is DEQ, environmental noise exposure, which is basically field measurements in terms of dB(A,Fast), a time averaged noise reading.

His recommendation to use Peak noise levels for environmental work is in conflict with environmental noise studies which relate to gunfire. A study of 49 independent papers, state regulations and books on environmental noise concludes that dB,(A,Fast) as the applicable measurement for impulse noise events. Furthermore it specifically states that the Peak Hold measurement is dismissed as being irrelevant to the environmental noise setting. See *Appendix 11* for reference.

Furthermore, WAC does specify that all noise testing is to be done using A weighted sound meter. *Appendix 9,B,3.* Fast or Slow is not specified, but environmental noise is done using the Fast speed.

The subjective standards of livability with respect to the noise from gunfire is based on the dB(A,Fast) measurement. Any measurement of gunfire noise can be converted into the dB(A,Fast) equivalent version of that noise. *Appendix 5.* Noise measurements expressed in terms of dB(A,.Fast) are the standard to be used when determining livability for homes near the gunfire noise.

Appendix – Section 7: Evaluation of the VGO Report and Atty Leed's Interpretation

The Dec 16, 03 letter from Atty. Roger Leed was submitted in opposition to the CUP application by Cascade Field and Stream Club. A noise study in 1997, by VGO, was sited and a copy of the report was included. At the onset of this review VGO Inc was contacted about the possibility of discussing their report. They stated that the people who did the report are no longer working there and they could not comment on the report. By studying their report it becomes obvious that there is not enough factual information in it to be useful in the siteing of the present shooting range.

Their study involved two tests, one was done at the property line of the range and the other was at 50' from the shooting line, behind the shooting line. At 50' behind the firing line, pistol registered 100 to 111 dB,A and a rifle registered 100 to 116 dB,A. Unfortunately, what was not stated was the speed setting of the meter; Fast, Slow, Impulse or Peak. This means no one can really know how to interpret their data or recommendations.

1) Unspecified Units of Measurement: They used a B&K 2209 sound meter, which has the following speeds: Peak Hold and Impulse Hold along with 3 running meter speeds; Impulse, Fast and Slow. Impulse averages the noise spike over 35ms or about 1/30 second, Fast averages over 1/8 second and Slow over 1 second. Impulse registers + 5 dB over Fast measurements (B&K Master Catalogue, 1977 Pg 236, Fig 10) when measuring short lived sonic events..

What is clear in the VGO report is that outdoor domestic sounds of birds, cars, children playing, dog barking registered between 41 and 66 dB,A at a known location, and where the shooting range measured registered between 47 and 54 dB,A. The data was given in a low to high data spread range. Neighborhood noise measurements are always done with the meter set at dB(A,Fast). However, the VGO report does not state it was set at Fast speed. However, standard practice (Harris, Handbook of Noise Measurement, 3rd Edition) is that if there is no speed stated, then the meter was set at "Fast" and if the speed is different than Fast, then it must be so stated. From this perspective, one can reasonably assume that the noise of the shooting range measured in the neighborhood was with a weighting and speed of dB(A,Fast).

Noise at the shooting range in the VGO report was only stated to be in terms of dB,A. No speed was indicated, and the use of Peak or Impulse Hold was not indicated. The only conclusion that is consistent with sound measurement practice is that all the readings were taken with dB(A,Fast) setting, including that on the shooting range. This is consistent with standard practice, environmental noise readings are taken with dB(A,Fast).

Peak sound levels (Unweighted, Peak) of gunshots is typically about 20 dB louder than dB(A,Fast) measurements. (Harris, Handbook of Noise Measurement, 3rd Edition).

I have measured the difference between dB(Unweighted, Peak) and dB(A,Max Fast Hold) using a 38 special at 50 feet. The difference between the two readings was 29 dB,A. The gunshot registered 139 dB (Unweighted, Peak), 138 Peak dB(A, Peak) and 110 dB(A, Fast Max). (see Environmental Noise Study: Proposed Gun Range in Bret Pit, Grand Coulee Dam, Washington State, 7/15/2003 by Arthur Noxon).

The noise of gunfire is 5 to 10 dB louder when measured down the line of fire and 5 to 10 dB quieter when measured behind the shooter than when measured to the side of the shooter. At 50' to the side, noise from a loud pistol I measured 139 dB(Unweighted Peak). If we subtract 5 to 10 dB for being behind

the shooter plus 20 to 29 dB for being set on dB(A,Fast) we predict a reduction of 25 to 39 dB for the pistol measurements which results in the pistol shot being measured in the range of 100 to 114 dB,A. What was measured were pistol shots in the range between 100 and 111 dB,A which is consistent with a Fast measurement setting.

2) Two paragraphs of Atty Leed submission contained reference to the VGO report. One is the 3rd paragraph page 1, and the other is the 1st full paragraph on page 2.

A) In paragraph 3, page 1, the issue of woodland screening or berms is raised. The property surveyed in the VCO report has woodland screening and berms while the present property does not have woodland screening or berms. Further, noise from the range was restricted to 57 dB,A along with a 1 mile open space buffer for the nearest "outdoor use" land. An exception would be made only if a medium dense wooded land separates the shooting range and the outdoor use area, and then the separation could be reduced to 2000 feet.

The VGO report cites WAC 173-60 as the noise regulation that applies to their study. They state that a commercial noise source impacting a residential receiver in the daytime is obligated by WAC –173 to not exceed 57 dB,A.

Atty Leed presents this recommendation as being relevant and applicable to the present application. In so doing, he is suggesting that a firing range is a Class B (commercial) activity. There is one subcategory in commercial that could apply to a shooting range: Recreational activities. However, what is missing in the VGO report and subsequently in Atty Leed's proposal is the exceedence part of the WAC regulation. Noise levels can exceed the maximum allowed level, provided the exceeding noise does not last too long. The aggregate exceeding noise limits are found in subsections (i, ii, iii) where the level can be exceeded by 5 dB for no more that a collective 15 minutes of any hour, 10 dB for a collective of 10 minutes or 15 dB for 1.5 minutes. Gunfire, being intermittent noise, strong peaks of sound interspersed with relatively local periods of ambient quiet, easily fits into the exceedence rules.

A gunshot noise might last 1/30 second or less in duration. For a collective 1.5 minutes each hour, the noise from 2700 gunshots could impact the residential neighborhood at a level of 57 + 15 = 72 dB,A. To ignore detail allowances built into the WAC regulation, that are very applicable to the present application, and state that the WAC regulation cites 57 dB,A as the upper limit is to misrepresent the code.

Gunshots measured by VGO registered 54 dB,A at the residence in question. Since 54 dB,A is well below the commercial/residential limit of 57 dB,A there was no need to call out the exceeding noise limit part of the code.

VGO recommends 2000 feet of medium wooded forest or 1 mile distance to achieve the outdoor limit of 57 dB,A from gunfire. Their wooded forest insertion loss averaged for the loudest octaves of gunfire (1k to 2k) about 3.5 dB/100 feet with the restriction that the loss generally cannot exceed about 23 dB. Gunfire at 50' is averages 108 dB. Expansion to 2000' reduces the noise by 32 dB, to 76 dB. Subtracting the maximum insertion loss of 23 dB leaves noise impact of 54 dB,A, safely below the 57 dB,A limit. However, using 3.5 dB per 100', 23 dB forest insertion loss is reached after 650 feet of wooded forest. Additional forest, according to VGO adds nothing to the loss. VGO could have been more accurate and say that a set back distance of 2000 feet with a minimum 650 foot thick woodlot (medium dense woods) will suffice as a noise barrier for a shooting range.

At a distance of one mile, noise from a shooting range is reduced by volumetric expansion from 108 dB at 50 feet by 40.5 dB to 67.5 dB at a distance of 5280 feet. Atmospheric attenuation in the range of 1 and 2k is about 2 dB per 1000 feet. Ground attenuation is also about 2 dB per 1000 feet. In addition to the weakening of sound as it expands, sound is additionally attenuated by as much as 20 dB over one mile distance from the site of shooting.

B) Ambient Noise not Specified: In paragraph 1, page two again refers to the VGO report, this time with reference to ambient noise measurements.

A reading of the VGO report finds that of the two sites tested, only one, Site 1 had any ambience measurements. At Site 1, the data taken ranged fro 41 dB,A to 66 dB,A and was specifically defined and resented as a record of the various types of noise generating activities that took place in that area. It was not an ambience measurement. It was a record of 6 different noise sources, 5 local sources and 1 distant: Birds, dog barking, car drive by, children playing, overhead airplane and distant rifle fire. The point being made here was that the rifle fire was well within (in the middle) the range of other local, nearby noise generating activities found at that location.

This was not an ambience noise reading. A true ambience noise reading goes to great pains to exclude most everything this study recorded: Close by and loud specific and not constant noise sources, such as loud birds in a nearby tree, dog barking outside the house being monitored, car drive bys, children playing nearby and overhead airplanes.

At Site two, no ambience noise reading was taken of any sort, only the levels of nearby rifle fire.

Atty Leed misunderstood what he was reading, misinterpreted what was presented and gave his own and inaccurate version of what the VGO report did with respect to gathering and presenting "ambience" data. It is always important that an expert in the field would read and translate works in the field to interested but non-experts in the field. Using the VGO report to suggest that the Piacsek report is deficient in ambient reading is an erroneous conclusion, based on a misunderstanding of the VGO report.

Appendix – Section 8: Environmental Impact Study – Noise from Gunfire

Dr. Piacsek took measurements of rifle fire at 30m (100') and found it registered on average 131 dB(A, Peak). This was a sound level "Peak" reading which means it is the absolute maximum noise level reached during the gunfire event. It is unlike most versions of noise readings, which have been averaged over some defined period of time.

The basic acoustic model used to predict how loud sound will be at a distance is based on a free field, flat hemispherical expanding wave front. To this basic attenuation calculation is added other effects such as atmospheric and ground effects, which usually but not always additionally reduce the strength of a sound over distance.

As sound expands it's intensity weakens 6 dB(A) per doubling of distance. This equally applies to dB(A,Peak) abbreviated dB(A,P) measurements. The farther one moves away from a noise source the larger is the area over which the energy of the sound is spread. At 200' distance the sound level due to expansion should be 131 – 6 = 125 dB(A,P). At 400' it should be 125 – 6 = 119 dB(A,P). At one mile the sound loudness weakening effect due to free field expansion of this same wave front is predicted to be 34.5 dB(A,P) lower than at 100' or 96.5 dB(A,P). At 2 miles the predicted level is 90.5 dB(A,P) and at 4 miles it is 84.5 dB(A,P) and so on. These levels seem intolerably high but this calculation is based exclusively on the expansion of sound pressure over flat hard ground in dry air. However the excess attenuation effects on sound traveling through the atmospheric and over the ground have yet to be factored in.

Excess attenuation (Ae) are natural losses in sound energy in addition to the hemispherical expansion of sound. Dr. Piacsek took sufficient data to be able to plot out the total atmospheric + ground + barrier + scattering effects for the area surrounding the shooting range. His data establishes that for this region the total excess attenuation over the rough terrain to the east and west of the shooting range to be -30 dB @ 1000 feet and - 3 dB additional per each doubling of distance. At 2000' in the east-west directions excess attenuation is -33 dB, 4000' it is -36 dB and 8000' is -39 dB.

Atmospheric attenuation for gunfire in dryer climates is generally around 5 to 10 dB(A) per 1000 feet (Beranek, Noise and Vibration Control, Fig 7.5) . At one mile, atmospheric attenuation reduces gunfire from 96.5 dB,A to between 70 and 46 dB(A). At 2 miles the noise is reduced from 90 dB(A) to something between 46 and zero dB(A). This is not inconsistent with what Dr. Piacsek measured.

According to Dr. Piacsek's measurement, gunfire heard at one mile distant to the east or west the sound level should be that due to expansion plus the excess attenuation effect, 96.5 – 37.2 = 59.2 dB(A, P). At two miles the level should be 90.5 – 40.2 = 50.3 dB(A, P). This excess attenuation equation is only applicable over the irregular terrain that exists predominantly to the west and east from the shooting range.

However, an entirely different type of terrain is to the north and south. It is fairly flat and gently sloping. Noise measurements made uphill, at the crest of the hill along Hayward Rd to the north, with a clear line of sight to the shooting range, registered 92 dB,A Peak, which means there is only -6 dB for excess attenuation over an uphill distance of 3500 feet. At one mile, the excess attenuation should be about -10 dB. Uphill sound has the amphitheater effect, which compensates for the excess attenuation effect.

Noise measurements were also made at the nearest home to the south, the Pearson residence, which is located slightly downhill, but still has a clear line of sight to the firing range. Noise tests there registered

gunfire 81 dB(A, Peak) which means there is -13 dB excess attenuation over a distance of 5500 feet, a little over one mile.

These measurements have documented the behavior of gunshot noise in all directions away from the shooting range. The nearest homes to the shooting range are one mile or more distant. Those in the north/south directions are less protected from the noise of gunfire compared to homes in the east/west directions due to terrain differences.

The stretch of land in the north/south direction is fairly smooth ground, sloping gradually up or downhill and here is where the ground provides a minimum of excess attenuation, in the range of 10-12 dB at one mile. In the east /west direction the terrain rises and falls, the excess attenuation of gunfire is significant and in the range of -35 dB at one mile.

It is important to remember that Peak noise measurements have to be converted into dB(A,Fast) equivalent measurement in order to be applicable to environmental impact studies. This reduction is on the order of -30 dB. Noise registering 80 dB(A,Peak) in the north south directions will register 80 - 30 = 50 dB(A,Fast). Noise in the east west directions will register 60 – 30 = 30 dB(A,Peak).

Although the noise of gunfire is exempt from noise codes, its impact on the livability in residential areas around the range does matter. In order to meet a livability standard, sound mitigation can be used in the form of sound berms or shooting enclosures to reduce noise that is considered intrusive in neighborhoods around the range.

The environmental impact study produces noise levels around 50 dB(A,Fast) near homes one mile distant to the north and south of the range and noise levels around 30 dB(A,Fast) at homes one mile distant to the east and west.

Appendix - Section 9: Review and Discussion of Local and State Noise Codes

Applicable noise regulations must be conformed to in any land use. Citation of applicable noise codes is required and evidence of compliance is expected in any land use application. In a rural setting, outside a city or town, there will be two types of noise codes that apply. The State noise code and the county noise code.

A) County Noise Code

Kittitas County noise code is found in Kittitas County Code, Title 9 Public Peace, Safety and Morals, Chapter 9.45 Noise. This noise regulation is a "subjective noise code" in that no dB levels are specified. What is specified is that "it is unlawful to create or allow one's property to be used to create any loud, unpleasant or raucous noise which unreasonably disturbs the peace, comfort or repose of others." Examples of prohibited noise sources include fire crackers. There is no mention of "shooting range" either as a source of prohibited or exempt noise. However, noise emitted from legitimate training activities located within the Yakama Training Center, a military base, is exempt. It should be noted that restrictions on "quarry shooting" (KCC 9.45.032) has been repealed but whether noise was a factor or issue is not known.

B) State Noise Code

The guiding set of regulations for the state noise code is found in RCW 70.107 Noise Control. In the *Exemptions* section gunfire noise from shooting ranges is included as exempt. (RCW 70.107.080). The noise measurement procedure is covered in WAC 173-58 Sound Level Measurement Procedures. WAC 173-60 is where the Washington State Environmental Noise Control Regulations are located. The state noise code is a coordination of two aspects of noise. One is to determine where the noise code is applied. Second is to define what the noise code actually is.

1) Classification of Property

To apply the WAC noise rules, one must first determine the Noise Class for the properties involved which then determines the level of protection. There are two noise related types of properties, those that produce (Source) noise and those that receive (Receiver) noise.

There are three types of property; A,B or C, which correspond to Residential, Commercial and Industrial land uses. Class A, residential, used for human habitat, sleeping, camping or otherwise. The Class B covers commercial property. The third is Class C: Industrial land includes production of durable goods, farming and forest practice. Class C lands would also include land used for the production of electricity from wind turbines. (WAC 173-60-030(1)).

WAC 173-60 is a property line noise code. What noise limit applies to which property line depends on the uses of the land on either sides of the property line. And so we can have three types of noise source properties; Class A, B and C and three types of noise receiving property; Class A, B and C. Each unique combination has its own noise limit.

The shooting range is on a desolate, undeveloped piece of property. It contains and is surrounded by wind turbines. There are a number of rock quarry locations in the area. There is no farming, ranching or forest practice visible in this area other than seasonal livestock grazing on select properties. The ground is dry,

barren except for sparse scrub brush and strewn with rocks. It is possible that this area in general and the shooting range in particular is classified as basic industrial land due to the presence of quarries that surround it and the wind turbines that have been installed throughout the area.

The consensus of involved parties is that the noise source property, the shooting range, is a Class C property. The primary concern is when the receiving property is a home, a Class A site. The opposition claims that a receiving property can be classified as residential; Class A, even when the house that is on the property is physically located thousands of feet away from the boundary of concern and between the house and boundary of concern lies nothing but barren unusable land.

The language in the Washington classification definition does not limit the extent of a residential property. Some judgment is needed here. For example a home is located in one corner of a 1000 acre tract of farmland. Is the entire 1000 acres Class A land? Or is the corner 1 acre of the land that wraps around the house Class A and the rest of the land Class C?

Before any discussion about what noise regulations might be used to define livability, this discrepancy in the land classification scheme needs to be sensibly ironed out, by using common sense or even better, already established case law.

WAC 173-60-30 (1,d and e) provides for local authorities or WAC officer involved in a case to determine the classification of the land involved. Sections 173-60-30 (2 and 3 include zoning and comprehensive use plans as a means to define the zone classification of any given section of EDNA land. Clearly local authorities have the mandate to determine the appropriate classification of the lands involved in the potential noise impact around the shooting range.

It could be argued that because there are rock quarries in the area, Class C property, that contiguous land some distance away is also of the same nature and Class C. But this circumvents application of common sense to the definition of Class A property. Consider how a real working farm is setup. Most of the land is dedicated to farm use, the farm house and yard is fenced off from the surrounding farm land. A house typically would have about one acre of space dedicated to the homestead Class A, and the rest of the land is dedicated to farming, Class C.

The current consensus is that the shooting range is Class C land. The land that surrounds the shooting range is undeveloped except for wind turbines. The land surrounding the shooting range appears by all visible signs to be Class C land.

2) Types of Measurements

WAC 173-58 is the standardization code for noise measurement in the state.

WAC 173-58 -020 Definitions contains:

(6) "Impulse Sound" means either a single pressure peak or a single burst of multiple pressure peaks which occur for a duration of less than one second as measured on a peak unweighted sound level meter.

(15) "Sound level meter" means a device or combination of devices which measures sound pressure levels and conforms to Type 1, Type 2 or Type 3 standards as specified in the ANSI S1.4-1971,

An impulse sound level meter shall be a peak or impulse, unweighted sound level meter which is capable of measuring impulse sound in conformance with the Type 1 or Type 2 specifications of ANSI S1.4.1971.

WAC 173-58 -030 Instrumentation contains:

(1) Sound level meter. The sound level meter shall meet the Type 1, Type 2 or Type 3 requirements of ANSI S1.4.1971. The meter weighting and response mode will be set as required in the specific procedure used.

WAC 173-58 -070 Environmental noise measurement procedure (Reserved). This is blank

WAC 173-60-040 specifies:

(2,a) the "maximum permissible noise level" crossing the property line between Class C lands to be 70 dB,A during the daytime, between 7:00 am through 10:00 pm.

(2,c) Short bursts of noise can exceed the basic limit by (i) 5 dB,A for an aggregate of 15 minutes, (ii) 10 dB,A for an aggregate of 5 minutes or (iii) 15 dB,A for an aggregate of 1.5 minutes in any given hour

WAC 173-60-090 Enforcement policy.

Noise measurement for the purposes of enforcing the provisions of WAC 173-60-040 shall be measured in dBA with a sound level meter with the point of measurement being at any point within the receiving property.

3) Type of Sound Level Meter: Comments have been raised as to what type of sound measurement is to be used for sounds of very short duration, of sounds which are like those of gunfire. Acoustic Engineer Jerry Lilly states that the WAC noise code does not specify what type of measurement is to be used. He chose to err on the conservative side, recommending that the worst case, the Peak sound level be used for environmental noise measurements.

Engineer Lilly is partially correct but not completely correct. The state noise code differentiates between a regular sound level meter and an impulse or peak hold sound level meter. It also specifies what type of sound meter is to be used to enforce the state code which indirectly leads to specifying what type of noise readings will be taken. This sequence is outlined below:

a) WAC 173-58-020 Definitions: The difference between a sound level meter and an impulse sound level meter is delineated.

b) WAC 173-60-090 Enforcement: Code specifies that a sound level meter is to be used to enforce noise regulation WAC 173-60-040. It does not specify that an impulse sound level meter is used.

c) WAC 173-58-030 Instrumentation section states that the meter weighting (A or C) and response mode Slow, Fast or Peak) will be set as required in the specific section.

d) WAC 173-60-040 states a "sound level meter" is to be used, in contrast with an "impulse sound level meter".

e) WAC 173-60-040 calls for dBA weighted sound readings, in contrast with Impulse tests such as a Peak, unweighted Peak Hold readings.

The code specifies that enforcement is to be done by a "sound level meter" set on A scale. It also specifies that a Peak sound level is to be measured by a different type of instrument, an impulse sound level meter, and the units of measurement are unweighted. There is no provision in the state noise code

that allows an unweighted peak sound level meter to be used for enforcement. The only sound meter allowed to enforce the Washington noise code is the A weighted Fast sound level meter. Mr Lilly's conclusion that Peak Hold, Unweighted sound level meter should be used to evaluate gunshot type noise is inconsistent with the language of the state noise code.

4) Property Line Noise Limits: The State noise code establishes that the property line noise limit between a commercial noise source property adjacent to residential properties is to not exceed 57 dB,A in the daytime and 47 dB,A at night. For purposes of comparison, Oregon Noise Code OAR 340-35-030 limits existing commercial noise impact on a neighboring residential property line, if the home is close to the property line, to not exceed L50 = 55 dB,A in the daytime and 50 dB,A at night. The OAR noise readings are dB(A,Fast) readings and are of the same magnitude as the Washington regulations.

a) Noise Bursts: The WAC noise code not only establishes a basic noise limit based on the types of land on either side of the property line, it also provides for regulation of intermittent noise bursts. This is found in subsection 173-60-040(c). Short bursts of noise can exceed the basic limit by (i) 5 dB,A for an aggregate of 15 minutes, (ii) 10 dB,A for an aggregate of 5 minutes or (iii) 15 dB,A for an aggregate of 1.5 minutes in any given hour. The base noise limits and the short time exceeded noise limits in the WAC noise code are all written terms of dB,A. However, there is no specification as to what type of time averaging is to be used when measuring the short bursts of noise, outside of it being measured by a sound level meter set on dB,A Fast.

b) Exemption: The state noise code is section WAC 173-60 Maximum Environmental Noise Levels. In this section is found the exemption sub-section *173-60-050 (b) [s]ounds created by the discharge of firearms on authorized shooting ranges*, which lists the noise from shooting ranges as being exempt from the code. (WAC 173-60-050(1)(b) exempts sound emanating from shooting ranges between the hours of 7:00 a.m. and 10:00 p.m.).

WAC 173-60-060 also states that local ordinances can prohibit nuisance noise from any source that is not exempted by the state code.

Appendix – Section 10: Definition of Acceptable Gunfire-like Noise Levels

WAC 173-60-040 Maximum Permissible Environmental Noise Levels are regulations that do not apply to gunfire from a shooting range, however they have been cited as possibly applying to the livability standard that must be included during land use change considerations.

Noise from shooting ranges is exempt from noise regulation. However, part of the CUP analysis is to evaluate whether the proposed conditional use and specifically the noise from the proposed use is detrimental or injurious to the public health, peace or safety or to the character of the surrounding neighborhood. Opponents to the proposed CUP argue that expanded use of the shooting range will degrade the outdoor ambience component of the neighborhood. In that this is a debatable subjective issue, it cannot be formally defined, and yet some measure of livability needs to be defined.

1) Allowed Noise Bursts: Short bursts of noise are allowed to exceed the standard property line noise limits by as much as 15 dB(A, Fast) for an aggregate time of 1.5 minutes, 90 seconds during any given hour's time. A gunshot is a short burst of noise. This section of code could be used to help define a livability limit for exposure to the noise from a shooting range.

For a gunshot to be measured as a separate event, using a dB,(A,Fast) sound meter any single shot would be averaged over a 1/8 second time period. During an aggregate 90 seconds, this would comprise 90 x 8 = 720 separate gunshots per hour, which is an average of one shot every 5 seconds.

2) Property Line Limits: The state noise code can be used to define the upper limit of tolerable noise exposure to short lived noise bursts, which sound like gunfire, with respect to livability.

For a Class C source and Class C receiver property line, the noise limit is 70 dB,A. Short lived high noise burst events up to +15 dB is allowed for an aggregate duration of 1.5 minutes in any given hour. WAC states allows along this type of property line as many as 720 separate gunshot like noise bursts per hour which are as loud as 85 dB(A,Fast).

If this regulation is applied to a Class A, residential property receiver, then the noise burst limit is 60 + 15 dB,A = 75 dB,A along the property line. Up to 720 gunshot like noise bursts, as loud as 75 dB(A,Fast) each, are allowed to cross the property line.

3) Conversion to Peak Hold: This dB(A,Fast) version of noise exposure can be converted to Impulse or Peak Hold, A weighted noise levels of gunfire by adjusting the dB(A,Fast) reading upwards by 25 to 30 dB,A.

This means Class C/C property lines are allowed to be exposed to gunfire like noise levels which register 85 + 25 to 30 dB = 110 to 115 dB,(A,Peak) noise levels. Class C/A property lines are allowed to be exposed to 75 + 25 to 30 dB = 100 to 105 dB(A,Peak) noise levels.

Appendix – Section 11: Property Line Noise Measurements:

The noise study by Dr. Piacsek measured dB,A Peak noise levels of from gunfire at the property line.

At the property line 1000' due east, to the side of the line of fire, he measured two shots, one registering 95 and the other 96 dB(A, Peak). Down range noise levels are typically 10 dB higher than when measured to the side for the same distance setback. Gunfire directed toward the East property line would measure in the range of 105 dB(A,Peak), which is within the Class C/A property line noise burst limit.

Other locations were not as loud; NW corner 2000' from the firing point registered 75 dB,A Peak, NE corners 2000' from the firing point registered 80 and 86 dB,A Peak, slightly exceeding the 85 dB limit. The SE corner 3500' from the firing point registered two shots at 74 and 78 dB,A Peak.

Dr. Piacsek took noise readings of gunfire in dB,A, Peak. The "dB,A" measurement is consistent with state standards for noise measurement WAC 173-60-040.

Acoustic engineer Jerry Lilly's recommended dB,Peak or un-weighted measurements be applied to the exceeding section of the code. I monitored gunshots at the range and recorded simultaneously the dB,Peak and the dB,APeak readings. The dB,Peak was about 2 dB stronger than dB,A,Peak for the largest bore gun, and less for regular rifles. If the impulse event had been a blast, which typically contains relatively high amounts of low frequency energy, there would be a significant difference between dB, Peak sound level and dB,A Peak sound level. But in this case, the difference is a mute point.

In conclusion, noise from gunfire on the range does not exceed WAC noise code limits for short lived noise bursts. Based on WAC noise code for allowed short noise bursts, the livability of neighboring property is not at risk.

Appendix – Section 12) Survey of Subjective and Objective Criteria for Noise from Gun Ranges

The noise from shooting ranges that are located near residential areas has been studied and debated for many years. Some regulations have been developed in this and other countries.

1) Ventura County, CA: Deemed acceptable if noise from shooting range near home over 15 minutes does not exceed SEL 59 dB,A. Background noise level was 30 to 35 dB,A. SEL is noise of gunshot averaged over one second. It was comprised of 1 shot @ 60 - 60 dB,A, 4 shots @ 55 – 60 dB,A, 13 shot @ 50 to 55 dB,A and 18 shots @ 45 – 50 dB,A. Each shot was estimated to physically last $1/10^{th}$ second. Gun range was "audible but not annoying" A "fast" sound level meter was used to record the data.
Reference:

2) Placerville, CA: New commercial shooting ranges shall not produce a maximum noise level that exceeds 65 dB,A at the receiving property line of a noise-sensitive use. The sound level meter should be set on Fast Response when evaluating Impulsive levels as those associated with shooting ranges.

3) Oregon: Noise code 340-35-015 (21) defines Impulse Sound as Single pressure peak or burst, multiple peaks for a duration of less than one second as measured on a Peak Unweighted or C weighted, Slow Response and specified by dB or dBC respectively. Limits are 100 dB Peak day and 80 dB Peak night. Slow response is a one second time averaged level.

4) Oahu, HI:
OAR 43 s1143-3 (d) Impulse noise limit at property line is L10 during any 20 minute period, to not exceed 10 dB,A above allowed noise levels, 55 dB,A day and 45 dB,A night, measured Slow.

5) Illinois: 35 H Ch I Sect 901.104 Impulsive Sound from Class A, B or C land onto Class A or B land measured at least 25' from property line, residential limit is 45 dB(A,Fast) night and 50 dB(A,Fast) day.

6) Maine: 375.10 A regulated short sound event is at least 6 dB(A,Fast) above the ambient level that proceed and follow the event. From new developments, will not exceed +5 dB over background noise due to new development. Any residential or similar location, add +5 dB to meter reading and the combination cannot exceed 65 dB(A,Fast) day or 55 dB(A,Fast) night. Meter set to dB(A,Fast).

7) Maryland: 26,02.03.01 Definition…Periodic noise measured at or within property line of receiver, with sound meter on dB(A,Fast).

8) Minnesota: Environmental Impulse Noise Study…Primary issue is to define the "speed" for measuring impulse or short duration noise. Peak Hold is not an option, not relevant to environmental assessment of impulsive sounds. Measure with dB(A,Fast). Secondly, the threshold for aggressive or alerting type of impulse noise is when the impulse is 5 to 10 dB(A,Fast) above the background Leq noise level. Impulse noises below this threshold are audible but not alarming.

9) New York: Article 10 Section 150 Shooting Range noise limited to not exceed 90 dB(A,Impulse) for 1 hour per day or 85 dB(A,Impulse) for 8 hours per day measured at or adjusted to 100 feet beyond the property line of the shooting range, Impulse means Peak Hold

10) Netherlands: Residential/rural limits to not exceed single shot level of 75/73 dB Impulse during the day time. For multiple shots Lr is to not exceed 50/45 dB, where $Lr = Ls + 10 \log N - 33$, where N is the

number of shots per hour. If each shot is maximum 75/73 dB Impulse, then 6/3 shots/hour are allowed. If each shot is 70/68 dB Impulse then 20/10 shots per hour are allowed

11) Lane County, OR: County commissioners on field trip judged that gunfire measured with a dB(A,Fast) sound meter that exceeds +5 dB over ambience is considered annoying.

Consensus: Gunfire that registers between 5 and 10 dB above the ambience should be considered objectionable to the livability of residential or rural residential areas. Measurements are made with sound level meter set at dB(A,Fast). Peak Hold noise readings are not good indicators of environmental impact, but still, the limit of 75 to 85 dB Peak should not be exceeded in residential areas.

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Appendix – Section 13: Neighborhood Exposure Levels and Mitigation Levels

The acceptable livability criteria is for the impulse noise to not exceed a level that is 5 dB(A, Fast) over the mean ambient noise level. I have measured the quiet ambient daytime levels and Dr. Piacsek has measured the sound level of gunfire throughout the neighborhood. By combining these two data sets the conclusion is reached that an additional 12 dB(A) of excess attenuation in the north/south direction is sufficient to achieve the ambient + 5 dB(A, Fast) outdoor livability standards for homes in all directions.

The needed -12 dB of extra attenuation to sound of gunfire expanding to the north and south directions is easily attainable by adding mitigation attenuation (Am). This is an engineered design and construction, a permanent modification that reduces the noise levels emitted north and south. Sound berms work well in this setting but also the shelters that are built at the gunfire positions can be construction to absorb sound from guns.

Pearson Residence

Dr. Piacsek's report measured gunshots at the Pearson residence. At 5500 feet south of the gun firing location, it is the closest property to the gun range and gunshots were recorded there at 81 dB,A Peak, and 66 dB,A Impulse. We can subtract the 4.6 dB conversion factor between Impulse and Fast readings and get an impact of 61.4 dB,A Fast. The average (Leq) background noise level measured there, due to Highway 10 is around 45 dB,A. This location can tolerate gunshot noise that does not exceed +5 dB,A Fast or 50 dB,A Fast. By this, the needed mitigation attenuation for livability is 61.4 dB,A Fast – 50 dB,A Fast = 11.4 dB,A Fast.

If a mitigation measure is put in place which reduces the noise of gunshot fired towards the east and measured to the south by around 12 dB, the outdoor livability standard will be met at the Pearson residence.

Driveway 16530 Route 10

This residence is located 4000' SE from the gun range. Dr Piacsek measured 79 dB,A Peak and 52 dB,A Impulse at this location. This is right on Highway 10 and the ambience fluctuates greatly between the ambience and the rush of passing vehicles. Ambient noise level of 38.6 was measured at the location titled Swauk, 3000' NW off Hayward along the canal road, 2000' NE of Hwy 10. Noise levels were measured at 44.7 dB, at Rosehill Farm on Thorp, which is 1000' off Hwy 10. We'll allow that the ambience at this location is about 42 dB,A, and the gun noise should not exceed 47 dB,A Fast.
If we subtract 4.6 dB from the Impulse (35ms) measurement of 52 dB,AI we get 47.4 dB,A Fast as the intruding dB,A, Fast level. The intruding level is about the same as the maximum allowed +5 dB above ambience, intruding level to retain livability, 47 dB,A Fast.

Other Residences

All other residential locations are exposed to noise levels lower than those discussed here and are by default, well within outdoor livability criteria.

VELIKANJE HALVERSON P.C.
ATTORNEYS AT LAW

Adam K. Anderson · Alan D. Campbell · West H. Campbell · James C. Carmody · J. Jay Carroll
Paul C. Dempsey · James S. Elliott · Mark E. Fickes · Carter L. Fjeld · Lawrence E. Martin*
Linda A. Sellers · Michael F. Shinn · Arthur A. Simpson · Kathryn Knudsen Smith · Sara L. Watkins*
Of Counsel: Frederick N. Halverson · Terry C. Schmalz
*Also a member of the State of Oregon Bar

January 13, 2012

Kittitas County Community Development Services
411 North Ruby, Ste. 2
Ellensburg, WA 98926

RE: Application for Conditional Use Permit (CU-11-00003)
Cascade Field & Stream Club

Dear Sir or Madam:

This comment letter is provided on behalf of Dean and Danielle Tonseth, David Holmquist, Margaret Towle and Ken Fyall. Our clients have been advised that the comment period on the application has been extended to January 13, 2012.[1] These comments are provided with respect to both the application and environmental review.

This letter may be supplemented by additional comments provided directly by our clients.

Application – Project Description Incomplete.

We have had an opportunity to review the Zoning Conditional Use Permit Application, together with supplemental submissions and materials. The information is incomplete and provides no substantive basis for meaningful analysis or comment or mitigation. The application discusses former site operations and states: "… we hope and plan to offer many of the same opportunities and services …" with the existing project location. The application includes (1) a site plan with "existing conditions"; and (2) a site plan with "… possible future ranges." The materials are vague and ambiguous with respect to timing and specific construction plans.

It appears that Cascade Field & Stream Club is attempting to phase both environmental and land use review for the project. WAC 197-11-060(3)(b) specifically recognizes that "… proposals or parts of proposals that are related to each other closely enough to be, in effect, a single course of action, shall be evaluated in the same environmental document." It is incumbent upon the SEPA Responsible Official to assure that information is both available and complete for review of an application. WAC 197-11-080. It is recognized that:

[1] Notice of Application was issued on December 16, 2011 and had an initial comment deadline of January 3, 2012.

> If information on significant adverse impacts essential to a raise in choice among alternatives is not known, and the costs of obtaining it are not exorbitant, agency shall obtain and include the information in their environmental documents. The basic purpose of SEPA is to require local governmental agencies, including counties, to consider total environmental and ecological factors to the fullest extent before taking action on application.

Sisley v. San Juan County, 89 Wn.2d 78, 569 P.2d 712 (1977). SEPA also requires an *independent* review of the checklist submitted by the applicant. WAC 197-11-330(1)(a).

The current application fails to disclose the total area to be excavated for berms, target pits, backstops and parking areas. Also missing is a description of best management practices (EPA Best Management Practices) to be installed and implemented for the project and no mitigation or project design is presented to establish compliance with NRA Range Source Book. The application also lacks any details or information regarding site management; improvements for various ranges and shooting areas; parking lot designs or capacities; lead containment procedures, etc.

Agencies conducting environmental review "... shall make certain that the proposal that is the subject of environmental review is properly defined". WAC 197-11-060(3)(a).

Incomplete Disclosure of Prior Environmental Review.

This application is at least the fourth conditional use permit by Cascade Field & Stream Club. Each of the projects are virtually identical with the exception that the current application contains less detailed information of proposed project improvements, timing and mitigation proposals.[2] Prior projects failed because of incomplete information.

We request that all related files be reviewed and incorporated in the present application. We specifically request that Cascade Field & Stream Conditional Use Permit C-01-020 be included together with all comment letters. Comment letters include the following:

- Letter from Travis W. Misfeldt to Chad Bala dated November 8, 2001 (Attachment B);
- Letter from Erin L. Anderson to Chad Bala dated November 8, 2001 (Attachment C);
- Letter from Roger M. Leed to David Taylor dated December 18, 2003 (Attachment D);

[2] Cascade Field & Stream Club filed an application in 2001, 2002 and 2003. Extensive public comment was provided with respect to each of those applications. A copy of application information from File C-2001-20 is attached as Attachment A. (The application contained greater detail and included a specific "Land Use Plan" (i.e. short term, mid-term/intermediate and long-term plans).

- Letter from Erin L. Anderson to Chad Bala dated November 8, 2011 (Attachment E);
- Memorandum from Paul D. Bennett, P.E. to Community Development Services dated December 17, 2003 (Attachment F);
- Letter from Kittitas County Fire Protection District #1 to Kittitas County Planning Department dated December 15, 2003 (Attachment G);
- Memorandum from Kittitas County (Department of Building & Fire Safety) to Kittitas County Planning dated July 17, 2001 (Attachment H);
- Letters from Kittitas Reclamation District dated November 6, 2001 and December 15, 2003 (Attachment I);
- Letter from Tom R. Cottrell, PhD to Kittitas County Planning Department dated January 12, 2004 (Attachment J).

A set of development conditions and requirements were developed following a pre-application meeting (Attachment K).

It is also noted that Cascade Field & Stream operated an illegal firing range at the site. (Letter from Kittitas County Department of Building & Fire Safety to Cascade Field & Stream Club dated December 19, 2002). (Attachment L).

SEPA Environmental Checklist fails to identify or incorporate prior environmental review of identical permit applications. All such materials should be incorporated by reference. WAC 197-11-635.

Best Management Practices – Lead at Outdoor Shooting Ranges/NRA Range Source Book.

KCC 17.08.485 requires a "detailed site plan" establishing adherence to the practices and recommendations of (1) the "EPA Best Management Practices for Lead at Outdoor Shooting Ranges" ("EPA BMP") (and (2) NRA Range Source Book. All that is included in the application are vague references to prior activities and "hopes" to offer the same opportunities and serves at this location. "Possible future ranges" are depicted but Applicant provides no details or engineered plans for the various improvements and ranges.

The application fails to include a detailed site plan and is not compliant with EPA Best Management Practices.

1. Best Management Practices require development and construction of bullet and shot containment facilities. This is step 1 in the EPA BMPs. Applicant does not identify or propose to construct specific containment facilities. The most common bullet containment system at rifle and pistol ranges is earthen backstop (earth and material, i.e., sand, soil, etc.) which is located directly behind the targets. (EPA BMP 3.1). The earth and backstop should be between 15 and 20 feet high with a recommended slope as steep as possible. EPA BMP 3.1.1. Sand traps, steel traps, lamella and rubber granule traps and shock absorbing concrete are alternatives. Applicants failed to identify or describe required bullet and shot containment areas.

Design alternatives are also to be considered to address shot containment. EPA BMP 3.1.2. It should also be noted that construction of berms would necessarily require significant excavation which triggers additional environmental review and grading permit requirements.

2. EPA BMPs require monitoring and measures designed to prevent lead migration. EPA BMP Step 2. Mitigation to prevent lead migration includes monitoring and adjusting soil pH, immobilizing lead and controlling runoff. EPA BMP 3.2.2. Soil analysis is required to establish effective mitigation measures that provides for adjustment of soil pH and phosphates. Applicant's SEPA Checklist fails to include the required soil testing and information. No specific mitigation measures are identified. EPA BMP 3.2.1.

3. EPA BMPs provide direction with respect to controlling soil erosion and surface water runoff. A Type 5 stream is located within the shooting area but no information or mitigation is provided with respect to project design and mitigation. Filter beds, containment traps, detention ponds, dams and dykes are required to address surface water runoff from the target range. Applicant has provided no information or proposals with respect to management of surface water runoff and control of such runoff.

4. The most important BMP for lead management is lead reclamation (lead removal and recycling). EPA BMP 3.3. Applicant indicates that it will "... plan a lead reclamation project ... ." Neither the project nor mitigation measures are identified in the materials and no factual basis exists to appropriately condition project design, development and operation. Reclamation activities usually require that the area be clear of scrub vegetation (grass, mulch, or compost). EPA BMP 3.3.4.

5. BMPs require provision of specific information including number of rounds fired, soil pH, annual precipitation, soil type, depth to ground water and surface water assessment. None of the essential information has been provided for review. This information is also required in order to complete environmental review of project impacts. It is clearly recognized that lead presents a significant adverse impact.

The National Rifle Association Range Source Book recommends that berms and baffles be constructed as necessary safety measures. Moreover, the backstop area for ranges, if natural soil is to be used, needs to be "free of rocks and debris to a depth of 18-24 inches." Section 2.04.1.5. The Source Book goes on to say "in rocky soils, when the face of a hillside is cut to provide a better angle, the cut must be over-excavated and clean fill placed in the cavity to provide an impact area free of any material large enough to create ricochets."

It recommends that berms be constructed eight feet high.

The Source Book recommends, for high-powered rifle ranges, that a target pit be constructed. These recommendations must be viewed in the light of the NRA's information that maximum ranges for center fire rifle cartridges range from 2,100 yards for a .22 Hornet to as

much as 6,000 yards for the .338 Winchester Magnum and that maximum calculated ranges for pistol ammunition are, with one exception, over 1,500 yards, and can be as far as 2,500 yards.

The application fails to disclose the total area to be excavated for berms and backstops. It fails to state the total area to be used by the assortment of shooting ranges alluded to. Since all shrub vegetation will have to be cleared from firing range areas, there will be substantial habitat destruction involved in constructing this project. There is no description of whether that habitat currently serves as important feeding or nesting habitat for birds and other wildlife. No assessment has been done of the habitat to be destroyed from the standpoint of the presence of rare and important plans and plan communities.

Noise Analysis and Study.

Applicant includes with its application "Preliminary Noise Measurements for Proposed Cascade Field & Stream Firing Range on Hayward Road" dated November 1, 2003. This document was provided in conjunction with prior environmental review for an identical project proposal. Applicant has neglected, however, to provide for review additional materials that were previously provided with respect to noise analysis and assessment. Attached hereto is comment letter prepared by Jerry G. Lilly, P.E. F.A.S.A. of JGL Acoustics, Inc. (Attachment M).

Mr. Lilly is a qualified, experienced and recognized expert and reviewed the preliminary noise study provided by Andrew A. Piacsek. Mr. Lilly is a licensed acoustical engineer and a member of three professional acoustical associations. There is no information concerning the qualifications, if any, of Mr. Piacsek.

Among the comments are the following:

1. Lilly and Piacsek agree that the measurement of one or two gunshots at each location is not sufficient to characterize the day-to-day variations and sound level caused by changing environmental conditions. A more complete study and analysis is necessary for determinations regarding acoustic impacts.

2. Lilly disagrees with the conclusion that maximum sound pressure level with an impulse response (time constant of 35 ms) should be used to evaluate compliance with adopted noise standards. Lilly indicates that "... time waiting should not be permitted when dealing with the maximum sound level." The only way to eliminate the time waiting influences to use the peak detector on the sound level meter. All technical papers learn about the noise of guns and firearms have recorded sound levels as peak levels, not impulse average values.

3. Piacsek incorrectly identifies the receiving parties as C Class EDMA. WAC 173-60-030. Receiving properties should be considered Class A EDMA (lands where human beings reside and sleep). The permissible noise level with proper classification would be 60dBA. WAC 173-60-040(2)(a).

4. Piacsek's report establishes violation of applicable noise standards. Table I shows peak sound pressure levels measured at nearby residential properties as high as 81 dBA at Location 12 and 79 dBA at Location 14.

5. Piacsek's report is "preliminary" and no conclusions can be drawn as a result of the preliminary study. Lilly states:

> While the report is clear to indicate that the measurements are preliminary, I am concerned that the casual reader will conclude that noise from the proposed facility will have no noise impact on the neighboring properties. This conclusion cannot be drawn from the results of this preliminary study. *What is needed is a comprehensive noise study to assess the environmental impact of the proposed firing range.*

Lilly then identifies necessary components of a comprehensive noise study. Kittitas County should require a comprehensive noise study in order to properly and completely evaluate noise impacts to the proposed shooting range. Elements listed by Mr. Lilly should be incorporated in the study which should be prepared by an *independent* acoustic engineer with experience related to shooting ranges.

Environmental Checklist – Incomplete Disclosure and/or Information.

The Environmental Checklist submitted by Cascade Field & Stream Club is incomplete and lacks necessary detail for meaningful environmental analysis and comment. Deficiencies include the following:

Checklist A.6. Does not disclose timing or schedule (including phasing) but simply states "... [i]mmediate use of current facility; Add ranges as the need and money allows." No initial improvements or mitigation is proposed.

Checklist A.7. Simply reflects that "... [a]dditional range is similar to Attachment F. Range designs may be added in the future." Those range designs include shooting range definitive drawings prepared by National Rifle Association. Those standards should apply immediately to the project and be constructed prior to any use of the property. The references also inaccurate because "possible future ranges" are identified in Attachment B. No timing or design standards are established for the identified "... possible future ranges."

Checklist B.1(e). Indicates that future ranges may be graded and gravel imported to surface parking areas. EPA Best Management Practices require construction of berms as do guidelines from National Rifle Association. Berm construction will include excavation and grading. Checklist needs to identify locations, quantities of grading proposed for the project.

Checklist fails to document and mitigate impacts on Type 5 stream draining the subject property, Hayward Canyon Creek. The stream is located within the shooting range and presents potential for lead migration to adjacent properties and surface waters.

Checklist 3. Checklist fails to "... [d]escribe the source of runoff (including stormwater) and method of collection and disposal. The insert is only that applicant expects water to seep into the ground and will create stormwater retention areas as required by applicable law. Site plan includes designated parking areas but provides no analysis of grading or stormwater management with respect to such areas.

It is also indicated that it is "not likely" that waste materials could enter ground or surface waters.

Checklist B.5. Fails to identify impacts on birds and animals. The property is known for wildlife and shooting ranges may impact migration and wildlife environments.

Checklist B.11. Applicant may add lighting in the future. No assessment of light or glare impacts is provided with respect to the potential lighting of the area.

Checklist B.14. Transportation impacts are insufficiently identified and mitigated. The project site is served by Hayward Road from both Highway 10 and Horse Canyon Road. The most efficient access is from Highway 10. Hayward Road is a primitive road that does not meet applicable standards. Kittitas County Fire Protection District No. #1 previously commented that "... the lower portion of Hayward Road (canal to Highway 10) needs to be addressed – i.e. new culverts put in and turnouts established." Department of Public Works require that the roads should be improved to a 24' wide gravel road with sufficient crushed rock added to form an adequate structure and crown; access point to be at 90° angle.

Checklist B.15. Applicant indicates that it is "not likely" to increase needs for public services. This statement is incomplete and inaccurate with respect to prior review and analysis with respect to fire protection. Prior comments regarding fire protection are incorporated by this reference.

Conclusion.

We request the following:

1. That the project be accurately, completely described and identified for both current and future phases;

2. Specific plans, improvements and mitigation measures are identified and evaluated with respect to EPA BMPs and NRA Range Source Book recommendations.

3. A complete Noise Study be prepared by an independent acoustic engineer.

4. Specific mitigation measures required by ordinance or through environmental review be specifically identified and available for comment.

Very truly yours,
VELIKANJE HALVERSON P.C.

James C. Carmody

JCC:td
cc: Clients (w/encl)
g:\jcc\tonseth, dean\kitt county comment ltr - 1 12 2012.doc
1/12/2012 4:56 pmtd

EXHIBIT A

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

Kittitas County
Community Development Services
411 N. Ruby, Suite 2, Ellensburg, WA 98926
Telephone: (509) 962-7506 ▪ Facsimile: (509) 962-7697

TO: All INTERESTED PARTIES

FROM: KITTITAS COUNTY PLANNING DEPARTMENT
CHAD BALA, STAFF PLANNER

RE: **CASCADE FIELD & STREAM CONDITIONAL USE PERMIT C-01-20, EXTENSION OF THE COMMENT PERIOD**

The Kittitas County Planning Department has extended the comment period for an additional 15 days. The additional comment period will start December 2, 2003 and comments will have to be submitted no later than December 16, 2003 @ 5:00 p.m.

If you have any question please feel free to contact the Planning Department.

Kittitas County
Community Development Services
411 N. Ruby, Suite 2, Ellensburg, WA 98926
Telephone: (509) 962-7506 ▪ Facsimile: (509) 962-7697

To:
WA. Dept. of Ecology - Yakima
WA. Dept. of Ecology - SEPA Registry
WA. Department of Natural Resources
WA. Department of Fish & Wildlife
Yakama Nation
Kittitas County Sheriff's Dept.
Kittitas County Building and Fire Safety
Kittitas County Environmental Health
Kittitas County Solid Waste Programs
Kittitas County Public Works
Kittcom
Fire District # 1
CWU Library
Adjacent Property Owners
Applicant

From: Kittitas County Community Development Service Department

Date: November 17th, 2003

Subject: APPLICATION FOR CONDITIONAL USE PERMIT:
Cascade Field & Stream Club
Tax Parcel # 19-17-21000-0001
In the Agriculture – 20 zone, File C-2001-20

Attached is a Conditional Use Permit application, SEPA Environmental Checklist, and related materials for a Firing Range. Firing ranges are considered a conditional use in the Agricultural – 20 zone (Kittitas County Code 17.29.030(D)). The site (tax parcel #19-17-21000-0001) a portion of Section 21, T. 19N., R 17E., W.M.

The applicant proposes to run a Firing Range. The parcel is approximately 182.38 acres in size. The site is located off of Hayward road, site address 2410 Hayward Road, Ellensburg Wa. The ground at this site is currently range land.

Please send comments regarding potential adverse environmental impacts and the application overall prior to December 2, 2003 @ 5:00 p.m. A public hearing before the Kittitas County Board of Adjustment has been tentatively set for March 10, 2003 @ 7:00 p.m., Kittitas County Courthouse. Please note that staff will be trying to reserve a larger room for the hearing and once an alternative hearing location and time is confirmed a notice will be issued.

KITTITAS COUNTY COMMUNITY DEVELOPMENT SERVICES
DEVELOPMENT ACTIVITIES APPLICATION

PLEASE TYPE OR PRINT CLEARLY IN INK. ATTACH ADDITIONAL SHEETS AS NECESSARY. THE FOLLOWING ITEMS MUST BE ATTACHED TO THIS APPLICATION PACKET:

- ☐ ADDRESS LIST OF ALL LANDOWNERS WITHIN 300' OF THE SITE'S TAX PARCEL. IF ADJOINING PARCELS ARE OWNED BY THE APPLICANT, THE 300' EXTENDS FROM THE FARTHEST PARCEL. IF THE PARCEL IS WITHIN A SUBDIVISION WITH A HOMEOWNERS OR ROAD ASSOCIATION, PLEASE INCLUDE THE ADDRESS OF THE ASSOCIATION. **PREVIOUSLY SUBMITTED.**
- ☐ SITE PLAN OF THE PROPERTY WITH ALL PROPOSED: BUILDINGS; POINTS OF ACCESS, ROADS, AND PARKING AREAS; SEPTIC TANK AND DRAINFIELD AND REPLACEMENT AREA; AREAS TO BE CUT AND/OR FILLED; AND, NATURAL FEATURES SUCH AS CONTOURS, STREAMS, GULLIES, CLIFFS, ETC. (PLAT APPLICATIONS EXCLUDED) **ATTACHED, EX. A-1.**
- ☐ KITTITAS COUNTY ENCOURAGES THE USE OF PRE-APPLICATION MEETINGS. PLEASE CALL THE DEPARTMENT TO SET UP A MEETING TO DISCUSS YOUR PROJECT.

THIS DEVELOPMENT ACTIVITIES APPLICATION IS USED TO APPLY FOR ONE OR MORE OF THE FOLLOWING APPROVALS.

FOLLOWING SECTIONS II AND X APPLY.

RECEIVED
NOV 7 2003
KITTITAS COUNTY
CDS

1. Check all that apply to your project and complete those sections of the application:

☐ SECTION I. *Fee - $150*

Zoning Structural Setback Variance - to place a structure closer to the lot line than allowed:

Residential front 15' side 5' rear 25'
Residential-2 front 15' side 5',10' rear 25'
Suburban, Sub.-II front 25' side 15' rear 25'
Agriculture, Liberty front 25' side 5' rear 25'
Rural-3 front 25' side 15' rear 15'
Forest&Range-20 front 25' side 10' rear 10'
Commercial Forest front 200' side 200' rear 200'

☐ SECTION II. *Fee - $350*

Zoning Conditional Use Permit - proposing a use such as a bed & breakfast or campground. **PREVIOUSLY PAID.**

☐ SECTION III. *Fee - $450*

Request to Rezone - to change from the existing zone to another zone.

☐ SECTION IV. *Fee - $350*

Shorelines Substantial Development/Conditional Use Permit - proposing a project greater than $2,500 value w/in 200' of a water body listed in Section V.

☐ SECTION V. *Fee - $350*

Shorelines Structural Setback Variance - to place a structure closer than 100' of (*denotes portion of shoreline requiring 200' setback):

Kachess River
Cabin Creek
Log Creek
Big Creek
Little Creek
Swauk Creek
Taneum Creek
Teanaway River (incl. West, Middle, North forks)
*Yakima River**
Wilson Creek (so. of E□burg)
Lake Keechelus
Lake Cle Elum
Cle Elum River
*Lost Lake**
*Unnamed Lakes (T.21 R.12)**
*Cooper Lake**
*Tucquala Lake**
*Manastash Lake**
Manastash Creek (incl. South fork)
Naneum Creek
*Columbia River**
*Lake Kachess**
Lake Easton

☐ SECTION VI. *Fee - $10.00*

Flood Development Permit - for any construction or placement of buildings, mining, dredging, filling, grading, paving, excavation or drilling in the FEMA 100-Year Floodplain.

☐ SECTION VII.

Short Plat - to divide into 2-4 lots.

Fee - $190 plus $10/lot Transportation; $125 plus $50/hr. over 2.5 hrs. Environmental Health; and, $175 Planning.

☐ SECTION VIII.

Long Plat - to divide into 5 or more lots.

Fee - $200 plus $10/lot Transportation; $625 plus $50/hr. over 12.5 hrs. Environmental Health; and, $400 Planning.

☐ SECTION IX. *Fee: $350*

Public Facilities Permit: a written decision by the Planning Dept authorizing a public facility use to locate at a specific location

Incomplete or illegible applications will be returned. KCPD 2-02

☐ Section X.
Fee - $100 initial

SEPA Environmental Checklist/Review - review required in conjunction with Sections II, III, IV, VIII. Or IX. Other development proposals may also require completion of this section. ATTACHED, FEE PREVIOUSLY PAID.

2. Name, mailing address and day phone of land owner(s) of record:
CASCADE FIELD & STREAM CLUB
C/O MONTY MILLER
P.O. BOX 424
CLE ELUM, WA 98922

3. Name, mailing address and day phone of authorized agent, if different from land owner of record:
PAUL HORISH
730 TEANAWAY HTS. DR.
CLE ELUM, WA 98922
509-674-5105

PHILIP A. LAMB
LAMB LAW OFFICE
P.O. BOX 4
YAKIMA, WA. 98907
509-225-3522
509-930-1207 CELL

4. Contact person for application (select one): ☐ Owner of record X☐X Authorized agent
All verbal and written contact regarding this application will be made only with the contact person.
CONTACT BOTH HORISH & LAMB.

5. Street address of property:
2410 HAYWARD RD.

6. Legal description of property:
PARCEL A:
ALL OF THAT PORTION OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER, AND OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER AND OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER LYING EAST OF THE COUNTY ROAD AND LYING EAST OF THE EASTERLY BOUNDARY OF THE KITTITAS RECLAMATION DISTRICT CANAL, IN SECTION 21, TOWNSHIP 19 NORTH, RANGE 17 EAST, W.M.

PARCEL B:
ALL OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 19 NORTH, RANGE 17 EAST, W.M. LYING EAST OF THE COUNTY ROAD.

7. Tax parcel number:
19-17-21000-0001

8. Property size:
182.38 ACRES.

9. Narrative project description: describe project size, location, water supply, sewage disposal and all qualitative features of the proposal; include every element of the proposal in the description (be specific, attach additional sheets as necessary):
THIS 182 ACRE PARCEL, CURRENTLY ZONED AG-20, IS UNDEVELOPED RANGE LAND. EXTENSION OF UTILITIES, SUCH AS WATER AND ELECTRICITY, IS NOT ECONOMICALLY FEASIBLE IN THE NEAR FUTURE. THIS RANGE LAND HAS BEEN PURCHASED BY THE CASCADE FIELD & STREAM CLUB IN ORDER TO REPLACE THE BULL FROG ROAD RANGE, WHICH WAS RELINQUISHED TO THE PLUM CREEK/MOUNTAIN STAR DEVELOPMENT.

THE CLUB HOPES TO ESTABLISH EQUIVALENT FACILITIES TO THE BULL FROG RANGE, WITH IMPROVEMENTS OVER TIME, SUBJECT TO FINANCING. ESTABLISHING THIS NEW RANGE WILL CONTINUE THE CLUB'S TRADITION OF PROVIDING A SAFE FACILITY IN KITTITAS COUNTY FOR FIREARMS TRAINING AND PRACTICE. THE CLUB IS EXTREMELY PROUD THAT

THERE HAVE BEEN NO FIREARMS SAFETY INCIDENTS AT ITS RANGE SINCE ITS FOUNDING IN 1934, AND EXPECTS TO CONTINUE THAT TRADITION.

AS REFLECTED ON THE SITE PLAN (EX. A-1), FACILITIES WILL INCLUDE ARCHERY, RIFLE, PISTOL, AND SHOTGUN (TRAP/SKEET) RANGES. A PRIVATE ACCESS ROAD WILL BE CONSTRUCTED FROM HAYWARD ROAD. A STORAGE CONTAINER, AND POSSIBLY A MODEST MOBILE HOME, WILL BE BROUGHT IN FOR STORAGE, TRAINING, AND CONDUCTING MATCHES.

LACK OF UTILITIES WILL REQUIRE THE PRESENCE OF EITHER A PORT-POTTIE(S) OR HEALTH DEPARTMENT APPROVED OUTHOUSE. POTABLE WATER WILL NOT BE AVAILABLE ON-SITE. WATER FOR FIRE PROTECTION PURPOSES, AND APPROPRIATE FIRE BREAKS, WILL BE PROVIDED AS ULTIMATELY REQUIRED BY THE COUNTY AND FIRE MARSHALL.

DRY CAMPING BY CLUB MEMBERS AND INVITED GUESTS IS ANTICIPATED. NO COMMERCIAL OR PUBLIC CAMPING WILL BE PERMITTED.

IF AND WHEN UTILITIES BECOME ECONOMICALLY FEASIBLE, A CARETAKER RESIDENCE MIGHT BE INSTALLED. IN THAT EVENT, ALL SITING AND DEVELOPMENT REGULATIONS OF THE AG-20 ZONE WOULD BE COMPLIED WITH, AND SUCH A RESIDENCE IS CONSIDERED BY THE APPLICANT TO BE AN EXISTING PERMITTED USE.

ON-SITE ROAD AND PARKING IMPROVEMENTS WILL BE GRAVELLED, DUST ABATED AS NECESSARY, AND DESIGNED TO ACCOMMODATE APPROXIMATELY 100 VEHICLES. GIVEN THE RELATIVELY REMOTE LOCATION, AS COMPARED TO BULL FROG, AND THE LACK OF UTILITIES, AVERAGE DAILY TRIP COUNTS IN EXCESS OF TEN ARE CONSIDERED UNLIKELY.

THE SITE WILL BE FENCED, POSTED, WITH A LOCKED GATE ACCESSIBLE ONLY BY AUTHORIXED USERS, INCLUDING EMERGENCY SERVICES PERSONNEL.

THE RANGE WILL BE OPERATED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES AS SUGGESTED BY THE FEDERAL ENVIRONMENTAL PROTECTION AGENCY, IN ITS PUBLICATION EPA-902-B-01-001, DATED JANUARY 2001, ENTITLED "BEST MANAGEMENT PRACTICES FOR LEAD AT OUTDOOR SHOOTING RANGES".

RANGE OPERATION WILL ALSO COMPLY WITH BEST MANAGEMENT PRACTICES AS RECOMMENDED BY THE NATIONAL RIFLE ASSOCIATION, AS REFLECTED IN ITS RANGE DESIGN AND MANAGEMENT MANUAL.

NOISE GENERATION WILL BE SPORADIC, WITH LITTLE OFFSITE IMPACT DUE TO THE REMOTE LOCATION. A NOISE STUDY DONE FOR THE CLUB (CF&S EXHIBIT 4) INDICATES THE CLUB WILL BE IN COMPLIANCE WITH THE NOISE CONTROL ACT OF 1974, RCW 70.107, WHICH REGULATES DECIBEL LEVELS. WAC 173-60-050(1)(b) EXEMPTS SOUNDS CREATED BY THE DISCHARGE OF FIREARMS ON AUTHORIZED SHOOTING RANGES BETWEEN THE HOURS OF 7:00 A.M. AND 10:00 P.M. THE RANGE WILL OPERATE WITHIN THOSE HOURS, SUBJECT TO ACTUAL AVAILABILITY OF DAYLIGHT.

THE RANGE ANTICIPATES CONTINUING TO SERVE THE TRAINING NEEDS OF LOCAL LAW ENFORCEMENT AGENCIES. PAST AGENCY USERS INCLUDE THE KITTITAS COUNTY SHERIFF DEPARTMENT, ROSLYN AND CLE ELUM POLICE DEPARTMENTS, THE WASHINGTON STATE PATROL, AND THE BELLEVUE SWAT TEAM.

HUNTER EDUCATION TRAINING PROGRAMS WILL CONTINUE TO BE A FOCUS OF THE CLUB. THIS NEW FACILITY WILL BE MORE SAFE, AND ALLOW A MORE NATURAL TRAINING ENVIRONMENT, THAN THE BULL FROG RANGE. RCW 77.32.155 MANDATES THIS TRAINING IN ORDER TO OBTAIN A HUNTING LICENSE. THIS FACILITY WILL SUPPORT THE SIGNIFICANT ECONOMIC IMPACT HUNTING PROVIDES TO KITTITAS COUNTY. ESTABLISHED WELL DESIGNED AND OPERATED FACILITIES PROVIDE AN OUTLET FOR FIREARMS RELATED ACTIVITIES, HOPEFULLY HELPING TO DETER UNAUTHORIZED SHOOTING AND TRESPASS ON OTHER PRIVATE PROPERTY.

10. XX☐Application is hereby made for permit(s) to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. I hereby grant to the agencies to which this application is made, the right to enter the above-described location to inspect the proposed and or completed work.☐

Signature of Authorized Agent
SIGNATURE OF PAUL HORISH IS ON FILE. Date APRIL 28,2003

Signature of Land Owner of Record (required for application submittal) Date
SIGNATURE OF MONTY MILLER, ON BEHALF OF THE CLUB, IS ON FILE.

THIS REVISED APPLICATION SUPPLEMENTS THE PRIOR APPLICATIONS, DATED SEPT. 9, 2001, May 6, 2002 AND APRIL30, 2003.

SECTION I. ZONING STRUCTURAL SETBACK VARIANCE. NOT APPLICABLE.
ADDITIONAL ITEMS TO COMPLETE: NONE.

1. Provision of zoning code for which this variance is requested and the way in which you wish to vary:

2. A variance may be granted when the following criteria are met. Please describe how each criteria is met for this particular request (attach additional sheets as necessary):
   a. Unusual circumstances or conditions applying to the property and/or the intended use that do not apply generally to other property in the same vicinity or district, such as topography.

   b. Such variance is necessary for the preservation and enjoyment of a substantial property right of the applicant possessed by the owners of other properties in the same vicinity.

   c. That authorization of such variance will not be materially detrimental to the public welfare or injurious to property in the vicinity.

   d. That the granting of such variance will not adversely affect the realization of the comprehensive development pattern.

☐ SECTION II. ZONING CONDITIONAL USE PERMIT.
ADDITIONAL ITEMS TO COMPLETE: SECTION X SEPA ENVIRONMENTAL CHECKLIST.

1. Provision of the zoning code applicable:
   KCC CHAPTER 17.60, DEALING WITH CONDITIONAL USES IN THE AG-20 ZONE, AND RELATED PROVISIONS.

2. A conditional use permit may be granted when the following criteria are met. Please describe how each criteria is met for this particular project (attach additional sheets as necessary):

A. The proposed use is essential or desirable to the public convenience and not detrimental or injurious to the public health, peace, or safety or to the character of the surrounding neighborhood.

STATE LAW, CITED ABOVE, FAVORS CREATION OF FIRING RANGES. REMOTE LOCATIONS IN RURAL AREAS ARE OBVIOUSLY PREFERRED, DUE TO THE NATURE OF THE ACTIVITY. THIS 183 ACRE PARCEL IS IDEAL, DUE TO THE LIMITED DEVELOPMENT POTENTIAL OF THE SURROUNDING AREA, YET IT IS REASONABLY ACCESSIBLE.

OPERATED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES, THERE WILL BE NO ADVERSE IMPACT TO THE PUBLIC HEALTH, PEACE, OR SAFETY. ALTHOUGH THIS IS A LAND USE APPLICATION, IT IS IMPORTANT TO RECOGNIZE THE CONSTITUTIONAL PRIORITY THE BILL OF RIGHTS PLACES ON THE SECOND AMENDMENT. REGARDLESS OF ONE'S POLITICAL OR PERSONAL PHILOSOPHY CONCERNING FIREARMS, THERE CAN BE NO DOUBT THAT PUBLIC EDUCATION AND AN APPROPRIATE LOCATION FOR FIREARMS ACTIVITIES CONTRIBUTES TO THE PUBLIC HEALTH AND SAFETY.

THE LAST FACTOR REQUIRES CONSIDERATION OF THE IMPACT OF THIS PROPOSAL ON THE CHARACTER OF THE SURROUNDING NEIGHBORHOOD. THIS WORDING IS INSTRUCTIVE. LAND USE REGULATION HAS DEVELOPED IN RESPONSE TO INCREASED POPULATION DENSITY. AS NEIGHBORHOODS DEVELOP, THERE IS INCREASED POLITICAL INTEREST IN ENCOURAGING COMPATIBLE ACTIVITIES. THIS RURAL AREA IS VERY LIGHTLY POPULATED, AND THUS WILL BE LITTLE AFFECTED.

GIVEN SETTLEMENT PATTERNS IN THIS COUNTRY, AND PARTICULARLY IN KITTITAS COUNTY, THIS IS ONE OF THE MOST DESIRABLE LOCATIONS. IT IS REASONABLY ACCESSIBLE, BUT ABOUT AS REMOTE AS ONE CAN EXPECT. IF HAYWARD WAS A MUCH IMPROVED ROAD, AND UTILITIES WERE AVAILABLE, THIS WOULD BE A MUCH LESS DESIRABLE LOCATION BECAUSE IT WOULD BE BETTER SUITED FOR MORE INTENSE USES.

WHEN CONSIDERING A CONDITIONAL USE PERMIT, THE UNDERLYING ZONING AND THE USES WHICH ARE PERMITTED OUTRIGHT SERVE AS A GUIDE IN CONSIDERING THE COMPATIBILITY OF THE PROPOSED USE. IN THIS INSTANCE, AG-20 ZONING MEANS 9 HOUSES ARE ENTITLED TO BUILDING PERMITS OUTRIGHT ON THIS PARCEL, WITHOUT REGARD TO THE IMPACT OF TEN VEHICLE TRIP ENDS PER DAY PER HOUSE, WITHOUT REGARD TO ANY ENVIRONMENTAL IMPACT (EXEMPT FROM SEPA REVIEW), WITHOUT REGARD TO GROUND WATER IMPACT (ENTITLED TO EXEMPT WELLS), WITHOUT REGARD TO ANY IMPACT ON HAYWARD RD, AND WITHOUT REGARD TO FIRE PROTECTION ISSUES.

COMPLY WITH THE PLATTING REQUIREMENTS, COMPLY WITH THE BUILDING CODE, AND THIS PROPERTY COULD BE TRANSFORMED INTO PERMITTED USES WITH FAR MORE IMPACT THAN THIS PROPOSAL.

B. The proposed use at the proposed location will not be unreasonably detrimental to the economic welfare of the county and that it will not create excessive public cost for facilities and services by finding that (1) it will be adequately serviced by existing facilities such as highways, roads, police and fire protection, irrigation and drainage structures, refuse disposal, water and sewers, and schools; or (2) that the applicant shall provide such facilities; or (3) demonstrate that the proposed use will be of sufficient economic benefit to offset additional public costs or economic detriment.

THE ANALYSIS SET FORTH ABOVE SHOULD ALSO INSTRUCT REVIEW OF THESE FACTORS. THIS PROJECT MUST COMPLY WITH COUNTY DEVELOPMENT REGULATIONS. EACH AGENCY WILL WEIGH IN DURING THIS REVIEW PROCESS. ISSUES CONCERNING FIRE

PROTECTION AND ROAD ACCESS WILL OBVIOUSLY BE IMPORTANT TO CONSIDER AND RESPOND TO.
THIS FACILITY CAN ENHANCE THE COUNTY'S REPUTATION FOR OUTDOOR SPORTS, INCLUDING HUNTING AND MORE ORGANIZED FIREARMS EVENTS. PROVISIONS CAN BE MADE FOR FIRE PROTECTION WHICH WILL SIGNIFICANTLY ENHANCE THE CURRENT SITUATION. ROAD CONDITIONS COULD BE BETTER, BUT THE LOW VOLUME OF PROJECTED TRAFFIC WILL UNDOUBTEDLY BE LESS THAN IS EXISTING PARCELS IN THE AREA, WITHOUT ANY NEW LOT CREATION, WERE DEVELOPED TO THE EXISTING PERMITTED RESIDENTIAL DENSITY.

☐ SECTION III. REQUEST FOR REZONE.
NOT APPLICABLE

ADDITIONAL ITEMS TO COMPLETE: SECTION X SEPA ENVIRONMENTAL CHECKLIST.

1. Present zoning district 2. Zoning district requested:

3. Applicant for rezone must demonstrate that the following criteria are met (attach additional sheets as necessary):

a. The proposed amendment is compatible with the comprehensive plan.

b. The proposed amendment bears a substantial relation to the public health, safety or welfare.

c. The proposed amendment has merit and value for Kittitas County or a sub-area of the county.

d. The proposed amendment is appropriate because of of changed circumstances or because of a need for additional property in the proposed zone or because the proposed zone is appropriate for reasonable development of the subject property.

e. The subject poperty is suitable for development in general conformance with zoning standards for the proposed zone.

f. The proposed amendment will not be materially detrimental to the use of properties in the immediate vicinity of the subject property.

g. The proposed changes in use of the subject property shall not adversely impact irrigation water deliveries to other properties.

☐ SECTION IV. SHORELINES SUBSTANTIAL DEVELOPMENT/CONDITIONAL USE.
NOT APPLICABLE.

ADDITIONAL ITEMS TO COMPLETE: SECTION VI FLOOD DEVELOPMENT APPLICATION (IF LOCATED WITHIN 100-YEAR FLOODPLAIN); SECTION X SEPA ENVIRONMENTAL CHECKLIST; AND, THE FOLLOWING ITEMS:

SECTION IX. SEPA ENVIRONMENTAL CHECKLIST.

A. Background

1. Proposed timing or schedule (including phasing, if applicable):

DIRTWORK IS THE BULK OF THE ACTIVITY, COMMENCING IMMEDIATELY UPON PREMIT APPROVAL ROUTINE ACCESS AND MAINTENANCE ALREADY OCCURS ON SITE.

STRUCTURAL IMPROVEMENTS, SUCH AS SHOOTING BENCHES AND COVERS, AND STORAGE FACILITIES, WILL BE BUILT AS TIME AND MONEY PERMIT.

2. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

AS INDICATED IN THE APPLICATION, A FUTURE CARETAKER/RANGE OFFICER RESIDENCE MAY BE ADDED IF AND WHEN UTILITIES BECOME AVAILABLE. COMMERCIAL CAMPING IS A LONG TERM POSSIBILITY, BUT WOULD BE SUBJECT TO ZONING REVIEW AT THAT TIME.

3. List any environmental information you know about that had been prepared, or will be prepared, directly related to this proposal.

SAGEBRUSH POWER PARTNERS,LLC HAS DONE EXTENSIVE STUDIES ON OUR PROPERTY AND THE SURROUNDING AREA WHICH HAVE BEEN PUT IN THE PUBLIC DOMAIN IN THEIR KITTITAS VALLEY WIND POWER PROJECT EFSEC APPLICATION DATED 12 JANUARY, 2003. WITH VERBAL PERMISSION, WE HAVE INCLUDED SOME OF THIS INFORMATION AS EXHIBITS FOR THIS DOCUMENT.

DR ANDREW PIACSEK, ASSISTANT PROFESSOR OF PHYSICS AT CWU, HAS COMPLETED A NOISE STUDY FOR US; THIS STUDY IS INCLUDED AS CF&S EXHIBIT 4.

WE HAVE NOT PREPARED SPECIFIC ADDITIONAL ENVIRONMENTAL STUDIES.

4. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

WIND FARM PROPOSALS, WHICH SEEM TO BE ON-AGAIN, OFF-AGAIN, MAY AFFECT THIS PROPERTY (ZILKHA). AT THIS POINT NO CONFLICT IS APPARENT.

5. List any government approvals or permits that will be needed for your proposal, if known.

CONDITIONAL USE PERMIT, FIRE MARSHALL APPROVAL, BUILDING PERMITS FOR COVERED STRUCTURES.

B. Environmental Elements

1. Earth

a. General description of the site (circle one): flat, rolling, hilly, steep slopes, mountainous, other.

HILLY.

b. What is the steepest slope on the site (approximate percent slope)?

45%, FOR A SMALL PORTION OF THE PARCEL. THE AREA PROPOSED FOR DEVELOPMENT IS BASICALLY FLAT.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

CLAY, BASIC DIRT, SCATTERED SMALL ROCK.

d. Are there surface indications or history of unstable soils in the immediate vicinity?

NO

e. Describe the purpose, type, and approximate quantities of any filing or grading proposed. Indicate source of fill.

ALL GRADING AND FILLING WILL BE NET TO THE PROPERTY, EXCEPT FOR ROAD ROCK WHICH MAY BE BROUGHT IN. PERHAPS 2400 LINEAR FEET OF ACCESS ROAD WILL BE CONSTRUCTED, TOGETHER WITH PARKING. MATERIAL MOVEMENT WILL BE VERY LOCALIZED.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

THE MOST SIGNIFICANT EROSION POTENTIAL WILL RESULT FROM FIREBREAK CONSTRUCTION, WHICH WILL HAVE TO BE SENSITIVE TO THE TOPOGRAPHY.

g. About what percentage of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

SHOOTING PADS FOR THE RANGES WILL BE THE PRIMARY IMPERVIOUS SERVICES:

SHOTGUN	75' X 50' = 1875
RIFLE	15 X 150 = 2250
PISTOL	15 X 150 = 2250
CLUBHOUSE	50 X 100 = 5000
STORAGE	24 X 32 = 800
TOTAL	12,175 SQ. FT., APPROXIMATELY .36 ACRE, OR .2%.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

COMPLIANCE WITH STANDARD CONSTRUCTION PROCEDURES. LANDSCAPING OF DISTURBED AREAS WILL CONSIST OF REPLANTING GRASSES APPROPRIATE TO THE AREA, SUCH AS CRESTED WHEAT GRASS, IDAHO FESCUE, AS WELL AS PINE TREES.

2. AIR

a. What types of emissions to the air would result from the proposal (i.e. dust, automobiles, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

DURING CONSTRUCTION, EARTHMOVING EQUIPMENT GENERATES DUST AND DIESEL FUMES.

NORMAL OPERATIONS WILL GENERATE AUTOMOTIVE RELATED NOISE AND FUMES, AS WELL AS SPORADIC GUNFIRE AND OCCASIONAL USE OF A HANDHELD MEGAPHONE DURING MATCHES.

DRY CAMPING BY MEMBERS AND GUESTS WILL RESULT IN OCCASIONAL FIREPITS IN APPROVED LOCATIONS.

IN ALL CASES, EMISSIONS WILL BE MINIMAL, CONSISTENT WITH THE LOW AVERAGE DAILY TRAFFIC EXPECTED FOR THIS PROPOSAL.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

NO.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

DUST ABATEMENT, AS NEEDED, ON INTERIOR ROAD.

3. WATER

a. Surface

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what streams or river it flows into.

A SEASONAL STOCK POND IS LOCATED ON SITE, AS REFLECTED ON THE SITE PLAN. IT IS FED BY SNOW MELT AND RUN OFF, WHICH DRAINS FROM THE POND, FOLLOWING THE NATURAL TERRAIN OFF-SITE.

2) Will the project require any work over, in or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

NO. THE POND AREA WILL REMAIN AS IS FOR WILDLIFE USE.

3) Estimate the fill and dredge material that would be placed in or removed from surface water or wetlands, and indicate the area of the site that would be affected. Indicate the source of fill material.

NOT APPLICABLE.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

NO.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

NO. LOCATION IS 740' ABOVE THE RIVER.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

WASTE AND DEBRIS, SUCH AS LITTER, WILL BE DEPOSITED IN AN ON-SITE DUMPSTER.
HUMAN WASTE WILL BE TAKEN CARE OF BY A PORT-POTTIE.
THERE IS A REMOTE POSSIBILITY OF LEAD LEACHING FROM THE BULLET BACKSTOPS INTO THE INTERMITTENT DRAINAGE FROM THE STOCK POND. AS REFLECTED IN THE SCIENCE, LEAD IS VERY STABLE, TENDING NOT TO MOVE. HOWEVER, SMALL BERMS, UP TO ABOUT ONE FOOT HIGH, WILL BE SPACED IN THE DRAINAGE, TO SERVE AS SMALL SETTLING BASINS TO SETTLE OUT ANY LEAD WHICH MAY ENTER THE CHANNEL THESE CAN BE CLEANED PERIODICALLY.

b. Ground

1) Will ground water be withdrawn, or will water be discharged to surface waters? If so, give general description, purpose, and approximate quantities if known.

NO, UNTIL AN EXEMPT WELL IS INSTALLED, WHICH FOR PRACTICAL PURPOSES IS YEARS IN THE FUTURE. ANY WELL WILL COMPLY WITH STATE AND LOCAL REGULATIONS IN PLACE WHEN THE WELL IS INSTALLED.

2) Describe waste materials that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

THE BULLET BACKSTOP AREAS WILL BE BUILT AND OPERATED IN COMPLIANCE WITH BEST MANAGEMENT PRACTICES, AS OUTLINED ABOVE IN THE APPLICATION. WHEN COMMERCIALLY FEASIBLE, LEAD WILL BE RECLAIMED. THE POTENTIAL RUNOFF SITUATION IS DEALT WITH ABOVE.

ANY CARETAKER/RANGE OFFICER RESIDENCE, AND A POTENTIALLY PLUMBED CLUBHOUSE, WILL COMPLY WILH ALL REGULATIONS, IF THEY ARE EVER BUILT.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

THE INTERMITTENT DRAINAGE FROM THE STOCK POND IS APPARENTLY CLASSIFIED BY THE COUNTY AS A CLASS 5 STREAM BED. THIS SITE IS ABOUT 2.3 MILES FROM THE YAKIMA RIVER. THE CLASS 5 STREAM APPARENTLY DRAINS INTO AN IRRIGATION CANAL ABOUT 1.7 MILES AWAY.

2) Could waste materials enter ground or surface waters? If so, generally describe.

NO, EXCEPT AS PREVIOUSLY DESCRIBED.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

THE LOW BERMS CREATING SMALL SETTLING PONDS ARE DESCRIBED ABOVE.

4. PLANTS

a. Check or circle types of vegetation found on the site:

deciduous tree: alder, maple, aspen, other
evergreen tree:fir, cedar, pine, other
shrubs
grass
pasture
crop or grain
wet soil plants: cattails, buttercup, bullrush, skunk cabbage, other
water plants: waterlily, eelgrass, milfoil, other
other types of vegetation:

SHRUBS, NATIVE GRASSES, SAGEBRUSH, AND WEEDS. SEE CF&S EXHIBIT 6, AN INVESTIGATION OF RARE PLANT RESOURCES.

b. What kind and amount of vegetation will be removed or altered?

THIS HAS BEEN PREVIOUSLY DESCRIBED. ROAD, PARKING, AND SHOOTING BENCH AREAS WILL RESULT IN REMOVING THE NATIVE VEGETATION. PERHAPS 11 ACRES OF THE 183 ACRE PARCEL WILL BE DISTURBED.

c. List threatened or endangered species known to be on or near the site.

NONE KNWN. SEE CF&S EXHIBIT 6, AN INVESTIGATION OF RARE PLANT RESOURSES. WASHINTON DNR LAND IN THIS AREA HAS BEEN GRAZED EVERY SPRING FOR DECADES.

d. Proposed landscaping use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

AS PREVIOUSLY INDICATED, UNIMPROVED DISTURBED AREAS WILL BE REPLANTED WITH APPROPRIATE GRASSES, SUCH AS BUNCH AND CRESTED WHEAT, FOR USE BY WILDLIFE. PINE TREES AND OTHER APPROPRIATE SHRUBS AND TREES MAY BE PLANTED FOR SHELTER BELTS.

5. ANIMALS

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beavers, other:

fish: bass, salmon, trout, herring, shellfish, other:
HAWKS, EAGLES, SONGBIRDS, DEER, ELK, AND COYOTES. FOR A MORE COMPLETE LISTING SEE CF&S EXHIBIT 8 – WILDLIFE BASELINE STUDY – AND CF&S EXHIBIT 5 – WASHINTON FISH AND WILDLIFE'S ANSWERE TO OUR SAME QUESTION.

b. List any threatened or endangered species known to be on or near the site.

NONE KNOWN. PLEASE SEE CF&S EHHIBIT 7 – BIOLOGICAL ASSESSMENT OF ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES. OUR CLUB PROPERTY WAS COVERED AS A PART OF THIS STUDY.
GRAZING, EXTENSIVE DRYLAND FARMING, AND RESIDENTIAL HOUSING ARE ALL PERMITTED OUTRIGHT ON THIS PARCEL. THESE PERMITTED USES ARE FAR MORE DESTRUCTIVE OF THE NATURAL ENVIRONMENT THAN THIS PROPOSAL.

c. Is the site part of a migration route? If so, explain.

NO.

d. Proposed measures to preserve or enhance wildlife, if any.

MAINTAIN STOCK POND, REVEGETATE UNIMPROVED DISTURBED AREAS, MAINTAIN A VERY HIGH PERCENTAGE OF UNDISTURBED AREA.

6. ENERGY AND NATURAL RESOURCES
a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the competed project□s energy needs? Describe whether it will be used for heating, manufacturing, etc.

LACK OF UTILITIES LIMITS ENERGY CONSUMPTION. PROPANE AND FUEL POWERED GENERATORS MAY BE OCCASIONALLY USED. THIS IS NOT AN ENERGY CONSUMPTIVE PROJECT.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, describe.

NO.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

NONE.

7. ENVIRONMENTAL HEALTH
a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

LEAD MIGRATION FROM BULLET IMPACT AREAS IS A REMOTE POSSIBILITY, AS PREVIOUSLY DESCRIBED. SMOKELESS POWDER, EVEN IN BULK, IS NOT EXPLOSIVE AND SIMPLY BURNS RAPIDLY. BLACK POWDER IS EXPLOSIVE, BUT WILL BE ON SITE IN VERY SMALL QUANTITIES FOR PERSONAL USE. IT WILL NOT BE STORED ON SITE. POWDER RELATED EFFECTS ARE PRIMARILY BURN RELATED TO INDIVIDUAL USE, CONTROLLABLE BY THE USER, MUCH AS A CHAIN SAW IS DANGEROUS IF NOT PROPERLY HANDLED.

1) Describe special emergency services that might be required.

AMBULANCE AND FIRE PROTECTION, CONSISTENT WITH THE ZONING.

2) Proposed measures to reduce or control environmental health hazards, if any.

THIS FACILITY WILL BE DESIGNED, CONSTRUCTED, AND OPERATED IN COMPLIANCE WITH BEST MANAGEMENT PRACTICES FOR OUTDOOR SHOOTING RANGES, PURSUANT TO MANUALS IDENTIFIED IN THE APPLICATION.

b. Noise

1) What types of noise exist in the area which may affect your project (for example, traffic, equipment, operation, other)?

NONE.

2) What types and levels of noise would be created by or associated with the project on a short-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

ROAD BUILDING AND LAND LEVELING WITH COSNTRUCTION EQUIPMENT, TYPICALLY FROM 7:00 AM TO 5:00 PM.

3) Proposed measures to reduce or control noise impacts, if any.

NONE.

8. LAND AND SHORELINE USE

a. What is the current use of the site and adjacent properties?

THIS SITE IS RANGE LAND. SURROUNDING PROPERTIES ARE ALSO RANGE LAND. SCATTERED, VERY LOW DENSITY SINGLE FAMILY RESIDENCES ARE ALSO IN THE AREA. THE CLOSEST RESIDENCE IS THOUSANDS OF FEET AWAY.

b. Has the site been used for agriculture? If so, describe.

GRAZING, SINCE AT LEAST THE 1960'S.

c. Describe any structures on the site.

NONE. A "SEA-LAND TYPE" SHIPPING CONTAINER HAS BEEN EMPLACED FOR STORAGE AND A 15000 FIRE WATER STORAGE TANK HAS BEEN BURRIED.

d. Will any structures be demolished? If so, what?

NO.

e. What is the current zoning classification of the site?

AG 20.

f. What is the current comprehensive plan designation of the site?

RURAL.

g. If applicable, what is the current shoreline master program designation of the site?

NOT APPLICABLE.

h. Has any part of the site been classified as an □environmentally sensitive□ area?

NOT TO OUR KNOWLEDGE.

i. Approximately how many people would the completed project displace?

NONE.

j. Approximately how many people would reside or work in the completed project?

ONE, ON A PART-TIME, PROBABLE VOLUNTEER BASIS, IMMEDIATLEY. PERHAPS 2 ON A MORE PERMANENT BASIS IN THE DISTANT FUTURE.

k. Proposed measures to avoid or reduce displacement impacts, if any.

NONE.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

PROJECT WILL COMPLY WITH BEST MANAGEMENT PRACTICES FOR FACILITIES OF THIS TYPE. THE PROJECT WILL HAVE LESS IMPACT THAN EXISTING PERMITTED USES, WITH A MUCH LOWER OVERALL DEVELOPMENT DENSITY.

IN CONSIDERING COMPATIBILITY AND ENVIRONMENTAL IMPACTS, WASHINGTON CASELAW DIRECTS THAT A CONDITIONAL USE PERMIT PROJECT MUST BE COMPARED IN LIGHT OF USES WHICH ARE PERMITTED OUTRIGHT IN THE SAME ZONE. IT IS INAPPROPRIATE TO REQUIRE MORE OF A PROJECT WHICH REQUIRES A CONDITIONAL USE PERMIT, IF IT HAS LESS OR EQUIVALENT IMPACT, THAN WOULD BE REQUIRED OF AN OURTIGHT PERMITTED USE. SEE HANSEN V. CHELAN COUNTY, 81 WN.APP. 133 (1996), CITED APPROVINGLY IN DEV. SERVS. V CITY OF SEATTLE, 138 WN.2D 107, 126 (1999).

REGULATORY REFORM LEGISLATION, CODIFIED AT RCW 36.70B, REQUIRES LOCAL PROJECT REVIEW TO BE CONSISTENT WITH, AND NOT REVISIT, FUNDAMENTAL LAND USE PLANNING CHOICES MADE IN ADOPTED COMPREHENSIVE PLANS AND DEVELOPMENT REGULATIONS. SEE RCW 36.70B.030 (PROJECT REVIEW—REQUIRED ELEMENTS—LIMITATIONS) AND 36.70B.040 (DETERMINATION OF CONSISTENCY).

9. HOUSING

a. Approximately how many units would be provided, if any? Indicate whether high, middle or low-income housing.

PERHAPS ONE UNIT IN THE DISTANT FUTURE, LOW TO MIDDLE INCOME.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle or low-income housing.

NONE.

c. Proposed measures to reduce or control housing impacts, if any.

NONE.

10. AESTHETICS

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

METAL BUILDINGS, PERHAPS 25 FEET HIGH, ARE ANTICIPATED. ALL STRUCTURES WILL COMPLY WITH AG 20 ZONING AND RELATED DEVELOPMENT REGULATIONS, INCLUDING UNIFORM BUILDING CODE

b. What views in the immediate vicinity would be altered or obstructed?

NONE.

c. Proposed measures to reduce or control aesthetic impacts, if any.

NONE.

11. LIGHT AND GLARE

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

NONE.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

NO.

c. What existing off-site sources of light or glare may affect your proposal?

NONE.

d. Proposed measures to reduce or control light and glare impacts, if any.

NONE.

12. RECREATION

a. What designated and informal recreational opportunities are in the immediate vicinity?

NOTHING DESIGNATED. INFORMAL ROCK HUNTING, WILDLIFE VIEWING, AND FLOWER PICKING.

b. Would the proposed project displace any existing recreational uses? If so, describe.

NO.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

NOTHING IS PROPOSED TO REDUCE OR CONTROL IMPACTS ON EXISTING RECREATION OPPORTUNITIES.
THIS IS A RECREATION PROPOSAL, SUBSTANTIALLY INCREASING RECREATIONAL RESOURCES IN KITTITAS COUNTY.

13. HISTORIC AND CULTURAL PRESERVATION

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

NO.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

NONE.

c. Proposed measures to reduce or control impacts, if any.

NONE.

14. TRANSPORTATION

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

HAYWARD RD FROM THE NORTH (CONNECTING TO BETTAS RD) IS THE PRIMARY ACCESS. HAYWARD RD TO THE SOUTH, IS MORE PRIMITIVE AND WOULD NOT BE ADVOCATED NOR PROMOTED BY THE CLUB FOR ACCESS.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

NO. NEAREST PUBLIC TRANSIT IS ABOUT 11 MILES.

c. How many parking spaces would the completed project have? How many would the project eliminate?

ABOUT 100 GRAVELLED SPACES WILL BE PROVIDED. NONE WILL BE ELIMINATED.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

NO. LEVEL OF SERVICE ON EXISTING PUBLIC ROADS DOES NOT REQUIRE IMPROVEMENT UNDER STATE CONCURRENCY REQUIREMENTS. HAYWARD RD DOES NOT MEET CURRENT COUNTY ROAD STANDARDS, BUT IS CONSIDERED ADEQUATE BY THE APPLICANT TO SERVICE THIS PROJECT. COUNTY PUBLIC WORKS WILL OBVIOUSLY BE INVOLVED IN REVIEWING THIS PROPOSAL, AND WE WILL WORK WITH THEM IN THE EVENT MINOR IMPROVEMENTS ARE CONSIDERED ADVISABLE, OR IMPOSED AS A CONDITION OF THE PERMIT.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

NO.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

PERHAPS 5 ROUND TRIPS ARE PREDICTED ON A DAILY AVERAGE. THIS IN BASED UPON THE CLUB'S EXPERIENCE WITH THE BULL FROG RD RANGE, WHICH HAD CONSIDERABLY MORE CONVENIENT ACCESS.

g. Proposed measures to reduce or control transportation impacts, if any.

DUST ABATEMENT OF THE ON-SITE ROAD, AND CONSTRUCTION OF AN APPROVED ACCESS TO HAYWARD RD.

15. PUBLIC SERVICE

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

ANY INCREASE IN PUBLIC SERVICES WILL BE INSIGNIFICANT, AND LESS THAN THE PROBABLE IMPACT OF THE ALREADY PERMITTED USES.

b. Proposed measures to reduce or control direct impacts on public services, if any.

AS PREVIOUSLY INDICATED, THE APPLICANT WILL COMPLY WITH FIRE MARSHALL REGULATIONS WHICH MAY BE IMPOSED AS A CONDITION OF THE PERMIT, LIKELY INCLUDING A FIREBREAK AND ON-SITE STORAGE OF WATER. A 15000 STORAGE TANK FOR FIRE WATER HAS BEEN INSTALLED ON THE PROPERTY.

THE PROPERTY WILL BE FENCED, POSTED, WITH CONTROLLED ACCESS, LIMITED TO MEMBERS AND INVITED GUESTS, AS WELL AS EMERGENCY PERSONNEL.

16. UTILITIES

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse services, telephone, sanitary sewer, septic system, other.

NONE.

b. Describe the utilities that are proposed for the project, the utility providing the services, and the general construction activities on the site or in the immediate vicinity which might be needed.

NONE AT THIS POINT. ELECTRICITY IS ABOUT ONE MILE AWAY. WATER IS PROBABLY VERY DEEP, GIVEN THIS LOCATION IS MORE THAN 700 FEET ABOVE THE RIVER.

C. SIGNATURE

XXThe aboveanswers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.□

MONTY MILLER
Signature

ORIGINAL ON FILE, 5-6-02
Date

THE REMAINING QUESTIONS ARE EXCLUSIVELY FOR REZONE APPLICANTS AND FOR AMENDMENTS TO COUNTY COMPREHENSIVE PLAN AND CODE. UNLESS THESE APPLY TO YOU, THIS IS THE END OF THE SEPA CHECKLIST.

SEPA ENVIRONMENTAL CHECKLIST QUESTIONS FOR NON-PROJECT ACTIONS ONLY. WHEN ANSWERING THESE QUESTIONS, BE AWARE THE EXTENT OF THE PROPOSAL, OR THE TYPE OF ACTIVITIES LIKELY TO RESULT FROM THE PROPOSAL, WOULD AFFECT AN ITEM AT A GREATER INTENSITY OR AT A FASTER RATE THAN IF THE PROPOSAL WERE NOT IMPLEMENTED. RESPOND BRIEFLY AND IN GENERAL TERMS (ATTACH ADDITIONAL SHEETS AS NECESSARY)

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise? Proposed measures to avoid or reduce such increases.

2. How would the proposal be likely to affect plants, animals, fish or marine life: Proposed measures to protect or conserve plants, animals, fish or marine life.

3. How would the proposal be likely to deplete energy or natural resources? Proposed measures to protect or conserve energy and natural resources.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands? Proposed measures to protect such resources or to avoid or reduce impacts.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses? Proposed measures to avoid or reduce shoreline and land use impact.

EXHIBTS

Exhibit A1	Cascade Field & Stream Club Range Layout Sketch (not available on Computer)
Exhibit A2	Land Use Plan
Exhibit A3	Cascade Field & Stream Club History
Exhibit 4	Noise Measurements for Cascade Field & Stream Proposed Range (map not available on computer)
Exhibit 5	Washington Department of Fish and Wildlife correspondence wildlife Distribution on the club property (not available on computer)
Exhibit 6	An Investigation of Rare Plant Resources (some maps and figures not Available on hard copy due to printer constraints – viewable on computer)
Exhibit 7	Biological Assessment of Endangered, Threatened, Proposed and Candidate Species
Exhibit 8	Wildelife Baseline Study

NOTE: Exhibits 6, 7, and 8 are in the public record submitted by Sagebrush Power Partners, LLC, as a part of their Kittitas Valley Wind Power Project EFSEC Application dated 12 January, 2003. Excerpted by permission.

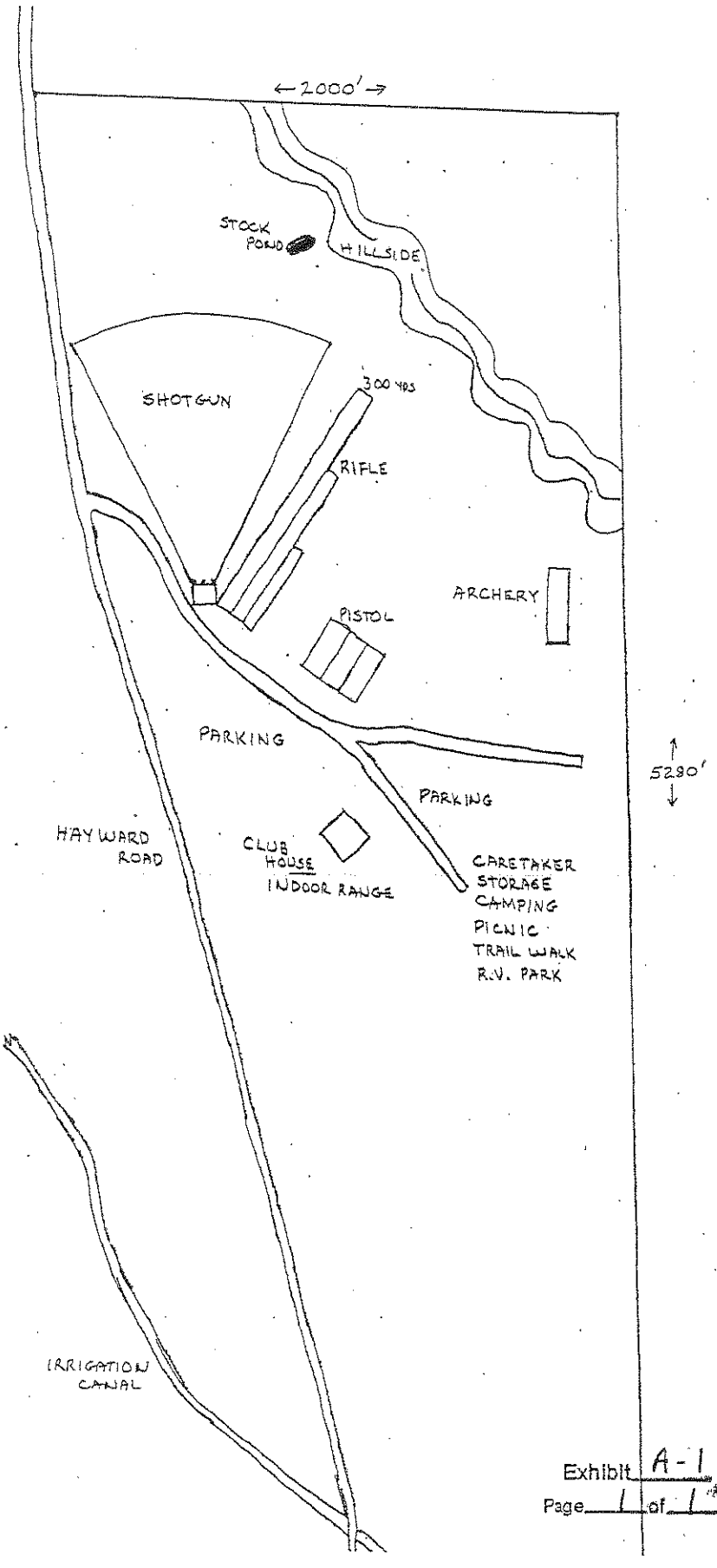


Exhibit A-1
Page 1 of 1

LAND USE PLAN

2410 HAYWARD ROAD

Cascade Field and Stream Club

I. Objectives of the Club

1. To provide a safe, controlled facility for the pursuit of the shooting sports
2. To provide facilities for Hunter Safety, Home Firearms Safety, and basic marksmanship instruction
3. To provide facilities where local, county, and state law enforcement agencies can train and qualify in shooting skills
4. To provide facilities for other groups such as Washington State Traditional Bow Hunters, F.C.F. Royal Rangers, and Back Country Horsemen who have used our ranges at the previous location

We will start toward these objectives in a very limited way because our resources are very limited, both in money and manpower. Our first efforts will be very basic but it will be a foundation to build and improve on in the future. We know that it will take us many years to realize the potential of our property and to achieve the goals we envision.

The following plans are in no particular order of priority except in general terms for purposes of organizing our approach to our goals. Funding, resource availability, and current interest of club members will largely determine when and if a particular plan will be implemented. This list is an expression of our vision and dreams for the club and the community.

II. Short Term Plans

1. Improve roads and parking for range access
2. Rifle range to 300 yards
3. Separate pistol range to 50 yards
4. Informal clay target (shotgun) shooting area
5. Temporary storage building (s)
6. Temporary clubhouse/classroom
7. PortaPotties for temporary sanitary facilities
8. Hunter Safety trail walk
9. Fence and gate to control access; caution signs
10. Archery area and archery trail walk
11. Fire protection – fire break along property line; maintain existing stock pond for fire water source
12. Separate law enforcement training range
13. Separate Cowboy action shooting range

14. Creedmoor (Quigley) range – 600 to 1000 yard
15. Silhouette range

III. Midterm or Intermediate Plans

1. Berms, barricades, or baffles as may prove necessary for safer or more efficient range operation
2. Covered firing points for basic rifle and pistol ranges, perhaps including permanent storage facilities
3. Primitive camping area with fire pit and picnic area
4. "Dry camp" RV parking area
5. Electric service
6. Well and Septic system
7. Insure handicap access (wherever possible at all stages of development)
8. Formal trap and skeet ranges
9. Sporting Clay area

IV. Long Term Plans

1. A permanent club house with restrooms, office, classroom/meeting rooms, food preparation facilities, storage, and indoor, small bore, pistol, and air rifle range
2. Additional parking
3. Single family caretaker's residence
4. RV hookups with power and water (no long term camping)

THE CASCADE FIELD AND STREAM CLUB

The origin of the Cascade Field and Stream Club dates back to Roslyn, Washington in the very early 1930's, when a group of sportsmen founded the Roslyn Rod and Gun Club. No written records of this group have survived to date. What is known of the early existence of the club was obtained from interviews with several original members, now in their late 80's and early 90's, and the reference noted in the newspaper article of 1934 noted below.

Monthly indoor meetings of the Roslyn Rod and Gun Club were initially held in the upstairs of the Musso building, a large sandstone structure still standing today on the southwest corner of 2nd and Pennsylvania Avenue. Members fished in the local rivers, creeks, and many lakes surrounding the Roslyn area for native cutthroat, rainbow, and Dolly Varden Trout. Outdoor rifle and pistol shooting was conducted pretty much wherever several members would gather and choose to take a shot in those bygone days of free open spaces.

It does appear an expanding interest in a sportsman club, to include rifle range, trapshooting area, and clubhouse for meetings existed and was shared by residents of both Roslyn and Cle Elum during this period. In fact, quoting from the Miner Echo, "the club was formed at a meeting that packed the Roslyn public library to the doors" on the evening of January 24, 1934.

The following are excerpts from the Miner Echo dated January 26, 1934:

"Sportsmen's Club Formed at Mass Meeting"

"The club was given an initial start that placed it squarely on its feet by the Roslyn Rod and Gun Club, who turned over to the new group a cash reserve of $200 to be used as a revolving fund in the future. The Roslyn Rod and Gun Club clubhouse and trap shooting equipment is also assigned to the new body making the total assets approximately $500. The former gun club thus becomes no more but its members join the new amalgamation. The gift of the Gun Club is contingent upon the new club getting a 400 membership by the 1st of March.

Elections were held naming the first officers of the club as follows: Tony Sandona, president; John Juris, vice-president; John Kezak, secretary; Henry Balcom, treasurer, directors, Bob Dorsey, Steve Clutcher, and Herb Newman.

The sportsmen got into action immediately selecting a committee to meet the state game commission at Yakima on February 6th. The following were named on the committee, Wm. Graham, Jack Cadwell, Jack Boose, Bob Dorsey, Fred Steiner, and Ray Baker, chairman....."

The following constitutional provisions were passed by the assembly at the request of the Rod and Gun Club at this transition meeting as a safeguard to perpetuate the cash reserve of the club in the future:

- "Yearly dues of this organization were set at 50 cents. They would keep a cash reserve of $200 at all times."
- "The club will elect a president, vice president, secretary, treasurer, and three directors; and each town must be represented by at least one officer."
- "The meetings shall be alternated between the towns as far as practical."
- "It shall be the duties of the board of directors to act as a finance and veto board. They shall pass on all expenditures voted by club exceeding $10."

A new club name was formed by combining 'Cascade' from the surrounding mountains and 'Field and Stream' from the highly coveted prestigious national sharpshooter's award of the era. This combination also carried over the theme of the previous 'Rod and Gun' club. This new organization was to serve members with an interest in hunting, fishing, target, and trapshooting and "for the purpose of promoting the sportsmen's interests in this region."

A 23 acre, forested area in the 'Bull Frog Flats' area 1 mile South of Roslyn was leased for the nominal sum of $1.00 per year from the Northern Pacific Land Co., and work was begun immediately on the range and trap shooting area that was to remain on this location for 66 years.

All records of the club's 1934 charter, members names, and any activities in the years 1934 to 1943 were lost in a fire at the Knights of Phythias Hall located on South 2nd Street in downtown Roslyn in the winter of 1943. For some unknown reason, files for several local fraternal and civic organizations were thought to be kept safe in this vintage wooden building. All were lost when the building was completely destroyed.

It is not known with certainty whether or not the 400 membership figure was met early in the club's infancy. A later excerpt from the "Spawn of Coal Dust" history of Roslyn dated 1955 states on page 72 there were 488 charter members. This figure seems high for charter members, and although there was certainly a lot of interest initially, and since records do not exist, the high figure is believed to be cumulative up to the 1955 writing, and quite possibly someone's approximation of the time.

Recent research, including tasking the National Rifle Association to review their records, does not reveal any club action of certainty during the years 1934 through 1945, although it is known the club did remain active through this time. The introduction during these years by several National firearm manufacturers of improved upon World War I arms, calibers, and ammunition led to an ever-increasing interest in competitive shooting. Additionally, members of the National

Rifleman's Association at this time could, for example, purchase a military surplus Winchester Model 1917 Enfield 30-06 for the sum of $7.50, including delivery by railroad express to the Cle Elum/ Roslyn area. Rounds of military ammunition suitable for target practice cost 1 cent each.

In continuing through the chronology of the Cascade Field and Stream Club, it would be noted the World War II years drew many of the patriotic members to the service of their country. With the cessation of hostilities in 1945, membership in the club once again rose when the veterans returned home. Perhaps it was at this time when the highest membership was recorded. The populations of Roslyn, Cle Elum, and surrounding area were bustling with miners, loggers, two railroads, several saw mills, cross-state power line erection, and an increasing amount of farming and ranching.

As noted earlier, the Roslyn/Cle Elum area had always supported a great interest among sportsmen and outdoorsmen. Now, with the return of service men who had been recently trained in the proper care, shooting, and handling of firearms, the 'stage was set' for club expansion and many activities to follow.

Cascade Field and Stream Club Elects New President

Another Miner Echo article dated February 1946 states "Pete Horish, Jr., elected President of Cascade Field and Stream Club at a meeting last Monday. Horish will replace Jack Boose, a charter member, who has held the office for the past 8 years."

With the high spirits, additional helping hands, and increased financial aide, the original, donated one room wood frame 'clubhouse' was expanded to include toilet facilities. Electrical power and water was introduced, and what had been just an outdoors area for small arms target practice became a bonified 300 yard rifle range, including a large vertical concrete backstop for target marker protection at the 100 yard line, covered bench rest positions, concrete walkways, and trap and skeet shooting facilities.

Range activities during the late 1940's and through the 1950's included 'turkey shoots' on Sunday afternoons in the spring and summer months. These paper target events were very popular, drawing impressive sized audiences to view competition among members and guests shooting with all caliber of rifles at 100 yard distances from the standing position using iron sights only. Live turkeys were awarded as 1st prize and local legend has it that on one occasion the winner placed his prize in the back seat of his sedan for the trip home to Roslyn. He decided to stop at one of the many taverns along the way to boast of his marksmanship. After several hours the prize and driver finally arrived at home. When the rear door of the sedan was opened the turkey immediately flew out and landed high on the rooftop of a neighbor's house. The mildly intoxicated, startled driver chambered a round in his 30-06 and shot the turkey in the neck.

Another popular event sponsored by the club was the children's annual fishing derby held at the juvenile ponds located along the Cle Elum River north of the Bull Frog bridge crossing. Members of the club had erected wooden walkways and guard rails over the fresh water ponds for a horizontal distance of approximately 100 feet. The ponds were stocked with trout by the Washington Fish and Game Department early each spring and a contest for children was held in the morning hours of the opening day of fishing season. This function was always well attended by members with children until about 1960.

Several Roslyn members also assisted annually with the distribution of Christmas candies during the Roslyn Fireman's visit by Santa Claus at the community tree on Pennsylvania Avenue every Christmas Eve. This event usually drew as many as 300 excited children.

One of the last projects to have been accomplished by some of the original members of the Cascade Field and Stream Club was the building of a wooden boat launch and dock at Bell Creek on Lake Cle Elum in the early 1950's.

Target shooting at the "Bull Frog Range" continued to be a popular event through the 1960's and 70's, often drawing participants from the 'Coast' on the west side of the Cascades, Idaho, and northern Oregon. Bench rest shooting had replaced the previously chosen standing only position by this time.

It was this writer's observation, while collecting data for this history, that the membership of the club dropped with the closing of the coal mines in the Roslyn field in the early 1960's. Interest did, however, continue and the club remained active through the 1970's and 80's.

Recently, data has been obtained from America's main office of the National Rifle Association showing five Cascade Field and Stream club members applied to establish club affiliation in June 1990. On August 22, 1990, the NRA issued senior club membership #I-7501 to the club. At the date of the affiliation and charter in 1990 it was recorded 285 members belonged to the club, with 67 being NRA members.

Officers of the newly chartered group were President Lionel Stewart, Vice President Jerry Morris, Secretary Ron Stewart, and Treasurer Louis Osmonovich, with Steve Rogers, Director.

Quite an interest in target shooting at the range resumed in the 1990's, the trapshooting area received much action, and a separate pistol range was constructed for the first time. Black powder muzzle loading events were initiated into the area, and a summer yearly rendezvous became an annual event staged

at the range. These gatherings attracted many participants who would camp at the site for a weekend. Annual children's fishing derbies at Lavender Lake resumed and continues to this day.

In June of 2001, the range was forced to cease shooting activities when Trendwest Resorts purchased the property from Plum Creek timber.

Excerpts from a Northern Kittitas County Tribune dated October 4, 2001 follows:

"Cascade Field and Stream Club Relocates"

"The Cascade Field and Stream Club has relocated their shooting range from the Trendwest property on Bull Frog Road to Hayward Hill approximately 12 miles east of Cle Elum.

With $50,000 in seed money, Trendwest helped the club identify and purchase 182 acres for a new site.

The club is now in the process of obtaining a conditional use permit from the county before moving ahead with the construction of the new shooting range.

In the past, the gun club's range was used by law enforcement for firearms training by the Sheriff's Office, police departments, and state patrol.

The club leased their previous location on 23 acres from Plum Creek Timber and then Trendwest....."

"Monty Miller, president of the Field and Stream Club said additional funds raised from annual auctions and lifetime memberships were used toward the purchase of the land. He said construction of the new range is expected to get underway next year. The new range will meet National Rifle Association specifications."

"We are thankful for Trendwest helping us. We couldn't have done it without them. We plan to start small and work our way up. This piece of property gives us room to grow," Miller said.

The club promotes outdoor recreation, firearms safety, and education classes."

Current officers of the club are: President Monty Miller, Vice President Mark Bennett, Secretary Duane Fluent, and Treasurer Paul Horish. There are currently 85 members in the club.

Exhibit A-3

At the end of writing this history of 'the Club,' I would like to take this opportunity to mention two people who were instrumental in making it possible for me to accomplish this: (1) My father, Pete Horish (1913-1996), the owner of the 'sedan' noted earlier who allowed me to tag along to the range and observe first hand events in the 1940's and 50's , and (2) my wife Lynn for typing assistance.

Pete Horish
February 2003

Exhibit A-3

Preliminary noise measurements for proposed Cascade Field & Stream firing range on Hayward Road

November 1, 2003

Andrew A. Piacsek, PhD
Assistant Professor of Physics
Central Washington University

Background

The Cascade Field and Stream Club (CSFC) have filed an application with the Kittitas County Planning Office to establish a practice firing range for shotguns, rifles, and handguns on a property owned by the club located on Hayward Road, approximately 1.5 miles north of the intersection with Highway 10. The property is identified as Township 19, Range 17, Section 21.

The present study consists of sound level measurements of typical rifle shots fired at the proposed range site; the objective is to provide a preliminary assessment of the environmental noise impact at the perimeter of the property and at residential sites up to three miles away, The measurements were recorded on September 16 and October 24 of 2003, using a type I sound level meter in accordance with WAC 173-58-030, -040, -050, and –060. Specific operating procedures are described below.

Geographical setting

The proposed firing range is located near the top of a ridge (see map in Appendix A). The direction of rifle fire is NNE, toward a hillside that is within 200 m of the shooter, henceforth referred to as the acoustic "source." The vegetation is predominantly shrub-steppe and the surrounding area is undeveloped. From the source, the nearest residence is approximately one mile distant, due south, and 100 m lower in elevation.

Procedure

Sound level measurements were made with a Quest model 1900 type I sound level meter (SLM) using the A-weighted frequency response. The 1/2 inch microphone was covered with a 6 cm diameter foam windscreen. Background noise level and wind speed were recorded for each measurement. Most measurements were made with the SLM set to the very fast "peak" time response (50 μs time constant). For comparison, some measurements were also made using the impulse response setting (30 ms time constant). A discussion of the definition and interpretation of these two settings appears in the Conclusions section. Calibration measurements were peformed before and after the field measurements on both days.

All gun shots were made with a 30.06 rifle operated by Paul Horish of the CFSC. The sound level meter was operated by Dr. Andrew Piacsek of CWU; written records were made by Dr. Piacsek, CWU student Greg Wagner, and Duane Fluent of the CFSC (time and wind speed).

A source level was measured at a distance of 30 m, perpendicular to the aim direction; both the peak and impulse settings were used. The source level can be used to predict sound levels at other distances using basic outdoor propagation models. Later in the report, these predictions are compared with measured sound levels to give an indication of "excess attenuation" levels due to environmental effects such as wind and terrain.

Sound level measurements were then recorded at various locations along the perimeter of the property, as well as locations more distant from the source. All the recording sites are listed in Table 1; these are also identified in the map provided in Appendix A. The perimeter

measurements were taken on September 16, which was a relatively windy day (wind speed often exceeded 12 mph); the wind noise that day precluded sound level measurements at more remote sites. A second round of recordings took place on October 24, when the maximum wind speed was about 5 mph.

A sound level measurement consisted of the following set of actions:

1. A receiving location was identified and described. The perimeter locations were described by GPS; the remote locations were described physically (e.g. "intersection of Bettas Rd. and Hayward Rd").
2. Background noise (usually wind, traffic, or flowing water) was observed and typical values were recorded.
3. When background noise was acceptably low (typically less than 50 dBA), communication by 2-way radio was established and a 10-second silent countdown commenced. The countdown was followed by a single rifle shot. A recording was made of the sound pressure level (SPL) meter reading that appeared after an audible shot. If no gunshot was heard, the countdown and shot were repeated.
4. For perimeter measurements, this procedure was performed twice at each location. Two shots were also fired at each remote location, but one shot was measured using the peak response and the second was measured using the impulse response setting.
5. The wind speed was recorded at the source for each shot. Unless otherwise noted, wind was from the West.

Measurements

All measurements are listed in Table 1, which shows the location, elevation, distance from source, wind speed, peak and impulse SPL, ambient sound level, and theoretical and actual attenuation for each set of sound level readings. The entry "NR" indicates that the corresponding measurement was not recorded, either because the measurement was not attempted or because environmental conditions precluded a satisfactory measurement. Some perimeter readings were taken twice; both values are recorded.

Table 1 includes measurements taken on September 16, as well as those taken on October 24. The 9/16 measurements were taken during the afternoon, between 2:30 and 4:30; the average temperature was 52° F, the humidity was 55%, and the average wind speed was about 12 mph, which is the upper limit for environmental noise studies, as specified in WAC 173-58-40. The 10/24 measurements were taken in the morning, between the hours of 10:00 and 12:00, with an average temperature of 52° F, humidity of 40%, and an average wind speed of 2 mph.

Table 1

ID	Location	elevation (feet)	distance (feet)	wind speed (mph)	peak SPL (dBA)	impulse SPL (dBA)	ambient noise (dBA)	Spread Loss (dB)	Actual Loss (dB)
1	30m E of source 9/16	2400	100	12	133	NR	NR	X	X
2	30m E of source 10/24	2400	100	1.5	129	110	NR	X	X
3	SE corner of property 47°06'16"N 120°42'32"W	2360	3500	1.6	74 78	NR	50	-31	-59
4	Property line E of source 47°06'42" N 120°42'33" W	2395	1000	13 12	96 95	NR	50	-20	-37
5	Highline canal bridge 47°07'06" N 120°42'46" W	2088	3500	10 12	67 72	NR	NR	-31	-66
6	On canal S of bridge 47°06'52" N 120°42'42" W	2092	4500	14	66	NR	55	-33	-67
7	NW corner of property 47°07'56" N 120°43'00" W	2432	2000	17	75	NR	NR	-26	-58
8	NE corner of property 47°07'55" N 120°42'32" W	2420	2000	15 13	80 86	NR	NR	-26	-53
9	Hayward Rd, crest of hill 500 ft. S of power lines	2480	3500	1.6	92	69	< 50	-31	-37
10	Hayward Rd. 1000 ft from Bettas Rd.	2520	5500	1.6	62	NR	< 50	-35	-67
11	Bettas Rd. .8 mile E of Hayward Rd.	2400	5500	3.0 S	62	NR	45	-35	-67
12	Pearson residence driveway N of house	2060	5500	2.5 S	81	66	< 50	-35	-48
13	Rte 10 at Swauk Cyn gate	1760	6000	3.0 S	58	NR	NR	-36	-71
14	driveway of #16530 Rte. 10	1850	4000	4.0 S	79	52	NR	-32	-50
15	Thorp Hwy 1/3 mi S Rte 10	1800	8500	5.2 S	<50	NR	50	-39	-79+
16	Thorp Hwy @ Yakima River	1680	9700	5.2 S	<58	NR	58	-40	-71+

The column labeled "Spread Loss" refers to the attenuation of sound due to geometric spreading. A rifle shot in an open environment can be considered a point source that spreads spherically, so that the pressure amplitude decreases as 1/r, where r is the distance from the source. Thus the attenuation (in dB) from some reference distance, r_{ref}, to the distance, r, where a measurement is made is given by Loss = 20 $\log_{10}(r_{ref}/r)$. This assumes flat terrain with no wind and a uniform temperature profile; windy conditions and hilly terrain will generally cause excess attenuation. The column labeled "Actual Loss" is the difference between the peak SPL recorded at the indicated location and the peak SPL at 100 feet (matched to the day of measurement).

Elevations recorded on 9/16 were obtained via GPS; those recorded on 10/24 were obtained from a contour map with 40 ft contour intervals (included in Appendix A). Distances from the source were obtained from the same map and are rounded to the nearest 100 feet.

The wind direction for measurements 1-10 was predominantlly West to East; for measurements 11-16, the wind was predominantly from the South.

Conclusions

The measurements described above should be considered preliminary. Only SPL was measured; the waveform was not recorded, nor was any spectral analysis conducted. Only one or two measurements of a single shot were made at each location, which does not provide sufficient information to characterize the day to day variation in sound level due to environmental changes (especially wind) or in the nature and number of sources. This study also does not attempt to provide a long-term characterization of the background noise levels at residential sites within audible range of the source.

The peak SPL measurements shown in Table 1 do provide a general idea of the sound level at the nearest residential locations (none closer than 4000 feet), as well as an indication of the effect of wind and local topography on the attenuation of sound from the proposed firing range site. A discussion of some specific results is given below.

It should be noted that the extremely short duration of the peak response time captures the absolute peak amplitude of a very brief event, such as a gunshot. In contrast, the impulse response computes an rms average of the signal over 35 ms; the shorter the acoustic event, the larger the disparity between these two methods of measuring amplitude. At 100 feet from the 30.06 rifle used in this study, the difference between the two response settings was 19 dB. The WAC does not specify which response setting to use, but clearly the two numbers cannot be casually compared. Since the impulse response more closely resembles the response of the human ear, this is the more appropriate metric for establishing compliance with noise ordinances. We have chosen to measure primarily the peak response in this study because this quantity is more sensitive to differences in the sound propagation due to wind speed, wind direction, topography, etc, thereby allowing to study the practical effects of these variables.

The peak response is sensitive to wind speed, since high winds can "smear out" an acoustic signal, transforming a tall narrow spike into a shorter, rounder spike; the impulse response will not be sensitive to this broadening of the peak. This is illustrated by the observation that the peak SPL at site #7 (2000 feet NNW of the source) was 17dB *less* on a windy day than the SPL at site #9 (3500 feet NNW of the source) recorded on a calm day. Both sites are partly upwind from the source. Another factor contributing to this disparity is the difference in elevation.

A second example of the importance of wind speed when taking peak response measurements is seen in the comparison of the 66 dBA reading at site #6 (4500 feet S of source) on a windy day with the 81 dBA reading at site #12 (5500 feet S of source), taken on a calm day.

The importance of topography is very clear from the data. The reading at site #12 is relatively high because this location has a line of sight to the source; there are no significant hills or humps in between to block the direct sound path. In contrast, readings at sites #10 and #11 are almost 20 dB less, even though they are the same distance from the source (and more in the line of fire). However, the ground rises at least 60 feet between the source and Bettas Rd., interfering with the direct sound path. According to the contour map in Appendix A, this appears to be true for all areas north of the proposed firing range (between NW and NE of the source). Site #13 is due West of the source, but the canyon walls jut out to block the line of sight; it is also 640 feet lower

in elevation and is generally upwind of the source. This site had the largest excess transmission loss of all the calm day measurements. Site #14 is 4000 feet SW of the source and has a direct transmission path; only site #12 was louder at a comparable distance.

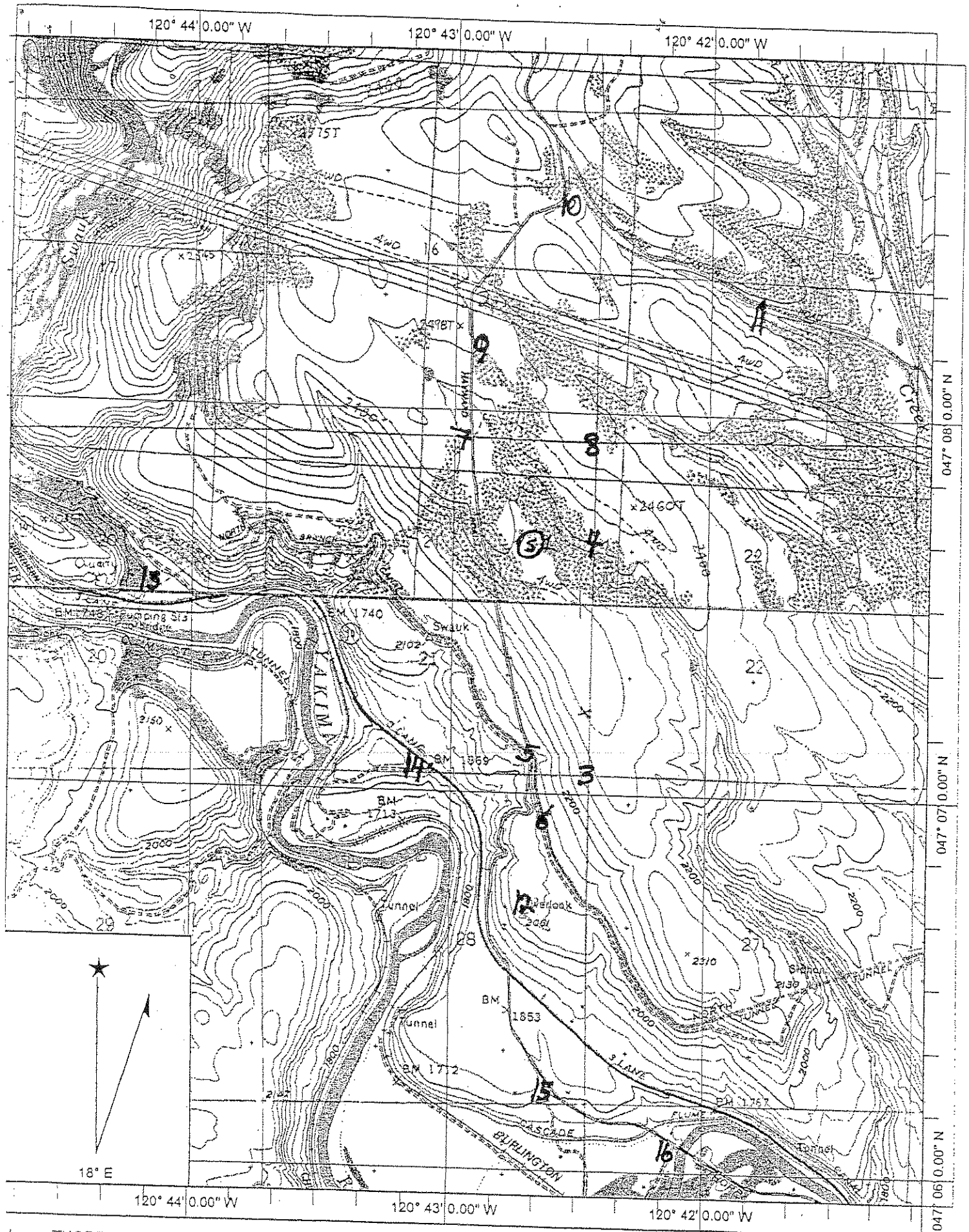
Two sites on N. Thorp Highway were investigated (sites #15 and #16), since there are several residences along this road, but the gunshots were inaudible at both locations. This road, and all the houses along it, are on a relatively steep south-facing slope, so that there is no line-of-sight to the firing range. These two locations are also the most remote among those studied. Because the gunshots were inaudible at these locations, it was considered unnecessary to take readings at sites in the Ellensburg Ranches area, which is more remote from the source (with undulating terrain in between).

Lastly, it should be noted that at the residental site (#12) with the loudest reading, the impulse response measurement was less than 70 dB. The measured 66 dBA will likely vary with wind conditions, but not nearly as much as the peak response measurements do.

Summary

The peak response SPL measurements show that there is a large amount of excess attenuation of gunshot sounds at locations west and north of the proposed firing range; this is primarily due to sound blockage by the terrain. The impulse response measurements at the few residential locations south of the firing range that have a direct sound path were less than 70 dB, which is the maximum level specified for class C areas specified in WAC 173-60-030. It should be noted that multiple simultaneous shots may exceed this level. Test gunshots were not audible above background noise at two locations on N. Thorp Hwy. Residential areas to the east of the firing range (e.g. Ellensburg Ranches area) are more 2.5 miles away, with no direct sound path (based on contour maps). Measurements taken at similar locations on days with very different wind speeds show that noise levels from the firing range will be greatest on very calm days.

These preliminary measurements suggest that the proposed firing range is likely to meet WAC community noise standards.



Name: THORP
Date: 2/7/2001

Location: 047° 07' 26.7" N 120° 42' 55.1" W

State of Washington
DEPARTMENT OF FISH AND WILDLIFE
Mailing Address: 600 Capitol Way N • Olympia, WA 98501-1091 • (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building • 1111 Washington Street SE • Olympia, WA

November 26, 2001

Mr. Mark Bennet
1581 White Road
Cle Elum, Washington 98922

Dear Mr. Bennet:

Enclosed is a data retrieval from WDFW's corporate wildlife data bases pertaining to your shooting range in Section 21 of Township19 Range 17E. I fear you may have been misled or have unrealistic expectations regarding the depth of data available from WDFW on a project area basis. WDFW has committed significant wildlife use area for priority species to a variety of databases, but does not have a running annual tally of wildlife use for small-scale areas.

The data retrieval has been highlighted by me to emphasize polygons of potential interest for your project. This is the extent of the location specific data I have access to. If you need more detail, you might contact the biologists listed in the source fields of the retrieval. I believe most of them report to the Yakima office. I hope this is helpful.

Sincerely,

Tom Owens, Manager
Wildlife Surveys, Data Management Section

TO:tl

Enclosures

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE - HABITATS AND SPECIES REPORT
IN THE VICINITY OF T19R17E SECTION 21
Report Date: November 21, 2001

This map contains the following species and/or habitat locations that are deemed sensitive by the Washington Department of Fish and Wildlife Sensitive Fish and Wildlife Policy.

PHS CODE/ SPPCODE	COMMON NAME	USE CODE	USE DESCRIPTION
FAME	PRAIRIE FALCON	B	BREEDING OCCURRENCE

PHS POLYGON FORM LIST - CROSS REFERENCE REPORT
IN THE VICINITY OF T19R17E SECTION 21

PHSPOLY#	FORM NUMBER/ PHS CODE*USE CODE
2	901285-901286 ODHE*RLC-CEEL*RC-
3	901285-901286-901294 ODHE*RLC-CEEL*RC-OAK*-
4	901251 ODHEH*RLC-
5	901285-901293 ODHE*RLC-ODHE*RLC-
6	901285-901293-901294 ODHE*RLC-ODHE*RLC-OAK*-
7	901285-901293 ODHE*RLC-ODHE*RLC-
8	901285-901293 ODHE*RLC-ODHE*RLC-
9	901285-901293-901741 ODHE*RLC-ODHE*RLC-CLIFF*-
10	901285-901293-901741 ODHE*RLC-ODHE*RLC-CLIFF*-
11	901285-901293-902884 ODHE*RLC-ODHE*RLC-RIPAR*-
12	900000 *-
13	902884 RIPAR*-
14	900000 *-
15	902884 RIPAR*-
16	900000 *-

PHS POLYGON - SPECIES AND HABITAT LIST

PHS FORM#	PRIORITY	PHS CODE	COMMON NAME	USE CODE	USE DESCRIPTION
900,000					
901,251	YES	ODHEH	MULE DEER	RLC	REGULAR LARGE CONCENTRATION
901,285	YES	ODHE	MULE AND BLACK-TAILED DEER	RLC	REGULAR LARGE CONCENTRATION
901,286	YES	CEEL	ELK	RC	REGULAR CONCENTRATION
901,293	YES	ODHE	MULE AND BLACK-TAILED DEER	RLC	REGULAR LARGE CONCENTRATION
901,294	YES	OAK	OAK WOODLAND		
901,741	YES	CLIFF	CLIFFS/BLUFFS		
902,884	YES	RIPAR	RIPARIAN ZONES		

Form number 900000 indicates presence of PHS is unknown or the area was not mapped. Form numbers 909998, 909997, or 909996 indicate compilation errors.

YES under the "PRIORITY" column indicates that the species or habitat is considered a priority and is on the Priority Habitats and Species List and/or the Species of Concern List.

WILDLIFE HERITAGE POINT - SPECIES LIST AND REPORT
IN THE VICINITY OF T19R17E SECTION 21

QUADPT	PRIORITY	SPPCODE	COMMON NAME	USE CODE	USE DESCRIPTION
4712026021	YES	FAME	PRAIRIE FALCON	B	BREEDING OCCURRENCE

YES under the "PRIORITY" column indicates that the species or habitat is considered a priority and is on the Priority Habitats and Species List and/or the Species of Concern List.

quadpt: 4712026021 sppcode: FAME use: B name: PRAIRIE FALCON
year: 1991 class: SA accuracy: C state status: SM fed status:
township - range - section: T19N R17E S20 SEOFNW occur#: 263 seqno: 1
general description:

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE - PHS POLYGON REPORT
Report Date: 11/21/2001

form: 901,251 species/habitat: ODHEH species use: RLC season: WS S accuracy: 1
sitename: ELLENSBURG MULE DEER WINTER RANGE
general description:
MULE DEER WINTER RANGE-ELLENSBURG, POLYGON IS 90% OF HERD WINTER RANGE

source: MUSSER, JOHN MCKEEL, ROGER BRACKEN, EDD LANDRIE, LONNIE WDW
date: 071090 code: PROF
synopsis:
FIELD OBS, TRADITIONAL SURVEYS

form: 901,285 species/habitat: ODHE species use: RLC season: WS accuracy: 2
sitename: SWAUK PRAIRIE DEER WINTER RANGE
general description:
MULE DEER WINTER RANGE, MORE THAN 200 DEER IN WHEAT FIELDS, PLUS DEER IN TIMBER

source: ROGERS, STEVE, DIST. WILDLIFE AGENT WDW
date: 071990 code: PROF
synopsis:

form: 901,286 species/habitat: CEEL species use: RC season: WS S accuracy: 2
sitename: LOOKOUT MOUNTAIN ELK WINTER AREA
general description:
ELK WINTER AREA - LOOKOUT MOUNTAIN NOT MORE THAN 50 HEAD

source: ROGERS, STEVE, DIST. WILDLIFE AGENT WDW
date: 071990 code: PROF
synopsis:
FIELD OBSERVATIONS, MORE THAN ONE YEAR

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE - PHS POLYGON REPORT
Report Date: 11/21/2001

form: 902,884 species/habitat: RIPAR species use: season: accuracy: 1
sitename: YAKIMA RIVER
general description:
RIPARIAN AREA-YAKIMA RIVER FROM YAKIMA CANYON UPSTREAM TO SWAUK CREEK; INCLUDES MANY WETLANDS AND FLOODPLAIN; BALD EAGLE WINTERING AREA (25-30 EAGLES); GOOSE NE ST AREA (100 NESTS), OSPREY NESTS; CAVITY NESTING DUCKS

source: STREAM, LEE WDW FORD, TIM WDW
date: 90 code: WTRAN
synopsis:
BALD EAGLE WINTERING SURVEY

source: FORD, TIM; ESSMAN, BILL WDW
date: 041091 code: PROF
synopsis:
FIELD OBSERVATIONS DURING PATROL

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
PRIORITY ANADROMOUS AND RESIDENT FISH PRESENCE REPORT FROM THE STREAMNET DATABASE
IN THE VICINITY OF T19R17E SECTION 21
Report Date: November 21, 2001

RIORITY ANADROMOUS FISH PRESENCE

ODE	COMMON NAME	STREAM NAME	STREAM LLID	RECORD DATE	SOURCE
HSP	Spring Chinook	Swauk Creek	1207370471233	05-12-97	P. Harvester,WDFW
TSU	Summer Steelhead	Swauk Creek	1207370471233	05-02-97	P. Harvester, WDFW
HSP	Spring Chinook	Yakima River	1192269462537	05-12-97	P. Harvester,WDFW
TSU	Summer Steelhead	Yakima River	1192269462537	05-02-97	P. Harvester, WDFW

'RIORITY RESIDENT FISH PRESENCE

'ODE	COMMON NAME	STREAM NAME	STREAM LLID	RECORD DATE	SOURCE
RBT	Rainbow Trout	Swauk Creek	1207370471233	06/12/92	WDFW Staff
RBT	Rainbow Trout	Yakima River	1192269462537	06/12/92	WDFW Staff
DET	Dolly Varden/Bull Trout	Swauk Creek	1207370471233	08-21-00	Eric Anderson, WDFW
DBT	Dolly Varden/Bull Trout	Yakima River	1192269462537	08-21-00	Eric Anderson, WDFW

The fish information in this report only includes information that Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. This information only documents the location of important fish resources to the best of our knowledge. It is not a complete inventory of the fish species in the state. Fish are identified as priority by WDFW if they meet one of three criterion as listed in the Priority Habitats and Species List. The list is available by contacting WDFW Priority Habitats and Species section at (360)902-2543 or it is available on our web site at http://www.wa.gov/wdfw/hab/phspage.htm. To insure appropriate use of this information users are encouraged to consult with WDFW biologists.

Exhibit 6

An Investigation of Rare Plant Resources Associated with the Proposed Kittitas Valley Wind Power Project

TABLE OF CONTENTS

EXHIBIT B

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

Velikanje | Moore & Shore, P.S.
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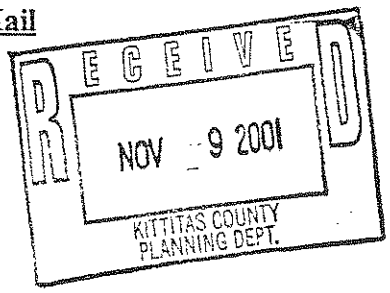
Brendan V. Monahan
Kevan T. Montoya
Nancy L. Livingston

Metiner G. Kimel
Travis W. Misfeldt
Garon K. Jones
James S. Elliott
J. Gabriel Ibarra
Sarah L. Wixson

E. Frederick Velikanje
of counsel

By Fax (509) 962-7697 and First Class Mail



November 8, 2001

Mr. Chad Bala
Kittitas County Planning Department
411 N. Ruby Street, Suite 2
Ellensburg, WA 98926

RE: Cascade Field and Stream Club CUP Application and SEPA checklist

Dear Mr. Bala:

This office represents Edward Pearson. Mr. Pearson is the owner of real property and a residence located at 15087 Highway 10, Ellensburg, WA 98926-8133. As the map attached to the CUP application and SEPA materials that Mr. Pearson received recently illustrates, Mr. Pearson owns the property immediately south of the site upon which the Cascade Field and Stream Club (hereinafter "Applicant") proposes to build a facility to replace a former facility on Bullfrog Road.

Mr. Pearson has asked us to review the materials he received late last month relating to Applicant's proposed facility and to provide comments on those materials. The remarks that follow represent our best efforts to glean from Applicant's sparse statement of anticipated environmental impacts, as contained in the Environment Checklist (hereinafter "Checklist") filed herein, some sense of the probable environmental impacts of the development that Applicant proposes. The remarks that follow are also intended to comment on the County's expected issuance of a Determination on Non-Significance (hereinafter "DNS") with respect to Applicant's proposed development based only on the rudimentary and speculative description of the project that is contained in the Checklist.

As argued more fully below, the development proposed by Applicant presents several obvious probable significant environmental impacts that have not been addressed by Applicant, such that the issuance of a DNS is inappropriate here. Further, it is contended that the development of any project of the type contemplated by this application on the site currently proposed by Applicant would be inappropriate without significant mitigation measures that have yet to be offered by Applicant here.

Basic Precepts of SEPA's Requirements and Compliance Therewith

Because the comments that follow derive significantly from the theoretical principles upon which the State Environmental Protection Act (hereinafter "SEPA") rests, a brief description of SEPA's requirements in the context of the County's anticipated action here is warranted. As the Washington

Specific Comments on Checklist Contents

It is Mr. Pearson's position that the County cannot possibly comply with the mandates of SEPA by issuing a negative threshold determination based on an independent review of the Checklist that Applicant here has provided. In particular, the following objections are registered:

- **The Project is Not Properly Defined** - Agencies conducting environmental review "shall make certain that the proposal that is the subject of environmental review is properly defined". WAC 197-11-060(3)(a). Here, Kittitas County apparently intends to conduct a single environmental review of a project that is described by Applicant as consisting of "Short Term Plans"; "Midterm or Intermediate Plans"; and "Long Term Plans". It is impossible to tell from Applicant's Checklist and application materials whether a part or the whole of these "Plans" are currently offered for environmental review, such that the project under review is not properly defined.

  Given the scope and nature of the project proposed, it is contended that Applicant should be required to supplement its Checklist to provide, at a minimum: (a) a site plan setting forth the precise project that is currently proposed; (b) a detailed narrative describing its intended build-out schedule, including, if applicable, a statement that environmental review will be phased over the course of that build-out; (c) a list of events that are expected to be held by Applicant on a regular basis; (d) a statement of anticipated hours of operation and peak use, including a schedule of events that are expected to be held by Applicant on a regular basis; and (e) a statement as to whether it anticipates that persons other than members of Applicant will use the facility.

- **The Information Provided by the Applicant on the Checklist is Incomplete, Such That Any DNS Issued Here Will Have to be Withdrawn Upon Challenge** - A lead agency must base its threshold determination "upon information reasonably sufficient to evaluate the environmental impact of a proposal", Moss v. City of Bellingham, — Wn.App. —, 31 P.3d 703, 708 (2001) (citing WAC 197-11-335), and a lead agency that issues a DNS shall withdraw the DNS if the DNS was procured by "misrepresentation or lack of material disclosure." WAC 197-11-340(3)(a)(iii).

  In addition to the wide variety of probable significant adverse environmental impacts that are associated with this project and described below, though not described in Applicant's Checklist, the Checklist and other materials submitted by Applicant here are replete with misrepresentations and material non-disclosures. For instance, Applicant represents that its proposed development "will be only [sic] shooting range in county" when, in fact, an outdoor shooting range already exists near the Kittitas County Airport and an indoor pistol range exists at the Kittitas County Trading

Company. Further, the Checklist indicates that no part of the site has been classified as an environmentally sensitive area, when, in fact, the Planning Department's own Preliminary Site Analysis Form indicates that the site is within a Fish and Wildlife Habitat Conservation Area. Finally, the Checklist indicates that waste materials cannot enter ground or surface waters, when, in fact, the proposed site is located in an area of significant spring run-off which drains into the Yakima River.

- **SEPA Requires that the Entire Plan be Considered as One Project** - Under state SEPA rules, it is mandated that "proposals or parts of proposals that are related to each other closely enough to be, in effect, a single course of action shall be evaluated in the same environmental document". WAC 197-11-060(3)(b). Here, Applicant intends to make no fewer than twenty-eight (28) improvements and alterations to the subject property, in the Applicant's own words, "ASAP". Thus, irrespective of whether Applicant truly and sincerely believes "it will take (it) many years to realize the potential of our property and to achieve the goals we envision", it is incumbent upon the County to evaluate the sum of Applicant's "goals" under SEPA now.

  Simply put, the entire project contemplated by Applicant will result in wholesale changes to sensitive physical and tranquil human environment, and these changes have not been sufficiently identified, let alone discussed or mitigated, by Applicant. For instance, Applicant's proposed build-out will clearly require large scale road and structural construction activities on the subject site, but the limitations imposed upon those activities by the site's rolling topography and sensitive ecology has not been identified or discussed. Further, Applicant's proposed build-out will clearly require the development of a source of water, but Applicant provides neither a discussion of water availability nor an evaluation of water supply alternatives in its Checklist. Finally, Applicant's proposed build-out will clearly require a long-term waste treatment strategy, but no such waste treatment strategy is identified or discussed.

- **Whether Considered as One Project or as Several Projects, Applicant's Proposed Development Has Dozens of Probable Significant Environmental Impacts** - Applicant's proposed project has, at minimum, the following probable significant environmental impacts, as grouped below by environmental element:

  - **Earth** - In addition to the build-out considerations raised above, Applicant's checklist indicates a maximum grade of 45% on the subject property, but Applicant nonetheless maintains that no erosion could occur as a result of the clearing, construction, or use thereof. Clearly, erosion could occur as a result of development on this lot, such that Applicant should be made to address this element more fully before the expected DNS can properly issue.

- **Air** - Applicant proposes to develop a shooting range that will require one hundred (100) parking spaces, but maintains that the only emission to the air that will result from the development is dust. It is more probable that, in addition to dust, automobile exhaust and smoke from campfires, cookouts and discharging firearms will increase in this area as a result of the proposed project, and these impacts must be addressed before a DNS may issue.

- **Water** - In addition to the water source considerations raised above, the proposed project will result in significant environmental impacts to both the Yakima River, which receives spring run-off from the subject property, and the KRD irrigation canal that run through the subject property. These impacts are not mentioned, let alone addressed, in Applicant's materials here, such that a DNS may not properly issue on an independent review of those materials.

- **Plants** - Applicant indicates an intention to build a firebreak around the subject property, but makes no mention of plant impacts occasioned by construction of the same. Also, Applicant indicates an intent to build no fewer than seven shooting ranges; camping and RV facilities; several permanent structures, conforming, in at least one case, to National Rifle Association standards; and a parking lot for one hundred (100) cars but maintains that its activities will affect merely two percent (2%) of the plants currently existing on the site. Again, an independent review of this proposal and Checklist provided by Applicant cannot yield a DNS, as it is plain that Applicant intends to impose upon an area of environmental sensitivity changes of significant magnitude.

- **Animals** - Planning Department's Preliminary Site Analysis Form indicates that the subject property is winter range for Ellensburg mule deer, and Applicant's intended use of the subject property will involve a significant amount of noise and shooting. In light of these two considerations, it is difficult to reach see how the operation of a shooting range could not adversely affect the mule deer's use of the subject property as winter range. Further, no attempt is made by Applicant to address the almost certain impact to neighboring properties when mule deer that currently winter on the proposed site of this project migrate off that site to avoid the noise and human disruptions on that site. Finally, Applicant makes no effort to assess or address the probable impacts of a shooting range on domestic animals and grazing activities in the surrounding area. Applicant has failed to address these probable significant environmental impacts in its Checklist.

- **Public Services** - Applicant states that increased fire protection will be necessary but neither indicates whether the subject property is within a fire district nor provides any statement as to how that increased fire protection will be obtained. In addition to increased fire protection services, however, it is to be expected that other public services, such as emergency medical services and the services of the sheriff's department will occasionally be required on this property with greater frequency than is now required. As Applicant makes no effort to describe or mitigate the anticipated impacts that its development will have on these services, a DNS may not issue here.

- **Noise** - Applicant's discussion of noise impacts is wholly inadequate. First, as anyone who lives within proximity of Kittitas County's current outdoor shooting range knows, a outdoor shooting range in Kittitas County is audible all weekend, every weekend. Further, given the regularity with which state law enforcement personnel are acknowledged to have used Applicant's Bullfrog Road location, it is reasonably anticipated that this shooting range will be audible, from its ridge top location, for miles in every direction all day most every day. Finally, as there is no reason to believe that Applicant, once approved for the proposed development, will not try to provide some facility for shooting at night, it must be reasonably anticipated that noise from its facility will be generated in the night time hours as well. It is contended that Kittitas County must conduct a noise analysis with respect to this project before any threshold determination may be properly issued in this matter.

- **Aesthetics** - While the elevation of the subject property has undoubtedly contributed to the desirability of the property from Applicant's point of view, that same characteristic creates the possibility that activities on the property will diminish the view aesthetics of surrounding properties, in particular if Applicant decides to light any part of property for night shooting. Kittitas County should insist, at a minimum, upon a statement from Applicant as to whether Applicant intends to light any part of the subject property, and should evaluate any mitigation strategies relating to view and light/glare tendered by Applicant before a negative threshold determination is proper here.

- **Transportation** - Applicant apparently intends to provide access to a shooting range serving three hundred (300) members as well as members of the state's law enforcement community on a bladed single track road, as the Checklist submitted here indicates that no new roads or improvements to existing roads will be necessary to the project's completion. Further,

Applicant makes no effort to estimate how many new vehicular trips this project will generate, whether on Hayward Road, Bettas Road, or Highway 97. Obviously, a project of this magnitude cannot be determined to be without significant environmental impact under SEPA without traffic studies demonstrating that levels of use on these roads will not rise to unacceptable levels. Hence, a DNS cannot issue here until traffic studies are done.

- **The County Failed to Notify all Affected Parties and Agencies** - On the maps submitted by Applicant with its Checklist and/or application materials, it is noted an irrigation canal flows along the western edge and southern margin of the property proposed for development by Applicant. The subject irrigation canal is owned and maintained by Kittitas Reclamation District (hereinbefore "KRD"), but the Kittitas County Planning Department letter that covers the materials provided to Mr. Pearson does not indicate that KRD was provided with any notice of the proposed project.

  The County's failure to notify KRD of the proposed action on land through which its canal flows is a serious procedural omission which would subject any DNS issued here to reversal on appeal, even under Kittitas County's SEPA appeal ordinance. As is known to all who live around KRD's highline canal through this area, the canal, beyond providing a conduit for the dispersion of waste from the shooting range, poses a deadly hazard to dogs and, potentially, children and adults, because the canal disappears into the ground in several places. KRD should have an opportunity to address these concerns to the County itself, and the County's apparent failure to provide KRD with notice of its intended action has deprived KRD of that opportunity.

Conclusions

As the forgoing analysis amply illustrates, the Applicant's Checklist is inadequate and a DNS based solely thereupon is inappropriate and inconsistent with the letter and spirit of SEPA. The proposed project demands careful and considered review, and it is hoped that Kittitas County will provide a comprehensive review of this project that is consistent with its scope, rather than simply blessing, through a hastily issued DNS, a project that clearly requires further definition and study.

Very Truly Yours,

VELIKANJE, MOORE & SHORE, P.S.

TRAVIS W. MISFELDT

EXHIBIT C

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

Velikanje | Moore & Shore, P.S.
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VMS

John S. Moore
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Garon K. Jones
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By FAX (509) 962-7682 and First Class Mail

December 14, 2003

Mr. David Taylor, Planning Director
Kittitas County Community Development Services Department
411 N. Ruby Street, Suite 2
Ellensburg, WA 98926

RE: Current Cascade Field and Stream Club CUP Application and SEPA checklist

Dear Mr. Taylor:

This office represents John Winnett. Mr. Winnett is a Cle Elum businessman who owns real property and a residence located at 1421 Emerick Road, Cle Elum, WA 98922. Mr. Winnett's home is located in the immediate vicinity of a facility that the Cascade Field and Stream Club (hereinafter "Applicant") has proposed to build in each of the last three years to replace a former facility on Bullfrog Road.

Introductory Comments

It appears from Applicant's materials that this is Applicant's fourth similar application. Despite requesting notice of future applications from this Applicant, we did not receive a copy of whatever application was filed in May, 2002, or April, 2003. We do have Applicant's 2001 application, which we reviewed for Edward Pearson. As review of our comments for Mr. Pearson will indicate, we took the position in 2001 that our ability to offer cogent comments on that application was severely limited by the Applicant's ambiguous description of the actual, present-day proposal made in its application.

Applicant's current application suffers from the same infirmity and should be rejected out of hand as insufficient or incomplete. As the Washington Supreme Court in Sisley v. San Juan County, 89 Wn.2d 78, 569 P.2d 712 (1977) stated, at 82-83:

> A basic purpose of SEPA is to require local governmental agencies, including counties, to consider total environmental and ecological factors to the fullest extent when taking "major actions significantly affecting the quality of the environment". ... Such actions require preparation of an EIS. Where, as here, the governmental action consists of issuing permits for a private project, we have employed a two-step analysis in determining whether there is a "major actions significantly affecting the quality of

> the environment". First, the nature or character of the "action" must be considered. Thereafter, the "significance" of the action's impact must be examined to determine its effect on the quality of the environment.
>
> (Citations omitted).

A governmental agency's approval of private projects by the granting of permits constitutes an "action" within the meaning of SEPA. See Id., at 83 (citations omitted). Given the skeletal and future-directed nature of Applicant's proposal, however, we do not see how your office can possibly determine whether the impact of granting the requested permit is "significant" or not. While we contend that a firing range to be used, at minimum, for target practice, shooting events, hunter safety instruction, and law enforcement training has numerous probable and significant environmental impacts that are not addressed in Applicant's materials, a permit application that does not identify a concrete present proposal cannot be granted because the absence of a clear and present proposal renders impossible the significance determination that the County is required to make under SEPA.

Further, the paucity of environmental documentation provided by Applicant will render any threshold determination that is made subject to successful challenge under applicable SEPA principles. A correct threshold determination is vitally important to SEPA's effectiveness as the public policy underlying SEPA is thwarted whenever an incorrect threshold determination is made. Norway Hill v. King County Council, 87 Wn.2d 267, 273, 552 P.2d 674 (1976). Thus, it has long been the rule in this state that:

> if after considering the cumulative effects of the entire project, the government agency makes a determination of no significant impact under SEPA, i. e., a "negative threshold determination," it must show "that environmental factors were considered in a manner sufficient to amount to prima facie compliance with the procedural requirements of SEPA."
>
> Sisley, 89 Wn.2d at 84 (citations omitted).

Our review of the application indicates that the Applicant has provided your office with a preliminary noise study and a number of environmental documents developed for another project in support of its application. As just indicated, the noise study states on its face that it is preliminary and, furthermore, suffers from several salient flaws, which are discussed below. On the other hand, the public domain wind farm environmental documentation provided by Applicant contains no information regarding the effects of a firing range on the matters addressed in that documentation. Further, the provided documentation gives no indication that the probable significant environmental impacts of a wind farm are comparable to those of a firing range. Again, Applicant should be made to identify a project for review and then provide environmental study relating to that project.

Next, it is noted that SEPA requires an *independent* review of the checklist submitted by applicant, such that blind acceptance of representations made by the Applicant here will be insufficient to support issuance of a DNS in this case. In making a threshold decision, the responsible official "shall review the environmental checklist, ... (i)ndependently evaluating the responses of any applicant...." WAC 197-11-330(1)(a). This requirement of independent review is manifest in SEPA law, see, e.g., Brown v. City of Tacoma, 30 Wn. App. 762, 765, 637 P.2d 1005 (1981), such that it is expected that Kittitas County will observe this requirement of SEPA in making its threshold determination here.

SEPA's requirement of independent review is raised because our client is concerned that Kittitas County has this project on the fast track for reasons that are not clear to him. He is concerned that Applicant appears to have had access to the planning department in developing these applications while he cannot get a phone call returned. He is also concerned that Mr. Bala, the planner who worked on this file with Applicant, left your office in November, 2003, and was not replaced on this file until the middle of December, 2003. Finally, he is concerned that your office's original notice mailing missed our client and no fewer than twenty other people that had requested notice in 2001, but that your office's correction of that oversight involved only the mailing of notice to him.

Finally, he is concerned, as we are concerned, that Applicant is being allowed to file serial CUP applications under the same filing fee and application signature. We assume your office has accepted Applicant's application because its previous application(s) were returned to Applicant as incomplete. While it may be your office's policy to allow an applicant to complete and resubmit an application returned as incomplete, we believe this practice is contrary to law, see Graham Thrift Group, Inc. v. Pierce County, 75 Wn.App. 263, 877 P.2d 228 (1994) and KCC 17.60.040, particularly where, as here, the application in question was initially determined to be incomplete two years ago and has been resubmitted twice already, at least by reference to the materials filed with this application.

While Applicant has been allowed to save a few dollars by refiling without a new fee, Mr. Winnett and other similarly situated have spent time and incurred expense in preparing comments with each of Applicant's re-applications. Consequently, and in fairness to the persons similarly situated with Mr. Winnett and adversely affected by a firing range at the proposed location, we think that, if the application can be treated as continuing and cumulative, the comments made with respect to that application ought to receive the same treatment, particularly in the face of the uncertainty that existed as to whether citizens that requested notice of this application were properly notified. Thus, we contend that this application should be considered in light of all the comments that have been received with respect to a firing range on Applicant's Hayward Road property from 2001 to the present.

Specific Comments on Checklist Contents

The County cannot possibly comply with the mandates of SEPA by issuing a negative threshold determination based on an independent review of the Checklist that Applicant here has provided. In

particular, the following comments and objections are made and registered:

- **The Project is Not Properly Defined** - Agencies conducting environmental review "shall make certain that the proposal that is the subject of environmental review is properly defined". WAC 197-11-060(3)(a). In this case, Kittitas County is being asked to conduct a single environmental review of a project that is described by Applicant as consisting of "Short Term Plans"; "Midterm or Intermediate Plans"; and "Long Term Plans". It is impossible to tell from Applicant's Checklist and application materials whether a part or the whole of these "Plans" are currently offered for environmental review, such that the project under review is not properly defined.

  Though Applicant's project is far from adequately defined, several facets of Applicant's intent are apparent between the lines, and each of these facets have environmental dimensions that must be considered in acting on this application. For instance, Applicant's club history indicates that Applicant currently has approximately eighty five members, yet Applicant is requesting one hundred parking spaces.

  Presumably, these extra spaces are intended to accommodate non-members at shooting events or law enforcement personnel at training exercises or students attending Applicant's hunter safety offerings. Yet Applicant requests permission from the County for all of this activity without intending, at least in the short term, to erect berms, barricades, or baffles as may be necessary for safe range operations, which are identified as midterm or intermediate plans in Applicant's materials. Applicant should be required by the County to comply with safety standards established by some objective resource, such as the NRA Range Source Book, prior to issuance of any permit here, particularly when Applicant intends to invite non-member Kittitas County citizens on to its property for shooting competitions and/or educational activities.

  In 2001, this office, on behalf of Edward Pearson, suggested that Applicant should be required to supplement its Checklist to provide, at a minimum: (a) a site plan setting forth the precise project that is currently proposed; (b) a detailed narrative describing its intended build-out schedule, including, if applicable, a statement that environmental review will be phased over the course of that build-out; (c) a list of events that are expected to be held by Applicant on a regular basis; (d) a statement of anticipated hours of operation and peak use, including a schedule of events that are expected to be held by Applicant on a regular basis; and (e) a statement as to whether it anticipates that persons other than members of Applicant will use the facility. None of these issues are explicitly addressed in Applicant's current application, but the County must have these issues addressed before that application can be approved.

- **The Information Provided by the Applicant on the Checklist is Incomplete, Such That Any DNS Issued Here Will Have to be Withdrawn Upon Challenge -** A lead agency must base its threshold determination "upon information reasonably sufficient to evaluate the environmental impact of a proposal", Moss v. City of Bellingham, 109 Wn.App. 6, 14, 31 P.3d 703 (2001) (citing WAC 197-11-335), and a lead agency that issues a DNS shall withdraw the DNS if the DNS was procured by "misrepresentation or lack of material disclosure." WAC 197-11-340(3)(a)(iii).

  In addition to the wide variety of probable significant adverse environmental impacts that are associated with this project and described elsewhere in this letter, Applicant's Checklist and the other materials submitted by Applicant here are replete with misrepresentations and material non-disclosures. For instance, the Checklist indicates that the Applicant's property is not part of a migration route, but the West, Inc., study submitted with this application indicates that parts of the areas studied therein were designated by the Washington Department of Fish and Wildlife ("WDFW") as winter range mule deer and elk, and the Planning Department's Preliminary Site Analysis Form from the 2001 application indicates that this site is within a Fish and Wildlife Habitat Conservation Area. Further, the Checklist indicates that no known or threatened species are known to be on or near the site, yet the Biological Assessment ("BA") submitted by Applicant indicates that a variety of listed species are found in Kittitas County and that development in addition to the proposed wind farm studied in the BA may contribute to cumulative effects on bald eagles that use this area.

- **SEPA Requires that Applicant's Entire Plan be Considered as One Project, and that the Cumulative Effects of this Project and Proposed Wind Farm Projects be Considered Together -** Under state SEPA rules, it is mandated that "proposals or parts of proposals that are related to each other closely enough to be, in effect, a single course of action shall be evaluated in the same environmental document". WAC 197-11-060(3)(b), and that cumulative impacts from such proposals be considered together. Here, Applicant intends to make no fewer than twenty-eight (28) improvements and alterations to the subject property over a period of years. Further, as Applicant concedes by using wind farm environmental documentation in support of its proposal, these improvements are proposed to occur on Applicant's property while a wind farm is being developed on that and surrounding property.

  Applicant's project, as built out over the years, will result in wholesale and irreversible changes to a sensitive physical and tranquil human environment. These changes may occur with simultaneous significant environmental changes relating to wind farm operations in the same and surrounding area. The probable significant environmental impacts associated with the proposed firing range have not been sufficiently identified,

let alone discussed or mitigated, by Applicant, either as related solely to the firing range proposal or in the context of wind farm development. We contend that these impacts must be studied, both standing alone and in the context of wind farm operations, before the County can issue a threshold determination under SEPA.

- **Whether Considered as One Project or as Several Projects, Applicant's Proposed Development Has Dozens of Probable Significant Environmental Impacts** - Applicant's proposed project has, at minimum, the following probable significant environmental impacts, as grouped below by environmental element:

  - **Earth** - In addition to the build-out considerations raised above, Applicant's checklist indicates a maximum grade of 45% on the subject property, but Applicant nonetheless maintains that no erosion could occur as a result of the development of the property, except in the context of firebreak construction. Applicant then acknowledges that firebreak construction "will have to be sensitive to the topography", but provides no plan for meeting that objective or for limiting erosion that results from firebreak construction. Clearly, erosion could occur as a result of development on this lot, such that Applicant should be made to address this element more fully in its application.

  - **Air** - Applicant proposes to develop a shooting range that will require one hundred (100) parking spaces, but maintains that "emissions will be minimal, consistent with the low average daily traffic expected for this proposal." Applicant's reliance on average daily traffic to support its contention that impacts to air amenities will be minimal is misleading because the proposed use of the property will focus large groups of people on the property for Applicant's expected events and educational activities. Thus, in addition to dust and other air impacts associated with project build-out, automobile exhaust and smoke from campfires, cookouts and discharging firearms will increase in this area as a result of the proposed project, with steep peaks to be expected during events. These impacts must be identified and studied.

  - **Water** - In addition to the water source considerations, the proposed project will result in significant environmental impacts to both the Yakima River, which receives natural spring run-off from the subject property, and the KRD irrigation canal that run through the subject property. These impacts are not mentioned, let alone adequately addressed, in Applicant's materials here. Rather, Applicant's materials focus exclusively on potential lead-related water impacts, which Applicant asserts will not be significant because lead is stable in water "as reflected in the science" that Applicant does not provide. It is

incumbent upon the County to determine independently whether Applicant's proposal will have water-related impacts from any source, including, but not limited to lead discharges, before issuing a threshold determination here.

- **Plants** - Applicant indicates an intention to build a firebreak, but makes no mention of plant impacts occasioned by construction of the same. Also, Applicant indicates an intent to build no fewer than seven shooting ranges; camping and RV facilities, several permanent structures, and a parking lot for one hundred (100) cars on eleven (11) acres of land. Again, an independent review of this proposal and the Environmental Checklist provided by Applicant cannot yield a DNS, as it is plain that Applicant intends to impose changes of significant magnitude upon an area of environmental sensitivity.

- **Animals** - Planning Department's 2001 Preliminary Site Analysis Form and the BA submitted with Applicant's current application indicates that the subject property is winter range for mule deer and elk, and Applicant's intended use of the subject property will involve a significant amount of noise and shooting. In light of these two considerations, it is difficult to reach see how the operation of a shooting range could not adversely affect the mule deer's use of the subject property as winter range. Further, no attempt is made by Applicant to address the almost certain impact to neighboring properties when deer and elk that currently winter on the proposed site migrate off that site to avoid the noise and human disruptions on that site. Finally, Applicant makes no effort to assess the probable impacts of a shooting range on domestic animals and grazing activities in the surrounding area.

- **Noise** - Applicant's discussion of noise impacts is wholly inadequate, and Applicant's failure to propose any noise mitigation is unfathomable. First, as anyone who lives within proximity of Kittitas County's current outdoor shooting range knows, an outdoor shooting range in Kittitas County is audible all weekend, every weekend. Further, given the regularity with which state law enforcement personnel are acknowledged to have used Applicant's Bullfrog Road location, it is reasonably anticipated that this shooting range will be audible, from its ridge top location, for miles in every direction all day most every day. Finally, there is no reason to believe that Applicant, who has been placing fixtures on its property and allowing shooting activities without having first obtained the permit sought in this application, will not try to provide some facility for shooting during the nighttime hours. Thus, it is probable that noise will be generated at night as well as during the day.

Applicant attempts to avoid this issue by submitting a preliminary noise study conducted by an Assistant Professor of Physics at Central Washington University ("CWU"). This study indicates that the noise readings were taken during one (1) two hour period on a windy September afternoon and a two hour period on an October morning. Further, the noise that was measured is this study was single shots from one gun operated by the Applicant's agent.

The conclusion reached in this study is "the proposed firing range is likely to meet WAC community noise standards". How that conclusion could be reached on the basis of the tests employed in the study, when the actual use expected is firing of multiple guns of multiple calibers over several hours by persons of various skills and gun knowledge and safety levels is not clear. Further, the conclusion stated is not that the range will not result in probable significant environmental impacts, but that the proposed firing range may not result in constant violations of noise standards established by Washington law.

Kittitas County must conduct a noise analysis with respect to this project before any threshold determination may be properly issued in this matter. Applicant's materials are wholly inadequate and Applicant, having skirted the law before in operating its firing range without prior authorization, cannot be simply trusted to accept and observe conditions relating to facility use.

- **Aesthetics** - The elevation of Applicant's property creates the possibility that activities on the property will diminish the view aesthetics of surrounding properties, in particular if Applicant decides to light any part of property for night shooting. Kittitas County should insist, at a minimum, upon a statement from Applicant as to whether Applicant intends to light any part of the subject property, and should evaluate any mitigation strategies relating to view and light/glare tendered by Applicant before issuing a threshold determination.

- **Transportation** - The Checklist submitted here indicates that no new roads or improvements to existing roads will be necessary to the project even though the principal access to this property is a single-track bladed gravel road. Further, Applicant makes no effort to estimate how many new vehicular trips this project will generate, whether on Hayward Road, Bettas Road, or Highway 97. Obviously, a project of this magnitude cannot be determined to be without significant environmental impact under SEPA without traffic studies demonstrating that levels of use on these roads will not rise to unacceptable levels. A threshold determination should await traffic studies.

- **Public Services** - Applicant flatly states that increased fire protection will be necessary but neither indicates whether the subject property is within a fire district nor provides any statement as to how that increased fire protection will be obtained. In addition to increased fire protection services, however, it is to be expected that other public services, such as emergency medical services and the services of the sheriff's department will occasionally be required on this property with greater frequency than is now required. As Applicant makes no effort to describe or mitigate the anticipated impacts that its development will have on these services, a DNS may not issue here.

- **The County Has Failed to Notify all Affected Parties and Agencies** - As previous correspondence dated December 11, 2003, from this office indicates, the County's notice mailings missed a minimum of twenty individuals who requested notice of future filings by this Applicant with respect to this proposal back in 2001. Should the County chose to close the comment period on December 16, 2003, and render a threshold determination on this proposal, the County's failure to notify these individuals properly will constitute a prima facie procedural SEPA violation. The County should correct this error by providing notice to the individuals identified in our December 11, 2003, correspondence, and any other individuals that the County missed in its first two notice mailings, and extending the comment period accordingly.

Conclusions

Once again, the Applicant's Checklist and application materials are totally inadequate. Given the state of this application, a threshold determination, let alone a DNS or an MDNS, at this point is both inappropriate and inconsistent with the letter and spirit of SEPA. As set forth above, the proposed project must be defined properly. Once that happens, Applicant's actual proposal demands careful and considered review. It is Kittitas County, not the applicant, that must comply with SEPA, and it is hoped that Kittitas County will finally order Applicant to provide it with the means by which that review can occur, rather than simply blessing this project through a hastily issued DNS.

Very Truly Yours,

VELIKANJE MOORE & SHORE, P.S.

TRAVIS W. MISFELDT

EXHIBIT D

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

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December 18, 2003

Mr. David Taylor, Planning Director
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411 N. Ruby, Suite 2
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Via fax: (509) 962-7682
Original mailed

Re: Conditional Use Permit/Cascade Field and Stream Club

Dear Mr. Taylor,

We are hereby submitting our comment letter dated December 16, 2003 with several corrections and minor additions.

We previously submitted comments regarding the insufficiency of this application and the accompanying State Environmental Policy Act checklist on behalf of our client, The Farm, which is adjacent to the Applicant's property. This letter is in response to your latest invitation to comment on what is essentially the same application, submitted twice before and rejected as incomplete both times. The only relevant new information is a "preliminary" noise study, discussed below, which is too incomplete to show noise impacts would be acceptable. Thus, the application and checklist are still incomplete, and must again be rejected.

Mr. Jerry G. Lilly, a qualified, experienced and recognized noise expert, at our request reviewed the preliminary noise study. His comment letter is enclosed. Mr. Lilly is a licensed acoustical engineer and a member of three professional acoustical associations. There is no information concerning the qualifications, if any, of Mr. Piacsek. Has Mr. Piacsek ever done a professional noise study before? Even if he has, has he ever done a noise study for a firing range?

We are enclosing a copy of the noise study prepared by VGO, Inc. noise engineers for a proposed firing range at Camp Bonneville at Vancouver, Washington. You will note that the recommendations of this firm, which was hired by the sponsors of the range, include a restriction that noise levels be less than 57 dBA and that there be a 1-mile buffer between firing range noise sources and the nearest outdoor use area unless medium density wooded land separates the source and the affected area, in which case the buffer need only be 2,000 feet. The study notes that berms and screening can reduce noise impacts. This site does not have woodland screening or berms. There are outdoor use areas, including our clients' farm and DNR land, adjacent to the Club property, much closer than one mile. The Applicant suggests that noise levels should be allowed to 70 dBA.

The Piacsek study not only has essentially no information concerning the distance to non-residential uses but there is no list of existing residences within the noise impact radius of the proposed firing range. Moreover, there is no information concerning residences that are likely to be constructed in the future on nearby property. Can the Club compensate these landowners for loss of property value? The Piacsek preliminary noise study did not consider impacts on users of the highway, students, hikers and other recreationists, livestock, or wildlife.

As Mr. Lilly points out, the preliminary noise study does not have any information about present ambient noise levels (cf. the VGO report), does not include a representative sample of the weapon types to be used at the proposed firing range, nor necessary information concerning year-round temperature ranges, prevailing winds, and humidity. Mr. Lilly identifies a number of other deficiencies in the preliminary study, including the author's misinterpretation of the applicable noise standard. The preliminary noise study is therefore inadequate to support a DNS or an MDNS. In fact, as Mr. Lilly notes, the preliminary study shows that the range will violate noise standards.

The Applicant should be required to submit a noise study by a qualified professional acoustics engineer. That study should be designed to comprehensively evaluate the likely range of noise levels to be produced by all types of weapons which will be fired at the proposed firing range, under the full range of environmental conditions that are likely to be encountered, and affected outdoor use areas.

A major deficiency in the application and the checklist is its failure to document the presence of a Type 5 stream draining the subject property, Hayward Canyon Creek. This Critical Areas Ordinance classified stream is only mentioned once in the checklist. The checklist erroneously states the Creek drains into an irrigation canal when it drains to the Yakima River. There is no wetland study to assess the habitat values associated with the Creek, and no inventory of on-site vegetation or animal life. The Creek doesn't even appear on the crude not-to-scale plan submitted by the Applicant.

Ignoring the fact that operating a firing range poses a serious risk of lead contamination, not only of the Creek, but also the river and possibly the irrigation canal below the subject property, the Applicant proposes to deal with lead hazards by constructing "berms" in the Creek to retain lead contamination. Neither the Critical Area Ordinance nor State law permits altering natural streambeds for such a purpose. Even more important, there is no scientific evidence provided in the application that berms would prevent lead from contaminating the stream and flowing down to contaminate the Yakima River. Any lead entering the stream is a toxic waste, triggering the Toxic Substances Control Act and related State and Federal laws.

Although the application states that the Club would comply with the Best Management Practices for Lead at Outdoor Shooting Ranges as recommended by the EPA in document EPA-902-B-01-001, none of these practices is described in the application. Moreover, it is evident that the Club does not have the resources to implement these practices.

The practices recommended by the EPA include regular collection and recycling of lead, as well as the construction of devices to ensure that lead does not leave the property boundaries, or contaminate ground or surface water. Here the application cryptically states "When commercially

feasible, lead will be reclaimed." Removing and recycling lead is not optional, however, under the EPA guidelines. Nor do the guidelines permit using a stream as a lead detention system by blocking it with berms.

This application describes no berms or baffles to prevent lead from the range from traveling onto other nearby properties, including public land. Apart from the hazard of stray shots striking livestock or even persons, the operation of this range clearly creates a significant risk that other properties will be contaminated by lead.

The National Rifle Association Range Source Book recommends that eight-foot high berms, and baffles, be constructed as necessary safety measures. Moreover, the backstop area for ranges, if natural soil is to be used, needs to be "free of rocks and debris to a depth of 18-24 inches". Section 2.04.1.5. The Source Book goes on to say: "in rocky soils, when the face of a hillside is cut to provide a better angle, the cut must be over-excavated and clean fill placed in the cavity to provide an impact area free of any material large enough to create ricochets."

These recommendations must be viewed in the light of the NRA's information that maximum ranges for center fire rifle cartridges are from 2,100 yards for a .22 Hornet to as much as 6,000 yards for the .338 Winchester Magnum and that maximum calculated ranges for pistol ammunition are, with one exception, over 1,500 yards, and can be as far as 2,500 yards.

The application fails to disclose the total area to be excavated for berms, target pits, and backstops. It fails to state the total area to be used by the assortment of shooting ranges alluded to. Since all shrub vegetation will have to be cleared from firing range areas, there will be substantial habitat destruction involved in constructing this project. There is no description of whether that habitat currently serves as important feeding or nesting habitat for birds and other wildlife. No assessment has been done of the habitat to be destroyed from the standpoint of the presence of rare and important plants and plant communities.

Lead is a listed toxic substance. Although a firing range in use is not considered a toxic waste storage facility, a property not in that use must be cleaned up. Who will be responsible for cleaning up nearby properties contaminated by ricochets and stray shots if berms, baffles, and backstops aren't constructed? In fact, how can the Club, which has been operating unlawfully without a permit, and in violation of the direct order of the Kittitas County Department of Building and Fire Safety, be expected to live up to promises to deal properly with lead contamination? Only the requirement of a significant bond would ensure that the County would be protected from liability for permitting a firing range to operate without adequate measures to ensure that the Club property and other nearby properties are not contaminated with lead as a toxic waste.

An MDNS cannot be issued for this application because the information supplied is so woefully insufficient that it is impossible to fashion mitigation conditions. In order to even consider issuing an MDNS, the County must have an adequate environmental assessment submitted. The information in the assessment must be "accurate and objective". WDF&W. Shooting Range Application Policies and Procedures, 2004.

The WDF&W states that the "environmental information" should be kept "free of project justification". It goes on to state:

> "Do not rely on generalities. Specific facts are essential. General statements and allegations should be supported and quantified whenever possible."

The WDF&W further states "make liberal use of maps, sketches and related graphics to help explain the project."

The WDF&W describes an "Environmental Assessment Format". Under the heading "Fish, Wildlife, and Vegetation", the Department states: "...the project sponsor should have a qualified person look at the site if it contains areas of undisturbed vegetation or habitats. A local naturalist, fish and wildlife biologist, or other person knowledgeable about plants and animals can be used to conduct a preliminary overview. The EA submitted should document the efforts to determine the presence of any endangered species on the proposed site."

The Applicant must submit a checklist that fully discloses, in detail, what and where the Club proposes to construct and when, that details all measures the Club proposes to take with respect to: 1) reducing environmental noise to acceptable levels, 2) preventing lead from contaminating Hayward Canyon Creek and the Yakima River, 3) protecting range users, employees and nearby properties from the harmful effects of lead and lead dust, 4) protecting wildlife, livestock and residents in the vicinity from ricochets and stray shots, and 5) ensuring that Hayward Canyon Creek, its wetlands, and required buffers, are respected in the firing range design.

In order to understand what mitigation measures are necessary, the Applicant must also provide the County with full information regarding present uses in the vicinity of the proposed range as well as intended future development by property owners in the vicinity.

We also recommend that the staff consult the references listed on the attachment to this letter, which demonstrate the importance of rejecting this application and environmental checklist because of insufficient, incomplete, and biased information.

That this is the third application submitted and yet these same deficiencies persist is strong evidence that the Club does not have the means or the intention to design or operate a firing range consistent with safety of users, the public, and the environment. Moreover, the Club's use of its property, without a permit, as a firing range, despite having been directed by the County not to do so, confirms a fundamental disregard for the law, and the public health and safety. The Club thereby forfeits any claim that it should be given the benefit of the doubt.

Finally, before the Club's application is received, let alone declared complete, the Club should document to the satisfaction of the County's Environmental Health Department that it has cleaned up its former site near Roslyn in compliance with applicable State and Federal standards. Until the Club documents that such clean up has occurred, its financial responsibility for that clean up jeopardizes its ability to proceed with this project.

This application is not accompanied by a Critical Areas Checklist as required by KCC 17A.03.035 even though a Type 5 stream drains the subject property. Neither has the Applicant submitted a "hazardous materials plan" to deal with lead contamination as required by KCC 17A.08.015.

Another glaring deficiency of the Application and Checklist is the total failure to deal with the severe wildfire hazard which operation of the range would inevitably create. Hayward Canyon is listed as a high risk area for wildland fires in the Washington state Hazard Identification and Vulnerability Assessment prepared by the Energy Management Division of the State Military Department. Several major wildfires have occurred in the canyon and vicinity over the past decade. Not only does the application fail to disclose and assess this high risk, but there is no fire control plan to indicate how that risk could be managed.

Is the Club in a position, if it is allowed to construct and operate this firing range, to compensate other property owners for the economic losses caused by a wildfire? Does it have, or even qualify for, insurance? If it is not insurable, the County should reject the application on that basis alone.

The checklist contains essentially no information regarding soil types, wildlife or vegetation. The Applicant has not submitted any information from qualified soils, wildlife or vegetation experts. Yet, the Applicant claims that it will follow the Best Management Practices for Lead as recommended by the U.S. EPA. The Best Management Practices state that it is important to determine soil characteristics because those characteristics, including such things as acidity and granularity, have a major bearing on the likelihood of lead transport. Therefore, without that information, the Applicant cannot follow the Best Management Practices and the statement that it will do so is transparently false.

Best Management Practices also calls for confining lead bullets and fragments by means of berms and other artificial structures, as well as reclaiming lead from areas where bullets are fired. There is no information provided in the checklist and accompanying documents relating to any of these steps or facilities.

While the vegetation and wildlife surveys conducted for Sagebrush Power Partners, LLC provide a certain amount of useful background information, there is no indication that any of these studies looked at the subject property. For that reason, there is the distinct possibility that listed species, including the tailed frog and the Columbia spotted frog, are present on the subject property or present in areas where runoff from the subject property could impact them. Furthermore, the wind farm studies ignores impacts on ESA listed fish, which this project, due to lead contamination, is not entitled to do. The wind farm studies, therefore, are of essentially no use in analyzing the environmental impacts of this project.

The Applicant has not submitted any information to show that it will not destroy or damage valuable plant communities. It is likely that the operation of its facility will have an adverse effect on birds who ingest lead introduced in the environment by range operations. Which mammals are seasonal or year-round users of the subject site and vicinity? Are there any elk or mule deer migration routes on or within the range of influence of the proposed firing range? No information

on these subjects is provided. Would the operation of the range deny wildlife, including sage nesting and foraging birds as well as mammals such as the elk and mule deer, access to critical habitat, particularly during the winter when they may be dependant on forage for survival? Once again there is no information provided in the environmental checklist.

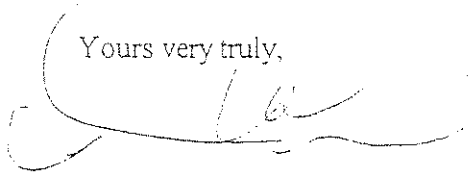
Finally, since there is no wildfire protection plan, and no assessment of whether, if a wildfire is started, it could destroy habitat critical for wildlife, plants and plant communities of special concern or protected status. The wind farm vegetation survey identifies the habitat values as "good" along ridge lines. The survey also notes that a threatened orchid species is present in wetland environments. The subject property has a pond and a Type 5 stream but neither has been assessed to determine if there are protected species of plants or wildlife present.

This application is so devoid in information and details that it is impossible to perform environmental review. Moreover, the lack of information about many features and facilities which are described as part of the project, but not shown on the crude single-page sketch makes it impossible to even understand what the scale and scope of the project proposed is. Such a project requires engineered plans. Where are these ranges to be constructed and what are their dimensions? What safety features will be provided to separate the ranges and to ensure that dangerous ricochets and stray shots do not pose an unreasonable risk to users and the public? Where will the berms identified as necessary by the EPA under its Best Management Practices, and called for by the NRA in its Guidelines for Constructing and Operating of Outdoor Firing Ranges, be located? What would their volume and dimensions be? How much soil will be moved and from where in order to construct these berms? What measures will be taken to ensure that berm construction does not adversely affect the environment? Where and how large will the camping area be? How much impervious surface will be associated with it? What waste disposal system will be constructed to serve the camping area and where will it be located? Does the site have a location suitable for such a system?

Is the Club in a position to ensure that it has the monetary resources to operate a firing range as proposed safely in terms of adequate supervision, maintenance, and lead containment and recycling? The Club appears to lack the money to even design a firing range, let alone construct and operate a safe and environmentally responsible facility. If a Mitigated DNS is issued, will the Club simply ignore mitigation conditions for lack of resources and continue to operate a firing range anyway, as it has done without a permit for the past several years? If a lead contamination problem develops, will the Club be in a position to clean up the problem or will the taxpayer be on the hook?

This application raises far more questions than it answers. It should be rejected out of hand.

Yours very truly,



Roger M. Leed

cc: Mr. Kenneth Fyall
Jerry G. Lilly, P.E.

REFERENCES

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EXHIBIT E

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

LAW OFFICES OF
CONE, GILREATH, ELLIS, COLE & ANDERSON
A PARTNERSHIP INCLUDING PROFESSIONAL CORP

Reply to:
✓ ELLENSBURG Office:
P.O. BOX 499
200 EAST 3RD AVENUE
ELLENSBURG, WASHINGTON 98926
TEL (509) 925-3191
FAX (509) 925-7640

JOHN P. GILREATH, P.S.
DARREL R. ELLIS
RICHARD T. COLE, P.S.
ERIN L. ANDERSON

DOUGLAS W. NICHOLSON

ILEM Office:
...NTY COMMISSIONERS
...O. BOX 337
...1ST STREET
...IGTON 98922
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...09) 674-2435

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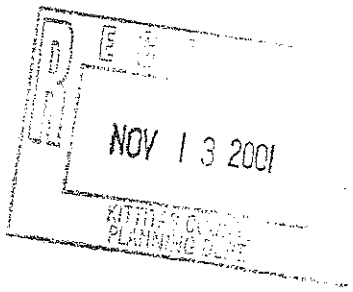
Master Copy of all Comment Letters

November 8, 2001



Kittitas County Planning Department
Attn: Chad Bala, Staff Planner
411 North Ruby Street, Suite 2
Ellensburg, WA 98926

Re: Application for conditional use permit C2001-20, Cascade Field and Stream Firing Range

Dear Mr. Bala:

I write on behalf of this firm's clients, Mr. and Mrs. Keith Schober, adjacent property owners to the subject tax parcel involved in Cascade Field and Stream Club's application for a firing range CUP. My legal assistant, Sarah, contacted your office over a week ago and was advised that the proposal submitted to you, including the SEPA checklist, contained insufficient information, and that further information would be required before issuance of a threshold determination. To date, we have received no further indication that the planning department has received additional information. I respectfully ask that you postpone issuance of a threshold determination until such time as the proponent has submitted adequate information on the SEPA checklist.

SEPA

The following comments pertain to the information in the SEPA environmental checklist.

A. 1. Proposed timing or schedule (including phasing, if applicable):

"ASAP". This is an insufficient answer taking into consideration the proposed land use plan that proposes "short term", "midterm" and "longterm" plans that are simply

> "an expression of....visions and dreams for the club and the community",

but with an acknowledgment

> "the following plans are in no particular order of priority except in general terms for purposes of organizing our approach to our goals. Funding, resource availability and interest of club members will largely determine when and if a particular plan will be implemented."

That is an unacceptable answer for SEPA purposes, the objectives of which are to flesh out the information to make determination whether this project will have a significant adverse environmental impact. You don't have that information by virtue of this answer.

A.2. Do you have any plans for future additions, expansion, or further activity related

See discussion above.

A.3. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Considerable environmental information should be prepared to make a determination whether this proposal satisfies both federal EPA and OSHA requirements. An answer of "NA" is not acceptable.

B.2.a. What types of emissions to the air would result form the proposal (i.e. dust, automobiles, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

In response to this question, the proponent only acknowledges dust emissions. Airborne lead emissions are also a result of this proposal, and are not acknowledged or addressed. There is the additional emission of gun smoke and the risk of smoke from shooting-related fires. This is facially inadequate for purposes of state law. I also point out that the Schobers experienced a several hundred acre range fire at this site fire just a few years, which was not successfully fought with stock water. Fire is a considerable risk at this site.

2.c. Proposed measures to reduce or control emissions or other impacts to air, if any.

The proponent proposes no measures to reduce or control emissions or other impacts to air. More information should be required from the proponent on this.

3.a. Water: Surface

Proponent fails to acknowledge what seasonal runoff occurs and into what streams or rivers such seasonal runoff flows into, and does not address the source of seasonal stock-pond water. The

proponent should be required to candidly discuss this, so that the responsible official can do the job of reviewing it and then making decisions.

3.a.6. Waste materials discharged into surface waters

Water from the site will be discharged to the Schobers' ponds, and flow toward the KRD irrigation canal and the Yakima River.

3.b. 1. 2. Waste materials discharged into ground water

Proponent submits inadequate answers.

3.c. Water runoff

Proponent's answer "NA" is false and dodges a critical inquiry, and based thereon, proponent fails to follow through on risk disclosure and mitigation discussions. Proponent should be required to propose measures to reduce or control surface, ground, and runoff water impacts in light of both airborne and soil lead contamination as a result of the activities proposed.

5.d. Proposed measures to preserve or enhance wildlife, if any

Wildlife is not enhanced by shooting ranges or potentially lead-contaminated watering ponds.

7. Environmental Health

Proponent denies the existence of any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill or hazardous waste that could occur as a result of this proposal. Based on the discussion below, proponent has failed to accurately answer this question. Notably, the NRA, firearms ammunition manufacturers, and federal regulatory agencies all acknowledge considerable health hazards, up to the point of death, as a result of airborne and ground lead contamination from firing range-generated spent lead. It is only the proponent that denies the existence of the same.

At 7.b. the proponent is particularly coy about the proposed measures to reduce noise impacts. The proponent's response minimizes this factor: "Normal noise associated with a shooting range facility". This answer tells the responsible official and interested individuals absolutely nothing about the decibel levels of shooting ranges and the effects thereof on wildlife, surrounding property owners and the people using such a firing range. The proposed mitigation measures proposed by proponent are insincere and are addressed only vaguely at best and are wholly insufficient to mitigate noise impacts. Parenthetically, employees working/residing on the completed project are covered by federal and state OSHA/L&I safety standards, which are not acknowledged in this proposal.

12. Recreation

Proponent acknowledges that both wildlife viewing and rock hunting occur in the immediate vicinity, yet proposes no measures to control the impacts to these users. Rock hunters and individuals viewing wildlife in the area are now exposed to potentially hundreds of individuals discharging firearms and yet no defined safety measures are proposed. It is unfathomable that a DNS based on the insufficiency of this information could issue.

14. Transportation.

Proponent denies the necessity for improvements to existing roads, yet acknowledges one hundred parking spaces would be constructed to accommodate the project. One hundred parking spaces creates the potential for hundreds of in-and-out visits per day, on an unmaintained road. Notwithstanding that, the proponent claims that they do not know how many vehicular trips per day would be generated by the completed project and when peak volumes would occur. This checklist should either be rejected and returned to the proponent for some candid and honest answers to these questions (as discussion of proposed mitigation measures) or culminate in the issuance of a DS based on the lack of adequate information to analyze the checklist in its current form.

LAND USE PLAN

Speaking to the draft land use plan submitted for the property at 2410 Hayward Road, the description of phasing and mitigation measures is fuzzy and inadequate, e.g.,

> "our first efforts will be very basic, but it will be a foundation to building and improve on in the future....
>
> The following plans are in no particular order of priority except in general terms for purposes of organizing our approach to our goals. **Funding, resource availability, and current interest of club members will largely determine when and if a particular plan will be implemented.**" (Emphasis added).

This land use plan does not contain the type of information necessary to determine whether a CUP is appropriate. Flowery language of this sort, i.e., we'll get to it someday if we want to and if we can, is legally insufficient. As for SEPA, no proposal should receive a DNS in regard to the environment without even setting forth the proposed schedule for development, or the discussion of mitigation measures.

The proponents also indicate that this will be the only shooting range in the county. This is not true. There is a very active trap and skeet shooting facility near Bowers Field, and an indoor shooting range at the Kittitas County Trading Company.

The operation of a shooting range is a high-risk operation involves strict liability if an accident occurs, not the least of which is the death of patrons or adjacent neighbors. The plan does not propose any type of insurance that would protect again environmental contamination, complete destruction of the value of adjacent properties, and the risk to human life. The lack of liability coverage is a significant problem, considering this dangerous activity is proposed to occur in an area zoned for small, 20-acre homesites with hobby farms. Failure to set forth a safety plan further exacerbates the safety risks to others. It is simply unacceptable that Cascade Field and Stream Club proposes to meet its vague safety objectives "a very limited way" because their "resources are very limited, both in money and manpower."

I also note that my client did not receive (and the proposal appears to lack) a narrative project description containing "all qualitative features of the proposal". Among its shortcomings, the materials submitted by the proponent do not indicate the location of walls and berms, the low income housing proposed for the property, or any distances between the firing range and the stockwater pond or the low income housing unit proposed for the site.

Insofar as KCC 17.60.010 establishes before a Board of Adjustment may permit a conditional use, there are multiple requirements that must be met. These include a determination that the proposed use is essential or desirable to the public convenience and not detrimental or injurious to the public health, peace or safety or to the character of the surrounding neighborhood, as well as a mandatory determination that the proposed use at the proposed location will not be unreasonably detrimental to the economic welfare of the County and that it will not create excessive public costs for facilities and services. The proponent must satisfactorily demonstrate to the Board that the proposed use will either be adequately serviced by existing facilities such as highways, roads, police and fire protection, irrigation and drainage structures, refuse disposal, water and sewers; or that the applicant shall provide such facilities; or by demonstration that the proposed use will be of sufficient economic benefit to offset additional public costs or economic detriment. None of this evidence is in either the application for conditional use or the SEPA checklist.

Instead, it is a "dream for the club and the community to have a short term plan of improv{ing} roads and parking for range access." A dream is not good enough. It is a "dream" to fence and gate control access, without any money, schematics, or dimensions therefore. It is a "dream" to maintain existing stock ponds for fire water source without addressing the potential for lead contamination in the same self-contained stock-water. A "midterm" plan is "a berm, a barricade or a baffle that **may** prove necessary for safer or more efficient range operation". It is a "plan" to construct recreational vehicle parking, a midterm plan to perhaps put in a well and septic system, and a longterm plan to provide recreational vehicle hookups with power and water. Notably, the county has not received an application for a private campground CUP, which is mandatory in this zone. The county code contains very specific requirements for such an activity in an AG zone, none of which are even discussed in the proposal.

A firing range is an extraordinarily noisy and invasive activity and very disruptive to the peace of adjacent landowners and to the safety of all of those in the area, including the many rockhunters, wildlife viewers and hungers that frequent the area. This proposal is devastating to the public health, peach and safety of the neighborhood, and is not simply injurious to the character of the surrounding neighborhood, but will **destroy** it and its value. The Schobers intend to divide their acreage into 20-acre parcels according to zoning, and sell those lots as small hobby farm homesites. This is their retirement fund. It becomes worthless once a shooting gallery goes in next door.

The effects will also be felt immediately by the Schobers, because the land is currently leased out for cattle grazing. Nobody is going to place grazing cattle on the Schober land once a firing range is built next door. Moreover, the cattle are watered through two stock ponds that lie downhill from the face of the shooting gallery. Spring runoff from the gallery is likely to be contaminated by ammunition containing lead, which water will run into the Schober ponds, down Hayward Canyon and into the Yakima River.

Lead poisoning at this site is a very serious issue. Firing ranges are subject to federal regulations under the Environmental Protection Act as well as the Office of Occupational Safety and Health Administration due to the long-term effects of lead dust and fumes at firing ranges and potential seepage into soil and water sources. Lead poisoning poses a significant risk to all people and is particularly severe in its effects on children. Because many of the early symptoms of lead poisoning mimic other disorders, it can be difficult to diagnose lead poisoning without a trip to the doctor. Early signs include fatigue, headache, upset stomach, sleeplessness, irritability, nervousness, metallic taste or poor appetite, as well as muscle and joint pains, and nausea, many of which, if undiagnosed, could be readily construed as cold or flu. However, health effects from lead poisoning include severe brain damage, headaches, memory and concentration problems, anemia, stomach ailments, nerve disorders and reduction of red blood cells, reproductive problems in males, kidney damage, slower reflexes and risks to unborn fetuses and increase in blood pressure. *See* "Firing Ranges: The Airborne Lead Dust Hazard", Massachusetts Department of Health; *contact also* the National Rifle Association. Although the firing range proposed by the proponent is an outdoor range, thereby reducing concentrated lead levels, airborne lead dust can contaminate the surrounding environment and lead to exposure by shooters and employees at the range, which this proposal anticipates. Lead contamination in outdoor environments can occur through water run-off and from wind carrying the lead off-site, which hazards usually are not present with an indoor range such as the one at the local trading company in Ellensburg. In addition, the process of removing spent bullets from the face of a berm (also proposed by this application) exposes humans to large quantities of lead dust.

A recent publication of Precision Cartridge, Inc., (in the business of supplying target shooters with ammunition) noted that

> "Several recent studies, focused on exposure in outdoor firing ranges, also have

found -- to the surprise of some -- high lead exposure levels.

- One study in 1989 found that blood lead levels among a class of police cadets in Richmond, Virginia, tripled during the 5-training day period using conventional lead bullets at an outdoor range.

- Another recent study found that a group of seven Los Angeles Police Department shooting instructions at an uncovered outdoor range all had elevated blood lead levels and nearly 30% of the group had lead levels above OSHA's maximum level."

Precision Cartridge itself recommends that every range, regardless of whether it is indoor or outdoor, should evaluate the potential for unsafe lead exposure levels and should take steps to solve any potential sources of problems. My purpose in pointing this out is to emphasize that even the industry recommends safety measures. The land use plan of the proponent addresses none of these issues, all of which are required by federal law to be accommodated.
The proponent itself acknowledges seasonal runoff yet does not address the environmental hazards of lead poisoning that go along with such runoff into surface (Yakima River/Schober ponds/KRD canal) or ground water, or the soil itself.

CONCLUSION

The SEPA environmental checklist does not provide the type of information required by state law in order to determine the environmental impacts including noise, environmental and personal safety, transportation and soil and water contamination. There is not sufficient information to determine that this proposal will not have a significant adverse impact on the environment. The land use plan submitted for the conditional use permit does nothing to shore up the many shortcomings of the checklist. Based on the foregoing, a Determination of Significance should issue so that these issues can be addressed in accordance with the mandates of state law.

Very truly yours,

Erin L. Anderson
ELA:shk

EXHIBIT F

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

KITTITAS COUNTY

DEPARTMENT OF PUBLIC WORKS

Paul D. Bennett, P.E., Director

Memorandum

To: Community Development Services

CC:

From: Paul D. Bennett, P.E.

Date: 12/17/2003

Re: Cascade Field and Stream Conditional Use Permit C-01-20

Hayward Hill Road is a primitive road where there are not maintenance or design standards. The anticipated Daily traffic will change the rating from a primitive road status. Should the Average Daily Traffic of the Cascade Field and Stream Club exceed those numbers stated in the application then additional mitigation may be required in the future. A condition of Approval is that the Average Daily Traffic during Club use not exceed the number stated in the application. If the number is exceeded the application should be reconsidered by the BOA. The road should be improved to a 24 foot wide gravel road with sufficient crushed rock added to form an adequate structure and crown. This improvement is required only along that portion of the proposed property that fronts Hayward Hill Road.

Realign the access point to be at a 90-degree angle with Hayward Hill Road. The approach should be a 22 foot wide graveled approach with a 2% crown on the approach. The approach entry should enter Hayward Hill road at an angle between plus and minus 3%.

Access permits will be required from Public Works as this is a change in use. The existing access point will be evaluated for site distance issues.

The Range is not exempt from WACs regulating noise. That portion of the WAC applies to existing ranges and not new proposed ranges.

Traffic for the range should travel from the North along Bettas and not from the South from SR 10. A Condition from the BOA is to post rules and signs that direct members and guests to use Bettas Road as the primary access to the club.

411 North Ruby Street, Suite 1
Ellensburg, WA 98926

TEL (509) 962-7523
FAX (509) 962-7663

I suggest we meet with the applicant prior to discuss the staff comments prior to making a determination

411 North Ruby Street, Suite 1
Ellensburg, WA 98926

TEL (509) 962-7523
FAX (509) 962-7663

EXHIBIT G

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

KCFD#1

Kittitas County Fire Protection District #1
POB 34 – THORP WA 98946
Phone 509-964-2435

To: Kittitas County Planning Department
Staff Planner

From: D.J. Evans, Fire Chief
Kittitas County Fire District #1

DEC 16 2003
KITT

Date: 15 December 2003

Subject: Application for Conditional Use Permit
Cascade Field and Stream Club
Tax Parcel #19-17-21000-0001
In the Agriculture – 20 Zone, File C-2001-20

Kittitas County Fire District #1 is not opposed to the above proposed Conditional Use Permit application, provided the following issues are addressed and completed to Kittitas County Fire District #1 satisfaction, before construction, no phasing in.

1) Hayward Hill Road to be updated from a primitive road status to an all weather surface road from Bettas Road to project entrance. The lower portion of Hayward Road (canal to Highway 10) needs to be addressed – i.e., new culverts put in and turnouts established.
2) A minimum of 20,000 gallon, above ground, water storage system for firefighting support. Tank needs to be inspected and certified with proper certification. Stock pond is not a reliable source of water.
3) Fire lane access roads to all points of purposed project. Fire lanes shall be a minimum of 20-feet wide with all weather surfaces.
4) No tracer type ammunition to be used on the premise.
5) All areas to be bermed to protect against stray projectiles.
6) Fire break line to be constructed and maintained along fenced property line at all times.
7) No open fire rings for campfires. In lieu of primitive fire rings, a large kiosk could be built with multiple fireplaces in center with spark arrester screens on top. Surround kiosk with a 30-foot barrier of gravel.
8) Suggest Club look at exchanging property with County, utilize Ryegrass landfill area on Vantage Highway.
9) Entrance gate to have a knox box lock installed – KCFD #1 code – for fire and emergency use.
10) All requirements set forth by the 1997 Uniform Fire Code of the State of Washington for the construction and operation of a firing range be enforced.

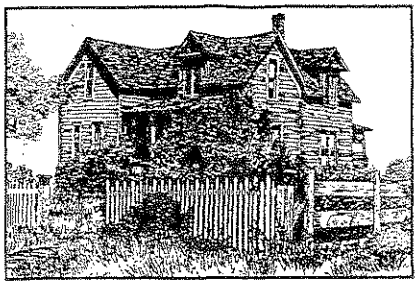
Respectfully,

DJ Evans, Fire Chief
Kittitas County Fire District #1

EXHIBIT H

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club



Kittitas County
Department of Building & Fire Safety

411 N. Ruby, Suite 4, Ellensburg, WA 98926
Telephone (509) 962-7694 Fax (509) 962-7682

Date: July 17, 2001

To: Kittitas County Planning

From: Derald Gaidos, Fire Marshal

RE: SEPA Notice of Action
Firing Ranges

After reading the information provided I have the following comments:
All rifle ranges must follow 1997 Uniform Fire Code, Appendix II-D. The section is attached.

For a Fire Safe Kittitas County

Derald Gaidos

APPENDIX II-D

RIFLE RANGES

(See UFC Section 1101.1)

SECTION 1 — PERMIT

A permit is required to establish, maintain or operate a rifle range. Applications for permits shall be referred to the chief law enforcement officer for approval.

SECTION 2 — SUPERVISION BY RANGE OFFICER

Rifle ranges shall not be operated or maintained without the supervision of a qualified range officer.

SECTION 3 — QUALIFICATIONS OF RANGE OFFICER

To qualify as a range officer, individuals shall demonstrate to the chief and chief law enforcement officer their knowledge of firearms and ammunition, including the general rules of safety and the provisions of this code relative thereto. Qualified range officers shall be issued a certificate of fitness upon completion of such qualification examination.

SECTION 4 — INSPECTION AND DISPOSAL OF AMMUNITION

Ammunition shall be inspected and approved by the range officer before permission to fire or discharge the same is granted. Ammunition that will not fire or discharge or which is otherwise defective shall be surrendered to the range officer for safe disposal.

SECTION 5 — PORTABLE FIRE APPLIANCES

Rifle ranges shall be equipped with portable fire appliances and other equipment required by the chief. Additional fire-prevention measures required by the chief shall be provided.

SECTION 6 — REMOVAL OF VEGETATION

Rifle ranges, including striking grounds, shall be completely clear of vegetation within a safe distance from the firing line.

SECTION 7 — WARNINGS

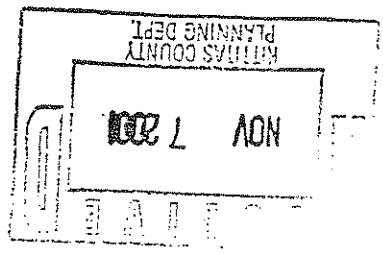
Rifle ranges which are not fenced shall be posted with approved warning posters or signs to notify and protect the public from danger.

EXHIBIT I

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

KITTITAS RECLAMATION DISTRICT
P.O.BOX 276, FOURTH & WATER STREETS
ELLENSBURG, WASHINGTON 98926
(509) 925-6158 Fax: (509) 925-7425
krdoffice@elltel.net www.elltel.net/krd



November 6, 2001

Attn: Chad Bala, Staff Planner
Kittitas County Planning Department
411 N. Ruby, Suite 2
Ellensburg, WA 98926

Subject: Cascade Field & Stream Club Application for Conditional Use Permit

Dear Chad Bala:

Kittitas Reclamation District (KRD) has reviewed the Cascade Field & Stream Club Application for Conditional Use Permit. The Cascade Field & Stream Club's Land Use Plan states that there will be Hunter Safety and Archery trail walks. They also state that there will be camping, picnic, R.V. hook ups, trail walk areas and that rock hunting and wildlife viewing are designated as informal recreational opportunities.

According to the map provided, it appears these types of land use will allow the general public access to the KRD North Branch Canal right-of-way. The right-of-way in this area is very steep and slopes directly toward a concrete lined canal. This canal section flows directly to tunnels and syphons with little opportunity for escape. We believe there is a significant public safety issue in allowing the general public access to these lands with out providing fencing along the KRD right-of-way and signs on the fence to warn the public of the potential dangers.

The Hayward Road is mostly a narrow one way, lightly used dirt road (at least from Hwy. 10 to the KRD canal bridge). The Cascade Field & Stream Club needs to address the impacts to that road and the public safety issues involved with the anticipated increase of traffic on a narrow, one-way dirt road. Signs needs to be address at the intersection of Hayward Road and the KRD maintenance road. There is already trespass problems with people using KRD's restricted right-of-ways at this location for both rock hunting and game hunting.

Another potential impact to KRD is the run-off of storm water from the Club's constructed facilities. There is the possibility of concentrated run-off, due to the new facilities, channeled into a draw that flows to the KRD canal that does not now exist. Also, the county road ditch on the Eastern up-grade side of Hayward Road drains into the KRD canal. KRD annually cleans out the sediment and debris that flows into our canal at that location. Increased activity on that particular road section could lead to increased negative impacts to KRD.

The Cascade Field & Stream Club needs to provide information on how they propose to protect their visitors from the KRD North Branch Canal right-of-way, control their visitors from using the KRD maintenance road at the Hayward Road intersection and address impacts to the use of the Hayward Road from Hgwy. 10 to above the intersection of KRD.

Thank you for the opportunity to comment on the Cascade Field & Stream Club Application for Conditional Use Permit,

Sincerely,

Jack Carpenter

Jack Carpenter
Secretary - Manager

KITTITAS RECLAMATION DISTRICT
P.O.BOX 276, FOURTH & WATER STREETS
ELLENSBURG, WASHINGTON 98926
(509) 925-6158 Fax: (509) 925-7425
krdoffice@elltel.net www.elltel.net/krd

December 15, 2003

Attn: Chad Bala, Staff Planner
Kittitas County Planning Department
411 N. Ruby, Suite 2
Ellensburg, WA 98926

Subject: Cascade Field & Stream Club Application For Conditional Use Permit

Dear Chad Bala:

Kittitas Reclamation District (KRD) has reviewed the Cascade Field & Stream Club Application for Conditional Use Permit dated November 7, 2003.

KRD previously submitted comments on the Cascade Field & Stream Club Application for Conditional Use Permit on November 6, 2001. I am re-submitting that letter as an attachment to this letter. KRD has the following additional comments:

As of the date, no one from the Cascade Field & Stream Club has contacted KRD to discuss potential impacts to KRD facilities adjacent to the proposed Club.

KRD still has concerns about the potential change in run-off patterns along the up-gradient side of the canal, the water quality of the run-off water, increased public access near the canal and increased usage of Hayward Hill Road from Hwy 10 to the KRD canal.

Thank you for this opportunity to comment.

Jack Carpenter
Secretary - Manager

EXHIBIT J

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

CENTRAL WASHINGTON UNIVERSITY
ELLENSBURG • LYNNWOOD • MOSES LAKE • SEATAC • STEILACOOM • WENATCHEE • YAKIMA
DEPARTMENT OF BIOLOGICAL SCIENCES

JAN 14 2004

Dr. Tom R. Cottrell, Ph.D.
Assistant Professor of Biology
Plant Ecologist
cottrelT@cwu.edu
509-963-3011

January 12, 2004

Kittitas County Planning Department
411 N. Ruby, Suite 2
Ellensburg, WA 98926

This letter is to state my strong objection to the proposed Hayward Hill Firing Range. As a member of the biology faculty at CWU I often take my classes up on Hayward Hill because of its unique ecology. Much of the shrub-steppe vegetation in Kittitas Valley has been greatly modified or destroyed, but Hayward Hill offers an example of good quality habitat. My classes that benefit from the natural shrub-steppe areas include Plant Taxonomy (usually 3-4 visits in spring quarter); Terrestrial Plant Ecology (usually 1-2 visits in spring quarter); and General Ecology (usually 2 visits in fall quarter). Other biology faculty regularly take classes up Hayward Hill, including professors Raubeson, Beck, and Ernest.

I have driven and walked on the site of the proposed firing range so I have first-hand experience with the site, though I have not done vegetation surveys there. One location that I always take my classes to is an ephemeral stream that crosses the road from west to east just above the proposed firing range. It is my belief that this stream runs onto the firing range property. The list of species in the wet areas adjacent to the creek includes some very interesting plants such as *Dodecatheon conjugens* (Desert shooting star) and *Hesperiochiron pumilus* (false strawberry). These ephemeral habitats are very important to the wildlife in the area and provide rare wet habitats for wetland plants in the shrub-steppe.

Before a commercial venture such as the firing range is permitted in the Hayward Hill area I think it is absolutely necessary that a careful study of the area including plant and animal communities is accomplished. The shrub-steppe is one of our disappearing state and national treasures, and any loss of this habitat is reason for concern.

Sincerely,

Tom R. Cottrell

EXHIBIT K

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

Kittitas County
Community Development Services
411 N. Ruby, Suite 2, Ellensburg, WA 98926
Telephone: (509) 962-7506 ▪ Facsimile: (509) 962-7697

Summary of pre-application meeting with Cascade Field and Steam on January 23, 2003

In the process of application for a Conditional Use Permit by Cascade Field and Stream for a shooting range, a pre-application meeting was scheduled with applicants to clarify many qualifications that would be involved in such permit.

Environmental Health:

- Group A water system required.
- Must have a well on site, need a site source survey.
- Must have an on-site septic or 2 sani-cans per 500 people and a copy of the contract.
- Must have a contract with solid waste.
- May not have permanent food sales.

Fire Marshal

- Must have road access on Betas Pass for emergency services such as ambulance and fire equipment.
- Must have water storage available of 2000 gallons.
- They are in DNR jurisdiction, so if fire suppression is needed, Cascade F & S must cover the cost.
- A fire break around the exterior of the property of 20 foot width must be in place.
- Road access year round must be rated to 60,000 lbs.
- Fire prevention should be covered in Hunter Education classes.

Public Works

- Must have 28' wide road gravel surface with drainage for estimated 100 people at 5 trips per day.
- The road surface would be based on usage and number of trips per day.
- If maintain as private road they would absorb the additional cost of repair, dust control and maintenance.
- An addition of 200 trips over the estimated current usage would require a hard surface road.
- Must have crowned road with 2% slope and a drainage ditch to the side.
- Must have 4-6" thick rock surface at current use.

Planning

- Phasing of the application to include a campground and club house is governed by the board of adjustment.
- May be more practical to condense the application to a shooting range only and amend later for additional services.
- Need more complete answers on the application regarding property values in the area, the amount of noise that would be created, Department of Ecology issues, and setbacks for windmills in the area with the Zilkha project.

EXHIBIT L

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

Kittitas County
Department of Building & Fire Safety

411 N. Ruby, Suite 4, Ellensburg, WA 98926
Telephone (509) 962-7694 Fax (509) 962-7682
Email: building@co.kittitas.wa.us

December 19, 2002

Cascade Field & Stream Club
PO Box 424
Cle Elum, Wa 98922

KITT DEC 9 2003

RE: Tax Parcel #19-17-21000-0001
Hayward Rd., Ellensburg, Wa

Cascade Field & Stream Club:

It has come to our attention that there is an illegal firing range being operated at the above referenced tax parcel. To operate a legal firing range, a Conditional Use Permit is required. At this time your application has been returned to you because additional information is needed. You are required to return that paperwork to us for this permit application to be considered.

Until a Conditional Use Permit is issued, no operation of a firing range shall take place at the above referenced tax parcel. This includes but is not limited to advertising and shooting.

Please return the necessary application and information to the Planning Department by January 12, 2003.

Thank you for your time. If you have any questions you may contact Chad Bala in Planning at (509) 962-7637 or myself at (509) 962-7001.

KITTITAS COUNTY
DEPARTMENT OF BUILDING & FIRE SAFETY

Lisa McPherson

Lisa McPherson
Code Enforcement

Kittitas County . . .
Community Development Services
411 N. Ruby, Suite 2, Ellensburg, WA 98926
Telephone: (509) 962-7506 ▪ Facsimile: (509) 962-7697

Summary of Cascade Field and Stream Violation File

Cascade Field and Stream Club
PO Box 424, Cle Elum, Wa 98922

Location: Hayward Rd, Ellensburg, Wa
Tax Parcel #: 19-17-21000-0001

8/22/02 Original complaint filed regarding shooting practice taking place on the above referenced tax parcel. It was noted by the complainant that the gate was locked. A complaint form was filled out by Chad Bala at which time he noted that they were applying for a CUP but that the process was at a stand still.

8/27/02 A site investigation was done by Rachel Risdon. No results to document.

8/29/02 A site investigation was done by Rachel Risdon. Refer to enclosed Complaint Investigation Form.

8/29/02 Chad returned a Verification of Violation form to Code Enforcement. It states that Firing Ranges are a conditional use and that Cascade Field & Stream are in the process of trying to obtain one.

9/13/02 CUP in progress, no evidence that money is changing hands or that anyone aside from members are using the property.

9/42/02 Rachel notes that complaint is invalid for now per conversation with Nancy Danko.

10/2002 Article found in the Mountain Echo that states a roughed in range is being used by members and that there are future plans for a more elaborate range in a convenient location. There is a contact address for membership information and donations. A new complaint was filed in reference to this article.

11/13/02 Complainant contacted Chad regarding where the CUP was in process. Chad explained that for Code Enforcement to do anything regarding this complaint there had to be verification that money was exchanged for services.

11/19/02 Nancy Danko notes in file that we have no verification that money is being taken to shoot at the range, invalid for now.

12/17/02 I, Lisa McPherson, took over the file. A letter was sent stating that a firing range must be a permitted use and that more information is needed to process the CUP.

Kittitas County
Community Development Services
411 N. Ruby, Suite 2, Ellensburg, WA 98926
Telephone: (509) 962-7506 ▪ Facsimile: (509) 962-7697

12/19/02 Wes Jones of Casc. F & S was in to speak with Chad about the details of the CUP. He also stated that no organized firing range is being used at this time. I explained that the letter I sent is in response to a complaint I had gotten. Meeting was scheduled for 1/23/03 with Chad, Wes, and the Casc. F & S attorney, to work out the details of the CUP.

1/6/03 Complainant called to check status of file. He was told we have a meeting on the 23rd and will send a letter of confirmation after the meeting.

1/14/03 Other complainant called wanting a copy of the violation letter I sent out to Casc. F & S. That was mailed to him without delay.

1/17/03 Site inspection, photos taken, no work has been done, site looks the same as previous photos.

1/23/03 Meeting with Casc. F & S, see meeting notes enclosed for details.

12/1/03 I have received word that new complaints have been filed with the commissioners. I myself have gotten no new complaints and no additional information on the status of the Conditional Use Permit.

Kittitas County
Complaint Investigation Form

Date: 8/29/02

Property Owner: Cascade Field & Stream

Location: Hayward Rd. Ellensburg

Tax parcel #: 19-17-21000-0001

Nature of Complaint:
Shooting without CUP.

Site Investigation:
Site inspection performed by Chad Bala and myself on 8/29/02 found no buildings and no evidence of a gun club or shooting range other than a few shells on the ground and two cleared areas with picnic tables.

Signature: Michael Elliott

Non significance

Cascade Field and Stream Club Celebrates 68th Year

11/13/02 Under
al Fo

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national forests searchi
elusive prey. Black bea
Aug. 1- Nov. 3. Couga
Aug. 1- March 15. Plea
the Washington State
Hunting Seasons and I
phlet for complete regu

Remember to make
ence known when recre
woods during huntin
wear bright colored c
talk or sing so hunters
that you are not their p

Remember pet safety
a brightly colored scarf ti

Founded in Roslyn in 1934, this club began with 488 charter members. With a focus on safety, there has not been one firearm related accident at the range in it's 68 year existence, a credit to the club's members and training.

With a need to relocate the range, members investigated seventeen locations before choosing the current site of 182 acres on Hayward Road, Hwy 10, halfway between Cle Elum and Ellensburg.

Currently, the roughed in range is being used by members for shooting practice and for hunter education classes by volunteer instructors from Upper and Lower Kittitas Counties. Anyone interested in these very affordable classes must pre-register by calling Mark Bennett at 509-674-7512. This is a required course to obtain a hunting license if born January 1972 or later. The next classes will begin in May 2003.

Future plans for the Cascade Field and Stream Club are to develop "Cowboy Action" – the fastest growing sport in the country. False store fronts, swinging door saloons, targets, period costumes, wooden horses and stagecoaches will enhance live ammo target practice using shotguns, rifles, and pistols. Also, in the future, the location of this range will make it more convenient for law enforcement to practice in an area closer than Yakima.

Hunter education and safety classes focusing on laws, conservation, safe gun handling, archery, muzzle loading, map and compass reading will continue to be featured by the club. Membership information or donations can be addressed to: Cascade Field and Stream Club, P.O. Box 424, Cle Elum, WA. 98922.

FALL COLOR HOTLINE

For folks planning to do some traveling this fall, a Fall Color Hotline is available and provides weekly updates on fall foliage color changes throughout the nation. For planning purposes, travelers should keep in mind that in most parts of the country color change will continue into early October. In areas of severe drought, there may well be an earlier than normal color change associated with moisture stress. This stress will cause an earlier leaf fall and color change. Color changes are primarily brought on by the increasing hours of darkness, but the timing and length of the fall color season is also affected by local weather. The toll-free number is (800) 354-4595 and provides callers with an automated voice system for hearing weekly updates on peak color in different regions of the country.

Safe Hiking Areas

Hunting season opens Oct. 12 which means most trails will see hunting activity. In fact, much of the forested and trail areas from Salmon La Sac to Ellensburg will be open to hunting.

Following are hiking or walking areas where hunting is prohibited:

- The Coal Mines' Trail
- The Iron Horse Trail
- Within city or town limits.

In Roslyn that means hikers who proceed over the old railroad tracks behind the police station will encounter areas open to hunting. In Cle Elum the city limits stop roughly at the power lines on the city's northern boundary.

When hiking in woods open to hunting, recreationists are urged to wear orange

If accompanied by a pet when hiking or hunting it is important that they too have orange attached to them.

For dogs, a piece of orange cloth attached to their collar might suffice. For horses there are even orange vests that can be purchased which can

Hunting Safety Top 10 List

Just in time for deer hunting season which opens Oct. 12, following are ten tips from the Washington Department of Fish and Wildlife to minimize hunting accidents:

10. Avoid alcoholic beverages or drugs!

9. Never shoot a bullet at a flat, hard surface or water.

8. Never climb a fence or jump a ditch with a loaded firearm.

7. Never point at anything you do not intend to shoot.

6. Unload guns when not in use.

5. Be sure of your target before you pull the trigger. Know your backstop.

4. Carry only ammunition matched to your firearm.

3. Be sure the barrel and action are clear of obstructions.

2. Watch that muzzle!

1. Treat every firearm with the respect due a loaded gun.

With these ten tips in practice, hunting season will hopefully be a successful and safe experience.

EXHIBIT M

To Comment Letter Submitted by James C. Carmody on behalf of
Dean and Danielle Tonseth
David Holmquist, Margaret Towle
And Ken Fyall

RE: CU-11-00003
Cascade Field & Stream Club

JGL
ACOUSTICS, INC.

Consulting Services
in Sound & Vibration
Control

Jerry G. Lilly, P.E. *President*

5266 NW Village Park Drive
Issaquah, WA 98027
Phone: (425) 649-0344
Fax: (425) 649-0717

December 13, 2003

Roger M. Leed, P.S.
2003 Western Avenue, Suite 600
Seattle, WA 98121-1261

Subject: Cascade Field and Stream Firing Range
Preliminary Noise Measurement Report

Dear Roger:

Thank you for sending me the November 1, 2003 report prepared by Andrew Piacsek. I have reviewed this document per your request, and I have several comments. First of all, I would like to say that it appears that Mr. Piacsek has done a commendable job, as far as a preliminary noise evaluation is concerned. I appreciate the fact that he had the instrumentation and vision to record both the peak and the impulse sound pressure levels associated with the gunshot noise. I also liked the way that he presented the measured data in a table, showing the expected spreading loss in decibels as well as the actual loss. I also agree with the first paragraph under the subtitle "Conclusions", where he clearly states that the measurement of one or two gunshots at each location is not sufficient to characterize the day to day variations in sound level caused by changing environmental conditions. However, I do not agree with all of his conclusions, as evidenced by the following comments:

1. The author has concluded that the maximum sound pressure level with an impulse response (time constant of 35 ms) should be used to evaluate compliance with the noise ordinance, because it more closely resembles the response time of the human ear. Actually, there is no consensus "time constant" for the human ear. Although some people reference the 1972 paper written by Helmut Haas[1], which demonstrated that a single echo will not adversely impact speech intelligibility until the time delay exceeds approximately 30 milliseconds, there are many research papers that demonstrate that the human ear has greater time resolution capabilities. For example, Ronken[2] conducted monaural signal detection experiments, which demonstrated the ability of human subjects to detect phase and amplitude changes of acoustic pulses

[1] Helmut Haas, *The Influence of a Single Echo on the Audibility of Speech*, Journal of the Audio Engineering Society, 20:146-159, 1972.
[2] Don A. Ronken, *Monaural Detection of a Phase Difference between Clicks*, Journal of the Acoustical Society of America, Vol. 47, Pt. 2: 1091-1099, 1970.

separated only by 1 to 10 milliseconds. As another example, Plomp[3] showed experimentally that people could detect a quiet time interval as short as 3 milliseconds between two equal noise pulses. In another paper, Miskolczy-Fodor[4] studied the auditory threshold change of tonal pulses with a duration that varied from 0.1 millisecond to 3 milliseconds. But the real issue at hand is the noise ordinance. The noise ordinance specifies the maximum allowable sound level, and it does not specify that the sound level must be measured with an exponential time weighting with a specific time constant (slow, fast, or impulse). As a result, time weighting should not be permitted when dealing with the maximum sound level. The only way to eliminate the time weighting influence is to use the peak detector on the sound level meter. The peak detector simply records and holds the maximum sound pressure level, with no special processing other than the A-weighting filter. Since no special processing is identified in the noise ordinance, none should be allowed. In fact, other technical papers[5, 6, 7] that have been written about the noise of guns and firearms have all reported sound levels as peak values, not impulse average values, because the impulse average values do not represent the true sound level at the ear.

2. The author also concludes that 70 dBA is the appropriate noise ordinance limit for gunshot noise from this project at the nearby residences. While the firing range should be considered a Class C EDNA because of its location and use, the nearby residences should not be considered Class C EDNA if they are used primarily as private residences. WAC 173-60-030 (1)(c) specifically states that "uses typical of Class A EDNA are generally not permitted within Class C EDNA." In these cases the residences should be considered Class A, which would require a maximum sound level of 60 dBA from the firing range.

3. The last sentence of the report states that the noise measurements suggest that the proposed firing range is likely to meet WAC community noise standards. I would have to disagree with this statement. Table 1 clearly shows that the peak sound pressure levels measured at nearby residential properties are as high as 81 dBA at Location 12 and 79 dBA at Location 14. These sound levels are 21 dBA and 19 dBA

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[3] R. Plomp, *Rate of Decay of Auditory Sensation*, Journal of the Acoustical Society of America, Vol. 36, 277-282, 1964.

[4] F Miskolczy-Fodor, *Relation between Loudness and Duration of Tonal Pulses. II. Response of Normal Ears to Sounds with Noise Sensation*, Journal of the Acoustical Society of America, Volume 32, No. 4, 1960.

[5] Pearl G. Weissler and Michael T. Kobal, *Noise of police firearms*, Journal of the Acoustical Society of America, Vol. 56, No. 5, 1974

[6] Shirley Jin, David Eplee and Gary W. Siebein, *A Preliminary Acoustical Analysis of Existing Indoor Firing Ranges*, Research Report to the National Rifle Association Grants-in-Aid Program, Washington, DC, 1990.

[7] R. Ross A. Coles, *Hazardous Exposure to Impulse Noise*, Journal of the Acoustical Society of America, Vol. 43, No. 2, 1968.

higher than the 60 dBA limit required by WAC 173-60-040 for a residential receiving property if the source is located on a Class C EDNA.

While the report is clear to indicate that the measurements are preliminary, I am concerned that the casual reader will conclude that noise from the proposed facility will have no noise impact on the neighboring properties. This conclusion cannot be drawn from the results of this preliminary study. What is needed is a comprehensive noise study to assess the environmental impact of the proposed firing range. The preliminary study did not assess any of the following factors that must be included in a comprehensive noise study.

- An assessment of the noise characteristics of the various different gun types that would be used at this facility. The preliminary measurements included only gunshots from a 30.06 rifle. It is my understanding that this range will include many different types of firearms including rifles, handguns and shotguns. A comprehensive study should evaluate the different characteristics (including peak level, pulse width, and directivity) of each gun type and factor these results into the analysis.

- The noise study should also include an assessment of the number of gunshots that could occur in any given hour. The noise ordinance is intended to apply to any hour of the day on any day of the year. To follow SEPA guidelines, it should assess the worst-case scenario, not a typical or average hour of the day. The preliminary report made no attempt to assess this very important component of the acoustical environment.

- The noise study should also include an assessment of the existing ambient noise environment. While Table 1 of the preliminary report does include limited information about the ambient noise level at each measurement location, the values shown are only representative of a few seconds of the day. A comprehensive study should include continuous ambient noise monitoring at nearby residences over several days (with no shooting at the firing range) to develop the true ambient noise statistics in the area.

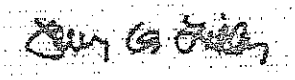
- The noise study should also assess the impacts of varying environmental conditions on the sound propagation from the firing range to the nearby residences, particularly humidity, wind, and air temperature profiles. While the preliminary study did record these variables at the time of the testing, there is little doubt that these conditions can vary significantly from hour to hour, day to day, month to month, and certainly season to season. Repeating the tests during a wide variety of environmental conditions will provide much needed insight as to how important these factors are in this particular location, and what kinds of limits can be determined regarding the maximum sound level from firing range activities.

JGL ACOUSTICS, INC.

- Finally, the noise study should determine the true noise impact on the nearby residential properties. Determining the true noise impact of the firing range involves calculating the expected increase in the noise level statistics at each residence, compared to the pre-existing ambient noise. The preliminary report only attempted to address the issue of compliance with the noise ordinance. While noise ordinance compliance is very important, compliance does not mean that there is no adverse noise impact. If the existing area can be characterized as serene or quiet, it is possible (and even likely) that a new noise source could be added to the environment that would cause a serious environmental noise impact without exceeding the limits of the noise ordinance. Keep in mind that the maximum allowable noise levels specified in the noise ordinance uniformly apply to all locations in the entire state of Washington. A noise level of 60 dBA may be found acceptable in a relatively noisy urban or suburban environment, but the same noise level could sound intolerably loud in a quiet, rural area.

In conclusion, I believe that a comprehensive noise study should be conducted to determine the true impact of the proposed firing range on the nearby residences before the gun club is allowed to move to the proposed location. If you have any questions regarding these findings and opinions, do not hesitate to give me a call.

Very truly yours,
JGL Acoustics, Inc.



Jerry G. Lilly, PE, FASA
President
Member INCE, NCAC

Tori Durand

From: Tori Durand
Sent: Friday, January 13, 2012 12:58 PM
To: 'Dan Valoff'
Cc: James Carmody
Subject: Cascade Field & Stream - 2nd Email
Attachments: Attach B - E.pdf

Attached are Attachments B through E.

Tori Durand
Legal Assistant to James C. Carmody
Velikanje Halverson P.C.
405 East Lincoln
Yakima WA 98901
☎ Phone: (509) 248-6030
🖷 Fax: (509) 453-6880
✉ Email: tdurand@vhlegal.com
Firm Web Site: VHLegal.com

Tori Durand

From: Tori Durand
Sent: Friday, January 13, 2012 12:59 PM
To: 'Dan Valoff'
Cc: James Carmody
Subject: Cascade Field & Stream - 3rd Email
Attachments: Attach F - M.pdf

Attached are Attachments F-M.

Tori Durand
Legal Assistant to James C. Carmody
Velikanje Halverson P.C.
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Yakima WA 98901
☎ Phone: (509) 248-6030
Fax: (509) 453-6880
Email: tdurand@vhlegal.com
Firm Web Site: VHLegal.com

Tori Durand

From: Tori Durand
Sent: Friday, January 13, 2012 12:58 PM
To: 'Dan Valoff'
Cc: James Carmody
Subject: Cascade Field & Stream -CU-11-00003 - Comment Letter
Attachments: Kittitas Co Comment Ltr 1 13 2012.pdf; Attach A.pdf

Attached is correspondence with various exhibits (*sent in three different emails*) – for the above-reference file.

I will put an original in the mail to you today. Thank you.

Tori Durand
Legal Assistant to James C. Carmody
Velikanje Halverson P.C.
405 East Lincoln
Yakima WA 98901
☎ Phone: (509) 248-6030
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