

Appendix G

**Responses to Comments on the
Draft Environmental Impact Statement**

APPENDIX G RESPONSES TO COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT

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APPENDIX G

RESPONSES TO COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

The DEIS was available for public review and comment from September 11, 2009 through October 26, 2009. The document (hard copy or CD) was distributed to recipients that expressed an interest in the document during scoping. It also was available on the Internet for review or downloading and a postcard was mailed to those on Fort Lewis' NEPA project mailing list who did not get the document directly. During the review period, a variety of agencies, elected officials, businesses, organizations, and individuals submitted letters and e-mails containing comments on the DEIS. In addition, three public meetings were held in Washington where people had the opportunity to ask questions about the DEIS and submit comments. The following section summarizes the public's comments on the DEIS and the Army's responses to those comments. Please refer to the Preface for acronyms used in this appendix.

G.1 SUMMARY OF COMMENTS ON THE DEIS

Table G-1 summarizes public involvement at the three meetings held during the comment period for the DEIS. The number of attendees reflects the count of people who signed in. In addition, some people attended more than one meeting. As noted on the table, only one person submitted written comments at the meetings. In addition to comments collected at the public meetings, 26 comments were received by mail, and email.

Table G-1 Summary of Meetings on the Draft Environmental Impact Statement

September 29, 2009 from 6:00-8:00pm in Lacey, Washington	
Number of Attendees	6
Comment Forms/Letters Received	1
September 30, 2009 from 6:00-8:00pm in Ellensburg, Washington	
Number of Attendees	3
Comment Forms/Letters Received	0
October 1, 2009 from 6:00-8:00pm in Yakima, Washington	
Number of Attendees	7
Comment Forms/Letters Received	0

G.2 ANALYSIS OF COMMENTS

Respondents submitted a variety of comments on the DEIS. The Army reviewed the comments and arranged them into groups with comment concerns. Then, a primary comment statement was prepared for each group of comments. Finally, a response was generated for each comment statement. Overall, the comments primarily focused on the NEPA process, alternatives, biological resources, cultural resources, water resources, wildfire, air quality, socioeconomics, and cumulative effects, though comments in other areas were received.

Table G–2, which follows the section on comments and responses, identifies the individuals, businesses, organizations, and agencies that responded to the DEIS. The table lists each respondent alphabetically and identifies the comment statement or statements attributed to the letter or e-mail.

The identifiers for the comment statements are associated with each comment statement in the section immediately preceding the table. The actual letters, e-mails, facsimiles, and transcripts of verbal statements are available for public review in the administrative record.

G.3 COMMENT STATEMENTS AND RESPONSES

This section presents the comment statements developed by the Army and their responses. The comment statements are numbered sequentially from 1 to 283 to facilitate references to them in **Table G–2**. However, they are organized in this section to follow the discussions of resource areas in the EIS. The discussion of resource areas follows the comments and responses regarding alternatives, the NEPA process, editorial changes, and other related issues.

G.3.1 NEPA Process/Alternatives/Planning

1. The DEIS does not include a reasonable range of alternatives as required by NEPA. The No Action alternative contains actions that could be as significant as the various action alternatives. Alternative 2 is being implemented according to the ROD for the 2007 GTA FPEIS. Thus, this alternative should be the baseline condition, not alternative 1. This appears to be a NEPA violation, as no EIS was prepared prior to implementation of this alternative.

Response: The alternatives included in the DEIS represent a reasonable range of alternatives. All action alternatives must meet the Purpose of and Need for the Proposed Action to be reasonable. In addition, the No Action alternative is rarely devoid of any actions or activities. The EIS attempts to capture the baseline of what would happen if the proposed action did not occur. In this case, a variety of actions, such as BRAC actions, have already been addressed under NEPA and approved. Because they have been approved, they are included in the No Action alternative. Decisions in the ROD for the 2007 GTA FPEIS about where growth and realignments would occur include stationing about 560 additional Active Duty Soldiers at Fort Lewis and augmenting Fort Lewis' existing units by approximately 1,320 Soldiers, for a total of approximately 1,880 additional Soldiers. The decisions about stationing actions were made with the understanding that site-specific analysis under NEPA would be undertaken at the affected installations before the actions were implemented. This EIS contains this site-specific analysis.

2. The City of Lakewood has been awarded two grants from the Office of Economic Adjustment (OEA) to study impacts from base growth. In April 2009, the City of Lakewood, WSDOT, and a consultant team began a \$450,000-study of congestion on I–5 through McChord AFB and Fort Lewis. In August 2009, Lakewood was awarded \$1,145,260 to create a Growth Coordination Plan for the ROI, which will identify and analyze community “gaps” that exist in order to properly handle the growth at Fort Lewis and McChord AFB. The City of Lakewood and WSDOT are concerned that there was no coordination between the DEIS and studies — the DEIS does not even mention the studies. In part because of this lack of coordination, WSDOT requests that final approval on the DEIS be withheld until these concerns have been fully and satisfactorily addressed.

Response: The DEIS was printed in July 2009 and distributed in early September 2009. At that time, work on the first study was only getting started and work on the second study had not yet begun. Since publication of the DEIS, we have coordinated with the parties that are participating on the studies and acquired current data. These data have been incorporated into the FEIS, particularly in the Transportation sections.

3. The alternatives were difficult to understand and compare. The DEIS describes four alternatives, but also sets forth a “proposed action”. The relationship between the proposed action and the alternatives and a preferred alternative is ambiguous. Although a variety of known projects is included in the No Action Alternative, we were unable to find an entire menu of these projects. What capital facilities are planned in the future? Are current troop levels at Fort Lewis being considered? It is also unclear whether Alternative 2 includes the number of Soldiers already included in previous decisions. The document provides no tool to compare the alternatives so the reader can understand what is being proposed under each alternative. Chapter 2 lacks details on the proposed actions and their impacts. A table comparing functional measures would help. All details related to description and quantification of training and other actions associated with Alternatives 1 through 4 and the reasonably foreseeable future actions (RFFAs) should be compiled in Chapter 2. All details related to the description and quantification of training and other actions associated with alternatives 1 through 4 and the RFFA should be compiled in Chapter 2 to insure the full scope and intensity of these actions is available and understandable to all.

Response: The Army did not identify a preferred alternative in the DEIS for the Fort Lewis Army Growth and Force Structure Realignment. The DEIS included a table that summarizes the “functional measures” of the alternatives. It was included in the front of volume 2 of the DEIS as an 11 by 17 foldout (to make it easy to have at hand as a reference while reading the DEIS). This table has been moved up to Chapter 2, where it will be more visible to readers. In addition, tables included at the beginning of Chapters 4 and 6 provide a comparison of the impact ratings for the various alternatives by resource. Appendix A includes tables that list the construction projects that comprise each alternative and these projects are shown on Figure 2–5. These tables are included in the document so those readers interested in the details can review them. They are not included in Chapter 2, however, because most readers are not likely to review all these projects. RFFAs are listed in Appendix B. RFFAs are not included in Chapter 2 because they are not part of any of the alternatives being considered.

4. The DEIS considers four alternatives and identifies Alternative 3 as the preferred alternative.

Response: The Army did not identify a preferred alternative in the DEIS for the Fort Lewis Army Growth and Force Structure Realignment Project. Statements in the Summary and Chapter 1 about Alternative 3 being the preferred alternative were in reference to the Final Programmatic Environmental Impact Statement (FPEIS) for Army Growth Structure Realignment that was completed in 2007.

5. Section 2.2.1.1 states that about half of the approximately 1,880 Soldiers resulting from implementation of the 2007 ROD have already arrived and been stationed at Fort Lewis. Has the accuracy of the expected number of associated Family members (2,860) been tested using the already stationed troops?

Response: The Army's ratios of the number of Family members and children to Soldiers were developed over many years with large numbers of Soldiers and their use is standard practice at all installations across the Army. Fort Lewis does not track the actual numbers of Family members because Soldiers and their Families move in and out of Fort Lewis too frequently for the numbers to be accurate for very long. In addition, comparing the actual numbers of Soldiers and Family members that have arrived to projected numbers is unlikely to provide useful data. The Soldiers and Family members would not arrive at Fort Lewis in the same proportion as the ratios; therefore, the distribution of Soldiers and Family members that have already arrived is probably skewed.

6. Distribution of the DEIS was inadequate. The distribution list contained in Chapter 9 suggests various entities, such as all potentially affected school districts, were not notified or provided the opportunity to review the DEIS. Other entities that should be notified and offered an opportunity for review and comment include Puget Sound Energy, Puget Sound Regional Council, Cascade Land Conservancy, and the NWR, as a potentially impacted, neighboring federal facility.

Response: Fort Lewis and YTC maintain a comprehensive mailing list for their NEPA actions. Parties on this list have varying levels of interest in Fort Lewis and YTC actions. The distribution list in Chapter 9 is a subset of the list and includes the entities that require a hard copy or CD version of the DEIS and those that specifically requested a copy of the DEIS while it was being prepared. Many of the other entities prefer to download a copy from the Internet. Postcards announcing the on-line availability of the DEIS and the three public meetings were mailed to the entities that did not specifically request a hard copy or CD, including all potentially affected school districts. Finally, the Army published public notices in all area newspapers announcing the availability of the DEIS and the three public meetings.

7. We urge the Army to withhold release of the FEIS until all crucial issues are addressed.

Response: We thank you for your comment and participation in this public process. Your comment has been considered and included in the administrative record for this process. We believe all issues have been addressed.

8. The Balanced Budget Act of 1997 (Public Law 105–33) promises many new opportunities and challenges for social workers in their varied roles. Major provisions of the law include committing \$47 million in new federal spending and requiring states to have a plan approved by the Department of Health and Human Services.

Response: We thank you for your comment and participation in this public process. Your comment has been considered and included in the administrative record for this process.

9. Please clarify the reference to years throughout the document. Does 2012 mean calendar year 1 January to 31 December or the Federal Fiscal Year October 1, 2011 to September 31, 2012?

Response: References to the federal fiscal year are preceded by "Fiscal Year" or "FY". Otherwise, references to years are calendar years.

10. The proposed action should be designed to include an environmental inspection and mitigation monitoring program to ensure compliance with all mitigation measures and assess their effectiveness.

Response: Inspections and monitoring are incorporated into a variety of the Army's management actions, such as the INRMP. Environmental regulations also require inspections and monitoring. The ROD will identify appropriate inspection and monitoring requirements.

11. Appendix B of the DEIS includes HIMARS among the “reasonably foreseeable future actions” (RFFAs) that are considered in the analysis and goes on to state that an Environmental Assessment (EA) has been prepared by the Army in compliance with NEPA for the HIMARS proposal. No EA has been prepared with regard to the HIMARS proposal and the Army has failed in its obligation under NEPA to assess the impact of the HIMARS proposal and give interested parties the opportunity for review and comment. No HIMARS-related capital facilities are included in Appendix A, but Table 2–9 indicates that HIMARS equipment is among the major equipment items assigned to Fort Lewis and YTC. HIMARS must be explicitly described and quantified, including where would they be pointed, how high would they go, and what kind of fall out would they produce.

Response: The HIMARS project is a RFFA for this NEPA analysis, and the Army has conducted a separate NEPA analysis that is documented in an EA, which will be released for public review after the decision maker has approved it for release. The EA discusses all of the attributes of HIMARS rockets and the effects of launching them at Fort Lewis and YTC. The EA concludes that launches of HIMARS rockets would not result in significant fall out. A schedule for release of this EA has not been determined.

12. The DEIS makes no mention of greenhouse gases, carbon footprint, or climate change and the requirement of Federal Agencies to account for this change. For example, even with the uncertainties associated with climate change, the fact that fires would be more frequent, of longer duration and may cover larger areas needs to be considered in the environmental analysis. The FEIS should include an assessment of the potential effects brought on by climate change.

Response: These issues are addressed in Sections 4.7.6.1.1 and 4.7.10 of the FEIS.

13. The DEIS does not provide information regarding the amount or extent of additional funding that will be provided to the installations to monitor their training lands and natural resources, maintain roads and provide additional infrastructure that will be needed to implement actions for a larger and more mobile Army. As troop strength increases, the ability to receive access for monitoring to training lands becomes increasingly difficult. The Department recommends that prior to increased troop strength and increased maneuver roads, Integrated Training Area Management staff be provided adequate time to effectively assess and monitor training activities.

Response: Estimates on the amount of additional funding to be included in Fort Lewis' annual budget requests for the selected alternative will be disclosed in the ROD. The Integrated Training Area Management staff works as effectively as possible to assess and monitor training activities by managing funds by priority. The Army is committed to providing access to training areas for management or

mitigation in order to ensure training area sustainability for future training. The Army will continue to monitor and conduct management activities in accordance with Fort Lewis regulations, the ITAM Program, and other installation management plans.

14. The DEIS lacks specificity with regard to where training intensity and frequency will increase on Fort Lewis, except to say that it will increase by 50 percent as a result of the third SBCT. This assumes that all impacts are additive, whereas some impacts may change by more or less than 50 percent. Because few data are presented, which would permit an objective assessment of impacts, the DEIS as written is inadequate and incomplete.

Response: Training frequency and intensity will increase at all areas on the installation under Alternatives 2, 3, and 4. It is not possible to identify the specific location and type of training to be conducted because these are dependent on individual unit training requirements and training events. The EIS uses estimated maneuver miles, including off-road miles, as a means of identifying potential impacts to training lands. The estimated numbers of miles by alternative are provided in Appendix B. This allows the EIS to take a hard look at the impacts of the proposed action and alternatives.

15. Nowhere in the DEIS are the impacts of the total population change at Fort Lewis quantified. A 67 percent increase in Fort Lewis population would have significant long-term effects on natural resources both on- and off-base and would increase illegal activities such as illegal dumping, unauthorized use of training lands by off-road and other motorized vehicles, and additional civilian recreational and other uses at Fort Lewis. This population change is based on Alternative 2. What would the total population changes be under Alternatives 3 and 4?

Response: The 67 percent increase in population mentioned in the comment is not solely due to the proposed GTA alternatives; this increase includes past decisions under BRAC and other actions. As stated in Table 2–9 in Chapter 2, Alternative 3 would add 7,260 Soldiers and Family members to the current population and Alternative 4 would add 14,320 Soldiers and Family members to the current population. Fort Lewis has processes in place involving the Military Police and Range Control that monitor and respond to illegal activities on Post.

16. Since three SBCTs were stationed at Fort Lewis in April 2007, their annual training requirements have increased from 44,000 miles to 529,000 miles due to an evolving doctrine. What is the level currently approved under the existing EIS. Please include all details about on- vs. off-road miles and associated measurement of maneuver and live-fire training activities in Chapter 2 and in the Summary Table of alternatives.

Response: The Army establishes the requirements for the maneuver training conducted by the SBCTs at Fort Lewis and YTC to sustain proficiency in the units' mission essential tasks. Although the basics of maneuver training have remained consistent, overall requirements for training vary with mission and lessons that the Army has learned from deployments. In response to changing missions and lessons learned, the number of miles driven during training has increased. Additionally, the proportion of miles driven on road to those driven off road has reversed from the Army's original expectations so that the number of miles driven off road is 20 percent or less of the total annual miles driven. This EIS

presents and analyzes the estimated mileage requirements defined by the Army's current training doctrine.

Relative to the presentation of details for training, Chapter 2 presents a level of information appropriate for the analysis. The Army strives to make its document understandable by the public. Thus, in some instances, such as the mileage calculations, a summary of the estimated mileage requirements is included in Chapter 2 whereas the details about how the mileage was calculated and specifically used in the analysis are included in Appendix B. This approach ensures that sufficient information is available for the public to understand the alternatives and provides the additional details for those readers who may wish to delve into the calculations in more detail. Total annual estimated maneuver training miles were provided in the DEIS' Summary of the Key Attributes of the Alternatives table, which has been moved up to Chapter 2 in the FEIS to make it more readily visible to the reader. Detailed breakdowns of on- vs. off-road miles are provided in Appendix B.

17. Access to training areas and live-fire ranges is becoming increasingly difficult to obtain. Without access, there is no means for monitoring populations or conducting management actions or mitigation. Please calculate the number and distribution of access days in which access may be expected in training and maneuver areas for the purpose of resource monitoring and management.

Response: The Army is committed to providing access to training areas for management or mitigation in order to ensure training area sustainability for future training. The Army will continue to monitor and conduct management activities in accordance with Fort Lewis regulations, the ITAM Program, and other installation management plans.

18. Where will new SBCTs be stationed? According to the ROD for the 2007 GTA FPEIS, up to six active BCTs will be added nationwide. Is it possible that more than three SBCTs would be stationed at Fort Lewis in the near future?

Response: The ROD for the 2007 GTA FPEIS identifies up to six BCTs, for stationing nationwide and specifically identifies where each BCT would be stationed. None of the new BCTs was identified for stationing at Fort Lewis.

19. On page 2–5, lines 7–8, The statement “The requirements of training three SBCTs simultaneously with all other major units, however, could result in increased frequency of use of maneuver training areas and weapons firing ranges.” is false. Please remove.

Response: The statement as written is an accurate description of the changes anticipated under the proposed action.

20. On page 2–5, lines 35–36, the DEIS specifies that new training ranges will be required, but no specifics are given, making it impossible to assess potential impacts of these actions. In addition, on Page 2–12, it is not clear from the information provided which ranges are new, upgraded, or otherwise modified, making it impossible to assess impacts.

Response: The proposed new ranges are identified and described in Section 2.2.2.1, including on Table 2–4. In addition, they are shown on Figures 2–6 and 2–7.

21. On page 2–8, lines 3–11, the DEIS states that operating on roads or unrestricted terrain (e.g., less than 30 percent pitch and 60 percent grade) allows SBCTs to take advantage of the Stryker’s speed (p. 2–8). We recommend minimizing off-road training miles to reduce loss of rare species, habitat destruction, and fuel consumption.

Response: As noted in Section 2.2.1.1, SBCTs move mostly by road, with limited off-road or cross-country operations. The SBCT uses Stryker vehicles to traverse terrain and obstacles to ensure protected delivery of infantry squads to their dismount points. The way the Stryker vehicles are used in training and deployment already minimizes the number of off-road training miles.

22. On page 2–17, lines 11–13, the DEIS states that “The construction of the facilities required for the CSS units cannot currently be determined because the precise distribution of units among transportation, quartermaster, medical, headquarters, or other CSS units is unknown.” Without knowledge of where construction is occurring, no assessment of impacts can be made.

Response: The area has been increased to 60 acres with 10 acres of oak habitat protected and incorporated into the design. For the purposes of this analysis, we assumed the most of the 60-acre CSS area shown on Figure 2–5 would be entirely disturbed. Thus, the impact analysis assumed that 50 acres would be converted from its present habitats to a disturbed, urban habitat. This is adequate for this level of analysis.

23. On page 2–17, lines 25–26, citing facilities, especially given they cover an area of 107.8 acres, in seemingly disturbed areas does not automatically mean they will have no impacts. Please strike the words “which are largely developed already”.

Response: The Army believes the phrase “...largely developed already” is accurate. The area is already occupied by offices, living quarters, other buildings, parking lots, and streets. The phrase has not been deleted.

24. Referencing Table 2–8 on page 2–20, how can Fort Lewis train even one SBCT if the training area requirement for one SBCT is 2,500 sq km (617,800 acres) and Fort Lewis has less than 307.6 sq km (76,000 acres) of training lands? It seems impossible that Fort Lewis can support semi-annual SBCT maneuvers each lasting 4 to 6 weeks for one let alone three SBCTs.

Response: As noted in the text reference, Table 2–8 depicts the doctrinal area that an SBCT requires to train to its wartime mission essential task list. Few of the Army’s installations have the required doctrinal area called for in TC 25–1 for BCT and larger formations. At Fort Lewis and YTC, units employ available training lands to maintain proficiency in their mission essential training tasks.

25. On page 2–21, line 43 the DEIS states that “Training impacts would also vary according to the size and weight of the truck and cargo.” Please provide minimum and maximum expected impacts.

Response: The variations in sizes, weights, and types of vehicles and cargos combined with the continuous variations in vegetation, slope, and soil types renders this type of estimation unworkable. Consequently, the impact analyses are based on a worst-case scenario and not on minimum/maximum expected impacts.

26. On page 2–23, lines 6–13, please provide a range of elevations for each of the type of helicopter training and the Training Areas where each type of training would occur.

Response: Although helicopters would fly at altitudes ranging to approximately 5,000 feet above ground level while training, they would primarily conduct landings and takeoffs only at GAAF and VHF. They could, however, fly anywhere over Fort Lewis or YTC during their training flights using the modes of flight described in Section 2.2.3.3.

27. On page 2–23, lines 38–39 please revise the statement to read “The addition of the medium CAB would increase the overall number of takeoffs and landings at GAAF by 344 percent from approximately ?? to ?? (Clayton 2009a).”

Response: The statement has been revised as suggested.

28. The statement that “Fort Lewis is bordered on the north by McChord Air Force Base (AFB) and suburban and commercial development; on the east and south by rural areas, forestland, and several small communities; and on the west by Puget Sound, the Nisqually Indian Reservation, and rural areas that surround Olympia” appears repeatedly in the DEIS (for example, p. xxiv, beginning line 34). Under state law, incorporated areas (cities and towns) and those lands within designated urban growth areas (UGAs — including Ft. Lewis’ and McChord’s cantonment area and Camp Murray) are categorized as “urban,” while unincorporated areas outside of UGAs are characterized as “rural.” In this sense, the description of environs should be adjusted to portray expected levels of growth more accurately, regardless of existing levels of development. Also, the presence of the Nisqually Wildlife Refuge (NWR) to the west is not noted.

Response: References to the environs of Fort Lewis have been revised.

29. The information sheet lists as affected jurisdictions Kittitas, Pierce, Thurston, and Yakima counties. However, because of the potential for added impacts upon the I–5 corridor north of Fort Lewis, I–405, and I–90/Snoqualmie Pass as related to convoy travel, we believe King County is also among the impacted areas. King County jurisdictions abutting the travel corridor should have been included in the distribution, analysis of convoy impacts through the corridor completed, and public notice provided to that additional affected area.

Response: The list of affected jurisdictions refers to those locations where primary construction and training would occur. The effects of convoys traveling between Fort Lewis and YTC are described and disclosed in Section 6.10. Public notices announcing scoping and the availability of the DEIS were published in the Seattle newspapers, which provided notification to anyone in King County.

30. The DEIS contains a number of typographical and other minor errors.

- p. 3–57, line 10: Nisqually Wildlife Refuge (Technically, according to the US Fish and Wildlife Service Web site, its proper name is the Nisqually *National* Wildlife Refuge, although I do not typically hear that name used in local nomenclature.)
- p. 3–62, line 17 (bullets): St. Claire Clare Hospital
- p. 6–81, line 20: The principle principal activities within the region that contribute to noise...

- p. 9–2, lines 7 & 9: These are not governmental agencies and should be moved to the “Individuals and Organizations” section beginning on line 49.
- p. 9–2, line 12: Thurston County Regional Planning Council
- p. 9–2, line 26: Honorable Cynthia Lyall Iyall, Chair, Nisqually Indian Tribe
- (numerous pages): Cloverpark Clover Park School District
- The description of various portions of Fort Lewis lands in relation to “the town of Lacey,” “town of Yelm,” and “town of Roy” also appear repeatedly in the DEIS (for example, p. 3–47, beginning line 10). Lacey, Yelm and Roy are all cities, not towns. Similarly, Steilacoom is referred to as a “town” (for example, p. 3–57). The characterization of nearby incorporated areas within the distribution list is correct and should be substituted.
- Nisqually tribal lands are referred to, variously, as the “Nisqually Indian Reservation” and as the “Nisqually Indian Community” (for example, p. 3–47, lines 14 & 17) in the DEIS text and figures. The latter appears to be an effort at a more politically correct representation of tribal lands. The Army should defer to the Tribe’s preferred terminology (noting that the Tribe’s own Web site refers to the “Nisqually Indian Reservation”), and all references to Nisqually tribal lands should use the same name in order to avoid confusion.

Response: The typographical errors have been corrected. We thank you for your comment and participation in this public process. Your comment has been considered and included in the administrative record for this process.

31. We favor the prospects of additional troops, families, units, and missions as detailed in the DEIS.

Response: We thank you for your comment and participation in this public process. Your comment has been considered and included in the administrative record for this process.

32. Please provide a map or list of those areas considered maneuver areas and at a minimum that total number of such acres on Fort Lewis and YTC.

Response: Training areas have been added to the appropriate maps in Chapter 2 for both Fort Lewis and YTC. A description of the areal extent encompassed by the training areas has been incorporated into Section 2.1.2.

33. There are several methods discussed in the Impact Methodology that do not appear to have been implemented in the DEIS. For example, B.2.6 Significance Criteria, states that all Significant and Significant but Mitigable to less than Significant Effects will be identified in the text by number (e.g., Impact 1) with a corresponding numbered mitigation (e.g. Mitigation 1). Only criteria indicating Significant effects are supplied in the DEIS; all other categories appear to be arbitrary and subjective designations.

Response: The discussion in Appendix B has been revised to reflect the presentation of effects in the FEIS more accurately. Additional discussion of mitigation measures has been included throughout the FEIS. These measures include ongoing as well as proposed mitigation.

34. WDFW is interested in participating in this conversation once impacts to fish and wildlife resources resulting from the various alternatives have been adequately documented and quantified in the DEIS.

Response: We thank you for your comment and participation in this public process. Your comment has been considered and included in the administrative record for this process.

35. Please move section B3 (Maneuver Training Mileage Estimation) in Appendix B (Impact methodology) to Chapter 2.

Response: The Army prefers to leave this discussion in Appendix B with a reference in Chapter 2. It is supplemental information that many readers do not review.

G.3.2 Soils

36. Contrary to what is stated on page 4–5, lines 2–3, compaction and loss of top soil greatly affect the ability of prairie soils to sustain and grow vegetation, and as such WILL impair effective maintenance of TAs, consequently impacts are likely to be significant given the number and area of proposed maneuvers and off-road miles and the current difficulties being encountered in re-establishing native vegetation. This comment applies to assessments for all Alternatives. The ITAM program has undergone consistent reductions in size and scope over the past 5 years, and has been unable to address many recent impacts to training lands.

Response: The Army's analysis supports the determination that effects of compaction and loss of topsoil would not be significant. Compaction and loss of topsoil have not been and are not issues on Fort Lewis. Compaction that occurs during maneuver training is temporary. Plant growth and freeze-thaw cycles break up the compacted soils. In addition, topsoil on Fort Lewis is stable because of the moisture regime and limited slopes. Finally, the size and scope of the ITAM program fluctuates annually depending on military needs.

ITAM currently repairs training lands and ranges using a variety of methods that include the use of native plugs, native seed mix, and sterile wheat. ITAM has had great success in using these methods to repair the land. Monitoring is being completed on the success of ITAM native plug planting and the Plant Propagation Manager is developing methods to increase the survival of the native plugs.

37. On page 4–6, lines 24–26, please quantify the increase in disturbance resulting from rotor wash (number of take-offs, landings, very low-level flights). Also, please specify what percentage of training is to occur during summer months when soils are very dry and/or exposed because of fires and mowing. These factors could lead to significant adverse effects.

Response: Section 4.13 presents the number of take-offs and landings expected with the medium CAB. As noted, take-offs and landings would occur primarily at GAAF. In general, the pilots would not frequently land their helicopters elsewhere on the Post. In addition, topsoil on Fort Lewis has been and is stable. Finally, aviation training, and thus take-offs and landings would be evenly distributed throughout the year, not seasonally distributed. Consequently, the Army concluded that rotor wash for helicopters would not affect soils on Fort Lewis significantly.

G.3.3 Water Resources

38. Each of the Alternative's description of increases in troop strength and maneuver miles would increase the amount of range and training area damage. On YTC, we are concerned about the amount of additional sediment delivery into the Yakima and Columbia River basins, which provides important migratory and spawning habitat for the threatened bull trout (*Salvelinus confluentus*). The FEIS should include an analysis of additional amount of erosion and sediment delivery that would be associated with each of these alternatives, the impacts to the Snake and Columbia River and mitigation for those impacts.

Response: Increase in soil erosion on YTC was evaluated in terms of annual soil loss increase. Soil loss, however, represents material actually removed from a site and is generally greater than the actual sediment transported to a stream. The soil loss analysis is provided in Section 6.1.4.3.1. Management activities discussed in Sections 5.1, 5.2, and 5.3 would minimize discharge of sediments to both Yakima and Columbia Rivers. These include management and rotation of training areas to allow vegetation to recover, active restoration by planting, construction of sediment-trapping check dams at critical locations, and protection of critical riparian vegetation corridors by restrictions on use. Additionally, the existing rangeland restoration/rehabilitation and watershed protection programs contained in the CNRMP/INRMP would be continued to maintain optimal water quality. This program reduces suspended solids discharges by minimizing streambed and gully erosion and reducing disturbance of soils at stream crossings. Overall, the impact to water quality is expected to be minimal because of the mitigation measures that the Army has in place.

In addition, the USGS has evaluated surface water quality in the Yakima River Basin. One report concluded from 1987–1991 data that “stream-flow from rangeland was small, and in terms of land use, its effect on water quality was insignificant”. A 2000 report concluded that good water quality and habitat conditions in the Yakima River Basin are associated with areas of little or no agriculture, as opposed to poor condition sites that are associated with intensive agriculture. One of four fish bearing streams on YTC (Lmumma Creek) flows into the Yakima River, and the report identifies this area within the Yakima River Basin, as having some of the best water quality and habitat conditions. Generally, the report indicates sediment from sources like YTC is of little or no consequence when compared to chronic impacts from irrigation return flows. Consequently, YTC's influence on bull trout habitat in the Yakima River Basin is minute. Increased sediments from non-agriculture areas like YTC are the result of seasonal snowmelt and run off events.

There are three additional fish bearing streams feeding into the Columbia River; Johnson, Hanson, and Alkali Creeks. Conditions on these streams and their impacts on water quality and habitat conditions in the Columbia River are similar to that for Lmumma Creek on the Yakima River; infrequent seasonal snow melt and run off events that are of little to no consequence when compared to other sources (e.g., agriculture return flows). Consequently, YTC's influence on bull trout habitat in the Columbia River Basin also is minute.

39. The use of Seibert stakes has been a successful method of reducing or eliminating vehicle impacts to streams. Fires however, have eliminated riparian vegetation and negatively

impacted streams. Increased sediment, solar radiation and reduced riparian woody debris results from burned riparian areas. Streams on YTC drain to both the Yakima River basin and the Columbia River. Listed fish utilize these streams certain years or annually. These streams meet phases of their life history. The impacts to fish habitat have not been adequately assessed. The miles of stream adjacent roads (miles of road within 50 feet and 75 feet per drainage) and the number of stream crossings per stream as well as the acreage of road that drains to the stream should be provided to quantify erosion and sediment sources.

Response: The USGS has evaluated surface water quality in the Yakima River Basin. One report concluded from 1987–1991 data that “stream-flow from rangeland was small, and in terms of land use, its effect on water quality was insignificant”. A 2000 report concluded that good water quality and habitat conditions in the Yakima River Basin are associated with areas of little or no agriculture, as opposed to poor condition sites that are associated with intensive agriculture. One of four fish bearing streams on YTC flows into the Yakima River (Lmumma Creek), and the report identifies this area within the Yakima River Basin, as having some of the best water quality and habitat conditions. Generally, the report indicates sediment from sources like YTC is of little or no consequence when compared to chronic impacts from irrigation return flows. Increased sediments from non-agriculture areas like YTC are the result of seasonal snowmelt and run off events.

There are three additional fish bearing streams feeding into the Columbia River; Johnson, Hanson, and Alkali Creeks. Conditions on these streams and their impacts on water quality and habitat conditions in the Columbia River are similar to that for Lmumma Creek on the Yakima River; infrequent seasonal snow melt and run off events that are of little to no consequence when compared to other sources (e.g., agriculture return flows).

Fire impacts do occur and primarily exhibit short-term impacts to riparian and wetland vegetation (i.e. reduction of structure, establishment of earlier seral vegetation condition, stimulation of regeneration.)

40. Due to unprotected nature of this aquifer and the soil characteristics, there is higher potential for contamination to the aquifer underlying the proposed activity. This fact needs to be disclosed in this document, as well as the potential pathways of environmental contamination to the unprotected aquifer, groundwater, and surface water. Many of the existing surface waters have on-going contamination problems associated with historic storm water, wastewater, and other human activities in the area.

Response: EPA designated the Central Pierce County sole source aquifer as discussed in Groundwater Protection Programs Section 3.2.2.2.1. Designated 303(d) surface water bodies are disclosed in Section 3.2.1.2. Existing contamination sources are discussed in Section 3.2.2.2 and in further detail in Section 3.12.8 Hazardous Waste Spills and Contaminated Sites. The Army has measures in place to prevent contamination. Therefore, the Army believes that the potential for activities related to proposed alternatives to affect the groundwater resources adversely is low and detailed groundwater characterization and analysis are not warranted. Fort Lewis has programs and control measures in place to protect the aquifer. The Army complies with the western Washington stormwater manual and attempts to maximize utilization of LEED Silver guidelines and Low-impact

Development practices for comprehensive stormwater management. Any potential impacts related to water quality would be addressed through SWPPPs and SPCCPs. The Army will continue to coordinate with appropriate state and federal agencies to ensure compliance with regulations and protection of groundwater resources.

41. It is important to mention that Pierce County and Thurston County both have unprotected sole-source aquifers underlying Fort Lewis. There has been historic man-made contamination from private industry, as well as the Air Force and Army Base of the past several decades. Some of this contamination is still be cleaned up. A contaminated (current or future) aquifer is harmful to human and environmental health. The lack of mention of these critical environmental facts is disconcerting. The existing environmental condition, as well as potential future environmental risks must be included in the draft environmental document. Appropriate avoidance and mitigation strategies must also be included for all alternatives.

Response: As discussed in Sections 3.2.2 and 3.12.8, past contamination at Fort Lewis has been evaluated and, in coordination with the EPA and state agencies, appropriate remediation has been developed and is in place. At the same time, specific procedures were developed to protect the aquifers underlying Fort Lewis from future contamination. Finally, no part of any of the actions that comprise the alternatives evaluated in this EIS would result in releases of contaminants that could adversely affect the aquifers.

42. The draft EIS indicates that there are several water bodies that would potentially be affected by the project and that some of them have been listed as water quality impaired on the state of Washington's 303(d) list. Listing parameters include pH, temperature, dissolved oxygen, fecal coliform bacteria, phosphorus, and pesticides. We are concerned that planned activities under the Preferred Alternative, such as construction of additional facilities and intensified use of live-fire and maneuver training and associated equipment use could further degrade water quality with respect to those parameters. We believe that the NEPA analysis should include additional specific information about water quality and management actions that would improve water quality. The EIS, for example, identifies the pollutants affecting various water bodies, but does not indicate the magnitude of water quality standard exceedances and Army actions to meet water quality standards. We recommend the Army work with Washington State Department of Ecology (Ecology) to develop water quality restoration plans for waters that do not currently have such plans, and to implement existing plans to meet State and Federal water quality rules and regulations.

Response: As discussed in Section 3.2.1.2, only one surface water body located within Fort Lewis — American Lake — is listed as a Category 5 impaired water body, which is equivalent to the traditional 303(d) list. Other water bodies are outside and upstream of the Fort Lewis boundary and therefore would not be affected by activities related to proposed alternatives. Based on the 303(d) list American Lake is listed as impaired by phosphorus which is primarily related to agricultural activities. The Army does not believe that activities related to proposed alternatives would contribute to phosphorus contamination in the American Lake. The watershed management plan was completed in July 1997 and proposed control measures include phosphorous precipitation/inactivation, watershed nutrient management, and volunteer monitoring. Additionally, mitigation measures proposed by the Army, including the SPCCP and exclusion

of training activities from sensitive areas, further minimize potential impacts to water quality.

43. The draft EIS notes that most surface water on Fort Lewis would also be discharged into Puget Sound, which is sensitive and vulnerable to water quality and habitat impacts. As an active member of the Puget Sound Partnership, EPA strongly supports the strategic priorities that have been established to protect and restore this important resource. Because of that, we encourage the Army to partner with others involved in Puget Sound restoration programs to ensure coordination of ecosystem restoration activities. We also note that, under the federal Clean Water Act (CWA), any construction project disturbing one or more acres requires a construction storm water discharge permit or National Pollutant Discharge Elimination System (NPDES) permit for discharges to waters of the U.S. The FEIS should document the project's consistency with applicable storm water permitting requirements and should discuss specific mitigation measures that may be necessary or beneficial in reducing adverse impacts to water quality.

Response: As noted throughout Sections 4.2 and 6.2, for each project contractors would develop and implement a SWPPP that outlines mitigation strategies to reduce impacts associated with storm water runoff during construction. The Army would incorporate BMPs that would reduce runoff and sedimentation to aquatic environments in accordance with CWA regulations for storm water runoff at construction sites. Additionally, the Spill Prevention Countermeasure and Control Plan (SPCCP) would address the potential for impacts from accidental spills and releases that would have potential to impact water quality. As stated in Section 6.2.4.1.1, "pursuant to provisions in the CWA, contractors must submit a NOI to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Construction Activities for each construction project that disturbs 1 acre or more of land." Furthermore, Fort Lewis has been actively involved in the Puget Sound Federal Caucus, a sub-group of the Puget Sound Partnership to assist with restoration efforts and activities. The text in these sections has been updated to reflect this statement.

44. In our scoping comments in February 2009, we indicated that construction of facilities and cantonment developments could compact the soil, thus changing hydrology, runoff characteristics, and ecological function of the area, affecting flows and delivery of pollutants to water bodies. The EIS does not describe in sufficient detail sediment loadings to impaired streams during construction and maneuver training. Are stream crossings going to impact any stream with sediment? How effective would any proposed best management practices be in protecting the streams and aquatic resources, particularly fisheries? Do crossings at certain times of the year result in more impacts than others? The final EIS should discuss impacts due to stream crossings. The EIS should also document locations where stream fording and crossing within the Installations with wheeled and tracked vehicles have been approved, and if articulating concrete mats are used to harden low-water crossing sites along tank trails.

Response: No new stream crossings are proposed with the proposed action; however, the existing crossings would be used more frequently. There are no "impaired" streams located on YTC. Stream crossing improvements have been constructed in accordance with all regulatory (permitting and design) requirements. In addition, all water bodies have a 50-m buffer around them. The assumption with the use of BMPs is that they are effective, thus the reason for their use. Any

construction within drainages or that have potential to impact drainages are vetted through appropriate planning and permitting processes. Finally, construction activities require the use of SWPPPs, SPCCPs, and EPPs.

45. The project proposes new construction activities that would expand impervious surfaces, resulting in greater storm water volumes and potentially higher pollutant loading to nearby waterways and floodplains. Even though current surface water drainage and retention systems at the Installations would lessen the impacts of storm water runoff from impervious surfaces, pollutants are still likely to accompany discharge to surface waters and infiltrate to ground water.

We recommend use of Low Impact Development (LID) techniques that reduce the volume of storm water and mimic natural conditions as closely as possible. More information about LID practices can be found online at: http://www.psat.wa.gov/Programs/LID/lid_cd/brochure.pdf and <http://www.epa.gov/smartgrowth/stormwater.htm>.

Response: LID techniques were incorporated into the Area Development Plans that will be the foundation for all future development as part of complying with the western Washington stormwater manual. Thus, impervious surfaces were minimized as much as practicable. In addition, potential impacts related to construction activities would be addressed through project-specific SWPPPs and SPCCPs. Finally, every construction project has an Environmental Protection Plan (EPP) that includes all environmental protection measures outside of SWPPPs.

46. The draft EIS should address any potential effects to groundwater resources at Ft. Lewis and YTC from the proposed action, and indicate measures to be taken to ensure protection of groundwater quality as the project is implemented. Please note that the groundwater resources at Fort Lewis lie within the Central Pierce County Aquifer that EPA designated as a Sole Source Aquifer (see <http://yosemite.epa.gov/r10/water.nsf/Sole+Source+Aquifers/SSA>) due to concerns about potential contamination risks. In order to better analyze potential impacts to this sole source aquifer and aquifers at YTC, the final EIS needs to include information about water level elevation contours of the area, cross sections depicting aquifer stratigraphy and water level depth, maps of any contaminant plumes known to exist in the area and plume(s) likely to be transported to a deeper part of the aquifer systems, ground water flow directions, hazardous materials sites, and locations of existing wells and a description of the anticipated impacts on the wells and on the wellhead protection areas. In particular, EPA is concerned that in some areas of Yakima County, nitrate levels in well water are in excess of the state drinking water maximum contaminant level (MCL) of 10 mg/L. If information is available, please include the most current test results for nitrates and other contaminants in well water at the installations.

Because of concerns that water within the aquifers may exceed drinking water quality standards, we recommend the Army coordinate with appropriate State and Federal agencies with programs addressing the aquifer issues to ensure their protection, and to partner with the agencies' ongoing aquifer habitat and water flow and quality studies to better understand the complex aquifer and river interchange relationships. Please note that some projects receiving federal financial assistance are subject to EPA review and approval that the project would not be a hazard to public health through contamination of ground/drinking water.

Response: EPA designated Central Pierce County sole source aquifer is discussed in Groundwater Protection Programs Section 3.2.2.2.1. The Army believes that the

potential for activities related to proposed alternatives to affect groundwater resources adversely is low and therefore detailed characterization and analysis of the groundwater conditions (i.e., water level map, cross sections, plumes delineation etc) would fall out of scope for this EIS. Any potential impacts related to water quality would be addressed through SWPPP and SPCCP plans. Army will coordinate with appropriate state and federal agencies to ensure compliance with regulations and protection of groundwater resources. Furthermore, Fort Lewis has been actively involved in the Puget Sound Federal Caucus, a sub-group of the Puget Sound Partnership to assist with restoration efforts and activities. The text in this section has been updated to reflect this statement.

Any military training activity is unlikely to affect quality of groundwater resources at YTC. Potable water is obtained from aquifers that historically have not demonstrated influence from training activities at YTC. The primary source of drinking water in the cantonment area and for many area residents is a confined aquifer that occurs at considerable depth. The commenter stated “the FEIS needs to include information about water level elevation contours of the area, cross sections depicting aquifer stratigraphy and water level depth...” Due to the complex geology of the YTC area, existing wells and data are insufficient to contour the water level elevation or aquifers of the area or to derive cross-sections of the aquifer stratigraphy.

The commenter further stated that “[the final EIS needs to include] maps of any contaminant plumes known to exist in the area and plume(s) likely to be transported to a deeper part of the aquifer systems, ground water flow directions, hazardous materials sites, and locations of existing wells and a description of the anticipated impacts on the wells and on the wellhead protection areas.” The only known contaminant plumes are in the cantonment area and are associated with sites investigated in the RCRA Facility Investigation in 1995. According to groundwater monitoring data, the plumes affect surficial water in an area of less than one tenth of a square mile and have no influence on existing Army or private potable water wells. No contamination has migrated beyond the YTC boundary. In addition, a groundwater monitoring well has been positioned to identify if there is future development of a plume associated with a petroleum release in 2008. All groundwater monitoring is done in cooperation with the Washington State Department of Ecology.

In addition, the commenter stated, “In particular, EPA is concerned that in some areas of Yakima County, nitrate levels in well water are in excess of the state drinking water maximum contaminant level (MCL) of 10 mg/L. If information is available, please include the most current test results for nitrates and other contaminants in well water at the installations.” YTC is aware that areas of Yakima County with high nitrate levels are associated with agricultural and residential activities. YTC has no agricultural activities. YTC does not have permanent residential facilities for Soldiers and Families, but does provide temporary housing for training Soldiers. Water from downrange potable wells is analyzed for nitrate every three years. Water from Class A potable water distribution systems is analyzed for nitrate annually. Washington State Department of Health determines analytical schedules and maintains resulting data. Data have been below the MCL.

47. The figures on page 4–4, lines 33–34 on off-road miles contradicts the percentage (20) shown on page 4–10, line 6.

Response: The numbers and percentages have been corrected. Please refer to Section 4.1.4.3.1 to review the revisions.

G.3.4 Biological Resources

48. Inspecting and removing bats before demolition will not mitigate the loss of habitat. This is a frivolous mention of bats if this is all that is said about the impacts of demolition to breeding or hibernating colonies of bats.

Response: We agree that removing bats before demolition will not mitigate the loss of habitat. However, since the habitat is man-made, it does not represent the loss of native habitat for these species. Removal of bats would help avoid direct mortality.

49. The sentence “Fires would cause some mortality to wildlife, although most animals would be able to flee from fire” is biologically unsupportable, as hinted at in the sentence following this, which states that small mammals, butterfly larvae, ground nesting birds with eggs or young, would be vulnerable. This group happens to include many of the protected species occurring in this habitat, such as the protected butterflies, streaked horned larks, pocket gophers, and hibernating or torpid bats.

Response: Section 4.3.3.3.2, Live-Fire Training Direct and Indirect Effects, and similar sections have been modified to state that “some animals would be able to flee from fire.” The document does address risks to protected species from fire, both in this section and throughout Section 4.3.3 where impacts to special status wildlife species are addressed.

50. Please add frequent or ill-timed fires to the list of threats for both prairie butterflies and clarify that human and off-road vehicle threats are both direct and indirect.

Response: The text of Section 3.3.3.2.1, Prairie Butterflies has been modified to include fire in the list of threats. Effects from off-road vehicles are clarified in the effects analyses in Section 4.3.3, Wildlife Resources.

51. Page 3–33, lines 7–9. “Wildfires in the AIA accounted for approximately 2,145 acres (868 ha) of the 3,487 acres (1,411 ha) burned during 2008, including the 650-acre (260-ha) wildfire noted above (Leeper 2009).” This information is accurate but contrary to statements throughout the document that fires affect hundreds of acres on the Fort each year. The scale, timing and frequency of fires on the AIA under current conditions are a source of significant conservation concern and appear to be adversely impacting several federal candidate species (mardon skipper, Taylor’s checkerspot, streaked horned lark, and Mazama pocket gopher) through direct and indirect mortality and are a significant source of habitat loss and degradation. Most of the AIA burns every year, with fires being too large, too early and at too large a scale to provide the benefits suggested in the DEIS. Please quantify the number, timing and size of fires, and quantify impacts that would be expected under the various Alternatives, including Alternative 1. Please correct inconsistent language related to fire throughout the DEIS and address associated impacts and proposed mitigation for all Alternatives, including Alternative 1.

Response: The Army keeps records of how many acres burn annually at Fort Lewis and where these ignitions occur on the installation. Although large fires do occur in the impact areas, particularly the AIA, and will continue to occur in the future under any of the alternatives, the majority of fires resulting from ignitions at Fort Lewis in a given year are small in size. It is not possible to predict accurately how many fires would occur in a given year or locations where such fires would occur, under any of the alternatives, but the number of fires is expected to increase as additional Soldiers arrive at Fort Lewis.

Occurrences in the document that imply fires affect hundreds of acres have been changed. Potential impacts to the special status species mentioned in this comment are discussed in Section 4.3.3, Wildlife Resources. Fires at Fort Lewis have positive as well as negative effects. For example, in forested areas, they promote diversity by creating a microhabitat for species that populate the areas after they have been burned and fires on the prairie help control the encroachment of Douglas-fir. An increase in the number of fires in forested areas would not affect candidate species. The EIS presents both potential benefits and adverse effects of fire.

52. Page 4–17, line 4: Fires in the AIA impact thousands of acres annually as stated elsewhere in the document, not hundreds as stated here. Please change wording. Also, it is inappropriate to assume that potential benefits automatically outweigh negative effects of existing and increased fires when this has not been described or quantified. Fire impacts result from inappropriate timing, intensity and frequency of burns, all of which can be detrimental to native plants and animals of conservation concern. Increased training is highly likely to lead to more early season fires, more fires overall, and more acres burned, which is highly likely to destroy habitat and remaining populations of Taylor’s checkerspot and mardon skipper butterflies, the young of migratory grassland birds such as streaked horned lark and vesper sparrow, juvenile and adult herps of many species and may affect Mazama pocket gopher directly and/or indirectly be reducing food availability during the breeding season. Numerically, far more animals and species are unable to flee from fires and are destroyed. These comments apply to all Alternatives. We consider current fire impacts on the AIA (Alternative 1) to be Significant. They may be mitigable if appropriate to address current fire effects on biological resources. Because current fire conditions represent a severe and unmitigated threat to the remaining populations of Taylor’s checkerspot and mardon skipper, any increase in fire activity is a source of significant concern. Alternatives 2 through 4 represent an unspecified level of increased risk. Alternatives 1 through 4 present an unacceptable level of risk to special status wildlife species.

Response: Section 4.3.1.3.2.1 has been modified to state more accurately the total annual acreage of the AIA impacted by fire. The page and line referenced in the comment is in Section 4.3.1, Vegetation. Therefore, the associated discussion applies to plant communities and not wildlife. The text presents potential adverse and beneficial effects of fire, but does not state that potential benefits “outweigh negative effects” of fire, as implied in the comment.

53. The statement “...the number of acres burned annually being highly dependent on weather conditions” is incorrect. Currently most of the area burned is on the AIA, which burns extensively every year.

Response: The referenced text in Section 4.3.3.2.1 has been changed to state that the number of acres burned in a given fire event is highly dependent on weather conditions.

54. Low intensity is a relative term and only one way in which fires are damaging; why do you assume additional fires would be low intensity? Also, the frequent low intensity burns currently affecting the AIA (Alternative 1) are having both short- and long-term impacts on vegetation composition and structure, most notably in the increase of noxious weeds, which tie up large amounts of space and outcompete native plants. Some fire effects are positive, such as reducing likelihood of invasion by Scot's broom, but many others, such as the loss of native annual plants and invasion by non-native annual grasses, have had profound effects on rare plants, animals, and ecosystem function.

Response: The assumption that additional fires would be low intensity is based on numerous years' worth of observation of fires in the AIA. Fires set in the AIA typically occur after the grass dries out in June, and after an area is burned initially, there is virtually no fuel remaining to support additional fires. Sections 4.3.1.3.2.1 4.3.1.4.2.1 have been modified to include some information on the potential for fire to change the species composition of prairies. The sections referenced by the comment mention both adverse and beneficial effects of fires on prairies.

55. There is no mention of Migratory Birds in Chapter 3. Fort Lewis contains numerous populations of rare and important migratory birds such as purple martins, western blue birds, and others. Please provide information here and address these in a corresponding manner in Chapter 4 and elsewhere as appropriate. There is also no mention of bats in this chapter, although a few scattered references appear elsewhere in the document and several are listed as species of concern in Table 3–6.

Response: Migratory birds are discussed in Section 3.3.3, under the various habitat types. See Section 3.3.3.1, Wildlife Species and Their Habitat, and its subsections. Bats are mentioned in Chapter 3, in Section 3.3.3.1.1. It should be noted that these discussions are intentionally kept brief and are not exhaustive lists of all of the species that occur on Fort Lewis.

56. Townsend's Big-eared bats, a federally designated Species of Concern, and a Washington State Candidate Species, utilize islands of conifer trees in the prairies and savannah habitats on Fort Lewis. This was not previously known, but determined during a 2009 Fort Lewis Fish and Wildlife study performed by Cascadia Research.

Response: We have revised Sections 4.3.3.4.3.1, 4.3.3.5.3.1, and 4.3.3.6.3.1 of the EIS to list the Townsend big-eared bat along with the other non-listed special status wildlife species that occur in prairie and oak woodland habitats.

57. Bats may be very sensitive to noise, and helicopter activities may already be a factor in the uneven distribution of some bats species at Fort Lewis. Little is known about the impacts of human-generated noise on bats.

Response: The Army is unable to determine that bats at Fort Lewis are susceptible to helicopter noise.

58. Page 4–35, lines 9–10. Increases in Noise are considered Significant under Alternatives 2 through 4; wildlife may be somewhat habituated to current noise levels, but logic does not follow that a significant change in noise levels would have no effect on wildlife, especially on species like grassland birds. Please address this issue and provide mitigation options.

Response: The referenced section does not state that the change in noise would have no effect on wildlife, as the comment implies. Section 4.3.3.4.3.1 discusses the potential impacts of noise on wildlife, but states that these effects would not be significant. Effects would be significant to human receptors, but not to wildlife because significance is related to annoyance. The FEIS contains specific mitigation for the streaked horned lark, which includes developing protective buffers for all identified streaked horned lark nesting colonies (except at GAAF), and restricting low-level hovering by aircraft in colonies and buffer areas during the nesting period. Because these restrictions would not be feasible for the GAAF population, identified mitigation for this population is to create suitable alternative nesting habitat down range.

59. Page 2–23, Lines 6–13: Please provide a range of elevations for each of the type of helicopter training and the Training Areas where each type of training would occur. Address the potential for these flights to impact federal candidate butterflies and the streaked horned lark on Fort Lewis in Chapter 4.

Response: Although helicopters would occupy altitudes ranging up to approximately 5,000 feet above ground level while training, they would primarily conduct landings and takeoffs only at GAAF and VHF. They could fly most anywhere over Fort Lewis or YTC during their training flights using the modes of flight described in Section 2.2.3. Potential effects of aircraft on the streaked horned lark are discussed in Section 4.3.3.6.3.1 of the EIS, under Special Status Wildlife Species. The discussion has been expanded to address potential effects to candidate butterflies.

60. Page 4–39, lines 30–39. Helicopter training impacts need to be described in detail and quantified. NOE and similar types of training could cause significant mortality to prairie butterflies and streaked horned lark. Larks will be significantly adversely affected by the increase over baseline conditions of more than 55,000 take-offs and landings at GAAF. Please specify how and where all such activities would occur, what seasons and with what frequency so that impacts can be properly assessed. There is nothing in the mitigation section that could compensate for these effects.

Response: The details of helicopter training that are known at this time are presented in Section 2.2.3.3, Medium Combat Aviation Brigade. The Special Status Wildlife Species discussion in Section 4.3.3.6.3.1 includes an assessment of potential adverse effects to the streaked horned lark from helicopter flights. This section has been modified to include a discussion of potential effects to federal candidate butterflies. In the FEIS, Section 4.3.3.8, Mitigation, has been revised to include additional mitigation for these species, including restrictions on low-level aircraft hovering near nesting colonies of streaked horned larks.

61. Chapter 2 indicates that the medium CAB would perform training activities “as low as the vegetation would permit.” Please provide information on where training, particularly the NOE, would occur as well as the season. Rotor wash could have profound effects on the

integrity of rare and important prairie plants as well as impact pollination, seed formation and dispersal. Rotor wash is also likely to exacerbate the spread of noxious weeds, especially wind-dispersal species such as Hairy cat's ear, which is particularly difficult to treat. If such an event were to occur following a fire, the effects would be cumulative due to the exposure of the mineral soil.

Response: Section 4.3.1.6.3.1 has been modified to address some of the comment's concerns in the discussion of potential impacts to vegetation from helicopter training. Helicopter training would be able to occur in all available Fort Lewis airspace at any season, with the exception of the restrictions on flight in Fort Lewis Regulation 420–5.

62. The number and scale of digging events under any of the Alternatives is not provided here or elsewhere. Please quantify and supply a map of where digging is permitted so that impacts can be assessed.

Response: The approximate annual acreage affected by digging under all the alternatives is provided in Table 4–6. The dig permit process is described in Section 4.3.1.3.3.1.

63. The number of road and off-road vehicle miles is proposed to increase by a minimum of 35 percent. Fort Lewis currently has difficulty maintaining habitat under the existing maneuver miles being driven. Any additional roads would put increased pressure on Fort Lewis's ability to sustain training lands in a condition to support federally listed and candidate species. At the current rate of restoration, impacts from maneuver training would not be mitigated sufficiently. We recommend that the necessity of an increase in road miles and an increase in acreage for maneuver training be reconsidered in order to address the potential threat of these impacts to federally listed and candidate species and trust resources.

Response: The increase in vehicle road miles proposed in this EIS refers to an increase in the number of total miles that military vehicles drive on existing hardened roads annually. The proposed action and alternatives do not include creation of new roads on training lands. In addition, the need for the increase in vehicle miles is described in Chapter 1 and has not changed.

Although the number of off-road miles driven would increase substantially under all the alternatives and would put increased pressure on rehabilitation efforts at Fort Lewis, much of the off-road training would occur in areas where listed and candidate species do not occur. At present, Fort Lewis tends to concentrate the most intense forms of training in the most degraded areas. While these areas must be repaired after training events, they do not undergo the degree of rehabilitation that occurs in higher quality habitats. For instance, these areas are often hydroseeded with a grass mixture following training damage with the intent of supporting additional training, rather than re-establishing high quality native plant communities. The mitigation sections 4.1.3.8 and 4.3.3.8 have been modified to list ongoing management activities to protect/conserv/enhance prairie habitat and other sensitive habitats and species on Fort Lewis, which would continue regardless of the outcome of the EIS. Additionally, new mitigation proposed in these sections has been revised to include more specific measures for sensitive species.

64. Page 2–8, lines 3–11: Operating on roads or unrestricted terrain (e.g., less than 30 percent pitch and 60 percent grade) allows SBCTs to take advantage of the Stryker’s speed (p. 2–8). This description fits the Fort Lewis prairies precisely. Tracked vehicles crush animals unable to flee (young birds, butterflies in all stages) and may also impact fossorial species like Mazama pocket gopher by crushing burrows or young. Vehicles traveling at high speed on fragile soils, such as the cryptogammic crusts on the prairies, can also significantly degrade habitat through erosion, introduction and spread of noxious weeds and destruction of key native plants. We recommend minimizing off-road training miles to reduce loss of rare species, habitat destruction, and fuel consumption.

Response: As noted in Section 2.2.1.2, SBCTs move mostly by road, with limited off-road or cross-country operations. The SBCT uses Stryker vehicles to traverse terrain and obstacles to ensure protected delivery of infantry squads to their dismount points. The way the Stryker vehicles are used in training and deployment already minimizes the number of off-road training miles.

Stryker vehicles are wheeled and not tracked vehicles, as implied by the comment; while they do affect native communities and wildlife as described in the comment, the intensity of these impacts is much less than that of tracked vehicles. Effects to vegetation and Wildlife are discussed in Section 4.3, Biological Resources.

65. Page 3–11, line 31–32. “The Forestry and Fish and Wildlife Habitat and ITAM programs are responsible for controlling Scotch broom and unwanted trees in the TAs.” Fort Lewis Fish and Wildlife is also tasked with control of noxious weeds on the TAs, an impact that is expected to increase dramatically. Many noxious weeds take years and repeated treatments to control. No dedicated funding is provided to Fort Lewis Fish and Wildlife to accomplish this task and it is currently conducted with habitat management funds. Please address this omission, as appropriate, in other areas of the document.

Response: The text of Section 3.3.1.2 has been modified to clarify some of the noxious weed control duties and guidance on Fort Lewis. Control of invasive species is guided by the Integrated Pest Management Plan. The statement that no dedicated funding is provided to accomplish noxious weed removal is incorrect. The five-year annual budgets provided in the Fort Lewis INRMP show funding for invasive species control as a separate project in the Fish and Wildlife Program budget.

66. Neither the DEIS nor the INRMP’s site-specific plans contain protection measures to maintain species where they occur on the landscape. Instead, emphasis is on lands being restored on their behalf both on and off Fort Lewis. Maintenance of existing populations of special status species currently occupied sites should be primary before considering moving to alternative locations.

Response: The Army has ongoing management programs for sensitive species and habitats that contain protection measures to maintain species where they occur on the landscape. Some of these protections are found in Fort Lewis Regulation 420–5, ESMPs for listed and candidate species, and other portions of the INRMP. The mitigation sections of the EIS (see Sections 4.3.1.8 and 4.3.3.8) have been modified to list ongoing management programs to protect these species, which would continue to occur regardless of the outcome of the EIS.

67. Many threatened and endangered plants and species depend on wetland habitat for survival. This project, along with other specifically mentioned projects in the DEIS, will jeopardize the existence of this critical habitat, as well as the species.

Response: Outside of the listed salmonid species, very few of YTC's endangered, threatened, and sensitive species are riparian obligates. Potential impacts to wetlands are discussed in Sections 4.4 and 6.4 of the EIS, and potential impacts to the one threatened and endangered species that occurs in wetland habitats are discussed in the Biological Assessment (Appendix F) and Sections 4.3 and 6.3 of the EIS. As discussed in the EIS, the proposed activities would not have a significant effect on wetlands on Fort Lewis or YTC because they would occur outside of established buffers and would not affect compliance with wetland policies or regulations, nor would they lead to a loss in size or function of wetland habitat. Neither Fort Lewis nor YTC contains critical habitat for threatened or endangered Species, including wetland and aquatic species. As discussed in the BA, the proposed activities are not likely to adversely affect these species, because the existing protection measures (such as buffers between maneuver/refueling areas and wetlands/aquatic habitats) are sufficient to continue to protect these species under all the alternatives covered in the EIS. Fire impacts do occur and primarily exhibit short-term impacts to riparian and wetland vegetation (i.e. reduction of structure, establishment of earlier seral vegetation condition, stimulation of regeneration).

68. Page 4–33, line 35–36. “Wetlands and other aquatic habitats are designated on maps to prohibit off-road vehicle travel within 164 feet (50 m) of these areas.” These maps need to become part of the GPS systems installed in most military vehicles to that Soldiers can discern these boundaries on the ground. Also, there are numerous existing roads of all types on Fort Lewis that occur within the 50-m buffer, which contradicts statements in numerous places in the DEIS; the INRMP is also conflicted on this point. Roads, especially near wetlands, can significantly impact wildlife species, particularly herps that travel seasonally to and from wetlands and can be found in high concentrations within 100 m of the wetland edge. Alternatives 1 through 4 do not acknowledge or address this issue in spite of the presence of several special status herps; please address. We recommend seasonal restrictions on the use of all roads and trails within 100 m of wetland edges from February to April and September to October to protect migrating herps. Existing roads within the 50-m buffer should be closed to protect special status species, including occupied and potential howellia habitat.

Response: Vehicle travel on existing roads is allowed within wetland buffers. This has been clarified throughout the EIS wherever not clearly stated. We have revised Section 4.3.3 of the EIS to include mortality by vehicles on roads as a potential adverse impact to special status herpetofauna. We do not agree that significant impacts to these species would occur under the current management program. While some mortality to these species could occur during migration, the breeding habitat of these species is protected.

69. Section 4.18. If there will be irreversible impacts to flora, fauna and other endangered species, habitat, cultural resources and other uses, how can they be avoided or mitigated? It is not clear that this document has analyzed that to the extent that is required by NEPA and other federal acts...neither in the letter of the law nor the spirit of the law.

Response: The referenced Section (4.18, Irreversible and Irretrievable Commitments of Resources) indicates that “irretrievable resource commitments include the loss of fish and wildlife habitat from construction and training activities.” The section does not state that there would be irreversible impacts to endangered species, critical habitat, or cultural resources, as the comment implies. The nature of impacts to the various resource areas are discussed in more detail under the appropriate resource sections in Chapter 4. Section 4.18 also states that “ongoing and proposed mitigation and resource management would reduce these impacts, but the quality of vegetation and habitat is likely to be reduced if training levels remain high.” The EIS does not imply that all impacts to resources would be “avoided or mitigated,” merely that the degree of impact would be lessened by mitigation. As required under NEPA, this document discloses unavoidable adverse impacts to resources (Section 4.16), the relationship between short-term uses and long-term productivity (Section 4.17), and irreversible and irretrievable commitments of resources (Section 4.18).

70. “However, continuation of the current levels of training would still result in the degradation of prairies from the baseline conditions reported in Chapter 3, and would require a continuation of current prairie management and monitoring programs to prevent significant impacts.” If prairies continue to degrade as a result of training, and training will increase by 50 percent plus impacts related to additional training related to each Alternative, then those programs tasked with offsetting these impacts must grow as at least this much. However, given that prairie restoration becomes more difficult as the percentage of non-native plants increases, it is likely that required repairs will increase disproportionately, which will require regular access to and resting of training lands, which will subsequently result in higher levels of impacts to training lands left open.

Response: The effects analysis has been completed with the understanding that increased training will require increased rehabilitation efforts. Much of the training is concentrated on already degraded prairies that have a large component of non-native plants. These areas are rehabilitated to support additional training rather than to restore native plant communities. The Army is committed to providing access to training areas for management or mitigation in order to ensure training area sustainability for future training. The Army will continue to monitor and conduct management activities in accordance with Fort Lewis regulations, the ITAM Program, and other installation management plans

71. Page 4–19, lines 23–29. There is currently a relatively small amount (few hundred acres) of prairie in good or fair condition, yet much of this is outside of Seibert-staked areas. Within Seibert-staked areas, there are an increasing number of encroachments by military vehicles for which there are currently no repercussions under Fort Lewis Regulation 420–5. Increases in such activities will lead to loss and degradation of critical prairie vegetation and mortality to species of concern, making these impacts significant. Please apply this assessment to Alternatives 2, 3, 4 and address mitigation needs.

Response: The following paragraph in the referenced section states that there would be significant effects to vegetation as a result of degradation of high-quality native plant communities. Although mitigation has been proposed for these impacts, and a concerted effort will be made to continue to protect native prairie habitats, the FEIS has been revised to state that the potential effects would be significant.

Additional mitigation for impacts to vegetation has been provided in Section 4.3.1.8.2.

72. Please quantify all cumulative effects from all associated activities such as population increase on Fort Lewis and in the surrounding area, the proposed HIMARS, fires, maneuvers, etc. Also, lines 21–29 from this section attempt to offset impacts from the proposed Alternatives. These actions are needed to prevent extinction of numerous prairie and oak woodland species and ecosystems in addition to the need to protect habitat and occupied sites on Fort Lewis, and could not begin to offset impacts from the proposed actions because Fort Lewis owns 90 percent of the remaining habitat and most imperiled species. Finally, the PBMS approach only works if access and funding are guaranteed, which they are not. Consequently, Alternatives 1 through 4 are highly likely to result in Significant impacts to high quality plant communities, and therefore loss of habitat, particularly for sensitive species. Please address this impact here and for all affected Biological Resources.

Response: The installation has analyzed all cumulative effects from all past, present, and reasonably foreseeable future activities in the region within the EIS to the extent practicable. We have attempted to consider the range of adverse and beneficial impacts to resources in the cumulative effects sections in the DEIS. Including beneficial impacts is not intended as an “offset” to adverse impacts. Beneficial impacts must also be considered in a cumulative effects analysis. In the FEIS, the PBMS approach is no longer included, because it is unclear when this program will be fully implemented at Fort Lewis.

73. If the PBMS approach was currently applied, it would likely lead to an immediate recommendation to reduce the amount of training on key sites such as range 74/76. Hence, it is inappropriate to conclude that this approach will “fix” the issues raised here, so again, impacts are considered significant.

Response: In the FEIS, the PBMS approach is no longer included, as it is unclear when this program will be fully implemented at Fort Lewis.

74. Page 4–19, lines 34–37. Please provide a map and a table of maneuver areas with acreages. Also please tie this to the type and frequency of maneuver activities expected under each of Alternatives 1–4. It is appropriate to assume that all maneuver areas would receive equal use? Range 74/76 is the only large live-fire maneuver area showed on Page 2–14. Also no mention is made in the DEIS about how or whether the TAs in the Rainier training Area would be used. Please address these issues in quantifying the expected training activities, where they will occur and how often. This information is critical to making an informed assessment of impacts to fish and wildlife species and their habitats. Also, if all vegetation is disturbed each year with a portion of it (up to 3,800 acres in Alternative 4) becoming bare ground, which requires one to several years to repair if training is removed or radically reduced, it would seem that all training lands will become either unusable, if performance-based management is applied, or bare ground if they are not. Also, the spread of noxious weeds that would result from the exposure of so much soil would greatly exacerbate the cost of and ability to repair training lands and should be considered a cumulative effect here and elsewhere. Please provide a detailed quantification of this rate of vegetation loss and graph the cumulative effect over time. Please address how these training land repairs will be paid for and implemented so that they do not result in 100 percent cover of bare ground within a 10- to 15-year time frame.

Response: All TAs on Fort Lewis would be used for training, including the Rainier training area. We cannot specifically quantify where training activities will occur and how often, as this information will change based on training needs and the suitability of different training areas to support them. Since all maneuver areas would be available for training, we assumed that they would receive equal use for the analysis. However, it is more likely that certain areas would continue to receive more intense use than others. As such, a detailed quantification of the rate of vegetation loss over time is not feasible. As stated in section 4.3.1, the proposed training would have significant effects on vegetation under Alternatives 2 through 4. The spread of noxious weeds is included as a component of prairie degradation throughout the effects analysis in Section 4.3.1, and as such is addressed in the cumulative effects analysis, which addresses degradation of prairies and other habitats. The FEIS has been changed to remove the statement that effects would be mitigable to less than significant, and new mitigation measures have been listed in Section 4.3.1.8. The ITAM Program will continue to prioritize rehabilitation efforts as a result of training impacts.

In addition, ITAM currently repairs training lands and ranges using a variety of methods that include the use of native plugs, native seed mix, and sterile wheat. ITAM has had great success in using these methods to repair the land, and to revegetate bare ground after training events. Monitoring is being completed on the success of ITAM native plug planting and the Plant Propagation Manager is developing methods to increase the survival of the native plugs.

75. Contrary to the said 50 percent increase in training three SBCTs simultaneously, Table 4–6 indicates more than a 4- to 10-fold increase in training impacts, most notably generating 1,567 to 3,797 acres of bare ground annually. Current supplies of native seeds and plugs from all existing sources provide only enough material to treat about 400 to 500 acres, without consideration of plant survival, let alone survival on the face of ongoing training. Not only does the DEIS fail to address this level of impact, it is inappropriate to assume that a “business as usual” approach using the current INRMPs can address changes of this magnitude.

Response: The acreages shown in Table 4–6, which represent estimates of acres impacted by maneuver training, were used to evaluate impacts to biological resources in Section 4.3. Acres of impact does not equate to acres of bare ground. As stated in footnote 2 of Table 4–6, this is the estimated acreage “that could experience a 10- to 15-percent reduction in total plant cover.” Because training is concentrated in the most degraded areas, most rehabilitation after training does not involve planting native plant plugs or seeds. In these areas, the goal is to rehabilitate the area enough to support additional training, so hydroseeding of a grass mixture is often used. Note that Table 4–6 has been revised to correctly reflect impacts under Alternative 1, which are greater than what was shown in the DEIS.

76. Page 4–17, lines 26–29: “This table considers overall impacts to vegetation, but does not consider how disturbance to vegetation from training activities impacts the quality of native plant communities (particularly prairies), which is difficult to quantify.” Suffice it to say that impacts will be significant and irreparable, with similar associated impacts to the four federal prairie candidates. Please indicate what percentage of these impacts would occur on prairies and which training areas are likely to be impacted.

Response: The quoted statement appears to have been misinterpreted. The majority of impacted areas would be prairie/grasslands. Maps showing areas available for maneuver training are provided in Chapter 2. What is difficult to quantify is how the training would affect the quality of native prairie communities. Intense forms of training would not occur in certain Controlled Use Areas (CUAs), many of which exist to provide protection to candidate prairie species. The CUAs are consolidated on the Fort Lewis environmental coordination map that is provided to trainers and are also shown on Figure 2–9. For clarity, Section 4.3.1.8, Mitigation, has been revised to include a list of ongoing mitigation measures to protect prairie habitats and sensitive prairie species. Additionally, the EIS has been revised to remove the statement that impacts would be mitigable to less than significant, and additional mitigation has been developed for biological resources.

77. Page 4-18, lines 35–36: “Under Alternative 2, proposed construction would affect up to 75 acres (31 ha) more than would be impacted under Alternative 1.” This appears to be the first time this is mentioned, as under Water Resources it indicates no new construction; also, the construction of three 1.5-M gallon water tanks, mentioned under Wildfire Management is also not addressed in other areas of the document.

Response: Chapter 2 and Appendix A identify the projects that comprise the new construction that would occur under Alternative 2, including the water tanks. Figures 2–3 and 2–4 show the locations of the projects on Fort Lewis. As discussed in Chapter 2, most of the projects and disturbance would occur within the cantonment area. Consequently, not all projects are specifically called out in every resource’s discussion of effects.

78. Despite the proactive support provided by the DOD to recover the prairie candidates, the DEIS does not reflect this philosophy. The fact that the Biological Assessment (BA) does not address prairie candidates at all is a serious omission, which calls into question the thoroughness and adequacy of the DEIS. The DEIS must evaluate the threats to the candidate species and divulge the potential impacts from the action alternatives in great detail. It must delineate those impacts resulting from the proposed changes, and provide minimization and mitigation alternatives to address those impacts.

Response: Section 7 consultation under the Endangered Species Act requires federal agencies to ensure that “any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.” Section (c) (1) of Section 7 of the Endangered Species Act states “To facilitate compliance with the requirements of subsection (a) (2) each Federal agency shall...request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action. If the Secretary advises, based on the best scientific and commercial data available, that such species may be present, such agency shall conduct a biological assessment for the purpose of identifying any endangered species or threatened species which is likely to be affected by such action.” The Biological Assessment prepared as part of this consultation is not required to include an assessment of impacts on candidate species, and Fort Lewis has never included prairie candidate species in the numerous Biological Assessments that have received concurrence from the USFWS and NMFS in the past. However, these species are discussed in the DEIS

in Section 3.3.3.2, Special Status Species and Critical Habitat, and potential impacts from the project and alternatives are provided in the effects analyses provided in Section 4.3.3. Section 4.3.3.8, Mitigation, states that significant impacts that could potentially occur under Alternatives 2, 3, and 4 include “a reduction in the population, habitat, or viability of a species of concern or sensitive species (Mardon skipper, Taylor’s checkerspot, Mazama pocket gopher, streaked horned lark) that would result in a trend toward endangerment or the need for federal listing.” The EIS then identifies measures to mitigate for effects to these species and their habitats. In the FEIS, additional mitigation measures for biological resources have been included.

79. Page 4–19, line 40–44. This statement of significant impacts is not reflected in the heading on line 9 of this page, which states, “Significant but mitigable to less than significant.” Please correct this error. Significant adverse impacts to native prairie and oak woodland vegetation can only mean significant adverse impacts to those species dependent on these habitats, although these impacts are not addressed in the section on Wildlife Resources. This is especially true where those species are already at risk or declining, as is the case for Taylor’s checkerspot, mardon skipper and other prairie butterflies, streaked horned lark, vesper sparrow, Mazama pocket gopher and western gray squirrel. There are no dedicated funds or strategies presented in the DEIS or the INRMP to address the effects of large-scale loss of habitat and associated populations of federal candidates and other species of concern. Please address these issues here, under the Wildlife Resources section and as appropriate elsewhere in the document.

Response: The text in the referenced section of the DEIS matches the heading, as both state that effects would be significant but mitigable to less than significant. In the FEIS, both the text and the heading have been changed to indicate that they are not mitigable to less than significant. Effects to special status wildlife species are discussed in a different section (Section 4.3.3, Wildlife).

80. The list of species in Table 3–6 is fairly comprehensive, but little or no mention of most of these species is made in the BA or in Chapter 4. Please address these shortfalls, as many of these species are likely to suffer direct mortality and other indirect effects as a result of increased training, most notably on and off-road travel and fire.

Response: Only federally listed species and species proposed for listing are required to be addressed in the BA. Therefore, the vast majority of the species in Table 3–6 were not included. Species in Table 3–6 that would potentially be affected by the proposed activities are discussed in Section 4.3.3, as appropriate.

81. Please identify that in addition to listed and rare plants, Fort Lewis prairies are home to several federal candidate species, including mardon skipper, Taylor’s checkerspot, streaked horned lark, and Mazama pocket gopher. All except the streaked horned lark are year-round residents.

Response: These species are discussed in Section 3.3.3.2, Special Status Species and Critical Habitat.

82. On Page 4–33, line 22–24, please add interference with mating to the list of indirect impacts. Collectively, the list of direct and indirect impacts to special status species is alarming, and the acknowledgement that these are having a moderate effect currently warrants a conclusion

of significant impacts based on criteria presented in bullets 3 and 4 on page 4–30. This conclusion is extended to Alternatives 2 through 4, with a considerable increase in mitigation required as a result of Alternative 2 alone.

Response: Section 4.3.3.3 of the FEIS has been modified to include interference with mating to the list of indirect impacts to special status wildlife species. The DEIS states that effects to wildlife would be significant under alternatives 2 through 4. New mitigation measures for potential effects to special status species have been included in Section 4.3.3.8.

83. Please quantify impacts to special status species and their habitats; it appears these will be significant and likely to result in a trend toward endangerment. Please provide details on which prairies receive protection, the amount of acreage involved and which Army programs provide protection. There is currently no information provided to permit such an assessment or reach the said conclusions. Some of the highest quality prairie occurs on Range 74/76, which is one of the most heavily used training areas.

Response: The mitigation sections for Vegetation and Wildlife (Sections 4.3.1.8 and 4.3.3.8) have been modified to list management for prairies and prairie species under current management programs, including protection of prairies. Additional mitigation has been presented in these sections of the FEIS. In addition, Range 74/76 is not a training area; it is an impact area. Permission is required from the Directorate of Plans, Training, Mobilization, and Security (DPTMS) Range Control to use any impact area for maneuver training. Thus, Range 74/76 is not used for maneuver training without permission.

84. Page 4–40. The assessment of cumulative effects is inadequate and fails to address the majority of issues and their impacts. The fact that training levels have been lower than expected in recent years due to stationing overseas only mean that the real impacts of Alternative 1 have not been experienced or documented. In other words, the existing baseline condition is likely more destructive and mitigation more inadequate than presented in the DEIS; Alternatives 2 through 4 may result in exponential rather additive impacts.

Response: We believe that cumulative effects are adequately addressed throughout the document. Also, the statement that “The fact that training levels have been lower...” is incorrect. Alternative 1 is the existing baseline situation and the “lower” training levels cited pertain to this alternative. Alternatives 2 through 4 include the situation where the SBCTs have all returned from deployment and are training along with all other units stationed at Fort Lewis. Finally, analysis in the EIS does not support the assertion that Alternatives 2 through 4 may result in exponential impacts.

85. Page 4–41, line 15. “Since most impacts to wildlife are associated with loss or degradation of native habitats...” This statement is false and contradicts admissions of direct mortality to numerous species, particularly special status species, elsewhere in the DEIS. For this reason, impacts must be quantified, not described with general subjective language.

Response: The referenced statement in Section 4.3.3.8.2 has been changed in the FEIS to state that “many potential impacts to wildlife are associated with loss or degradation of native habitats.” Additionally, new mitigation measures for potential effects to wildlife have been included in this section.

86. Page 4–36, lines 1–36. In spite of lengthy admissions of real and potential impact to special status species in this section, there is not statement of significance. In fact, for reasons provided here as well as elsewhere in this letter and in the DEIS, impacts to special status species, particularly those associated with prairies and oak woodlands, resulting from Alternatives 2 through 4 would be significant. Please state as such and provide suggestions for the extensive mitigation that would be required to prevent federal listing of one or more of these species. The WDFW would be available to assist you in developing appropriate mitigation strategies.

Response: Significant effects were implied by the associated heading “Significant but Mitigable to less than Significant Effects.” However, the text of Section 4.3.3.4.3.1 has been modified to state more clearly where significant impacts would potentially occur. In discussions of special status wildlife species under Alternatives 3 and 4 (Sections 4.3.3.5.2.1 and 4.3.3.6.3.1), the document does state that significant effects would occur. The FEIS has been revised to eliminate the statements that effects would be mitigable to less than significant.

87. Page 4–34, lines 15–16. The impact of an additional 40,000 people on Fort Lewis alone would not be considered “minor and indirect.” The traffic alone from this increase is likely to have a significant adverse impact on species that cross roads, particularly western gray squirrel. Please address here and in cumulative effects and propose appropriate mitigation including reduced speed limits on East Gate Road and in other areas where roads run adjacent to or through high quality habitat.

Response: The comment asserts that Fort Lewis will grow by 40,000 people under Alternative 2. This is incorrect. Alternative 4, which includes the greatest growth, would add 14,320 Soldiers and Family members. Despite the incorrect assertion however, the discussion of potential impacts associated with population increases in Section 4.3.3 (see Sections 4.3.3.4.1.1, 4.3.3.5.1.1, and 4.3.3.6.1.1) have been revised to include a discussion of impacts associated with increased traffic on Fort Lewis roads, including impacts to western gray squirrel. Mitigation for western gray squirrel has been included in Section 4.3.3.8, mitigation.

88. Page 4–34, lines 41–43. Like Table 4–6, this admission that off-road training will increase by 6-fold, indicates that the summary statement provided in Chapter 2 of a 50 percent increase in overall training under Alternative 2 is inaccurate and misleading. Please provide detailed information and quantification for all training-related and other actions associated with Alternatives 1 through 4 in Chapter 2 where all readers can access the same set of consistent facts. Only then can impacts be adequately assessed and addressed.

Response: The reference to a “6-fold increase” has been replaced with numbers. In addition, the summary table that was included at the beginning of Volume 2 has been moved to Chapter 2 to facilitate the comparison of alternatives.

89. Page 4–38, line 8. This statement accounts for hunting by military personnel. Please address all hunting pressures resulting from population increases on and off base as well as associated disturbance to game species here and as appropriate elsewhere in the document.

Response: The referenced section (Section 4.3.3.6.1.1) and similar sections have been revised to state that Family members could also contribute to hunting increases.

Hunting activity from Family members is insignificant, however, and will remain so under the proposed action. In addition, no populations of game species are at risk from hunting activities. Please note that military personnel include personnel both on and off Post.

90. Page 4–47, lines 8–10. “Three 1.5-million gallon drinking water reservoirs with wells for fire-fighting needs would be constructed as planned under Alternative 1 at Ross Hill, Miller Hill, and Noble Hill.” There is no mention of this construction in many other places in the document. Are these hills within the cantonment area? If not, they may impact western gray squirrels via habitat loss. Please address.

Response: Miller Hill is in the cantonment area, the other two are near the boundary. None of the sites are considered good habitat for the western gray squirrel. Consequently, construction of the referenced drinking water reservoirs would not affect western gray squirrel habitat. As construction activities under Alternative 1 have been or are being addressed under separate NEPA documents, they are not analyzed in detail, but are considered cumulative effects for the purposes of this EIS.

91. Page 4–36, lines 35–43. Please acknowledge and address increased impacts to western gray squirrel resulting from increased training, traffic, and rounds fired into habitat on the northern boundary of the AIA and into the CIA. These would include but are not limited to direct impacts in the form of road kill as well as indirect impacts in the form of access to food, interference in mating and caring for young, compaction of soils that would inhibit fungal production, etc.

Response: The referenced section has been changed in the FEIS to include a discussion of impacts to western gray squirrels. This discussion may be found in Section 4.3.3, Wildlife, in sections pertaining to special status wildlife species. Mitigation for this species has been presented in Section 4.3.3.8.

92. Page 2–17, line 11–13: “The construction of the facilities required for the CSS units cannot currently be determined because the precise distribution of units among transportation, quartermaster, medical, headquarters, or other CSS units is unknown.” Without knowledge of where construction is occurring, no assessment of impacts can be made and we must assume potential detrimental effects to wildlife. The construction of 35 acres of facilities is significant and needs to be addressed in the DEIS.

Response: The CSS area has been ground surveyed for Oregon White Oak trees/stands. Three areas of oak clusters have been identified for incorporation into the CSS facilities design. The area has been used intensively for training and has completely burned in the last ten years. Oak, Scotch broom, and non-native grasses make up the majority of species composition within the entire construction footprint. Additionally, stands of oaks would be avoided during construction activities. The discussion of impacts associated with construction found in Section 4.3.3 has been revised to discuss more specifically what wildlife habitats occur in the 60-acre area (the area has been increased to 60 acres with 10 acres of oak habitat protected and incorporated into the design). The loss of the 50 acres would not constitute a significant adverse effect to vegetation or wildlife, based on the significance criteria presented in the EIS.

93. The statement “Concentrate the most destructive forms of training on the most degraded areas to minimize impacts to higher quality prairies” is contrary to the map of live fire training areas presented in the DEIS, which shows most of the highest quality prairie habitat in the AIA. No other maneuver areas are mapped or mentioned by name to allow qualification of this statement. Please strike or qualify wherever this statement occurs, especially where it is offered as mitigation.

Response: The most intense forms of training, particularly for prairie habitats, involve off-road maneuvers by Strykers and other vehicles. These activities are concentrated in the most degraded areas of the installation. The AIA supports artillery and mortar live fire, not maneuver training. Most of the AIA is off limits to maneuver training including dismounted training due to the presence of unexploded ordnance. Much of these off limits areas contain the highest quality prairie on Fort Lewis and because they are off limits, provide protection for the prairies. Consequently, no changes were made to the statement.

94. Page 4–34, lines 5–6. Proposed construction would reduce the amount of available habitat for western gray squirrel under Alternatives 2 through 4; also forested areas, particularly adjacent to or on the CIA should not be described as “well-developed,” and in fact could be considered high quality habitat in some cases.

Response: Section 4.3.3 has been revised to include a discussion of the potential impacts to wildlife in areas where proposed construction activities would occur.

95. Page 4–37, lines 42–43. Much of the 110 acres of additional construction proposed in Alternative 4 is concentrated on or immediately adjacent to areas used by the federal candidate streaked horned lark for nesting; thus significant and long-term habitat loss and degradation would occur as a result of construction; also, depending on construction timing, destruction of nests and young may also occur. Please address these issues in the DEIS and provide detailed mitigation options.

Response: There are no streaked horned lark populations within the areas identified in the EIS as future construction sites.

96. Cumulative effects of construction and training alone from these Alternatives would affect plant productivity over thousands of acres due to soil compaction and plant removal (Table 4–6). Please correct this assessment and provide meaningful mitigation measures, including addressing funding issues related to the cost of training land repairs at this scale. The current INRMP, funding structure, and infrastructure for providing native plants and seeds is grossly inadequate for mitigation at the scale, let alone that this has not been the purpose of most of this effort.

Response: The statement referenced by the comment (in Section 4.3.1.7, Cumulative Effects) is referring to cumulative effects associated with only construction projects, not construction plus other actions. Therefore, the several hundred-acre figure remains correct. Please note that because the most intense forms of training tend to be concentrated in the most degraded areas on Fort Lewis, most rehabilitation following training disturbance involves hydroseeding, rather than planting of native plants. In addition, ITAM uses native plugs, native seed mix, and sterile wheat to repair maneuver damage.

97. The DEIS states “On Fort Lewis, there is evidence of pocket gopher populations in the AIA, as well as various other prairie habitats (ENSR 1994, 2004; 34 Steinberg 1995; EDAW 2006; Schmidt 2006).” This is an understatement. There are numerous large populations of Mazama pocket gophers on nearly all major Fort Lewis prairies. Most notable is the large high-density population in the “90 Ranges” (SSAIA), which is centered in the area proposed for construction of Range 92. Please add this information here and address impacts in Chapter 4 and elsewhere as appropriate. Construction of this range would have a significant adverse effect by destroying a large portion of the occupied habitat and fragmenting the remaining habitat. WDFW is working to develop translocation methods, but so far, we are experiencing exceedingly high mortality rates in translocated gophers after only a few days. Please address what mitigation actions are proposed to address loss of this critical habitat.

Response: Section 3.3.3.2.3 of the FEIS has been modified to include additional information on Mazama pocket gopher populations on Fort Lewis. Additionally, portions of Section 4.3.3 dealing with construction have been modified to include a discussion of potential effects to pocket gophers from the proposed construction project at Range 92. Given the location of the proposed construction, and the small area that would be impacted, impacts to pocket gophers would be limited to minimal mortality and loss of habitat. The population in that area is a large population that predominantly utilizes down range habitats located away from the proposed construction project. Although the ESMP for the pocket gopher mentions translocation, the ESMP was developed before information on the low success rate of translocation attempts by WDFW was reported. Translocation would not be used as a mitigation method on Range 92. It is likely that gophers whose habitat is lost to construction would move to other suitable areas of the range — 80 percent of the range would continue to exist as it currently is because construction of range facilities would remove only about 20 percent of the habitat. Consequently, construction of this range would not have a significant adverse effect.

98. Few details are provided in the EIS as to what mitigation is to be conducted on site (e.g., following disturbance by off-road vehicle traffic). In addition, no lands are proposed to be acquired for off-site mitigation in the event that on-site mitigation is not possible. We urge the Army to take the following steps to prevent or mitigate adverse impacts to native habitats on Fort Lewis:

- 1) Avoid fire-causing activities in previously unimpacted areas except for controlled burns timed to manage prairie habitat for increased native floral diversity and control of invasive plants.
- 2) Avoid soil disturbance to previously unimpacted areas during training activities and development, in particular avoid impacts to soils in relatively intact plant communities.
- 3) Design training and development activities to prevent impacts to state and federally listed sensitive plant species populations.
- 4) Plan and fund ongoing invasive plant control and restoration of disturbed areas, including replanting white oak and ponderosa pine woodlands where these habitats are extensively damaged by fire.
- 5) Fund and implement continuing surveys for rare and endangered species, and ongoing studies of prairie and oak-woodland management.

Response: The recommended items listed in this comment are actions that the Army already does under current management programs, or has proposed as mitigation in the EIS (Section 4.3.3.8). The most intense forms of training do avoid higher quality habitats, and are typically concentrated in the most degraded areas. Mitigation for the proposed training is to continue this approach with the new units. Additionally, Fort Lewis has designated Controlled Use Areas (CUAs) in which certain forms of training are prohibited. Certain CUAs are buffers for listed species or areas of high quality habitat that provide habitat for candidate species. The Army currently protects populations of state and federally listed plant species, funds ongoing invasive plant control and restoration of disturbed areas, and surveys the installation for sensitive species. Fort Lewis currently participates in the ACUB program, which entails funding mitigation at off-site locations to compensate for impacts on Post. However, since this program is relatively new, the Army is currently testing the value of this approach to mitigation before making a decision to increase its level of participation. It should also be noted that given the widespread development in the South Puget Sound region, few suitable locations for off-site mitigation exist. In the FEIS, Section 4.3.3.8, Mitigation, has been revised to list some of the ongoing management actions to protect sensitive habitats and species that would continue under all the alternatives considered in the EIS.

99. On Page 4–35, lines 17–18, Indication of Significance not carried back to heading on Page 4–34, line 33.

Response: The indication of significance and section heading referenced in this comment do indeed match up in the DEIS. However, in the FEIS, both the discussion and the heading have been changed to state that effects would be significant, but not mitigable to less than significant.

100. Page 4–35, lines 26–27. INRMP would need to be changed and existing roads closed to make this a true statement.

Response: The sentence has been modified to indicate that travel within 50 meters of wetlands could occur only on existing roads.

101. Section 5.3.3.2.3. Certainly, the Fringed myotis (*Myotis thysanodes*), Pallid bat (*Antrous pallilus*), Spotted bat (*Euderma maculatum*) and Western pipistrelle or Canyon bat (*Parastrellus hesperus*) should be included as utilizing this habitat, and probably others in this particular area because of the proximity of the Columbia and Yakima Rivers.

Response: The FEIS has been changed to include information about the pallid bat, canyon bat, and spotted bat. The fringed myotis does not occur on species lists for the counties in which YTC occurs, is not known to occur on the installation, and suitable habitat is limited.

102. The DEIS states that at the YTC, the protection zones around the currently occupied leks are 1 km (0.6 miles). These protection zones appear to be insufficient to provide the space and territory required by these threatened birds as the literature states that females commonly move 2.4 km (2.1 miles) to 7.8 km (4.8 miles) from their leks, based on examination of over 300 nest locations. Females have been documented as far as 20 km

(12.4 miles) from their leks. We recommend that these protection zones be increased to provide additional protection to occupied sage grouse leks.

Response: The Army is aware of the information presented in the comment regarding the movements of female sage-grouse during the period of active lek use. The comment only mentions YTC's current lek protection buffers but fails to mention the approximately 44,000 acres of sage-grouse protection area designated to manage nesting and brood-rearing habitat in and around the majority of YTC Leks.

Figure 5–3 of the Final EIS shows sage-grouse leks and the Sage-Grouse Protection Area on YTC. As shown in this figure, the Sage-Grouse Protection Area offers additional protection for several leks beyond the 1-km lek buffers. For leks outside the Sage-Grouse Protection Area, the training buffer is limited to 1 km. While the Army acknowledges that these buffers are small in relation to distances presented in the comment, increasing the buffer widths around all leks would limit the Army's ability to train as required during a portion of the year.

As mitigation, the Army has proposed increasing the Sage-Grouse Protection Area, as shown in Figure 6–1 of the Final EIS, and designating Secondary Sage-Grouse Management Areas, which would maximize the area of sage-grouse protection while still allowing the Army to meet mission requirements.

103. One concern about increased training activities at YTC involves the fragility of the shrub-steppe ecosystem. We urge the Army to take the following steps to prevent or mitigate adverse impacts to habitat on YTC:

- 1) Increase fire suppression efforts to protect shrub-steppe habitats from further loss of sagebrush cover and conversion to communities dominated by non-native plant species;
- 2) Maintain fire suppression crews trained and resourced specifically for wildland fire suppression;
- 3) Avoid soil disturbance to previously unimpacted areas during training activities and development, in particular avoid impacts to soils in relatively intact plant communities;
- 4) Design training and development activities to prevent impacts to state and federally listed sensitive plant species populations;
- 5) Identify and implement on-site and off-site mitigation measures to assure no net loss of intact shrub-steppe habitats, should increased impacts be unavoidable; and
- 6) Where on-site mitigation is assumed, funding for rehabilitation of training lands depends on funding availability from the Army. For mitigation to be successful, funding must be assured as a component of any training activities.

We recommend off-site mitigation for habitat loss, in order to prevent loss of critical habitats and the sensitive plant and animal species they support.

Response: YTC already takes many of the steps listed in this comment in the resource management program currently in place and detailed in the CNRMP/ INRMP. In order to clarify these ongoing efforts to protect shrub-steppe

habitat on the installation, the sections on mitigation have been revised to list measures that are already in place and would continue regardless of the outcome of the EIS. Additional mitigation is presented in the FEIS, Sections 6.3.1.8.2 and 6.3.3.8.2, for adverse impacts to vegetation and wildlife. The Army has determined that off-site mitigation is not a feasible approach to mitigation for impacts at YTC because there is a lack of shrub-steppe habitat in the area that is suitable and large enough to mitigate for losses of habitat at YTC adequately. However, the Army has included exploring participation in the Army Compatible Use Buffer Program to reduce encroachment issues.

104. The frequency, intensity, and distribution of fires appear to be increasing, especially on YTC. The DEIS states that on the YTC, there are provisions to build more fire breaks, which will require that more land be removed as habitat for Federally listed and candidate species. We are also concerned with the amount and frequency of fires generated from training exercises, which is certain to increase with the additional troops and maneuver miles proposed in the DEIS. The DEIS provides little quantification of the increased threat of fire to Federally listed and candidate species, however, more frequent fires covering an ever increasing footprint are likely to create unsustainable conditions for species at risk. During the past 20 years, more than 25 percent of the YTC has burned, and the FWS is aware of at least two fires that have escaped the boundary of YTC and jumped the Columbia River and created conflagrations on neighboring lands such as Hanford National Wildlife Refuge. Habitat and individual Umtanum Buckwheat plants have burned, thus reducing the number of plants in the single population of this Federal candidate species. The Umtanum buckwheat is not a fire-adapted species and the fires have changed the composition of vegetation of the habitat making it more susceptible to fire disturbance. These fires have changed the structure and composition of the vegetation, which created conditions for hotter and more frequent and uncontrolled fires. The FEIS should further address the incidence and potential threat of these fires and the impacts associated with addressing these fires such as firebreaks to federally listed and candidate species and trust resources.

Response: A discussion on the history of fire and the risk of fire at YTC is provided in Section 5.5.2, Fire History and Risk of Fire. Umtanum Buckwheat presence on YTC has not been confirmed. The potential impacts of fire on vegetation, including sensitive species, are discussed in Section 6.3.1 of the EIS. The EIS states that there would be significant effects associated with fire as a result of proposed training increases. The EIS has been revised to include additional mitigation for fire-related impacts in Section 6.3.1.8.2.

105. The current mitigation in place is so far out of balance with the degree of impact, no commensurate compensatory value or function is being realized under this disturbance regime. The measures in place at the YTC to control the size and spread of fire within and onto the installation are wholly insufficient. In reality, most ignition sources, training locations, timing of training that is mindful of weather conditions, repositioning of fire fighting resources both on and off YTC are entirely under the control of the Army. Please address this disassociation between the occurrence of fire and management/training decisions in the DEIS. The numbers provided in the table differ by an order of magnitude or more and this imprecision is replicated in each alternative. These are not the results of a meaningful analysis. No informed decision by reviewers or proponents can be based on such a paucity of information. We request that a thorough fire analysis be performed and that methods and assumptions be disclosed.

Response: The number of fires is not directly correlated with the number of Soldiers training. Many other variables influence the number and size of fires. When you increase the number of Soldiers training, the number of activities that could cause fires also increases. In response to concerns about fire stated in comments received on the DEIS, YTC held a “fire summit” to address fire-related issues and determine steps that could be taken to mitigate for potential effects associated with fire. The mitigation measures that were developed during this meeting have been included in the FEIS, in Section 6.5.8 and in the mitigation sections for pertinent resource areas.

106. What the draft EIS fails to address is the cumulative nature of annual impacts adequately. The entire YTC is approximately 327,000 acres in size. Approximately 225,000 acres are available for vehicle training. When we couple the annual mechanical damage figures from Table 6–8 that result from vehicles driving over vegetation with the impacts from fires, the vast majority of the installation would be impacted within an extremely short time frame. When we couple this vehicle impact acreage figure with the fires, it is our contention that no on-site mitigation could possibly address this impact or level of disturbance. Please address in the DEIS how this level of chronic disturbance can be mitigated, particularly if the same area is repeatedly disturbed. This information has not been provided in the document. The analysis of the large-scale impacts that persist for years in an average annual figure of available training lands. No information has been presented that substantiates that the vegetation impacts are healed at the end of a training year or that they can be restored through remedial measures. Nothing is in place or is proposed that prevents immediate training on recently restored sites, burned sites and locations where mitigation measures were employed. The impacts are cumulatively significant within an individual year and that cumulative significance is compounded annually between years. Additionally, fire burns both available training lands and the land not suitable for training, both of which serve as wildlife habitat.

Response: Acreages in Table 6–8 represent annual area impacted, but they do not specify where those impacts would occur. In many cases, the acreage would include repeated disturbance to the same impacted area. As discussed in Section 6.3.1 and elsewhere in the document, although 225,000 acres are available for training, the current model of training by SBCTs is to concentrate impacts into small areas, rather than spread out over the entire installation. Under this training model, areas used for training would be more intensively disturbed, but much of the installation would be more minimally impacted. The EIS also addresses a worst-case scenario, similar to the one presented in this comment. The EIS discloses that under such a scenario, impacts to vegetation and wildlife would be significant, and would remain significant even if the proposed mitigation were to be implemented. Sections 6.3.1.7 and 6.3.3.7, Cumulative Effects, also state that cumulative effects to vegetation and wildlife would be significant under all the action alternatives.

The 225,000-acre value relates to the amount of area at YTC that is 60 percent slope or less. This defines the amount of area that a Stryker can climb, however the vehicle is also limited to slopes of 30 percent (80,000 acres) for traversing in a cross slope manner. These values represent suitability for these activities, but they do not imply availability. In addition, not all suitable areas are available for use at all times, and SBCT training

entails vehicle movement that is mostly on roads until they reach a point of tactical deployment near training objectives. Finally, acreage burned annually is a mixture of new and repeat burn areas.

107. It appears that the 6 travel lane figure from Table C–2 has been utilized in other tables within the DEIS. Based on our observations, we feel that a larger travel lane figure should be utilized. The 6-lane figure is a mid-range figure, but observations coupled with the lack of any measures to dictate the number of travel lanes and training methods makes the larger number reasonable and likely. Acreage impacts have therefore been dramatically underrepresented in the document. We request that the acreage figures be revised upward to reflect the larger figure provided in the table and that these adjusted figures populate the relevant tables throughout the DEIS so impacts can be adequately assessed by reviewers.

Response: The tables showing acres of impacts from off-road mileage typically present a range representing 4 to 6 travel lanes by vehicles, as indicated by the bolded lines in Table C–2 in Appendix C, Soil Erosion and Vegetation Impact Assumptions and Estimates. While four to six travel lanes represents a mid-range figure when looking at all possible training scenarios, scenarios involving more than 6 travel lanes are not reasonably foreseeable. The 6-travel lane figure was derived from observations of how Stryker units train. Unlike tanks, which would spread out across a wide front as they moved forward, Strykers tend to stay on roads in a single column until they reach their objective. They limit off-road travel to the immediate area of their objective. At that point, they tend to spread out around the objective in smaller groups. Therefore, it was determined that the mid-range 6 travel lane figure was appropriate.

108. Roads also represent permanent losses of habitat. Please provide current road mileage, abandonment road mileage and proposed new road mileage. The road width running surface, cut and full slope width are needed so acres of lost habitat can be determined.

Response: There are 1,648 miles of roads currently on YTC. New road construction is not proposed under the proposed action or alternatives. Construction activities that would result in disturbance of soil and an increase in impervious surface are discussed in Section 2.2.2 of the EIS, Construction of Facilities at Fort Lewis and YTC. The potential effects of these activities on wildlife habitat are discussed in EIS Sections 4.3.3 and 6.3.3.

109. Weeds along roads are not being adequately addressed currently or in the proposed alternatives in the DEIS. Managing weeds along roads is a basic best management practice (BMP) that our observations indicate is not taking place at an adequate scale.

Response: Since road construction is not proposed under any of the alternatives, a discussion of weed control along roads on the installation is not warranted. Ongoing control of invasive plants on YTC is addressed in a Noxious Weed Control Plan and YTC does conduct weed control annually in the range areas, as discussed in Section 5.3.1.2. Control of target species within arid environments requires persistence for several years to reduce seed banks within the soil, and to establish desirable vegetation concurrently in areas such as roadsides, ranges, and other rehabilitation sites. Historically, YTC

conducted control measures on over 900 acres annually. While no recent monitoring data is available, anecdotal observations indicate improved conditions along many high use areas at YTC over the past five years. Finally, for clarification, noxious weed control at YTC focuses on “control” versus “eradication”. In most instances, it is extremely difficult to eradicate noxious weed species. Therefore, control of these species at tolerable levels is the objective.

110. The numbers provided in the DEIS alternatives section for acres impacted by fires are vague and do not appear to be supported by a sufficient study of historical fire extent. The YTC should conduct a spatial analysis of how many acres have burned on average in any given year for the past 12 to 15 years. This analysis would not only allow a view into the spatial distribution of fires, but also provide data on the amount of habitat converted from shrub-steppe to steppe on average and allow reviewers to assess rates of recovery. Information is needed on where and how many acres burned per year. How many acres can be successfully rehabilitated annually with shrub seedlings? What time frame is being used to quantify recovery post fire? What equipment and financial resources are committed to the task? How are the impacts to the biological crust proposed to be addressed? The role that YTC plays in the persistence of the southern population of sage-grouse and how the proposed action will conflict with sage grouse life history requirements is insufficiently addressed. Impediments to the use of tanker aircraft to suppress fires in YTC or that threaten to burn onto YTC should be addressed. Staffing levels and pre-positioning of fire fighting resources and personnel is insufficiently disclosed. Impediments to off-site mitigation of chronically disturbed YTC habitats. Alternatives to training during extremely dry and high wind conditions are not disclosed.

Response: The Army keeps records of how many acres burn annually at YTC and where these ignitions occur on the installation. This data is summarized in Section 5.5.2 of the EIS. The Army also spatially maps annual data from fires on the installation. As stated in the EIS, most fires on YTC start on existing ranges in the CIA and dud areas. However, new areas do sometimes burn. In such an event, the Army conducts an analysis of new footprint fires, and what impacts these fires had on resources.

The Army has many methods available to fight wildland fires at YTC, including aerial resources and personnel, which are discussed in Section 5.5.4 of the EIS. Aerial assets are used at YTC for high-priority fires, on steep and rugged terrain, and within impact areas. As a result of recent (2007) modifications to its aerial fire suppression requirements, the Army now has greater flexibility over the types and quantity of equipment used for aerial fire suppression at YTC. Aerial fire suppression capabilities at YTC include up to 15 types of aircraft from both internal (Army) and external (contracted services) sources. However, rotary wing aerial assets are believed to be a more effective fire asset than tanker aircraft given the initial response time, quicker turn-around time, and precision of suppression activity.

Section 6.3.3 of the DEIS, Wildlife Resources, discusses potential impacts to sage-grouse from fire. These effects are discussed in more detail in the Biological Assessment in Appendix F. Section 6.3.3.4.2, Live-Fire Training Direct and Indirect Effects, states that there would be significant adverse

effects to sagebrush habitat and to the western sage-grouse, primarily as a result of fire and maneuver training.

The Army has developed a list of mitigation measures to reduce fire risk and increase protection and rehabilitation of shrub-steppe habitats utilized by sage-grouse. These mitigation measures are listed in Section 6.3.3.8.2, with a more thorough discussion included in the Biological Assessment in Appendix F.

111. The health of prairies and oak lands of Thurston and Lewis Counties, and Fort Lewis and YTC are interdependent. We urge that you reevaluate the probable impacts to all resources at a landscape scale.

Response: The importance of prairie, and oak woodlands at a landscape scale was considered when assessing impacts to vegetation and wildlife on Fort Lewis (neither community occurs on YTC). The significance criteria developed for vegetation (Sections 4.3.1.1, Resource-specific Significance Criteria) reflect the importance of these communities, in that any long-term loss or degradation of unique or high quality prairie or oak woodlands is considered a significant impact. Sections 3.3.1.1.2 (Prairies/Grasslands) and 3.3.1.1.3 (Oak/Oak-mixed Woodlands) have been revised to include a discussion of the importance of these habitats on a regional level.

112. Page 4–41, line 41. Numerous grassland bird species would be impacted directly and indirectly by both fires and training events under Alternatives 1 through 4. Please quantify impacts and address needed mitigation.

Response: The referenced section (4.3.3.9.1, Migratory Birds) has been revised to include more information on potential effects to grassland migratory birds associated with impacts to prairies on Fort Lewis, and to direct the reader to mitigation presented in Sections 4.3.1.8 and 4.3.3.8, which will also help mitigate for effects to these species.

113. Throughout the DEIS there is stated reliance on the conservation guidelines provided by four overarching documents, these are the *Integrated Natural Resources Management Plan* (INRMP), the *Endangered Species Management Plans* (ESMPs) specific to our at-risk species, the draft *Candidate Conservation Agreement* (CCA), and *Army Regulation 420–5*. The mechanisms to minimize and mitigate for impacts builds on these documents, which are currently not approved by natural resource oversight agencies, or are not finalized. The INRMPs and ESMPs are general in nature and do not effectively describe in spatial and temporal detail rare species and habitat management, maintenance, or enhancement actions. The current Fort Lewis INRMP falls short of adequately protecting species as well as sustainable training lands as demonstrated by damage to Training Range 74/76 at Fort Lewis in winter 2009. Because the DEIS leans on incomplete and unapproved documents, it is incomplete and inaccurate. According to the Army, *Army Regulation 420–5* is planned to be modified to improve the protection of environmental conditions and federal trust resources. We recommend that until those modifications are made and implemented, reliance on the documents should not be the basis for the FEIS. Since the DEIS relies on incomplete and unapproved documents, it is not possible to conclude other than the DEIS is incomplete and inadequate.

Response: With the exception of the Candidate Conservation Agreement (CCA), the documents referenced in the comment are dynamic documents that are periodically updated by the Army to incorporate updated information. Although each updated version of these documents is finalized and approved by installation commanders and agencies prior to implementation, during this process, the Army continues to follow the previously approved versions of the documents, such as the 2002–2007 version of the INRMP for Fort Lewis and YTC’s currently approved plans. The text of the FEIS has been revised to clarify which management documents the Army is utilizing while waiting to finalize updated versions, and the schedule for finalization, review, and implementation of updated documents. While the CNRMP and INRMP are by necessity somewhat general documents that describe management of all natural resources on both installations, appendices to these documents provide more detailed information. For example, individual Species ESMPs provide more specific information on what is done to document, manage, and protect these species. Additionally, the existing Fort Lewis Regulation 420–5 provides detailed information about protection measures for sensitive species on Fort Lewis and YTC. In order to provide better detail about ongoing management actions on Fort Lewis and YTC, mitigation sections have been revised to list existing measures that will continue to help protect sensitive habitats and species on the installations.

114. All monitoring and corrective actions in the INRMPs hinge on adequate funding and access to training lands. Access for monitoring purposes has become increasingly difficult at Fort Lewis with even two SBCTs training simultaneously. There is no guaranteed program funding or monitoring access in the INRMP or the DEIS. Consequently, there is no reliable plan to assess potential impacts through a Performance-based approach or to mitigate for damages that may occur.

Response: The Army is committed to providing access to training areas for management or mitigation in order to ensure training area sustainability for future training. The Army will continue to monitor and conduct management activities in accordance with Fort Lewis regulations, the ITAM Program, and other installation management plans. The EIS identifies mitigation to minimize, avoid, or compensate for adverse effects to environmental resources. All practicable means to avoid or minimize environmental harm from the selected alternative would be adopted. A mitigation and monitoring plan will be implemented to ensure that these mitigation measures are implemented, monitored, and their effectiveness measured, with appropriate adjustments made when necessary.

115. Page 4–41, line 22–23. Mitigation dependent on unsecured funding is not mitigation at all. This theme is repeated throughout the document. It is a circular argument to say that Significant impacts can be made Significant but Mitigable to less than Significant by implementing the INRMP, PBMS, and CCA when these documents are not complete, they were not written to address the impacts and actions proposed, and no guaranteed funds are available.

Response: Mitigation in the EIS will be based on measures from existing documents. These are dynamic documents and as new versions are approved, mitigation measures in those documents will be implemented. Further, mitigation

measures that will be stated in the ROD are those measures that the Army has committed to fund, subject to the availability of funds.

116. The INRMP as written does not address impacts from training on common wildlife species.

Response: The 2007 INRMP as written discusses management of common wildlife species and their habitat on Fort Lewis. The INRMP is a resource management document, not an impact assessment document.

117. We note that Sec. 4.3.3.8 suggests implementation of the performance-based management strategy approach in the INRMP as a measure to mitigate impacts upon wildlife, specific species, habitat, and vegetation. Since the INRMP was adopted in 2007, hasn't this strategy already been implemented? In light of the changed demands upon the Ft. Lewis training lands, generally, that would result from any of the alternatives (for example, training ammunition usage, tracked vehicle usage, etc., addressed in the DEIS), the INRMP should be revisited to ensure that it is relevant to proposed operations and continues to provide adequate environmental protection no matter which alternative is pursued in the end.

Response: The 2007 INRMP has not been implemented. Although the INRMP has been finalized and approved by installation commanders, it has not been approved by natural resource oversight agencies. These agencies will be completing their review of the document in conjunction with this NEPA process; therefore, the two documents will be coordinated. While the 2007 INRMP is going through the approval process, the Army continues to follow the previously approved 2002–2007 version of the INRMP. In the FEIS, performance-based management has not been included as mitigation in Section 4.3.3.8, or elsewhere in the document, as it is unclear when this program will be fully implemented at Fort Lewis.

118. Impacts and mitigation from increased training as it is proposed would very likely cause significant damage to the natural resources present on the installations. The general assessment of the DEIS that impacts from GTA are negligible and can be mitigated is not supported. The evaluation of impacts is insufficient; they are not satisfactorily described or addressed. Further, it is not clear from the cited performance-based management that the mechanisms or the capacity to mitigate for impacts exists. We urge that the EIS and resulting impact minimization and mitigation actions include:

- 1) Protection of the most vulnerable populations and their habitat, especially those along the eastern edge of the Artillery Impact Area at Fort Lewis and critical sage-grouse habitat at YTC;
- 2) Incorporation of performance-based management strategies including clear and specific performance parameters approved by resource oversight agencies and sufficient capacity and dedicated funding to support those management strategies.
- 3) Development of site-based management plans that address cumulative effects from training events and management;
- 4) Delineation of funding to support regional off-Post land acquisition, habitat management, and efforts to recover the rarest species;

- 5) Consistency and support of the sustainability philosophy employed by Ft. Lewis and DOD.

Response: The comment that “The general assessment of the DEIS that impacts from the GTA are negligible...” is incorrect. The DEIS states that proposed increased training would have significant impacts on natural resources on both installations. Please refer to Tables 4–1 and 6–1 for a summary of impacts to resources on Fort Lewis and YTC, respectively. The EIS does not generally state that impacts are negligible, as implied by this comment.

In the FEIS, the PBMS approach is no longer included, as it is unclear when this program will be fully implemented at Fort Lewis.

Many of the mitigation actions listed in this comment are already a part of ongoing management at Fort Lewis and YTC. The eastern edge of the Artillery Impact Area on Fort Lewis and important sage-grouse habitat at YTC are already subject to training restrictions that protect vulnerable populations of sensitive species. The INRMP at Fort Lewis and the ICRMP/INRMP at YTC are site-based management plans that are designed to address all effects from training activities. Additionally, the Army at Fort Lewis is participating in the ACUB program, and has provided funding to off-Post efforts to help offset impacts to prairie habitats on Fort Lewis. The Army is currently testing this approach to mitigation to determine its value and evaluate whether this program should be expanded in the future. All of these management efforts are consistent with the sustainability philosophy employed by Fort Lewis and the Department of Defense. To clarify ongoing management to protect sensitive habitats and species, the mitigation sections of the FEIS have been revised to list pertinent actions at both installations that would continue regardless of the outcome of this EIS.

Additional mitigation measures for both installations have been included in the Final EIS in the appropriate resource area sections.

119. A major flaw in the DEIS is the insufficient proposed mitigation. The parameters for the performance-based management actions, upon which the proposed mitigation relies, are not delineated clearly or sufficiently. The regional capacity to fulfill necessary restoration requirements for proposed training impacts is lacking. For instance, even if it were possible to revegetate the areas degraded through increased training, there is not enough native plant material available to conduct those revegetations. In addition, the restoration and resource management funds available to implement mitigation actions are insufficient to support current training, let alone any proposed changes. These issues are unacceptable and preclude any factual evaluation of the possible successes of suggested actions. Thorough reevaluation of the potential impacts to all resources is essential, and a more complete set of mitigation options must be incorporated, including improvement of existing performance-based management strategies.

Response: Tables 4–42 and 6–34 in the FEIS identify mitigation to minimize, avoid, or compensate for adverse effects to environmental resources. All practicable means to avoid or minimize environmental effects from the selected alternative would be adopted. A mitigation and monitoring plan will be implemented to ensure that these mitigation measures are implemented,

monitored, and their effectiveness measured, with appropriate adjustments made when necessary. The ROD will identify the mitigation that the Army has committed to fund, subject to the availability of funds.

120. The current DEIS does not focus on or address the threat of candidate species listing on military training, nor does it reflect the long-range sustainability actions undertaken and future actions planned by Fort Lewis or the DOD. The EIS associated with GTA actions should be completely consistent with installations' efforts to recover all listed and candidate species that occur on their lands, as well as their long-term vision of sustainability. The current DEIS does not build on these efforts and is not integrated with the multi-pronged efforts of the installations and the DOD. The DEIS therefore is inadequate and would likely increase the probability that severe limitations to military training will occur in the near future. The Army has the tools in place to accomplish needed mitigation both on and off the installations. We urge that the DEIS take advantage of the full suite of tools available for mitigation of training impacts including the Sikes Act expanded authority that allows installation funds to be spent on management of non-DOD lands, the ACUB program, and the conservation banking authority.

Response: The EIS addresses impacts to these species in Section 4.3.3, Wildlife Resources, and proposed mitigation in Section 4.3.3.8, Mitigation. Installation sustainability efforts to recover listed and candidate species are discussed in the INRMP and the currently implemented Sustainability Implementation Plan (which is also Appendix F of the INRMP). Mitigation presented in DEIS Section 4.3.3.8, Mitigation, is intended to be additional mitigation to address the impacts associated with the proposed activities under the alternatives. In order to more clearly illustrate how proposed mitigation builds off of ongoing prairie management efforts, mitigation sections 4.3.1.8 and 4.3.3.8 have been revised to list ongoing resource management efforts, in addition to presenting new mitigation developed for the proposed activities.

121. Increased risk of fire is of particular concern, as current fires likely contribute to mortality of prairie butterflies and juvenile streaked horned larks, and causes significant habitat loss and degradation. Numerous other species (e.g., many reptiles, small mammals, grassland birds) are also destroyed as a result of the large scale and timing of fires on the AIA.

Response: The potential impacts of fire on sensitive grassland species are discussed in Section 4.3.3.

122. We appreciate the inclusion of a draft Biological Assessment for the project and efforts to work with the Washington State Department of Fish and Wildlife, US Fish and Wildlife Service and National Oceanic and Atmospheric Administration to determine the extent of impacts to individual species and design appropriate mitigation measures to reduce impacts to the species and their habitats, especially loss of the shrub-steppe vegetation and prairies due to fire, construction and training activities. We recommend the FEIS include the outcomes of consultations with the agencies and specific measures recommended to protect species and habitats that would be impacted.

Response: DEIS wildlife mitigation sections (4.3.3.8 and 6.3.3.8) present mitigation that was developed for impacts to wildlife, including sensitive species and their

habitats. The Draft BA, which was included as an appendix to the DEIS, was reviewed by the USFWS and NMFS. The Draft BA was revised into the Final BA using their comments. The Final BA is included as an appendix to the FEIS. Review of the BA is ongoing and results of the Army's consultation with USFWS and NMFS will be included in the ROD.

123. The EIS needs to include the impact of noise on threatened and endangered species.

Response: Noise-related impacts to wildlife, including threatened and endangered species are discussed in Sections 4.3.3 and 6.3.3 of the DEIS. These sections include discussions of potential impacts associated with construction and different types of training. Additionally, the potential for noise associated with the proposed activities to affect specific threatened and endangered species is included in the Biological Assessment (Appendix F).

124. Will the preferred alternative result in disturbance to previously unimpacted areas?

Response: The Army did not identify a preferred alternative in the DEIS. Under the three action alternatives considered in the document, no new areas will be open to military training that are not currently available for similar types of training. The proposed increase in training under the three action alternatives would likely result in greater use of training areas than at present, as discussed in various sections of the EIS. As discussed in the EIS, some of the proposed construction would occur in previously undeveloped areas, though none would occur in areas not previously impacted by training.

125. The DoD and Fort Lewis have demonstrated a commitment to restoring prairie habitat, yet the DEIS does not address candidate prairie species. On both Fort Lewis and the Yakima Training Center, will prairie species be impacted? What species would be impacted and how, under each alternative?

Response: The DEIS does address candidate prairie species at Fort Lewis and candidate shrub-steppe species at YTC. Potential impacts to these species under each of the alternatives are presented in Sections 4.3.3 and 6.3.3 of the EIS.

126. Because prairies, oak woodlands, and high quality shrub-steppe habitats are so rare and sensitive, we would prefer the remaining intact plant communities not be disturbed. Where mitigation is proposed, how can I be assured that it will be sufficient? Have Integrated Natural Resource Management Plans, Endangered Species Management Plans and/or Candidate Conservation Agreements been used before? Are each of these tools specific enough to describe the specific habitats that have been destroyed and corresponding mitigation that will take place? Are these measures sufficiently robust to ensure there is sufficient latitude both for species and for the military (what if candidate species are listed, what if a catastrophic fire occurs, what if critical habitat is mistakenly damaged, etc)? Are the resources necessary for mitigation readily available at the scale proposed?

Response: Both installations take steps to avoid disturbance to intact prairie, oak woodland, and high quality shrub-steppe habitat, including prohibiting or

limiting destructive forms of training in these areas, and concentrating training in areas that have already been degraded by past activities. These management policies would continue under all the action alternatives. Mitigation developed for this EIS is based on the best available information and associated predictions of the types and intensity of impacts likely under the alternatives. Mitigation measures have only been proposed if they are feasible to implement. We have identified mitigation measures in all circumstances where they would tend to eliminate or reduce adverse impacts noted in the EIS analysis. Additionally, the installations will continue to observe and monitor the impacts to resources and respond as necessary, in accordance with adaptive management strategies. Both installations currently have INRMPs (CNRMP in the case of YTC) and ESMPs in place and in use that are guiding natural resource management until the revisions are implemented. These documents are specific enough to guide management of resources on the installations, and consider both natural resources and the military mission. The Candidate Conservation Agreement is in the process of being developed, and therefore has not been used before.

127. I appreciate that at Fort Lewis, “Forest habitat that could be potentially used by northern spotted owl or marbled murrelet, or coastal habitats that could be used by marine mammals and birds of concern are not among the habitats that would be impacted by construction.” Will the proposed increase in operations cause other disturbances (such as noise, damage from munitions firing or fire, etc) to northern spotted owl, marbled murrelet, or birds of concern?

Response: The effects of noise and other disturbances to birds and other wildlife at Fort Lewis is addressed in Section 4.3.3 of the DEIS. As discussed in Section 3.3.3.2, Special Status Species and Critical Habitat, as well as the Biological Assessment in Appendix F, northern spotted owls and marbled murrelets are not known to occur on Fort Lewis, and therefore would not be disturbed by the proposed activities.

128. Both Fort Lewis and Yakima Training Center are some of the last remaining remnants of high quality habitat and they may play an important role in helping wildlife move across the landscape. How will wildlife connectivity be impacted by the proposal?

Response Distribution and movement of wildlife across the landscape can be affected directly by noise and activity that occurs during training and indirectly by habitat changes related to training such as wildland fire and construction of facilities. It is projected that military training activity would increase under all action alternatives from current levels. It is not anticipated that increased activity and associated habitat change will impact the ability of species to traverse the installation to the point of degrading overall wildlife connectivity. Species habituated to human activity such as ravens, crows, and deer will likely not be adversely impacted by increased military training. More sensitive species such as sage-grouse will avoid disturbed areas for certain activities, such as nesting, but can still fly between suitable areas. Sections 4.3.3.7 and 6.3.3.7 of the FEIS have been revised to include a brief discussion of impacts to wildlife connectivity.

129. Species and habitat protection needs to be better addressed at the troop level so they can become self-regulating. There is a need to better educate Soldiers about rare species concerns, encourage them to share those concerns, and take responsibility for their stewardship.

Response The Sustainable Range Awareness component of the ITAM program addresses Soldier awareness of rare species and stewardship of natural resources. Soldiers are provided environmental protection handbooks, posters, videotapes, and briefings.

130. Even a single pass by any motor vehicle can kill one to many prairie butterflies during any stage of their life cycle. All are resident and few can flee more than a few meters, and this is only under certain conditions. Please quantify and address this impact and mitigation options in all appropriate locations in the DEIS.

Response The majority of prairies that provide habitat for butterfly populations are protected from off-road maneuvers. Additionally, some butterfly habitat is off limits and marked with Seibert stakes to prevent this type of impact to butterflies and their habitat. The mitigation sections of the FEIS have been revised to list ongoing management for prairie butterflies and other sensitive species and habitats, which provide numerous protections for these species. See Section 4.3.1.8 and 4.3.3.8.

131. Lines 16–17 on page 3–90 state, “The TAs are used 325 days per year by more than 200 military units.” Does this number include live-fire ranges? Under current conditions, access to TAs and live-fire ranges is becoming increasingly difficult to obtain. Without access, there is no means for monitoring populations or conducting habitat management actions. In other words, the PMSAs proposed as the mechanism for mitigation, regulation, and monitoring cannot occur. This would change all effects characterized as “Significant but Mitigable...” to “Significant”. Please calculate the number and distribution of access days across the calendar year that access might be expected in TAs and Maneuver areas for the purpose of natural resources monitoring and management.

Response: The 325 days-per-year figure does include the live-fire ranges. The Army is committed to providing access to training areas for management or mitigation in order to ensure training area sustainability for future training. Access to TAs or live-fire ranges would never be eliminated. For example, equipment on live-fire ranges needs to be maintained, which requires the suspension of live-fire training. The Army will continue to monitor and conduct management activities in accordance with Fort Lewis regulations, the ITAM Program, and other installation management plans. Because access for monitoring and management would continue, the concerns in this comment would not result in a determination of significant adverse effects.

G.3.5 Wildfire Management

132. The measures in place at YTC to control the size and spread of fire within and onto the installation are insufficient. Please address the disassociation between the occurrence of fire and management/training decisions in the DEIS.

Response: The Army recognizes that wildfire occurrence and resulting impacts on the environment at YTC are significant, and has changed the impact rating in the FEIS to reflect this significance. The Army also recognizes that existing mitigation measures in place at YTC are not sufficient to control the size and spread of fire occurring at the installation. Therefore, the Army is proposing numerous new mitigation measures and BMPs in this FEIS as a part of the GTA actions that aim to reduce the frequency of wildfire occurrence at YTC and to reduce the size and intensity of fires that do occur. However, the Army acknowledges that implementation of these mitigation measures and BMPs may not reduce wildfire impacts to a less than significant level.

133. A thorough fire analysis at YTC should be performed, with methods and assumptions disclosed.

Response: The Army has conducted a wildfire analysis for YTC in Section 6.5 of the EIS. Methodology and assumptions used for this analysis are also disclosed in this section.

134. The document draws a distinction among alternatives without any real difference with respect to the issue of fire. If all actions have the potential to deliver the same results, one is not presenting alternatives. A reasonable range of alternatives need to be provided in the DEIS, alternatives that could provide different outcomes and significantly less impact from fire, soil/vegetation disturbance and one that would provide for the maintenance of shrub steppe.

Response: The alternatives are based on stationing, construction, and training as directed to Fort Lewis from the 2007 GTA FPEIS. Land management actions need to reside within the land management plans, such as the INRMP and CNRMP. As discussed in the fire management impact analysis presented in Section 4.5 (for Fort Lewis) and 6.5 (for YTC) of the EIS, each of the alternatives is anticipated to have a successively greater potential for ignitions due to a greater amount of live-fire and maneuver training occurring. Therefore, the potential for ignitions to occur would not be the same across all alternatives. Additionally, alternatives to reduce impact from fire, soil/vegetation disturbance, and provide for the maintenance of shrub steppe habitat would not meet the Purpose of and Need for the Proposed Action. No additional alternatives have been developed or analyzed in the FEIS, but your comments and participation are appreciated.

In this FEIS, the Army has re-evaluated wildfire impacts at YTC and has determined that these impacts are significant. Therefore, the Army is proposing numerous new mitigation measures and BMPs in this FEIS as a part of the GTA actions that aim to reduce the frequency of wildfire occurrence at YTC and to reduce the size and intensity of fires that do occur. However, the Army acknowledges that implementation of these mitigation measures and BMPs may not reduce wildfire impacts to a less than significant level under any of the GTA alternatives.

135. YTC should conduct a spatial analysis of how many acres have burned on average in any given year for the past 12 to 15 years in order to determine the spatial distribution of fires, provide data on the amount of habitat converted from shrub-steppe to steppe on

average, and allow reviewers to assess rates of recovery. Information is needed on where and how many acres burned per year.

Response: The Army keeps records of how many acres burn annually at YTC and where the ignitions occur on the installation. These data are summarized in Section 5.5.2 of the EIS. The Army also maps annual data from fires on the installation. As stated in the EIS, most fires on YTC start on existing ranges in the CIA and dud areas. However, new areas do sometimes burn. In such an event, the Army conducts an analysis of new footprint fires, and what impacts these fires had on resources.

136. Impediments to the use of tanker aircraft to suppress fires on YTC or that threaten to burn onto YTC should be addressed. Staffing levels and pre-positioning of fire fighting resources and personnel is insufficiently disclosed. Alternatives to training during extremely dry and high wind conditions are not disclosed.

Response: Fire-fighting resources available at YTC, including aerial resources and personnel, are discussed in Section 5.5.4 of the EIS. Aerial assets are used at YTC for high-priority fires, on steep and rugged terrain, and within impact areas. As a result of recent (2007) modifications to its aerial fire suppression requirements, the Army now has greater flexibility over the types and quantity of equipment used for aerial fire suppression at YTC. Aerial fire suppression capabilities at YTC include up to 15 types of aircraft from both internal (Army) and external (contracted services) sources. However, rotary wing aerial assets are believed to be a more effective fire asset than tanker aircraft given the initial response time, quicker turn-around time, and precision of suppression activity. Also as discussed in Section 5.5.4 of the EIS, there are four types of personnel involved with wildfire suppression at YTC, including the YTC Fire Department, military training units, qualified YTC civilian firefighting staff, and the Mutual Aid Task Force. While military units are using ranges at YTC, they are required to designate suppression teams responsible for suppressing ignited fires and these teams are supported by the YTC Fire Department.

As discussed in 5.5.3, a Fire Risk Management Assessment is conducted at YTC throughout the day as fire danger conditions change. When the fire risk becomes too high, military training is curtailed or postponed until the risk of uncontrolled fire is reduced. Therefore, training is not conducted during extremely dry and high wind conditions. In addition to this practice, the Army has developed numerous new mitigation measures and BMPs in this FEIS as a part of the GTA actions to reduce the frequency of wildfire occurrence and to reduce the size and intensity of fires that do occur at YTC. These include temporal constraints on training during the high fire danger period, refinement of YTC's Fire Risk Assessment, and increasing wildfire awareness training for all training units.

137. The DEIS states that on the YTC there are provisions to build more firebreaks, which will require that more land be removed as habitat for Federal listed and candidate species.

Response: We were unable to find any reference to building more firebreaks at YTC in the DEIS. Regardless, the Army monitors its Wildland Fire Management

Program annually, including the location and condition of firebreaks, to ensure that fire prevention and control measures are sufficient to manage fire occurrence on the installation. Firebreaks are strategically located to compartmentalize fires, and provide access into remote areas of the installation. While construction of additional firebreaks could result in the loss of some wildlife habitat, the Army does not propose to construct any firebreaks within protected species habitat. The Army must comply with environmental laws and regulations, including the Endangered Species Act, when it conducts its activities, including the construction of firebreaks at YTC.

138. The EIS fails to acknowledge or address the potential changes to fire risk and fire effects associated with climate change.

Response: The potential changes to fire risk and fire effects associated with climate change are outside the scope of this EIS. However, Sections 5.5 and 6.5 of this EIS address changes to fire risk from implementation of each of the project alternatives and associated increases in training.

139. Please acknowledge and quantify current impacts on wildfire management at Fort Lewis and address the need for mitigation under Alternatives 1 through 4. The INRMP is inadequate on this issue.

Response: A summary of fire runs that have occurred on Fort Lewis between 1988 and 2008 (the most recent year that these data are available, is provided in Section 3.5.2, Fire Risk and History, of the EIS. Current fire management approach at Fort Lewis is also described in this section. Impacts on wildfire management that are anticipated to occur from each of the alternatives cannot be quantified, as the number, location, intensity, and size of future fires are unknown. However, a qualitative analysis is provided in Section 4.5 of the EIS. This section acknowledges that the current fire management program may require updating to address the increased training frequency and risk of accidental wildfire ignition under Alternative 2, 3, and 4. Fire prevention, fire suppression, post-fire actions, and fire management direction for the installation is provided in the Fort Lewis Integrated Wildland Fire Management Plan (IWFMP). An update of the 2000 IWFMP for Fort Lewis is currently being conducted.

140. The wildfire management impact significance criteria provided for Fort Lewis fail to acknowledge fire impacts related to scale and timing.

Response: It is not possible to predict the scale of a fire accurately or the timing of a wildfire occurrence. Therefore, scale and timing were not used to rate the significance of wildfire impacts. As discussed in Section 3.5.2 of the EIS, the risk of fire at Fort Lewis depends on several factors, including weather conditions; fuel availability (vegetation); the frequency, type, and intensity of military training activities; and location in relation to fire suppression resources (i.e., water and fire fighting personnel).

141. The EIS is incorrect in stating that, under Alternative 1, fires would continue to be predominantly small. Fires in the AIA are large, often hundreds to thousands of acres.

Response: While large fires do occur in the impact areas, particularly the AIA, and will continue to occur in the future under any of the alternatives, the majority of fires resulting from ignitions at Fort Lewis in a given year are small in size. Large fires that have occurred on the installation are discussed in Section 3.5.2 of the EIS. As stated in this section, however, the sizes of annual wildfires have ranged from campfire size to 160 acres, with the majority being small in size.

142. Why would increases in ignitions associated with an increased population living at Fort Lewis not be proportional to the population increase?

Response: The number of fires is not directly correlated with the number of Soldiers. Many other variables influence the number and size of fires. With an increase the number of Soldiers, the number of activities that could cause fires also increases. Thus, the increase in accidental ignitions associated with an increased population living at Fort Lewis would not be proportional to the increase in population. Since ignitions in the cantonment area do not occur frequently, and are contained and suppressed quickly when they do occur, this impact would be minor under all of the alternatives.

143. The statement that limitations on the use of pyrotechnics and other ignitions sources during high fire danger periods would reduce the probability of a large-scale wildfire occurring from live-fire training activities appears false, as Chapter 3 of the EIS states that live-fire training areas are exempt from the controls placed on other training areas to reduce fire risk.

Response: The statement in the document is correct.

144. Many things cause fires on the maneuver training areas outside the live-fire training areas, including vehicles, campfires, and smoking. Limits on activities in these areas during high fire danger periods do reduce the probability of a large-scale wildfire. Live-fire areas (the NSAIA, the CSAIA, and SSAIA) for small arms firing, including the use of tracer ammunition, are required to comply with restrictions on tracers and potentially incendiary ammunition during periods of high-fire hazard levels. The Artillery Impact Area (AIA) is the exception because it is the only area that can support artillery and mortar live fire training, into which artillery and mortar rounds can be fired at Fort Lewis, and these rounds occasionally cause fires. The Post's Forestry section conducts a prescribed burn within the AIA each year prior to the high-fire hazard season to minimize the occurrence of fires. The Fort Lewis Forestry crew assists on fires, but is not designed, funded, trained, or equipped to deal with large-scale fires or numerous simultaneous fires.

Response: As stated in Section 3.5.4, Firefighting Resources, of the EIS, during the high fire danger period at Fort Lewis, the Forestry fire staff is supplemented by an additional 14 temporary forestry technicians and two full-time heavy equipment operators. Under most circumstances, permanent and temporary employees in the Forestry Section are capable of controlling wildfires occurring at Fort Lewis. However, during the high fire danger period, Soldiers from I Corps and Fort Lewis may be required to provide support. In addition, help from the WDNR and local fire districts is available through mutual aid agreements. The Fort Lewis and McChord AFB Fire Departments may also respond to requests for assistance in fire suppression. The Army

believes that the fire suppression capabilities at Fort Lewis are sufficient to manage wildfires occurring on the installation.

G.3.6 Wetlands

145. The draft EIS describes wetlands on both Installations and explains that they would suffer no significant impacts due to the proposed action. It is not clear where the wetlands are, their size, and the extent to which wetlands and associated riparian areas would be impacted by the project. Will there be loss of riverine and riparian habitat important to fish and other species? The final EIS should discuss in detail the impacts to wetlands and riparian areas, describe the impacts and associated mitigation measures in quantitative and functional terms. We also recommend the inclusion of a detailed discussion of the cumulative effects from this and other projects on the hydrologic conditions of the proposed project area, including wetlands.

Response: The distribution of wetlands across the installation is shown on Figures 2–9 and 3–1. In addition, Figure 2–9 shows the wetlands with the 50-m buffers. New figures have been added showing the distribution of wetlands on Fort Lewis (Section 3.4) and YTC (Section 5.4). As discussed in Sections 4.4 and 6.4, impacts to wetlands are not anticipated. The primary reasons for this conclusion are that no construction or other disturbances are allowed within the wetlands or the 50-m buffer that surrounds each wetland. Thus, other than the specific impacts identified in Section 4.4, no wetlands would be disturbed by implementation of the alternatives. In addition, the terrain where the wetlands are found on Fort Lewis is essentially flat, so indirect effects are not expected.

146. Wetlands. No mention is made of contamination issues from munitions. This issue was only touched on superficially in the water quality section and no quantification was provided. Contamination from heavy metals can contribute to or cause mortality of fish and wildlife species dependent on wetlands, and may have played a role in the loss of western pond turtles and western toads from Nisqually Lake. Please broaden the assessment to address these issues.

Response: As discussed in Chapter 3, surveys have not located western pond turtles on Fort Lewis. As far as the western toad is concerned, Nisqually Lake is off limits and the Army does not fire munitions into wetlands or other water bodies, including Nisqually Lake. Thus, the Army cannot say with any certainty that heavy metals may have played a role in the loss of western pond turtles and western toads from Nisqually Lake as asserted in the comment.

G.3.7 Cultural Resources

147. The draft EIS indicates that the planning team met with tribes that may be affected by the project, but information related to issues discussed and outcomes of the meetings was not included in the draft EIS. We recommend the final EIS include that missing information and a discussion on how any issues raised would be addressed. Because the draft EIS indicates that tribal resources could be impacted by the project, it is important that the Army work closely with affected tribes to address those impacts and document measures that would be taken to avoid or reduce impacts to cultural resources.

Response: No impacts to tribal cultural resources from the proposed GTA alternatives have been identified in meetings with the tribes to date, as reflected in the DEIS. However, Fort Lewis maintains open and ongoing consultation with the tribes. Noise impacts are addressed in Section 4.8.

148. “Historic recreational use” of prairies by Indian tribes, and use of historical equestrian trails by the local equestrian community clubs are 4(f) resources that have not been addressed in the DEIS. Also that demolition of the historic Army horse and mule stables/structures that date to the early establishment of the fort, and are currently in use as Public Works Shops is an adverse effect that the local equestrian community would like to see mitigated through documentation of the facilities with input from the equestrian community and historical societies, facilitated by in-person tours of the historic Woodbrook Hunt Club and Brookwood Equestrian Facilities, and rotating exhibits for education purposes.

Response: Section 4(f) conditions are related to the taking of or impacts to publicly owned recreational resources for transportation purposes by the FHWA (WSDOT), and that is not involved in this situation. Regarding the mitigation of impacts to the former Army horse and mule stables, which are now in use as Public Works Shops and would be demolished as part of the Master Plan update, Mitigation Measure G (Table 1) in Stipulation II of the PA, addresses creative mitigation of impacts to the Fort Lewis Garrison Historic District, including the former Army horse and mule stables. Mitigation Measure G includes: Web-based Documentation, Interpretive Signs and a Self-Guided Tour. This creative mitigation project will develop documentation and educational material to preserve and share the history of the Garrison Historic District. Fort Lewis will seek input from the local equestrian community and historical societies in Lakewood and Tacoma in developing these interpretive materials. Finally, Mitigation Measure H (Table 1) in Stipulation II of the PA will develop and evaluate alternatives for reuse of historic gun sheds, stables and other buildings proposed for potential demolition in the Master Plan’s Historic Downtown Area Development Plan. The PA is included in the FEIS as Appendix D.

149. The SHPO needs to be consulted on the APE.

Response: Fort Lewis and the SHPO have agreed that Fort Lewis will consult with the SHPO to determine APE if an undertaking is likely to be considered controversial, or if the Cultural Resources Manager determines that the undertaking is likely to have an adverse effect on significant cultural resources. This agreement has been incorporated into SOP 2 “Defining the Area of Potential Effects (APE,)” in Appendix 1 of the PA.

150. The SHPO needs to discuss some type of annual planning meeting to discuss the past years actions and next year’s actions.

Response: Stipulation III.B of the PA was revised to include an annual meeting at Fort Lewis. The meeting would occur within six months of the PA’s signing and then every 12 months thereafter.

151. In Stipulation III.A of the PA, there is no narrative to go along with the Dispute Resolution.
- Response: This text was revised to refer to SOP 9, which addresses the Dispute Resolution process.*
152. In Stipulation III.D.3 of the PA, there is no explanation as to what the next steps would be after the 30-day review period is over.
- Response: An additional step was added to this Stipulation as follows: III.D.4 If resolution is not reached by the end of the 30-day period, the PA will be terminated, in which case Fort Lewis shall*
- A. Consult with the signatories to develop a new PA; or*
 - B. Request the comments of the ACHP pursuant to 36 CFR 800.7(a)(1).*
153. In SOP 1.3.1(2), what about consultation with interested parties?
- Response: Fort Lewis proposes no consultation with interested parties for exempted undertakings. Interested parties can review the Annual Report for the PA.*
154. In SOP 1.3.1(2), what about areas of overlapping jurisdiction like when USACE permits are required? Who takes the lead, the Army or the Army Corps?
- Response: A sentence was added to the end of 1.3.1(2) to indicate that an undertaking may not be exempted if a permit, lease, or license from another agency is required. The Army (Fort Lewis) is always responsible for Section 106 compliance, even if the Army Corps is the “constructing contractor.”*
155. Regarding SOP 2.3, what about changes to the APE due to the elimination of alternatives or changes to the Scope of Work?
- Response: Changes to the APE would be documented in the RHPC (i.e. if the project is relocated cf. SOP 6.3.1). A bulleted item to this effect was added to SOP 2.3.*
156. In SOP 4.3.1.1, the word “generally” should be added to the first sentence. As it reads now there is no provision for adding churches, cemeteries, graves, etc. Some discussion about exceptions to this rule should also be considered here.
- Response: The following text was added to the first paragraph under 4.3.1.1: “However, these types of resources may be considered eligible if they meet the NRHP Criteria Considerations at (CFR 60.4).” “Generally” was not added because NRHP criteria considerations are specific.*
157. In SOP 5.5, after-the-fact reviews within 30-days of what? The end of the declared emergency or day after the emergency undertaking is finished?
- Response: Text was revised to add: “... of the declared date of the emergency...”*
158. Regarding SOP 9, it is very odd that this section is here in the Appendix and little detail about dispute resolution is actually in the PA.

Response: See earlier response about revisions to PA Stipulation III.D.3. (Dispute Resolution) regarding consultation to develop a new PA that resolves the dispute, or to seek comment from the Council.

159. Regarding SOP 9.3.3, should not disputes concerning NRHP eligibility be taken-up with the Keeper?

Response: Disputes regarding NRHP eligibility are correctly resolved by the Secretary of Interior as stated in SOP 9.3.3. Section 106 regulation 36 CFR 800.4(c)(2) provides for the agency to obtain a DOE from the SOI in the case of disagreement with the SHPO. There is no need to involve the Keeper per 36 CFR 63. The text of SOP 9.3.3 was revised and a reference 36 CFR 800.4(c)(2) was added.

160. Regarding the PA appendix Exempted Undertakings [Appendix 3], are we attempting to eliminate “No Effect” or “No Adverse Effect” determinations through this list of exemptions? The language of the appendix is written with “Adverse Effects” in mind. Does it matter?

Response: Preamble text to Exempted Undertakings was slightly revised as follows: “All reviews for actions that qualify under the following categories will be documented in the Project Review Log...” and “Projects that qualify under any of the following exemptions are understood to have potential effects that are foreseeable and likely to result in a finding of No Adverse Effect. In addition, all exemption category headers are now lettered A through N followed by numbered items.

161. General Exemption #4 [Exempted Undertaking A.4.] seems a bit vague to me.

Response: The text “if existing space is used w/o alteration” was added to the end of this sentence.

162. Do we have a definition of in-kind anywhere in this document?

Response: A new Exempted Undertaking (A.18) was added to the list of General Exemptions category as follows: A.18. “All “in-kind” replacements/repairs shall adhere to the Secretary of Interior’s Standards for the Treatment of Historic Properties.”

163. Regarding Exempted Undertaking #15 [A.15], some language about reversibility of effects should be added here.

Response: Text regarding the reversibility of facilities to provide access to historic properties by disabled persons was added to Exempted Undertaking A.14.

164. Regarding Exempted Undertaking Electrical/Plumbing/HVAC Exemption #1 [H.1], language needs to be added that states an abandonment in-place option will be considered in areas where historic materials could be adversely affected by their removal.

Response: The following text was added to Exempted Undertaking H.1.: “Abandonment in-place will be considered in cases where the integrity of the property could be adversely affected by the removal of historic features or materials.”

165. Beginning on page 1 and throughout the SOPs, each SOP includes an objective and policy. I am wondering about the policy statements in terms of what is the basis for implementing and enforcing these policies? Please provide some background information about the policies such as if they are tied to other DOA or Post policies? It would be important to know that these policies are acknowledged, adopted, and are supported across the base and by project decision-makers.

Response: It is the Garrison Commander’s responsibility to ensure that all military and nonmilitary organizations on Fort Lewis and Yakima Training Center coordinate their actions under these Standard Operating Procedures with the Cultural Resources Manager for each installation to ensure compliance under DoDI 4715.16 and AR 200–1. These regulations are cited in the preamble to Appendix 1 of the PA, Standard Operating Procedures, and reference the Department of Defense Instruction, Number 4715.16, Cultural Resources Management; Army Regulation 200–1, Environmental Quality, Environmental Protection and Enhancement.

166. Somewhere in the [SOP] document, there should be a statement of the qualifications of the CRM, i.e. must meet the National Park Service Professional Qualifications etc. I believe this is the first reference, but perhaps the professional qualification standards should be in the PA itself.

Response: NPS qualifications language was added to SOP sections 3.3.1, 3.3.2, and 3.3.5., and Stipulations I and II of the PA.

167. In the first paragraph of SOP 3.3.1, should mention archaeology sensitivity model mapping for Fort Lewis.

Response: Text was added to the second sentence of 3.3.1 referencing the Fort Lewis archaeological sensitivity GIS mapping model.

168. In regard to the last sentence in SOP 3.3.5, please address the need to assess the need to update information where inventory records need updating. Also, please specify the forms to be used. We recommend using DAHP’s Historic Property Inventory Database and adhering to DAHP’s Cultural Resource survey standards and guidelines.

Response: The following text was added to SOP3.3.5: “In accordance with DAHP guidelines, a Historic Property Inventory form will be prepared for each resource recorded during a survey.”

169. In SOP 4.3.5, recognize that existing inventory data should be assessed for the need for updating and evaluation.

Response: The following text was added to SOP 3.3.1: “Resources that are 50 years old or more will be recorded on DAHP Historic Property Inventory forms in accordance with DAHP guidelines appropriate to the level of inventory being conducted.”

170. In SOP 5.5, should there be a reference to Section 800.12 for emergencies in the Section 106 regulations or alternatively adopting the procedures in 800.12 in this section?

Response: Text was revised to reference 36 CFR 800.12(b)(1).

171. In the third bullet point of SOP 9.3.3, the text states, “If the construction is found to have no adverse effects on the property, the installation historic architect will make a recommendation of No Historic Properties Affected and will prepare...” This should be changed to a recommendation of “no adverse effect.” If the intent here is otherwise, please explain why.

Response: The text was revised as follows: If the construction is found to have no adverse effects on the property, the installation historic architect will make a recommendation of No Adverse Effect to Historic Properties and will prepare a RHPC and report the incident in the PA annual report.

172. Regarding Exempted Undertakings 6 and 7 [A.6 and A.7], explain how these assumptions [about the need for archaeological survey in areas that have been previously disturbed or surveyed] would be verified.

Response: The text of Exempted Undertakings A.6 and A.7 have been revised to explain how the Fort Lewis GIS would be used to identify areas that have been previously surveyed or disturbed, and will be assessed for the need for additional survey at the discretion of the Fort Lewis Cultural Resource Manager. Figures 1 and 2 have been added to the document that show examples of the GIS layers for “Disturbed Areas” and “Surveyed Areas.”

173. In the Exempted Undertakings, delete Agriculture/Timber Management Exemption 2 [N.2 regarding timber management and harvesting in areas previously surveyed with negative results for archaeological properties or in areas mapped as “Low Probability” in the GIS archaeological predictive model].

Response: Fort Lewis declines to delete Exempted Undertaking N.2, but has revised the text as follows to justify the exemption: Timber management and harvesting in areas previously surveyed with negative results for archaeological properties pursuant to Exemption A7, or in areas mapped as “Low Probability” for the presence of archaeological properties in the DAHP Predictive Model, provided that any known archaeological sites or buildings/structures are avoided, including those that are of undetermined NRHP eligibility status; Fort Lewis will utilize previous skid trails, landings and existing roads if practicable to avoid such resources. If a new skid trail, or loading/logistical staging area (landing) is required, Fort Lewis will ensure that the skid trail or landing is at least 50 feet from a historic property or resource of undetermined status. This provision does not exempt known historic properties that are traditional cultural properties; when such properties exist in a timber management or timber harvest unit, Fort Lewis will consult with the SHPO and affected tribes (Nisqually, Puyallup, and Squaxin Island Tribes).

G.3.8 Air Quality

174. Based on a description of the project, the following will be required: (1) a New Source Review (NSR) Order of Approval may be required based on the equipment to be installed; (2) Prior to demolishing any structures an asbestos survey must be done by a certified asbestos building inspector; (3) Any asbestos found must be removed by a licensed asbestos abatement contractor prior to demolition; (4) A Notification of Demolition and Renovation (NODR) application must be filed with the Yakima Regional Clean Air Agency (YRCAA) and the appropriate fee should be paid; and (5) Contractors doing demolition, excavation, clearing, construction, or landscaping work must file a Dust Control Plan with YRCAA, prior to the start of any of the work.

Response: The Army is aware of these regulatory requirements, and will submit all required plans, applications, and fees prior to the commencement of project activities. Additionally, the Army will comply with all requirements related to asbestos surveys, removal, and abatement. A statement to this effect has been added to the appropriate discussions of construction-related effects in Section 6.7.7 of the FEIS.

175. In Figure 3–6, the Thurston Region PM₁₀ area is incorrectly labeled as “nonattainment.” This was re-designated as a maintenance area in 2000.

Response: Figure 3–6 (now Figure 3–7) has been modified with the correct label for the Thurston Region PM₁₀ maintenance area.

176. Section 4.7 fails to include analysis of non-commuting private vehicle emissions associated with additional stationing for any alternative or analysis of private vehicular emissions stemming from added associated Family members. The population change data referenced in this section do not align with and are significantly lower than the numbers presented in Section 4.11 relative to population change. If the Section 4.11 numbers are accurate, the air quality analysis is deficient.

Response: Because it is not known where Soldiers with Families would reside in the region, how many dependents would drive, and how far their daily driving habits would be, it is impossible to precisely quantify the emissions associated with vehicle travel by spouses and dependents, or emissions associated with non-commuting driving by Soldiers. Therefore, Section 4.7 of the FEIS makes an assumption that emissions associated with these other uses of personal vehicles would be roughly the same as the emissions associated with commuting by Soldiers. These emissions have been added to the discussion of effects under all the alternatives in Section 4.7, as well as to the total emission summaries in Tables 4–17, 4–19, and 4–22. In addition, the presentation of population numbers in Section 4.11 has been revised to make it consistent with the way the numbers are presented in the rest of the EIS.

177. Appendix E indicates significant increases in emissions associated with vehicle training by SBCT and GTA units (Table E–5), well above the 100 tons per year triggering a conformity analysis. While Chapter 4.7 (Air Quality) describes the dispersal analysis and impacts at the boundaries of Fort Lewis, it is not clear that this analysis extended to the cumulative impacts off Post.

Response: Modeling of PM was not done because emissions would not be generated within a PM maintenance or nonattainment area. The Thurston County nonattainment area is located several miles from the Fort Lewis boundary. Given that low-to-ground particulate emissions decrease rapidly with distance, the contribution of PM from training activities to the maintenance area would be very small relative to regional sources such as local traffic. Cumulative effects to air quality, which include regional impacts are discussed in Section 4.7.10, Cumulative Effects.

178. While air quality in the region may have been degraded by past actions, considerable effort has been made to improve air quality in this region, the success of which is evidenced by the re-designation of the region's conformity status from non-attainment to maintenance.

Response: The air quality cumulative effects analysis has been modified to include a discussion of regional efforts to improve air quality in the region and the re-designation of the Thurston County nonattainment area to a maintenance area in 2000.

179. With the vast reduction in wood smoke particulates, the major mobile source of PM₁₀ is diesel particulates. Increased training by heavy-duty military vehicles will generate PM₁₀ not just from dust (such as described on page 4–61) but also from diesel exhaust. Diesel exhaust is especially applicable to the heavy equipment and vehicles used for training purposes. Emissions drifting from the Fort Lewis area into the existing maintenance area must not be sufficient to cause a lapse in NAAQS standards.

Response: Emissions from vehicle exhaust were quantified as part of this EIS. Diesel exhaust is approximately 3 percent of the total PM₁₀ tons per year value cited in Table E-3. US EPA diesel emissions standards have decreased the level of PM₁₀ produced in diesel exhaust. <http://www.epa.gov/nonroad-diesel/regulations.htm>.

180. The DEIS recognizes the impact that commute traffic has on mobile source emissions. The sustainability goal described in on page 4–77 to reduce congestion on the installation and overall energy consumption will have air quality benefits. To achieve the reduction it is important that the security issues currently hampering more comprehensive transit service be addressed as a part of the growth strategy.

Response: The current security procedures are expected to remain in place. Although there are ongoing efforts between the Army and transit authorities to incorporate transit at the Fort Lewis gates, security is not the real problem. The primary issue is lack of ridership. Soldiers prefer the convenience of traveling in their cars rather than using transit services. For example, all Soldiers have to be on Post at 6:30 am for physical training. They then go home to shower and change, and return for the rest of the duty day. Most prefer the convenience of their cars to meet these needs.

181. The DEIS considers the Cross-Base Highway mitigation as a credit for air quality here. Yet elsewhere in the document, it is noted that the Cross-Base Highway is not included in the analysis because it is not yet funded and will not be completed by 2015. This contradiction is spoken to in more detail later in these comments.

Response: Because of the uncertainty of funding for this project, and the low likelihood that it will be constructed prior to 2015 even if a funding source is found, it has been removed from the air quality cumulative effects analysis in Section 4.7.10. It is not reasonably foreseeable.

182. Air quality may also be impacted due to invasive plant treatment activities, dust from road construction and site operations, regular traffic on dirt roads, emissions from vehicles, and cumulative impacts from surrounding activities such as agriculture and fire.

Response: Plant treatment activities, dust from construction activities and site operations, and emissions from vehicles were quantified as part of this EIS. Cumulative impacts are discussed in Section 4.7.10 of the EIS (Cumulative Effects). The discussion in Section 4.7.10 has been modified to mention agriculture and fire as regional sources of air pollutants.

183. Since Fort Lewis, YTC, and surrounding areas may include sensitive populations such as the elderly and children, it will be important to monitor air quality and take corrective action if air quality standards are not met. Monitoring strategies should be tailored to local conditions because localized air quality impacts can be substantial, even though area-wide and/or long term monitoring may show compliance with air quality standards. That is particularly important with regard to Fort Lewis because EPA has designated parts of Pierce County as nonattainment for 24-Hour PM_{2.5} Standards (see <http://www.epa.gov/pmdesignations/2006standards/final/region10.htm>.)

Response: The majority of PM_{2.5} emissions generated at Fort Lewis and YTC are from vehicle maneuvers. Concentrations of low-to-ground particulate emissions decrease rapidly with distance from the source. Additionally, the assumptions that went into the emissions calculations used in the EIS were very conservative in estimating emissions.

YTC comprises over 300,000 acres of land that is mostly remote. Prevailing weather patterns move air pollutants away from the most densely populated areas. Historically, there have been no discharges of pollutants from training activities that have violated the Conformity Rule or generated public complaint.

YTC is a complex minor source of air pollutants. YTC will comply with regional air agency laws and regulations for air emission calculations.

184. Section 3.7.2. The document needs to disclose greenhouse gas emissions, including embedded greenhouse gas emissions associated with the proposed materials to be used for construction, the greenhouse gas emissions associated with construction phase(s) of this proposal, as well as greenhouse gas associated with the proposed on-going activities of “Grow the Army” for the life of the project.

Response: This is discussed in Sections 4.7.6.1.1 and 4.7.10.

185. Where is the carbon footprint analysis?

Response: Sections 4.7.6.1.1 and 4.7.10 discuss carbon dioxide and greenhouse gases.

186. We are concerned over implications of GTA on the ability to maintain both PM_{2.5} and ozone ambient air quality standards. We believe the DEIS should provide more evaluation and assurances with respect to maintaining attainment with the ozone and PM_{2.5} standards. For ozone, we have been informed that the Department of Ecology Air Program helps support the CMAQ model, which predicts daily ozone concentrations for the Puget Sound region. Why couldn't the CMAQ model be used as a means to assess implications of GTA on ozone attainment? For PM_{2.5}, we believe the DEIS should either provide an evaluation of impacts or support why emissions are not significant based on how they are distributed over space and/or time.

Response: The PM_{2.5} nonattainment area in Pierce County is located along two sections of the northern and eastern boundary of Fort Lewis, as shown on Figure 3–7. Under all the alternatives, projected emissions would be only slightly above conformity thresholds, and the vast majority of emissions would be generated by construction and off-road training by SBCTs, outside of the PM_{2.5} nonattainment area. On a day-to-day basis, the increase in PM_{2.5} emissions associated with training would be minimal because on average about one company trains in each maneuver training area per day at Fort Lewis, which is the current practice. There are 18 training areas over which these emissions would occur, encompassing close to 77 square miles, only a few of which are located immediately adjacent to the PM_{2.5} nonattainment area. Thus, the PM_{2.5} emissions are not expected to exceed any NAAQS or other thresholds.

The Community Multiscale Air Quality (CMAQ) model is a model that could be used to predict information about ozone concentrations given different meteorological conditions, emission inputs, and other factors. For the air quality analysis in this EIS, the EPA-approved American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) was used for dispersion modeling of NO_x, one of the ozone precursors. There is no corresponding NAAQS for VOCs, and VOCs could not be modeled using this type of model. In order to provide a basic quantitative assessment of potential contributions to ozone, Sections 4.7.7.5, 4.7.8.5, and 4.7.9.5 have been revised to include a calculation of the predicted VOC and NO_x emissions as a percent of total regional emissions of these ozone precursors. Emission data and other sources of air quality information from Fort Lewis could be used to help the Department of Ecology and other regional air quality planners with their applications of the CMAQ model.

G.3.9 Noise

187. Provide measures to mitigate for increased noise generated by increased helicopter noise at Fort Lewis. Sec. 2.2.3.3 discusses a potential 344 percent peak increase in the number of GAAF takeoffs and landings associated with stationing actions under the various alternatives. Correspondingly, Sec. 4.3.3.6.3.1 indicates that low-level helicopter noise would be more frequent under Alternative 4, and Sec. 4.9.6.2.1 indicates this alternative would add 110 helicopters. Sec. 4.8.6.1.1 states, also in conjunction with Alternative 4, that “helicopters are expected to fly around the perimeter areas of Fort Lewis. Noise from these flights would carry unobstructed into the adjoining communities and cause annoyance” and goes on to conclude that impacts from maneuver training would be significant. This finding is carried forward to the cumulative findings as well; however, the suggested mitigation is insufficient. The establishment of a board to periodically meet

with neighbors and “maintain a continuing dialogue” does nothing whatsoever to mitigate for the increased helicopter noise, vibration, inconvenience and, potentially, broader public impacts including reduced property values and neighborhood degradation.

Response: Helicopters flying around Fort Lewis and YTC follow, and will continue to follow, the “Fly Friendly” program. “Fly Friendly” is a voluntary good neighbor policy of the aviation community not to disturb people on the ground. Section 4.8.6.1.1 has been revised to note that pilots may fly over or fly a portion of the perimeter of Fort Lewis. Flying around the perimeter is not something they do routinely. In addition, aircraft will remain at least 2,000 feet AGL when flying over the Nisqually National Wildlife Refuge.

188. Provide a summary of the Army’s noise study that was conducted in February 2009 and if possible present the summary data in a table by comparing the size of the affected areas by alternative. Provide data on the differences in the number of residences and number of people living in the residences by alternative, particularly for off-Post residences. Because noise impacts are significant, provide additional mitigation measures for noise. Other noise mitigation measures we believe could be included are:

- All mobile equipment should be tuned to manufacturers’ specifications for optimal noise attenuation e.g., mufflers.
- Noise from stationary construction equipment can be reduced at the source through shielding constructed around the equipment.
- The noise complaint line should also remain active and notification of significant noise events given to surrounding residents, especially when noise activities are not usually restricted.
- Spot noise monitoring inside and outside the nearest affected residences should be considered during average day and noisy missions events during all seasons, particularly in winter when leaf cover may be absent. This would provide data to consider when designing noise mitigation.
- Home soundproofing can also provide noise relief inside homes, as well as use of earthen berms and evergreen tree cover between noise sources and nearby receptors.

Response: A summary of the Army’s noise study that was conducted in February 2009 is provided in Chapter 4.8, Noise. Noise impacts that are described for the No Action and three Action Alternatives are paraphrased from the results presented in the Army’s noise study and the noise figures are pulled directly from the Army’s noise study. Summary data comparing the size of the affected areas by alternative is not presented in a table. However, the size of the affected areas by alternative is relatively the same. The noise impacts are increased from action alternatives 2 and 3 to Alternative 4.

Data on the number of residences and number of people living in those residences by alternative, particularly for off-Post residences, is not known. However, it is reasonable to assume that the greatest number of residences and people are impacted in the LUPZ (57 dB CDNL) because the cantonment area, Fort Lewis housing areas, the community of Yelm, and part of the community of Lacey are located within this zone.

Thank you for your suggestions for mitigation.

G.3.10 Land Use Conflict/Compatibility

189. Section 4.9.1 calls for appraisal of conflicts between the Project and the land-use plans and policies of surrounding communities. Although findings of less-than-significant impacts are entered, there is no analysis to demonstrate that the surrounding land-use plans and policies were reviewed or weighed against the various alternatives as part of the DEIS's development.

Response: As evaluated in Section 4.9, none of the action alternatives, consisting of stationing actions at Fort Lewis directed by the ROD for the GTA FPEIS and the potential stationing of CSS units and a CAB, would result in changes to existing land uses or conflict with zoning designations on the installation, or on lands outside of the installation. Potential effects to land uses outside of the installation from increased noise, traffic, and population levels are addressed in Section 4.8 Noise, Section 4.10 Traffic and Transportation, and Section 4.11 Socioeconomics. The analysis was revised in Section 4.9.4 to provide clarification that there would be no off-Post effects to land uses from any proposed action, and that there would be no conflicts with off-Post zoning designations.

190. Within Section 4.9, the Ft. Lewis ADPs outlined in Sec. 2.2.5 are referenced. The City has not had the opportunity to review or comment upon the ADPs. However, it appears that some aspects of the ADPs may significantly change Fort Lewis' physical interrelationship with the surrounding communities, particularly in terms of traffic flow with regard to planned gate and interchange amendments. We are particularly concerned about an apparent move toward repositioning the main gate, but other concerns may exist as well. We would welcome the opportunity to engage in additional communication about this; in the meantime, the lack of specific comments here related to the ADPs does not constitute assent.

Response: As described in Section 4.9.6.1, the ADPs that comprise the Fort Lewis Master Plan are being revised to accommodate the range of changes that either have occurred or are anticipated to occur due to previous or ongoing actions (Alternative 1) or would occur as a result of Alternative 2. Each ADP provides a plan to accommodate facilities to support the military mission; each plan specifically identifies existing facilities and functions that can be relocated and moved to allow demolition and reconstruction within ADP areas. There would be no conflict with existing land use zones designated by each ADP, as the primary objective of designated land use zones is to support the military mission under the action alternatives. Finally, the ADPs provide long-range plans for Fort Lewis and YTC that extend well beyond the FY 2015 time frame evaluated in this EIS. Consequently, many projects included in the ADPs, such as repositioning the main gate, are just potential projects that the Army may consider in the future. These speculative projects are not part of the reasonably foreseeable future actions considered in this EIS.

191. The significance criteria for land-use impacts indicate significance, according to Section 4.9.1, if the Project would "conflict with non-military land use plans or policies." Section 4.9.6.2.1 states that Alternative 4, which poses the greatest degree of helicopter activity, "could diminish the recreational experience for some users" of recreational lands. In

particular, this element of Alternative 4 would appear to conflict with the 2005 Nisqually National Wildlife Refuge Comprehensive Conservation Plan. It does not appear the NWR was consulted.

Response: The DEIS was made available to the NWR. Section 4.9.6.2.1 addresses recreational uses within the installation, as no stationing activities or facility construction would affect off-Post land uses. The primary effect to recreational uses at the Nisqually National Wildlife Refuge from Alternative 4 would be from the noise of helicopter activities. The effects of noise on lands neighboring the Fort Lewis installation are assessed in Section 4.8 – Noise. The 2005 Nisqually National Wildlife Refuge Comprehensive Conservation Plan (<http://www.fws.gov/pacific/planning/main/docs/WA/docsnisqually.htm>) addresses existing effects of Fort Lewis on-Post activities, indicating that artillery impact areas are surrounded by buffer areas to prevent noise and safety effects to surrounding areas. The buffer areas are not formally designated as such; however, unpopulated open lands between the bluff and the Nisqually River serve as a noise buffer area. The plan also acknowledges the impact area is expected to remain operational for the foreseeable future. No conflicts with the conservation plan were identified.

192. This proposal, along with cumulative impacts of other projects specifically mentioned in the DEIS, (Cross-Base Highway and others) have a high potential to create a land-use pattern which could be detrimental in the long-term to the existing uses on Fort Lewis, primarily driven by other projects cumulative impacts which have not been clearly disclosed, nor have the direct or indirect environmental impacts been identified or analyzed for the public to comment on.

Response: The primary land uses within the Fort Lewis installation are military land uses; the analysis identifies an increase in the intensity of military land uses within the installation in the cumulative analysis as well as the alternatives analyses. Direct and indirect impacts are defined in Section 4.9.1. In general, indirect impacts occur from encroachment issues to neighboring land uses from proposed actions or activities. These effects would not occur from the proposed activities, as indicated in the analysis for the proposed action, and were therefore not carried forward in the analysis for each alternative.

193. The current and historic equestrian use and partnership with Camp Lewis and now Ft. Lewis should be mentioned here. Compatibility of future use along with historic uses needs to be considered as part of the document. The proposal does not clearly articulate what near, mid and long-term uses and potential impacts may be to historic recreational uses.

Response: Section 3.9.2 describes horseback riding as one of multiple non-military uses of the installation. Recreational opportunities would decrease with an increase in the frequency of maneuver and live-fire training, as described in Section 4.9.6.2 and 4.9.6.3. These effects would occur for all outdoor recreational opportunities in the affected areas, including equestrian activities; however, the effects are not significant because proposed construction and activities are consistent with the primary land use of the

installation, which is to support military mission goals. Historic uses and facilities are evaluated in the Cultural Resources Sections 3.6 and 4.6.

194. Please add “illegal activities” to the list of land use conflicts on page 3–57. Fort Lewis currently struggles with illegal dumping, unauthorized access, poaching, off-road driving, etc. All of these activities can affect wildlife and their habitat.

Response: Although illegal dumping and poaching do occur, these activities are clearly inappropriate and Fort Lewis has policies against them that it tries to enforce. Nevertheless, these activities do not rise to the level of land use and thus are not listed as land use conflicts.

G.3.11 Traffic and Transportation

195. The traffic impact study conducted for this project should have been more readily accessible for public review.

Response: The traffic impact study is now posted on the Fort Lewis website along with the FEIS.

196. The DEIS should include an analysis and discussion of the traffic impacts related to additional school bus traffic.

Response: The FEIS identifies that the increase in student population will likely result in an increase in demand for student transportation. Given that the school trips will mostly occur during off-peak times, it is anticipated that any increases in traffic on Post can be accommodated by the existing street network.

197. The cumulative effects section is insufficient. In Section 4.10.7.1, cumulative transportation effects are dismissed as less than significant by the following statements “Regional land use growth would result in general traffic increases along I–5 and county roadways. The impacts of this growth would be accommodated by regional freeway improvements on I–5, expected to occur over the next 20 years.” This does not account for increases in traffic associated with incremental Fort Lewis growth over time or associated with the current Project. The DEIS also needs to consider the cumulative impacts of other regional projects, specifically the Cross-Base Highway, projects along the I–5 corridor, and other regional transportation projects.

Response: Section 4.10.7.1 describes that the cumulative transportation effects would be less than significant. The time horizon for this analysis is 2015, by which time the Cross Base Highway and other I–5 projects are not expected to be implemented. The FEIS includes a summary of the I–5 Transportation Alternatives Analysis and Operations Model Study to provide a discussion of the potential longer-range effects of these regional transportation facilities on transportation conditions.

198. The time horizon for the transportation analysis should go beyond 2015. Most environmental documents use a 20-year horizon for the analysis.

Response: The Army cannot predict national security needs far into the future. Therefore, the target date of 2015 was considered reasonable to plan for the direct needs of the known installation expansion. To incorporate a longer horizon, the Army has summarized the results of the I-5 Transportation Alternatives Analysis and Operations Model Study that extends the analysis to 2030.

199. What methodology was used to develop the traffic forecasts? Include information on how trip generation and distribution was developed.

Response: The traffic forecasts were developed using a growth-factor methodology. This method factored existing traffic volumes proportional to the growth in installation personnel represented within each alternative. This method was considered to be the most appropriate given that the changes in personnel represented in each alternative would be generally spread throughout Fort Lewis. The growth factors are described within the EIS. The distribution of travel was assumed to be similar to existing conditions.

200. Traffic on I-5 has been and continues to be one of the City of Lakewood's primary concerns related to the relationship between the City and Fort Lewis. The DEIS only analyzed one I-5 interchange, Exit 119 at Steilacoom Rd-DuPont Rd. What are the impacts at the other interchanges serving Fort Lewis? More analysis needs to be conducted along I-5 at ramp merges and mainline operations. Finally, no mitigation is suggested to deal with any of the I-5 problems.

Response: Given the fluctuations of the Fort Lewis population due to deployments, it was considered during scoping that impacts on the I-5 mainline would be minimal in perspective to the regional traffic growth on the freeway. Recent I-5 traffic information was obtained from the I-5 Transportation Alternatives Analysis and Operations Model Study. Relevant data at other ramps and the mainline I-5 were extracted from that study and are summarized in the FEIS. Detailed findings related to future I-5 operational needs are not included in the FEIS, but will be documented in the ongoing I-5 study that is expected to be completed in mid 2010. The Steilacoom Rd-DuPont Rd interchange was specifically analyzed in the DEIS, since it was identified during scoping as the location most likely to be affected by the proposed actions.

201. What are the assumptions about cumulative traffic impacts off Post? What facilities will experience the growth described, and what will the resulting operational conditions be at critical intersections on those local facilities?

Response: Section 4.10.7.1 (Cumulative Effects) documents that the cumulative effects of the alternatives would not be significant in the context of other regional growth and planned transportation improvements. This conclusion is reasonable in the context of the growth in regional traffic volumes within both Pierce and Thurston Counties during the past 20 years, even in the absence of growth in the Fort Lewis population. To incorporate a longer horizon than 2015, the Army has summarized the results of the I-5 Transportation Alternatives Analysis and Operations Model Study, which

extends the analysis horizon to 2030 and involves a more regional evaluation.

202. Please clarify the traffic assumptions used in the intersection analysis for the Steilacoom Rd- DuPont interchange. The levels of congestion seem to be understated given the close spacing of the intersections.

Response: The traffic analysis showed that traffic signal timing could improve the conditions for Alternatives 2 and 3. After further examination, the effects of the closely spaced intersections were understated within the Synchro analysis. This condition occurs for Alternative 1 – No Action as well as for the Action Alternatives. Under any of the alternatives, acceptable levels of service could be attained through addition of lane capacity across the I-5 Bridge or reconstruction of the interchange.

203. Impacts at the East Gate and SR 507 should have been evaluated.

Response: This location was not identified as a study location during scoping. The ‘2008 Fort Lewis Comprehensive Traffic/Transportation Study’ concluded that a traffic signal was warranted at this location under the No Action conditions.

204. It appears that rail operations created by the ‘Bypass of Point Defiance Rail Project’ have not been taken into account within the DEIS.

Response: A Determination of Non-Significance, approved August 1, 2008 by the Director of the WSDOT State Rail and Marine Office, for the Bypass of Point Defiance Rail Project was provided to the Army in 2008. The DEIS relied on the assessment conducted by WSDOT and did not conduct a separate evaluation of the impacts of the expanded rail service on Fort Lewis traffic operations. The FEIS incorporates a summary of the I-5 Transportation Alternatives Analysis and Operations Model Study, which evaluates this rail project.

205. Section 4.7.7.1 assumes an off-Post commute of 24 miles round-trip as a base for calculating probable emissions. As a comparison, MapQuest® shows the one-way distance from Lacey City Hall to Fort Lewis as 13.36 miles, so the given assumption could be a realistic average of Thurston-based balanced with Pierce-based commuters. However, it is noted this does not include “vehicle travel by spouses and dependents,” and the DEIS is mute on impacts of any increases in civilian personnel and/or contractors. Obviously, collective trips and vehicle miles traveled are bound to be much higher when factoring in those additional persons’ vehicle usage, so impacts will be greater than is posed in the DEIS.

Response: Because it is not known where Soldiers with Families would reside in the region, how many dependents would drive, and how far their daily driving habits would be, it is impossible to quantify the emissions associated with vehicle travel by spouses and dependents. However, Section 4.7 of the FEIS has been modified to include a discussion of these emission sources. The Army does not anticipate any increases in civilian personnel or contractors associated with the proposed action. However, civilian personnel and

contractors working at Fort Lewis typically already live in the region when hired, and may drive slightly more or less than they did before obtaining these positions.

206. The traffic analysis of the alternatives did not address the impacts on the Pierce County road system. The presumption that cumulative traffic increases of 5 percent on County Roads will not be significant is not reasonable.

Response: Section 4.10.7.1 (Cumulative Effects) documents that the cumulative effects of the alternatives would not be significant in the context of other regional growth and planned transportation improvements. This conclusion is reasonable in the context of the growth in regional traffic volumes within Pierce County during the past 20 years. Using these data, the DEIS assumed a five-percent growth assumption by 2015. During the scoping process, the breadth of the transportation impacts and subsequent analysis were considered to be focused within the close proximity of the Post. Impacts to other Pierce County Roads were considered to be affected over time by regional growth factors that would be examined by the County as part of its comprehensive plan process. As part of the Washington Growth Management Act, all counties are required to zone out their landscape and develop a comprehensive plan to control growth and preserve areas of high value. As part of this planning process, the counties must account for projected traffic associated with their zoning plans (e.g., from anticipated residential, commercial, and industrial developments). Furthermore, much of the military population at Fort Lewis resides in existing housing off Post. As such, these military personnel are subject to real estate/property, sales, and gasoline taxes just like the general population, which help fund roadway and traffic improvements.

207. Regional transit services connections with Fort Lewis should be more completely described. These include services provided by Intercity Transit and Sound Transit. Intercity Transit provides both weekday and weekend “Olympia Express” service between Olympia and Lacey to Lakewood (SR 512 Park & Ride and Sound Transit’s Lakewood Station) and various points in Tacoma. Intercity Transit and Pierce Transit both operate the Express service under the same name, although operated independently of each other. Transfer connections to local Pierce Transit service, which serve the Fort, are available at a number of locations in close proximity to it. This includes service connections to Madigan Hospital and other connections for service to a fairly isolated Veterans Hospital located on Fort Lewis. Sound Transit regional services (bus and commuter rail), while not directly linking to the Fort, does provide daily commuter service from park and ride lots in DuPont, Lakewood, and Tacoma. These services also provide options for connections to local Pierce Transit service serving the Post. Reference to a vanpool program is limited to Pierce Transit. However, Intercity Transit operates a similar program. As of October 2009, there are 24 Intercity Transit vanpools operating to and from the Post from Thurston County. It is also noted that the reference in this section to the Transportation Study Report (March 2009) was to have included vanpool origin/destination and contacts but it does not appear in the electronic version (pdf) of the study.

Response: These transit and vanpool services are identified in the FEIS. Please refer to Section 3.10 to review the revisions.

208. Identify other Pierce Transit routes serving Fort Lewis, including Pierce Transit Route 300 linking Tacoma Mall and McChord Air Force Base Commissary.

Response: Pierce Transit Route 300 is outside the scope of the analysis (it only links the Tacoma Mall and the McChord AFB Commissary). Other transit and vanpool services are identified in the FEIS. Please refer to Section 3.10 to review the revisions.

209. Provide a map of transit services routes for all local and regional transportation services and connection/transfer points in and around the Fort Lewis and McChord Air Force base.

Response: A map of transit services is included in the FEIS. Please refer to Section 3.10 to review the revisions.

210. Provide additional details to document alternatives to single occupant vehicles going to or from Fort Lewis.

Response: The FEIS includes an expanded discussion of alternatives to single occupant vehicles. Please refer to Section 3.10 to review the revisions.

211. There is little detail as to the projected demand or financial impact expected on public transit services. Each of the four alternatives suggests increase demand for transit services. Current transit service is assumed to be adequate but lacks any apparent evaluation, and there is no discussion of how transit services might be expanded to include new development proposals associated with one or more alternatives within portions of the base that are currently unserved. Since transit services are funded via sales tax revenue and Fort Lewis does not contribute toward on-base service, any on-base growth in transit demand would be borne by local off-base taxpayers. There is also no mention of any potential impacts on other transit providers that may contribute to base commuter transportation, such as Intercity Transit or possibly Sound Transit.

Response: The timing of the troop increases and the expected mix of the population makes it difficult to forecast specific changes in transit demand. Overall transit ridership should increase at a rate consistent with the overall growth in population. Estimating financial requirements to provide transit service is outside the scope of this EIS. However, much of the military population at Fort Lewis resides in existing housing off Post. As such, these military personnel are subject to real estate/property, sales, and gasoline taxes just like the general population, which help fund transit service, facilities, and improvements.

The primary issue influencing the development of transit services on Fort Lewis is lack of demand for ridership. Soldiers prefer the convenience of traveling in their cars rather than using transit services. For example, all Soldiers have to be on Post at 6:30 am for physical training. They then go home to shower and change before reporting for their daily assignments. Most prefer the convenience and flexibility of their cars to meet these needs.

212. The military base generates little local sales tax on Post, so please address how additional transit services created by the alternatives may be funded.

Response: Military personnel conduct most of their shopping off Post, including “big ticket” items, such as cars and furniture. The additional sales generated by Soldiers and their Families contribute substantially to local sales tax, which funds transit services.

213. Conditions of entry to and from the Fort are such that use of public transit service is fairly restrictive. Provide additional details as to the functioning of public access to and from Fort Lewis for those riding public transit. Describe how transit service connections at the access gates can be accomplished. For example, a transit exchange could be developed outside the gate where passengers from other areas (Olympia, Lacey, Tumwater, DuPont, etc.) can easily disembark a bus that is not going on-Post clear security, and transfer to an internal bus system to take them to their ultimate destination.

Response: Further description of transit access to/from Fort Lewis is provided in the FEIS. The current security procedures are expected to remain in place. Although there are ongoing efforts between the Army and transit authorities to incorporate transit at the Fort Lewis gates, security is not the real problem. The primary issue is lack of ridership. Soldiers prefer the convenience of traveling in their cars rather than using transit services. For example, all Soldiers have to be on Post at 6:30 am for physical training. They then go home to shower and change before reporting for their daily assignments. Most prefer the convenience and flexibility of their cars to meet these needs.

214. Describe changes in non-motorized demand related to the alternatives, specifically related to an increase in demand for transit by non-motorized modes. Also, what improvements in transit infrastructure must be made to accommodate this group of commuters?

Response: The DEIS identifies the potential for an increase in non-motorized demand in proportion to the increase in population and changes in demand would be negligible. The uncertain timing and mix of the population makes it difficult to forecast specific changes in non-motorized demand at different locations within Fort Lewis. However, it is anticipated that much of the non-motorized demand will also be tied to transit access. Specific infrastructure projects to link pedestrians and bicyclists to transit service can be made as part of project-level determinations of where the population growth will occur.

215. There is no mention of student transportation for the 2,770 additional students who may occupy Clover Park and Steilacoom schools. School bus transportation needs to be identified related to additional traffic demands on the base road system and effects on air pollution.

Response: The FEIS identifies that the increase in student population will likely result in an increase in demand for student transportation. Given that the school trips will mostly occur during off-peak times, it is anticipated that any increases in traffic on Post can be accommodated by the existing street network. The additional school-age children would be distributed among twelve local school districts; and the Fort Lewis Garrison Commander is actively working with the local school districts to address schooling and transportation issues jointly.

216. What assumptions are made about freeway improvements to I-5 that will be complete by 2015? Mention is made of Pierce County HOV lanes. What assurance is there that these lanes will be in place by 2015? Were they included as a part of the traffic modeling? Consider the effects of the proposed HOT lanes on I-5. The use of toll lanes will skew demand in the non-toll lanes.

Response: We are aware of the potential to implement HOT lanes on I-5, although the timing of this proposal is uncertain. The WSDOT is responsible for evaluating the effects of the toll lanes on freeway demand and operations. Such effects would occur regardless of any changes in population on Fort Lewis.

217. How do the travel demand model assumptions relate to those of the regional or local forecast models?

Response: As previously stated, the traffic growth on the installation was prepared using a growth-factor approach. Given the relatively short time horizon of 2015 for this analysis, it was determined that this method would be more meaningful than using a travel demand model such as the PSRC or Pierce County model.

218. The traffic effects of convoys have not been adequately reported, particularly for Alternatives 2, 3, and 4. Even if the maximum number of vehicles in a convoy does not increase, trip frequency would be likely to increase with the heightened training demand that would accompany stationing of additional personnel. Impacts of convoys to facilities in King County should also be described.

Response: Convoys effects related to transportation are described in Section 6.10 for YTC. This section identifies that convoy frequencies would increase under Alternatives 2, 3, and 4. These convoys would continue to use the approved convoy route between Fort Lewis and the YTC and would continue to avoid primary rush hours. The impacts would continue to be temporary and would be less than significant.

219. Traffic congestion on I-5 is going to get much worse with the increase in troops.

Response: Traffic congestion on I-5 is primarily due to past and continued regional growth and development, not from military personnel accessing Fort Lewis. As a result of regional growth, the mainline flow on I-5 is much greater than it was in the past.

220. American Lake Gardens has been renamed Woodbrook. The FEIS should reflect the name change.

Response: The Army understands that the names American Lake Gardens and Woodbrook are essentially interchangeable. American Lake Gardens, however, is the more popular name. Therefore, we did not change the name to Woodbrook in the FEIS.

221. Appendix B identifies the Cross-Base Highway as a Reasonably Foreseeable Future Action (RFFA), which was to be considered in the impact analysis. The Cross-Base

Highway proposal assumes reconstruction of the Thorne Lane interchange into a Single-Point Urban Interchange (SPUI) and construction of a new frontage road along the north side of I-5 between Thorne Lane and Gravelly Lake Drive, both of which will have a pronounced effect on traffic in this vicinity. As noted in the Fehr and Peers Traffic Impact Study, the 2003 Cross-Base Highway EIS identified mitigation measures to address its likely impacts on I-5 and surface streets. What impact will the GTA scenarios have on those mitigations? Also, please explain the rationale for including it as an RFFA in Appendix B but excluding it from traffic analysis as described in Chapter 4.10.

Response: The Cross-Base Highway has been removed from Appendix B as an RFFA for the Fort Lewis GTA EIS because it will not be constructed within the time frame of this analysis. The I-5 Transportation Alternatives Analysis and Operations Model Study also assumes the Highway would not be constructed before 2015. Consequently, it is no longer part of the cumulative effects analysis and the Cross-Base Highway project also has been removed from the air quality analysis. The Army has, however, summarized the results of the I-5 Transportation Alternatives Analysis and Operations Model Study in Section 4.11, which extends the analysis horizon to 2030 and incorporates the Cross-Base Highway.

G.3.12 Socioeconomics

222. The City of Lakewood should be explicitly called out in the description of the Region of Influence.

Response: The City of Lakewood has been named explicitly in the description of the Region of Influence in the FEIS.

223. The Clover Park School District is incorrectly referred to as the Cloverpark School District throughout the DEIS.

Response: Thank you for your comments. The spelling of the Clover Park School District has been corrected in the FEIS.

224. Please clarify the ownership and operation of schools on Fort Lewis.

Response: The schools on Fort Lewis are owned by the US Department of Education. The Army owns the land on which the schools reside. By statute, the Department of Education is required to transfer all owned schools to local districts. Local districts are generally unwilling to accept them, as in the Fort Lewis case, due to the age and condition of many of the school facilities. The text in the FEIS has been revised to make clear that school facilities on Fort Lewis are federally owned but operated by the Clover Park School District.

225. The DEIS provides a good and clear description of how an increase in demand for on-Post child care will be addressed. A similar description is necessary regarding how an increase in demand for schools will be addressed. The DEIS notes that two additional elementary schools will be needed to accommodate increased on-Post student enrollment, and should be more directive in stating how this need will be met (i.e., it should address the process through which additional Federally-owned, on-Post schools will be

constructed). The Army should initiate efforts to assist CPSD to plan for and accommodate the impacts from growth in the number of Soldiers stationed at Fort Lewis. The EIS should define a plan for the Army to follow that will directly address the issue of student enrollment growth and existing facility deterioration along with increased transportation costs.

Response: The need for new and/or expanded schools is an issue but the Army does not have the authority to build schools through the MCA program. The involvement of the Department of the Army and DOD is necessary to deal with impacts of growth on local school districts. Just because the existing schools are federally owned does not translate to federal construction of newly required schools. At other growth installations, the local districts are building the necessary schools. Fort Lewis will continue to engage the ED, Army, CPSD, and Congress. Ultimately, the federally owned schools on-Post may be transferred to CPSD.

226. The DEIS should include a discussion of the need for, and impacts of, increased bus service to accommodate higher school enrollment.

Response: Additional text has been included regarding on- and off-Post school bus service.

227. There is no description of the on-Post school facilities contained in the DEIS.

Response: Descriptions of the on-Post school facilities have been included in Section 3.14, Facilities.

228. In the executive summary, the many facility modernizations underway on Fort Lewis are mentioned, but there is no mention of the fact that school facilities are not currently planned for replacement or that the age of schools is being otherwise addressed.

Response: The discussion in the Executive Summary is intended to convey to readers that Alternative 1, the 'No Action' Alternative, contains a range of construction and infrastructure development projects that have been previously evaluated and thus are not included in the EIS. It is not intended to be a comprehensive presentation of what is and is not being built or modernized at Fort Lewis or the Yakima Training Center. A description of the current school infrastructure is presented in Section 3.14, Facilities.

229. The HMA used in the DEIS presents a validated need for an additional 2,601 Family housing units on Fort Lewis by 2012. Utilizing a 2.3 children per household multiplier indicates that as many as 5,982 additional children could be associated with those housing units. This represents a worst-case scenario that must be factored into the EIS.

Response: We concur that the HMA validates a need for 2,601 Family housing units, and that this could represent a worst-case scenario. However, due to a number of financial, safety, and space constraints, Fort Lewis could not currently, or in the foreseeable future, develop this number of housing units while meeting its mission objectives. As a result, the validated need presented in the HMA does not reflect the current or future reality of housing on Fort Lewis. Current information indicates that only 300 new Family housing units

would be constructed during the evaluation period (due to the recent increase in construction costs, only 300 new Family housing units will be built). Utilizing the same multiplier returns a figure of 690 new children associated with these 300 Family housing units. Working from the current student population of 15,049, these additional 690 students would represent an approximate 5 percent change in the potential on-Post student population versus an approximate 40 percent change if all 2,601 housing units were constructed. Information on the current housing situation on and surrounding Fort Lewis is presented in Section 3.11.2; information on potential impacts resulting from each of the Alternatives is presented in Sections 4.11.3.3, 4.11.4.3, 4.11.5.3, and 4.11.6.2.

230. The note below the table on page 3–75 indicates that the CDCs at Clarkmoor, Madigan, and Beachwood will be expanded to accommodate the additional children. Please add a note on line 27 of page 75 that there are currently no formal plans for the federally owned schools on Lewis/McChord to be expanded to accommodate the additional children. We propose this text to read, “At the time of this writing there is no formal Federal plan to address the issue. These Federally-owned schools must be expanded to accommodate the additional children.”

Response: The Garrison Commander is working with the local school districts to identify alternatives for increasing the facilities for accommodating the additional anticipated school-aged children.

231. The DEIS does not accurately portray the coordination activities conducted to date between Clover Park School District and Fort Lewis regarding planning to accommodate any potential increased student enrollment in the Clover Park School District, including the Federally-owned/CPSD-operated schools on Fort Lewis.

Response: Language in Section 4.11.4.4.1 of the FEIS has been modified to represent the coordination efforts taken to date more accurately.

232. The discussion regarding the need for new schools is inconsistent across Alternatives 2, 3, and 4.

Response: Thank you for your comment. The discussion has been appropriately revised.

233. The DEIS does not adequately discuss how any increase in student enrollments at on- and off-Post schools under the four Alternatives will be addressed. Impact Aid payments to affected school districts have been reduced over the past five years, reducing the funding provided to school districts used to cover the operational costs of educating children who reside on-Post but who attend schools operated by local school districts. Impact Aid payments only address operational costs, and cannot be used to fund the construction of new schools.

Response: Impact Aid payments to local educational agencies (school districts) are calculated using formulas contained in Federal statute and are contingent upon Congressional appropriation. The level of appropriations for Impact Aid payments is beyond the scope of the Grow-the-Army NEPA process, and thus, is not addressed in the FEIS. As discussed in Section 4.11, a percentage of the new students who may enroll in local school districts under any of the

four Alternatives will reside off Post; by doing so, the parents or guardians of these students will pay state and local taxes, and thus will either directly or indirectly contribute to the funding available for local school districts' educational and capital budgets. In addition, military Families with school-age children residing on Post will contribute to the funding available to local school districts through the payment of state sales taxes on purchases made off Post.

As the level of future stationing actions at Fort Lewis become clearer, the Garrison Command will engage local school districts to develop a plan to accommodate the school-aged children of newly stationed Soldiers.

234. The DEIS does not address the reasonably foreseeable future effects on military services of an increase in the military retiree/veteran population in the ROI that may result from any of the Alternatives. How are the needs of veterans (present and future) addressed in this proposal? If they were not considered in the process, please explain the rationale.

Response: As stated in the DEIS (Section 4.11.3.4.1.4, page 4-118, lines 4–7), most of the new troops that would be assigned to Fort Lewis under any of the Alternatives would likely serve at other Posts before discharge or retirement. Future stationing actions and personnel levels at Fort Lewis beyond those discussed in the FEIS are unknown at this time, as are the numbers of Soldiers who may be stationed at Fort Lewis at the time of their retirement. In addition, services would continue to be provided to veterans and retirees by the Army Community Support Center, the Family Connection, Family Readiness Groups, and the Retirement Services Office. Because of this, there is no reasonably foreseeable future effect to be realized from these uncertain future retiree/veteran populations in the ROI.

235. The DEIS notes that “the services provided through the private sector can be expected to respond to the increased demand [for recreational facilities] by increasing supply.” It is stated that increased demand for recreational facilities would largely fall upon the public sector, and that this demand may be incapable of being met given current budgetary constraints.

Response: Increases in demand for on-Post recreational facilities will be met through the development of facilities described in Alternatives 1 and 2. Increases in demand for off-Post recreational facilities will be met by a combination of private and public sector facilities, the latter of which are funded in part by sales taxes collected in localities and paid by Soldiers and civilian employees residing on and off Post; by property taxes of Soldiers and civilian employees residing off Post; and through use fees. Unmet demand for certain types of recreational facilities (pools, general and activity-specific gymnasiums, etc.) can be expected to be met by the private sector as presented in the FEIS.

236. The DEIS contains projections of the numbers of Family members who would accompany Soldiers stationed at Fort Lewis under the four Alternatives. The Army should validate the accuracy of these projections by sampling the demographics of the Soldiers already stationed at Fort Lewis as a result of the implementation of the 2007 Grow-the-Army Record of Decision.

Response: The population projections contained in the FEIS are developed using Soldier:Family member ratios contained in the Army Stationing and Installation Plan (ASIP). ASIP is the official Department of the Army database that reflects the authorized planning population for Army Installations (Paragraph 1–1, AR 5–18). ASIP provides installation population to all OACSIM systems and is the basis for developing Base Operations Services and MILCON requirements. ASIP is the Common Operation Picture for installation population projections for Army Staff planning (OACSIM – G3/5/7 agreement). Utilization of non-ASIP data is not possible due to the interconnectedness of MILCON requirements and ASIP data, and the use of MILCON requirements throughout the FEIS. As of December 2009, the number of children (ages 5 to 18) of active duty Soldiers living on Fort Lewis was 4,794. The total number of children (ages 5 to 18) of active duty Soldiers at Fort Lewis (living on Post and off Post) was 15,551.

237. Population figures presented throughout the DEIS are internally inconsistent.

Response: All current and projected population figures in the FEIS are internally consistent with the exception of those used in Section 4.7, Air Quality. The figures used in Section 4.7 overestimate the air pollution that may be caused under any of the four Alternatives, and thus this internal inconsistency presents a worst-case scenario rather than an underestimation of impacts. As a result, the internal inconsistency is considered beneficial when weighing the potential impacts of the four Alternatives.

238. A cryptic passage is added to the explanatory text prefacing the tables relative to Alternative 2, stating that the population expressed in the table includes “other growth at Fort Lewis that is not considered in this [DEIS].” We are unable to interpret this statement, even in the context of the remaining information in the DEIS. What is the externality or set of externalities applicable to Alternative 2 that is not evident, but which would result in additional population under Alternative 2?

Response: Growth from previously analyzed and approved actions is included in the Alternative 1 discussion in Section 4.11.3.1.2. The “other growth at Fort Lewis that is not considered in this [DEIS]” statement refers to all the other activities, construction, and stationing that are or may be occurring at Fort Lewis that are not covered under the GTA NEPA process and that have been evaluated under previous actions. This statement was intended to remind the reader that even under the No Action Alternative, there would be population changes at Fort Lewis.

239. The DEIS fails to evaluate whether actions under the four Alternatives may result in “disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, or Indian tribes.”

Response: Environmental justice evaluations related to construction, live-fire, and maneuver training for all four Alternatives are contained in Sections 4.11.3.5, 4.11.4.5, 4.11.5.5, and 4.11.6.4, respectively. The evaluations presented in these sections indicate that there would be no high and adverse human health or environmental effects on these populations.

240. The housing analyses conducted for Alternatives 2, 3, and 4 does not adequately evaluate the capacity of the off-Post housing market to meet the demand of new military and civilian personnel.

Response: The housing analyses contained in the EIS are based upon the 2007 Joint Housing Market Analysis (HMA) completed for Fort Lewis and McChord Air Force Base. The HMA evaluates the availability of housing for both military Families and unaccompanied (bachelor) military personnel stationed at Fort Lewis and McChord Air Force Base, meeting Army, Air Force, and DoD standards for affordability, location, quality, and number of bedrooms. This report is based on criteria and methods approved by HQDA and the U.S. Air Force, and reflects current guidance by the Office of the Secretary of Defense regarding market analyses for military housing.

The HMA defines the market area as that contained within a 20-mile commute radius. The analysis contained in the HMA draws on data on the availability of rental units and houses for sale within this market area, and utilizes information on past building permit issuances as a guide to the level of demand for new residential (single and multi-family) construction the building industry and permitting infrastructure in the market area can reasonably accommodate.

241. Less-than-significant findings are entered for impacts upon public safety, but no analysis is provided. Off-base, public sector agencies may experience additional calls for service related to stationed personnel and associated family in terms of their personal activities and choices during off-duty time. As is to be expected with the general population, any growth may result in added demand for police, fire, medical aid, and animal control services. The DEIS should include analysis of off-base impacts upon public safety services within the ROI.

Response: Increases in the on- and off-Post populations at Fort Lewis related to the four Alternatives may cause an increase in the demand for off-Post public safety services (fire, police, emergency response, etc.) Local and state government agencies provide these services; funding for these services is derived from sales and gross receipts taxes, property taxes, and other taxes and charges levied on goods and services. Soldiers and civilians living off-Post will fund additional public safety services through the payment of sales, property, and other taxes. Soldiers living on-Post will also fund additional public safety services through the payment of sales taxes on purchases made off-Post and other charges. Because of the limited amount of on-Post housing, the large majority of newly stationed Soldiers and newly hired civilian employees would reside off-Post under any of the four alternatives. As a result, the increased demand for public safety services presented by these new residents of the area will be offset by their payment of various taxes and charges.

G.3.13 Hazardous Materials and Wastes

242. Executive Order 13423 (Strengthening Federal Environmental, Energy, and Transportation Management) requires the Army to reduce the quantity of toxic and hazardous chemicals acquired, used, or disposed of.

Response: The Army has a number of programs designed to reduce the quantity of toxic and hazardous chemicals acquired, used, or disposed of Per EO 13423 guidance, Fort Lewis is in the process of developing a plan to implement a Green Procurement Program (GPP) to maximize the use of environmentally preferable products, such as the use of less toxic materials, and to reduce waste generation. The DoD Green Procurement Strategy and Army Green Procurement Guide outline the requirements for GPPs at Army installations.

As outlined in Army Pamphlet 710-7 and the HMMP, Fort Lewis implements centralized hazardous materials management. Fort Lewis mandates the use of a Hazardous Materials Control Center (HMCC) to manage the purchase, storage, use, and recovery of hazardous materials. The HMCC controls procurement through the Authorized Use Lists (AULs), the Restricted Use List (RUL), and signature cards (Army Form 1687). The AUL and the RUL limit and reduce hazardous material use and substitute more environmentally preferable less toxic products. Fort Lewis also has a new product review procedure in which products new to Fort Lewis undergo a health, safety, and environmental review before being authorized for use.

The HMCC provides centralized management and visibility of all hazardous materials stored and used on the installation. Unused hazardous materials that qualify for entry into the Re-Issue Program are collected and transported to reduce costly waste disposal fees through redistribution to other organizations. For example, the availability of products entered through the Re-Issue Program resulted in a procurement cost avoidance of \$413,826 and a waste disposal cost avoidance of \$542,986, for a total savings of \$956,812 in 2008.

243. The FEIS should include detailed information regarding specific measures that will be taken to reduce impacts of potential release of emerging contaminants and toxic hot spots in the environment and disturbance of contaminated sites by the project.

Response: As noted in Section 3.12, Fort Lewis has implemented a variety of measures to address the potential release of contaminants and hot spots. For example, Fort Lewis mandates the use of a HMCC to manage the purchase, storage, use, and recovery of hazardous materials. Fort Lewis also has SPCC plans for individual projects to direct the response to potential spills. Finally, Fort Lewis has coordinated and will continue to coordinate with EPA and the Washington Department of Ecology as contaminated sites are identified and cleanup plans are developed. Specifics of SPCC plans or the steps that the Army uses to prevent or respond to potential releases of contaminants or emerging contaminants are too numerous to include in the document.

244. The DEIS should discuss Army protocols to minimize or eliminate concerns about explosives safety and hazardous materials.

Response: All the hazardous materials and wastes and their handling are covered by standing regulations and education classes. Management of hazardous materials and wastes at Fort Lewis will continue to follow Army, federal, and state regulations in order to minimize potential impacts to human health or

the environment. AR 200–1 governs all aspects of managing hazardous materials and regulated waste by military or civilian personnel and on-Post tenants and contractors at all Army facilities.

Fort Lewis developed a P2 Plan in 1993, with the objectives of minimizing environmental impacts associated with facility operation, protecting human health from exposure to harmful hazardous substances, and reducing hazardous substance use and hazardous waste generation (Army 2008a). The P2 plan addresses hazardous substances listed in the Superfund Amendments, RCRA, Solid Waste Amendments, and the Washington Department of Ecology’s Dangerous Waste regulations.

The Fort Lewis ICP establishes procedures, responsibilities, and resources for the emergency response to accidental spills or releases of hazardous substances. FRPs are prepared for sites that have the potential to harm the environment substantially from release of significant quantities of petroleum, oils, or lubricants to surface waters supporting fish and wildlife, groundwater providing drinking water, and navigable waters of the United States. These plans are incorporated into one document identified as the Integrated Contingency Plan at Fort Lewis.

Facilities for storage and use of ammunition and explosives are already constructed at Fort Lewis. Ammunition handling and storage methods, disposal protocols, and safety procedures would continue to be conducted in accordance with existing regulations and Army protocols, including DoDI 4715.11, Environmental and Explosives Safety Management on Department of Defense Active and Inactive Ranges Within the United States. SDZs are established in accordance with Army Pamphlet 385–64, Ammunition and Explosive Safety Standards. All government personnel or government contractors accessing impact areas would continue to follow OSHA and Army standards and guidelines to minimize health and safety impacts from exposure to any contaminants or ordnance.

245. The project has the potential to mobilize contaminants currently in soils and to impact ongoing and planned remedial actions, particularly at locations where site contamination has resulted in the listing of areas on the National Priorities List (NPL).

Response: The ADPs identify IRP-related construction constraints within each ADP area. Excavation within IRP sites could expose soils contaminated by historic uses of sites; however, the Army will continue to implement standard protocols to minimize the potential for soil contaminants to be mobilized. The IRP is an ongoing DoD-administered program for identifying, evaluating, and remediating contaminated sites on federal lands under DoD control. The program was implemented in response to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements to remediate sites that posed a health threat. Section 211 of the Superfund Amendments Reauthorization Act (SARA) amended CERCLA and established the Defense Environmental Restoration Program (DERP), through which DoD funds and conducts its environmental restoration programs.

Excavation Clearance Requests (dig permits) would continue to be required prior to any excavation activities. Any discovered contaminated soil or groundwater would not be removed from construction sites without written approval from an authorized Army representative. Contaminated soils would be removed to approved disposal facilities or remediated in place.

Construction in the Madigan/Logistics Center would occur within an area of groundwater contamination (Logistics Center NPL site), but the proposed construction is not anticipated to affect permanent pump and treatment systems or hinder any other efforts to clean up this NPL site (Army 2004b). If planned construction were within the boundary of an IRP site or other area of potential contamination, coordination with the IRP Program would be required to address design features, avoidance measures, or other aspects of construction project. New facilities would be sited to avoid or minimize disturbances to existing contaminated sites or ongoing remediation activities, and to minimize the potential for the spread of contamination or exposure of construction or Army personnel, the public, or the environment to hazardous wastes during construction.

246. Why wasn't the potential for spills of POLs or hazardous materials during construction or for disturbances within NPL or IRP sites to expose contaminants not disclosed in Chapter 3?

Response: The Army has disclosed information regarding contamination as information has become available. Information presented in Section 3.12 represents the most current results from contamination investigations at Fort Lewis. The discovery of potential contamination from activities of the past also remains a possibility. Better science, modern spill prevention and response programs, and waste handling and disposal methods greatly reduce the potential for new contamination to occur. Because of the nature and duration of Army activities at Fort Lewis, there is a potential for spills of POLs or hazardous materials to occur during construction. Potential effects are discussed in Section 4.13.

G.3.14 Facilities

247. The calculation for potable water demand for Alternative 1 appears to be flawed. Since the DEIS represents that about half of the anticipated Alternative 1 population growth has already arrived, it might be expected that the cited baseline usage includes only about half of the increased water usage over the pre-stationing condition and does not fully reflect Alternative 1 usage. This is compared to the Fort Lewis system capacity of approximately 19 million gallons per day, and Section 4.2.7.1.1.2 asserts that while there exists a potential cumulative impact on water resources, "these increases are not expected to be substantive because the amounts of water that would be pumped from the hydrologic units are not likely to reduce available water supplies appreciably."

Response: Force structure and population are based on the best information currently available. The number of Soldiers assigned to Fort Lewis, however, may vary as frequently as daily based on unit movements, personnel actions, and other factors. The Army is in a constant state of flux (for example, deployments,

stationing, modularity, conversion, activation), and population changes are to be expected. Therefore, the baseline for the No Action Alternative (Alternative 1) considers the force structure that will be in place at the end of FY 2009 (Section 2.3.1.1). The “Alternative 1” referenced by the comment is actually Alternative 2; Alternative 1 is the No Action alternative. The DEIS states that half of the anticipated population growth for Alternative 2 (rather than for Alternative 1) has already arrived.

248. The evaluation of impacts to potable water demand should extend to the community water supply systems. The analysis assumes that all water usage impacts will accrue to the on-Post water system, which is not an accurate assumption unless *all* population growth associated with Fort Lewis growth is constrained to the installation. Instead, while some increased demand can reasonably be expected to occur on Post, actual impacts will be spread across the ROI, wherever off-Post troops, families, and civilian employees live. Increased usage may be an issue if community water systems lack adequate capacity.

Response: Alternative 1 would result in minimal increased potable water demand for the community water supply systems. Based on the number of Soldiers stationed at Fort Lewis (along with their Families), implementation of any of the alternatives would result in a population increase of less than 3 percent compared to the total population within the ROI. Therefore, the potable water demand to the surrounding community water supply systems within the ROI would increase minimally compared to current conditions. As described in the 2007 FPEIS, the existing potable water infrastructure within the ROI is anticipated to have sufficient excess capacity for the anticipated peak demands. In addition, new Army buildings and facilities would incorporate water conservation measures.

249. The evaluation of impacts to sewer demand should include the off-base community system capacity. Parallel to the discussion about water supply, not all increased sewer demand will accrue to the on-Post system but rather will be dispersed among surrounding communities; therefore, analysis of off-Post community system capacity should be included.

Response: Implementation of any of the alternatives would result in minimal increased sewer demand on the community wastewater treatment systems. Based on the number of Soldiers stationed at Fort Lewis (along with their Families), implementation of any of the alternatives would result in a population increase of less than 3 percent compared to the total population within the ROI. Therefore, the sewer demand to the surrounding communities within the ROI would increase minimally compared to current conditions. As described in the 2007 FPEIS, the existing wastewater infrastructure within the ROI is anticipated to have sufficient excess capacity for the anticipated peak demands. In addition, new Army buildings and facilities would incorporate water conservation measure, which would also minimize sewer demands. Finally, off-Post community planning agencies should be addressing the demand for sewer service during their reviews of applications for building permits.

250. Mitigation measures discussed in the DEIS should be correlated with the conditions of the wastewater discharge permit for the Solo Point treatment plant.

Response: The Army attempts to comply with the conditions of the current EPA wastewater discharge permit for the Solo Point wastewater treatment plant and will continue to attempt to comply with permit conditions in the future. Over the 2004-to-2009 period of the previous permit the Army exceeded the permit treatment requirements six times (EPA Fact Sheet, August 28, 2009). The Solo Point treatment plant has sufficient capacity to handle the demand from the proposed action. However, given the past performance of the facility it is expected that discharges will violate permit treatment requirements more frequently in the future as demand increases. Increased demand combined with more stringent requirements for discharges under future NPDES permits will render the Solo Point wastewater treatment plant insufficiently protective of Puget Sound water quality. Consequently, funding for construction of a new wastewater treatment plant in FY 2012 was identified as mitigation.

G.3.15 Cumulative Effects Analysis

251. The DEIS is critically flawed. It fails to recognize the cumulative impacts of past incremental actions which, when taken together, are significant and if fails to recognize most off-base impacts. We maintain that although impacts of past growth at Fort Lewis have been treated as individually minor, over time these incremental impacts, particularly when combined with any of the alternatives presented in the DEIS, constitute significant impacts that now must be addressed.

Response: The Army believes that we have adequately analyzed the cumulative effects within the ROIs for each resource area. The effects of past actions have been used to establish the current baseline condition for each resource. Thus, the effects of past actions are already incorporated into the description of the current affected environment. The impact analysis starts with this current situation and adds the direct and indirect effects of the alternatives and the cumulative effects of the RFFAs identified in Appendix B. The comment lacks specificity as to additional past, present, or RFFAs that the commenter would like to see analyzed in the EIS.

G.3.16 Biological Assessment (Appendix F)

252. The project description is unclear what the project activities are that may have potential effects on listed species. The BA does not contain the level of detail of the project actions that is necessary to understand the magnitude and extent of effects on listed species. The BA should address the components of each activity in the project that may have pathways to listed species in the action area, including the frequency, magnitude, and spatial extent of the types of training activities and proposed construction at both Fort Lewis and YTC. A matrix outlining the components of these activities at each installation would be helpful. Also, it is unclear in the project description which activities are parts of the proposed action, and which activities have been previously consulted on, but have not yet been implemented. Please provide clarification of which activities are part of this action and how they relate to current conditions rather than referencing information in other documents or previous consultations.

Response: The Biological Assessment has been revised to clarify which activities are ongoing (discussed in Chapter 2 of the revised BA) and which are part of the proposed action (discussed in Chapter 3 of the revised BA). The description of the project has been expanded to include additional information about the components of each activity that would occur under the proposed action that may have pathways to listed species.

253. The BA defines the action area as being the area enclosed within the boundaries of the military base. The action area, as defined in the ESA, includes all areas that would be directly or indirectly affected by the action. Information provided in the BA indicates that the effects of some activities may extend beyond the boundaries of the base, and that the action area is much larger than was defined and analyzed in the BA. Please evaluate impacts on listed species for which there are pathways of potential effects that extend off base. Some of these pathways include changes to hydrology and water quality in streams, increased risk of wildfire, noise, flight corridors outside of the installation, and potential off-base infrastructure needs/construction to accommodate additional troops, families, and contractors living on and off-base. Please define the true action area (a map would be helpful) and include an analysis of effects on all listed species within that action area.

Response: The action areas for the various species have been more clearly defined. For most activities, the action area remains the actual installations of Fort Lewis and YTC. For some activities, such as noise and aviation training, the action area extends beyond the installations' boundaries. Please refer to the beginning of Chapter 2 of the revised BA to review the expanded discussion of action areas.

254. Not enough detail on the environmental baseline was provided on the current habitat conditions to evaluate impacts on listed species. To evaluate the impacts of the project, we ask that you define the baseline habitat conditions within the action area with enough detail to provide a reference with which to evaluate the effects of this action. This should include information on what the current status of the habitat is and what the effects of current training are on the species.

Response: The species background descriptions in Chapter 5 of the BA have been revised to include additional detail on environmental baseline conditions. Additionally, more information on current conditions has been provided in Chapter 2, which will also help provide a more complete picture of baseline conditions.

255. The BA needs to specifically address potential effects on listed species. The analysis provided is too qualitative and does not provide the extent or magnitude of the project effects or the rationale for the conclusions that are reached. The spatial and temporal extents of these activities and effects should be considered. Please provide a map showing the occurrences and potential habitat of listed species relative to the proposed activities, including streams, proposed construction, established roads and types of roads, off road vehicle use areas, bivouac areas, Stryker vehicle maneuver areas, firing ranges, artillery impact areas, fly-over areas, and protected areas.

Response: Additional figures have been included in the BA to show more clearly spatial information, including the locations of the requested information in relation to areas where listed species are present and/or designated critical habitat. Please note that because the BA is a public document, we were unable to show some sensitive information about species occurrences. Areas where training is restricted because of environmental constraints are discussed in Section 2.0.

256. The BA references conservation and mitigation measures to reduce effects on listed species. Please be specific about what these measures are, and how and to what extent they will reduce project effects.

Response: The baseline discussions in the BA have been expanded to include more thorough coverage of ongoing management for listed species on Fort Lewis and YTC. The sections on Conservation Measures have been revised to state only additional mitigation that is required to reduce the effects of the proposed action.

257. Please provide in the BA a table outlining the proposed increase in troops that is part of the proposed action, the increase in associated families and civilian employees, and a description of what other troop and population increases are predicted to occur based on past approved activities and future proposed troop increases.

Response: Table 3–1 summarizes population increases associated with the proposed action. The proposed action would not include an increase in civilian employees. Increases in the Fort Lewis population associated with previously approved actions are already incorporated into the baseline numbers in Alternative 1.

258. According to the BA, the proposed action includes an increase in troops of 5,800 with an estimated population increase (troops and families) of 14,400 people, and an increase in training of 9,800 troops at any given point in time. Please provide an estimate of the number of civilian contractors and other support that would be working at the fort as part of the project activities, and more information on where these people would live. For example, what percentage of the population is likely to live on base vs. off base? The BA should address all impacts, including anticipated growth and development in the commuting area (action area) for troops or support staff that will live off base. Are there any resulting off-base infrastructure needs resulting from the project that could result in potential effects to listed species, such as transportation improvements or utilities?

Response: The Army would not hire additional civilian contractors as part of the proposed action. Additionally, when such employees are hired, they are typically hired locally, and therefore would not represent a regional population increase. Contractors involved in construction projects would come onto the Post as needed. The population increase associated with the proposed action, both on and off Post, is presented in Table 3–1 of the revised BA. The Army has not identified any off-Post infrastructure needs resulting from the project that could result in potential effects to listed

species. Soldiers and Families that would reside off Post would be housed in existing or previously permitted developments and they would use existing facilities and roads.

259. What changes are proposed to the cantonment area development plans? Will they change any current land use to a use that may affect listed species? In particular, will these changes result in a reduction of open space or an increase in impervious surfaces that could ultimately result in changes to water quality and hydrology in areas that provide habitat for bull trout? Specifically, how much impervious surface will result from the proposed project? How will the stormwater runoff from these surfaces be treated, and where will it be discharged, especially relative to fish bearing waters and associated 50-meter buffers?

Response: The new Area Development Plans incorporate LEED Silver guidelines and Low-impact Development practices for comprehensive stormwater management. They also comply with the western Washington stormwater manual. The goal is to treat stormwater on site as much as possible using various technologies, including bio swales and injection wells. Thus, any discharges from the developed areas would be routed to the Army's current discharge points. Finally, one must understand that areas covered in the Area Development Plans are already developed.

260. From the BA and draft EIS it is evident that construction will occur in areas outside of the cantonment area. Please provide more information on the locations and potential habitat that will be affected by this construction.

Response: Primary construction outside the cantonment areas involves new live-fire ranges. The new ranges would be constructed on portions of existing ranges. Figures showing the locations of the new ranges have been included in Section 2.0 of the BA.

261. Will there be any increase in training activity near Solo point or in the marine areas near Fort Lewis? What types of activities are currently occurring there?

Response: No increase in training is expected near Solo point or in the marine areas near Fort Lewis. Most of the training that occurs on Fort Lewis and YTC is associated with the SBCTs. Training in marine environments is not part of the SBCTs wartime mission essential task list. Section 2.4.8 of the revised BA discusses the types of activities that currently occur in these areas.

262. What specific activities does maneuver training involve? Does it only involve driving, or are there other components to this activity?

Response: Section 2.4.1 of the BA includes a discussion of the components of maneuver training. Although maneuver training primarily involves driving, other components include dismounted training, bivouac activities, urban combat training, refueling, rearming, and digging.

263. Where will increases in artillery use occur? What is the estimated increase in noise as a result of these activities? How will increased noise on and off base associated with training activities affect nesting areas or migratory corridors for listed birds and bald eagles?

Response: Increases in artillery firing would occur at existing firing points and other areas surrounding the firing points that are within the existing special use airspace. The intensity (amount of noise associated with firing) would not increase, but the frequency (number of firing events) of artillery activity would increase. The Army anticipates a 50-percent increase in the frequency of artillery firing. The BA has been revised to include more discussion of where artillery increases would occur. Noise-related effects are discussed in Chapter 5 under the analyses of direct and indirect effects for the various species, as appropriate.

264. Where are the flight corridors where there will be an increase in traffic as a result of the proposed action? Will helicopters be using airspace outside of the boundaries of the base? If so, where would this occur and what would be the estimated timing, frequency, and duration of the noise levels. Could this potentially affect nesting areas or migratory corridors for listed birds?

Response: Low-elevation training would occur on the installation. Outside the Post boundary, pilots would fly above 2,000 feet AGL but are not restricted to flight corridors. Any low-elevation flights or activities that require helicopter landing zones would require additional impact analysis prior to initiation of these types of activities. This information has been included in the revised BA.

265. The BA mentions the use of chaff in aviation training. How much chaff is likely to be used, at what frequency, and where is the chaff likely to end up? Over the long term, is it likely to accumulate in areas where it may harm listed species? Please provide a more quantitative description on the potential for exposure of wildlife, birds, and fish to chaff in the action area. With the addition of an air brigade, how much will the use of chaff at Fort Lewis and YTC increase?

Response: All references to chaff have been removed from the BA as well as the EIS. Aviation units do not train with chaff at Fort Lewis or YTC, nor do we anticipate training with chaff to occur in the future.

266. The information presented in the BA regarding bull trout presence is not clear nor is it well substantiated. Very little information was provided regarding the presence or absence of any fish species on either base, or the ability of the stream habitats to support fish. The only reference cited to support absence was from 16 years ago. Please provide more up to date information if it is available. What surveys have been conducted on the base to document bull trout presence/absence? What time of year did these occur and what methods were used to determine absence. If the habitat is not appropriate for supporting bull trout, specific details about stream temperatures and other factors supporting this conclusion should be presented. The BA needs to describe

the potential for sediment and contaminant loading in more detail. The watershed condition pathway needs to be identified. The analysis needs to tie effects to specific actions in the project description.

Response: The BA has been revised to include additional information about the most recent surveys for Bull trout on Fort Lewis, as well as temperature data for Muck Creek to support why surveys have not been conducted. The BA also includes temperature data from streams on YTC to support why they are unsuitable for bull trout. Section 5.2.2.3 of the BA has been revised to describe the potential for sediment and contaminant loading better and to better tie effects to specific project actions.

267. In the BA it states that over 300 fords or crossings were recently hardened on YTC and that these fords are exposed during lower flows. Are these crossings fish passage barriers? Has anyone inventoried fish passage barriers on the base?

Response: Information on crossings of fish-bearing streams at YTC has been included in Section 2.2.4 of the revised BA. This discussion includes information on the recent inventory of these crossings on YTC. All of the fish-bearing crossing features that were installed were planned, reviewed, and approved by the appropriate regulatory agencies. None of the crossings on the installation are functioning as barriers to fish passage.

268. For species that have been determined to be absent from Fort Lewis and YTC (golden paintbrush, marsh sandwort), please provide specific information on when, what areas, and what intensity of survey has been conducted to determine that they are not present.

Response: The background sections of these plant species have been revised to include information on surveys that have been conducted and when they occurred. In addition to surveys by installation staff, subject matter experts from other resource agencies have been on our installations and have not encountered any of these species.

269. The BA states that the quantities of sediment delivered to streams from military activities would be insignificant, but it provides no information to substantiate it. Off road vehicle use, unimproved roads, increased frequency of wildfire, construction of fire breaks, loss of vegetation, and driving through streams has the potential to contribute an enormous amount of sediment to streams, especially at YTC where there are steep slopes with erodible soils. Please provide an analysis of the potential for delivery of sediments to streams, both on base and off base that may be used by bull trout. The analysis should quantify the baseline conditions as well as an estimated increase in the sediment loadings in these streams with implementation of the proposed action.

- a. The DEIS states that water quality in the vicinity of the YTC has been measured. Please provide information (a map would be helpful) showing where these water quality stations are located and if the data indicate any exceedances of water quality standards originating from YTC. This information should be included in the BA.
- b. What defines an established road? Are they all mapped and maintained to prevent erosion and delivery of sediments to streams. Will any new established roads be

- constructed as part of this project? Is there a mechanism in place to ensure that new and existing roads are maintained with the proposed increase in use?
- c. What is the estimated acreage of impacts from class 4 and 5 roads and off-road vehicle use? What is the estimated potential delivery of sediments into streams from these sources?
 - d. How many stream crossings are being used? Where are these located and what is the condition of the streambed at these crossing sites? How many of these have been improved or have timing restrictions to prevent delivery of sediments into streams? What is the current frequency of use?
 - e. What is the intensity of military activities on foot that may affect sedimentation in streams? Are these activities occurring at an intensity that may remove riparian vegetation and damage streambanks?
 - f. The BA states that all training activities would be conducted outside of stream buffers. What types of streams are actually buffered from these activities? Is this buffer applied to all runoff and ephemeral channels that could potentially deliver sediment during large rainfall or snowmelt events?
 - g. The DEIS states riparian and upland restoration programs minimize the quantity of fine sediment reaching streams on both of the military bases. Please provide more information on where and how these restoration programs have minimized sediment delivery to streams.
 - h. What are the restoration/resting intervals for disturbed habitats? What type of restoration/rehabilitation is occurring and how capable is the land of recovering between disturbances? What is the estimated length of time that these areas have bare soils and potentially provide a source of sediments to streams?

Response:

- a. *The referenced information from the DEIS has been included in Section 5.2.2.1 of the revised BA, which provides background information pertaining to salmonid habitat in the action area.*
- b. *Definitions of established roads are presented in Sections 2.1.4 and 2.2.4 of the revised BA. They are all mapped, and figures showing roads on Fort Lewis and YTC have been added to the revised BA. Section 3.5 of the revised BA clarifies that no new established roads would be constructed on either installation as part of the proposed action. Additional information on road maintenance has been included in Section 2.2.4 of the revised BA.*
- c. *Tables 2–2 and 2–3 summarize the estimated annual mileage that would be driven on MIL-CLASS 4 and 5 roads and off road on Fort Lewis and YTC. Section 3.6.1 of the revised BA also discusses corresponding acres of impacts from off-road driving. A discussion of potential delivery of sediments into streams is incorporated into the discussion of effects for stream-dwelling species in Chapter 5.*
- d. *Figures 2–2 and 2–6 in the revised BA show stream crossing locations at Fort Lewis and YTC. Additionally, Figures 2–4 and 2–8 through 2–12 show photos of typical stream crossings at Fort Lewis and YTC. A discussion of stream crossings and their improvements is provided in*

Section 2.2.4 of the revised BA. There are currently no temporal constraints related to water quality or erosion conditions, and the Army does not have information on how frequently stream crossings are used.

- e. Military activities on foot are very low intensity and do not cause sedimentation into streams, remove vegetation, or damage streambanks.*
- f. Additional information on stream buffers has been provided in Section 2.6.2 of the revised BA. Stream buffers apply to the mainstem drainages where perennial water is typically found, as well as some secondary and tertiary drainages where surface water or other resources require protection from land use activities.*
- g. Additional information on riparian and upland restoration programs has been included in the revised BA, in Section 5.2.2.2, Current Salmonid Habitat Use and Protection Measures.*
- h. Additional information on restoration/rehabilitation and rest intervals has been included in the revised BA, in Section 5.2.2.2, Current Salmonid Habitat Use and Protection Measures.*

270. The BA references conservation measures that will reduce or mitigate for impacts to listed species. What are these measures, and how are they implemented? How effective have they been in the past at reducing impacts to listed species? Has any monitoring been conducted to ensure that they are meeting their objectives? Specifically:
- a. What methods were used to delineate sensitive species (habitat) buffers and stream buffer widths? How are these adequate to protect sensitive species from project impacts? How are these marked on the ground? When personnel are involved in training activities, are these buffers evident?
 - b. How is Regulation 420–5 enforced? How do military personnel know the locations of these species so that they can avoid them? How involved is the environmental staff in training activities on a day to day basis, and what specific types of adjustments are made to minimize effects to species? How do recreationalists know of these restrictions?

Response: Fort Lewis and YTC have developed numerous conservation measures to protect listed species on the installations. These are summarized in Tables 2–3 and 2–4 of the BA and in the discussions of listed species in Chapter 5. These measures are identified in Army guidance manuals (e.g., AR 420–5; INRMPs). Range Control informs unit leaders of training restrictions to protect listed species before leaders undertake training activities. Most measures involve exclusion of training activities from areas with listed species for all or portions of the year. Protection areas are clearly identified on training maps and using highly visible Seibert stakes in the field. The Army conducts annual surveys for terrestrial species, and to a lesser extent, for aquatic species that are known to be found on the installation, to monitor the success of conservation measures. The Army conducts periodic surveys for species that are not known to occur, but may occur, on the installations. These surveys are generally conducted prior to ground disturbing activities in areas where these species may be present. In general, success has been

good with known population of listed species holding steady or increasing during the past several decades. On a regional level, Fort Lewis and YTC provide some of the best habitat for listed species and are vital for the long-term protection of these species.

a. Buffers were delineated using GIS, based on the best understanding of what would be suitable to protect sensitive species. As discussed in the revised BA, buffers (shown on Figures 2–14 and 2–15) are depicted on environmental training maps, and units receive a briefing on environmentally sensitive areas prior to training in a given locations. In certain areas, Seibert stakes and/or signs are utilized to mark buffers, as shown in Figures 2–16 and 2–17.

b. A discussion on enforcement of Fort Lewis Regulation 420–5 has been added to section 2.7 of the revised BA.

271. Although measures are in place to prevent the spread of wildfires, from the DEIS, it is evident that a large portion of the YTC has burned in the last 20 years. Please provide information in the BA on the acreage and frequency of unintentional fires originating from training activities at Fort Lewis and YTC. How is this likely to increase with implementation of the proposed project, and what could be the impact of changes to the frequency and intensity of fires on listed and candidate species? What conservation measures will be implemented to ensure that fire prevention and suppression activities are adequate to address the additional wildfire risk.

Response: Section 2.5 has been added to the revised BA, detailing fire risk and fire management at Fort Lewis and YTC. The potential impacts of fire increases on listed species and the sage-grouse have been included in the effects analyses in Chapter 5. Conservation measures to reduce potential fire effects to listed species are presented in the species conservation measures subsections in Chapter 5, as appropriate.

272. In addition to the listed species addressed in the BA, there are a number of candidate species that are present at both Fort Lewis and Yakima Training Center. Some of these species may be listed in the near future (emergency listings) due to their current population status. Although there is no requirement that they be addressed, we advise that they are addressed in case they do become listed in the future. These species include Mazama pocket gopher, Mardon skipper, Taylor’s checkerspot, streaked horned lark, greater sage grouse, and the Umtanum desert buckwheat.
- a. What are the specific mitigation measures that are proposed to reduce impacts to candidate species? Please provide this information in the BA instead of referencing other documents.
 - b. Where are the areas that have the highest diversity of native plants? What activities occur in these areas and how are they protected from being destroyed by maneuver training, fire, or non-native species introductions?
 - c. Some of the candidate species have limited dispersal capability and need connectivity corridors between habitat patches to support populations. How are these planned and maintained?

- d. Greater sage grouse was specifically addressed in the BA. Please provide additional information on how the sage grouse and lek protection areas will prevent adverse effects to this species. Female sage grouse typically nest from 3 to 5 miles from their mating areas. If the protected areas are only 0.6 mile from the active leks, how will this ensure that nesting grouse and their habitats are not destroyed by project activities?

Response: The Army has decided not to include candidate species in the BA (apart from sage-grouse, which has always been included in BAs for YTC), as there is no requirement to include them under ESA. However, the Army does recognize the potential for proposed activities to affect candidate species on both installations. An assessment of these impacts has been provided in the EIS, and the discussion has been expanded in response to this comment. The Army also feels that the Candidate Conservation Agreement that is currently being negotiated is the appropriate place to determine appropriate management actions for protecting these species on Fort Lewis and in the region. A discussion of sage-grouse protection measures and the potential for adverse effects to the species are provided in Section 5.2.3 of the revised BA. The BA does not state that existing protection measures would ensure that nesting grouse and their habitats would not be destroyed by project activities. Additional conservation measures for sage-grouse have been included in Section 5.2.3.6 of the revised BA.

273. Section: 4.1.4, Salmonids, page 4-6, 4th paragraph. The native eelgrass species of the Pacific Northwest, Puget Sound is *Zostera marina*, not *Vallisneria* spp., and the macro algae species of kelp in southern Puget Sound is *Nereocystis luekeana*, not *Macrocystis* spp., which occupies the Strait of Juan de Fuca and coastal areas of Washington. Please correct this.

Response: This information has been corrected in the revised BA.

274. Increasing the listed species and critical habitat area is necessary for the effects from the Fort Lewis sewer treatment plant (STP). This would include but is not limited to listed species in the nearshore areas of southern Puget Sound within the discharge plume of the STP.

Response: The species provided in Table 1 of the BA include all the listed species in the nearshore areas of the southern Puget Sound, including marine mammals and sea turtles. The potential effects of wastewater discharges from the Solo Point wastewater treatment on these species have been included in the effects analyses in Chapter 5 of the revised BA.

275. Section: 4.1.4.1 Salmonids, page 4-8. Chinook salmon use of Muck Creek is not included. According to WDFW Salmon scape, the presence of chinook salmon has been documented. This section needs to be updated to include fall chinook salmon.

Response: The BA has been revised to include a discussion of Chinook salmon use of Muck creek in Section 5.1.4. Additionally, this information is shown on Figure 5-3.

276. Section: 4.1.4.1 Salmonids, page 4–9. Steelhead use of Muck Creek (rearing/presence), a major tributary on the Fort Lewis reservation, is not included. Please revise BA to include this information.

Response: The BA has been revised to include a discussion of steelhead use of Muck Creek in Section 5.1.4. Additionally, this information is shown in Figure 5–4.

277. Please indicate how the 50-meter buffers are delineated to ensure activities do not encroach into buffers?

Response: Enforcement of 50-m buffers and other regulatory measures to protect listed species are discussed in Section 2.7.1 of the revised BA. The 50-m buffers are delineated on maps and incorporated into the GIS systems at Fort Lewis and YTC. The environmental constraints maps that are provided to trainers show the buffers and other off-limits areas. In addition, Seibert stakes and signage are used in many places to delineate the boundaries in the field, as shown in Figures 2–16 and 2–17 of the BA.

278. Section: 4.1.4.2 Analysis of Direct and Indirect Effects, page 4-10, Ground Training. Please provide a map showing the number of existing ford crossings and proposed ford crossings (Fort Lewis). What is the proposed operation and maintenance of ford crossings? Are there any plans to convert ford crossings to water crossing structures such as a bridge?

Response: The locations of stream crossings at Fort Lewis and YTC are shown in Figure 2–4 and Figures 2–8 through 2–12 show photos of typical stream crossing sites at both installations. Please note that that, as discussed in Section 2.4.8, no fording of the Nisqually River has been done in the last five years, and there are no plans to cross this river during training for the foreseeable future. Maintenance of stream crossings is discussed in Sections 2.1.4 and 2.2 of the revised BA. There are no plans to convert ford crossings to water crossing structures.

279. How are the buffers delineated to ensure activities do not encroach into and through buffers? Aerial (Ping maps and Google maps) views of Muck Creek show vehicle traffic tracks fairly close or in buffer areas.

Response: Please see response to Comment 277 for a discussion of buffers. The tracks that the commenter is identifying as “vehicle tracks” in aerial views are most likely established roads. Travel on established roads is allowed within stream buffers.

280. Overlay Maps of Action Areas and proposed riparian buffers. There are no maps with respective buffers and fish bearing streams relative to proposed activities. Please include detailed maps, delineating buffers for the Fort Lewis and YTC.

Response: Figures in Chapter 5 show the locations of fish-bearing streams and their respective buffers relative to various training areas and facilities on Fort Lewis and YTC.

281. Section: 4.1.4.3 Interrelated and Interdependent Effects. 1st paragraph, 3rd line, 2nd sentence. As noted above, Sec. 4.1.4, and Sec. 4.1.4.1, please explain why activities and associated indirect effects are contained within the cantonment areas.

Response: This section has been revised and no longer states that indirect effects would be contained within the cantonment area.

282. 1st paragraph, 5th line, 3rd sentence, please substantiate this statement. How can adding up to 20,000 people not have an effect of the volume of pollutants being discharged from the STP? In the BA revision, please include the STP and the extent of the mixing zone within Puget Sound.

Response: A more thorough discussion of the potential increases in discharges from the WWTP has been added to Section 5.1.5.1 under the “Stationing” heading. The extent of the mixing zone is also discussed in this section. The Army is unclear from where the 20,000 people figure came from, as the proposed action would only result in a total on-Post population increase of 2,100 Soldiers and Family members, with further increase in wastewater associated with 4,100 additional Soldiers working on Fort Lewis regularly. These population increases are more clearly detailed in Table 3–1, and discussed in the analyses of effects associated with increased discharges from the WWTP.

283. 4.1.4.4 Cumulative Effects. This section is inadequate. There should be a discussion about cumulative effects from project actions, to the action area, even if there are no effects.

Response: Section 5.1.5.3 of the BA has been revised to include additional discussion of cumulative effects from project actions.

284. The project description in the BA should contain more detail. The proposed action should be the preferred alternative or should be the one with the highest level of effects. It needs to clearly and concisely differentiate on-going actions from future actions and identify connected actions. Key issues need to be addressed.

Response: The BA has been revised to address these concerns. The proposed action is EIS Alternative 4, which has the highest level of effects. In order to better differentiate ongoing actions from future actions, the BA has been reorganized so that ongoing actions are described in Chapter 2.0, Project Location and Current Conditions, and future actions are described more clearly in Chapter 3.0, Project Description.

285. It appears the current conservation strategy for the sage-grouse at YTC is not working. With the projected increase in training, adverse effects to sage-grouse habitat will increase and wildfires will increase. The effectiveness of current conservation measures needs to be evaluated and additional conservation measures need to be considered. For example, is a 1 km lek buffer too small? Is an air operations buffer of 300 feet AGL too low? Is the number of firebreaks sufficient and are they effective? Are limits on driving off roads within sage-grouse protection areas effective?

Response: The Army has thoroughly evaluated current protection measures. Through this evaluation, the Army has developed additional measures to minimize the risks of fire associated with increased training and to help reduce the potential effects of training on sage-grouse and their habitats. All current and proposed measures are fully described in Section 5.2.3.6.

286. The sage-grouse baseline suggests fluctuations, but a declining trend and surveys from recent years suggest some of the lowest population numbers reported. The BA describes sources of mortality for sage-grouse very generally. What are the sources of mortality on YTC?

Response: The background discussion on sage-grouse (Section 5.2.3.1 of the revised BA) has been expanded to include a discussion of sources of mortality on YTC.

287. Effects to sage-grouse presented on pages 4–34 to 4–38 are not clear or easily differentiated from on-going activities. Conservation measures appear to differ from Fort Lewis Regulation 420–5. The BA states that fire in Lmumma, Selah, and Cold Creeks could jeopardize sage-grouse, but there are no direct conservation measures to address or minimize this (beyond standard fire-fighting, which appears ineffective). Other conservation measures are mentioned, but are not described. Please clarify the discussion of effects and proposed conservation measures and ensure that the proposed measures will be funded.

Response: The BA has been revised to differentiate project activities from ongoing activities more clearly. Ongoing activities are described in Chapter 2.0 of the BA, Project Location and Current Conditions. The discussion of ongoing protection measures has been moved to Section 5.2.3.2, Current Sage-Grouse Habitat Use and Protection Measures. The effects analysis in Section 5.2.3.3 identifies the likely effects of the proposed project. These effects generally stem from increases in the same types of activities that are currently happening at YTC. Section 5.2.3.6, Conservation Measures, has been revised to include only new mitigation measures for the sage-grouse.

Table G-2 Summary of Officials, Agencies, Businesses, Organizations, and Individuals Responding to the DEIS

Last Name	First Name	Representing	Comment Numbers Associated with Correspondence
Black	Thera	Thurston Regional Planning Council	2, 6, 175, 177–181, 195, 200, 201, 203, 204, 213, 216, 217, 221, 234
Bloom	Dennis	Intercity Transit	195, 207, 209–214
Brackett	Gary	Tacoma-Pierce County Chamber	2, 31
Bugher	David	City of Lakewood	1, 2, 3, 5, 6, 7, 28–30, 176, 177, 187, 189–191, 196, 197, 200, 204–206, 211, 218, 233–241, 247–251
Cool	Seth	Conservation Northwest	124–128
Dunn	Patrick	The Nature Conservancy	48, 113, 118–120
Dykstra	Jenni	U.S. Fish and Wildlife Service	252–272
Elgar	Betsy		3, 8
Falxa	Greg	Cascadia Research	48, 49, 56, 57, 101
Goodin	Mark	Olympia Region Clean Air Agency	186
Griffith	Greg	Washington State Historic Preservation Office	149–173
Grindley	Rory	Pierce County	206
Hayden	Kelly	Pierce Transit	2, 207, 208, 211, 213–216, 220
Johnson	Deborah		11, 30
Kalinowsk	Stephan	Washington Department of Fish and Wildlife	1, 3, 11, 14–27, 32–37, 47, 50–55, 58–62, 64–66, 68, 70–97, 99, 100, 112–116, 121, 129–131, 138–144, 146, 194
Keniston-Longrie	Joy		40, 41, 67, 123, 148, 181, 184, 185, 192, 193, 246
Krupka	Jeff	U.S. Fish and Wildlife Service	266, 284–287
Kubo	Teresa	U.S. Environmental Protection Agency	3, 4, 10, 42–46, 122, 145, 147, 182, 183, 188, 242–245
Kyer	Krystal	Tahoma Audubon Society	78, 98, 103, 113, 118–120
LeBeau	Deborah	Clover Park School District	9, 222–233
Lelli	Kimberlie		219
Marsh	Michael	Washington Native Plant Society	98, 103

Table G-2 Summary of Officials, Agencies, Businesses, Organizations, and Individuals Responding to the DEIS

Last Name	First Name	Representing	Comment Numbers Associated with Correspondence
Molenaar	David	NOAA Fisheries Liaison	253, 259, 273–283
Nickerson	Donna	Black Hills Audubon Society	111, 120
Picard	Chris	Washington State Department of Transportation	2, 198–200, 202–204
Sleeper	Preston	U.S. Department of the Interior	12, 13, 38, 63, 69, 102, 104, 113, 117, 137
Tahat	Hasan	Yakima Regional Clean Air Agency	174
Teske	Mark	Washington Department of Fish and Wildlife	1, 39, 105–110, 113, 132–136

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