

I-5 Corridor Reinforcement Project

Final Environmental Impact Statement

Volume 3E: Comments and Responses (Communications 14747–14798)
DOE/EIS – 0436

Bonneville Power Administration

Cooperating Agencies:

**U.S. Army Corps of Engineers, Oregon Energy Facility Siting Council,
Washington Energy Facility Site Evaluation Council, Cowlitz and Clark Counties, Washington**

February 2016

Page intentionally left blank

Table of Contents

Volume 1: Chapters 1-13

Abstract

Notes to Reader

Perforated Icon Sheet

Summary

Chapter 1 Purpose of and Need for Action

Chapter 2 Facility Siting, Route Segments, and Action Alternatives

Chapter 3 Project Components and Construction, Operation, and Maintenance Activities

Chapter 4 Proposed Action and Alternatives

Chapter 5 Land

Chapter 6 Recreation

Chapter 7 Visual Resources

Chapter 8 Electric and Magnetic Fields

Chapter 9 Noise

Chapter 10 Health and Safety

Chapter 11 Socioeconomics

Chapter 12 Transportation

Chapter 13 Cultural Resources

Volume 2: Chapters 14-33

Chapter 14 Geology and Soils

Chapter 15 Water

Chapter 16 Wetlands

Chapter 17 Vegetation

Chapter 18 Wildlife

Chapter 19 Fish

Chapter 20 Climate

Chapter 21 Air Quality

Chapter 22 Greenhouse Gases

Chapter 23 Intentional Destructive Acts

Chapter 24 Short-Term Uses versus Long-Term Productivity
Chapter 25 Irreversible or Irretrievable Commitment of Resources
Chapter 26 Cumulative Impacts
Chapter 27 Consultation, Review, and Permit Requirements
Chapter 28 Consistency with State Substantive Standards
Chapter 29 References
Chapter 30 List of Preparers
Chapter 31 Agencies, Organizations, and Persons Receiving this EIS
Chapter 32 Glossary and Acronyms
Chapter 33 Index

Volume 3A: Comments and Responses (Communications 14093 – 14379)

Volume 3B: Comments and Responses (Communications 14380 – 14600)

Volume 3C: Comments and Responses (Communications 14601 – 14701)

Volume 3D: Comments and Responses (Communications 14702 – 14746)

Volume 3E: Comments and Responses (Communications 14747 – 14798)

Volume 3F: Comments and Responses (Communications 14799 – 14827)

Volume 3G: Comments and Responses (Communications 14828 – 14843)

Volume 3H: Comments and Responses (Communications 14844 – 14919)

Appendices

Appendix A Washington Department of Natural Resources Lands Analysis
Appendix B Right-of-Way Tower Configuration Tables and Figures
Appendix B1 Right-of-Way Tower Configuration Tables and Figures – Central Alternative using Central Option 1 (Preferred Alternative)
Appendix C I-5 Corridor Reinforcement Project Photomap Book
Appendix C1 I-5 Corridor Reinforcement Project Photomap Book – Central Alternative using Central Option 1 (Preferred Alternative)
Appendix D Underground Route Study
Appendix D1 Underground Route Study – Castle Rock, Washougal, and Camas areas
Appendix E Visual Assessment
Appendix F Electrical Effects

Appendix F1 Electrical Effects – Central Alternative using Central Option 1 (Preferred Alternative)

Appendix G Research on Extremely Low Frequency Electric and Magnetic Fields and Health

Appendix G1 EMF Research Updates

Appendix H Environmental Justice Tables

Appendix I Cultural Resource Sensitivity Scores

Appendix J Geologic Assessment – Geologic Hazards, Soil and Slope Gradient, Geology, Shallow Bedrock, Shallow Groundwater

Appendix K Fish Habitat and Fish Population Impacts

Appendix L Wetland Modeling

Appendix M Noxious Weed List

Appendix N NEPA Disclosure Forms

Appendix O Shoreline Management Act and Critical Area Ordinance Consistency

Page intentionally left blank

Comments and Responses

Volume 3E

Communication Log Numbers 14747 - 14798

Each comment form, email, letter or other type of correspondence (collectively referred to as communications) was given an identifying log number when it was received (e.g., 14100). Breaks in the number sequence are a result of communications logged during the comment period that were not comments on the Draft EIS. In some cases, duplicate communications (such as petitions and form letters) were later combined and assigned the same log number. Each communication is divided by subject or issue into individual comments. For example, 14444-2 is comment number 2 of communication 14444. BPA received 662 communications on the Draft EIS and 2,859 comments were identified in these communications.

All comments received on the Draft EIS and BPA's responses to these comments are provided in their entirety in Volume 3 (Volume 3A through 3H). Each page of comments is followed by a page of BPA responses to the comments. Due to the number of comments received, Volume 3 has been divided into eight parts for the purposes of printing and managing electronic file sizes (Volume 3A through 3H). The range of log numbers and page numbers found in each volume is included in Table 1 - Volume Contents for reference.

How to Review Comments and Responses

Communications are ordered consecutively by log number in the report. Please refer to Table 2 in the Introduction of Volume 3 for a list of all communications submitted by each commenter and the page number where the communication can be found in Volume 3A through 3H. If BPA's response to a comment refers back to an earlier response, use Table 1 to find the referenced log number. An online comment response search tool is also available at <http://www.bpa.gov/Projects/Projects/I-5/Pages/Search-Comments.aspx>.

Table 1 - Volume Contents

Log Numbers	Volume	Pages
14093 – 14379	3A	1 - 402
14380 – 14600	3B	403 - 808
14601 – 14701	3C	809 - 1222
14702 – 14746	3D	1223 - 1532
14747 – 14798	3E	1533 - 1862
14799 – 14827	3F	1863 - 2262
14828 – 14843	3G	2263 - 2602
14844 – 14919	3H	2603 - 3004

BPA I-5 Corridor Reinforcement Project Voicemail**Received: 03/23/2013 11:27 AM**

14747-1 | Yeah, I'm just leaving a message on the - I think it's line V on your I-5 corridor project. But the impact it'll have on us out here as a rural landowner and our tree farm. It's going to be substantial; it's going to take a lot of acreage. I'm just against it. The environmental impact will be huge, crossing the streams and whatnot. I'm just against it. My phone number is . Name's Rick. Thanks.

14747-1 Please see the responses to Comments 14097-1, 14328-5, and 14712-2.

B O N N E V I L L E P O W E R A D M I N I S T R A T I O N

BPA's Proposed I-5 Corridor Reinforcement Project
Draft environmental impact statement comment form

Public review of and comment on this draft EIS will continue through March 1, 2013. Comments should be as specific as possible, with references to particular pages, sections and chapters. Additional or clarifying information that should be considered is helpful. Factual corrections are appreciated. BPA staff will review all comments received and respond to them in the final EIS.

Name (will be included with your comment in the final EIS) Duane M. Jungwirth; Ronald C. Jungwirth

Address _____

Please add me to the mailing list

Please remove me from the mailing list

Comments:

14748-1 My Parcel of Timberland, approximately 19.50 Acres, was planted in 1989 and has been owned by me since shortly thereafter. The tree farm is divided by Fir Lane road.

The proposed Transmission line preferred route, travels directly through the lower portion of my property, below Fir Lane road, just north of Tower F42. If the Transmission Line was to shift further south I would lose less timber as I had planned on logging the parcel in 2019 when the trees would be thirty (30) years old and merchantable at that time.

14748-2 After logging I planned on reseedling and also selling the parcel with a homesite in mind. That idea would be destroyed as no one will be interested in the property with the Transmission lines being so close to a planned homesite. I truly hope you plan on compensating

14748-3 me for my losses as what is being contemplated by you is detrimental to me in the extreme.

Sincerely,
Duane M. Jungwirth.

14748-1 Please see the response to Comment 14097-1.

14748-2 Please see the responses to Comments 14097-1, 14328-5, and 14712-2.

14748-3 Please see the response to Comment 14566-9.

14749

DAVID GALLE

03/24/2013

March 24, 2013

David Galle

[address]

To: Bonneville Power Administration

I-5 Corridor Reinforcement Project Administrator

[address]

re: Bonneville Power Administration I-5 Corridor Reinforcement Project Draft Environmental Impact Statement (BPA I-5 DEIS) comments

(submitted electronically via the bpa.gov I-5 project website)

1) Introduction

14749-1

BPA should be commended for its outreach efforts and evaluation of candidate routes for this new transmission line. Since I don't own property near any of the proposed routes, my comments may be considered to be route-neutral. Having said that, as a customer of a public utility served by BPA, I am concerned that the route selection process for this project is thorough and legal, that all the public agencies involved remain accessible to affected property owners throughout the site selection and construction processes, and that the project is properly sited and any local impacts are mitigated to the maximum extent feasible.

2) Clarification of reliability concerns

14749-2

Some additional clarification regarding the necessity of this project in the final EIS might be useful. In order to comply with reliability requirements, transmission networks must remain functional even with the loss of some individual lines due to natural causes, human error or equipment failure. Therefore, what may appear to be the 'overbuilding' of a network is in fact mandated by law. Failure to maintain a reliable network can result in events such as the San Diego area blackout of September 2011, which was triggered by a minor error made by a technician during a routine substation maintenance procedure, and impacted a population of between five and eight million people in the southwestern United States and Baja California, Mexico [footnote 1]

3) Castle Rock vicinity substation site

14749-3

The potential Monahan substation site is properly not selected as the preferred alternative due to two reasons: 1) the potential for nearby forest to become habitat for certain threatened species, including the Northern Spotted Owl (*Strix occidentalis*) and Marbled Murrelet (*Brachyramphus marmoratus*); and

14749-1 BPA believes that public involvement results in better information and allows us to make better-informed decisions. Section 1.6 of the EIS discusses the project's public outreach efforts.

Recommended mitigation measures are included in Chapters 5 through 22. Mitigation measures included as part of the project are listed in Table 3.2, Mitigation Measures Included as Part of the Project.

14749-2 BPA has an obligation to construct new transmission facilities to maintain a safe and reliable transmission system that complies with national reliability standards. Chapter 1 of the EIS provides more details on the reliability concerns underlying the need for the proposed I-5 Project.

14749-3 Comment noted.

- 14749-3 2) the excessive impacts of a large substation on numerous rural properties in the immediate area. The Casey Road site is the superior site also due to its more distant location from other populated areas near Castle Rock.
- 14749-4 That said, it is curious that the Casey Road site is listed as a possible site for only one action alternative, when many if not all of the Baxter Road alternative routes could easily be extended to Casey Road as additional alternatives.
- 14749-5 4) Troutdale vicinity substation site
Given the appropriate recognition of possible impacts on wildlife habitat near the Monahan Creek substation site, it is also curious that no alternative substation sites to Sundial Road are suggested for the Troutdale area, where the proposed new substation would be in close proximity to at least two wild populations of Western Pond Turtles (*Actinemys marmorata*), a species listed as 'vulnerable' by the ICNU [footnote 2]. (On page 18-26 of the DEIS, impacts on the Sundial Road area are predicted to be moderate-to-high for resident turtle populations, even if the site may provide less-than-ideal nesting conditions for the species.) Although wild populations of these turtles may also be found in several other regions of Oregon today, none are known to exist in Washington, where only captive-bred populations survive.
- 14749-6 Whatever mitigation measures may be incorporated in the design and construction of a new large substation in the Sundial Road vicinity, the fact that there are existing electric substation infrastructure and other industrial activities in the area does not diminish the possibility of local impacts of an additional substation (stressor) on this species, particularly regarding the planned filling of eleven acres of wetlands (resulting in potential habitat fragmentation and loss), the possibility of accidental spillage of hazardous materials, and the possibility of herbicides being used for vegetation control. These concerns are not trivial, as *Actinemys marmorata* is already rare or extinct in much of its former wild range, which at one time extended north into British Columbia.

(The first sentence of the Western Pond Turtle section on page 18-24 of the DEIS refers to Section 18.2.2.4, which apparently doesn't exist.)
- 14749-7 5) Agreements between BPA and Washington Department of Natural Resources
BPA and the Washington Department of Natural Resources (WDNR) are to be commended for the creation of two documents ('Mitigation Agreement for McNary-John Day and Other Transmission Line Rights-of-Way' dated June 3, 2010; and 'Memorandum of Agreement between the Washington State Department of Natural Resources and the Bonneville Power Administration, Department of Energy for Managing Impacts to State Lands from BPA Transmission Line and Access Road Easements' dated March 16, 2012) which outline the responsibilities of each agency should BPA wish to construct a transmission line across any public land managed by WDNR. The DEIS refers to these documents only by reference. Since these documents delineate in exhaustive detail what measures nearby landowners can expect to be taken regarding such a transmission line (from initial planning and construction to management

- 14749-4 Comment noted.
- 14749-5 The location of the proposed substation at the Sundial site was based on the availability of industrial land, proximity to existing right-of-way and other transmission facilities, and proximity to an existing transmission crossing of the Columbia River. As discussed in the EIS, this substation site is located in an existing industrial park under development by the Port of Portland. After publication of the Draft EIS, BPA identified an additional option for the substation within the industrial park. BPA's preferred location for the substation is now Lot 11 on Port of Portland property. The Final EIS has been updated to reflect this change.
- 14749-6 Please see the response to Comment 14480-3. Section heading 18.2.2.4 has been corrected to 18.2.2.3, Sundial Substation.
- 14749-7 BPA has included the Statewide MOA in Appendix A. If a formal mitigation agreement for this project is developed and signed with WDNR before distribution of the Final EIS, BPA will also include that document in Appendix A.

14749-7 | actions in perpetuity), it would have been beneficial to the general public to include at least the latter document as an appendix to the BPA I-5 DEIS.

14749-8 | Lacking that inclusion, I made simultaneous public disclosure requests to BPA and WDNR in December 2012 for copies of both agreements. WDNR delivered the documents to me in about a week's time. BPA only acknowledged my request and never fulfilled it.

6) General Comments

14749-9 | By now, it should come as no surprise to BPA that a new transmission line is not a welcome addition to urban, suburban, or rural areas between Troutdale and Castle Rock, or in many other parts of the BPA region. There are people who enjoy forests and other natural areas unspoiled by transmission line clearcuts for what they are, even if those areas are not involved in timber production or designated as

14749-10 | recreation sites. Visual impacts to neighboring property owners are another serious concern wherever the lines may be sited. Furthermore, though causal links between Electromagnetic Fields (EMFs) and various human health problems may be debatable today, the possibility remains that EMFs indeed have a deleterious effect on the environment and residents who live near the lines, which will only be proven or excluded with the passage of time.

14749-11 | That said, the reinforcement of the transmission network in this part of BPA's region is necessary and will happen, and some locales will be affected more than others. Throughout the public process to date, BPA has made assurances to the general public that it will be available to and work with local residents and other affected entities during all planning and construction phases of the project. As final decisions are made in the near future regarding line routes, tower locations, etc, it is imperative that the agency lives up to its stated commitment.

Thanks for your interest.

/s/ David Galle

[footnote 1]

Federal Energy Regulatory Commission and North American Electric Reliability Corporation,

http://www.nerc.com/files/AZOutage_Report_01MAY12.pdf , page 1.

[footnote 2]

International Union for Conservation of Nature and Natural Resources,

<http://www.iucnredlist.org/details/summary/4969/0>

14749-8 BPA reviewed the list of Freedom of Information Act requests for this project and did not find a request submitted by the commenter. BPA also reviewed the project database and did not find a request for these documents. BPA regrets if this request was somehow overlooked by the project team. The commenter did receive the documents from WDNR. Please see the response to Comment 14749-7.

14749-9 Comment noted.

14749-10 Please see the response to Comment 14328-6.

14749-11 Please see the response to Comment 14749-1.

From: noreply@bpa.gov
Sent: Saturday, March 23, 2013 8:07 PM
Subject: BPA I5 Comment Submission Confirmation

Thank you for submitting your comments on the Bonneville Power Administration's draft environmental impact statement (EIS) for the I-5 Corridor Reinforcement Project. All comments submitted between November 13, 2013 and noon on March 25, 2013 will be responded to in the final EIS, which is expected in 2014.

A copy of your information, as submitted using our online form, is included below for your records. If you provided your contact information and submitted a question we can answer at this time, you will receive a response. Your contact information will also be added to our project mailing list. All comments including names will be processed and then posted on BPA's website at www.bpa.gov/goto/i-5

Sincerely,
Bonneville Power Administration

Name: Arvid L. Anderson
Organization:
E-mail:
Phone:
Address:

Group type: Business

Please ADD me to the mailing list.

Comment:

14750-1

BAD IDEA TO BUILD POWER LINES IN OUR COMMUNITY. I am the owner of Anderson Lodge. When considering the route for the I-5 corridor project I would like you to be aware of the impact it will have on our business, Anderson Lodge, located in the Yale Valley, near Ariel and Cougar, Washington. Anderson Lodge is the largest business in the area and if the proposed route runs through our property, it would be devastating. We employ many people in the community, have thousands of guests visit our lodge every year and our guests often utilize the local businesses and visit our recreational facilities in the region. If the line intersected the property of Anderson Lodge, it would not only impact our business but also the local employees, local businesses and the already depressed economy of the area. Anderson Lodge has been in operation for 27 years and hosts retreats, seminars, festivals, church retreats, family reunions, and school workshops. Our biggest draw is for weddings. We have 2 lodges located on Highway 503, with acreage totaling over 90 acres. Our guests spend anywhere between 1 and 7 nights in our facilities. We offer quality lodging and catering. Visitors to our lodges are here for the tranquility, the secluded location and most of all the natural setting. We have strived to maintain our forest around the lodge. The wedding sites capitalize on the spectacular views of the valley and mountains. The deciding factor for our clients to book our site is always the natural beauty. Our slogan is: "Where natural beauty is the icing on the cake!" If we were to have the buzzing transmission lines and towers on our property it would adversely affect our natural setting and I know our clients would no longer choose our property for their event. In these tough economic times, we have struggled to keep our business alive. We have lost several

- 14750-1 Please see the response to Comment 14097-1. The commenter's property is northeast of Segment 26. BPA's Preferred Alternative does not include Segment 26.

- 14750
- 14750-1 businesses in the community already. During the recession, we have seen a drop in our rentals, but have managed to stay open. With the addition of transmission towers, I know our number of clients would drop. We could no longer boast of natural beauty as nature walks, wedding photos and solitude would be impacted. I doubt if we could stay open with a decrease in bookings. That would mean loss of jobs for our employees, loss of revenue for local businesses like the Lone Fir Resort and less people that would be visiting our recreational sites in the area. Not to mention our means of making a living would no longer be possible. To give you an idea of the impact and effect we have on the community of Yale, I would like to provide you with some numbers of guests that utilize Anderson Lodge every year. Last year, we had 48 weddings with approximately 6,850 guests in attendance, 48 church retreats with approximately 2,000 guests, 15 family reunions with about 800 guests, 18 educational retreats with about 1,000 students and staff in attendance, and 7 business seminars with about 350 people present. This is an impressive amount of visitors we have brought to our wonderful Yale Valley! We have many returning guests every year and they all rave about the serenity and beauty of our wonderful Yale Valley. Our website illustrates the picturesque scenery and transmission towers would hinder this view tremendously. We have groomed many hiking trails on our property. Hiking is a popular activity for all our clients whether it is a reunion, a retreat or a wedding. There are many times that guests have marveled at the natural setting with the ferns and the tall fir trees. Often they are surprised by deer, grouse, fox, and magnificent elk. This is what our guests come to Anderson Lodge for. We provide an experience unlike their busy urban lives. The scenery, the wildlife, the natural uncultivated setting is so good for the soul. Buzzing transmission towers would not only be a distraction, but would ruin our tranquility that we have strived to maintain all these years. Through no fault of our own, we would have the natural setting on our property be negatively impacted. I urge you to take into consideration the devastating effect such a radical project would have, if these transmission lines and towers were to be on our property. Please take a moment to view our website to see the many photos of our gorgeous, natural beauty we have on the Anderson Lodge property. www.andersonlodge.com. I hope that you now realize that a transmission line running through our property would be an automatic death sentence to us and to the community. Our sole existence relies on our natural setting. After 27 years of talking to clients, giving tours of our facility and having feedback from clientele, I know without a doubt that it is our picturesque beauty of the Yale Valley that is our main appeal. Transmission towers would definitely deter clients from using Anderson Lodge. Please consider the devastating impact power lines would have on our business and our community and place the lines in an unpopulated area. Arvid Anderson Anderson Lodge
- 14750-2
- 14750-3
- 14750-4

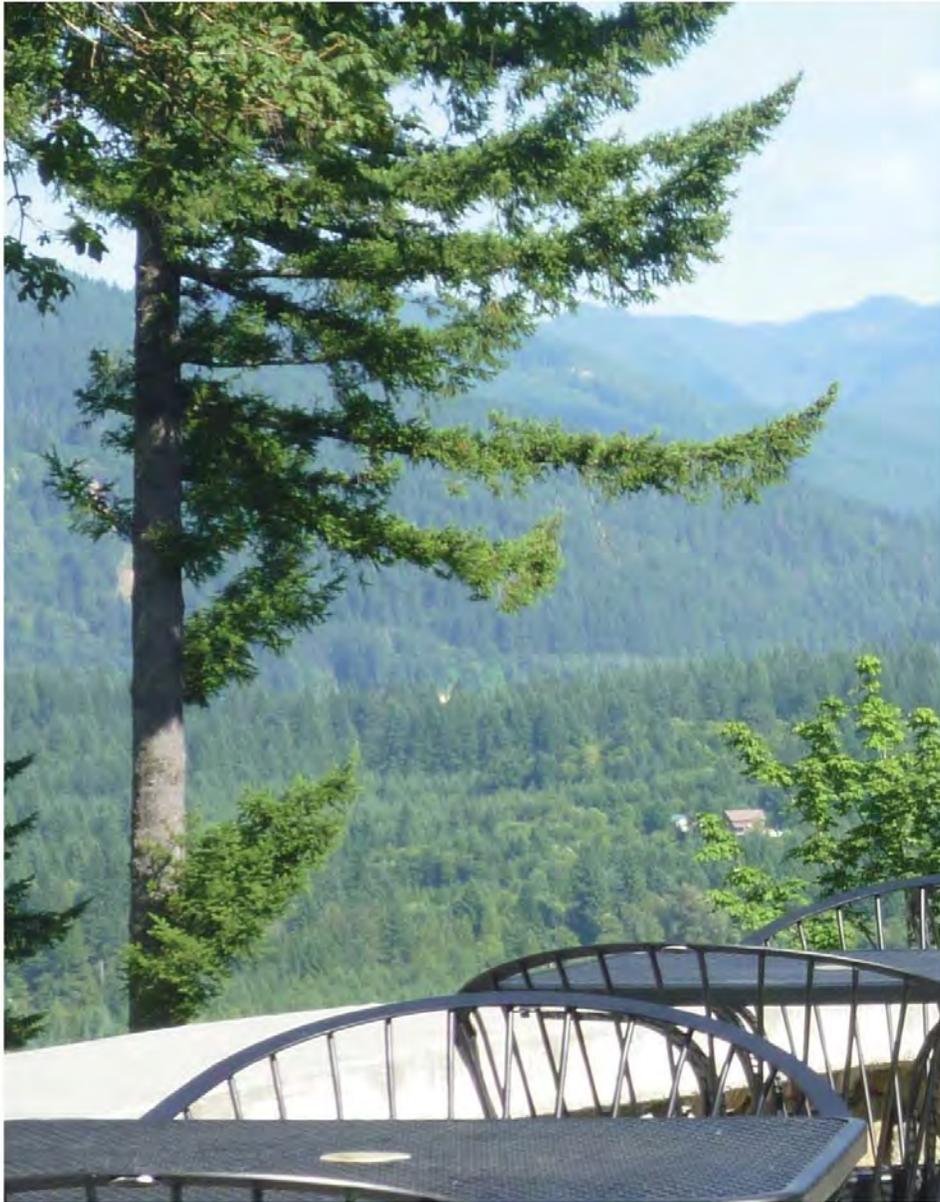
[Attachment](#)

14750-2 Please see the response to Comment 14750-1.

14750-3 Please see the response to Comment 14750-1.

14750-4 Please see the response to Comment 14750-1.

14750



Page 3 of 3

[http://782ce6104ed50a425e90-fe47783edea451e99a267338711de3cf.r31.cfl.rackodn.com/...](http://782ce6104ed50a425e90-fe47783edea451e99a267338711de3cf.r31.cfl.rackodn.com/) 3/26/2013

This page intentionally left blank.

14751
 MERLE L MOORE
 03/25/2013
 March 25, 2013

Draft Environmental Impact Statement comments

14751-1

It is still very unclear to me as to why the West Alternative has not been chosen as the BPA's preferred route. After all, it is your existing easement, bought and paid for many, many years ago. What you attempt to explain in the Draft Environmental Impact Statement, but fail to make a case for, just makes it clearer than ever that the West Alternative would be the obvious choice. By your own estimate, the West Alternative would save 74 million dollars. That alone should be reason enough, and if the private sector were considering building this proposed project, rather than an agency of the Federal Government, it would be reason enough.

The impact to the environment would be greatly minimized by using the West alternative.

I have read the eight page report mailed to the BPA and the US Army Corps of Engineers by Leyda Consulting, Inc., on February 27, 2013.

It is my opinion that in regard to environmental impacts, Joseph D. Leyda, MA, Professional Wetland Scientist and Certified Ecologist, has taken your sparsely worded analysis and explained in full detail why using the West Alternative is the most beneficial route.

Some examples include: ..."clustering of the proposed power lines alongside of existing power lines will concentrate the environmental impacts and avoid sprawling landscape scale impacts."

14751-2

"The existing power lines have already created negative environmental consequences. While any new power lines will result in new impacts, this is a case where cumulative impacts will likely be less if the project is located closer to existing disturbed areas."

"Routing the power lines through the more pristine foothills would create sprawling impacts closer to more wild areas to the east, as opposed to using the existing routes that are closer to developed (and more disturbed) areas."

"On a landscape scale, these impacts have already been sustained along the exiting power line routes. For example, the new power lines will likely result in creating areas dominated by exotic or invasive plants such as Himalayan blackberry and reed canary grass, which are present in places along the existing routes. Introducing those plants to the more pristine foothills would create a sprawling invasive effect, whereas locating them near currently infested areas along the existing routes would not."

Mr. Leyda's report is compelling, disturbing, and quite the eye opener. His review of your Wetland analysis and Vegetation clearing should make you ashamed of yourselves.

14751-1 Please see the response to Comment 14282-1.

14751-2 Comment noted.

- 14751-2 For some reason, I thought the BPA was very experienced in building transmission upgrade projects, but what I learned was you use a lot of vague language and take a lot of short cuts. All part of “get it done fast and meet all the schedules” I guess.
- The Pearl Alternative (Oregon) was not given a thorough Environmental Assessment as required under the National Environmental Policy Act.
- In a Freedom of Information Act (FOIA) request finally received by a citizen in March of 2010, you (BPA) state, “Since at least 2002, two main corridors have been under consideration for a potential I-5 Corridor reinforcement project...”
- The two corridors were the Pearl Corridor, and the Troutdale Corridor.
- It is interesting to note that in 2009, just days before the BPA announced this project to the Public the decision was made to not carry the Pearl alternatives through a full Environmental Assessment, leaving only the study of the Troutdale alternatives on the table.
- The above mentioned FOIA sites many reasons why the BPA did not want to go public with the Pearl alternatives alongside the Troutdale alternatives.
- 14751-3 Examples are: “High risk of not being able to meet schedule.” (Secretary of Energy Chu had already told the BPA Administrator he wanted this project “...on aggressive schedules, with the expectation that those schedule be met.”)
- “...It’s worth noting too that some of the communities on the west side (Pearl) have organized opposition to the LNG pipeline.”
- “...the project siting team believes that further consideration of the Pearl corridor would only unnecessarily infuriate several thousand additional land owners who will be put in a state of limbo for 3+ years with regards to the value of their property, not knowing whether to invest in their homes or sell, etc. when we feel it is highly unlikely we would build to Pearl. BPA should not carry Pearl through scoping and then drop it because that will mobilize the Troutdale option land owners, to, in their eyes, the apparent feasibility of building to Pearl instead, which would likely result in a challenge and may force us to bring Pearl back in at some point during the 3 years of scheduled NEPA and a much longer project schedule.” My comment here is, again with the schedule. Secretary Chu seems to have made quite an impression on the Administrator and his team.
- 14751-4 “...7,750 associated landowners have been identified for the Troutdale corridor.” “...3,100 landowners associated landowners have been identified for the Pearl.” My question here is, since the Pearl corridor would impact less than half the number of landowners, why did BPA drop it?
- BPA states concerns regarding a new river crossing at the Columbia River in Longview “requiring very tall towers up to 450 feet tall”. The existing towers crossing the Columbia in Longview are OVER 450 feet tall, so what is the concern?

- 14751-3 Please see the response to Comment 14596-3.
- 14751-4 Please see the response to Comment 14443-1 regarding the elimination of the Pearl Routes from detailed study in the EIS. Please see the response to Comment 14472-3 concerning how BPA identified its Preferred Alternative.

- “...all Pearl routing alternatives would need to go through some residential areas,” “would go through managed timber lands,” “would go near or through established wildlife areas and near or on private airstrips” My question here is, are those not the same scenarios facing the Troutdale alternatives?
- In the decision to only study the Troutdale alternatives, BPA stated that “The Pearl alternatives do not offer a route on existing right of way, whereas the Troutdale plan does.”
- In that case, then why did the BPA not choose the existing right-of- way on the Troutdale as its preferred option, that being the West Alternative?
- 14751-4 The BPA is apparently determined to waste millions of dollars, and hundreds of acres of private land will be invaded, taken, devalued, for this transmission upgrade. If the BPA persists in this then they also need to consider the Pearl alternatives to find the route least damaging to private property owners and the environment.
- Again, in the above mentioned FOIA, the BPA wrote “a new line in either corridor (Pearl or Troutdale) would fully meet our electrical needs” and “proposing and thoroughly analyzing up to 88 segments (the Pearl and Troutdale alternatives) will send a clear message that we considered all possible routes and have selected the very best alternative.”
- Well, the BPA has not done that, at least not yet. The BPA must perform a complete environmental review and analysis of the Pearl alternatives.
- 14751-5 The US Army Corps of Engineers must issue a permit for this project, but so far the BPA has only requested to permit the Central Alternative, Option 1. The BPA chose the Troutdale alternatives over the Pearl alternatives because Troutdale has an existing right-of-way, so, that being the case, I demand the BPA request a permit from the US Army Corps of Engineers for its existing right-of-way, the West Alternative.
- 14751-6 All of these issues must be thoroughly analyzed, both quantitatively and qualitatively.
- Sincerely,
- Merle L. Moore
- [address]
- Central Alternative Option 3

- 14751-5 Section 27.10, Clean Water Act, describes how BPA prepared a Section 404(b)(1) alternatives analysis to provide the Corps with the necessary information about the availability of practicable alternatives to the proposed project and to identify the least environmentally damaging practicable alternative. Because the Central Alternative using Central Option 1 is BPA's Preferred Alternative, the Joint Aquatic Resources Application submitted to the Corps included information on this alternative and not the West Alternative.
- 14751-6 Please see the response to Comment 14596-1.

14752

RAYMOND B RICHARDS

03/25/2013

I-5 Corridor Reinforcement Project

[address]

March 24, 2013

14752-1 Bonneville Power Administration intends to build a new 500 kV transmission corridor, known as the I-5 Corridor Reinforcement Project, through Clark and Cowlitz Counties. BPA's choice of the Central Alternative as its preferred alternative defies logic and ignores the facts. The goal in choosing a route should be to minimize the impact this project will have on private landowners, the environment and the scenic beauty of our community. The West Alternative is the route that accomplishes this goal.

The issues are:

14752-2 1. Landowner Rights: According to Table 5-2 of the DEIS, BPA would need to acquire 127 acres of land along EDGES of its existing right-of-way, the West Alternative. In contrast, on the Central Alternative, BPA would need to acquire 1287 acres of new easement, INVADING and destroying property as its corridor passes THROUGH new land. A quote from S.3.1.3 sums it up quite well: "Because the West Alternative would occupy 98 percent existing right-of-way and a larger proportion of existing access roads, it would have the least overall impact on landowners of the action alternatives."

14752-3 The following is a personal example of the unwarranted destruction the "preferred alternative" would cause. Route segment "V" on the Central Alternative would cut through my family's property, crossing the East Fork Lewis River a couple hundred feet downstream and within sight from our house, bisecting 200 acres of our forest land. This property is currently being managed for timber production. The effect of a new power corridor would be to render much of our land unusable for this pur-pose. Access roads would take additional land. Our property is also legally segmented for potential homesites which would be devalued by the invasion of a new corridor.

14752-4 2. Cost: According to BPA's estimate, Table 4-9, it will cost 74 million more dollars to build on the Central Alternative than on the existing corridor, the West Alternative. This is an irresponsible waste of ratepayers' dollars.

14752-5 3. Environmental Impact: There is minimal damage to the environment by using the BPA-owned West Alternative, an existing transmission corridor with a 70-year history. As stated in Chapter 19.2.4 regarding the West Alternative, "Because of the exist-ing degree of impairment and disconnection of floodplains crossed by this alternative, impacts...would be low." According to Chapter 19.2.5 regarding the Central Alternative, "Riparian vegetation would be cleared at 68 forested crossings of fish-bearing streams...Among the action alternatives, this would be the greatest number of forested crossings...impacts to loss of shade function would be high."

- 14752-1 Please see the response to Comment 14282-1.
- 14752-2 Comment noted.
- 14752-3 Comment noted.
- 14752-4 Comment noted.
- 14752-5 The EIS summarizes impacts to fish resources in Section 19.2, Environmental Consequences. Table 25 in Appendix K integrates findings of the hydrology, sediment, riparian, and floodplain impact analyses to rate the loss of fish productivity associated with potential habitat impacts. The West Alternative and options rank as having the lowest fish impacts. This alternative crosses a high number of relatively high-value streams but, as the commenter notes, many stream crossings occur at locations where conditions in the right-of-way are already altered. The Central Alternative and options rank intermediate. This alternative crosses the greatest number of forested crossings, although, not as many are highly-productive anadromous fish-bearing streams. Subsequently, impacts to fish productivity are not as great.

- 14752-6 Another personal example: Route segment "V" crosses the East Fork Lewis River on our property a few hundred feet upstream from the confluence with Rock Creek, its largest tributary. The East Fork is Clark County's largest remaining free-flowing river.
- 14752-6 This portion of the river is preserved for wild fish. I often see bald eagles flying up and down this river. We have a 101 foot ri-parian zone on both sides of the river where no tree cutting is allowed. I am bound by and support this legal restriction. BPA, however, would make a permanent clear-cut to river's edge on both sides.
- 14752-7 4. Visual Impacts: BPA's ridiculously inadequate attempt at comparing visual impacts on the four alternatives is demonstrated in Chapter 7 of the DEIS by figures 7-1 through 7-9 which show pairs of photographs of the existing transmission corridor at various locations. The first of each pair is how the site appears now. The second is a simulation of how it would appear with an additional power line. This is good demonstration showing that not much changes when a power line is added to an existing corridor. However, BPA then devotes only 2 pairs of additional photos, Figures 7-10 and 7-1,1 to address visual impacts on all of the new routes! A restroom and a muddy road are apparently what BPA considers to be our typical rural views. Nowhere to be found are the before and after shots of views toward Mount St. Helens, Tum Tum Mountain, Silver Star Mountain, Mount Adams or Mt. Hood. Also absent are any before and after shots of any of the 68 forested fish-bearing river and stream crossings where the riparian zones are permanently ruined by ugly 150 foot wide clear-cuts to the shorelines. One of these crossings is on my family's property on the East Fork Lewis River.
- 14752-8 I ask BPA to recognize these facts concerning the impact a new transmission corridor would have on rural homeowners, private land and landowner rights, the environment, the scenic areas that would be permanently damaged, and the productive timberland that would be forever lost. I ask you to choose the route that takes the least amount of new land. Choose the West Alternative.
- Sincerely,
- Ray Richards
- [address]
- [phone number]

14752-6 Please see the response to Comment 14336-2. Similar to landowners in Washington under Forest Practices, as a utility, BPA is guided by utility practice on the amount and types of vegetation allowed to remain within and along the transmission line right-of-way. In general, all tall growing vegetation would need to be removed for safe operation of the line. BPA has studied the engineering design for stream crossings on this project and has determined which crossings can benefit from a design adjustment to allow more lower-growing vegetation to remain during initial construction clearing and long-term maintenance clearing.

14752-7 Please see the response to Comment 14171-10 for further explanation of the methodology used in the visual assessment.

Photographs and simulations are included in the FEIS for the Castle Rock, Merwin Lake and Camas / Washougal area (see FEIS Figures 7-7 to 7-11, 7-15 to 7-17 and 7-19)

14752-8 Comment noted.

LEYDA CONSULTING, INC.

14753

February 27, 2013

Bonneville Power Administration
I-5 Corridor Reinforcement Project
P.O. Box 9250
Portland, OR 97207

**RE: A Better Way for BPA Comments on Ecological Impacts and Methods
BPA I-5 Corridor Reinforcement Project Draft Environmental Impact Statement**

To the Bonneville Power Administration and US Army Corps of Engineers:

This memorandum provides comments for the citizen group A Better Way for BPA () on the Bonneville Power Administration's I-5 Corridor Reinforcement Project Draft Environmental Impact Statement (DEIS) (November 2012). In preparation for these comments, Leyda Consulting, Inc. (LCI) reviewed portions of the DEIS, including Appendix C (Photomap Book), Chapter 16 (Wetlands), Chapter 17 (Vegetation), Appendix L, and other sections and documents as cited.

I. Wetland Determination Methodology

BPA used a GIS analysis (aerial imagery interpretation, databases [Herrera 2010/2012], NAIP 2009 imagery, LIDAR 2011 imagery, USFWS 2010 National Wetland Inventory, NRCS 2009 hydric soils, USGS 1995 Topography, and WDNR 2006 hydrography) to identify the wetlands in the project areas, and except for a few locations, did not conduct on-site wetland delineations (DEIS, p. 16-1). Wetland delineation is the process of identifying and marking a wetland-upland boundary (putting a line around a wetland). Wetland delineation is accomplished by making multiple wetland determinations at different points along transects, and marking the place in the landscape between a positive determination (in a wetland) and a negative determination (in an upland). The wetland-upland determinations are usually within a few feet of each other, and data is recorded at those locations to prove the wetland's boundary. Thus, wetland delineations depend on the resolution and accuracy of multiple wetland determinations. The 1987 Delineation Manual (the current manual with regional supplements for state and federal projects) does have a procedure for routine wetland determinations without visiting the site (Part IV, Section D, Subsection 1). However, the use of this level of wetland determination is limited by the sufficiency of the information available to make the determination (Part IV, Section C, Paragraph 57).

The available information used by BPA to delineate the wetlands in the project corridors is not sufficient to use the methods in Subsection 1 – Onsite Inspection Unnecessary. “This level may be employed when the information already obtained (Section B) is sufficient for making a determination for the entire project area” (Part IV, Section C, Paragraph 57a). The **entire project area** covers many different types of soils, vegetation and hydrology. This method may be used appropriately for only for monotypic wetland areas where marked differences in the three wetland parameters can be easily distinguished from the off-site information (see steps

14753-1

14753-1 In the Draft EIS, Chapter 16, Wetlands, describes how wetland delineations were conducted at Sundial, Casey Road, and Baxter Road substation sites while other wetlands were analyzed using desktop methods as that was all the information available to BPA at the time the Draft EIS was developed and published. Since that time, wetland delineations and functional assessments that meet Corps and Ecology requirements have been completed on the Preferred Alternative. Data that was available during the development and publication of the Final EIS has been incorporated into the document. This data has also been used for the Section 404 permit required for this project under the Clean Water Act.

BPA I-5 CORRIDOR REINFORCEMENT PROJECT – ECOLOGICAL IMPACTS AND METHODS

below). For example, the edge of a marsh with a distinct, uniform vegetation pattern, well-described topography, and known water elevations would be a good area to use this method. The complexity of the BPA routes largely precludes the use of this method because of the variability of the conditions along the routes.

Wetland determination (and hence delineation) depends on the presence of the three parameters of hydrophytic vegetation, hydric soil, and wetland hydrology under normal circumstances. BPA's wetland determination by GIS does not provide the means to accurately determine the presence of these three parameters. The 1987 manual states,

“STEP 2 - Determine whether hydrophytic vegetation is present. Examine the vegetation data and list on DATA FORM 1 the dominant plant species found in each vegetation layer of each community type. NOTE: A separate DATA FORM 1 will be required for each community type. Record the indicator status for each dominant species (Appendix C, Section 1 or 2). When more than 50 percent of the dominant species in a plant community have an indicator status of OBL, FACW, and/or FAC, hydrophytic vegetation is present. If one or more plant communities comprise hydrophytic vegetation, PROCEED TO STEP 3. If none of the plant communities comprise hydrophytic vegetation, none of the area is a wetland. Complete the vegetation section for each DATA FORM 1.” (Part IV, Section D, Subsection 1, Paragraph 62).

14753-1 The vegetation cannot be identified from the offsite sources to reliably classify it as hydrophytic, because the GIS analysis cannot identify plants to the species level to determine the wetland indicator status (FAC-OBL).

The wetland hydrology parameter cannot be determined for the entire project area, because portions in the developed areas have been hydrologically altered, because the vegetation cannot be classified over the entire project area, and because there is no “documented evidence that the area is periodically inundated or has saturated soils” (Part IV, Section D, Subsection 1, Paragraph 62, Step 3). Therefore, the hydrology cannot be described over the entire project area, so the wetland hydrology parameter cannot be determined as present or absent.

The presence of hydric soil cannot be determined for the entire project area, because the BPA determination method relied on mapped soil types. The 1987 manual states, “If all community types have hydric soils, the entire project area has hydric soils. (CAUTION: If the soil series description makes reference to inclusions of other soil types, data must be field verified). Any portion of the area that lacks hydric soils is a nonwetland” (Part IV, Section D, Subsection 1, Paragraph 62, Step 5). The BPA project area crosses many different soil types, and there are likely many units with inclusions. Therefore, all soils in the BPA project area must be field-verified to determine hydric status if inclusions are present in the soil descriptions.

In addition to the deviations from the 1987 manual, the GIS-based wetland determination method is extremely limited in the ability to locate wetland hillside seeps in the forest. These wetlands occur frequently in the foothills, and result from groundwater daylighting on the side of a slope which produces saturated soils. In LCI's experience, these wetlands are seldom mapped

This page intentionally left blank.

BPA I-5 CORRIDOR REINFORCEMENT PROJECT – ECOLOGICAL IMPACTS AND METHODS

14753

by wetland inventories, and may be found in areas where the soils are mapped as non-hydric. They are important habitat features, and may increase the number of wetlands along the more mountainous routes in the foothills. It is also not likely that the GIS analysis located small, isolated, vernal pool wetlands, which may be less than one foot deep. These wetlands also occur in the forest where remote sensing is more difficult.

Conclusions: the BPA wetland determination by GIS is flawed, and does not meet the requirements of the 1987 Manual for Section D, Subsection 1 – Onsite Inspection Unnecessary. LCI recommends that BPA field-delineate and survey all wetlands in the proposed project area to determine the true area of wetland fill during the planning process. This is typical for development in Washington. In LCI's experience, the Corps of Engineers (COE) and Washington Department of Ecology (WDOE) both require that complete wetland delineations be performed on the entire project area for residential, commercial, and industrial projects. The size of the project should not eclipse the need for proper wetland determination and delineation during the EIS process, and BPA should be held to the same standards as private developers to protect environmental resources. To maintain these standards, BPA should survey every mile of its proposed routes to determine if a wetland actually exists in the potential project area so that the decision-maker truly knows the extent of wetland impacts by alternative. This would ensure, regardless of the project size, that the need for adequate data and analysis is met.

II. Wetland Rating Methodology

14753-1

The DEIS used a “modified version of the Washington State Department of Ecology’s rating system as a foundation” for qualitatively rating the wetlands in the project area (p. 16-3). The DEIS-modified version relies on a Geographic Information System (GIS) automatic scoring, a manual scoring, and omission of some questions. No site visits were performed on the majority of the wetlands that were rated: “Several questions could not be answered without visiting the wetland and were not included on the modified rating form developed for this project” (Appendix L, p. 8; DEIS, p. 16-3).

This is problematic for several reasons. At least one of the questions that were answered automatically, Question D.1.2, should be evaluated in the field. The NRCS soil descriptions for a typical profile can vary substantially from the actual profile, especially with regard to texture. This question is worth four points, which heavily weights the scores. Basing the answer on published soil types, which may contain inclusions of other soils and textures, is inaccurate. Most soil type descriptions do contain inclusions and a frequency of occurrence within the main unit.

The BPA-modified wetland rating system is not the same as the actual Washington State Wetland Rating System – it is something else. The actual rating system is based on research, testing, and statistical analysis; the BPA modified system is not. Therefore, all the BPA-generated rating scores should not be correlated or considered as real wetland rating scores. The BPA scores give a skewed comparison between wetlands compared to the full Washington State Wetland Rating System and is of questionable value in the decision making process.

This page intentionally left blank.

 BPA I-5 CORRIDOR REINFORCEMENT PROJECT – ECOLOGICAL IMPACTS AND METHODS

The Washington Wetland Rating System “should be used only on vegetated wetlands as defined using the delineation procedures in WAC 173-22-80.”¹ The delineation procedures in WAC 173-22-80 have been repealed,² and replaced with the U.S. Army Corps of Engineers 1987 Delineation Manual³ and Regional Supplements.⁴

The wetland boundaries were established by GIS analysis and not by field delineation (DEIS, p. 16-1), except for the Sundial, Casey Road, and Baxter Road substation sites, which were delineated. Since the GIS-based wetland determinations do not meet the standards of the 1987 manual (see *supra* Section I. **Wetland Determination Methodology**), the wetland rating scores are similarly invalid. Because the wetlands were not delineated, the Washington State Wetland Rating system cannot be used, according to the text of the rating system guidebook.

Field visits are required to rate wetlands under the Washington State Wetland Rating System. In fact, multiple site visits may be required. The rating system manual states, “Larger sites with dense brush may involve strenuous effort... In some cases, however, it may be necessary to visit the wetland more than once. Some of the questions cannot be answered if the ground is covered with snow or the surface water is frozen. If this is the case at the time a wetland is being rated, it may be necessary to revisit the site later” (p. 11-12). Since no field visits were conducted, the wetland rating scores are not accurate, and should be discarded.

Conclusions: The wetland rating scores performed by BPA are invalid because they are not based on wetland delineations required by the wetland rating manual and because the rating methodology was modified. While it may be easier and cheaper to use less accurate methods to determine wetland ratings, these less accurate methods obscure the truth and create a false basis for environmental decision making. LCI recommends that the *real* Washington State Wetland Rating System be used for BPA’s proposed project, based on field observations and delineations, and that complete functional assessments be conducted to illuminate the actual impacts from the proposed routes.

14753-1

¹ Hruby, T. 2004. *Washington State wetland rating system for western Washington – Revised*. Washington State Department of Ecology Publication # 04-06-025. Page 2.

² Repealed by WSR 11-05-064 (Order 10-07), filed 2/11/11, effective 3/14/11. Announced online by WDOE at <http://www.ecy.wa.gov/programs/sea/wetlands/delineation.html>

³ Environmental Laboratory. *Corps of Engineers Wetlands Delineation Manual*. Wetlands Research Program Technical Report Y-87-1 (on-line edition). 1987.

⁴ U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

This page intentionally left blank.

BPA I-5 CORRIDOR REINFORCEMENT PROJECT – ECOLOGICAL IMPACTS AND METHODS

III. Further Concerns

- 14753-2
1. The need for widespread construction of access roads increases the ecological impacts. The existing power lines currently have access. This suggests that if the proposed power lines were located close to the existing lines, then few or no new access impacts would be required, since the existing access routes could be used. However, if some new access roads were needed along the existing routes for the additional lines, then any new roads constructed there would be twice as useful, because they would service both sets of power lines. New road construction on any of the proposed routes should be limited to upland areas of minimal habitat value.
- 14753-3
2. A more accurate ecological study should be performed on the proposed routes, including the Oregon route (the “Pearl Route”) that is not considered here. Avoiding environmental impacts should take priority over ease of permitting the project. It may be that the Pearl Route produces fewer ecological impacts than the eastern route through the foothills. All the proposed routes involve crossing the Columbia River. If the Columbia River crossing location along the Pearl Route is a monotypic stand of reed canarygrass (*Phalaris arundinacea*), it may constitute less of an impact than through the pristine forest of the foothills, which may have higher ecological diversity.
 3. The clustering of the proposed power lines alongside of existing power lines will concentrate the environmental impacts and avoid sprawling landscape-scale impacts. The existing power lines have already created negative environmental consequences. While any new power lines will result in new impacts, this is a case where cumulative impacts will likely be less if the project is located closer to existing disturbed areas. Routing the power lines through the more pristine foothills would create sprawling impacts closer to more wild areas to the east, as opposed to using the existing routes that are closer to developed (and more disturbed) areas. On a landscape scale, these impacts have already been sustained along the existing power line routes. For example, the new power lines will likely result in creating areas dominated by exotic or invasive plants such as Himalayan blackberry and reed canarygrass, which are present in places along the existing routes. Introducing those plants to the more pristine foothills would create a sprawling invasive effect, whereas locating them near currently infested areas along the existing routes would not. An analogy to this reasoning is found in civil planning at the state level. The Washington Growth Management Act requires concentrating population growth in cities in order to preserve the rural character of the countryside and prevent sprawl. By similarly concentrating impacts, more wild areas can be spared permanent alteration to maintain their ecological integrity.
 4. The analysis of vegetation clearing in the wetlands and riparian areas appears to be contradictory. “Most cleared forested wetland would be converted to low-growing scrub-scrub wetland. ...a high impact would occur because habitat would be removed and hydrology could be altered...” (16.2.4 West Alternative) However, 19.2.4 (West Alternative) states, “Overall, there would be little decrease in the mature vegetation cover...” “...long-term changes in watershed conditions and functions would be minor...”

14753-2 Please see the response to Comment 14119-2. Most of the access roads proposed for the Preferred Alternative are existing roads that would be improved or reconstructed. Both new and existing access roads cross upland and riparian habitat. The interactive map on the project website displays this information. All stream crossings would use bridges or fish-friendly culverts.

14753-3 Please see the responses to Comments 14110-1, 14377-5, and 14753-1.

Context is important when comparing the text in Chapters 16 and 19. The quoted text the commenter selected from Chapter 19 describes a conclusion made to hydrologic functions with ultimate impacts on fish. The conclusion is made in the context of a large watershed area of about 161,000 acres. In the context of such a large watershed area, long-term changes would be minor. In Chapter 16, the quoted text refers to an analysis of specific wetland areas and the local and immediate high impacts to those wetlands and the hydrologic function they provide. This discussion is not determining impacts within the entire watershed.

BPA I-5 CORRIDOR REINFORCEMENT PROJECT – ECOLOGICAL IMPACTS AND METHODS

Also, 16.2.4 (West Alternative) states, "Vegetation removal in scrub-shrub wetlands... would occur causing a high impact." As opposed to 19.2.4 (West Alternative), which says, "the West Alternative... crosses floodplains that are already greatly affected by existing agricultural and residential uses that have caused widespread clearing, road construction, ditching, filling, and grading. "Because of the existing degree of impairment and disconnection of floodplains crossed by this alternative, impacts...would be low."

14753-3

Although one chapter describes wetlands and the other describes riparian areas, it should be noted that riparian areas do contain wetlands. These wetlands are most often in the Riverine hydrogeomorphic classification, and they are often overlooked when the focus is on the streams themselves. Riverine wetlands are wetlands that occur between the ordinary high water mark of the stream and the uplands, and their hydrology is fed by the water body during flood stages. These Riverine wetlands would be identified if the proposed project routes were delineated. The final EIS should address this apparent contradiction of impacts in riparian vs. wetland areas.

This page intentionally left blank.

BPA I-5 CORRIDOR REINFORCEMENT PROJECT – ECOLOGICAL IMPACTS AND METHODS

IV. Context and Intensity of the Impacts

14753-4 The context of the ecological impacts is multi-leveled. Local impacts to wetlands, plant communities, and habitat will be continual. Regional impacts at the county level will be persistent because of the length of the routes, and at the ecosystem level because of invasive plant colonization, long-term mowing and maintenance of the power lines, habitat fragmentation, and potential changes to ecological diversity.

Another context exists that has not been discussed, and arises from the permitting process itself. Large projects such as this one are expensive, and difficult for agencies to review in detail. Because of the limited resolution of the permitting process for any given project, larger projects are allowed to use qualitative methods of analysis rather than quantitative methods that are required on smaller projects. The context of the larger project vs. the smaller project, such as construction of a subdivision, limits the value of the ecological information and hampers the decision-making process.

The looser requirements during the planning phase for larger projects result in a higher potential for more intense impacts. For example, a developer seeking to construct a 30-acre subdivision that involves wetland fill is required to submit a field-based wetland delineation (not a GIS-based delineation) that will be inspected by one or more agencies before the wetland fill is authorized. The purpose is so that the agencies can see all the wetlands on a property, and force the developer to move roads, avoid high quality wetlands, locate stormwater ponds appropriately, and so on. Partial delineations are not accepted, and in LCI's experience, wetland fill applications that do not include a quantitative on-site wetland delineation of the whole project area are rejected.

14753-5 When agencies allow non-quantitative studies for planning larger projects, such as the inaccurate wetland rating scoring and remote sensing for wetland delineation in this BPA project, there is a much greater potential for ecological harm and higher intensity of ecological impacts. Ironically, the larger the project, the greater the risk of harm and yet BPA finds it acceptable to base its decision on **less information** in this context. BPA's analysis should be based on at least as much, if not more, information than agencies use when evaluating the impacts of projects with much smaller impacts.

By accepting the non-quantitative methods during the alternatives analysis phase, the agencies' ability to properly protect the resources is severely compromised. For the case of the wetlands impacted, this permitting problem can allow a net loss of wetland function. Officials on the federal and state level acknowledge the problems, such as Mike Rylko of the US Environmental Protection Agency: " 'No net loss? I think we stopped measuring it about as quickly as it became a policy. I don't think we ever got good at it,' Rylko said. 'It's easy to say and easy to mean but really hard to do, especially when we are adding a lot of people every year. ... We aren't getting anything near what we are losing, and the pace is accelerating.' ”⁵

⁵ Welch, Craig and Lynda V. Mapes. "Saving Wetlands: a Broken Promise." *The Seattle Times*. May 12, 2008. Accessed online on 02/23/13 at http://seattletimes.com/html/localnews/2004407515_growth_wetlands15m1.html.

14753-4 Chapter 24, Short-Term Uses versus Long-Term Productivity, describes potential impacts to soil productivity, hydrological productivity, biological productivity and economic productivity from the proposed project over the long term.

14753-5 Please see the response to Comment 14753-1.

BPA I-5 CORRIDOR REINFORCEMENT PROJECT – ECOLOGICAL IMPACTS AND METHODS

According to a WDOE wetland scientist speaking about the wetland regulatory process, “We are kidding ourselves; the emperor has no clothes,” said Thomas Hruby, a senior ecologist at the Ecology Department. “Everybody says it, and it’s been going on for at least 20 years. We are deluding ourselves, hoping there is a silver bullet out there that will allow us to have our growth and not have the impacts. It’s a state of denial.”⁶

Another WDOE wetland scientist said, “A lot of us ... have felt badly over the years that we are misleading the people and fooling ourselves that we are doing OK, that we are getting replacement and protecting the most important places,” said Andy McMillan, a wetlands manager at the Ecology Department.”⁷

14753-5

The context of the potential impacts is broad, and the intensity of the impacts can be severe because of the permitting allowances for inaccurate ecological studies on large projects. Given the acknowledgement of federal and state wetland regulators that the regulatory system is “broken” and impacts are frequently un-mitigated, LCI recommends that fully quantitative ecological procedures should be required by agencies for large projects, such as this BPA proposal. BPA should conduct field delineations of all the wetlands for all of the proposed route alternatives. Complete wetland and ecological functional assessments should be performed to determine the potential impacts of each route. Impacts should be concentrated near existing developed areas to preserve ecological functions on a landscape scale and prevent sprawling impacts closer to wild lands with a higher intrinsic ecological value.

Sincerely,
Leyda Consulting, Inc.



Joseph D. Leyda, MA
Professional Wetland Scientist
Certified Ecologist



⁶ Welch, Craig and Lynda V. Mapes. “Saving Wetlands: a Broken Promise.” *The Seattle Times*. May 12, 2008. Accessed online on 02/23/13 at http://seattletimes.com/html/localnews/2004407515_growth_wetlands15m1.html.

⁷ Welch, Craig and Lynda V. Mapes. “Saving Wetlands: a Broken Promise.” *The Seattle Times*. May 12, 2008. Accessed online on 02/23/13 at http://seattletimes.com/html/localnews/2004407515_growth_wetlands15m1.html.

This page intentionally left blank.

14754

LISBETH A SEIL

03/25/2013

14754-1 | The proposed high-voltage power line SHOULD NOT BE RUN THROUGH POPULATED AREAS!!

14755

GINA A STAROS

03/25/2013

14755-1 | Please don't harm the 80 miles of forest, streams, and wetlands around the Lewis River. I would hope we can think of our future and protect the environment, instead of destroying it.

Please let me know if I can do anything more to protect this large part of our natural world.

14754-1 Comment noted.

14755-1 Comment noted.

14756

DONALD J SEIL

03/25/2013

14756-1 I am deeply concerned about the negative impacts on health and property values of a proposed high-voltage power line along the Western route through Vancouver. The Western option would affect by far the most people and would come much too close to many more homes and schools.

14757

DOMINIK S STAROS

03/25/2013

14757-1 Choose the Western Alternative, which is lower cost and uses existing rights-of-way, avoiding destruction of our environment and seizure of private lands.

14756-1 Comment noted.

14757-1 Comment noted.

14758

PATRICIA LEE WITTER

03/25/2013

As a member of a 4-generation tree farm business in rural Clark County WA, I am writing to voice my concern that BPA did not provide a full range of alternatives to the Central Alternative in its DEIS.

14758-1 I believe BPA's DEIS did not provide a complete and substantive analysis both quantitatively and qualitatively as required by law.

This comment focuses on two glaring omissions in the DEIS: DOUBLE-CIRCUIT TOWERS WERE NOT STUDIED and the PEARL ALTERNATIVE WAS NOT GIVEN A THOROUGH ENVIRONMENTAL ASSESSMENT AS REQUIRED UNDER NEPA.

14758-2 I insist that BPA should request a permit from the Army Corps of Engineers for its existing right of way, the West Alternative, using double circuit towers through wetlands.

Sincerely,

Patricia Lee Witter

[address]

14759

KENNETH G HADLEY

03/25/2013

14759-1 your preferred alternative is preferable to the suggested routes that go through areas with more population. however, the route to the East that would go mostly through timberland is still the better choice.

14758-1 Please see the responses to Comments 14596-1 and 14596-4.

14758-2 Please see the response to Comment 14596-5.

14759-1 Comment noted.

14760

JON W WATSON

03/25/2013

14760-1 I urge you to choose the Western Alternative, which is lower cost and uses existing rights-of-way, avoiding destruction of our environment and seizure of private lands.

14761

MARK PATRICK BRISLAWN

03/25/2013

14761-1 I support your decision to use the central alternative over the west alternative for the simple reason it will impact fewer property owners. However if this project is really necessary I would like to see it go farther east to have even less impact.

14760-1 Comment noted.

14761-1 Comment noted.

14762

ALYSSA M DILTZ

03/25/2013

14762-1 | I urge you to choose the Western Alternative, which is lower cost and uses existing rights-of-way, avoiding destruction of our environment and seizure of private lands.

14763

MICHAEL J FISHER

03/25/2013

14763-1 | To the BPA siting decisionmakers: I urge you to choose the Western Alternative siting option for this project. The Western Alternative is lower cost and uses existing rights-of-way. More important, this option will avoid destruction of our environment and seizure of private lands. Thank you, Michael Fisher

14762-1 Comment noted.

14763-1 Comment noted.

14764

RACHEL K HARRISON

03/25/2013

14764-1 | Urge you to choose the Western Alternative, which is lower cost and uses existing rights-of-way, avoiding destruction of our environment and seizure of private lands.

14765

MELISSA J DALLUHN

03/25/2013

14765-1 | Urge you to choose the Western Alternative, which is lower cost and uses existing rights-of-way, avoiding destruction of our environment and seizure of private lands.

14764-1 Comment noted.

14765-1 Comment noted.

14766

CITIZENS AGAINST THE TOWERS, ERNA SARASOHN

03/25/2013

14766-1

The real estate market has been rebounding very well but not in SW Washington because of the threat of the I-5 Project and the possibility of 15 to 25 story towers and dangerous 500kv high voltage lines being placed in our communities. The citizens have lived with this nightmare for more than 3 years and BPA, without a drop of concern for the people plans on extending our nightmare for 2 more years. This will result in stagnant real estate values, difficulty is selling homes and additional families being upside down with their mortgages. Telling the public that towers placed near our homes will not impact the value of our homes is laughable since the current situation has proved you wrong. It is long past time for BPA to take the required actions that will bring our lives back to normal and end the turmoil. BPA, you are a U.S. Government agency and work for and are accountable to us the people and the people say, enough is enough!!!!!!

14767

BRENDA J OLSEN

03/25/2013

14767-1

I feel your decision on taking the most destructive and expensive course through the private lands on the eastern corridor is a BAD one. It makes much more sense to use your existing I-5 corridor to keep costs down and destruction of property to a minimum.

YOU ARE GOING AFTER THE AREAS WHICH ARE LESS POPULATED, THEREFORE LESS VOICES AGAINST IT TO SHOVE THIS DOWN OUR THROATS.

I have personally seen what these towers are like in pristine areas. Going through the middle of properties, and yet these "off the grid" vacation cabins have no access to the power. Yet they have to put up with the clearing, maintenance and electrical "noise" these towers produce in a wilderness setting.

As a riverfront landowner I am really upset how you can get away with what you do to the land, and taking the lines over rivers. I cannot and would not think of doing that much destruction.

14766-1 BPA understands the commenter's desire to have updated information and learn about our project decisions as quickly as possible. We want to ensure that we provide a complete and comprehensive environmental review for consideration and comment. That takes time. The additional time allows BPA to consider the comments it has received about the project and complete environmental analysis of issues identified by landowners and stakeholders. This will help BPA make a well-informed decision about a preferred alternative and ultimately whether, and where, to build a new line and substations.

14767-1 Comment noted.

14768

KRISTI L KOEBKE

03/25/2013

14768-1 | I urge you to choose the Western Alternative, which is lower cost and uses existing rights-of-way, avoiding destruction of our environment and seizure of private lands.

14769

LEWIS HOUCK, LINDA M HOUCK

03/25/2013

25 March 2013

Dear BPA,

14769-1 | Our final comment to you would be to reconsider using your existing ROW. We feel it would be the most cost efficient option and have the least impact on homeowners, landowners, and our environment.

Sincerely,

Linda M. Houck

Lewis Houck

14768-1 Comment noted.

14769-1 Comment noted.

I-5 Corridor Reinforcement Project
PO Box 9250
Portland, OR 97207

March 20, 2013

We request that the following changes be made to the location of route segment "V":

1. South of tower V/15: Place a dead-end tower inside the northeast property corner of Harold and Margaret Paladini.
2. Re-direct the power line to the west on the north edge of the Paladini property.
3. Locate a tower on State of Washington Department of Natural Resources land to the west of the Paladini property line and re-direct the power line south along the DNR property line or southwest through DNR land.

The above measures would have these benefits:

14770-1

1. Minimize the impact to Paladini property by following their property line instead of bisecting their land.
2. Eliminate two access roads on Paladini property (to towers V/16 and V/17), one of which also would cross through the property of David and Kelli Merriman.
3. Minimize the impact to the property of Mary Richards by relocating the power line west of her west property line instead of bisecting her land.
4. Eliminate the need for two access roads on Mary Richards' property (to towers V/18 and V/19), one of which would cross through the property of Creighton and Jokay Kearns and along the properties of Percival/Holder, Zaske, Taylor, Gaston and MacDonald. This would also remove the impact of the second access road to property owners along NE 254th Street: Richards, Spolar, Thomas, and Gierloff.
5. **Eliminate the need for the power line to cross Rock Creek, an important steelhead stream and the largest tributary to the East Fork Lewis River.**

See enclosed maps (3) for details. See enclosed signature pages (4).

Sincerely,



Ray Richards

cc: US Army Corps of Engineers, Congresswoman Jamie Herrera-Beutler

14770-1 Please see the response to Comment 14097-1.

14770

I-5 Corridor Reinforcement Project
PO Box 9250
Portland, OR 97207

We request that the following changes be made to the location of route segment "V":

1. South of tower V/15: Place a dead-end tower inside the northeast property corner of Harold and Margaret Paladini
2. Redirect the power line to the west on the north edge of the Paladini property.
3. Locate a tower on State of Washington Department of Natural Resources land to the west of the Paladini property line and redirect the power line south along the DNR property line or southwest through DNR land.

The above measures would have these benefits:

1. Minimize the impact to Paladini property by following their property line instead of bisecting their land.
2. Eliminate two access roads on Paladini property (to towers V/16 and V/17), one of which also would cross through the property of David and Kelli Merriman.
3. Minimize the impact to the property of Mary Richards by relocating the power line west of her west property line instead of bisecting her land.
4. Eliminate the need for two access roads on Mary Richards' property (to towers V/18 and V/19), one of which would cross through the property of Creighton and Jokay Kearns and along the properties of Percival/Holder, Zaske, Taylor, Gaston, and MacDonald. This would also remove the impact of the second access road to land owners along NE 254th Street: Richards, Spolar, Thomas, and Gierloff.
5. Eliminate the need for the power line to cross Rock Creek, an important steelhead stream and the largest tributary to the East Fork Lewis River.

See enclosed maps (3) for details.

Sincerely,

(address)

(date)

Sign: Michelle Holder
 Print: Michelle Holder
 Sign: [Signature]
 Print: Todd Percival 3/11/13
 Sign: [Signature]
 Print: Larry Mason
 Sign: Dolores & Mason
 Print: Dolores & Mason
 Sign: _____
 Print: _____
 Sign: _____
 Print: _____

I-5 Corridor Reinforcement Project
PO Box 9250
Portland, OR 97207

14770

We request that the following changes be made to the location of route segment "V":

1. South of tower V/15: Place a dead-end tower inside the northeast property corner of Harold and Margaret Paladini.
2. Redirect the power line to the west on the north edge of the Paladini property.
3. Locate a tower on State of Washington Department of Natural Resources land to the west of the Paladini property line and redirect the power line south along the DNR property line or southwest through DNR land.

The above measures would have these benefits:

1. Minimize the impact to Paladini property by following their property line instead of bisecting their land.
2. Eliminate two access roads on Paladini property (to towers V/16 and V/17), one of which also would cross through the property of David and Kelli Merriman.
3. Minimize the impact to the property of Mary Richards by relocating the power line west of her west property line instead of bisecting her land.
4. Eliminate the need for two access roads on Mary Richards' property (to towers V/18 and V/19), one of which would cross through the property of Creighton and Jokay Kearns and along the properties of Percival/Holder, Zaske, Taylor, Gaston, and MacDonald. This would also remove the impact of the second access road to land owners along NE 254th Street: Richards, Spolar, Thomas, and Gierloff.
5. **Eliminate the need for the power line to cross Rock Creek, an important steelhead stream and the largest tributary to the East Fork Lewis River.**

See enclosed maps(2) for details.

Sincerely,

(address)

(date)

Sign: Staci E. Merriman

Print: Staci E. Merriman

2-26-2013

Sign: [Signature]

Print: Kurt Merriman

Sign: Trevor Wantaja

Print: Jim Walsh

Sign: Angie Wantaja

Print: Ric Levanen

Sign: [Signature]

Print: Melissa Levanen

2-26-13

Sign: [Signature]

Print: Nina Merriman

2-26-13

Sign: [Signature]

-2013

Print: Carissa L McClung

Sign: Carissa McClung

3-1-2013

Print: Cody McClung

Sign: Cody McClung

Print: Dave Paladern

[Signature]

14770

I-5 Corridor Reinforcement Project
PO Box 9250
Portland, OR 97207

We request that the following changes be made to the location of route segment "V":

1. South of tower V/15: Place a dead-end tower inside the northeast property corner of Harold and Margaret Paladini.
2. Redirect the power line to the west on the north edge of the Paladini property.
3. Locate a tower on State of Washington Department of Natural Resources land to the west of the Paladini property line and redirect the power line south along the DNR property line or southwest through DNR land.

The above measures would have these benefits:

1. Minimize the impact to Paladini property by following their property line instead of bisecting their land.
2. Eliminate two access roads on Paladini property (to towers V/16 and V/17), one of which also would cross through the property of David and Kelli Merriman.
3. Minimize the impact to the property of Mary Richards by relocating the power line west of her west property line instead of bisecting her land.
4. Eliminate the need for two access roads on Mary Richards' property (to towers V/18 and V/19), one of which would cross through the property of Creighton and Jokay Kearns and along the properties of Percival Holder, Zaske, Taylor, Gaston, and MacDonald. This would also remove the impact of the second access road to land owners along NE 25th Street: Richards, Spolar, Thomas, and Gierloff.
5. Eliminate the need for the power line to cross Rock Creek, an important steelhead stream and the largest tributary to the East Fork Lewis River.

See enclosed maps for details.

Sincerely,

(address)

(date)

Sign: Harold Peter Paladini
 Print: HAROLD PETER PALADINI 2-11-2013

Sign: Margaret Paladini
 Print: MARGARET PALADINI 2-11-2013

Sign: Mary Richards by Ray Richards. AHG in fact
 Print: Mary Richards 2-11-13

Sign: Ray Richards (25% owner of Mary Richards property)
 Print: Ray Richards 2-11-13

Sign: Trenton T Spolar
 Print: Trenton T Spolar 2-11-13

Sign: Linda L Spolar
 Print: Linda L Spolar 2-11-13

Sign: Kelli Merriman
 Print: Kelli Merriman

Sign: David W Merriman
 Print: David W. Merriman

Sign: Beverly Turner (25% owner of Richards property)
 Print: Beverly Turner

I-5 Corridor Reinforcement Project
PO Box 9250
Portland, OR 97207

14770

We request that the following changes be made to the location of route segment "V":

1. South of tower V/15: Place a dead-end tower inside the northeast property corner of Harold and Margaret Paladini.
2. Redirect the power line to the west on the north edge of the Paladini property.
3. Locate a tower on State of Washington Department of Natural Resources land to the west of the Paladini property line and redirect the power line south along the DNR property line or southwest through DNR land.

The above measures would have these benefits:

1. Minimize the impact to Paladini property by following their property line instead of bisecting their land.
2. Eliminate two access roads on Paladini property (to towers V/16 and V/17), one of which also would cross through the property of David and Kelli Merriman.
3. Minimize the impact to the property of Mary Richards by relocating the power line west of her west property line instead of bisecting her land.
4. Eliminate the need for two access roads on Mary Richards' property (to towers V/18 and V/19), one of which would cross through the property of Creighton and Jokay Kearns and along the properties of Percival/Holder, Zaske, Taylor, Gaston, and MacDonald. This would also remove the impact of the second access road to land owners along NE 254th Street: Richards, Spolar, Thomas, and Gierloff.
5. **Eliminate the need for the power line to cross Rock Creek, an important steelhead stream and the largest tributary to the East Fork Lewis River.**

See enclosed maps(3, for details.

Sincerely,

(address) (date)

Sign: JoAnn M. Thomas

Print: JoAnn M. Thomas

Sign: Richard J. Gierloff

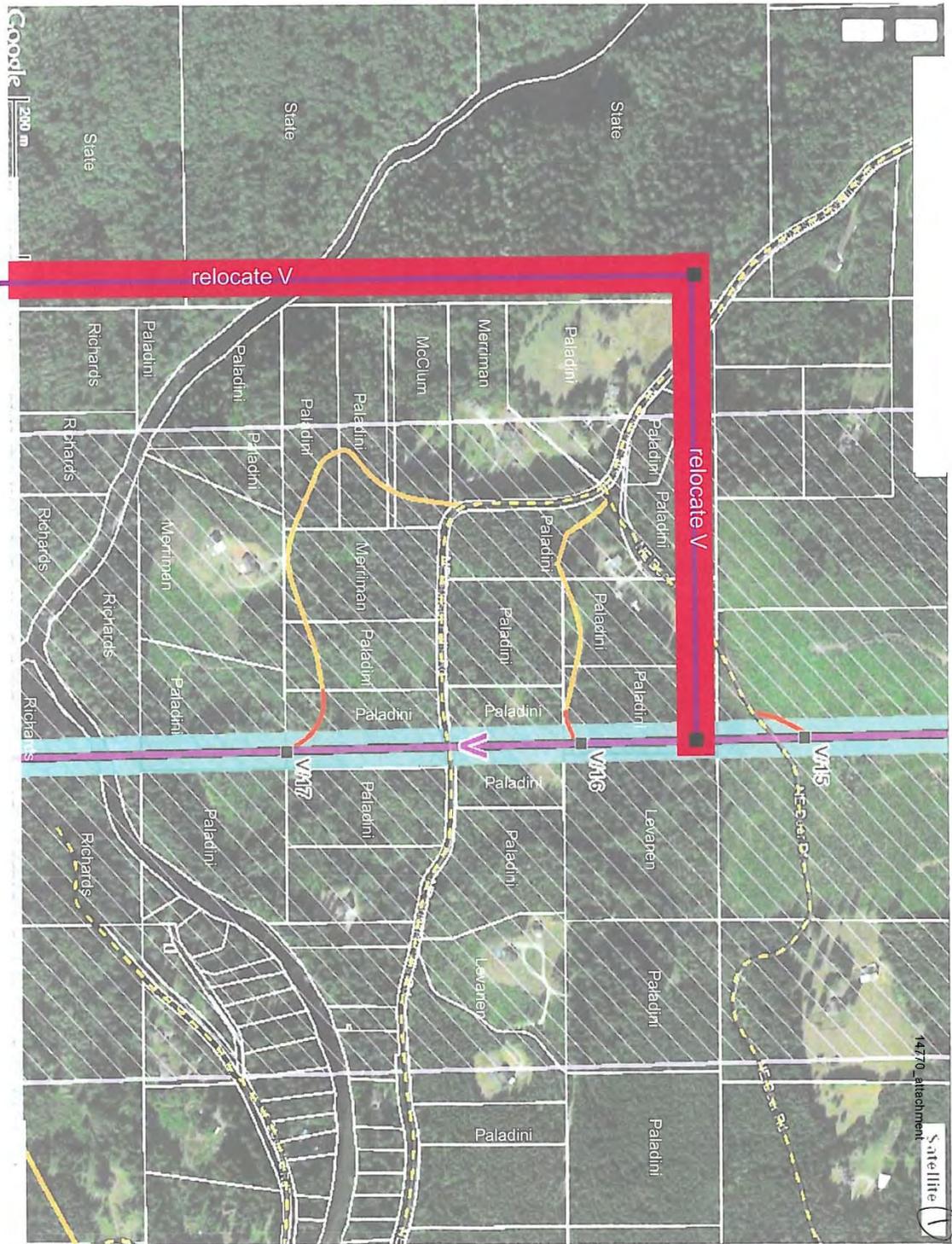
Print: RICHARD J. GIERLOFF

Sign: Clayton C. Larson

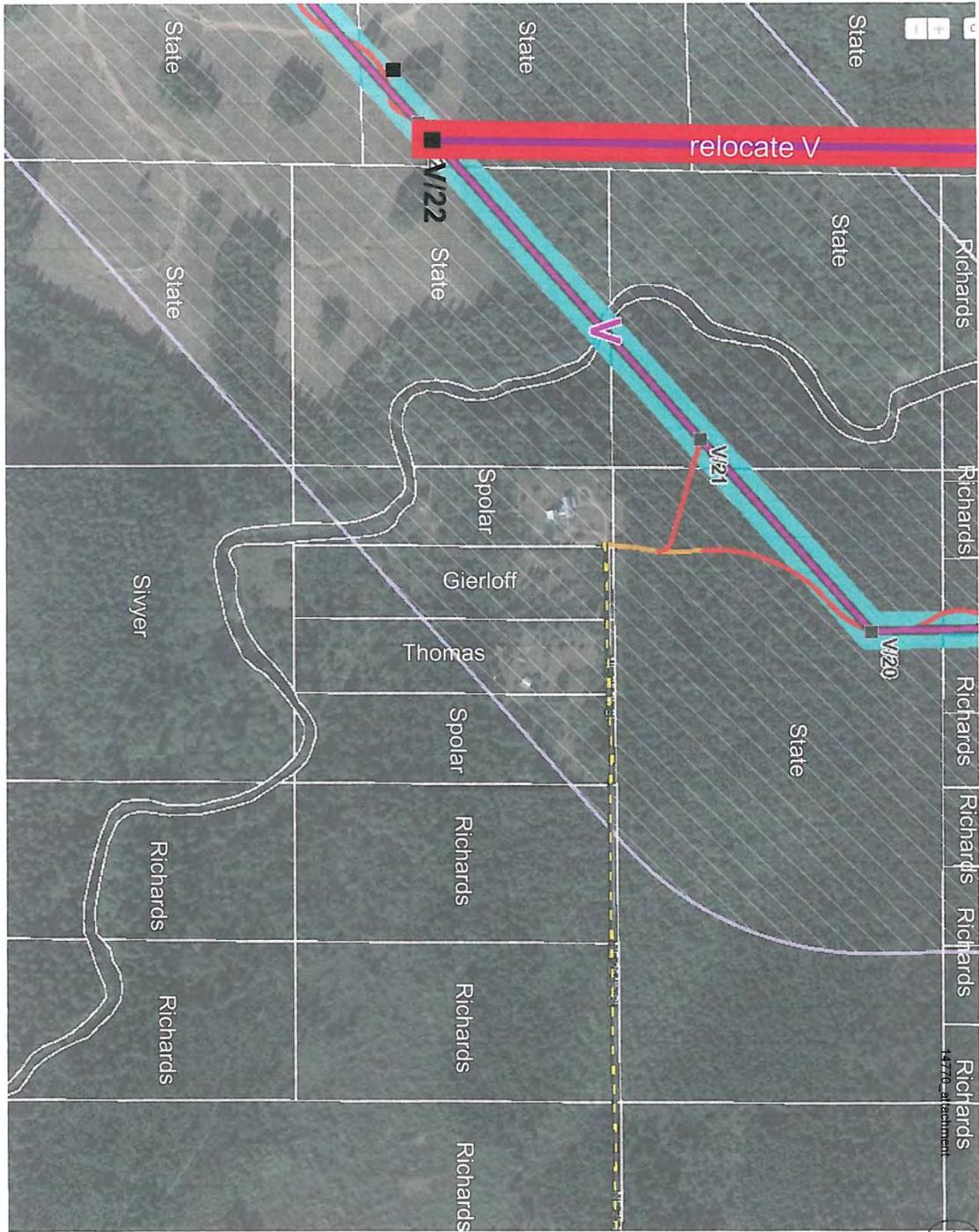
Print: CLAYTON C. LARSON

Sign: _____

Print: _____







This page intentionally left blank.

14771

VICENTE A MOLINOS

03/25/2013

Comments to DEIS for BPA I-5 Project

March 25, 2013

DATE: March 25, 2013

TO: Mr. Mark Korsness, Project Manager, BPA I-5

TO: Mr. Steve Manlow, Army Corps of Engineers

FROM: Vicente Molinos, Rose Valley, Kelso

REF: Comments to DEIS for BPA I-5 project

Dear Messrs. Korsness and Manlow:

14771-1 My personal comments to the referenced DEIS will expand on three topics that were mentioned in the study "I-5 Corridor Reinforcement: Economic and Human Impacts Study" delivered to you in mid-March 2013 by No Lines in Populated Areas, Urban or Rural, (www.nowaybpa.com). These topics are: the human health and safety risks, the socio economic impacts of the BPA-proposed routes and BPA's use of wildlife impacts. I have listed the exact quote from the numbered paragraph of BPA's DEIS in regular font and it is followed by my comments which are all in italics. Bolding is mine and used for emphasis. Thanks.

a. The Human Health Risks From Magnetic Fields

8.1.2 Magnetic Fields

"There are no national standards for magnetic fields, and Oregon, Washington and BPA do not have magnetic field limits for transmission lines. Guidelines created by national and international organizations range from 833 to 9,040 mG for public magnetic-field exposure and from 4,200 to 27,100 mG for occupational magnetic-field exposure (see Appendices F and G)".

14771-2 8.2.1 Impact Levels

"Because studies have provided insufficient or inconclusive evidence about the potential health impacts of magnetic fields (see Section 8.2.2.2, Magnetic Fields), and because there are no national or regional standards for magnetic fields, BPA has not defined impact levels for magnetic fields".

8.2.2.2 Magnetic Fields

"Decades of scientific studies are inconclusive as to whether magnetic fields can potentially cause health effects. A review of these studies and their implications for health-related effects is provided in Appendix G."

14771-1 Thank you for your comments. Specific comments are addressed below.

The referenced study was entered into the comment database as Comment 14790. Responses to the referenced study are found in Comments 14790-1 through 14790-50.

14771-2 Exponent provided an overview of peer-reviewed research published between January 1, 2006 and October 1, 2010. Please see Appendix G, Section 2 for more information about how Exponent identified appropriate literature to include in the report. An update to this report is provided as Appendix G1 and includes additional studies to April 1, 2015.

- 14771-2 | Comment a1:
 The annotated literature review BPA acquired from Exponent Inc. has selectively included some studies and positions or exposure limits that support BPA official position of denial related to magnetic fields while excluding epidemiological studies, exposure limitations and positions by international bodies which do not support BPA's position. An example of these practices follows:
 Appendix G. by Exponent Inc. 2011 ("Research on Extremely Low Frequency Electric and Magnetic Fields and Health", 2011,)

"A number of studies investigating childhood leukemia and magnetic fields have been published since the WHO review (Table 1). Recent studies continue to support a weak association between elevated magnetic field levels and childhood leukemia, but they lack the methodological improvements required to advance this field; the evidence remains limited and the observed statistical association is still unexplained".

A seventh study was included in Kheifets et al. (2010a), but only in the pooled analysis of childhood leukemia and residential distance to power lines (Lowenthal et al., 2007). This study is not discussed further in this section because published findings only report on a combined category of lymphoproliferative and myeloproliferative disorders for both adults and children combined.

 Comment a2:
 Below, are the results of the study by Lowenthal et al. 2007, which the report by Exponent Inc. mentions in footnote #11 pasted above and quickly dismisses. This is one of a few recent studies that have looked at large number of cancer cases over many years and raises the possibility that truly long-term residential exposure to magnetic fields of children is associated with their developing cancers later, as adults.
- {Results: Compared with those who had always lived >300 m from a power line, those who had ever lived within 50 m had an odds ratio (OR) of 2.06 (95% Confidence interval 0.87–4.91) for developing LPD or MPD (based on 768 adult case–control pairs); those who had lived between 50 and 300 m had an OR of 1.30 (0.88–1.91). Adults who had lived within 300 m of a power line during the first 15 years of life had a threefold increase in risk (OR 3.23; 1.26–8.29); those who had lived within the same distance aged 0–5 years had a fivefold increase in risk (OR 4.74; 0.98–22.9). Lowenthal, R.M. et al., "Residential exposure to electric power transmission lines and risk of lympho-proliferative and myelo-proliferative disorders: a case–control study", Internal Medicine Journal, Vol. 37 (2007),614-619.}
 14771-3 |
- 14771-4 | "In summary, the scientific studies and reviews of research on the potential health effects of power line electric and magnetic fields have found there is insufficient evidence to conclude exposure to either

14771-3 The results from the Lowenthal et al. (2007) study are further discussed in Appendix G under Adult leukemia and lymphoma and cited in Table 5.

14771-4 Please see the response to Comment 14771-2.

- field leads to long-term health effects, such as adult cancer, neurodegenerative diseases (such as Alzheimer's or Lou Gehrig's disease), or adverse effects on reproduction, pregnancy, or growth and development of an embryo. Uncertainties do remain about possible links between childhood leukemia and childhood magnetic field exposures at levels greater than 3-4 mG. There are also suggestions that short-term exposures to magnetic fields greater than 16 mG may be related to an increased risk of miscarriage. However, animal and cellular studies provide limited support for the idea that statistical associations observed in epidemiology studies reflect a causal relationship between magnetic field exposure and an increased risk of childhood cancer or miscarriage”.
- Comment a3:
- 14771-4 BPA has dismissed the statistical association between childhood leukemia and residential childhood exposure to High Voltage Transmission Lines (HVTLs) that has been repeatedly found by long-term epidemiological studies linking long-term residential exposure of children to low level magnetic fields (3-4 mG or more) from HVTL's. BPA's dismissal is based on the fact that laboratory studies have not been able to explain or replicate the biological mechanisms behind the observed associations. As the excerpt below from a refereed medical article by Dey, 2011 shows, this argument is at best unwise and possibly inappropriate for a public-owned entity.
- {Lung cancer is the leading cause of cancer death in the United States and throughout the world [1]. Cigarette smoking is the strongest risk factor for developing lung cancer. Smoking and exposure to environmental tobacco smoke account for 90% of lung cancer cases, and smokers have a 20-fold increased risk of death from lung cancer compared to nonsmokers [2]. However, the carcinogenic mechanisms of tobacco smoking are not well understood [3]}. Dey, Neekan et al., “Molecular Mechanisms of Cigarette Smoke–Induced Proliferation of Lung Cells and Prevention by Vitamin C”, *Journal of Oncology*, Volume 2011 (2011), Article ID 561862, 16 pages
- “No impact levels are stated because unlike in other resource chapters in this EIS, no basis exists for determining them (see Section 8.2.1, Impact Levels)”.
- Comment a4:
- 14771-5 The absence of national or Washington State residential exposure standards for magnetic fields notwithstanding, the fact that, in your view, “Uncertainties do remain about possible links between childhood leukemia and childhood magnetic field exposures at levels greater than 3-4 mG” should be sufficient for BPA to adopt a prudent risk avoidance policy such as California's and avoid placing new HVTL's in routes which will expose existing homes at magnetic fields greater than 3-4 mGauss.
-
- 14771-6 Appendix F. “Electrical Effects for the I-5 Corridor Reinforcement Project”
(Prepared by T. Dan Bracken, Inc. October 2011 for BPA.)
4.3 Calculated Values for Magnetic Fields (p.11)

14771-5 Science, in general, is not able to prove the absence of a potential effect with 100 percent certainty. Thus, scientific uncertainty will remain, and responsible scientific agencies will advocate continued research to further reduce scientific uncertainties. Based on currently available evidence, however, the World Health Organization (WHO) concludes that “[d]espite extensive research, to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health.” Similarly, the International Commission of Non-Ionizing Radiation Protection, the leading agency to set scientifically based exposure limits for electric and magnetic fields (EMF) to protect public health, states that the evidence from studies of long-term health outcomes “is too weak to form the basis for exposure guidelines.” Given the lack of sufficient scientific evidence, the WHO recommends that if any precautionary measures are considered to reduce EMF levels, those should be no cost or low cost measures and should not jeopardize the overall societal benefits that are brought by electricity.

BPA has a policy that addresses public concern and scientific uncertainty available at: <http://www.bpa.gov/Projects/Projects/I-5/2012documents/How%20BPA%20Addresses%20EMF%20brochure-WEB.pdf>

14771-6 Comment noted.

- Maximum magnetic field levels along the four alternatives (excluding options) would be 184 mG "On ROW" and 48 mG at "Edge of ROW" (75 feet from the proposed line). The average levels would be much lower: 35 mG "On ROW" and 12 mG at "Edge of ROW." By 150 feet from the proposed line, magnetic fields would fall to a maximum of 13 mG and an average of 4 mG; at 300 feet from the proposed line, the maximum field would be 4 mG and the average 1 mG".
- 14771-6 Comment a5.
Based on Mr. T.D. Bracken's work for BPA, at 75 feet from the edge of the ROW long-term exposures will be at least 4mG and, at peak loads, three times that level. According to BPA's home count, BPA's West route would expose 174 homes within 50 feet of the edge to at least 4 mG. Homes exposed within 50 feet by other BPA routes are: Central route 14 homes; East route 15 homes and Crossover route 29 homes). At 100 feet from the edge of ROW, exposed home counts almost double for all routes defined by BPA (BPA, Transmission, I-5 Corridor Project, data by segments and alternatives, November 9, 2012).
- Chapter 10 Health and Safety
This chapter describes existing health and safety conditions in the project area, and how the project alternatives could affect public health and safety.
- 10.2.1 Impact Levels
"Impacts would be high where project activities would cause the following:
Create a permanent and known health and safety condition
Impacts would be moderate where project activities would cause the following:
14771-7 Create a known but rare or infrequent health and safety condition
Impacts would be low where project activities would cause the following:
Create a risk to health and safety that could largely be mitigated
No impact would occur where there is no possible risk to human health and safety".
- Comment a6:
Based on the evidence provided in comments a2 through a5 and using the above definitions, the human health impacts of all BPA routes, and particularly the densely populated West route, would have to be high.
- 14771-8 10.2.2.2 Operation and Maintenance

- 14771-7 BPA recognizes that electric and magnetic fields is an extremely important topic to the public and hence, BPA itself. For this reason and to make the information easier to find for the public, BPA discusses EMF in its own chapter in the EIS (Chapter 8, Electric and Magnetic Fields) and not in Chapter 10, Public Health and Safety.

As discussed in Section 8.2.1, Impact Levels, studies have provided insufficient or inconclusive evidence about the potential health impacts of magnetic fields (see Section 8.2.2.2, Magnetic Fields), and because there are no national or regional standards for magnetic fields, BPA has not defined impact levels for magnetic fields.

EMF is also discussed in Appendices F and G.

- 14771-8 Information about risks from extreme weather events has been added to Section 10.2.2.2, Operation and Maintenance.

Extreme weather events, such as wind, ice, etc., are rare in BPA's service territory, but can occur and could cause a lattice steel tower to fail. Because lattice steel towers are connected to each other with conductors, if one tower fails it puts stresses on surrounding towers, which can sometimes cause nearby towers to collapse. BPA uses tower designs that help prevent this cascading effect from occurring.

Towers are designed to take some longitudinal loading, which occurs either when a wire breaks or a tower fails. This limits potential damage to only a few towers. The lattice-steel towers are designed to withstand 120 mph winds, which can be created by tornadoes, microbursts and downbursts.

On average 800 to 1,000 tornadoes occur within the contiguous U.S. For a 30-year period (1950 1980) the total number of reported tornadoes was recorded and compiled on a 1 degree latitude by 1 degree longitude (1 degree square contains about 4,000 square miles) map (Wong, 2009). In Washington and Oregon, 53 tornadoes were recorded over this period, which is quite low compared to other states. Another study observed that over a 63-year period (1916 1978), 86 percent of tornadoes were scaled as F2 or less (Wong, 2009). The F scale, FPP, was developed to categorize tornadoes by their intensity and size. A class F2 has a gust speed range between 113 mph and 157 mph. The economics of designing for the higher gust speeds to prevent a rare event is impractical and would increase rates paid by customers.

River crossing towers are designed to higher standards because they are critical to the system. These towers are designed with an additional 20 percent overload (factor of safety) for reliability.

Public Health and Safety

Comment a7:

The safety risk of downed towers and lines is ignored by the DEIS. While the probability has been historically low, the potential for high damages and loss of life is significant now that some of the existing HVTL are surrounded by homes. The Columbus Day storm of 1962 downed many transmission lines and tore "a 300-foot-tall electrical tower from its stanchions at Coos Bay sending a key 115,000 voltage line into the bay." http://www.historylink.org/index.cfm?DisplayPage=output.cfm&file_id=5325

14771-8

[Currently available data suggest that the frequency and severity of hurricanes

and ice storms will increase in the future. There has been a doubling of Category 4 and 5 Atlantic hurricanes from 1970 to 2004 which is the same time period during which ocean temperatures have increased. If this trend continues, it will have a significant impact on utility and user costs due to structural failures].

[Transmission lines in service today in the US have been designed using a

multitude of design approaches and structural loading criteria. The principal cause of structural failures is associated with weather events that produce loads that exceed the structural loading design criteria. In some cases, failures have been the result of inadequate design, construction and/or maintenance practices, airplane or vehicle accidents and criminal activities. Gibson Peters et al, "Transmission Line Reliability: Climate Change and Extreme Weather", 2006, Carnegie Mellon Electricity Industry Center Working Paper CEIC-05-06] [www.cmu.edu/electricity. http://gdi.ce.cmu.edu/docs/ceic_05_06.pdf](http://gdi.ce.cmu.edu/docs/ceic_05_06.pdf)

The impact on human safety for the more populated routes would likely be moderate due to the relatively low probability of occurrence and assuming that the automatic breakers would be able to limit damages and casualties by de-energizing the power lines quickly.

b. Socio Economic Impacts Of The BPA-Proposed Routes

11.1.9.2 Low-Income Populations

14771-9

Comment b1:

The DEIS fails to capture the high levels of poverty in both Cowlitz and Clark County. For example in the school districts for Castle Rock and Vancouver the children eligible for free or reduced price lunch are respectively 52% and 53%. (Please see NLPA Economic and Human Impacts Study, 2013).

11.2.2.3 Public Services and Infrastructure

14771-10

"Given the nature of the project, overall long-term impacts on most, if not all, public service and infrastructure providers from the project likely would be too small to be discernible. Because the project would not permanently increase employment or population in the area, no overall impact to schools, police, fire, or medical services would occur".

14771-8 To help prevent trees from falling onto the transmission lines during extreme weather, trees considered a danger to the transmission line are removed (see Section 3.11, Vegetation Clearing). Also, breakers in the substations keep the power from staying on in the event of a downed transmission line.

Icing events can occur in the Northwest. Washington and Oregon typically have between 0.25 inches and 0.5 inches of radial glaze ice occur every 50 years, depending on the geographic area. The Columbia Gorge can see glaze ice up to 1.25 inches. BPA uses an extreme icing load case that is two times the 50-year icing amounts.

Though BPA cannot design for every conceivable loading combination, design standards cover a high probability of events that are likely to occur within the area.

14771-9 Please see the response to Comment 14677-4.

14771-10 Please see the responses to Comments 14291-3 and 14674-1.

14771-10	<p>Comment b2:</p> <p>The first Right of Way through the urban growth of a small community like Castle Rock would have a negative effect in precisely the opposite direction as the DEIS considers. The ROW would reduce the density of services, reduce the available property tax revenues permanently and the school population.</p> <p>If the pattern of higher poverty documented in the vicinity of the existing ROW's in Clark County were to materialize in smaller communities, these would be less able to cope and likely suffer serious impacts over their quality of life and education.</p>
14771-11	<p>11.2.2.4 Government Revenue</p> <p>"The project would cause long-term decreases in government revenue by diminishing the base value of property subject to property taxation, reducing timber-related revenue from state trust lands, and decreasing future revenue from taxes on private timber harvests and some agricultural products"</p> <p>Property Tax</p> <p>"Direct decreases in property taxes would occur for properties BPA acquires and removes from the tax rolls".</p> <p>"Additional decreases may occur for those properties on which it secures an easement that constrains use of the property (severance, loss of use, etc.) and reduces assessed value, but data are insufficient to quantify these decreases".</p> <p>"Indirect decreases in property taxes could occur for nearby residential properties if the project reduces the quality of amenities, or commercial properties if the project affects the income-generating potential of the site".</p> <p>11.2.2.5 Property Values</p> <p>"The proposed transmission line is not expected to have long-term impacts on property values in the area for a variety of reasons. Whenever land uses change, the concern is often raised about the effect the change may have on property values nearby. Zoning and permits are the primary means by which most local governments protect property values. By restricting some uses, or permitting them only under certain conditions, conflicting uses are avoided. Some residents consider transmission lines to be an incompatible use adjacent to residential areas."</p> <p>Comment b3:</p> <p>The DEIS evaluated the present value of lost revenues by corporate entities such as state and industrial timberlands and agricultural enterprises. These indirect costs of the project are relatively small compared to the permanent and growing loss of taxable assets from prime urban and rural residential lands which will be devoted to transmission easements and which will result in higher taxes for all</p>

14771-11 Please see the responses to Comments 14140-2 and 14291-3.

- 14771-11 individual citizens of Clark and Cowlitz counties. The DEIS omitted these important indirect economic and fiscal impacts of the project. The lack of sufficient data is not a credible excuse. Please see the NLPA study (op. cit.).
- The DEIS comment about zoning is inconsistent with the historic impacts of the existing HVTL's in Clark County where the power lines drove the zoning and permitting process and the result is now a pattern of higher poverty about the existing power lines (BPA's West alternative).
- 14771-12 a. BPA's Evaluation and Use of Wildlife Concerns
- Comment c1:
- Since late 2009 BPA has received a wealth of detailed input from citizens regarding wildlife and other environmental concerns including US listed species in or near their localities. For example, I provided detailed explanations of the historic and ongoing efforts by WDFW and citizens groups to improve habitat and recover runs of ESA listed wild salmon and steelhead runs fish runs in the Coweeman River.
- The DEIS Chapter 19 on fish looks like a bureaucratic exercise of filling-in the blanks and where all the alternatives and options have the same narrative (need to refer to the right alternative name in the narrative for 19.2.7). The text of the report has little connection to the maps 19-1 A-D. The latter provide little relevant information and no segment labels.
- 18.1.4.1 Federally Listed Wildlife Species
- "The potential for a certain federally-listed wildlife species to occur in the study area is determined by documented occurrences and suitable habitat. Suitable habitat occurs for one federally endangered species (Columbian white-tailed deer) and two federally threatened species (northern spotted owl and marbled murrelet) along all action alternatives."
- "Northern Spotted Owl
- 14771-13 Suitable habitat for northern spotted owl is multi-layered, species diverse old-growth forest dominated by large overstory trees. Old-growth/mature forest stands of varying condition occur in the study area along all action alternatives (see Map 18-1A through 18-1D). In addition, northern spotted owls and their foraging territory (referred to as northern spotted owl circles, and including all territorial owls) are known to occur throughout the project area, with northern spotted owl circles crossed by or occurring within 1 mile of the Central, East, and Crossover alternatives. There is no federally designated critical habitat for northern spotted owl in the study area (USFWS 2010b, 2010c)."
- Comment c2:
- Based on the above text as well as your maps of 18-1 C-D of High Value Native Wildlife Habitat, it appears that BPA proposed lines have managed to precisely avoid all spotted owls nests. The Northeastern route concept proposed by citizens did not have the same luck.

- 14771-12 The EIS summarizes impacts to fish resources in Chapter 19, Fish, and Appendix K. Table A-3, in Appendix K, provides a subwatershed-scale accounting of potential hydrology impacts. BPA has also included subwatershed-scale accounting of potential sediment impacts in Appendix K. Tables B-1 and C-1 report potential crossing-scale riparian and floodplain impacts, respectively. Table D-1 in Appendix K provides a crossing-by-crossing accounting of salmon and steelhead production potential. This detailed information is integrated to rate the loss of fish productivity created by potential habitat impacts at the crossing, reach, and ESU scale. Summary level impacts are reported in Table 25 in Appendix K.

BPA has included an analysis of restoration projects potentially affected by the action alternatives in Chapter 19. According to SalmonPort, the online project tracking system maintained by the Lower Columbia Fish Recovery Board, several restoration projects have been implemented or are planned for the Coweeman subbasin. These projects seek to improve in-stream habitat, off-channel habitat, riparian functions, and fish passage. The Coweeman River CWS Riparian Restoration could coincide with one or more stream crossings. The Nesbit Tree Farm Stream Restoration is adjacent to the transmission line crossing 11-3. Otherwise, project actions would not directly affect restoration. However, restoration benefits would be offset somewhat by riparian habitat lost to transmission line corridor construction.

- 14771-13 Comment noted.

14771-14

We urge BPA to come up with a holistic, well-reasoned and transparent weighing system for the different factors, costs and benefits (private and public) associated to the different route options over the long-term. This should include the human and socio economic factors in addition to the wildlife and fish considerations. We have seen that BPA is able to mitigate any of the concerns that have risen so far, including the owls. So, why not evaluate all options and factors, without pre-conceived exclusions or inclusions?

- 14771-14 Comment noted. Under NEPA, BPA is required to prepare an EIS for proposed projects - such as the I-5 project - with the potential to significantly affect the quality of the human environment, which includes both the natural/physical environment and the social/economic environment. Accordingly, BPA has evaluated potential impacts to these environments in Chapters 5 through 26 of the EIS. NEPA does not require that a formal cost-benefit analysis be provided; however, BPA has provided project cost estimates in the EIS for each of the alternatives studied in detail. This information, along with the environmental impact analysis and other information in the EIS, can be used by decision-makers in considering the overall costs and benefits of each alternative, to the extent that is relevant to the choice among alternatives.

14772

JANE M REVESZ, PETER REVESZ

03/25/2013

March 13, 2013

RE: Bonneville Power Administration, I-5 Corridor Reinforcement Project Double-circuit towers
on wetlands and Oregon alternatives

To Whom It May Concern:

14772-1

I am writing you today because I believe Bonneville Power Administration (BPA) did not provide a full range of alternatives, including complete and substantive analyses both quantitatively and qualitatively as required by law in any Environmental Impact Statement.

Double-circuit towers not studied

Under a Freedom of Information Act (FOIA) request to BPA asking for studies on double-circuit towers on wetlands along its West alternative (BPA-owned existing right-of-way), we received a response stating there were "no documents responsive to our request."

In 2009 BPA told my community that putting towers side-by-side along their West alternative would be a reliability problem. They told us using their West alternative would be putting all their eggs in one basket if an airplane hit the lines or if there were a terrorist attack.

14772-2

On August 18, 2011, there was a response to several questions from Maryam Asgharian, a BPA contact person for this project. One question that was asked was "Has there ever been a tower collapse or line failure along their existing easement (West alternative). Her response was "We have not seen a tower collapse along this line. We have seen insulators fail or be vandalized. If this occurs, it would likely be along one span (between two towers), rather than the whole line. Once we are aware of an issue like this we can repair it within hours."

There is clearly not much of a reliability problem based on the 70-year history of this transmission corridor.

Using BPA's West alternative would save 74 million dollars by BPA's estimate. This would also minimize the impact to the environment. Double circuiting through wetlands would result in zero long-term net loss of wetlands. BPA's new double-circuit design reduces the perceived health risks, as found on BPA's web site [footnote 1] and in their Draft Environmental Impact Statement [footnote 2] (DEIS) for the I-5 Corridor Reinforcement Project.

BPA's new double-circuit tower design

- Uses fewer towers: "4 per mile in some places"
- Costs less: "saves BPA an average of \$18,000 to \$270,000 per tower"

14772-1 Please see the response to Comment 14596-1.

14772-2 Please see the response to Comment 14596-2.

- Uses less right-of-way and creates less Electromagnetic Field levels: as noted on page 3-2, section 3.2.1 Tower Types in the DEIS.
- 14772-2 Double circuiting for the entire right-of-way would place towers on the center of the right-of-way instead of near the edges, which would increase the distance from homes, businesses, and schools, would use half as many towers and would not require removal of as much vegetation along the edge of the existing corridor.
- Pearl Alternatives (Oregon) not given a thorough Environmental Assessment as required under the National Environmental Policy Act.
- For approximately ten years, the I-5 Corridor Reinforcement Project was a study of Oregon (Pearl) and Southwest Washington (Troutdale) alternatives. In 2009, just days before an announcement went to the public, BPA made the decision to not carry the Pearl alternatives through a full Environmental Assessment and made the decision to only study the Troutdale alternatives. In late 2009, a FOIA request was submitted for the Agency Decision Framework (Version 6)[footnote 3] discussing the prematurely dropped Pearl alternatives. From that documentation I learned that BPA planned to not let the Pearl alternatives “go public” for many reasons, most of which made little sense.
- Two examples are the following:
1. BPA states the Pearl alternatives would impact 3,100 landowners, whereas the Troutdale alternatives impacts 7,700 landowners. Since the Pearl alternatives would impact less than half the number of landowners, why did BPA drop it?
 2. BPA states concerns regarding a new river crossing at the Columbia River in Longview, “requiring very tall towers up to 450 feet tall.” This should not be a concern because the existing transmission towers crossing the Columbia River in Longview are over 450 feet tall.
- 14772-3 Both the Troutdale and Pearl alternatives had similar scenarios, as stated in the Agency Decision Framework (Version 6).
- “All Pearl routing alternatives would need to go through some residential areas,” “would go through managed timber lands,” “would go near or through established wildlife areas and near or on private airstrips,”
- However, in the decision to only study the Troutdale alternative BPA stated that “The Pearl alternatives do not offer a route on existing right of way, whereas the Troutdale plan does.”
- In that case why didn’t BPA choose an existing right-of -way, the West alternative, for its preferred alternative? I think this is the most reasonable choice. If BPA persists in its decision to waste millions of dollars and hundreds of acres and invade, take, and devalue the properties of private landowners by building a new transmission corridor, then it should also be considering the Pearl alternatives to find the route least damaging to private property owners and the environment.

14772-3 Please see the response to Comment 14596-3.

14772-3 BPA wrote “a new line in either corridor (Pearl or Troutdale) would fully meet our electrical needs,” and “proposing and thoroughly analyzing up to 88 segments (Pearl alternative and Troutdale alternative) will send a clear message that we considered all possible routes and have selected the very best alternative.” I believe this is exactly what BPA should have done.

14772-4 The current Draft Environmental Impact Statement is flawed without a full range of alternatives included. To provide a full range of reasonable alternatives, BPA should perform a complete environmental review and analysis of the Pearl alternatives and double-circuit towers on wetlands along the West alternative.

14772-5 The Army Corps of Engineers must issue a permit for this project. BPA has only requested to permit one alternative, the Central Alternative, Option 1. Since BPA chose the Troutdale alternatives over the Pearl alternatives because Troutdale has an existing right-of-way, I demand that BPA requests a permit from the Army Corps of Engineers for its existing right-of-way, the West Alternative, using double circuit towers through wetlands.

14772-6 I am asking that you work with me to ensure all alternatives, including double circuit towers and Pearl alternatives are given a complete and thorough analysis, both quantitatively and qualitatively by bringing these issues to light and commenting to Bonneville Power Administration and the Army Corps of Engineers during the public comment period for the Draft Environmental Impact Statement. Both of these comment periods end at noon, March 25.

Sincerely,

Peter T. Revesz and Jane M. Revesz

[footnote 1] BPA Engineers Build A Better Tower, Saving Millions:

<http://www.bpa.gov/news/newsroom/Pages/BPA-engineers-build-a-better-tower-saving-millions.aspx>

[footnote 2] <http://www.bpa.gov/Projects/Projects/I-5/Pages/Draft-EIS.aspx>

[footnote 3]

http://abetterway4bpa.org/index.php?option=com_docman&task=cat_view&gid=92&Itemid=77

14772-4 Please see the response to Comment 14596-4.

14772-5 Please see the response to Comment 14596-5.

14772-6 Comment noted.

14773

PETER J MENZA

03/25/2013

14773-1 Hi good morning, my name is Peter Menza. I'm a current resident here on the existing right of way regarding this I-5 reinforcement project. I just want to advise you folks, I have tried now since Saturday afternoon to log on and send my comments via your website. And each time I do it, I get to the submission point, I do that, and it kicks me out of the system with no receipt or acknowledgement of comment. So I would really appreciate the opportunity to do that before your drop dead date time today. And in light of just the timing, I would appreciate a call back at [phone number]. I will try your website again this morning. Thank you.

14774

CAROLYN J SCHULTZ-RATHBUN

03/25/2013

14774 I am writing in support of the West Alternative for the BPA's I-5 Corridor Reinforcement Project.

It is my understanding that BPA has only requested a permit for one alternative in SW Washington, the Central Alternative, Option 1. BPA chose the Troutdale alternatives over the Pearl alternatives in Oregon because Troutdale has an existing right-of-way. By the same token, BPA should request a permit from the Army Corps of Engineers for its existing right-of-way in Washington, the West Alternative.

BPA should route through SW Washington on your existing right-of-way, the West Alternative, using double- or triple-circuit towers as necessary.

14773-1 BPA contacted the commenter and confirmed that his comments had been received.

14774-1 Please see the response to Comment 14596-5.

14775

Richard Dyrland
Resource Analyst/Supervisory Hydrologist

March 22, 2013

I-5 Corridor Reinforcement Project
PO Box 9250
Portland, OR 97207

US Army Corp of Engineers, Regulatory Branch
Steve Manlow, Project Manager
PO Box 3755
Seattle, WA 98124-3755

**Re: Bonneville Power Administration NWS-2011-346
Draft I-5 Corridor Reinforcement Alternatives – Review of Draft EIS Documents**

Dear BPA I-5 Corridor Project Team:

My qualifications as a reviewer are that I am a semi-retired Federal Office of Management & Budget trained Programs, Policy, and Projects Analyst as well as a Supervisory Regional Hydrologist with more than 35 years of experience over the western United States as well as Washington D.C. I have worked at the local, regional, and national level.

14775-1

Introduction:

First I want to congratulate the BPA for putting together a very comprehensive document. I have both helped develop as well as review EIS documents of this size and scope in the past and appreciate the amount of effort it takes to do this and also to objectively and effectively involve the public.

Summary of Review Findings:

The one area of concern that I have is the rather light, and basically inadequate, treatment of “risk” in relation to impacts, cumulative effects, and tradeoffs throughout the documents in regard to four particular evaluation components, which are closely inter-related: specifically—Geology and Soils/Geologic Hazard Assessment, Water, Fish, and Public Health and Safety. Much of the stream-related impacts discussed in the Draft EIS documents are related to change in vegetative cover in terms of the width and number of stream crossings. Although helpful, this indicator of disturbance when viewed in relation to the total length of a given stream and adjusted for actual length of a stream with tree or shaded cover—is relatively small or low for all the route alternatives. Planting of shrubs and bushes can mitigate for some of this type of impact.

14775-2

Page 1 of 4

14775-1 Comment noted.

14775-2 Please see the response to Comment 14683-9.

The soil and groundwater contamination at the Reynolds Troutdale Site has been clearly identified and addressed in previous investigations and site cleanup required and overseen by EPA Region X. BPA is closely coordinating with EPA, the Oregon Department of Environmental Quality, and the underlying property owner (Port of Portland) to locate any geotechnical investigations and project facilities to minimize impacts to the site.

14775

- A more meaningful indicator of risk to water and fish is—What alternative routes have sites with significant risk to lowering of water quality and to loss of federally listed **Threatened & Endangered (T&E)** fish populations largely due to present or potential disturbance either man-made (anthropogenic) or earthquake/fault generated disturbance on known areas that are chemically contaminated? Two such areas exist and are briefly discussed in Chapter 10 Health and Safety 10-1 through 10-5. The risks these sites pose require a much more in-depth discussion and updated field examination than is done in the current Draft EIS. Pollution from toxic wastes was investigated at the Chelatchie site and concerns expressed as early as 1978 (WA Dept. Ecology, 1978).
- 14775-2 Toxic wastes are officially designated at the Chelatchie Prairie (Chelatchie Tank Farm, IPC Plywood Mill, IPC Solid Waste) sites (WA DOE Hazardous Site List, 2012). It is known that there was spilling, dumping, burying of toxic materials and liquids done at the Chelatchie sites. The Reynolds Metal site is in Oregon and recognized as an active EPA “Superfund” site. The Reynolds site which is in “active” ongoing cleanup state, apparently also has a known fluoride contamination plume.
- Although Volume-1 Chapter 10, Section 10.2.2 discusses Toxic and Hazardous Substances, and appropriate actions to be taken, it overlooks the need to avoid routes that contain potentially “high risk”. The impacts of disturbing and releasing toxic wastes that are near a stream are very significant and long-term because they not only destroy the “T&E” listed fish populations and habitat for many miles downstream, but through groundwater contamination it also creates a risk to Public Health and Safety. There is also concern with the location of Alternative routes because they pass through the Troutdale Aquifer, which is a federally designated “Sole Source Aquifer.” Any leakage of contaminates into the recharge area of the Troutdale Aquifer would have serious environmental and Public Health and Safety consequences.
- 14775-3 Cedar Creek and the Chelatchie Creek tributary have had eight fish habitat restoration projects completed in the last 12 years (one of which was about one mile in length) to improve Steelhead, Coho, and Chinook populations which are “T&E” listed. Damaging these streams and fish populations would result in a “Federal TAKE” with serious legal consequences. Cedar Creek/Chelatchie Creek salmonids are also vital to sustaining “T&E” listed fish populations in the North Fork of the Lewis River below the dams.
- 14775-4 **These kinds of stream and fish impacts cannot be mitigated, some of the groundwater impacts may be partly mitigated but at high economic and social cost. The sites and routes (Central Alternative-Series should be ranked as least desirable).**
- 14775-5 **Specifics:**
Again it needs to be said that the assumption used that all impacts can be “mitigated for” is not valid.
- 14775-6 The geologic and fault study reports done in the Chelatchie Creek area along with recent Mt. St. Helens related earthquakes indicate that there is a **high or significant risk** of disturbing contaminants.
- 14775-7 Tower anchor boring depths that can range from 4 ft. to 16 ft. or more and disturb up to 0.5 acres (Chap. 3-4 Tower Footings 3.2.2), run the risk of disturbing and penetrating contaminated areas or buried containers. The Draft EIS shows two tower sites proposed at the Chelatchie site and six tower sites at Reynolds Metals in Troutdale, which are both toxic waste sites. This, and related parts of the Draft EIS, need to be supplemented with at least **Ground Penetrating Radar (GPR)** studies of these sites and borings taken to do examination and determination kind and degree of contaminate characteristics.

Page 2 of 4

14775-3 The EIS summarizes impacts to fish resources in Section 19.2, Environmental Consequences. BPA has included an analysis of restoration projects potentially affected by the action alternatives to this section. According to SalmonPort, the online project tracking system maintained by the Lower Columbia Fish Recovery Board, two projects occur and/or benefit reaches crossed by transmission line corridors in the Cedar Creek watershed. The WRIA 27/28 Nutrient Enhancement project may involve carcass placement at or near the transmission line stream crossing 26-3 along Cedar Creek. Fish passage improvement near the Cedar Creek headwaters benefits fish production at the transmission line crossing at 28-6. In both cases, restoration benefits would be slightly offset by riparian habitat lost to corridor construction.

14775-4 Please see the response to Comment 14775-3.

14775-5 Chapter 25, Irreversible or Irrecoverable Commitment of Resources, discusses the potential resources used or impacted for the project that could not be mitigated. Also, Chapters 5 through 22 each contain a section called Unavoidable Impacts, which identify those impacts that would still remain if all recommended mitigation measures were implemented.

14775-6 Please see the response to Comment 14683-9.

There is no information available to suggest significant contamination exists in the Chelatchie Creek area to be released by geologic activity.

14775-7 Please see the responses to Comments 14775-2 and 14775-6. BPA has conducted geotechnical drilling at the Sundial Substation site to aid in the design of tower and substation footings. No buried containers were found. The cores were not tested for contaminants as soil and groundwater contamination has already been clearly identified and addressed in previous investigations and site cleanup required and overseen by EPA Region X.

- 14775
- 14775-8 Another important risk factor is that of landslides and their effect on transmission towers. The Swift, Yale, Amboy-Chelatchie Prairie, Buncombe Hollow and areas between (all enter and exit points for several alternatives and options) on transmission routes go through numerous zones that have landslide areas. They may be more active due to earthquakes related to Mt. Saint Helens and faults (Evarts R., US Geological Service 2005).
- Until those and other discussed further study needs are done, the comparison of the various alternatives and their effects—is incomplete and inadequate even for a Draft EIS.**
- 14775-9 Appendix J: Phase-1 Geologic Hazard summarizes in visual and tabular form identified specific conditions (Example: Segment 28 items 28-01 to 28-12 in the Chelatchie Prairie area), but the Draft EIS document does not have extensive substantive discussion of the type and degree of risk posed by these conditions, particularly in relation to the known toxic hazards officially identified and listed in that area.
- 14775-10 The economic tables showing value of timber cut to clear right-of-way and associated activities are not clearly defined in footnotes as to what they represent. Example is Appendix 12 Table A-7 is the Net Present Value actually calculated with discounted timber clearing benefits minus discounted forgone future harvest revenue?
- This table and other similar tables need to clearly show the net result of subtracting the discounted value of foregone future timber harvest and associated activities from the value of the right-of-way timber cut—if not, the information can be misleading or miss-interpreted in terms of evaluating and comparing Alternatives and Options. A basic table or series of tables **showing the difference or change** from the “No Action” Alternative in quantitative measurement units would be very helpful in evaluating the alternatives. Characteristics that are displayed as differences or changes are more informative than tables that only display totals for a measurement of a given attribute or indicator.
- Recommendations To Correct Deficiencies:**
- 14775-11 Give more weight to earthquake and fault interaction information as it relates to short-term and long-term risk factors and impacts on steams, fish, and public health and safety from toxic contaminated and potentially unstable sites.
- Better utilize existing, as well as obtain additional information (including GPR investigations) of known chemical pollution and potential pollution exacerbation by disturbance at know pollution hazard sites (Chelatchie Creek – International Paper Company Mill Sites and Solid Waste Site and Reynolds Troutdale Site). In addition, at least one of these sites (Chelatchie Creek Area) is susceptible to both exacerbation by earthquake-fault related events and ground disturbance of polluted areas.
- Those kinds of sites need to be further evaluated by information using **portable ground penetrating radar** equipment and other pollution investigation techniques and technology. The risk of severe long-term biological and social-economic impact at these sites is too high to not go back and do additional, more adequate risk investigation and analysis.
- Conclusions On The Draft EIS Alternatives:**
- 14775-12 My analysis indicates that the Central Alternatives Series, particularly Option-1 are the least desirable of all the alternatives. And overall, the new “rural alternatives” are all in a least desirable status, or stated in another way—transferring into other new routes in rural areas is not desirable either. The West Alternative (existing transmission corridor) is a better alternative and should be the “Preferred Alternative” for Washington.

- 14775-8 Appendix J contains a large amount of geologic data, some of which was used to develop Chapter 14, Geology and Soils. Chapter 14 describes site-specific investigations that would be done at landslide prone areas to evaluate their potential for landslides to occur. These investigations are on-going and the results inform the engineering design. To the extent possible, towers and access roads would be sited to avoid potential landslide prone areas. If needed, mitigation measures to reduce the risk of landslides, such as those described in Chapter 14, Geology and Soils, would be implemented (e.g. developing a landslide monitoring plan).
- 14775-9 Please see the responses to Comments 14683-9, 14775-2, 14775-6, and 14775-7.
- 14775-10 Chapter 11, Socioeconomics, and Appendix A have been updated to include a more detailed description of the assumptions used for the analysis of timber impacts. The analysis identifies two forms of impacts: short-term impacts from revenue gained from timber harvest for the project and long-term impacts from revenue foregone from future timber harvests that would not occur with the project.
- This analysis is not intended to serve as an appraisal of the value of timber on individual properties, or an estimate of compensation required to offset future expectations of timber-harvest revenue. It is instead intended to provide information sufficient to allow BPA to compare timber-related impacts across action alternatives, recognizing that there would be both positive and negative impacts for landowners. Timber landowners whose land the project would cross would have an opportunity to negotiate compensation with BPA.
- 14775-11 Please see the responses to Comments 14683-9 and 14791-22.
- 14775-12 Comment noted.

14775-13 | However, the Oregon Alternatives, referred to as the "Pearl Alternatives" may be the best of all the potential alternatives and should be brought into an update of the Draft EIS. 14775

Respectfully,



//s//Richard Dyrland
Resource Analyst/Supervisory Hydrologist

cc: A Better Way for BPA

CITATIONS AND REFERENCES:

Computer Desktop Encyclopedia, 2002. Ground Penetrating Radar Applications – Buried Tanks. 1 Page

Evarts, R. 2005. US Geological Survey, USDI, Geologic Map of Amboy Quadrangle, Clark & Cowlitz Counties, WA, Pamphlet to Accompany Scientific Investigation Map 2885, Landslides & Faults. 25 Pages

Fish First, 2006/2011. Fish First Projects History Summary Book and Project Updates, Woodland WA. 23 Pages

University of Kansas, 1998. Seventh International Conference of Ground Penetrating Radar, Proceedings Vol-1. 5 Pages

WA State Dept. Of Ecology, 1997. Ground Water Recharge Area Protection (Water Quality), Vol. 4, Appendix 2, Issue Papers, Need for Protection for Disturbance Sources of Contaminates. 45 Pages

WA Dept. Of Ecology, 2012. Hazardous Site List. 32 Pages

WA Dept. of Ecology, 1978. Impact of International Paper Company Wood Products Mill Effluent on Receiving Waters of the Upper Chelatchie Creek Drainages. 14 Pages

14775-13 Please see the response to Comment 14443-1 regarding the elimination of the Pearl Routes from detailed study in the EIS.

14776

RONALD S STEPHENS

03/25/2013

14776-1

I urge you to choose the Western Alternative, which is lower cost and uses existing rights-of-way, avoiding destruction of our environment and seizure of private lands.

14777

HASLINGER PROPERTIES LLC, KRIS J DESYLVIA, BARBARA HASLINGER

03/25/2013

March 25, 2013

I-5 Corridor Reinforcement Project

[address]

i-5@bpa.gov

Dear Sir or Madam,

We are writing on behalf of the members of Haslinger Properties LLC regarding the draft Environmental Impact Statement (EIS) for the I-5 Corridor Project. We own a one half interest in 160 acres of land in Clark County Washington. The remaining interest is owned by members of Francar LLC. Our property is currently managed exclusively for timber production, however it is zoned for limited residential development. Our property is directly and disproportionately impacted by Central Alternative Options 1 and 2 and by the Crossover Alternative.

14777-1

The draft Environmental Impact Statement (EIS) says in its summary that the "BPA is considering four action alternatives . . . The ultimate action taken will depend on which alternative best meets the project's primary purposes: maintaining system reliability and performance, helping BPA meet its statutory and contractual obligations, using ratepayer funds responsibly and efficiently, and minimizing impacts to the natural and human environment (S-2)." We submit that the alternative that best meets all four of these primary purposes is the West Alternative.

Each alternative has varying impacts on the natural and human environment. However, only the West Alternative limits these impacts to areas that are, for the most part, already subject to such impacts. By contrast, all alternatives to the West Alternative require a substantial number of new rights-of-way and easements and create impacts on lands that are not currently subject to transmission lines.

Great weight seems to be given to the fact that the West Alternative crosses over and impacts the most suburban and residential land. However, greater consideration must be given to the fact that these lands are already impacted by the present placement of power lines and easements.

14777-2

Use patterns have evolved around and adapted to the existing power lines. Also, changes that are made along existing power corridors can have less visual impact than construction of a new power corridor. For example in the Shelton-Kitsap Environmental Assessment, the BPA described the visual impact of proposed improvements to the Shelton-Kitsap power transmission line as follows:

Since the transmission corridor has existed since the 1940's, it has been a part of the viewscape in the project area for nearly three generations. . . . The greatest visual exposure to the Proposed Action along the existing electrical transmission corridor would be from the residences located intermittently along the corridor; the senior citizen residence/care center . . . the park . . . the church parking lot . . . and

- 14776-1 Comment noted.
- 14777-1 BPA considered many factors when identifying its preferred alternative. These included system reliability, cost, and impacts to the human and natural environmental. Please see BPA's issue brief at:
<http://www.bpa.gov/Projects/Projects/I-5/Documents/BPA-I-5-Issue-Brief-Preferred-Alternative-Nov2012.pdf>.
- 14777-2 The potential for the project to affect visual resources is described in Chapter 7, Visual Resources, and Appendix E. Although use patterns have evolved around and adapted to the existing transmission line and corridor along the West Alternative, Section 7.2.1, West Alternatives and Options, notes that public comments received during the scoping period indicate residents along the West Alternative are highly sensitive to change. This section also discloses how viewer sensitivity varies locally with land use and density, including that rural viewers' sensitivity may be higher given expectations of more natural landscapes.

- 14777-2 the dance hall parking lot. The visual impact from the Proposed Action to these potential viewers is considered low to moderate and non-significant, based on the following: the proposed rebuild would occur within an established electrical transmission line corridor that is in proximity to these potential viewers, who thus already have decreased sensitivity to the visual components associated with the Proposed Action. Shelton-Kitsap Transmission Line Rebuild, Final Environmental Assessment; January 2001
- 14777-3 Individuals affected by construction on the existing rights-of-way on the West Alternative also have either been compensated already for the easements or have encroached on them after the lines were constructed. Those people who purchased their property after construction of the existing power lines did so for a discount owing to the existence of the easements and the power lines.
- 14777-3 A decision to reject the West Alternative would define the use of the existing easements to be less than that which is legally authorized and expected. It would cause a financial benefit to property owners who had reason to expect that the easements would result in an expansion of the existing power lines. This financial benefit would come at the expense of the property owners whose lands would be subject to the newly acquired easements.
- 14777-4 Because of the human and natural world impacts of new power line construction, construction along existing easements generally is favored.
- 14777-4 When properly evaluated as part of routing decisions, corridor sharing can be a useful method in mitigating environmental, property and community impacts of a new transmission line . . . sharing corridors with existing facilities may minimize impacts by: reducing the amount of new ROW required; concentrating linear land uses and reducing the number of new corridors that fragment the landscape creating an incremental, rather than a new impact. Often, the most preferred type of corridor sharing is with an existing transmission line. Environmental Impacts of Transmission Lines, Public Service Commission of Wisconsin, <http://psc.wi.gov/thelibrary/publications/electric/electric10.pdf> p. 4,5
- 14777-4 In past projects, the BPA has recognized the advantages of building new transmission lines along existing rights-of-way. In an August 2002 draft EIS statement for the Grand Coulee-Bell 500 kV Transmission line Project the BPA said:
- 14777-4 When locating new transmission lines, BPA tries either to replace existing lines or to use or parallel an existing transmission right-of-way. Adding a transmission line on existing right-of-way next to an existing one can cause fewer visual, land use, and ground disturbance-related impacts than a new, totally separate line, and the need for new access roads can be kept to a minimum by using existing access roads. Using an existing corridor also avoids the impact of having to clear miles of new 150-foot wide right-of-way. Following this right-of-way practice can greatly reduce costs and environmental impacts. BPA Grand Coulee-Bell 500 kV Transmission Line Project Draft EIS August 2002 p. S-9
- 14777-5 According to the draft EIS for the I-5 Corridor Project, the West Alternative crosses the highest percentage of land (approximately 98%) that is already subject to a power easement (S-8). It would "occupy about 1,097 acres of existing right-of-way and require about 127 acres of additional new right-

- 14777-3 Comment noted.
- 14777-4 BPA considered many factors when identifying its preferred alternative. These included system reliability, cost, and impacts to the human and natural environmental. Please see BPA's issue brief at:
<http://www.bpa.gov/Projects/Projects/I-5/Documents/BPA-I-5-Issue-Brief-Preferred-Alternative-Nov2012.pdf>.
- 14777-5 The potential for the project to affect visual resources is described in Chapter 7, Visual Resources, and Appendix E. Although use patterns have evolved around and adapted to the existing transmission line and corridor along the West Alternative, Section 7.2.1, West Alternatives and Options, notes that public comments received during the scoping period indicate residents along the West Alternative are highly sensitive to change. This section also discloses how viewer sensitivity varies locally with land use and density, including that rural viewers' sensitivity may be higher given expectations of more natural landscapes.

- of-way along and adjacent to existing right-of-way" (S-11). The BPA would need to acquire up to 401 acres of new easements for transmission line right-of-way and new and improved roads(S-11).
- For the Central Alternative, by contrast, the BPA "would need to acquire up to 2,113 acres of new easements for transmission line right-of-way and new and improved roads (S-13). "Because the Central Alternative would follow existing right-of-way for only 8 miles, it would need about 1,287 acres of new right-of-way for both towers and roads – the most of the action alternatives" (S-13).
- Accordingly, the Central Alternative, would require approximately 10 times the amount of new right-of-way acreage as would be necessary for the West Alternative. Furthermore, the construction of a second power corridor would more than double the currently existing environmental impact.
- 14777-5 The East Alternative would require the BPA "to acquire up to 2,376 acres of new easements for transmission line right-of-way and new and improved roads (S-15). "Similar to the Central Alternative, the East Alternative would follow existing right-of-way for about 8 miles, needing about 1,255 acres of new right-of-way for both towers and roads" (S-15).
- The Crossover Alternative would require 1,420 acres of new easements (S-16). "Because the Crossover Alternative would follow existing right-of-way for about 33 miles, it would need about 772 acres of new right-of-way for towers and roads" (S-16).
- Because the West Alternative follows existing routes and easements for most of its distance, the need to condemn land and to negotiate for extensive new easements is not present. Also, right-of-way clearing and access road construction has already taken place along most of the West Alternative. Although these rights-of-way and access roads would need to be expanded and improved, the cost to do so would be less than the cost to clear new rights-of-way and to construct new access roads along a second corridor. The environmental impact of expanding and improving existing roads would also be less than the environmental impact of constructing new roads.
- 14777-6 It is notable that the draft EIS details the monetary costs of the various alternatives in only the most perfunctory manner (4-31). A dollar figure is given for each of the action alternatives but no information is given as to the methodology used or assumptions made. This lack of detail prevents any meaningful critique of the cost estimates.
- The EIS estimates that the Central Alternative will cost approximately \$74 million dollars more than the West Alternative. One of the BPA's four stated, and equally weighted, goals for the I-5 Corridor project is the responsible and efficient use of taxpayer dollars. Despite this stated goal, the BPA has identified the Central Alternative as the preferred route for the project. The BPA fails to adequately explain why a route costing approximately \$74 million dollars more than the West Alternative is an efficient and responsible use of taxpayer funds.
- 14777-7 In addition to being the lowest cost alternative, the West Alternative is the route that best meets the goal of minimizing the impact on the natural and human environment because it is the only alternative that limits the I-5 Corridor Project to an area that is already developed for power line transmission. All

- 14777-6 Please see the response to Comment 14777-1.
- 14777-7 For the action alternatives, BPA believes the EIS adequately describes baseline conditions. The EIS's description of the Affected Environment for each action alternative focuses on describing currently-existing environmental conditions for a wide variety of resources in the vicinity of each action alternative. These affected environments are widely recognized and accepted "baseline conditions" under NEPA. It is in comparison to these baseline conditions that the potential impacts of each action alternative is properly examined and described. Accordingly, BPA believes the approach used in the EIS to identify the baseline for each action alternative as the affected environment against which potential project impacts are analyzed is consistent with NEPA requirements.

- other alternatives require the creation of a second power corridor that will cause human and natural world impacts along two routes instead of one.
- 14777-7 Power lines are currently located on approximately 98% of the West Alternative. The increased environmental impact caused by construction of a new line along that existing route is the only appropriate measure of the environmental impact of the West Alternative, but that increased impact is not always clearly described in the draft EIS.
- 14777-8 The statement in the draft EIS that describes the impact of the West Alternative on water resources and soil disturbance illustrates this point. It says: "Transmission line clearing and road construction would result in about 84 miles (1,285 acres) of potential soil disturbance that could contribute sediment to streams . . . Because most of this alternative occupies an existing transmission line right-of-way, clearing has already occurred in some areas" (15-13) (emphasis added). This description provides no useful information about the increased impact that the West Alternative would have on soils and provides no meaningful comparison of the West Alternative to the other alternatives on the issues of soil disturbance and water quality.
- 14777-9 In its chapter on fish, the draft EIS describes the West Alternative's potential for soil disturbance in the same way. It says: "Transmission line clearing and road construction would cause about 84 miles (1,285 acres) of potential soil disturbance that could contribute sediment to streams through runoff or erosion" (19-18). However, according to the draft EIS the West Alternative would "occupy about 1,097 acres of existing right-of-way and require about 127 acres of additional new right-of-way along and adjacent to existing right-of-way" (S-11). Clearly the draft EIS has failed to adequately consider that clearing has already taken place along the West Alternative's existing power corridor and has failed to accurately assess the potential for soil disturbance and the impact on fish and water quality that would be caused by construction of the West Alternative.
- 14777-10 Regarding wetlands, the draft EIS says of the West Alternative: "Right-of-way clearing would affect about 54 acres of forested wetlands and 62 acres of scrub-scrub wetlands (both High impacts), the most of the action alternatives." However, it is clear from the statements regarding soil disturbance (quoted above) that clearing has already occurred in some areas because most of the West Alternative occupies an existing transmission line right-of-way. This fact is not adequately considered or addressed by the draft EIS.
- 14777-11 Chapters 5-23 and Table 4-10 of the draft EIS compare the environmental impacts of each action alternative. However, as to each category of environmental impact, the draft EIS fails to clearly define and distinguish the increased environmental impact that would be caused by construction on the West Alternative from the ongoing impact caused by the currently existing power corridor. Because of this the draft EIS fails to provide a meaningful comparison of the West Alternative from the other action alternatives.
- 14777-12 Because construction of a second power corridor will not lessen the impact of the existing power corridor, comparison of all alternatives should consider the environmental impact of each alternative plus the environmental impact of the existing power corridor.

- 14777-8 Please see the response to Comment 14777-7.
- 14777-9 While the West Alternative is mostly located on existing right-of-way, it does require areas of new right-of-way; as the commenter quotes from the Draft EIS. The areas of new right-of-way would need to be cleared. In addition, there are many areas along the existing right-of-way and new and existing access roads that would also need to be cleared exposing new areas to sedimentation through run-off or erosion. The existing right-of-way can accommodate two lines but because only one line occupies the right-of-way, vegetation has been allowed to grow through the years on the right-of-way. Most, if not all, of this vegetation would need to be removed.
- 14777-10 Please see the response to Comment 14777-9. Though most of the West Alternative would occupy an existing right-of-way, clearing would still be required in areas where right-of-way vegetation has not been maintained as low-growing vegetation.
- 14777-11 Please see the response to Comment 14777-7.
- 14777-12 Please see the response to Comment 14777-7.

- For example, the draft EIS compares the impact that the West Alternative and the Central Alternative would have on birds and wildlife in the following way:
- The West Alternative would create the least new fragmentation of wildlife habitat because it would require only 3 miles of new right-of-way; however widening of existing right-of-way could expand existing fragmentation, particularly in forested habitats. Because the new transmission line would be higher than parallel existing lines, it could increase the risk of bird collisions in many areas (4-43).
- Requiring mostly new right-of-way, the Central Alternative would increase habitat fragmentation primarily in forested habitats; however most of the new line would not parallel existing lines and so pose less collision risk for birds than the West Alternative . . . Impacts on most wildlife would be similar to the West Alternative (4-43).
- This description unfairly and inaccurately suggests that the impact on wildlife would be the same and the potential for bird collisions would be less if the Central Alternative were chosen instead of the West Alternative. These conclusions defy logic and common sense. If the Central Alternative were chosen over the West Alternative then bird collisions would occur along two power corridors instead of one. Although construction of higher transmission lines along the West Alternative “could increase the risk of bird collisions in many areas” (4-43), the construction of a second power corridor would double the currently existing risk of bird collisions. Similarly, although “widening of existing right-of-way could expand existing fragmentation, especially in forested habitats,” construction of a second power corridor across heavily forested land would double the currently existing impact on wildlife. It is disingenuous for the draft EIS to suggest otherwise.
- Because the draft EIS fails to employ a true and accurate comparative measure of the various alternatives to the West Alternative, it is inadequate to form the basis of an informed decision and should be rejected.
- The hazards caused to birds and wildlife by the placement of power lines are well documented. Power lines not only destroy habitat but they also disrupt bird and wildlife migration and isolate species. Collisions with power transmission and distribution lines are estimated to kill “anywhere from hundreds of thousands to 175 million birds annually, and power lines electrocute tens to hundreds of thousands more birds annually.” Bird Strikes and Electrocutions at Power lines, communication Towers, and Wind Turbines: State of the Art and State of the Science – Next Steps Toward Mitigation, Albert M. Manville II, 2005
- Federal agencies taking actions that are likely to have a measurable negative effect on migratory birds are required to work with the U.S. Fish and Wildlife Service to promote the conservation of migratory bird populations. Avian Power Line Interaction Committee (APLIC). 2012. Reducing Avian Collisions with Power Lines: The State of the Art in 2012. Edison Electric Institute and APLIC. Washington, D.C.
- Although the BPA proposes to mitigate the risk to bird and wildlife populations by working with the U.S. Fish and Wildlife Service (USFWS) and the Washington State Department of Fish and Wildlife once an

- 14777-13 Comment noted. BPA believes that the EIS reasonably analyzes the potential environmental impacts of all alternatives evaluated in detail in the EIS. Throughout the EIS, the impacts of these alternatives are presented in comparative form consistent with the CEQ NEPA regulations (see 40 CFR 1502.14). BPA thus believes that the EIS will be useful in making an informed decision concerning the proposed I-5 Project.
- 14777-14 Please see the response to Comment 14565-15. In addition, BPA is working with USFWS and WDFW to minimize impacts on avian species by avoiding important habitat areas to the extent possible and by mitigating with measures such as installing appropriate bird flight diverters on overhead ground wires or fiber optic line in areas at high risk for bird collisions.

- 14777-14 | action alternative is determined, (18-64) those agencies should be actively involved in the siting decision because mitigation measures cannot compensate for errors that occur in the initial siting decision.
- 14777-15 | Also, the wildlife information that was relied upon in the draft EIS appears to be dated and unreliable. For example, a 2001 listing of priority habitats, species maps and an associated data base were relied upon in the draft EIS (29-24). The draft EIS also appears to have relied upon terrestrial surveys of the Marbled Murrelets, a federally listed threatened species, that were created in 2001 and 2002 (29-29). A USFWS species list for Cowlitz and Clark County that was last updated in 2007 was relied upon. (2010b; 29-22). However, that species list is a general list for each county. It provides no information about the distribution or location within each county of the listed species.
<http://www.fws.gov/wafwo/speciesmap.html>. USFWS Critical Habitat Data was accessed in 2010. However, no information is given as to the date when the data was collected (29-22). Reliance on outdated and general resources such as these cannot substitute for current, location specific, information and data on these critical issues.
- 14777-16 | Similarly, an informed siting decision cannot be made without the close collaboration of state and local agencies that protect natural resources such as soil and water, especially where, as here, the draft EIS appears to have relied on dated material that may no longer be accurate. For example, wetland information for Clark County appears to have been collected from digital data that was compiled in December 2006 (29-4) and wetland information for Washington State generally was collected in 1992 and 2005 (29-42) and in 1997 (29-12). Hydrography data was compiled in 2006 (29-42).
Although the USFWS's National Wetland Survey was compiled in 2010 no information is given as to when the underlying data was gathered (USFWS 2010a; 29-22). Similarly, Herrera Environmental Consultants prepared reports in 2010, however, no information is given about the data that was relied on in those reports (29-10). Outdated and unreliable resources such as these cannot form the basis of an environmentally sound siting decision.
- 14777-17 | Although the West Alternative, in theory, could present reliability problems because of locally based calamities (air craft flying into power lines etc.), such issues have not created significant problems in the past. Also, the EIS identifies measures to protect against such concerns.
Furthermore, because vandalism has been identified as a persistent problem with overhead power lines, especially in sparsely populated areas, the construction of new power lines along existing easements and in more populated areas can reduce vandalism and promote system reliability. Environmental Impacts of Transmission Lines, Public Service Commission of Wisconsin, <http://psc.wi.gov/the-library/publications/electric/electric10.pdf>
- 14777-18 | For these reasons, the West alternative meets the primary purpose of maintaining system reliability and performance and helping the BPA meet its statutory and contractual obligations.

- 14777-15 The wildlife databases used for the Draft EIS were from 2010 and include the following primary sources:

WDFW. 2010a. Washington state species of concern lists. Washington Department of Fish and Wildlife. Obtained from agency website on September 14, 2010:
<http://wdfw.wa.gov/conservation/endangered/lists/search.php?searchby=All&orderby=AnimalType,%20CommonName%20ASC>.

WDFW. 2010b. Priority habitats and species GIS layers. Washington Department of Fish and Wildlife, Olympia, WA.

These databases were reviewed again in 2014 and updates were made to the Final EIS where new information was available. The locations of priority habitats and species deemed sensitive by WDFW are not to be displayed on a map due to an increased risk of human interference.

The Draft EIS did not rely on terrestrial surveys of marbled murrelet, but rather considered impacts on marbled murrelet habitat, in particular the marbled murrelet conservation zones specified in the 1997 Marbled Murrelet Recovery Plan prepared by the US Fish and Wildlife Service. Terrestrial surveys were done in 2015 and will continue in 2016.

- 14777-16 Please see the response to Comment 14753-1.
- 14777-17 Please see the responses to Comments 14702-1 and 14704-6.
- 14777-18 Comment noted.

- 14777-18 | If some action is determined to be necessary and in the public interest, we submit that the West Alternative should be chosen because it is the alternative that best meets all of the stated primary action goals.
- 14777-19 | However, the members of Haslinger Properties LLC also oppose what is currently identified as the preferred action alternative, Central Alternative Option 1, owing to its disproportionate impact on our property interests. For the same reason, we also oppose the Central Alternative Option 2 and the Crossover Alternative.
- 14777-19 | The draft EIS says of the Central Alternative that most of the land that would be burdened by new easements is not of a residential or suburban nature. However, consideration must be given not only to the use to which land is currently put but also the use to which it can be put. Our approximately 160 acre parcel, consists of two tax lots; a northern tax lot of approximately 80 acres and a southern tax lot of approximately the same size. This property has been held by our family since the 1950's. Each of these tax lots allows for residential development. Central Alternative Option 1, Central Alternative Option 2 and the Crossover Alternative will render our tax lots valueless for any future residential development. Further, each of these options will severely compromise our ability to manage our property efficiently and profitably for timber production.
- 14777-20 | The rights-of-way and easements that would be necessary for this project are for "in perpetuity." For this reason, any impact on cyclical forest production also is for a period "in perpetuity." The most recent timber sale on our property generated both personal income and excise tax income. The resource that generated this income is renewable and provides cyclical, dependable income.
- 14777-20 | Clark County has restricted the harvesting of trees within a certain distance of streams and creeks in order to protect water quality. Our property is crossed by a number of permanent and intermittent streams and creeks. A beaver dam is located near our northern boundary. To date, we have honored the water quality restrictions enacted by Clark County. However, we have not waived our right to claim that these restrictions constitute an unlawful taking of our property interests without compensation.
- 14777-21 | The right-of-way that would be required for the preferred option, Central Alternative Option 1, and for Central Alternative Option 2 and the Crossover Alternative, runs below and along the entire length of our Northern property boundary. Because of its placement, below our northern boundary, the proposed route strands a strip of timber producing land along our northern border. It appears that this was done in order to lessen the impact of the transmission lines on residential properties that are located near the Northwestern border of our property and possibly to avoid the need to pay compensation to those landowners. However the placement of this right-of-way has a disproportionate impact on our property.
- 14777-22 | Central Alternative Option 1, Central Alternative Option 2 and the Crossover Alternative also call for the construction of an access road across our southern tax lot. This proposed access road splits into two roads on our Northern tax lot. These roads, especially when combined with the power line right-of-way and the stream and creek restrictions imposed by Clark County, carve our property up and significantly impair our ability to manage our property efficiently and profitably for timber production. They also will promote illegal hunting, timber theft and the dumping of solid waste on our property.

- 14777-19 When BPA proposes to acquire a right-of-way and/or related access easements, the appraisal process would consider the highest and best use of the parcel, and determine the easement's impact using a before and after methodology as described in the Uniform Appraisal Standards for Federal Land Acquisitions (UASFLA). The appraisal process would establish the value of these impacts for the land rights to be acquired. See also the response to Comment 14566-9.
- 14777-20 Please see the response to Comment 14566-9.
- 14777-21 Please see the response to Comment 14097-1.
- 14777-22 Please see the response to Comment 14119-2. For most of their length, these are existing roads on your property that would be reconstructed.

The draft EIS says “In timber production areas, removal of land for timber use could have permanent high impacts on some landowners, despite compensation, and where rights-of-way could make certain timber stands inaccessible or economically infeasible to harvest (S-10).”

14777-23 Payment to us for the land taken out of timber production and rendered valueless for residential development cannot adequately compensate us for the impact on the value of the property that we have held in our family for generations and for the loss of the renewable resource on that property. It would be impossible for us to mitigate our loss by the purchase of substitute residential and timber production land. For these reasons, Central Alternative Options 1 and 2 and the Crossover Alternative have an unfair and disproportionate impact on us as landowners and we oppose them.

Sincerely yours,

Kris DeSylvia
Haslinger Properties LLC
Barbara Haslinger
Haslinger Properties LLC

14777-23 Please see the response to Comment 14566-9.

14778

MICHAEL S MARQUARD

03/25/2013

14778-1 I urge you to choose the Western Alternative, which is lower cost and uses existing rights-of-way, avoiding destruction of our environment and seizure of private lands.

14779

ANDREW P HALL

03/25/2013

14779-1 I urge you to choose the Western Alternative, which is lower cost and uses existing rights-of-way, avoiding destruction of our environment and seizure of private lands.

14780

January 7, 2013

To: Mark Korsness, Bpa.

Mark, my name is John Opsahl. I live at ..

14780-1 I spoke with you on the phone Dec. 10 2012 concerning the I-5 corridor project, powerlines and towers F28, F29, F30, and F31. As I told you before, this

placement will destroy the value of my view property. My home and view

14780-2 property are also my retirement and any value loss will be substantial.

14780-3 I did invite you and any BPA person to come and see the property and see what the damage can be. That offer stands. I can be reached at .. and

Thank you for your time,



John Opsahl

14778-1 Comment noted.

14779-1 Comment noted.

14780-1 Please see the response to Comment 14140-2.

14780-2 Please see the responses to Comments 14097-1, 14328-5, and 14712-2.

14780-3 BPA contacted Mr. Opsahl and met with him on his property on October 15, 2013.

14781

LISA A ANDERSON

03/25/2013

14781-1

My name is Lisa Anderson. I live in Hockinson about a mile west of the Central Alternative. Though the central alternative is the preferred alternative of BPA for the I-5 reinforcement Project, I think it is the wrong choice for SW Washington and the USA.

Start with the characterizations of the two areas from Draft EIS:

West Alternative- Excerpt From 16.1.1

“Many low-to-medium quality wetlands were also mapped along the West Alternative in the more developed areas of Kelso, Vancouver, Camas, Washougal, and Troutdale and along major road systems that have previously been disturbed by road construction and commercial and residential development. Wetlands have been filled and roads have created impervious surfaces and blocked water flow to wetland areas. Emergent wetlands with medium quality are found in agricultural land between the East Fork Lewis River and the city of Vancouver.”

Central Alternative- Excerpt From 16.1.2

“Emergent and forested wetlands with low-to-medium function ratings were mapped along the Cowlitz River, with high functioning wetlands along the North Fork Goble Creek and Goble Creek in the northern portion of the Central Alternative east of Longview (see Map 16-2A). Medium-to-high functioning wetlands were mapped along the Kalama, Lewis, and East Fork Lewis rivers and near Chelatchie and Big Tree creeks east of Amboy in the middle portion (see Maps 16-2B and 16-2C). Wetlands near the Little Washougal River and where Lacamas Creek and the Washougal River flow into the Columbia River in the southern portion of the alternative were rated as low-quality wetlands (see Section 16.1.1, West Alternative and Options, and Map 16-2D). Several unnamed streams and drainages crossed by the Central Alternative also have low-to-high functioning wetlands.”

14781-2

Based on Table 16-1 in wetlands chapter 16 of draft EIS the West Alternative has 54 forested and 62 scrub-shrub acres whereas the Central Alternative has 69 forested and 16 scrub-shrub acres. The fact that there are 62 scrub shrub(West) vs 16 scrub-shrub (Central) illustrates the fact that the wetlands on (West) alternatively have largely already been degraded because of pre-existing right of ways, whereas the (Central) is largely in pristine condition with only 16 acres of scrub-shrub.

14781-3

Isn't it far better to leave an area (Central) that society and the environment rely on for watershed, recreational, environmental, farming, forestland, in non-industrialized state; and upgrade development on the West Alternative that has preexisting power lines on wetlands that have already been degraded?

The reliability issue has been brought up, but there has never been a catastrophe on preexisting (West) line. Chances are there won't be in the future. If it is BPA will have easy access along the I-5 corridor to fix. It is also cheaper by at least 100 million to develop West Alternative. In these time of sequester doesn't it just make sense to go with less expensive option?

- 14781-1 Comment noted.
- 14781-2 Table 16-1, Potential Impacts to Wetlands, has been updated with new information based on field studies of the Preferred Alternative.
- 14781-3 The selection of alternatives for consideration in the EIS, including the Preferred Alternative, included the need to balance many factors, such as managing costs for regional ratepayers, BPA's role as responsible environmental stewards, and meeting the goal of operating a reliable transmission system. BPA considered many factors when identifying its Preferred Alternative. Please see BPA's issue brief at: <http://www.bpa.gov/Projects/Projects/I-5/Documents/BPA-I-5-Issue-Brief-Preferred-Alternative-Nov2012.pdf>.

14781-3 | BPA you will be harming our beautiful clean SW Washington highlands FOREVER if you go through with your preferred Central Alternative. There will be significant environmental costs whatever alternative is chosen. Why not up-develop where you have existing power lines, where it is already industrialized, where it will also be cheaper? Please make the right decision before it is too late. Thank you for your thoughtful consideration of these grave choices.

14782

MEGAN T CLARK

03/25/2013

14782-1 | I urge you to choose the Western Alternative, which is lower cost and uses existing rights-of-way, avoiding destruction of our environment and seizure of private lands.

14783

JAMES N PITKIN

03/25/2013

14783-1 | Please select the Western Alternative to minimize environmental impacts.

14782-1 Comment noted.

14783-1 Comment noted.

Commissioner Peter Goldmark
Washington State Department of Natural Resources

November 28, 2012

Dear Mr. Goldmark

14784-1 We live adjacent to the Bonneville Power Administration's I-5 Corridor Reinforcement Project's proposed "Central Alternative" route. Specifically, we are along the "P-Line" segment that traverses the DNR west boundary in Clark County, Washington. BPA has very recently designated this route as its preferred alternative for the project.

Approximately 3,000 lineal feet of this "P-Line" segment is adjacent to our properties, and importantly, is located entirely within the riparian management zone of a Type 3 stream which is a tributary of the North Fork of Lacamas Creek. (Please see attached exhibit "A")

14784-2 In 2009 your agency prepared a SEPA document (please see attachment #1) for the "Ocean Spray" timber sale #84262 and Forest Practices Application #2919484. That SEPA document identified the riparian management zones adjacent to the type 3 and 4 streams on the westerly boundary of the Ocean Spray Timber Sale. The riparian management zone was established as mitigation measures to protect water quality, provide corridors for wildlife, and maintain habitat for fish and amphibians. Your agency is responsible for the implementation of the state's Forest Practices Act and Rules. In your NEPA scoping comments for this BPA project dated December 10, 2009, your agency stated that, in 2002, DNR and BPA came to a common understanding regarding forest practices activities related to BPA's lines and those that would be constructed in the future. You requested in that NEPA document that BPA obtain an approved Forest Practices Application and comply with the rules. (Please see Attachment #2)

As adjacent landowners and citizens of Washington State, we are very concerned about the status of the riparian management zones of Lacamas Creek. If BPA is allowed to construct its proposed power transmission corridor along the alignment as shown in Exhibit "A" it will obliterate the riparian management zones that were established to preserve the water quality and fish and wildlife habitat.

The water quality of the Type 3 stream will be destroyed, timber will be cut, access roads and culverts built, and vegetation will be controlled with dangerous herbicides. This stream flows directly into Camp Bonneville, which is currently undergoing an extensive cleanup as a Superfund site. The lead agency in that project is the Washington Department of Ecology. Any further water quality degradation caused by this BPA project will further aggravate Ecology's efforts to clean up that site. The US Army Corps of Engineers prepared a study and found many threatened and endangered species along the Lacamas Creek corridor which runs through Camp Bonneville. Any further stream degradation will seriously affect these species as well.

14784-1 Comment noted.

14784-2 Please see the response to Comment 14097-1.

14784-3 We were very satisfied with your agency's efforts to preserve this sensitive environmental corridor and protecting fish and wildlife in the Ocean Spray timber sale. It is incumbent upon DNR to enforce the Forest Practices rules and regulations to provide cumulative protection to public resources.

14784-4 BPA has told us that your agency urged that the new power transmission corridor be placed on the westerly border of DNR land. We strongly encourage your agency to take a serious look at moving the alignment slightly further east in this area to avoid this very sensitive stream corridor. We realize that there are many streams in this area of state land. Alignments which would cross streams at or nearly at right angles have far less impact to the streams than alignments that traverse straight up streams as in the case along the current alignment adjacent to our properties.

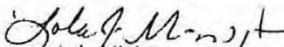
14784-5 BPA project manager Mark Korsness has told us they will be meeting with your staff in Castle Rock to investigate the potential to move the alignment slightly east within DNR ownership to avoid this sensitive stream corridor. We are appealing to you to direct your staff to allow this project to be moved further east to preserve this critical riparian management buffer. We take the Forest Practices Act seriously and we are certain you do as well. Allowing BPA to destroy an asset set aside by the DNR and the citizens of Washington State would be irresponsible and hypocritical. We fear that BPA will say it will mitigate these impacts elsewhere. But that does NOTHING to benefit LOCAL fish, wildlife and water quality.

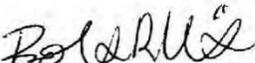
14784-6 We know your background and appreciate how you have consistently sought balance to resolve issues between forest management, sustainability and protection for fish and wildlife. We sincerely hope that you will continue treating the Forest Practices Act seriously by working with BPA to preserve this critically sensitive habitat buffer area.

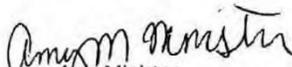
Thank you for your attention and consideration.

Sincerely,


Bolton C. Minister


Lola Minister


Bolton R. Minister


Amy Minister


April Minister


Rod Smith

14784-3 Chapter 28, Consistency with State Substantive Standards, describes BPA's commitment to planning its transmission projects to be consistent or compatible with state substantive standards to the extent practicable. Section 28.2.9 discusses Washington's Forest Practices Act and Rules.

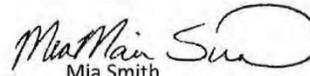
14784-4 Please see the response to Comment 14097-1.

14784-5 Please see the responses to Comments 14097-1 and 14306-4.

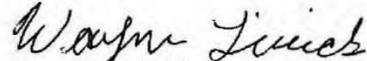
14784-6 Please see the response to Comment 14097-1.

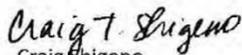
14784

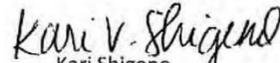

Taylor Smith

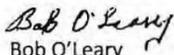

Mia Smith

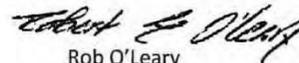

David Ballard

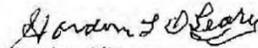

Wayne Livick

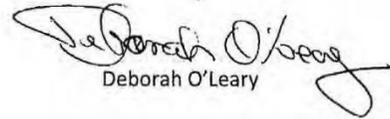

Craig Shigeno

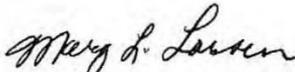

Kari Shigeno

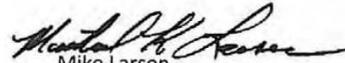

Bob O'Leary

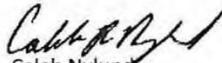

Rob O'Leary

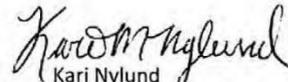

Gordon O'Leary


Deborah O'Leary


Mary Larsen

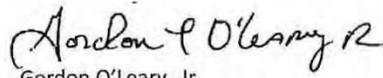

Mike Larsen

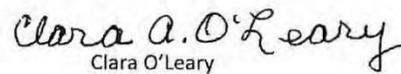

Caleb Nylund

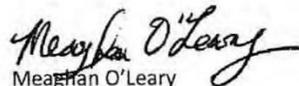

Kari Nylund

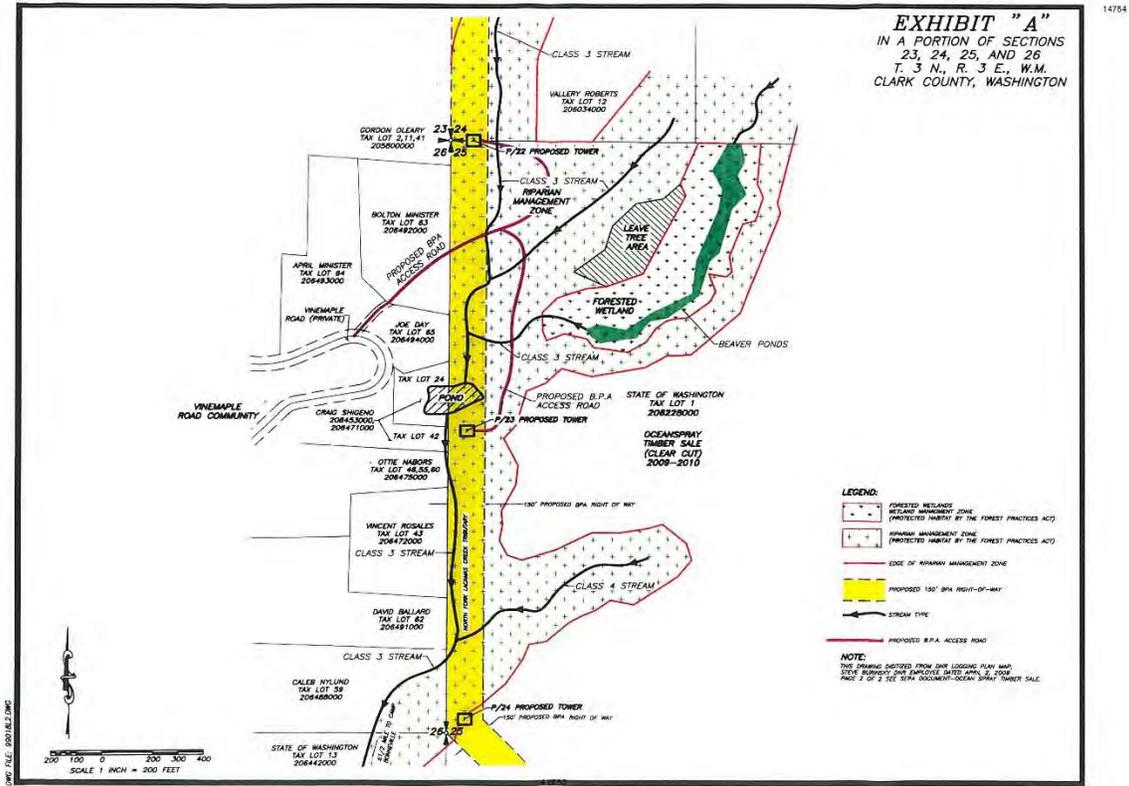

John Isaacson


Deanne Isaacson


Gordon O'Leary, Jr.


Clara O'Leary


Meaghan O'Leary



ATTACHMENT # 1
14784_Attachment1



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark – Commissioner of Public Lands

CARING FOR
Your natural resources

MEMORANDUM

April 30, 2009

File No. 09-043001

TO:	Clark County, Planning Director Gary Bell / A. Friez, DFW E. Holman / S. Brummer / L. Renan, DFW Labor & Industries Columbia Gorge Audubon Society Friends of the Columbia Gorge The Columbian Yakima Indian Tribe Jean Tackett / Steve Hartsell, DNR	Environmental Coordinator, DOE Gretchen Kaehler / Morgan Lee, DAHP Dept of Revenue Parks & Recreation Clark County Natural Resources Council Clark County ESA Program Cowlitz Indian Tribe Lauren Goldberg, Columbia River Keeper
-----	---	--

FROM: Elizabeth L O'Neal, SEPA Center

SUBJECT: **SEPA LEAD AGENCY & MITIGATED DETERMINATION OF NONSIGNIFICANCE**

This is to advise you that pursuant to WAC 197-11-900 (922 through 948), the Department of Natural Resources has determined that it is Lead Agency for the following:

Oceanspray Timber Sale #84262 and Forest Practice Application #2919484 is a variable retention harvest of 110 acres in two units riparian management zone thinning of 15 acres and wetland management zone thinning of 8 acres, with 5,368 feet of optional road construction, 7,784 feet of pre-haul maintenance, and 3,968 feet of road abandonment. Located in Section 31, Township 03 North, Range 04 East and Sections 25 and 26, Township 03 North, Range 03 East, W.M., Clark County.

Information about this proposal including the Threshold Determination, SEPA Checklist and Forest Practice Application can be viewed on DNR's website at:

<http://www.dnr.wa.gov/ResearchScience/sepa/Pages/Home.aspx>

Pursuant to WAC 332-41-504, this proposal was filed in the department's SEPA Center at the Natural Resources Building, _____, on **April 30, 2009**. We will consider comments on this proposed DNS received by 4:30 p.m. on **May 14, 2009**. Comments should be submitted to the SEPA Center at _____ for distribution to the responsible official. Please include the file number listed above on all comments.

5 of 53

1111 WASHINGTON ST SE • PO BOX 47015 • OLYMPIA, WA 98504-7015
FAX: (360) 902-1789 • TTY: (360) 902-1125 • TEL: (360) 902-2117
Equal Opportunity Employer

14784



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Caring for
your natural resources
... now and forever

MITIGATED DETERMINATION OF NONSIGNIFICANCE

Description of proposal: Oceanspray Timber Sale, Agreement No. 30-084262 and Forest Practices Application No. 2919484. This is a variable retention harvest of 110 acres in 2 units, riparian management zone thinning of 15 acres, and wetland management zone thinning of 8 acres, with 5,368 feet of optional road construction, 7,784 feet of required pre-haul maintenance, and 3,968 feet of road abandonment.

Description of mitigation: The following mitigation measures will be implemented with this proposal:

- Riparian Management Zones (RMZ) are between 175 feet and 190 feet wide on type 3 streams and a minimum 100-foot RMZ along type 4 streams have been retained to protect water quality, provide corridors for wildlife, and maintain habitat for fish and amphibians.
- Wetland Management Zones (WMZ) averaging 175 feet wide on wetlands greater than 1-acre and 100' wide on wetlands less than 1-acre and greater than .25-acre have been retained to protect water quality, provide corridors for wildlife, and maintain habitat for fish and amphibians.
- Within the RMZ and WMZ thinnings there will be a minimum of 5 enhancement trees per acre created to contribute toward the down woody debris and snag component.
- Wildlife tree and snag recruitment will be accomplished by retaining a minimum of 8 trees per acre, consisting of conifer and hardwood species.
- The most current design and construction techniques will be used for road construction and maintenance operations to minimize impacts on water quality.
- Rock pit L-1020 Quarry will be expanded and 16 trees will be removed. A 0.5 acre leave tree island has been recognized in the southern end of the historic Latte Timber Sale (Unit 2) and consists of 44 trees to mitigate for the loss of 16 leave trees.
- Neighborhood outreach conducted to solicit input on proposal.
- Avoided road construction through forested wetland by designating harvestable area as a leave tree area to avoid unwanted erosion and hydrological disruption of this sensitive habitat type.

6 of 53

Proponent: Department of Natural Resources

Location of proposal: Sections 31, Township 3 North, Range 4 East, W.M., Sections 25 and 26, Township 3 North, Range 3 East, W.M., approximately 8 miles by road, north of Camas, off the L-1020 road systems in Clark County, Washington.

Lead agency: Department of Natural Resources

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

PACIFIC CASCADE REGION | 601 BOND RD | PO BOX 280 | CASTLE ROCK, WA 98611-0280
TEL (360) 577-2025 | FAX (360) 274-4196 | TTY (360) 902-1125 | TRS 711 | WWW.DNR.WA.GOV
EQUAL OPPORTUNITY EMPLOYER



14784_Attachment1

There is no comment period for this Mitigated DNS.

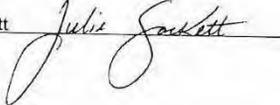
This MDNS is issued under 197-11-340(2); the lead agency will not act on this proposal for 14 days from Apr. 30, 2009. Comments must be submitted by May 14, 2009.

Responsible official: Julie Sackett

Position/title: Pacific Cascade Assistant Region Manager Phone: _____

Address: _____

Date 4/28/09

Signature Julie Sackett 

There is no agency SEPA appeal.

7 of 53

14784



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Caring for
your natural resources
... now and forever

MITIGATED DETERMINATION OF NONSIGNIFICANCE

Description of proposal: Oceanspray Timber Sale, Agreement No. 30-084262 and Forest Practices Application No. 2919484. This is a variable retention harvest of 110 acres in 2 units, riparian management zone thinning of 15 acres, and wetland management zone thinning of 8 acres, with 5,368 feet of optional road construction, 7,784 feet of required pre-haul maintenance, and 3,968 feet of road abandonment.

Description of mitigation: The following mitigation measures will be implemented with this proposal:

- Riparian Management Zones (RMZ) are between 175 feet and 190 feet wide on type 3 streams and a minimum 100-foot RMZ along type 4 streams have been retained to protect water quality, provide corridors for wildlife, and maintain habitat for fish and amphibians.
- Wetland Management Zones (WMZ) averaging 175 feet wide on wetlands greater than 1-acre and 100' wide on wetlands less than 1-acre and greater than .25-acre have been retained to protect water quality, provide corridors for wildlife, and maintain habitat for fish and amphibians.
- Within the RMZ and WMZ thinnings there will be a minimum of 5 enhancement trees per acre created to contribute toward the down woody debris and snag component.
- Wildlife tree and snag recruitment will be accomplished by retaining a minimum of 8 trees per acre, consisting of conifer and hardwood species.
- The most current design and construction techniques will be used for road construction and maintenance operations to minimize impacts on water quality.
- Rock pit L-1020 Quarry will be expanded and 16 trees will be removed. A 0.5 acre leave tree island has been recognized in the southern end of the historic Latte Timber Sale (Unit 2) and consists of 44 trees to mitigate for the loss of 16 leave trees.
- Neighborhood outreach conducted to solicit input on proposal.
- Avoided road construction through forested wetland by designating harvestable area as a leave tree area to avoid unwanted erosion and hydrological disruption of this sensitive habitat type.

Proponent: Department of Natural Resources

Location of proposal: Sections 31, Township 3 North, Range 4 East, W.M., Sections 25 and 26, Township 3 North, Range 3 East, W.M., approximately 8 miles by road, north of Camas, off the L-1020 road systems in Clark County, Washington.

Lead agency: Department of Natural Resources

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

8 of 53



14784

14784_Attachment1

There is no comment period for this Mitigated DNS.

This MDNS is issued under 197-11-340(2); the lead agency will not act on this proposal for 14 days from April 30, 2009. Comments must be submitted by May 14, 2009.

Responsible official: Julie Sackett

Position/title: Pacific Cascade Assistant Region Manager Phone: _____

Address: _____

Date 4/28/09

Signature Julie Sackett



There is no agency SEPA appeal.

90453

14784

STATE FOREST LAND ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. All of the questions are intended to address the complete proposal as described by your response to question A-1.1. The proposal acres in question A-1.1 may cover a larger area than the forest practice application acres, or the actual timber sale acres.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

10 of 53

A. BACKGROUND

1. Name of proposed project, if applicable:

Timber Sale Name: OCEANSPRAY Agreement #: 30-084262

2. Name of applicant: Department of Natural Resources

3. Address and phone number of applicant and contact person:

Pacific Cascade Region
601 Bond Road
PO Box 280
Castle Rock, Washington 98611-0280
Phone: (306) 274-2035
Contact Person: Robert W. Johnson

4. Date checklist prepared: 04/23/2009

5. Agency requesting checklist:

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

- a. Auction Date: September 24, 2009
b. Planned contract end date (but may be extended): October 31, 2011
c. Phasing: n/a

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? No
If yes, explain.

Timber Sale

a. Site preparation:
Some mechanical site preparation will be done during ground-based harvest activities. Chemical herbicides may be applied after harvest is complete.

b. Regeneration Method:
Upon completion of harvest activities and any necessary site preparation treatments, the unit will be hand planted with a mix of Douglas-fir, western hemlock and western redcedar seedlings at numbers that meet or exceed Washington State Forest Practices Standards.

c. Vegetation Management:

Competing vegetation will be monitored periodically. If competing vegetation is adversely affecting tree survival and growth, a manual or chemical release may be prescribed.

- d. *Thinning:* A survey at approximately 12 to 15 years of age will determine if pre-commercial thinning is needed. The stands will be evaluated at approximately 25 to 40 years of age to determine if commercial thinning will be necessary.

Roads:

Roads remaining at the termination of the sale will be used for future forest management activities. Road maintenance and periodic ditch and culvert cleanout will occur as necessary.

Rock Pits and/or Sale:

The primary rock source for this sale will be the existing L-1020 quarry located in Section 31 of Township 3 North, Range 4 East, W.M. The pit will be maintained in a safe and drained condition and may be used for other current or future road projects in the vicinity. Trees east and adjacent to the pit will be removed concurrently with this proposed sale. This will facilitate future expansion of the pit and provide an area for disposing of overburden.

Other:

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

303 (d) – listed water body in WAU: temp sediment completed TMDL (total maximum daily load): Temperature as follows: 5th Plain Creek, China Ditch, China Lateral, Shanghai Creek, Lacamas Creek, Matney Creek, Dwyer Creek, and Round Lake.
 TMDL = Columbia River for Dioxins.
 Landscape plan:
 Watershed analysis:
 Interdisciplinary team (ID Team) report:
 Road design plan: Road plan available at the Pacific Cascade Region office.
 Wildlife report: Available at the Pacific Cascade Region office.
 Geotechnical report:
 Other specialist report(s): Hydrological Assessment and L-1020 Pit removal of historic leave trees and isolated legacy area.
 Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):
 Rock pit plan: Road plan dated January 26, 2009 available at the Pacific Cascade Region office.
 Other: Spotted owl habitat mapping, marbled murrelet reclassified habitat maps, Forest Practices Activity Maps, WAU map for rain-on-snow areas, Policy for Sustainable Forests (PSF 2006), State Soil Survey, DNR GIS databases, Habitat Conservation Plan (HCP 1997), HCP Checklist, Planning and Tracking Special Concerns Report and associated maps, Larch Landscape Road Maintenance and Abandonment Plan #R2900971, Weighted Old Growth Habitat Index (WOGHI), Riparian Forest Restoration Strategy.

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

None known

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

HPA Burning permit Shoreline permit Incidental take permit FPA# 2919484 Other:
 The RFRS requires an HPA.

- 11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. *Complete proposal description:*

This proposal is located in the Larch Landscape, approximately 8 miles north of Camas, Washington. Oceanspray Timber Sale incorporates a variable retention harvest with a Riparian Management Zone (RMZ) and Wetland Management Zone (WMZ) thinning according to the HCP Riparian Forest Restoration Strategy. The Oceanspray Timber Sale includes two variable retention harvest (VRH) units. In addition to the VRH's, Unit 1 will have a total of 3.7 acres thinned within portions of the RMZ buffers associated with a Type 3 and a Type 4 stream. These will be thinned in accordance with procedures outlined in DNR's HCP Riparian Forest Restoration Strategy (RFRS). There will be thinning in portions of Unit 2 Type 3 and 4 RMZs and in two Wetland Management Zones (WMZ). There will be 11.6 acres thinned within Unit 2 RMZ's and 7.8 acres thinned within two WMZ's. The harvest units are composed primarily of Douglas-fir, with a small component of western hemlock, red alder, western redcedar and pacific silver fir. The gross proposal area of this sale is approximately 230 acres. Of this 230 acres, the net harvest area is approximately 133 harvest acres (including thinning areas). There are approximately 95 harvestable acres on State Forest Board Transfer Lands (01) and approximately 38 harvestable acres on Common School trust lands (03). There are private homes adjacent to the western boundary of Unit 2. Neighborhood outreach was conducted to solicit input for the sale design and contractual language was developed to mitigate concerns. No in-stream wood was marked to be felled along the Type 3 RMZ thinning area adjacent to these homes.

Trees east and adjacent to the L-1020 pit will be removed concurrently with this proposed sale. To replace these trees a large legacy tree island (44 trees) is being left at the southern end of the same former harvest unit. (See 7., Timber Sale, d. Rock Pits and/or Sale)

11 of 53

Unit #	Harvest R/W or RMZ / WMZ	Legal Description Sec/Twp/Rng	Grant	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)			Net VRH and Thinning Acres	Acreage Determination (List method and error of closure if applicable)
					RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres		
U1 VRH		Sec 31/ T 3N / R 4E	03	61.2	23.1	3.2	1.0	33.9	GPS
U1 RMZ / WMZ		Sec 31/ T 3N / R 4E	03	(23.1)	18.8 (no cut)	N/A	0	3.7	GPS
U2 VRH		Sec 25,26/ T 3N / R 3E	01	169.0	81.0	7.1	2.0	76.0	GPS
U2 RMZ / WMZ		Sec 25,26 / T 3N / R 3E	01	(81.0)	81.6 (no cut)	N/A	0	19.4	GPS
Rock Pit trees		Sec 31/ T 3N / R 4E	03	0.1	N/A	N/A		0.1	3P Cruise
TOTAL ACRES				230.3	81.0 (no cut) & 23.1 (cut)	10.3	3.0	133.1	

* Forested Wetland Acres

b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

Stand Description:

The proposed variable retention harvest area is comprised primarily of even-aged Douglas-fir with a minor amount of western hemlock, red alder, western redcedar and pacific silver fir. The stands are characterized by large (greater than 25 inches in dbh), dominant Douglas-fir trees in the overstory and small open patches. Understory species include: salal, sword fern, Oregon grape, red huckleberry, salmonberry and vine maple. The majority of the stand is about 64 years old.

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		5,368	4	0
Reconstruction				
Abandonment		3,968	3	0
Bridge Install/Replace				
Culvert Install/Replace (fish)				
Culvert Install/Replace (no fish)	1*			

*A culvert (24" x 30' culvert) will be installed in a Type 5 stream for Spur A, Unit 1, and within 400' of a Type 3 Stream. The Type 5 is not connected to the Type 3 downstream. The location of Spur A requires the removal of 0.2 acres of a Type 4 RMZ. The road will not be within 25' of the 100-year flood plain.

12 of 53

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. (See timber sale map available at DNR region office, and/or color landscape/WAU map on the DNR website <http://www.dnr.wa.gov> under "SEPA Center.")

a. Legal description: (See Timber Sale and Driving Map)

T3N R3E S25
T3N R3E S26
T3N R4E S31

b. Distance and direction from nearest town (include road names):

From State Route 500 (milepost 15, 15 miles from Washougal, Washington), turn East onto SE Blair Road and follow for 0.8 miles. Turn left (northeast), onto NE 292nd Ave for 2.2 miles. Turn right (north), onto Livingston Mountain Road and follow for 1.6 miles. Livingston Mountain Road becomes State DNR road L-1000; continue another 1.6 miles to L-1020. Turn left onto the L-1020 and proceed through yellow State Lands gate (PCP1-1 lock). Head northwest for 1.4 ml to Unit 1. Continue east on the L-1020 for 2.4 miles to Unit 2.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website <http://www.dnr.wa.gov> under "SEPA Center.")

WAU Name	Sub-Basin Name and Number	WAU Sub-basin Acres	Proposal Acres
LACAMAS LAKE	(all Sub-basins)	43485.7	Total = 230
	Sub-basin #2	2208	80
	Sub-basin #3	1699	92
	Sub-basin #6	1526	58

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website <http://www.dnr.wa.gov> under "SEPA Center" for a broader landscape perspective.)

14784_Attachment1

The following table is an estimated summary of past and future activity on DNR-managed land, based on information gathered using the Planning and Tracking database and contained within the General Information Report generated for the Lacamas Lake WAU. Figures for future timber harvests on private and federally owned land within the WAU are unknown.

Approximately 9% of the land within the Lacamas Lake WAU is managed by the DNR. Sub-basin 2 is the primary focus for planning this proposal. The DNR manages approximately 8% of Sub-basin 2. In the past three years, a total of 294 acres have been harvested within the Lacamas Lake WAU. Currently there are 1814 acres or 51% of the DNR managed lands in forests 25 years or older. Many areas within the Lacamas Lake WAU are candidates for future regeneration and commercial thinning harvest activities. Additional road building and rock pit development may occur to facilitate forest management activities on DNR managed land and other ownerships.

The proposed activity is not expected to influence the temperature or TMDL of the 303 (d) listed water bodies addressed in Section A.8. Type 3 and 4 waters that affect the listed water bodies have appropriate RMZ's (see Q. B-5-e-1.).

LACAMAS LAKE	WAU ACRES	Acres of even-aged harvest within the last seven years	Acres of uneven-aged harvest within the last seven years	Proposed even-aged harvest in the future*	Proposed uneven-aged harvest in the future
DNR MANAGED LAND	3860	706	0	414*	UNKNOWN
FEDERAL	3009	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
TRIBAL	0	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
OTHER STATE (NON-DNR)	0	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
OTHER LAND (PRIVATE & OTHER PUBLIC LAND)	36617	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN

*Includes the FY 2010 Oceanspray Timber Sale. Acres are approximate and may contain existing road acres.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

Flat, Rolling, Hilly, Steep Slopes, Mountainous, Other:

1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).

The Lacamas Lake WAU is situated in the western foothills of the Cascade Mountain Range and contains a variety of landforms, ranging from near sea level elevation in the south end of the WAU to approximately 2,000 feet in the north part of the WAU. Slopes vary from 0% to over 100%. The climate is moderate with 50 to 90 inches of precipitation annually. Approximately 75% of the WAU or 32,715 acres are in the lowland zone, 3% of the WAU or 3% is in the peak rain-on-snow zone and 21% of the WAU or 9224 acres are in the rain dominated zone. Timber types include Douglas-fir, western hemlock, noble and Pacific silver fir, and red alder. Lacamas Lake WAU's major drainage is Lacamas Creek.

2) Identify any difference between the proposal location and the general description of the WAU or sub-Basin(s).

No Difference.

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

The steepest slope on site is 50% for short distances in localized areas within Unit 1.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres	Mass Wasting Potential	Erosion Potential
5695	STONY CLAY LOAM	3-30	93	INSIGNIFICANT	MEDIUM
5696	STONY CLAY LOAM	30-65	70	LOW	HIGH
5670	CLAY LOAM	8-30	52	INSIGNIFICANT	MEDIUM
3918	KINNEY-SKOLY-COMPLEX	30-65	15	LOW	MEDIUM

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

None Known.

1) Surface indications:

There were no observed surface indications or any known history of unstable slopes discovered within the vicinity of the proposed harvest area.

2) Is there evidence of natural slope failures in the sub-basin(s)?

No Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

13 of 33

14784

- 3) Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?
 No Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:
 Associated management activity:
- 4) Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?
 No Yes, describe similarities between the conditions and activities on these sites:
- 5) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.

See question B.1.h. below for protection measures that will be implemented with this proposal.

- e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: 2 Approx. acreage new landings: <2 Fill source: Common Earth
- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

A small amount of incidental erosion could occur during the course of road building, rock pit development activities, and yarding. However, prudent road location, appropriate construction techniques and maintenance, as well as the mitigating measures outlined in question B.1.h. below will minimize and control any possible erosion.
- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? Approximate percent of proposal in permanent road running surface (includes gravel roads):

Approximately 2% of the proposal will be in rockered road surface.
- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

Measures to reduce erosion on roads or during active road construction:

- Roads will be either out-sloped or crowned, ditched, and cross-drained.
- Soils exposed during road construction will be grass seeded.
- Seasonal timing restrictions will prohibit road construction during wet weather conditions.
- Cross-drains will be installed and maintained.
- Sediment delivery will be addressed as needed during operations and may include the use of waterbars or silt traps.
- There will be periodic maintenance and inspection of the road system to insure proper drainage.
- Following the abandonment of Spur A, 0.2 acres of RMZ will be replanted according to the upland reforestation prescription.
- Avoided road construction through a forested wetland by leaving harvestable area as a legacy tree area.

Protection measures to reduce erosion associated with active logging operation:

- Ground-based yarding will be restricted to slopes less than 35%.
- One end suspension of all logs required during all yarding operations.
- Tracked skidders will be allowed only during the months when dry soil conditions permit.
- The potential for sediment delivery will be addressed as needed during operations and may include the use of water bars or silt traps.
- Equipment will not be allowed within 50' of the forested wetland boundaries.
- Equipment will not be allowed within 50' of the 100-year floodplain on Type 3 and 4 streams.
- Equipment will not be allowed to travel or work in Type 5 stream channels.
- Trees to be felled in RMZ and WMZ areas will be directionally felled, where possible, to minimize equipment travel within these zones.

14 633

2. Air

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

Minor amounts of engine exhaust from logging equipment and dust from vehicle traffic and logging equipment are expected while the project is active.

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

None.

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

None.

3. Water

- a. Surface:

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. (See timber sale map available at DNR region office, or forest practice application base maps.)

Yes.

- a) Downstream water bodies:

East Fork Lacamas Creek, Lacamas Creek, Lacamas Lake and the Columbia River.

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Stream	3	6	175-190
Stream	4	5	100
Stream	5	2	0
Wetland	n/a	4	100 - 175

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

Within the gross proposal acres there are six Type 3 streams, five Type 4 streams, two Type 5 streams, and four forested wetlands within or adjacent to the proposed unit boundaries. The Type 3 streams and wetlands exceeding 1-acre in size have site index buffers between 172 and 190 feet from the edge of the 100 year flood plain, depending on their location within the proposal. The windthrow potential was reviewed and it was determined not to apply any additional buffer widths to either RMZ's or WMZ's. The Type 4 streams and the wetlands less than one acre but greater than a quarter acre are buffered by at least 100 feet on all sides. One Type 5 stream was protected between a riparian zone below and a forested wetland above in Unit 1. In those RMZ's and WMZ's where harvest operation will occur, no equipment will be allowed within 50 feet of the edge of the 100-year flood plain of any stream and the edge of the forested wetlands. The location of Spur A requires the removal of 0.2 acres from the top of a Type 4 RMZ. No remaining right-of-way will exist due to the location of the road and subsequent construction. The road will not be within 25' of the 100-year flood plain. (See 8.a. above) Following the abandonment of Spur A, the area where the RMZ removal was necessary, will be replanted according to the upland reforestation prescription. All streams have been evaluated and protected per current HCP guidelines and procedures. The proposed activity is not expected to influence the temperature or TMDL of the 303 (d) listed water bodies addressed in Section A-8.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
 No Yes (See RMZ/WMZ table above and timber sale map available at DNR region office.)
 Description (include culverts):

Timber felling, bucking, cable yarding, tracked ground-based yarding, and/or road building will take place within 200 feet of all the described waters/wetlands. There are approximately 15 acres of RMZ and 8 acres of WMZ will be thinned according to the DNR HCP's Riparian Forest Restoration Strategy (RFRS) and DNR's Wetland Management Guidelines. All timber will be felled and yarded away from streams with the exception of RMZ enhancement trees that will be felled toward typed waters (provided it is safe to do so). Enhancement trees are selected for the potential to provide functional upland and aquatic large woody debris. Any slash that may enter these waters will be cleaned out per contract requirements with the exception of enhancement trees. A culvert (24" x 30' culvert) will be installed in a Type 5 stream for Spur A in Unit 1. Further erosion control measures will be implemented if necessary.

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

Approximately 20 cubic yards of fill only of native material that will be placed over a culvert in a Type 5 stream.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. (Include diversions for fish-passage culvert installation.)
 No Yes, description:

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
 No Yes, describe location:

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
 No Yes, type and volume:

7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

Generally, the high potential erosion areas are located on slopes of 65% or greater and often involve unstable soils and/or steep head walls. Some past failures have entered streams in small amounts. However, no slope failures or steep slopes have been identified within the sub-basins associated with this timber harvest activity, and none have been observed along the proposed roads in these sub-basins. With mitigating measures implemented, this proposal is not expected to contribute material to surface waters. The majority of mass wasting potential in the Lacamas Lake WAU is rated low to insignificant. See questions B.1.c, B.1.f, B.1.h, and B.3.9.

8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?
 No Yes, describe changes and possible causes:

See question B.3.a.13 below.

15 of 53

9) *Could this proposal affect water quality based on the answers to the questions 1-8 above?*
 No Yes, explain:
This proposal could possibly introduce minor amounts of sediment into the streams adjacent to the proposal area as a result of road building and logging operations during early stages of activity. The erosion control measures and operation procedures outlined in B.1.f and B.1.h. are expected to minimize the chances of any sediment delivery.

10) *What are the approximate road miles per square mile in the WAU and sub-basin(s)?*
There are approximately 4 road miles per square mile of DNR managed lands.
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
 No Yes, describe:

11) *Is the proposal within a significant rain-on-snow (ROS) zone? If not, STOP HERE and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
 No Yes, approximate percent of WAU in significant ROS zone.
 Approximate percent of sub-basin(s):

12) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*
 N/A

13) *Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?*
 No Yes, describe observations:
Normally, there are few significant changes associated with peak flows in the WAU or sub-basins. However, in the winter of 1996, a 100-year event occurred. The rainstorm set rainfall and flood level records in southwest Washington and northwest Oregon. Many stream channels were altered in this event due to extremely high stream flows with accompanying sediment loads and possibly large woody debris delivery. The full extent of this is not known.

14) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.*
This proposal may slightly change the timing/duration/amount of peak flow, and flow rates may increase slightly during low flow periods due to decreased transpiration and interception during the first decade of new forest growth. However, no cumulative impacts are expected since similar projects in the WAU have resulted in no noticeable increase in peak flows. See question B.3.a.16 below.

15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*
 No Yes, possible impacts:

16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.*
High stream flow rates will be mitigated with large organic debris supplied by RMZ's along Type 3 and 4 streams, which will also help maintain bank stability. Unit sizes less than 100 acres and providing for green-up before harvesting adjacent DNR stands will help decrease potential peak flow/flooding impacts. The road locations, unit size, and RMZ's will prevent impacts to down stream surface water.

b. Ground Water:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.
Relief culvert drainage may increase ground water recharge directly below culvert outlets.
- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.
Minor amounts of oil, fuel, and other lubricants may inadvertently be discharged to the ground as a result of heavy equipment use or mechanical failure. No lubricants will be allowed to be disposed of on-site. This proposed activity is expected to have negligible impact on ground water.
- 3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*
 No Yes, describe:
 a) *Note protection measures, if any.*

c. Water Runoff (including storm water):

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

Storm water will be the only runoff associated with this proposal. On roads, storm runoff will be collected by road ditches and diverted through cross-drains over energy dissipators and onto the forest floor. On out-sloped roads, storm runoff should dissipate onto the adjacent forest floor. Within the harvest unit, runoff will follow natural topography and be largely absorbed into the ground.

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

No.

a) Note protection measures, if any.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any. (See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)

A Hydrological Assessment by our DNR Hydrologist/Geologist was conducted and no adverse impacts were identified. Approximately 400' of road construction through a 1.2-acre forested wetland and its associated WMZ was discontinued as an ecological consideration to avoid unwanted erosion and hydrological disruption of this sensitive habitat type. Furthermore, in-stream conditions downstream critical for local populations of cutthroat will benefit from this management decision. See MEMORANDUM, dated March 31, 2009, Isolated Legacy Area – Unit 2 of the Oceanspray Timber Sale (TBS) and See question B-1-h for site-specific protection measures to help control erosion and protect water quality.

4. Plants

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

- deciduous tree: alder, maple, aspen, cottonwood, western larch, birch, other:
- evergreen tree: Douglas fir, grand fir, Pacific silver fir, ponderosa pine, lodgepole pine, western hemlock, mountain hemlock, Englemann spruce, Sitka spruce, red cedar, yellow cedar, other:
- shrubs: red huckleberry, salmonberry, salal, other: Vine Maple, Oregon grape, sword and deer fern
- grass
- pasture
- crop or grain
- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, devil's club, other: Slough sedge
- water plants: water lily, eelgrass, milloil, other:
- other types of vegetation: holly, English Ivy
- plant communities of concern:

b. What kind and amount of vegetation will be removed or altered? (See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)

Approximately 5,546 MBF of primarily Douglas-fir, with smaller components of western hemlock and red alder will be removed from the site. The age of the timber is approximately 64-years-old. Some vine maple, salal, Oregon grape, sword fern, huckleberry, and salmonberry will be removed during harvest activities on slopes less than 35%. Chemical site prep may be necessary in order to establish a new cohort of trees that are free of competing vegetation.

1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: <http://www.dnr.wa.gov> under "SEPA Center.")

Unit 1 is bounded by timber of the same age and type to the south. The eastern and western boundaries are adjacent to 5 to 7 year old plantations. The plantation to the north is approximately 10 years old.

Unit 2 is bounded to the north by a privately owned stand of thinned Douglas-fir of the same age as this proposal. The west boundary is a DNR managed RMZ and further to the west, adjacent to the RMZ, is private, developed property. The southern and eastern boundary is adjacent to 60-year-old Douglas-fir.

2) Retention tree plan:

All units will have an average of no less than eight wildlife and/or green recruitment legacy trees per acre remaining on site upon completion of harvest activities. All retained trees will provide wildlife habitat, older forest components, and a seed source to surrounding areas. Legacy trees were selected to retain snags, species diversity, large diameter trees and wildlife habitat. Where available, snags were protected by bounding out legacy tree areas around them. The site will be replanted with conifer seedlings at a stocking level that meets or exceeds Forest Practices standards. This proposal was screened for potential old growth. Field verification yielded no evidence of old growth.

TSU/ Area*	Distribution Method for Legacy Trees and Snags	Gross Harvest Acres	Legacy Tree Acres	Net Harvest Acres	Total # Legacy Trees
Unit 1 VRH	Clumped and scattered	37.1	3.2	33.9	298
Unit 2 VRH	Clumped and scattered	83.1	7.1	76.0	669
All Thinning Units	N/A	N/A	N/A	23.1	N/A

17 of 53

14784

- c. List threatened or endangered *plant* species known to be on or near the site.
- This proposal is within the historic range of the Hairy-stemmed Checker mallow (*Sidalcea hirtipes*). This plant is a Washington State recognized endangered species historically found in the lower Lacamas Creek Watershed closely associated with open prairies and other manipulated habitats conducted by Native Americans and early settlers. The occurrence of this species is quite rare and, although unlikely, has the potential to germinate following harvest activities. Consultation with Regional silviculturist, intensive management foresters, and biologists will ensue following harvest to document the presence/absence of this species.
- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

None

5. Animal

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

birds: hawk, heron, eagle, songbirds, pigeon, other: unknown owls
 mammals: deer, bear, elk, beaver, other:
 fish: bass, salmon, trout, herring, shellfish, other:
 unique habitats: talus slopes, caves, cliffs, oak woodlands, balds, mineral springs

- b. List any threatened or endangered species known to be on or near the site (include federal- and state-listed species)

None known.

- c. Is the site part of a migration route? If so, explain.
Pacific flyway Other migration route: Explain if any boxes checked:
- This proposal is located in the Columbia River Flyway, which is part of the Pacific Flyway. Migratory waterfowl also use the Columbia River Flyway; however, the area in which this proposal is contained is not generally the type of area used for resting or feeding by migratory waterfowl. While migrating through Pacific Northwest Forests, many Neotropical migratory birds are closely associated with riparian areas, cliffs, snags, and structurally unique trees. Riparian areas and special habitats are protected through implementation of DNR's Habitat Conservation Plan.

- e. Proposed measures to preserve or enhance wildlife, if any:
- 1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.
- There is a minimum of eight leave trees per acre of harvestable acres containing conifer and hardwood species for Legacy Cohort Management marked within the units. There are approximately 9 acres designated in leave trees clumps with the remaining leave trees required to meet Legacy Cohort guidelines marked individually and scattered.
 - Selected pockets of leave tree clumps were left throughout the units in strategic locations that contain wet areas, Type 5 streams, down woody debris, snags, and various trees having desirable snag recruitment characteristics.
 - The Type 3 streams and wetlands over one acre in size have been buffered by an average of 175-190 feet. Type 4 streams and wetlands between 0.25 acre and one acre have been buffered by a minimum of 100 feet.
 - Approximately 104 acres are buffered in RMZs or WMZs, which will minimize sediment delivery and will offer protection to fish and amphibian habitat.
 - Wildlife travel corridors may be impacted during harvest operations, but will be re-established through the units along riparian areas, and the proposal area.
 - Big game forage will improve as new regeneration and early plant species evolve post harvest.
 - Any snags felled for safety reasons shall remain near where they fall.
 - No existing down woody debris greater than 36 inches in diameter and that has been down for more than 5 years shall be removed from the proposal area.
 - Specific portions of Type 3 and 4 RMZ's and some WMZ's were targeted for implementation of the Department's Riparian Forest Restoration Strategy (RFRS). Thinning these areas will accelerate the growth toward an older forest desired future condition and enhance riparian function.
 - Within the RMZ and WMZ thinnings there will be 5 enhancement trees/acre created to contribute toward the down woody debris component, down woody debris within streams and snags created to benefit cavity dependent species, upland herps/mammals and in-stream wildlife. No trees will be felled toward the residences west and adjacent to Unit 2.

Oceanspray	Thinning Acres	Enhancement Trees Needed	DWD	SNAGS	TOTAL
Unit 1	3.7	18	15	6	21
Unit 2	11.7	59	43	17	60
TOTAL	15.4	77	58	23	81

This activity conforms to the 2006 PSF, the 1997 HCP, and Washington State Forest Practices rules and regulations.

6. Energy and Natural Resources

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

None.

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

There is a slight potential that the removal of timber could increase solar energy near adjacent properties.

18 of 53

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

None.

7. Environmental Health

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

There will be minimal health hazards due to operating heavy equipment and possible minor spillage of fuel and lubricating oils. The risk of forest fire is always present and will be increased for approximately two years following harvesting due to logging slash. The proposal area is within 1-mile of Camp Bonneville, a former test-firing range for the US Department of Defense. There is a small potential that mis-fired ordinance could be located within the proposal area.

- 1) Describe special emergency services that might be required.
 - Firefighting by the Department of Natural Resources, this may be supported by local fire districts.
 - Emergency medical and/or ambulance service for personal injuries.
 - Response by the Department of Ecology if a hazardous waste spill were to occur.
 - Response by Clark County Sheriff's Department, Department of Ecology, and other emergency response contacts will occur if military ordinance is located within the proposed sale area.
- 2) Proposed measures to reduce or control environmental health hazards, if any:
 - Compliance with state laws.
 - Fire equipment will be required on site during fire season.
 - Operations will cease if relative humidity falls below 30%.
 - Public access may be restricted during times of high fire danger.
 - If military ordinance is located within the proposed sale boundary, response by the Clark County Sheriff's Department, Department of Ecology, and other emergency response contacts will occur to mitigate the safety concerns for harvest and silviculture operations.

- b. Noise

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

None.

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

Noise from rock drilling/crushing machinery, rock blasting, road building, logging equipment, chain saws, yarding whistles, and log/dump trucks will increase during periods of operation on a short-term basis.

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

In Unit 2 only, operations will be restricted to the hours of 7 a.m. to 7 p.m. No operations will occur on weekends or holidays per contract requirements. Notification of this proposal has been made to local residents that may be affected by noise from this activity.

8. Land and Shoreline Use

- a. What is the current use of the site and adjacent properties? (Site includes the complete proposal, e.g. rock pits and access roads.)

- Timber Production
- Mutual use road easements have been granted to other forestland owners for forest management activities in the vicinity.
- Rock from rock pits may be sold to adjacent forest landowners for forest road maintenance.
- Private residences border Unit 2 to the west, however, a Type 3 RMZ separates the VRH unit from private property.

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

No.

- c. Describe any structures on the site.

None.

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

No.

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

Forest Land.

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

19 of 53

Resource Land.

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

Not Applicable.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

No.

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

None.

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

None.

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

None.

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

These harvest units will be reforested with commercial species and retained as forestland. This proposal is consistent with current land use designations and zoning regulations. See question A.11.b. above.

9. Housing

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

None.

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

None.

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

None.

20 of 53

10. Aesthetics

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

Not applicable.

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

Forest.

1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*
 No Yes, viewing location

Homes built along and adjacent to Vinemapple Road to the west of Unit 2 and some homes along Spud and Livingston Mountain Roads may be able to see parts of the proposed timber sale.

2) *Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*
 No Yes, scenic corridor name:

3) *How will this proposal affect any views described in 1) or 2) above?*

The completed proposal as seen from some scattered residential areas will result in a removal of trees in the background exposing other managed timberlands.

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

Individually scattered leave trees and leave tree clumps were strategically placed throughout the proposed units. An onsite consultation with adjacent neighbors was conducted to solicit input for leave tree placement and design. The harvest area will be re-planted with seedlings following the completion of harvest activities. This proposal conforms to other forest management activities in the vicinity.

11. Light and Glare

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

None.

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

No.

c. What existing off-site sources of light or glare may affect your proposal?
None.

d. Proposed measures to reduce or control light and glare impacts, if any:
None.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?
Hunting, mountain biking, hiking, horseback riding, berry and mushroom picking, target shooting are all informal recreational activities that take place in the vicinity.

b. Would the proposed project displace any existing recreational uses? If so, describe:
Recreational activities may be temporarily interrupted during periods of operation on the site.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
None.

13. Historic and Cultural Preservation

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

This proposal was screened for potential archaeological sites or artifacts using the P&T special concerns report and during the pre-sales phase. No concerns were identified.

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

None known.

c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

If during the course of the sale, any cultural resource is discovered, operations in the immediate vicinity will stop and the Agency's Archaeologist will be contacted to survey the site and develop a Site Protection Plan.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.
No public streets or highways will serve the site specifically, however, hauling of forest products generated from this proposal will traverse some county roads and enter highways enroute to the purchasers mill. See also question A.12.b. above.

1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?*

Traffic from this operation will marginally increase noise, dust and vehicle density, which will require a heightened awareness for safety measures. Contractual clauses require the operator to use existing safety standards. Truck traffic from this individual operation should not increase the need for public road maintenance.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?
No.

c. How many parking spaces would the completed project have? How many would the project eliminate?
None.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).
Some new forest roads will be constructed. See question A.11.c. for details.

1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*

This proposal will have very little impact since all of the new road construction will be forest management roads that begin and end on state land. All forest management roads to be utilized will be tributary to paved county roads, which already have residential vehicular traffic. Access to both units is gated and will continue to be utilized for forest management activities in the future.

21 of 53

14784_Attachment1

c. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
No.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.
The completed project will generate less than one vehicular trip per day on average. Up to 25 vehicular trips per day could occur during peak harvest activities. These trips would occur primarily between the hours of 7:00 am to 7:00 pm on weekdays.

g. Proposed measures to reduce or control transportation impacts, if any:
Traffic from this operation will marginally increase noise, dust and vehicle density in the nearby residential area. The increases will be short in duration and seasonal. Contractual clauses require the operator to limit chainsaw and equipment use in Unit 2 to the daytime hours of 7:00 am to 7:00 pm.

15. **Public Services**

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.
No.

b. Proposed measures to reduce or control direct impacts on public services, if any.
None.

16. **Utilities**

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.
None.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
None.

22 of 33

C. **SIGNATURE**

Revised by SB 4/29/2009

14784

14784_Attachment1

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

For Wakana Product Sales Forester
 Completed by: Stephen L. Burinsky Natural Resource Specialist I Date: 4-29-09
 Title
 Reviewed by: Robert W. Johnson Product Sales Manager Date: 4-29-09
 Title
 Comments: _____

23 of 53

Revised by SB 4/29/2009

14784

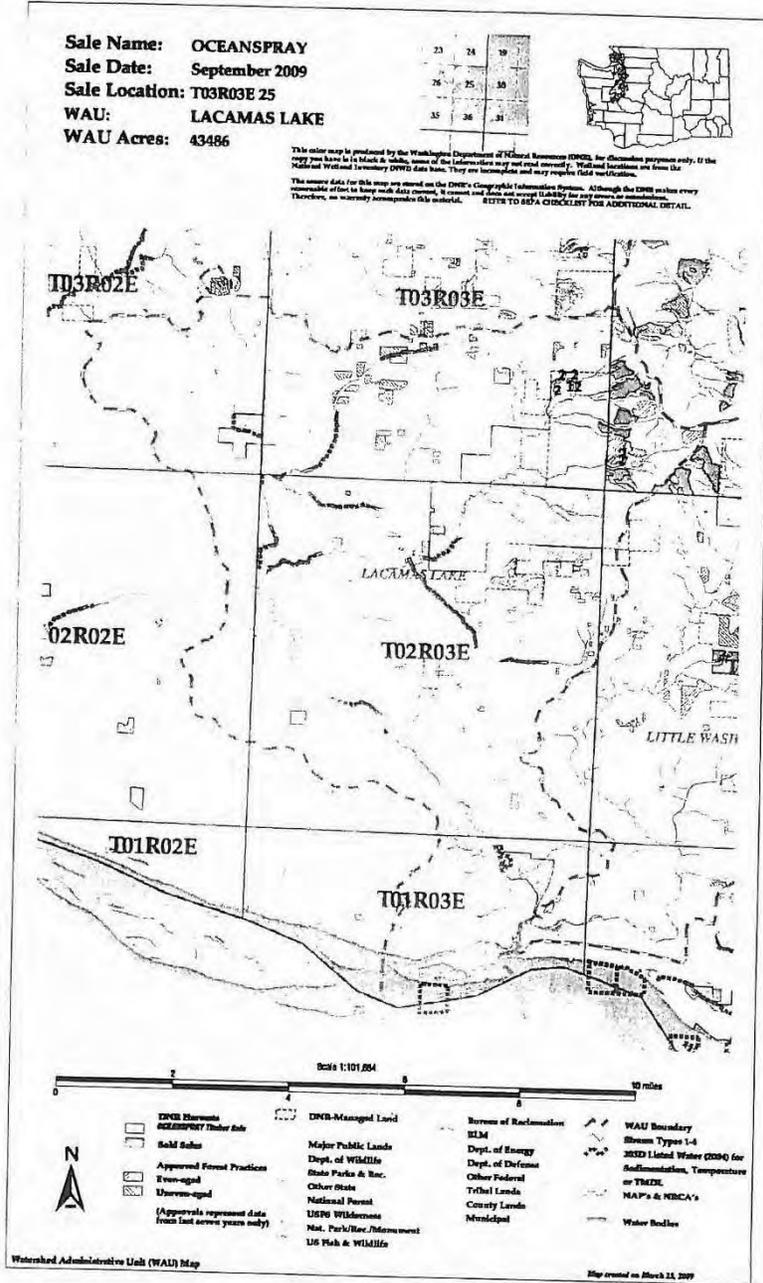
14784_Attachment1



24 of 53

14784

14784_Attachment1



25 of 53

14784

14784_Attachment1

HCP SUMMARY/CHECKLIST

Name of Proposed Activity Oceanspray Timber Sale Agreement# 30-084262 FPA# 2919484

Location: _____ Planning Unit: Columbia(Attach Map if one has been prepared for the proposal)

HCP STRATEGY/ELEMENT	HCP THRESHOLD	CONSIDER IN THESE PLANNING UNITS	STRATEGY DOES NOT APPLY (Element does not exist on proposal OR within threshold distance)	STRATEGY APPLIES (Protection, Avoidance, Mitigation measures implemented; OR, thresholds met)
Northern Spotted Owl	Different thresholds and strategies apply depending on Planning Unit. Evaluate proposal for potential impact.	WOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Bald Eagle	HCP requires compliance with WAC 222-16-080 and WAC 232-12-292.	WOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Grey Wolf	Proposed activities within 8 miles of a class 1 gray wolf observation within the past 5 years require HCP evaluation.	WOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Grizzly Bear	The HCP requires compliance with WAC 222-16-080.	WE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Oregon Silverspot Butterfly	Proposed activities within 0.25 miles of an Oregon silverspot butterfly occurrence require HCP evaluation.	WOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Columbian White-tailed Deer	Evaluate proposal for potential impact.	WOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Marbled Murrelet	Different thresholds and strategies apply depending on Planning Unit.	WO	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lynx	Evaluate proposal for potential impact.	WE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RMZ	Proposed activities within or adjacent to streams require HCP evaluation.	WO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wetlands	Proposed activities within or adjacent to wetlands require HCP evaluation.	WO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Rain on Snow	Proposed activities in the rain-on-snow zone require HCP evaluation and analysis.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Slope Stability	Proposed activity must be in compliance with WAC 222-16-050 (1)(d).	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Large, Structurally Unique Trees	5 live trees and 3 snags per acre leave tree requirement for regeneration harvests.	W	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Talus	Proposed activities located within forested talus or within 100 ft. of non-forested talus require HCP evaluation.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Caves	Proposed activities within 0.25 mi. of a cave require HCP evaluation.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cliffs	All cliffs greater than 25 feet tall and below 5000 feet elevation require HCP evaluation.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Roads	Roadwork proposed in conjunction with this proposal requires HCP evaluation.	WO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Oak Woodlands	Evaluate potential for impact.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Balds	Evaluate potential for impact.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mineral Springs	Proposed activities within 200 feet of a mineral spring require HCP evaluation.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Common Loon	Proposed activities within 500 feet of a common loon nest require HCP evaluation.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Harlequin Duck	Proposed activities within 165 feet of a harlequin duck nest require HCP evaluation.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Northern Goshawk	Proposed activities within 0.55 miles of a northern goshawk nest site located in a NRF management area require HCP evaluation. Outside NRF management areas, trees or snags that are known to contain active goshawk nests will not be harvested.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
California Wolverine	Proposed activities within 0.5 miles of a known active California wolverine den site located in a spotted owl NRF management area require HCP evaluation.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pacific Fisher	Proposed activities within 0.5 miles of a known active pacific fisher den site located in a spotted owl NRF management area require HCP evaluation.	WO	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pileated Woodpecker	Live trees or snags known to be used by pileated woodpeckers for nesting shall not be harvested.	WO	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vaux's Swift	Live trees or snags known to be used by Vaux's swifts as night roosts shall not be harvested.	WO	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Bats	Live trees or snags known to be used by myotis bat species as communal roosts or maternity colonies shall not be harvested.	WO	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Western Pond Turtle	Proposed activities within 0.25 miles of a known occurrence of a western pond turtle require HCP evaluation.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Purple Martin	Trees or snags known to contain active purple martin nests will not be harvested.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Western Bluebird	Trees or snags known to contain active western bluebird nests will not be harvested.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sandhill Crane	Proposed activities within 0.25 miles of a known active nesting area of a sandhill crane require HCP evaluation.	W	<input checked="" type="checkbox"/>	<input type="checkbox"/>

W=Westside HCP Planning Units O=OESF E=Eastside HCP Planning Units

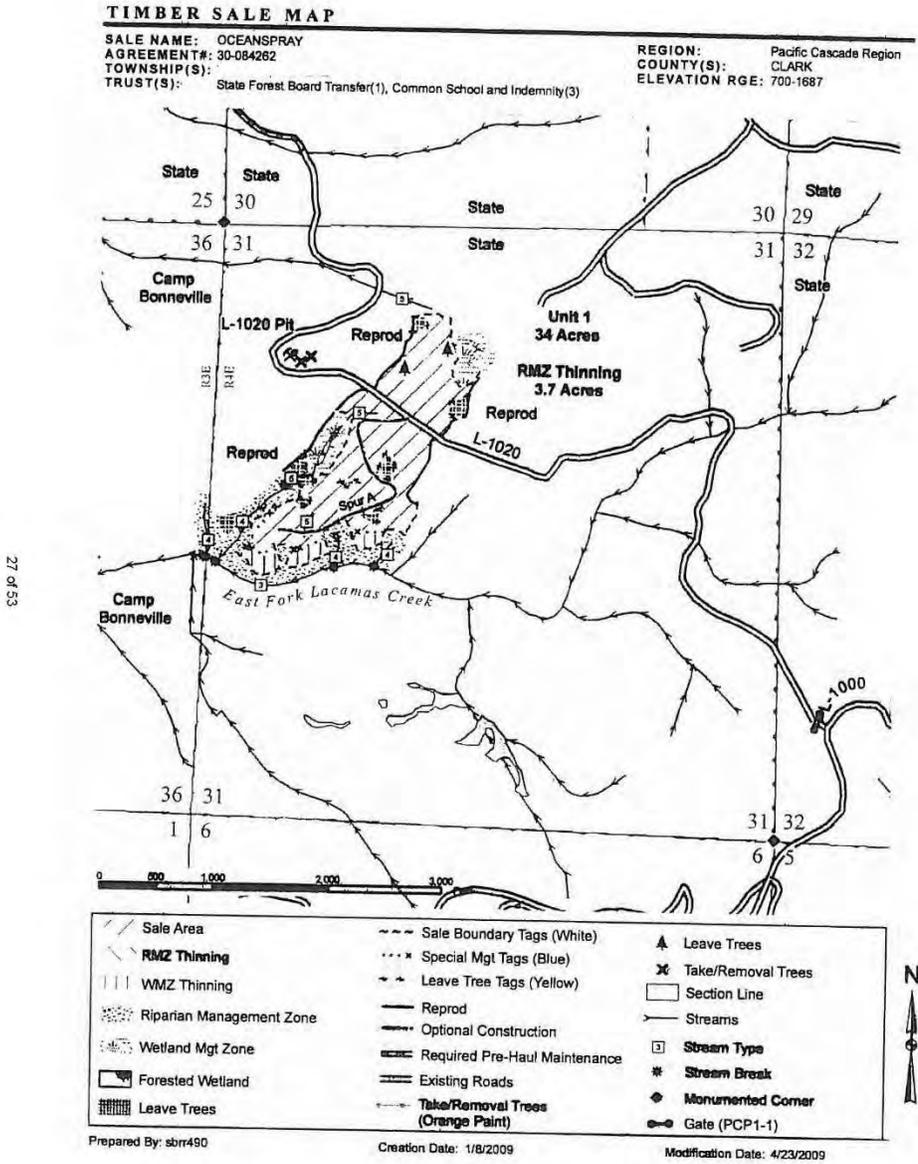
SIGNATURES for: Proponent Stephen Burinsky *Wakaino* Title Product Sales Forester *Natural Resource Specialist 1* Date 03/04/09

for Assistant Manager, State Lands Robert W. Johnson *Product Sales Manager* Date 4-16-09

• It is assumed that it can be demonstrated that the activity is in compliance with the Habitat Conservation Plan through both an audit function and appropriate documentation. Forest Practices requires documentation describing the HCP protection measures implemented be attached to the Forest Practices Application.

14784

14784_Attachment1

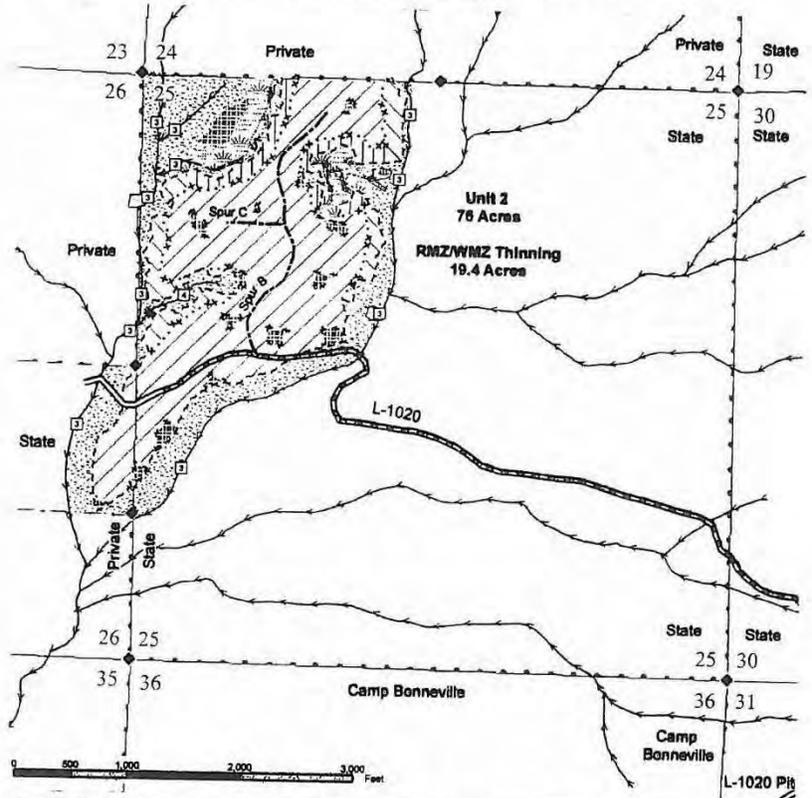


14784

TIMBER SALE MAP

SALE NAME: OCEANSPRAY
 AGREEMENT#: 30-084262
 TOWNSHIP(S):
 TRUST(S): State Forest Board Transfer(1), Common School and Indemnity(3)

REGION: Pacific Cascade Region
 COUNTY(S): CLARK
 ELEVATION RGE: 700-1687



28 of 53

Sale Area	Sale Boundary Tags (White)	Leave Trees
RMZ Thinning	Special Mgt Tags (Blue)	Take/Removal Trees
WMZ Thinning	Leave Tree Tags (Yellow)	Section Line
Riparian Management Zone	Reprod	Streams
Wetland Mgt Zone	Optional Construction	Stream Type
Forested Wetland	Required Pre-Haul Maintenance	Stream Break
Leave Trees	Existing Roads	Monumented Corner
	Take/Removal Trees (Orange Paint)	Gate (PCP1-1)

Prepared By: sbr/490
 Creation Date: 1/8/2009
 Modification Date: 4/23/2009



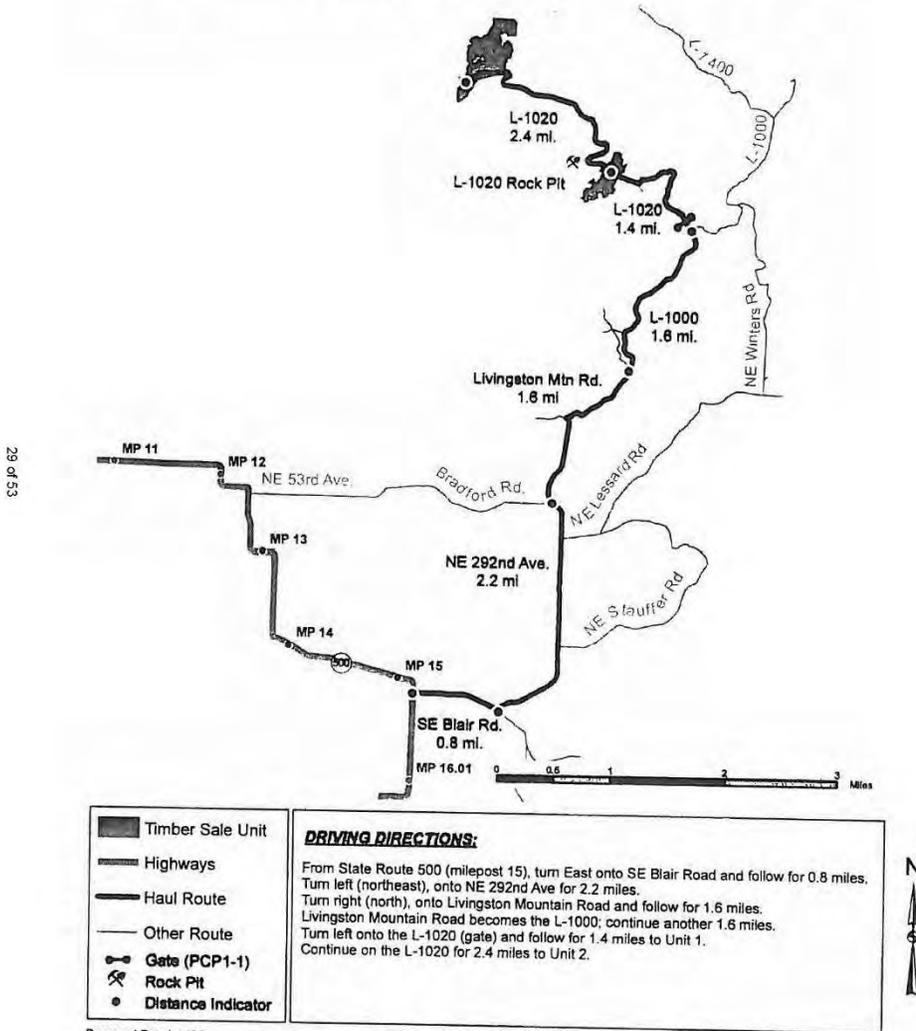
14784

14784_Attachment1

DRIVING MAP

SALE NAME: OCEANSPRAY
 AGREEMENT#: 30-084262
 TOWNSHIP(S):
 TRUST(S): State Forest Board Transfer(1), Common School and Indemnity(3)

REGION: Pacific Cascade Region
 COUNTY(S): CLARK
 ELEVATION RGE: 707-1688



29 of 53

14784

14784_Attachment1



WASHINGTON STATE DEPARTMENT OF
Natural Resources

**Forest Practices Application/Notification
Western Washington**

For DNR Region Office Use Only	
FPA/N #:	2919484
Region:	
Received Date:	

PLEASE USE THE INSTRUCTIONS TO COMPLETE THIS APPLICATION.
TYPE OR PRINT IN INK.

1. Landowner, Timber Owner, and Operator

Legal Name of LANDOWNER	Legal Name of TIMBEROWNER	Legal Name of OPERATOR
WADNR	SAME AS LANDOWNER	SAME AS LANDOWNER
Mailing Address:	Mailing Address:	Mailing Address:
City, State, Zip	City, State, Zip	City, State, Zip
Phone	Phone	Phone ()
Email:	Email:	Email:

30 of 53

2. Contact person

Contact Person: Ryan Siebold	Phone (360) 577-2025 Email:
--	--------------------------------

NOTE: You are required to verify water types, except type S waters, within 200 feet of your proposed forest practices activities prior to submitting a Forest Practices Application / Notification. Use the Additional Information section, additional pages, the Water Type Classification Worksheet and/or a Water Type Modification form to explain how you verified water types. See instructions.

3. Are you a small forest landowner?

No. Yes. See instructions.

4. If you are harvesting timber, enter the Forest Tax Reporting Account Number of the Timber Owner: **800-888-888**
For tax reporting information or to receive a tax number, call the Department of Revenue at 1-800-548-8829.

5. Are you substituting prescriptions from an approved state or federal conservation agreement or watershed analysis?

No. Yes. Write "HCP" or "Using Prescriptions" in tables that apply. Attach or reference on file prescriptions and/or crosswalks.

6. What is the legal description of your forest practice?

¼ ¼ (quarter quarter)	Section	Township	Range	E/W	Tax Parcel Number	County
NE NW	31	3	4	E	*	CLARK
SE NW	31	3	4	E	*	CLARK
SW NW	31	3	4	E	*	CLARK
NW SW	31	3	4	E	*	CLARK

QQ-46W 05-12-2008

1 of 7

WESTERN WASHINGTON

14784

14784_Attachment1

NE SW	31	3	4	E	*	CLARK
NW SW	25	3	3	E	*	CLARK
NW	25	3	3	E	*	CLARK
NE SE	26	3	3	E	B	CLARK

7. Have you reviewed this forest practices activity area to determine whether it may involve historic sites and/or Native American cultural resources? Read the instructions before answering this question.
 No. Yes.
8. Do you have a DNR approved Road Maintenance and Abandonment Plan (RMAP)?
 No. If No, is a Checklist RMAP required? (see instructions) No. Yes Include a copy of the RMAP Checklist.
 Yes. List the RMAP number: # R2900971
9. Is this forest practice application/notification: (Answer every question)
- a. No Yes Within city limits or inside an urban growth area? IF YES SEE INSTRUCTIONS FOR ADDITIONAL REQUIRED DOCUMENTS.
 - b. No Yes Within a public park? If Yes, include SEPA Environmental Checklist or SEPA Determination - except for harvesting/salvaging less than 5,000 board feet within a developed public park.
 - c. No Yes Within 500 feet of a public park? Park name: _____
 - d. No Yes On land that has been platted? If it was short or long platted after January 1, 1960, include a SEPA Environmental Checklist or SEPA Determination.
 - e. No Yes In an approved Conversion Option Harvest Plan (COHP) from the local government? If yes, include a copy.
 - f. No Yes Within 200' of the Ordinary High Water Mark (OHWM) or floodway of Type S water? If yes, does the activity require a Substantial Development Permit? Yes No If yes include a copy of your Substantial Development Permit. See instructions for information.
 - g. No Yes A request for a multi-year permit? If yes, length requested: 3 years 4 years or 5 years. Not everyone qualifies for a multi-year permit. See instructions for details.
 - h. No Yes An Alternate Plan? If yes, include a copy.
 - i. No Yes For work that is included in an approved Road Maintenance and Abandonment Plan (RMAP)?
 - j. No Yes Within 50 miles of saltwater and do you own more than 500 acres of forest land in Washington State? If Yes - include the "Marbled Murrelet Form" or attach/reference HCP prescriptions.
10. If constructing or abandoning forest roads and/or installing, removing, or replacing crossings in typed water, complete the table below. Show the road and crossing locations and identifiers on your Activity Map. Include abandonment plans for temporary roads and abandonment projects. Installation and removal of crossings in Type S or F Waters also require a Hydraulic Project Approval (HPA) permit from the Washington State Department of Fish and Wildlife (WDFW). This FPA serves as your request for an HPA (see instructions).

Road Identifier (Name, Number)	Road Construction		Abandonment Plans		Crossing Identifier (Letter, Number, or FFFPP)	Installing, Removing, or Replacing Structures in Typed Water			
	Length (feet)	Steepest Side-slope (%)	Length (feet)	Abandonment Date		Water Type (S, F, Np, Ns)	Activity (Install, Replace, Remove)	Structure (Culvert, Bridge, Ford)	Proposed Size (Dimensions of new structure)
Spur A	2306	50	2306	10/2011	20+35	Ns	Install	Culvert	24"x30"
Spur B	2550	35	1150	10/2011					
Spur C	512	35	512	10/2011					

QQ-46W 05-12-2008

2 of 7

WESTERN WASHINGTON

31 of 53

14784

11. If depositing spoils and/or expanding or developing a rock pit for forestry use, complete the table below. Show locations and identifiers on your Activity Map.

Spoil Area Identifier (Number, Letter)	Spoils Deposited (Cubic Yards)	Rock Pit Identifier (Name, Number, Letter)	Acres of New Rock Pit Developed	Acres of Existing Rock Pit Expanded
NA	NA	L-1020 Pit	0	0.5

12. If operating in or within 200 feet of a wetland, complete the table below. Show the boundaries of each wetland, along with its identifier, and WMZ on your Activity Map.

Wetland Identifier (Number, Letter)	Wetland Type (A, B or Forested)	Planned Activities in Wetland	Planned Activities in WMZ	Total Wetland Area (acres)	How many acres are you draining?	How many acres are you filling?
FW 1 *See HCP Addendum: 100-ft Buffer on all wetlands .25 to 1.0 acre.	Forested	None	None; No-cut boundary at 100 feet (2.7 acres)	0.3	0	0
FW 2	Forested	None	None; No-cut boundary at 100 feet (2.8 acres)	0.3	0	0
FW 3 *See HCP Addendum: Site Index Buffer on all wetlands 1 acre and larger.	Forested	None	Thin portions to 120 Basal Area. ELZ at 50-ft (6.2 acres)	1.2	0	0
FW 4	Forested	None	Thin portions to 120 Basal Area. ELZ at 50-ft (3.9 acres)	1.7	0	0

32 of 53

If not harvesting or salvaging timber, skip to number 23.

13. If harvesting or salvaging timber, complete the table below. Show all harvest areas and unit numbers on your Activity Map. For even aged harvest units also show surrounding stand information on your Activity Map.

Unit Number	Harvest Type (Even-aged, Uneven-aged, Salvage, Right-of-Way, Rock Pit, Spoils Area)	Yarding Method (Rubber Tired Skidder, Tracked Skidder, Dozer, Shovel, Full Suspension Cable, Leading End Suspension Cable, No Suspension Cable, Helicopter, Animal)	Acres to be Harvested	Volume to be Harvested (mbf)	Volume to be Harvested (%)	Steepest Slope in Harvest Unit (%)
1	Even-Aged	Shovel / Tracked Skidder	33.9	1287	99	45
1- RMZ Thin	Uneven-Aged	Shovel / Tracked Skidder	3.7	48	30	35
2	Even-Aged	Shovel / Tracked Skidder	76.0	4070	99	35
2- RMZ/ WMZ Thin	Uneven-Aged	Shovel / Tracked Skidder	11.6 RMZ 7.8 WMZ	126	35	35

14784_Attachment1

n/a	Even-Aged (Individually orange-ringed trees at L-1020 rock pit)	Shovel / Tracked Skidder	.1	15	35	35
-----	--	--------------------------	----	----	----	----

14. Reforestation. You must check the appropriate box(es).

Planting. Tree Species: Douglas-fir, western hemlock, western redcedar

Natural. *Include a Natural Regeneration Plan*

Not required because of one or more of the following:

I am converting some or all of this land to non-forest land in the next 3 years or lands are exempted under WAC 222-34-050.

Individual dead, dying, down, or windthrown trees will be salvaged.

Trees are removed under a thinning program reasonably expected to maximize the long-term productivity of commercial timber.

I am leaving at least 100 vigorous, undamaged, and well-distributed saplings or merchantable trees per acre.

An average of 190 tree seedlings per acre are established on the harvest area and my harvest will not damage it.

Road right-of-way or rock pit development harvest only.

15. Mark and describe the following harvest activities that will be done in or over typed water. Describe them in number 25, Additional Information.

Activity	Type S Water	Type F Water	Type Np Water	Type Ns Water
Equipment Crossing				X
Ground Skidding				X
Suspending Cables				
Cable Yarding				
Falling and Bucking		X	X	X

16. Is the taxpayer eligible for the EARR Tax Credit? Yes No

If you own MORE than 80 forested acres in Washington, skip to number 21.

17. Are you using the exempt 20-acre parcel riparian management zone (RMZ) rule on type S, F, or Np waters?

- No *If no, skip to number 21.*
- Yes *If yes, continue to number 18. See instructions for qualifications and information.*

18. Choose the answer below that best fits your situation. Show all RMZs on your Activity Map.

- a. ALL of the following apply to me and my land:
- Between June 5, 2006 and today's date I have always owned less than 80 acres of forestland in Washington.
 - Between June 5, 2006 and today's date this parcel has always been 20 acres or less of contiguous ownership.
 - Between June 5, 2006 and today's date this parcel has always been owned by me or someone else that has owned less than 80 acres of forestland in Washington.
- b. **ONE OR MORE** of the following apply to me and/or my land (check all that apply):
- I currently own more than 80 acres of forestland in Washington.
- Between June 5, 2006 and today's date I have owned more than 80 acres of forestland in Washington.
- Between June 5, 2006 and today's date this parcel has been more than 20 acres of contiguous ownership.
- Between June 5, 2006 and today's date this parcel has been owned by someone that has owned more than 80 forested acres in Washington.

19. If harvesting within 115 feet of a type S or F water on an exempt 20-acre parcel complete the table below. Show RMZs and stream segment identifiers on your Activity Map. Include stream shade analysis calculation if you are harvesting within 75 feet or the maximum RMZ, which ever is LESS.

33 of 63

Stream Segment Identifier (letter)	Water Type (S, F)	Segment Length (feet)	Bankfull Width (feet)	Maximum RMZ Width (feet)	Are you harvesting within the maximum RMZ? (Y/N)

20. Are you harvesting within 29 feet of a Type Np water on a 20 acre exempt parcel?
 No Skip to number 23.
 Yes See instructions and describe leave tree strategy in number 25. Then skip to number 23.

21. If harvesting within 200 feet of any of Type S or F waters, complete the table below. Include DFC for all inner zone harvests unless you have an HCP prescription. Show RMZs, CMZs, and stream segment identifiers on your Activity Map.

Stream Segment Identifier (letter)	Water Type (S or F)	Site Class (I - V)	Stream Width (feet)	Is there a CMZ? (Y / N)	RMZ Harvest Code(s) (see instructions)	Total width of RMZ (feet)
See HCP Addendum.						

22. If harvesting within 50 feet of Type Np water, complete the table below. Show RMZs and stream segment identifiers on your Activity Map.

Stream Segment Identifier (letter)	Total Stream Length in Harvest Unit (feet)	Length of No-Harvest, 50-foot Buffers in Harvest Unit (feet)	Stream Segment Identifier (letter)	Total Stream Length in Harvest Unit (feet)	Length of No-Harvest, 50-foot Buffers in Harvest Unit (feet)
See HCP Addendum.					

34 of 53

23. How are the following marked on the ground? (Flagging, paint, road, fence, etc)

Harvest Boundaries: Unit #1 is bounded by pink flashers with white Timber Sale Boundary Tags and pink & yellow flagging at GPS points. Previously harvested units lie to the north, east and west of Unit #1. Unit #2 is bounded by pink flashers with white Timber Sale Boundary Tags and pink & yellow flagging at GPS points. Private property line/section line/harvest line on the north side is delineated by those trees on the south side and closest to the section line being marked on the ground with a ring of orange paint as take trees. The section line is marked with white survey posts.

Clumped Wildlife Reserve Trees/Green Recruitment Trees: Pink flashers with Yellow Leave Tree Area Boundary tags and pink flagging delineate islands. Individual scattered leave trees are stump marked and painted with a ring of blue paint.

Right-of-way limits/road centerlines: The road centerline for new road construction is marked by 4-foot wooden stakes and/or orange ribbon.

Riparian Management Zone Boundaries and Leave/Take Trees: Pink flashers with white Timber Sale Boundary tags and pink flagging between tags along the Equipment Limitation Zone (ELZ) defining the no entry zone of the riparian management area. Pink & yellow flagging at GPS traverse points. Blue Special Management Area Boundary tags with pink flashers face the even-aged harvest areas behind which the RMZ thinning will take place. The boundary of RMZ thinnings are marked with pink flashers and white Timber Sale Boundary tags located at the ELZ. Wildlife Enhancement Trees in the RMZ are marked with an "S" to snag or two rings of orange paint to fell tree towards the stream. Trees to be harvested from the RMZ are painted with a single ring of orange paint.

14784_Attachment1

Channel Migration Zone: N/A

Wetland Management Zone Boundaries and Leave/Take Trees: Pink flashers with white Timber Sale Boundary tags and pink flagging between tags along the 50' ELZ. Pink & yellow flagging at GPS traverse points. Blue Special Management Area Boundary tags with pink flashers face the even-aged harvest areas behind which the RMZ thinning will take place. Trees to be cut and removed in the WMZ are marked with a single ring of orange paint.

24. Are you converting the land to non-forestry use within 3 years of harvest?
 No Yes *Include a SEPA checklist or SEPA Determination and copies of approved Clearing and Grading Permit*

25. Additional Information (attach additional pages if necessary):
- Applying an approved Habitat Conservation Plan. Please refer to the HCP checklists (addendums) for Spotted Owl, Aquatic Resources, and Marbled Murrelet attached to this FPA for HCP prescriptions.
 - An HPA will be needed to apply the HCP's Riparian Forest Restoration Strategy, which includes felling trees towards the stream for habitat enhancement.

35 of 43

QQ-46W 05-12-2008

6 of 7

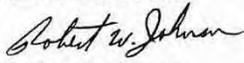
WESTERN WASHINGTON

14784

14784_Attachment1

26. We acknowledge the following:

- The information on this application/notification is true.
- Applying the Department's approved Riparian Forest Restoration Strategy (RFRS) as defined in the HCP, which includes felling trees toward streams for habitat enhancement.
- We understand this proposed forest practice is subject to:
 - o The Forest Practices Act and Rules AND
 - o All other federal, state or local regulations.
- Compliance with the Forest Practices Act and Rules does not ensure compliance with the Endangered Species Act or other federal, state or local laws.
- If we said that we would not convert the land to non-forestry use, the county or city may deny development permits on this parcel for the next 6 years.
- The following may result in an unauthorized incidental take of certain endangered or threatened fish species:
 - o Conversion of land to non-forestry use.
 - o Harvesting within the maximum RMZ on a 20-acre exempt parcel that was acquired after June 5, 2006.

Signature of LANDOWNER*	Signature of TIMBER OWNER (If different than landowner)	Signature of OPERATOR (If different than landowner)
		
Print Name: Ryan Stebbins ROBERT W. JOHNSON	Print Name:	Print Name:
Date: 4-29-09	Date:	Date:

***NOTE:** If you are a "Perpetual Timber Rights Owner," and are submitting this without the Landowner's Signature, provide written evidence the landowner has been notified.

36 of 53

QQ-46W 05-12-2008

7 of 7

WESTERN WASHINGTON

14784

**Forest Practices Application/Notification Addendum
 DNR Proprietary HCP Implementation Checklist for the Marbled Murrelet, 2008
 OESF, Straits, South Coast, and Columbia Planning Units Only**

Refer to the DNR Proprietary HCP Implementation Agreement for the Marbled Murrelet, 2008 and maps showing marbled murrelet occupied site delineations and habitat deferrals located at: snarf\div_lm\ecosystem\cons_strategies\marbledmurrelet\mmhcpmaps.

37 of 63

1. Is the Forest Practices activity located within an occupied marbled murrelet site, an additional area of deferral, or reclassified habitat not available for release?
 - Yes, proposal is **inconsistent** with the current HCP strategy. Harvest deferral of habitat. **Stop Proposed Activity** or document in Question #7, specifics of proposal and Land Mgmt Division/Services approval if intending to proceed.
 - No, Go to Question #2.

2. Is the Forest Practices activity within contiguous, similar forest type of a newly detected occupied marbled murrelet site not displayed on the above referenced maps? Marbled murrelet detections are located at /database/covers/wdfw/mmdets, refnum >= 2030000, wdfwstat <= 3.
 - Yes, Check with Region biologists/Division specialists for recommendations to determine the boundary of the occupied site. If occupied and boundary determined, go back to Question #1, otherwise if not within occupied site, go to Question #3.
 - No, Go to Question #3.

3. Is the proposed harvest activity within 300 feet of any occupied site(s)?
 - Yes, consult with Region biologists/specialists for recommendations. Go to question #4.
 - No, proposal is consistent with the current HCP strategy. Go to Question #6.

4. How were the occupied site(s) delineated?
 - Used above referenced interim marbled murrelet maps. Go to Question #5.
 - Followed Forest Practices guidelines in WAC 222-16. Go to Question #5.
 - Followed other methodology approved by USFWS, submit documentation. Go to Question #5

5. Will the occupied site(s) be protected by current HCP strategies during harvest activities?
 - Yes, proposal is consistent with current HCP strategy. Go to Question #6.
 - No, proposal is **inconsistent** with the current HCP strategy. **Stop Proposed Activity** or document in Question #7, specifics of proposal and Land Mgmt Division/Services approval if intending to proceed.

6. Is the Forest Practices activity within an area of reclassified habitat designated for release¹?
 - Yes, Proceed with activity, go to Question #7.
 - No, Proceed with activity, go to Question #7.

¹ All reclassified habitat within the OESF and SW Washington is harvest deferred without release. SW Washington is defined as that portion of the Columbia Planning Unit west of Interstate 5 and that portion of the South Coast planning unit south of Highway 8.

7. If harvesting reclassified habitat, list the WAU name, **total** acres allowed to be harvested and the **total** acres to date of habitat harvested within the WAU after this proposed harvest. It is the region's responsibility to ensure that the total acres of reclassified habitat harvested within the WAU will remain at or below the allowable amount. If within 300' of occupied site, describe protection, or if varying from current HCP guidance, attach concurrence or variance approval from Land Management Division and/or Services and discuss below.

N/A

38 of 53

**Forest Practices Application/Notification Addendum
DNR Proprietary HCP Implementation Checklist for the
Northern Spotted Owl, 2008 (all HCP planning units & OESF)**

Refer to the DNR Proprietary HCP Implementation Agreement for the NSO, 2008.

1. Is the Forest Practice activity within a NRF Management Area?
 Yes, Go to #2.
 No, Go to #6.
2. Is the Forest Practice activity within a designated 500-acre Nest Patch?
 Yes, No timber harvest allowed, harvest deferment of Nest Patches, refer to Substitution Agreement, Section I.A. **End Checklist.** Maintenance of existing roads is permitted. Describe road maintenance activity in Question #13.
 No, Go to #3.
3. Is the Forest Practice activity within 0.7 miles of a spotted owl nest site (status 1 or 2)?
 Yes, Apply timing restrictions; refer to Substitution Agreement, Section I. Go to #4.
 No, Go to #4.
4. Is the SOMU where the Forest Practice activity is located, above the threshold of NRF habitat?
 Yes, Proceed with the activity, ensuring that habitat within the SOMU will not fall below the target amount. Please describe in Question #13; if the activity will be harvesting habitat or non-habitat, whether it is an enhancement activity or even-age harvest and how many acres or percentage of NRF habitat will remain within the SOMU after harvest. Go to #13.
 No, Go to #5.
5. Is the Forest Practice activity within suitable submature habitat or better or "next best"?
 Yes, Ensure NRF habitat remains after completion of the harvest activity or that the activity will not increase the length of time for the target amount to reach a suitable habitat condition. Please describe in Question #13, type of activity, how habitat will be maintained or next best stands enhanced and what the final stand condition will be. Go to #13.
 No, Ensure that target amount of habitat within the SOMU will not take longer to achieve after activity. Please describe in Question #13 how management activity will maintain and/or achieve the NRF target amount. Go to #13.
6. Is the Forest Practice activity within a Dispersal or DFC Management Area?
 Yes, Go to #7.
 No, Go to #10.
7. Is the Forest Practice activity within 0.7 miles of a spotted owl nest site (status 1 or 2)?
 Yes, Apply timing restrictions; refer to Substitution Agreement, Section I. Go to #8.
 No, Go to #8.
8. Is the SOMU where the Forest Practice activity is located, above the threshold of dispersal habitat?
 Yes, Proceed with the activity, ensuring that habitat within the SOMU will not fall below the target amount. Please describe in Question #13; if the activity will be harvesting habitat or non-habitat, whether it is an enhancement activity or even-age harvest and how many acres or percentage of dispersal habitat will remain within the SOMU after harvest. Go to #13.

39 of 53

- No, Go to #9.
- 9. Is the Forest Practice activity within suitable dispersal habitat or better or "next best"?
 - Yes, Ensure dispersal habitat remains after completion of the harvest activity or that the activity will not increase the length of time for the target amount to reach a suitable habitat condition. Please describe in Question #13, type of activity, how habitat will be maintained or next best stands enhanced and what the final stand condition will be. Go to #13.
 - No, Ensure that target amount of habitat within the SOMU will not take longer to achieve after activity. Please describe in Question #13 how management activity will maintain and/or achieve the dispersal target amount. Go to #13.
- 10. Is the Forest Practice activity located within the OESF?
 - Yes, Go to #11.
 - No, Go to #12.
- 11. Landscape planning has been initiated, but has it been completed?
 - Yes, Proceed with the activity, ensuring that all commitments of the Landscape Plan are fulfilled. Please describe in Question #13; if the activity will be harvesting habitat or non-habitat, whether it is an enhancement activity or even-age harvest and how many acres or percentage of suitable habitat will remain within the SOMU after harvest. Go to #12.
 - No, Proceed with the activity, ensuring that the total amount of habitat harvested since HCP implementation will not exceed the allowable amount as described within the substitution agreement, Section II. Please describe in Question #13; if the activity will be harvesting habitat or non-habitat, whether it is an enhancement activity or even-age harvest and how many acres or percentage of suitable habitat will remain within the SOMU after harvest. Go to #12.
- 12. Is the Forest Practice activity located within a Status 1 or 2 spotted owl management circle based on the WDFW database?
 - Yes, Apply harvest timing restrictions to activities within the best 70-acre core around the site center; refer to Substitution Agreement, Section III. Include location of best 70-acre core on Forest Practices Map. Go to #13.
 - No, Go to #13.
- 13. Provide any additional information or details requested from previous questions on the following lines. If no additional information is required, simply state "not applicable" below. Otherwise, include the SOMU name(s) when necessary if activity is within NRF or dispersal management areas or OESF and how habitat will be maintained or enhanced, etc. If varying from standard HCP guidance, attach concurrence/variance approval from Land Management Division and/or Federal Services and discuss below.

End checklist.

Not Applicable

40 of 53

**Forest Practices Application/Notification Addendum
DNR Proprietary HCP, WAC Replacement Summary for Aquatic Resources, 2008
Five West-side Planning Units, Excluding the OESF**

Please refer to the DNR Proprietary HCP Substitution Agreement for Aquatic Resources, 2008. Please check all HCP prescriptions and/or activities, which are relevant to this proposal and describe the management prescriptions and final stand composition at the end of this checklist.

NOTE: When assessing hydrologic maturity for each sub-basin inside the rain-on-snow zone, DNR staff will use the most updated data layer delineating Watershed Administrative Units as designated by Forest Practices.

- Assessing Hydrologic Maturity in the Rain-On-Snow (ROS) Zone (Refer to item A in the Agreement Memo). If the activity lies within the ROS zone and subbasin will be managed for ROS, fill out the following table. If within ROS zone, but subbasin will not be managed for ROS, describe why in additional information section below.

1. SUB-BASIN NAME	2. TOTAL ROS ACRES (DNR) WITHIN SUB-BASIN	3. HYDRO MATURE TARGET ACRES (2/3 of Column 2)	4. CURRENT DNR SUB-BASIN ACRES IN HYDRO MATURE FOREST IN ROS	5. ACRES OF HYDRO MATURE FOREST TO BE REMOVED	6. SUPRPLUS (+) OR DEFICIT (-) ACRES AFTER ACTIVITY
n/a					

41 of 53

- Wetlands Protection, road construction within wetlands or wetland buffers, requires mitigation. (Refer to item B in the Agreement Memo). If this activity will include road construction within a wetland or WMZ, describe the type of wetland, potential loss of wetland function and how and where the loss of function will be mitigated.
- Harvesting within Forested Wetlands. (Refer to items C & E in the Agreement Memo). Describe the remaining stand characteristics within the wetland and map any forested wetlands greater than 3 acres.
- Wetland Management Zones. (Refer to item D in the Agreement Memo). Describe the site index and WMZ width. If harvesting within the WMZ, describe the remaining stand characteristics within the WMZ.
- Riparian Management Zones for Type 1, 2 and 3 Waters (Refer to item F and Appendix 1 in the Agreement Memo). Describe the site index, RMZ width and if a wind buffer was applied. Describe if the RMZ begins from the outer edge of a CMZ or 100-year floodplain and how they were typed.
- Riparian Management Zones for Type 4 and 5 Waters (Refer to item G and Appendix 1 in the Agreement Memo). Describe any special protection for Type 5 waters.
- Harvesting or Salvaging within Type 1, 2, 3 and 4 Riparian Management Zones. (Refer to item F-J and Appendix 3 in the Agreement Memo). If harvesting, describe the general

HCP Riparian Forest Restoration Strategy management scenario under which the proposal's riparian stand will be managed. Describe stand treatment including removals, down wood and snag recruitment and type of activities. Describe post-harvest stand; how it meets the management parameters of the general management scenario, what species composition and diameter classes will remain, trees per acre, basal area, relative density. If salvaging, describe how you will be meeting the RDFC conditions, what you will retain and removals and other salvage/restoration conditions described within the Ecosystem Services Section approved site specific restoration plan (and/or attach plan).

Please provide any requested additional information below. If varying from standard HCP guidance, attach concurrence/variance approval from Land Management Division and/or Federal Services and discuss below (e.g. research).

This proposal incorporates a variable retention harvest with a Riparian Management Zone (RMZ) and Wetland Management Zone (WMZ) thinning according to the HCP Riparian Forest Restoration Strategy.

Wetland Management Zones

Unit #1

There are two forested wetlands (FW 1 and FW 2), each 0.3 acres in size, and buffered by a 100' Wetland Management Zone (WMZ) buffer from the forested wetland edge. The edge was determined by vegetation and soil characteristics. No wind buffers were applied to either WMZ. There will be no thinning within the WMZ's of Unit #1.

Unit #2

There are two forested wetlands (FW 3 and FW 4). Each is larger than 1 acre and received a site index buffer. The WMZ buffers are based on the 100 year site index and no less than 172 feet. No wind buffers were applied to either WMZ. A total of 8 acres of WMZ are available for thinning in two WMZ's. The thinning units are primarily composed of Douglas-fir, with a small component of western hemlock, red alder and western redcedar. There are existing snags and large down woody debris (LDWD) within the WMZ's.

FW 3 (as referenced on the Forest Practice Activity Map)

The thinning entries were chosen based on high basal area. The stand will be thinned from below to a basal area of 120. The stand is predominately Douglas-fir with minor amounts of western hemlock. Tree ages range from 50 – 68 years. Understory species include swordfern (50%), salal (40%), vine maple (35-45%), and Oregon grape (5-25%). Slopes range from 0 – 35%. Plant association is TSHE/BENE/POMU.

42 of 53

14784_Attachment1

43 of 63

	Current Stand Characteristics
TPA	107
BA	264
QMD	21
RD	57

FW 4 (as referenced on the Forest Practice Activity Map)

The thinning entries were chosen based on high basal area. The stand will be thinned from below to a basal area of 120. The stand is predominately Douglas-fir with minor amounts of western hemlock. Tree ages range from 50 – 68 years. Understory species include, by percent cover: swordfern (50), salal (40), vine maple (35-45), and Oregon grape (5-25). Slopes range from 0 – 35%. Plant association is TSHE/BENE/POMU.

	Current Stand Characteristics
TPA	132
BA	255
QMD	19
RD	59

Riparian Management Zones

Unit #1:

There are 3.7 acres of thinning in a Type 3 and 4 RMZ as per DNR’s HCP Riparian Forest Restoration Strategy (RFRS). The Type 3 stream has a 190 foot RMZ buffer from the edge of the 100 year flood plain and based on a Douglas-fir 100 year site index. All Type 4 streams are buffered by a minimum of 100 feet from the edge of the 100-year flood plain. The location of Spur A requires the removal of 0.2 acres from the top of the Type 4 RMZ. No remaining ROW will remain due to the location of the road and subsequent construction. The side slopes in this area are generally flat, therefore, there will be very little excavation and disturbance. As the road is abandoned the road prism will be replanted consequently, the top of the RMZ will be replanted and restored. The road will not be within 25’ of the 100-year flood plain.

A thinning entry was chosen based on high relative density. The stand will be thinned from below to a relative density of 60. The stand is predominately Douglas-fir with minor amounts of western hemlock. Tree ages range from 50 – 68 years. Ground vegetation is dominated by sword fern (60%), vine maple (60%), Oregon grape (20%) and salal (10%). Slopes range from 0 – 35%. Plant association is TSHE/BENE/POMU.

14784

44 of 53

	Current Stand Characteristics	Post Harvest Stand Characteristics
TPA	115*	80*
BA	290	265
QMD	21	25
RD	63	60
Removals (mbf/ac)	7	n/a

* Applies only to trees greater than 6" dbh. It is estimated there are a minimum of 50 tpa less than 6" dbh.

Post Stand Characteristics

Based on field data and forest modeling, the thinning will remove approximately 5 to 7 mbf/ac, reduce the basal area to about 265 and leave approximately 80 TPA. Residual QMD ~ 25". The stand should meet the RDFC Desired Future Targets in both TPA and QMD as indicated. Basal Area should increase from 265 to 300 within 15 years.

Unit #2:

There are approximately 12 acres of thinning of Type 3 and 4 RMZ's as per DNR's HCP Riparian Forest Restoration Strategy (RFRS). The Type 3 streams have a 175 foot RMZ buffer from the edge of the 100 year flood plain and based on a Douglas-fir 100 year site index. All Type 4 streams are buffered by a minimum of 100 feet from the edge of the 100-year flood plain. Structurally, there is little overstory vertical or horizontal variability. A thinning entry was chosen based on high relative density. The stand will be thinned from below to a relative density of 54. The stand is predominately Douglas-fir with minor amounts of western hemlock. Tree ages range from 60 – 66 years. Ground vegetation is dominated by sword fern (60%), vine maple (60%), Oregon grape (20%) and salal (10%). Slopes range from 0 – 35%. Plant association is TSHE/POMU and TSHE/GASH.

	Current Stand Characteristics	Post Harvest Stand Characteristics
TPA	124*	80*
BA	260	264
QMD	20	19
RD	59	54
Removals (mbf/ac)	5	n/a

* Applies only to trees greater than 6" dbh. It is estimated there are a minimum of 50 tpa less than 6" dbh.

Field data and forest modeling suggests that we will meet the RDFC Desired Future Targets for QMD post-harvest for all units. Initial basal area after thinning would not meet the RDFC Desired Future Targets, however; forest modeling projections indicate that basal area targets for Unit 1 will be met within 15 years and basal area targets for Unit 2 will be met within 20 years.

Post Stand Characteristics

Based on field data and forest modeling, the thinning will remove approximately 7 to 8 mbf/ac, reduce the basal area to about 264 and leave approximately 80 TPA. Residual QMD ~19". The stand should meet the RDFC Desired Future Targets in both TPA and QMD as indicated. Basal Area should increase from 264 to 300 within 20 years.

RDFC Desired Future Targets For All RMZ's

TPA > 75
 BA > 300
 QMD > 21"

Both Units: There are a few remnant snags and LDWD from the Yacolt Burn. There was no insect damage of significance observed in the stand, however, scattered Armillaria root rot pockets were observed in Unit #2. Since the root rot is scattered it will not be delineated on the ground, rather, an area specific planting prescription will call for planting techniques and compositions that will enhance survival and reduce re-infestation.

The Riparian Thinning prescription will remove intermediate and co-dominant Douglas-fir from below favoring WH, WRC and dominant and co-dominant Douglas-fir as leave trees. Leave trees with LCR > 35% and large diameter trees > 25". During the commercial harvest entry, a total of 5 trees per RMZ acre will be dedicated toward dead wood goals. Harvested or 'Take Trees' are marked with a single orange ring around tree bole and a stump mark. Trees marked with an orange "S" may be topped at 16' for snag recruitment and trees marked with a double orange ring may be felled towards the stream for riparian habitat enhancement (provided it operationally safe to do so).

Enhancement Trees

The RMZ thinning will also include falling trees into streams, snag creation and creation of down woody debris according to the RFRS. Trees marked with an orange "S" may be topped at 16' for snag recruitment and trees marked with a double orange ring may be felled towards the stream for riparian habitat enhancement (provided it is operationally safe to do so). The following chart shows the thinning acreage, by Unit, and number of trees to be treated.

Oceanspray	Acres	Trees Needed	DWD	SNAGS	TOTAL
Unit 1	3.7	18	15	6	21
Unit 2	11.7	59	43	17	60
TOTAL	15.4	77	58	23	81

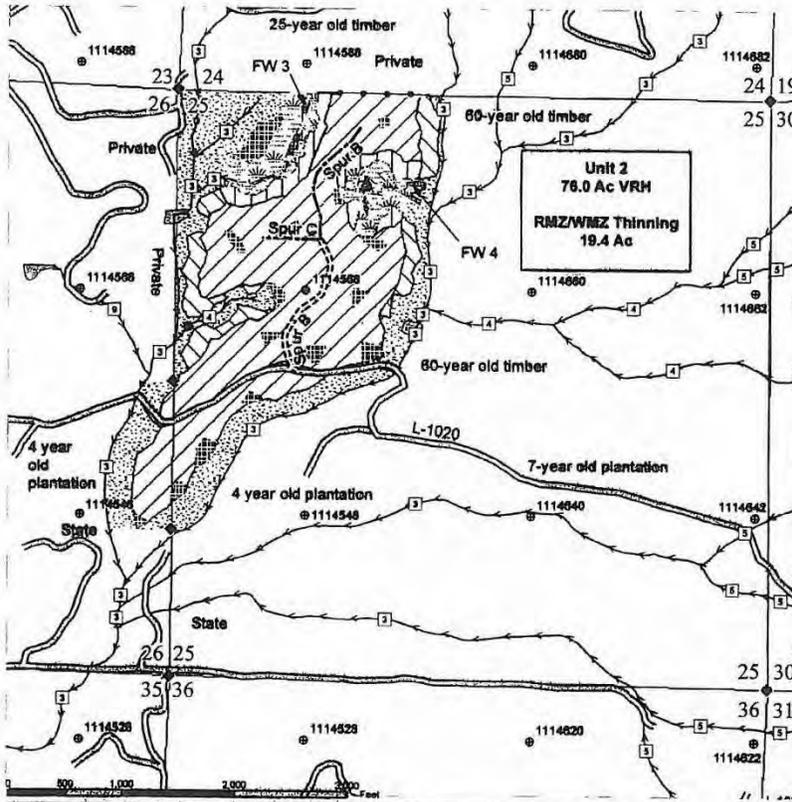
There will be no salvage operations within RMZ's or WMZ's. Existing LDWD is to be left onsite. Existing snags will be left standing unless they pose a safety concern. If felled for safety they will be left onsite to contribute toward the LDWD. There will be no wind buffers applied due to already existing buffer sizes.

45 of 53

FOREST PRACTICES ACTIVITY MAP

SALE NAME: OCEANSPRAY
APPLICATION #: 30-084262

COUNTY(S): CLARK
TOWNSHIP(S):



46 of 53

Sale Area	Existing Roads	Streams
WMZ Thinning	New Construction	Stream Type
RMZ Thinning	Temporary Construction	Stream Break
Wetland Mgt Zone	Tics - 2000' Interval	Culvert
Riparian Management Zone	Rock Pit	Property Line (with Orange Banded Take Trees)
Leave Trees	Monumented Corner	Gate (PCP1-1)
Forested Wetland	Landing	Timber Removal Trees
Leave Trees		

Prepared By: sbr490

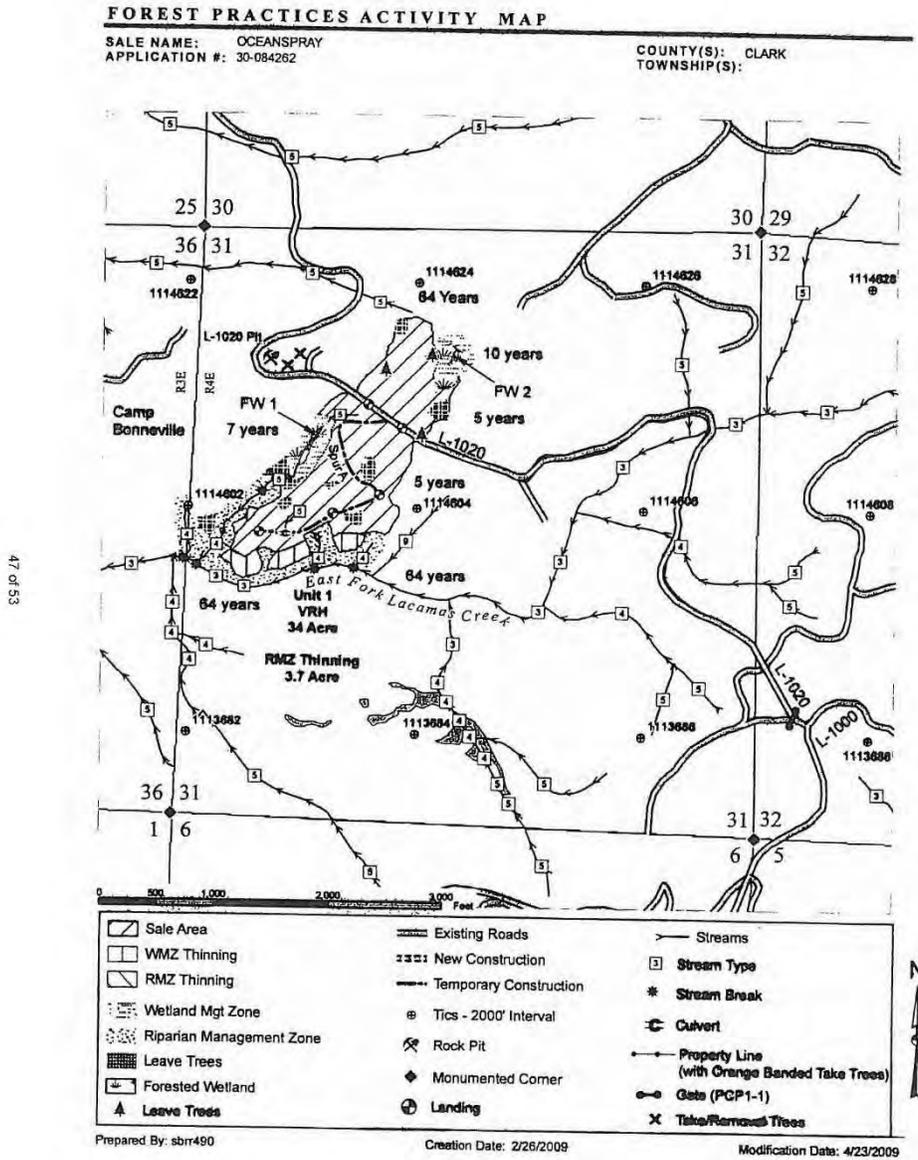
Creation Date: 2/28/2009

Modification Date: 4/8/2009

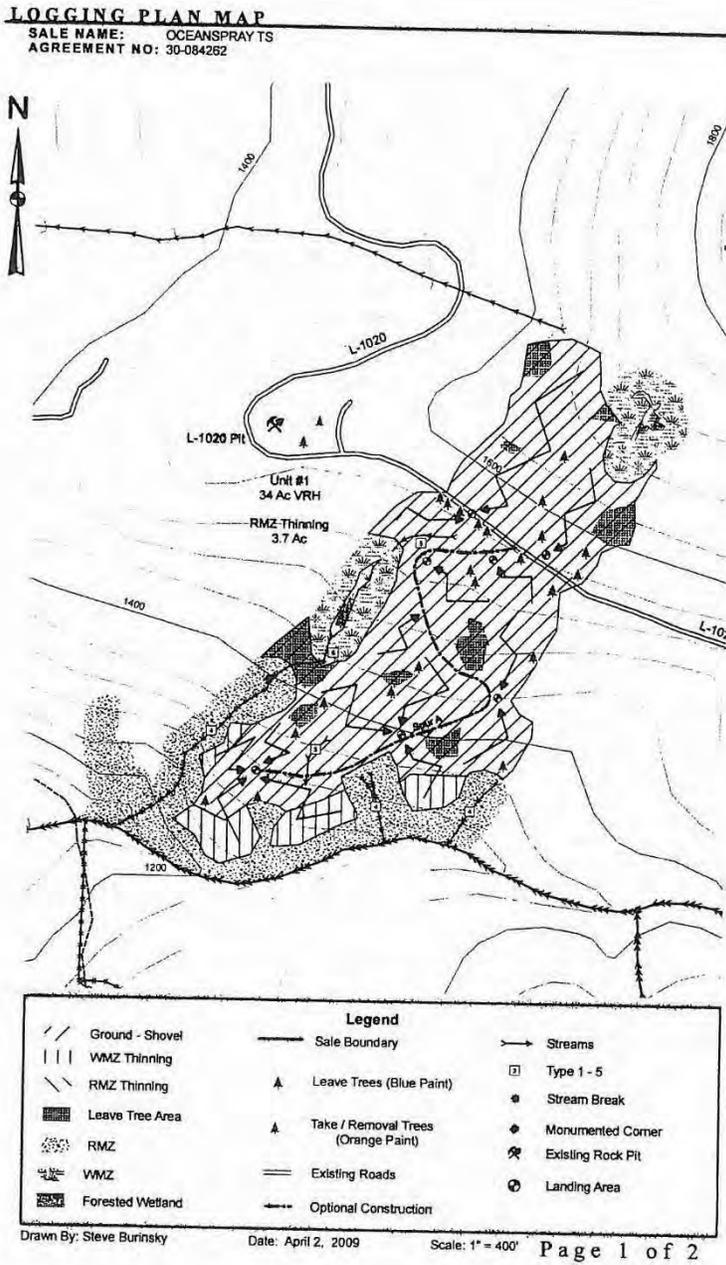


14784

14784_Attachment1



14784

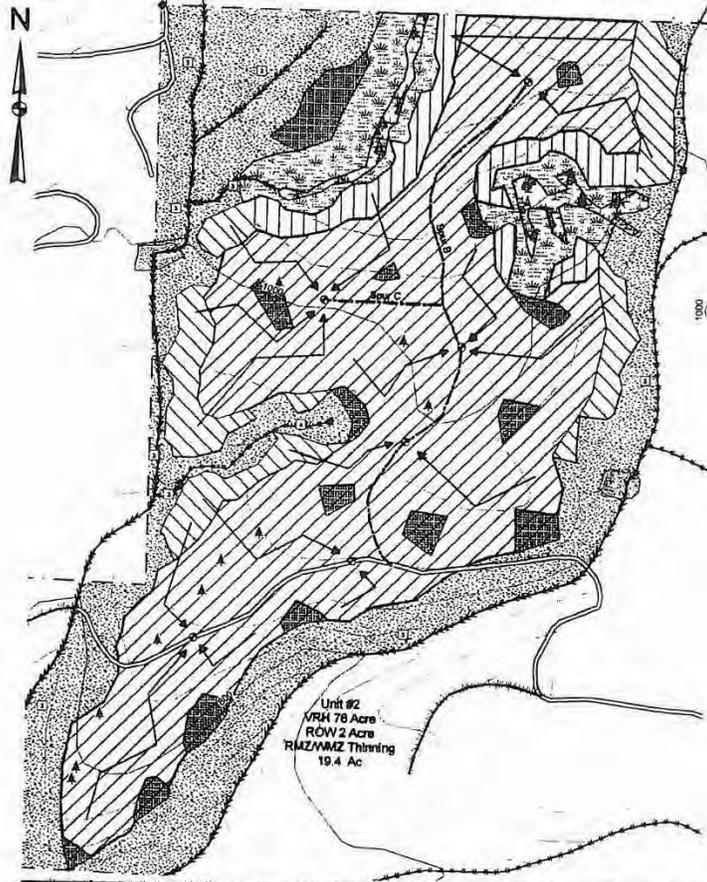


14784

14784_Attachment1

LOGGING PLAN MAP

SALE NAME: OCEANSPRAY TS
AGREEMENT NO: 30-084262



49 of 53

Legend					
	Ground - Shovel		Sale Boundary		Streams
	WMZ Thinning		Leave Trees (Blue Paint)		Type 1 - 5
	RMZ Thinning		Take / Removal Trees (Orange Paint)		Stream Break
	Leave Tree Area		Existing Roads		Monumented Corner
	RMZ		Optional Construction		Existing Rock Pit
	WMZ				Landing Area
	Forested Wetland				

Drawn By: Steve Burinsky Date: April 2, 2009 Scale: 1" = 400' Page 2 of 2

14784

Reconstruction continued:

Road	Station(s)	Requirements
T-3000	0+75 to 1+00 & 1+40 to 1+65 & 9+75 to 9+80	Remove existing fill to original hill slope and remove all organic material. All organic material shall be removed that is found in the embankment material even if it extends beyond the road stations noted. Reconstruct in accordance with design and detail sheets.
	1+00 to 24+80	Reconstruct old grade according to designs.
	46+39 to 49+97	Reconstruct old grade according to designs.
	62+52 to 64+64	Reconstruct old grade according to designs.

This project also includes but is not limited to pre-haul maintenance including:

Road	Station (s)	Requirements
T-Line	7+97 to 8+02; 22+97 to 23+02; 65+47 to 65+52; 70+77 to 70+82; 96+87 to 96+92; 100+62 to 100+67; 120+97 to 121+02; 127+20 to 127+25	Install new culverts as noted on the culvert list. Bed and backfill with crushed surface rock;

50 of 53

SECTION 1 - GENERAL CLAUSES

1.1-1

Clauses in this plan apply to all construction or reconstruction including landings unless otherwise noted.

1.1-2

Construction, reconstruction and pre-haul maintenance of the following roads is required. All roads shall be constructed, reconstructed and pre-haul maintained on the State's location and in accordance with this Road Plan.

Road	Stations	Type
T-Line	152+10 to 175+70 2960	Reconstruction
T-3000	0+00 to 14+54	Reconstruction
	14+54 to 54+64 4010	Construction
	54+64 to 56+76 212	Reconstruction
	56+76 to 77+17 2041	Construction
T-Line	7+97 to 8+02 5	Pre-haul Maintenance
	22+97 to 23+02 5	Pre-haul Maintenance
	65+47 to 65+52 5	Pre-haul Maintenance
	70+77 to 70+82 5	Pre-haul Maintenance
	96+87 to 96+92 5	Pre-haul Maintenance
	100+62 to 100+67 5	Pre-haul Maintenance
	120+97 to 121+02 5	Pre-haul Maintenance
	127+20 to 127+25 5	Pre-haul Maintenance

10,077

40 prehaul 6051 const. 4026 reconstr.

RANDOM CHANCE

30-083720

MARCH 31, 2009

Page 2 of 23

13,093

1.1-3

Construction of the following roads is not required. Roads used by the Purchaser shall be constructed on the State's location and in accordance with this Road Plan.

Road	Stations	Type
T-3202	0+00 to 2+62	Construction
T-3220	0+00 to 7+73	Construction
T-3221	0+00 to 6+17	Construction
T-3301	0+00 to 9+48	Construction
T-3302	0+00 to 10+16	Construction

1.1-4

If the Purchaser desires a road location or design change, a revised Road Plan shall be submitted to the State for consideration.

7614

9007

1.1-5

On this plan quantities are minimum acceptable values. Additional quantities required by the State because of hidden conditions or Purchaser's choice of construction season or techniques shall be at the Purchaser's expense. Hidden conditions include, but are not limited to: solid subsurface rock, subsurface springs, saturated ground, and unstable soil.

1.1-7

Hauling of forest products or equipment may require a county road hauling permit. Purchaser is responsible for obtaining a permit, and any costs associated with extra maintenance or repair levied by a county.

51 of 53

1.2-1

The construction, reconstruction, or pre-haul maintenance of any roads specified herein shall not be permitted between September 30 and May 1 unless authority to do so is granted, in writing, by the Contract Administrator.

1.2-2

Purchaser shall not use roads constructed or reconstructed under this Road Plan for hauling, other than timber cut on the right-of-way, without written approval from the Contract Administrator.

1.2-6

Pioneering shall not extend past construction that will be completed during the current construction season. Drainage shall be provided on all uncompleted construction as approved, in writing, by the Contract Administrator.

Clearing and grubbing shall be completed prior to starting excavation and embankment.

Culverts shall be installed in completed subgrade as construction progresses.

Subgrade, ditches, and culvert installations shall be completed and are subject to written approval by the Contract Administrator prior to rock application, subgrade compaction, and/or timber haul.

1.3-2

Roads are intended for dry weather use. Hauling shall be suspended when wheel track rutting exceeds 6 inches unless Purchaser elects to correct the situation at his/her own expense. Corrective measures and continued operations are subject to written approval by the Contract Administrator.

ATTACHMENT # 2

14784_Attachment 2



Washington State Department of
Natural Resources

NEPA Scoping Comments

for the

Bonneville Power Administration
I-5 Corridor Project

14784

14784_Attachment 2

Requests:

1. BPA agree that its actions and those of its contractors comply with RCW 76.04 and WAC 332-24.
2. BPA reimburse DNR for the full cost of suppressing any wildfires occurring on the BPA right-of-way or as a result of BPA operations in the area, regardless of cause.

Forest Practices

DNR's Forest Practices Program is responsible for the implementation of the state's Forest Practices Act and rules. The rules provide the framework for the protection of public resources and are a responsibility forest landowners, timber owners and operators have when conducting forest practices activities.

The Forest Practices rules and regulations provide cumulative protection to public resources. These resources include fish, water, wildlife and capital improvements of the state. The rules limit harvest adjacent to streams, wetlands and unstable slopes in addition to the construction and maintenance of roads. Maintaining long term large woody debris, shade producing tree species, bank stability and sediment filtering, collectively known as riparian function, immediately adjacent to fish bearing waters and perennial waters is extremely important. All forest landowners, timber owners and operators are required to follow the rules when conducting forest practices activities on forest land.

In 2002, DNR and BPA came to a common understanding regarding forest practices activities related to BPA's lines and those that would be constructed in the future. It is incumbent upon BPA to notify DNR Forest Practices when a particular proposal is going to take place within an area under BPA ownership. Absent BPA assertion of ownership, all Forest Practices obligations exist, which include obtaining an approved Forest Practices Application and complying with the rules. In this case the underlying landowner is ultimately responsible for the activities that take place on their property. This may include enforcement actions for activities that are conducted by another party, in this case a BPA contractor.

The Forest Practices program encourages BPA to be cognizant of these facts and make choices that do not have a negative impact on surrounding landowners.

Requests:

1. Agree to implement the 2002 agreement between DNR and BPA regarding forest practices.
OR
Agree to work with the neighboring landowners to obtain Forest Practices Applications and comply with the Forest Practices Act and rules.
2. Evaluate the project alternatives based on the impacts that they will have on Threatened and Endangered fish species, and water quality concerns.
3. Limit the impacts to potentially unstable slopes as defined in WAC 222-16-050(1)(d)(i).
4. BPA conduct an environmental analysis of the impacts to unstable slopes, riparian function and water quality for all stream crossings that will be impacted. A mitigation plan is provided for the project to specifically guide the removal and manipulation of vegetation near stream crossings.
5. BPA consider replacing existing tree species within the corridor with a species that will

This page intentionally left blank.

14785

NICHOLAS O ARNOLD

03/25/2013

14785-1 I urge you to choose the Western Alternative, which is lower cost and uses existing rights-of-way, avoiding destruction of our environment and seizure of private lands. Please keep nature for our enjoyment. I want to dance in that river again some day, and see all the wildlife that we want to see for the rest of our days.

14786

COURTLEIGH GUERCI

03/25/2013

14786-1 I believe the choice of routes absolutely must have minimal impact on all existing homes, schools, businesses and the environment in general. Although BPA has seemed to currently not selected the West alternative route, we believe this option has not been eliminated as your final choice. Thus, all homes adjacent to this newly proposed right of way as well as those on the west alternative have been

14786-2 the victim of greatly negative effects to their property values.

14786-3 Ours is one of hundreds of homes located along this Western route... as well as several schools and wetlands. It is our understanding that the Corps of Engineers has also warned of seriously negative effects if the construction of 500 KV lines is done within populated areas.

14786-4 Because of the existing lines along the west route many children are already exposed to the ill effects of the 230 KV existing line. However, even common logic illustrates even greater health risks and dangers, as determined by studies I've read. It is evident the Golder Associates study, commissioned by the BPA itself, but suppressed from public view for obvious reason, also strongly recommended a 2150 ft EMF right of way as a result of the even greater risk with the construction any of 500 KV lines.

It is a common sense and the perception with virtually anyone who seriously considers the potential ill effects of this technology and the truthfully published science behind it, that great harm would be done to those close to these lines and this is one significant factor driving property values as well.

14786-5 There is no doubt property values would significantly decrease further if the 500 KV line were constructed near any populated areas. While it is recognized this line has no business being constructed on the west alternative where there is so much potential for adverse health effects and residential property devaluation, we feel the further east these lines are placed the less danger from those ill health effects and deterioration of property values there will be. Please stop considering the west alternative

14786-6 and even the current route and move your focus to a further easterly route. Thank you. Respectfully submitted, C J Guerci

14785-1 Comment noted.

14786-1 Under NEPA, BPA cannot make a final decision concerning a route for the proposed project until after it completes the Final EIS and allows for at least a 30-day "waiting period" from the time the Final EIS is issued. That decision then will be announced in the Record of Decision. Accordingly, although BPA has identified its preferred alternative, all alternatives considered in detail in the EIS remain under consideration.

14786-2 Please see the response to Comment 14140-2.

14786-3 Please see the responses to Comments 14097-1, 14328-5, and 14712-2.

14786-4 Please see the response to Comment 14328-6.

14786-5 Please see response to Comment 14140-2.

14786-6 Comment noted.

14787

CHERYL R CARLSON

03/25/2013

14787-1

Yeah, this is Cheryl Carlson and my phone number is [phone number]. And I'm just trying to find out what's – I think I'm in line of the power line going in. I'm just trying to find out if you guys are coming around to talk to people or what. If you could give me a call and let me know. Thanks!

14788

BPA I-5 Corridor Reinforcement Project Voicemail**Received: 03/25/2013 3:46 PM**

14788-1

Hello my name is Mandy Lawrence, I'm with the Department of the Interior. And I just submitted comments online on behalf of Allison O'Brien who is with the Department of the Interior. And I noticed that it said that the comment period ended at noon today. And this is just about 15 minutes ago at 3:30 – the system accepted my comments. But I'm just calling to confirm that they did make it through that they will be taken into consideration. I just had a comment deadline date and did not realize there was a midday time associated with that date. So if you can, give me a call back, I'd appreciate it. My phone number is . Thanks a lot. Bye.

14787-1 BPA contacted the commenter in March 2013 and confirmed that her property is north of BPA's Preferred Alternative and not directly affected by the proposed project. BPA explained that a member of the design team may try to contact her again in the future which they did in February 2015. The design team did contact and meet with landowners directly affected by the proposed project.

Please see the response to Comment 14097-1. The proposed route has been moved south in the commenter's area to be further away from residences to the north (including the commenter's) and avoid a large wetland area.

14788-1 BPA received and considered the commenter's comments.

14790

From: noreply@bpa.gov
Sent: Saturday, March 23, 2013 6:36 PM
Subject: 14790: BPA I5 Comment Submission Confirmation

Thank you for submitting your comments on the Bonneville Power Administration's draft environmental impact statement (EIS) for the I-5 Corridor Reinforcement Project. All comments submitted between November 13, 2013 and noon on March 25, 2013 will be responded to in the final EIS, which is expected in 2014.

A copy of your information, as submitted using our online form, is included below for your records. If you provided your contact information and submitted a question we can answer at this time, you will receive a response. Your contact information will also be added to our project mailing list. All comments including names will be processed and then posted on BPA's website at www.bpa.gov/goto/i-5

Sincerely,
 Bonneville Power Administration

Name: Terry L. Constance
Organization: No Lines in Populated Areas
E-mail:
Phone:
Address:

Group type: Special interest group

Please ADD me to the mailing list.

Comment:

14790-1 Mr. Bill Drummond Administrator, Bonneville Power Administration Portland, Oregon Ref: Economic and Human Impacts of I-5 Corridor Reinforcement, Study by NLPA Dear Mr. Drummond, The "No Lines in Populated Areas, Urban or Rural" coalition includes citizens groups from the urban and rural areas of Cowlitz and Clark counties. Our mission is to work with others in a spirit of cooperation so no new transmission lines will be placed in urban or rural populated areas. Since 2009 we have tried to help BPA implement the Project more efficiently, effectively and with less impact to the public. We are aware of the need to upgrade our region's overall transmission infrastructure and reliability. To date, BPA's decision making relative to the I-5 Project shows a narrow focus on political expediency, minimizing capital costs or simplifying the engineering challenges while avoiding crossing powerful political and corporate interests. We see little evidence of any real concern from BPA for the public welfare of local communities and their governments, or safeguarding the health, safety and financial well-being of individual property owners. From our vantage point, the way BPA has conducted the I-5 Project so far has not lived up to its vision and mission. For example, BPA has:

- Used its public relations apparatus to go through the motions of public participation while stifling it
- Withheld basic technical and socio-economic information about the project
- Dropped all Oregon route options without a serious evaluation for a project that will supply primarily Oregon and California
- Dismissed serious and professional technical input and concerns from citizens using public relations campaigns to mislead the public

14790-2 The attached study was done to introduce the perspective of public costs and benefits to the process. It is the

14790-1 The opinions of the commenter are noted. BPA believes it has conducted a robust and meaningful public process for the project and EIS that has encouraged public input. The EIS reflects public and expert input on many subjects, ranging from potential routing ideas to information on resources present in particular areas along these routes. BPA has made great efforts to share information about the project throughout the process and has attempted to ensure that this information is as accurate as possible. See the response to Comment 14443-1 regarding the elimination of routes in Oregon (i.e., the Pearl Routes) from detailed study in the EIS.

14790-2 Comment noted.

14790

- 14790-2 result of two years of analytical and field work by a multidisciplinary team of senior professional experts including electrical engineers, forestry and environment people, economists, real estate appraisers and assessors. The study shows that: • The West route, on existing right of ways, has the lowest capital cost but has the highest economic and fiscal impact to the public while bringing health and safety risks to thousands of homeowners in Clark and Cowlitz counties. • Compared to BPA's preferred Central route, the longer Northeastern route, which NLPA has suggested, reduces the economic and fiscal impact to citizens and their local governments by at least \$9 million per year now, growing to \$19 million per year in 2030. It detours around the cities and suburban growth areas of Castle Rock and Camas, avoids rural populated areas and provides room for expansion. • From the public perspective, the payback period for the extra capital costs of the longer Northeastern route recommended by NLPA is under six years. • The existing routes have expanded over time and now have a major negative economic, fiscal and social footprint both in terms of downgraded prime lands and in poverty around the lines. • By going through Castle Rock, Camas and rural populated areas, BPA's preferred route would disproportionately affect smaller towns and poorer communities. Based on the study, NLPA respectfully requests BPA to re-open the scoping period to: a. Fully evaluate the Northeastern route option as mapped by BPA on January 18, 2012 ending with segment "O". (A map is annexed to the report). b. Fully evaluate a Bonneville dam crossing for the Northeastern route. Goes easterly from the end of segment "O" using existing ROWs on forested public lands to reach and cross the Columbia River at the dam site. The suggested route then follows the existing ROW as it climbs out of the gorge area. It continues on existing public-owned ROW and ends at a substation on the Oregon side, preferably east of Troutdale. This alternate substation site would minimize impacts to private properties and to the suburban growth lands near Troutdale. (A Google Earth draft map is annexed to the report). c. Evaluate the Oregon alternative of reinforcing the path South of Allston. Transmission congestion studies by DOE and others show that most congestion, for loads going south to Oregon and California, occurs south of this point. We are confident that by using generation re-dispatch and working with the support of citizens, any extra time spent in implementing the above recommendations will be recovered in terms of the completion schedule and result in a more cost-effective project and a better public policy. Sincerely, Terry Constance, Chairman No Lines in Populated Areas-Urban or Rural Another Way BPA www.nowaybpa.com
- 14790-3
- 14790-4
- 14790-5

[Attachment](#)

- 14790-3 Section 4.7.2.4, Northeastern Alternative, North of Silver Lake, Washington, explains why potential routes farther east were considered but eliminated from detailed study. BPA believes that the reasons provided in the EIS for eliminating these alternatives sufficiently explain their elimination.
- 14790-4 Please see the response to Comment 14771-9.
- 14790-5 Comment noted. Section 4.7.2.4, Northeastern Alternative, North of Silver Lake, Washington, explains why potential routes further northeast were considered but eliminated from detailed study. Section 4.7.2.8, Transmission Line Route East to Bonneville Dam, explains why potential routes near Bonneville Dam were considered but eliminated from detailed study. Please see the response to Comment 14443-1 regarding the elimination of routes in Oregon south of Allston (i.e., the Pearl Routes) from detailed study in the EIS.

BPA believes that it has provided sufficient reasons in the EIS for eliminating these alternatives and that re-opening the EIS scoping period to further assess these alternatives is not warranted.

14790_attachment

**I-5 Corridor Reinforcement: Economic and Human Impacts to
Southwest Washington State from Bonneville Power
Administration's Transmission Line**



By: No Lines in Populated Areas, Urban or Rural, March 13, 2013]
www.nowaybpa.com

3 of 34

14790_attachment

Acronyms and Conversion Factors

BPA	Bonneville Power Administration, autonomous enterprise, US Dept. of Energy
BLM	U.S. Bureau of Land Management
DEIS	Draft Environmental Impact Study by BPA, as required by NEPA
DOE	U.S. Department of Energy
EFSEC	Washington State Energy Facility Siting and Evaluation Committee
EMF	Electro-magnetic field strength (3-4mGauss danger threshold to children)
FERC	Federal Energy Regulatory Commission
FOIA	Freedom of Information Act
HVTL	High Voltage Transmission Line
NEPA	National Environmental Policy Act 1969
NLPA	No Lines in Populated Areas, Urban or Rural
NWPCC	Northwest Power and Conservation Planning Council
PUD	Public Utility District
ROW	Right of Way (applied to both easements on private land or land owned by BPA)
WDNR	Washington State Dept. of Natural Resources

Conversion Factors

Note: Decimals separated by period, thousands by commas

1 mile= 5,280 ft.	1 mile= 1,609 meters
1 acre= 43,560 ft.2	1 meter= 3.28 ft.
1 mi2= 640 acres	1 acre= 0.4047 hectare
1 mGaus= 0.1 micro Tesla	

14790_attachment

Table of Contents

Acronyms and Conversion Factors2

SUMMARY4

I. BACKGROUND AND RATIONALE.....7

 A. What is BPA I-5? 7

 B. Description of Cowlitz and Clark Counties..... 7

 C. BPA’s Denies Health Risks from Electromagnetic Fields, EMF 8

 D. Dismissal of Northeastern Route Concept 8

II. OBJECTIVES AND METHODS OF THE HISTORIC ASSESSED VALUES STUDY9

 A. Objective..... 9

 B. Methods..... 9

 C. Scope 9

 D. A Refresher of Key Topics 10

 E. Design and Parameters Used..... 12

III. RESULTS14

 A. Tax Shifts and Home Counts for Routes Proposed by BPA and Citizens’ Groups..... 14

 B. Lessons from History 16

IV. CONCLUSIONS AND IMPLICATIONS19

 A. Main Parties Impacted by BPA I-5 19

 B. Payback Periods for Longer Routes 21

 C. Federal policies to facilitate inter-state transmission projects 22

V. RECOMMENDED ACTIONS23

 A. Short Term 23

 B. Medium and Long Term 23

Works Cited24

Annexes: Maps of routes proposed by BPA, citizens.....27

 A-1. Map of BPA Selected Routes, May 2011 27

 A-2. Map of Northeastern route by BPA, January 2012..... 28

 A-3. Northeastern route suggested by NLP (crossing Columbia R. at Bonneville Dam) 29

 A-4. Clark County: Percentage of Total Population with Income Below Poverty Level 30

 A-5. Cowlitz County Poverty Map 31

 A-6. EMF for 500 kV..... 32

This page intentionally left blank.

SUMMARY

- 14790-6 **Background.** In October 2009 the Bonneville Power Administration (BPA), announced the “I-5 Corridor Reinforcement” project, a \$342 million, 70 mile, 500kV High Voltage Transmission Line (HVTL) line to transfer power through Southwest Washington State to and from Oregon and California. It was fast-tracked by US Department of Energy (DOE), as one of four job creation projects taken on by BPA as part of a \$3.25 billion extension to its line of credit with the US Treasury under the Economic Recovery Act of 2009.
- 14790-6 **BPA’s approach.** BPA announced the evaluation of 45 possible route segments potentially affecting 7750 property owners in SW Washington. A set of Oregon routes affected only 3100 property owners, but BPA’s top executive dropped the Oregon route options without a detailed evaluation. For over four years citizens’ lives and properties will have been put on hold while BPA conducts a series of costs and environmental impact studies to select a route from Castle Rock to a substation at Troutdale, Oregon.
- 14790-7 **By using the prime and suburban growth lands, all BPA routes create significant permanent economic burdens to all taxpayers of Cowlitz and Clark counties and their local governments. Additionally, the four routes BPA pre-selected in May 2011 have unacceptably high human safety and health risks for home owners near the lines. BPA has publicly denied the increased blood cancer risks from long-term exposure of children to Electromagnetic Fields (EMF) and withheld relevant technical information.**
- 14790-8 **Dismissal of citizens’ input.** In September 2010, a team of technical experts supporting the non-profit No Lines in Populated Areas- Urban or Rural (NLPA), proposed BPA an alternative route concept, further north and east from all BPA routes. It minimized the number of affected homes and the economic burdens to all home owners. In January 2012, after a public relations campaign that distorted the home counts and number of properties potentially impacted, BPA dismissed this option. BPA alleged the proposed “Northeastern route” would cost an extra \$30 million to build and could potentially impact protected wildlife habitat so it might be expensive to mitigate. NLPA’s senior environmental and forestry advisers reviewed the issue with state wildlife specialists. They concluded that, if desired, BPA could easily mitigate the wildlife concerns.
- 14790-9 **Study of Historic Assessed Values.** NLPA’s study evaluates the present and future indirect economic and financial burdens which each route proposed by BPA or by citizens groups, will impose on every property owner of Clark and Cowlitz county, even if their property is far from any route.
- 14790-10 **For each route segment proposed, the foregone real property assessed values in the new or additional Right of Way (ROW) required by the Project are evaluated. These buildings that cannot be built and lands that are not developed inside the new ROW’s generate less property tax¹. Foregone tax must be offset by tax shifts, or higher tax rates, for all county homeowners. These impacts are similar to the county property tax exemptions. In 2011, for example, the total tax shifted from all tax exempted properties in Cowlitz County resulted in the average homeowner paying \$295 in higher property tax rates. Tax exemptions for public-owned properties were responsible for 60% of that total tax shift.**
- Computer-based mass appraisal techniques were used to gather and analyze current and historic real property assessed values from the Cowlitz and Clark county assessors. Historic sequences of aerial photography going back to the 1940’s and 1960’s were used to gage the urban growth patterns and the locational criteria that BPA applied when placing the existing high voltage transmission lines.**
- Study Results. “Basic tax shift” from power line ROW evaluated.** It is the foregone taxable asset value of all properties, buildings and prime residential lands under the new or additional ROW required by BPA I-5.

¹ Lands in privately owned easements still pay property taxes, however, they get a ~20% break from assessor.

- 14790-6 Comment noted. Please see the response to Comment 14443-1 regarding the elimination of potential routes through Oregon (i.e., the Pearl Routes) from detailed study in the EIS.
- 14790-7 Please see the response to Comment 14642-2.
- 14790-8 Please see the response to Comment 14328-6.
- 14790-9 Please see the response to Comment 14790-3.
- 14790-10 Please see the response to Comment 14642-2.

14790_attachment

Table a. Annual Taxable Asset Shift and Homes Placed at Risk by BPA I-5 Routes

ROUTES	BASIC ROW TAXABLE ASSET SHIFT \$MM/YR		Number of Homes by Distance to Center of Line		
	2012	2030	300 ft.	500 ft.*	1320 ft.**
BPA-PROPOSED:					
WEST	21.7	90	1526*	3032	7207
CENTRAL (Preferred by BPA, Nov. 2012)	11.6	25	173*	327	2321
CROSSOVER	6.7	18	320*	657	2307
EAST	6.8	15	157*	286	1114
CAMAS Crossing***	2.4	7.7	137*	na	839
CASTLE ROCK, SEG F	4.0	10	na	na	183
CITIZEN-PROPOSED:					
Northeastern with Bonneville Dam Crossing and return in Oregon ROW	3.3	7	16	na	111
Northeastern Crossing at CAMAS	4.6	10	140*	na	950

*BPA; **NLPA; *** Camas Crossing includes segments T, S, 49, 51, 52; na=not available

14790-11

The Northeastern route crossing at Bonneville has the lowest human and economic impacts but would be much longer. It would require a higher one-time, direct capital investment of \$60-70 million which gets accounted as an almost undetectable increase² to the monthly utility bills of all rate payers. As the table below shows, the public would recuperate this extra initial investment in less than eight years.

Table b. Public Impacts and Pay-Back Periods of BPA and Citizens' Routes***

ROUTE	TAXABLE ASSET SHIFT 2012 (\$MM/year)	TAXABLE ASSET SAVINGS (LOSSES) vs. BPA-PREFERRED (\$MM/year)	PAYBACK PERIOD FOR EXTRA INVESTMENT vs. BPA-PREFERRED (# of years)	HOME COUNT WITHIN 300FT.
WEST	21.7	(10.1)	NA	1526*
BPA PREFERRED, CAMAS CROSSING	11.6	0	NA	173*
NORTHEASTERN CROSSING AT CAMAS	4.6	7.0	<4	140**
CITIZENS, NORTHEASTERN CROSSING AT BONNEVILLE	3.3	9	<8	16**

*BPA calculations; **NLPA calculations, nominal; NA not applicable *** Includes only the taxable asset shift due to new or expanded ROW.

14790-12

The market value losses from properties adjacent to the HVTL also create a taxable asset shift but this is quite variable and hard to estimate. This additional tax shift has been excluded from the above impacts. If it were included at a conservative level of 2%, impacts shown above would increase by roughly 30%.

14790-13

HVTL's influence zoning, urban planning and human settlement patterns. The study found concentrations of high density, lower cost multifamily residential structures built immediately adjacent to BPA's existing ROW in Vancouver and in Lexington, Kelso. Analysis of the 2010 US Census data tracts along the existing West route in Vancouver suggests a pattern of higher poverty along the existing HVTLs placed in the 1940's and 1960's.

² Transmission direct investment and operating costs are 5-7% of the retail electricity price and are rolled in with existing 15,000 miles of BPA lines. Rate payers see prices go up or down depending on the type and cost of the energy being sourced by their local utility.

14790-11 Please see the response to Comment 14790-3.

14790-12 Please see the response to Comment 14291-3.

14790-13 Please see the response to Comment 14677-4.

14790_attachment

14790-14 **Citizens support Northeastern route avoiding Castle Rock and Camas.** Compared to BPA's preferred Central Route, the Northeastern route option with the crossing at Bonneville would reduce the affected homes tenfold. It would also reduce the 2012 taxable asset shift to a third or \$3.3 million. By working with the support of citizens, BPA should be able to more than make-up the time it will need to evaluate the Northeastern route. The Northeastern option allows for future expansion with lower impacts.

Recommended Actions

1. Short Term.

NLPA respectfully requests the **Federal, State and County elected officials and the Washington State Governor to urge BPA to re-open the scoping period** to fully evaluate the routes suggested by citizens in Oregon and Skamania, as follows:

- 14790-15
- a. **Fully evaluate the Northeastern route option** as mapped by BPA on January 18, 2012 ending with segment "O". (A map is annexed to the report).
 - b. **Fully evaluate a Bonneville dam crossing for the Northeastern route.** From the end of segment "O" using existing ROWs on forested public lands to reach and cross the Columbia River at the dam site. The suggested route then follows the existing ROW as it climbs out of the gorge area. Continues on existing public-owned ROW and ends at a substation on the Oregon side, preferably East of Troutdale. This alternate substation site would minimize impacts to private properties and to the suburban growth lands near Troutdale. (A Google Earth map is attached to the digital version).
 - c. **Evaluate the Oregon alternative of reinforcing the path South of Alston.** Transmission congestion studies by DOE and others show that most congestion, for loads going south to Oregon and California, occurs south of this point.

2. Medium and Long Term

14790-16 a. NLPA respectfully requests the **Federal, State and County elected officials and the Washington State Governor** to support and **follow-up with the Executive branch and federal agencies so they** comply with Section 368 of the Energy Policy Act of 2005 and **define the Utility Corridors on federal and public lands in the State of Washington.**

14790-17 b. NLPA respectfully requests **Washington State legislators and elected officials to introduce legislation and regulations so the "prudent avoidance" setback distances mandated in California** to keep new schools away from high voltage transmission lines are adopted in Washington State. A new school would be at least 350 ft. away from the edge of the ROW of a 500 kV line.

NLPA, March 12, 2013 (ver.6)

14790-14 Please see the response to Comment 14790-3.

14790-15 Please see the response to Comment 14790-5.

14790-16 Comment noted.

14790-17 Comment noted.

I. BACKGROUND AND RATIONALE

A. What is BPA I-5?

14790-18 The Bonneville Power Administration, BPA, is an autonomous agency of the U.S. Department of Energy, DOE. The US Congress, with the Bonneville Power Act of 1937, gave BPA the mandate to build and operate hydroelectric dams and transmission lines in the Pacific Northwest with direct borrowing authority from the US Treasury. Heavy industries, such as pulp and paper industries and aluminum smelter plants, both large consumers of energy, would be built to use this new source of low cost power. Today, BPA operates over 15,000 miles of transmission lines and acts as a marketing agency for the electric power produced by 31 federally owned dams operated by the Army Corps of Engineers and the Bureau of Reclamation.

14790-19 In October 2009 the Bonneville Power Administration, BPA, announced the I-5 Corridor Electric Transmission Reinforcement Project, a \$342 million 70 mile 500kV line to transfer power through Southwest Washington State to Oregon and California. The need for the project has never been clearly justified by BPA (1) who dominates transmission planning processes in the Pacific Northwest region. The project had been considered since at least 2002. When the Economic Recovery Act of 2009 was announced, BPA I-5 was fast-tracked by DOE. It would be one of four job creation projects taken on by BPA in exchange for a sorely needed \$3.25 billion extension to its line of credit from the US Treasury (2) (3) (4).

B. Description of Cowlitz and Clark Counties

14790-20 After WWII and up to the late 1970's, the Pacific Northwest enjoyed a booming economy largely based on manufacturing wood products, pulp, paper and aluminum smelting. At one point, the Pacific Northwest's aluminum industry accounted for 25% of BPA's electricity sales. The regional boom was underpinned by cheap hydroelectric power, abundant natural old growth forests and low oil prices. During the 1980's, competition and the liquidation of the high-quality old growth timber closed several of the wood products plants, depriving the local pulp mills from their low cost by-products used as raw materials.

The drop in world aluminum prices and the rapid rise in maritime freight costs and regional labor costs closed the aluminum smelters. Despite a promising growth of the high technology sector to its north and south, the SW Washington area has never recovered its previous economic growth rates. Today, Cowlitz County and rural Clark County have some of the lowest levels of income, employment and access to health services in the West Coast (5). This is in stark contrast with the rosy socio-economic picture painted by the DEIS (6) for the whole Pacific Northwest using data of 2000.

14790-21 In 2011 Cowlitz County had 19.5% of its population living below the poverty line, up from 14.0% in 2000³. Clark County with an average percentage of poverty of 13.7%, close to Washington State's average of 13.9%, had 58,684 people living below the poverty line, the sixth largest such group in Washington State (7) (8).

During the recent economic recession, citizens in Cowlitz County were hit with official unemployment levels of 14%. They saw their property tax rates go up as a result of the depressed property values. Their retail electrical rates went up 27% as a result of continued rising energy costs from BPA and Cowlitz PUD's marketing problems in California.

The acute lack of unskilled jobs, the depressed economy and lower property values, the reduced federal and state budgetary allocations, have put local governments and schools of both Clark and specially the smaller Cowlitz County, under severe and ongoing financial pressures.

³ <http://www.census.gov/did/www/saige/data/interactive/#>

14790-18 Comment noted.

14790-19 The I-5 Project would benefit utilities throughout the southwest Washington and northwest Oregon area by providing a parallel network to the existing 500-kV transmission system. The primary purpose of this project is to keep pace with the increasing energy needs in the local project area. This project is not intended to impact power exports to California or the cost of energy in California.

BPA has an obligation to construct new transmission facilities to maintain a safe and reliable transmission system that complies with national reliability standards. BPA currently meets its obligations in the I-5 corridor. However, as discussed in Section 1.2 of the EIS, BPA needs to increase the electrical capacity and transfer capability of its 500-kV transmission system between the Castle Rock, Washington area and the Troutdale, Oregon area, in response to congestion on this part of the system, growing system reliability concerns, increasing local demand for electricity, and new requests for long-term, firm transmission service to move power across this portion of its system.

14790-20 Comment noted.

14790-21 Please see the response to Comment 14677-4.

C. BPA's Denies Health Risks from Electromagnetic Fields, EMF

Since the early 1990's, long-term exposure of children to electromagnetic fields (EMF) above 3 to 4 mG has been repeatedly associated by world-wide studies with a doubling occurrence risk of blood and lymph cancers in children and later as adults. BPA's "Electrical and Biological Effects of Transmission" 295 page review of 1996, found that 25 ft. away from the edge of the ROW for a 500kV the magnetic field strength of the line carrying average load is 12.6 mG, and at peak loads 26.7 mG (12). These levels are respectively four and eight times the danger threshold mentioned above and have been associated by studies in California to miscarriages.

14790-22

Publicly, BPA has steadfastly denied any human impacts from EMF (9)⁴. BPA's public denial of EMF risks supports its continued use of a ROW of 150 ft. in populated areas. These legacy practices also enabled BPA I-5 planners to propose routes in the existing ROWs of lines placed in the 1940's and 1960's. These former suburban growth lands of Kelso and Vancouver are now engulfed by urban growth. If selected, BPA's densely populated West route would have had left 1526 existing homes within 300 ft. of a 500 kV line (13). All those homes would be at safety risks (39) and many at health risks (10), (11) from EMF. Unfortunately, any of the other routes proposed by BPA would still leave over 150 homes within 300 ft. of the 500 kV line. At 200 ft. of the line with average load, magnetic field strengths reach 3.0 mG (12).

Since 1993 the State of California's "prudent risk avoidance" policy bans building new schools closer than 350 feet from 500 kV power lines (35). EMF is not stopped by materials or dirt but its levels fade rapidly with distance. Some of the latest research suggests that lower levels of EMF may be of concern (36).

BPA's Draft Environmental Impact Statement (DEIS) Chapter 8, dedicates one page to magnetic fields. It reiterates the fact that neither Washington, Oregon nor BPA have standards limiting residential exposure to EMF from power lines. The DEIS uses misleading examples to support BPA's public position on EMF and refers the reader to Appendix G. The latter is a glossy public relations piece ordered by BPA that selectively reviews and comments past research and old political declarations by the World Health Organization that support BPA's position (13) while dismissing those studies (10) (11) that do not.

D. Dismissal of Northeastern Route Concept

In September 2010, No Lines in Populated Areas, NLPA, presented to BPA in writing and with a map a proposed route concept, "the Grey Route", that minimized human safety and health risks as well as financial, economic and biodiversity impacts. It went further north and east than all BPA's proposed routes.

14790-23

The Grey route concept was put together by a multidisciplinary group of senior professionals including electrical engineers, foresters, environmental and business consultants who worked closely with others knowledgeable of the terrain and BPA's past practices and present capabilities.

In January 2012 BPA finally dismissed this Northeastern route option arguing a \$30 million additional capital costs to build it and potentially high costs to mitigate spotted owl habitat.

Full details of the events and facts surrounding this dismissal are discussed on a companion presentation by NLPA that describes BPA's approach to the Project.

⁴ BPA DEIS page 11-10: "Most people in the U.S. are continually exposed to EMF, which are present wherever electricity flows. Many studies have investigated the possibility of health risks from exposure to EMF, but few have found conclusive evidence that any exist"

14790-22 Please see the response to Comment 14328-6.

14790-23 Please see the response to Comment 14790-3.

II. OBJECTIVES AND METHODS OF THE HISTORIC ASSESSED VALUES STUDY

A. Objective

This study of Historic Assessed Values (HAV) sought to evaluate the present and future economic and financial costs that each of the routes proposed by BPA or by citizens groups will inflict to every property owner of Clark and Cowlitz counties and their local governments, not just those who own properties adjacent to the selected routes.

B. Methods

This study was sponsored by No Lines in Populated Areas⁵ and completed over a two-year period by a multidisciplinary team of volunteers. The team featured senior specialists in statistics, economics, public finance, industrial forestry, environment and natural resources, land use planning and electrical engineering. Design support and steering was provided by an advisory group of senior academics and professional experts in real estate, assessors and Geographic Information Systems, GIS.

14790-24

In preparation, NLPA volunteers performed an extensive revision of the academic and industry studies and publications world-wide related to appraisal and encumbrance effects of power lines (14), (15) (16). Numerous field visits to existing high voltage transmission lines (HVTL) were made in Cowlitz and Clark Counties both in urban and rural areas. They helped understand the encumbrance effects, EMF and noise impacts of power lines over adjacent properties and put in context the reviewed studies, their conclusions and motivations. The county assessor practices and reporting systems in both counties were studied in detail. Rural and urban property owners with transmission easements were interviewed.

Finally, historic sequences of matched aerial photos were obtained for selected locations. They helped understand the historic patterns of urban growth before and after the existing HVTL's were built in the 1940's and 1960's as well as the criteria used by BPA for locating the existing power lines.

C. Scope

This report will cover the measurable indirect economic impacts of the alternative routes being considered by BPA and citizens. The proximity of HVTLs to existing homes is an important factor of public concern regarding human health and safety as well as property values. For this reason, home counts by proximity to lines are displayed jointly with economic impacts.

1. What the study does not cover

14790-25

The Historic Assessed Values Study (HAV) was deliberately focused to only include impacts that can be objectively measured based on official historic data. The economic impacts measured by this study do not include the potential financial losses of individually affected homeowners who may receive a reduced resale value for their property due to proximity to the existing or proposed HVTL. We are keenly aware that homeowners having to relocate will suffer a devastating impact. General compensation issues and principles are discussed in Furby, 1986 (17) and Bolton & Sick, 1998 (14) and BPA's compensation practices are explained in some detail by BPA's DEIS in Chapter 11 (6).

A thorough review of journals from the appraisal business community in USA and Canada reveals a cottage industry of studies dealing with the loss of market value by proximity to HVTLs. These studies are often sponsored by utility

⁵ Washington State 501(c)(3) non-profit corporation.

14790-24 Comment noted.

14790-25 Please see the response to Comment 14140-2.

14790_attachment

14790-25 companies and repeated with the same formats, often by the same team of authors. One example is the study published by BPA-employed appraisers in Right of Way magazine in July/August of 2000. It is as a sequel study that reconfirms their 1996 finding⁶ of 1-2% reduction for residential properties in Portland, Vancouver and Seattle in 2000 (18). A discussion of conflicts of interests is in Bolton & Sick, 1998, (14).

For rural residential properties of 20 acres, a utility-sponsored and professionally conducted ⁷ case study in Montana found a 15% loss of market value for properties up to 1000 ft. of a 500 kV line (19) (20). As other literature reviews (16) have found, very few of the studies reviewed accounted effectively for the tremendous statistical variability and biases from location, intended use, property sizes, building site flexibility, year built, line voltage and tower sizes and styles, distance to line, visibility, market timing, time needed to sell, quality of improvements, financing, among other factors.

The decline in property values due to proximity to HVTL across all property types, locations and sizes ranged from 0% to 28%. For urban single family homes the range of declines went from 2% to 14%, highest for high end properties. For rural residential properties the range of price declines cited ranged from 4% to over 20%. The price decline is smaller with larger lots, corner clippings, increasing distance to line or lowered visibility due to trees or other buildings.

During public meetings, BPA I-5's project manager stated that some people actively seek properties that back to a transmission line Right of Way (ROW), which is factual. After many questions from realtors and the public, he finally stated publicly that resale values could be affected negatively from 0 to 10%. This appears to be the established BPA position on this issue.

According to BPA's DEIS of 2012, section 11.2.2.5 dealing with Property values, "The proposed transmission line is not expected to have long-term impacts on property values in the area for a variety of reasons" (6).

A notional estimate of the regional economic impacts and property tax shifts resulting from lost market value by properties immediately adjacent to HVTL's is discussed in section IV-B.

D. A Refresher of Key Topics

To better understand this report, the following three concepts merit reviewing. References have been provided for readers wishing more background on different topics or assertions.

1. Indirect costs of projects

14790-26 All projects, public or private, have indirect or external costs and benefits beyond those directly intended for their investors, clients, beneficiaries and geography, during and even after their lifecycle. Some are very hard to measure. For example, greenhouse gases from burning fossil fuels in the USA or forests in the Amazon; or the unforeseen uses of the military communications project "Internet". Compliance with the National Environmental Policy (NEPA) requires that federal agencies evaluate the impacts to the human and natural environment and that citizens be informed and participate and that disadvantaged groups are not burdened disproportionately. NEPA requirements can be seen at <http://ceq.hss.doe.gov/nepa/regs/nepa/nepaeqia.htm> .

14790-27 BPA I-5 has placed much effort identifying the potential impacts to the natural environment and wildlife. However, its DEIS has little substantive analysis of the economic impacts, both positive and negative, that the different routes and the project overall will have for SW Washington and its local governments, after its construction period.

⁶ Study uses "closely matched" homes away from the power line for comparison with homes by the power lines.

⁷ Northwestern Energy in Montana sponsored 57 case studies by J. Chalmers. The official consolidated report available from the utility website has excluded hard impact numbers. See from same author (19).

- 14790-26 This EIS is a part of BPA's NEPA process for the I-5 Project. Section 1.6, Public Involvement and Major Issues describes the many opportunities for public participation.
- 14790-27 Sections 11.2.2.3, Public Services and Infrastructure and 11.2.2.4, Government Revenue, describe the potential short- and long-term impacts of the project on public services and government revenues, respectively.

14790-28

2. Highest and Best Use lands

A piece of private land is valued on its alternative uses and the expected benefits it will bring to the owner over time. These benefits are determined by its physical attributes, its location, prevailing zoning and land use regulations or special use restrictions as well as the laws of supply and demand. Highest and Best Use was defined by Albriton in 1979 as “the most profitable likely use to which a property can be put” (21).

With population and urban growth, the best use of land in the urban frontier changes over time as the real estate potential becomes more attractive than farming and forestry. For example, large timberland owners, both private and public, are continually divesting of lands that have become too valuable to use in production forestry.

From the property tax perspective, as suburban areas get more densely built, the assessed value per acre increases over time for both built and un-built lands. In contrast, qualifying private timberlands get a 90% tax exemption and public lands get a total tax exemption (22).

Tax reductions for open space and timberlands recognize that some landscapes such as sub-urban farms, forests or wetlands provide important benefits which are hard to quantify such as sustaining biodiversity and wildlife habitat, clean water or clean air, erosion protection, recreation, to name a few.

Fig. II-1 Illustrative Examples of Highest and Best Use Lands

Land Type	Assessed Value \$/acre in 2012	Property Taxes \$/acre	Financial returns* on investment
Built lands in Lexington, N. Vancouver, Camas	350,000	3500	10%+**
Built lands in Castle Rock, Suburban growth	34,650	200	10%+
High altitude Industrial timberlands	160-200	2	4-9%***
Public timberlands	Non-taxable	0	2-5%****

*Real Internal Rate of Return; **Stowe, (21)***NLPA Estimate; **** (23)

The Socioeconomics Chapter of BPA’s DEIS (6), evaluates the present value of the lost sales in perpetuity from the most likely agricultural crops and from private timberlands that will not be grown under the easements for the different routes. No such calculations are made for the buildings and land values which will not be realized under the new and additional ROWs.

14790-29

3. How property tax shifts affect all homeowners

When real property prices drop due to recessions, the property tax rates must be raised to fund the operating expenses of local governments. Both Clark and Cowlitz counties provide total property tax exemptions to county, city state and federal public-owned lands and facilities. These counties also reduce the tax base for disabled individuals or extreme hardship cases or reduce real property valuation to designated forest lands or to privately owned parcels affected by easements, including HVTL. These reductions of the taxable property base need to be offset by charging higher tax rates or “tax shifts” to all remaining County property owners.

For example, in Cowlitz County in 2011, **the total shift from all types of property tax exemptions was \$19 million and added \$295 to the tax bill of a \$150,000 home.** In Cowlitz Co. public-owned properties represent 60% of that tax shift, up from 42% in 2005 (22).

14790-28 Section 11.2.2.5, Property Value, includes a detailed discussion of the project's potential impacts on property values. The FEIS is not intended to serve as an appraisal of the project's impact on property value for individual parcels. Landowners whose land the project would cross would have an opportunity to negotiate compensation with BPA. Please also see the response to Comment 14566-9.

14790-29 Comment noted.

E. Design and Parameters Used

1. Mass appraisal of strips using GIS

The review of the industry literature on appraisals for utility lines highlighted the need to find an approach that could avoid controversies related to the encumbrance effects of HVTL's over individual property values. The design of this study was inspired by the development of mass appraisal techniques that rely on computers and Geographic Information Systems. They make possible to appraise and track values over time for large numbers of properties and to analyze them separated into a variety of different sets (24).

A strip the length of each existing or new line segment and the width of 0.25 mile (1,320 ft.) was defined at each side of the ROW. Informed by field visits and the literature reviews, two criteria were used to select this distance:

- Effects of power lines over resale prices are zero at a quarter mile.
- Safety risks from downed lines and EMF health risks become minimal beyond 1320 ft.

2. Methodology tested, data validated

An initial test run was made on 12 miles of existing line segment 25 N-S (West Route). It was built in the 1940's and runs almost parallel to the I-5 freeway. Actual assessor tax lots from 1995 to 2010 were used. Data was separated into rural, suburban and older urban segments to test the possible effects of location and year-built over assessed values and their historic rates and patterns of growth.

A test was also made to compare a strip immediately adjacent to the ROW with a parallel strip of the same width starting at 0.4 miles from the ROW. Analysis of the data indicated great variability, the evolution of assessment practices over time and the unexpected concentration of dense, mostly lower cost housing built after the line was placed and often closer than 300 ft. from the ROW edge.

While it is technically possible to compare values in adjacent parallel strips, it would require using narrower and shorter strips, separating property types and introducing statistical sampling techniques. The latter would have violated the basic tenet of this study of measuring rather than estimating.

3. Economic impacts and tax shifts calculated

The current economic impact for a given BPA I-5 line segment is defined as the foregone assessed value of buildings and buildable land which will not be developed in the new or additional area of ROW. The additional area which will be required is taken from BPA engineering designs for that particular segment (25).

Publicly available property records from both Clark and Cowlitz County Assessor were purchased for each county, each year and for most segments. The GIS program selected and reported all properties that were included or intersected by the strips for each segment. A segment summary sheet was developed that reports totals, counts, averages, median and ratios for the key attributes such as official area, GIS area, land value, improvement value and total property value.

County assessors' reporting and coding practices change over time. This required a major data validation effort. Individual verification and checking with maps, aerial images and occasionally site visits were needed to understand recording practices and treatment of exempt properties, mobile home parks, condominiums and sub-divided properties.

The end products are per acre values for un-built land, built land, improvement value, total property value. Lastly, general segment descriptors were reported such as: total home count for the segment, percentage of area with built lots, median area of all parcels, average area of built lots, and median value of improvements. For cross checking,

14790-30

14790-30 Please see the responses to Comments 14140-2, 14291-3, and 14790-3.

14790_attachment

parameter calculations were done separately for all properties combined and then for single family residences and for land without buildings. Data and area calculations for single family residences are straightforward.

The assessed value of buildings which are foregone -they cannot be built in the ROW- are evaluated at the full average assessed value per acre of buildings currently existing in that particular segment, as measured by the corresponding strip⁸. This value increases over time as the area gets more densely built so the foregone assessed values escalate for both land and building values.

In most cases the HVTL is built on easements as opposed to land owned by BPA, so the original owners will continue to pay for property taxes on land taken by BPA. Data reviews of individual cases and discussions with county assessors indicate that Southwest Washington property owners subject to transmission easements for BPA get charged on average, land taxes on only 80% of their land area. This is not a hard and fast rule.

A tax shift is created by the resulting higher taxes that must be paid by all non-exempt real property owners of the county to compensate for the property taxes that would have been collected from the foregone buildings and the observed average 20% discount on the land values.

4. Projecting the growth of assessed values

14790-30

From 2002 to 2011 the assessed values for real property in both Clark and Cowlitz counties grew at a compounded average rate of growth in nominal terms of 4.4%. The rates for projecting assessed value growth for the next twenty years were developed individually for each segment or part of a segment. Historic data from 1995 to 2011 was parsed in different ways to test the effect of the three recessionary years.

Special care was taken to reflect the broad range of historic growth rates observed across the two-county region. The historic rates calculated for the longer segments were adjusted based on subsets sorted by zip codes and by comparing them to the historic rates of growth in total real property values reported by the county assessors for the incorporated areas and school districts.

The prevailing criterion was to err on the conservative side, especially for the more densely populated segments where extremely high rates of historic growth (8-9%), which are unlikely to continue for twenty years, were adjusted down. The final growth rates used for annual compounding from 2010 to 2030 ranged from 2% on the less populated areas of the East route to 9% in a small pocket of Vancouver, but most segments fall between 4% and 6%. To avoid bias when projecting the period from 2030 to 2050, a flat rate of 4% was used for all segments.

Nominal values per acre for the years 2010, 2030 and 2050 were calculated for each segment. Each route was assembled with a look-up table of zeros or ones, to include only the required segments for a given route or portion of a route.

⁸ The average total property value per acre within the strip reflects the lower assessed values of adjacent properties so it imposes a downward bias to the foregone assessed values created by ROW.

This page intentionally left blank.

14790_attachment

III. RESULTS

14790-30

A. Tax Shifts and Home Counts for Routes Proposed by BPA and Citizens' Groups

NLPA's technical analyses show that BPA could lower significantly the impacts of their preferred route of November 2012 by avoiding the suburban growth areas of Castle Rock and Camas. Following are two variations of the Northeastern route concept as mapped by BPA in January 2012 (map in A-2).

1. Northeastern route avoiding both Castle Rock and Camas

This is NLPA's preferred option for the Northeastern route. It avoids Camas by crossing the Columbia River at Bonneville dam. It then uses an existing crossing over the Columbia River. After by-passing the suburban growth areas of Castle Rock the northeastern route continues southward parallel and just east of BPA's segment "O". At the end of "O", it turns east into Skamania County along the existing ROW, mostly in public forestlands and above the Columbia Gorge National Scenic Area. It uses existing ROWs for 20 miles, mostly on public-owned lands, to reach the Bonneville dam site. BPA could do so by rebuilding its towers and, where needed, slightly expanding this ROW (A map is in Annex A-3).

14790-31

The route returns from the Bonneville dam on the Oregon side, all on existing ROWs⁹, for about 16 miles to a new substation north of the line and east of Elsner Rd, rather than the Troutdale substation. This avoids environmental impacts at Troutdale and reduces tax shift in the future growth areas east of Troutdale. After crossing the Columbia River at the dam site, the return path uses the existing ROW which climbs out of the Columbia gorge area for 3.7 miles on public forested land. It would require rebuilding towers plus possibly widening ROW by 25 to 50 ft. The remaining 12.4 mile path would require widening existing ROW by 100 to 150 ft. The last 4.5 miles of the existing ROW are rural residential 3-10 acre lots where up to 12 homes could be within 300 ft. of the ROW edge. These homes could be avoided by stopping the line at the new proposed substation location. The extra length of this route option is partially offset by not building 11 miles through Camas and by dealing with fewer individual property owners.

2. Northeastern Route avoiding Castle Rock, but crossing at Camas

This second option for the Northeastern route detours around Castle Rock's growth areas. However, by crossing the Columbia River at Camas, as all other BPA routes do, it exposes several hundred homes to safety and EMF risk and reduces taxable assets in 2012 by \$2.4 million annually as shown by the table in Fig III-1. Burial of the line, as the City of Camas has requested, would minimize the visual impacts and safety risks. Line burial, however, will not reduce the taxable asset shifts of Fig. III-1 and could likely increase the health risks from EMF since buried lines are much closer to people than overhead lines. The cost of burying and operating 500 kV lines is roughly three to ten times higher than building overhead lines so the extra capital and the recurrent and growing avoided taxable asset losses linked to this option would further increase the advantages of the Northeastern route, option 1 compared to BPA's preferred route.

14790-32

3. Home counts and tax shifts for each route

The table in Fig III-1 shows the base¹⁰ levels of taxable asset reductions resulting from each of BPA's pre-selected routes, plus two options for the route concept proposed by NLPA and labeled here as BPA's "Northeastern route" (Map of the Northern part of the route shown in A-2).

⁹ Parallels the existing Wautoma-Ostrander 500kV line

¹⁰ Recall that the lost market value reductions from proximity to power lines are not included.

14

16 of 34

14790-31 Please see the response to Comment 14790-3.

14790-32 Please see the response to Comment 14790-3.

14790_attachment

Fig. III-1 Taxable Asset Base Reduction and Homes Placed at Risk by BPA I-5 Routes

ROUTES	TAX BASE REDUCTION \$MM/YR		Number of Homes by Distance to Center of Line		
	2012	2030	300 ft.	500 ft.*	1320 ft.**
BPA-PROPOSED:					
WEST	22	90	1526*	3032	7207
CENTRAL (Preferred by BPA, Nov. 2012)	13	28	173*	327	2321
CROSSOVER	7	18	320*	657	2307
EAST	7	17	157*	286	1114
CAMAS Xing ***	3	9	137*	na	839
CASTLE ROCK SEG F	4	10	na	na	183
CITIZEN-PROPOSED:					
Northeastern with Bonneville Dam Crossing and return on Oregon side (NLPA Preferred)	4	9	16**	na	111
Northeastern with CAMAS Crossing	6	14	140**		950

14790-32

*BPA calculations; **NLPA calculations; *** Camas Xing includes segments T, S, 49, 51, 52

a. Home counts

BPA’s Central route, preferred by BPA as of November 2012, would leave today, 173 homes within 300 ft. of the line ROW. In contrast, the complete Northeastern route with a Bonneville crossing as proposed above, could leave a grand total of 16 (sixteen) homes exposed within 300 ft. if terminating at Troutdale. The homes within 300ft. could be reduced to less than 8 (eight) homes if the route is terminated at the proposed further-east substation location. The extra capital costs of this longer route are discussed in section IV-B.

The Northeastern route concept would expose 3 (three) homes up to and excluding the Camas crossing of the Columbia River where an additional 137 homes are within 300ft. of the line.

b. Taxable assets reduction

Compared to BPA’s preferred route of November 2012, NLPA’s recommended Northeastern route, crossing the Columbia River at Bonneville, would reduce the taxable asset shift by \$8.3 million per year. If the Northeastern route were to cross the Columbia River at Camas it would reduce the impact by \$7.0 million per year compared to BPA’s preferred route but impact 140 homes.

4. Notional estimates of public economic impacts from market value losses of properties adjacent to line

In order to avoid controversies this study has focused on measuring the tax shifts created by the new and additional power line ROWs. These are rather simple to measure and impossible to negate. At the risk of confusing the reader, we feel it would be a serious omission to completely ignore the proximity effects of HVTL’s on property values. After all, this is what everyone thinks about when real estate values and power lines are first mentioned in the same sentence.

14790-33

Following is a brief attempt to provide the reader with some idea of the relative magnitude of the economic impacts, from the public perspective, which are likely to result from reductions in property values due to proximity to HVTLs.

a. Estimating market value losses from proximity to HVTLs. The combined effects of proximity, visibility and encumbrance by the easement over the resale prices of the adjacent properties are variable and hard to estimate. They are the subject of a continuing self-interested debate between utility companies and property owners. Rates quoted by several studies reviewed, ranged from 0-29% loss in value across a range of property locations, sizes, intended uses, amenities, etc.

14790-33 Please see the response to Comment 14140-2.

14790-33 A case study by BPA’s staff appraisers argues for a 1% to 2% price decline for urban properties in Portland, Vancouver and Tacoma (18). BPA I-5’s project manager is on record saying that property value losses are within 0% to 10%. BPA’s DEIS (6) quotes urban studies for the Pacific Northwest with market losses of 1.65% for average homes but 11.2% for higher end homes. It also quotes studies for rural properties in Central Wisconsin that found price declines of 0% to 4% depending on where the parcel’s shape was crossed by a power line.

b. Estimating ranges of “additional taxable asset shifts”

These losses in market value for individual properties create, over time, a taxable asset shift by reducing the assessed values of properties adjacent to the HVTLs¹¹. Using the HAV study data the areas and values for the properties immediately adjacent to the ROW have been estimated for each line segment. Two scenarios of assessed value reduction were considered: 2% and 5%. Fig. III-2 shows the taxable asset shifts from a 2% loss in value applied across the board to each adjacent property. Admittedly this value is probably too conservative. Consider that just the assessor deductions for lands encumbered with power line easements, observed at 20%, reduce a built property’s total assessed value by 2%-4%.

Fig. III-2 Lower Bound Estimates of 2012 Taxable Asset Shifts from Market Value Losses for Properties Immediately Adjacent to the 500kV HVTL*

ROUTE	2% LOSS ADJACENT PROPERTY VALUE	5% LOSS, ADJACENT PROPERTY VALUE
	(\$MM/YEAR in 2012)	
WEST	15.3	38.2
BPA-PREFERRED, CAMAS CROSSING	4.8	12.0
NORTHEASTERN CROSSING AT CAMAS	4.1	10.2
NORTHEASTERN CROSSING AT BONNEVILLE DAM	3.6	8.9

14790-34

*This is an estimate, additional to the new ROW taxable asset shifts measured in Fig. III-1.

c. A thirty percent margin of increased credibility

For illustration purposes, let us assume that market losses of immediately adjacent properties to the line cause a 2% loss in assessed values for all adjacent properties in every segment. The resulting additional taxable asset shift increases by 20 to 50% the basic ROW impacts used as the core impact of this study and shown in Fig III-1. Wishing to avoid distortions we have purposely not added this *estimated* additional impact to the *measured impacts* of the different routes. This approach strengthens the credibility of the results and conclusions with at least a 30% margin.

B. Lessons from History

1. BPA had few choices for placing early HVTLs

14790-35 In 1963 the HVTL’s needed to reach aluminum and pulp industries located in the periphery of urban nuclei in Vancouver and Longview, next to the Columbia River. Then, BPA had no alternative to reach those industries but to traverse what were the urban growth areas. All things considered, BPA’s location of their early HVTL’s show a reasonable and

¹¹ Assessed values in the counties studied are pegged to market every six years and values tend to lag actual market sales prices. The counties use market and assessed values almost interchangeably. This study has used a deliberately conservative estimate of average market price loss so it will more closely approximate the assessed value loss used as the metric.

14790-34 Please see the response to Comment 14291-3.

14790-35 Comment noted.

14790_attachment

relatively farsighted effort to detour their transmission lines around the rural areas which would become the suburban growth areas during the 1990's and beyond.

14790-35 Aerial photos taken in 1963 just after the Lexington–Ross 230kV line was built, (currently segment #2 of BPA's west route) show sparsely built agricultural lands and pastures in the Kelso northern suburban growth areas. Recent aerial photos of the same locations show the HVTL's engulfed by urban growth which took advantage of flat lands located near the main highways and rivers.

2. A surprising find

The historic analysis of urban growth patterns and assessed values about existing power lines built in the 1940's and 1960's led to a rather surprising fact. In both East Vancouver and in North Kelso, real estate developers took advantage of lower cost land adjacent to the HVTL's and got the counties to provide the urban services and zoning needed to build several high density condominiums. The great majority of those homes are closer than the "prudent risk avoidance" regulations of California for schools.

If BPA had chosen their existing West route, 1526 homes would have been within 375 ft. of a 500 kV line mostly in Lexington and Vancouver, with some in East Vancouver and Camas. Many are lower priced condominiums occupied by families with young children. The study team could not find developers willing to discuss these past projects.

BPA's DEIS, in Chapter 11 uses data from 2000 census to conclude: "The West Alternative would include an area (Census Tract 410.02, Block Group 1) with a low-income population that is disproportionate to populations living elsewhere in the alternative's affected counties (see Table 11-4 and Appendix H for individual block group data)."

3. HVTL's affect zoning, human settlement patterns

14790-36 The observed concentration of low cost condominiums, vacant lots and mobile home parks by HVTLs in the Project area was reconfirmed by census data. Using 2010 US census data, NLPA has updated the analyses of the US census poverty data done by BPA's DEIS using data from 2000. The conclusion is that there are substantially higher levels of poverty along the corridors of the older existing HVTL's than the DEIS indicates.¹² The poverty map for southern Clark County, Fig.III-3, is on the next page and the poverty map for Cowlitz County is in annex A-5.

The concentration of low cost multifamily developments found adjacent to the power lines coupled with the poverty maps provided and the analysis of historic sequences of photographs of HVTL's placed in suburban growth areas show that HVTL's can have important impacts on urban planning, zoning and sprawl. By devaluing adjacent lands and splitting landscapes, properties and communities, power lines act as de-facto zoning boards. As citizen health and safety concerns related to HVTL's continue to grow, this effect is likely to become more pronounced.

In addition to diminishing their taxable base, ROW's placed across towns have altered their character and social fabric by creating or exacerbating¹³ poverty belts. The residential areas near Ross and Sifton in Vancouver or the Ocean Beach Highway near West Longview illustrate these points well. In both cases, an initial power line has attracted more lines. A secondary effect of ROWs proliferating across urban growth areas is the decrease in the final density of urban services and therefore increasing the per-family monthly costs for water, sewage and utilities. This is particularly important for smaller cities and towns such as Castle Rock where smaller scales of operation or sparsely populated areas raise the cost of providing urban services or make low-enrollment schools unviable¹⁴.

¹² http://www2.census.gov/plmap/pl_trt/st53_Washington/c53011_Clark/CT53011_003.pdf

¹³ The exact links between the placement of HVTL and the observed poverty are beyond the scope of the study.

¹⁴ Castle Rock Schools Superintendent, personal communication.

17

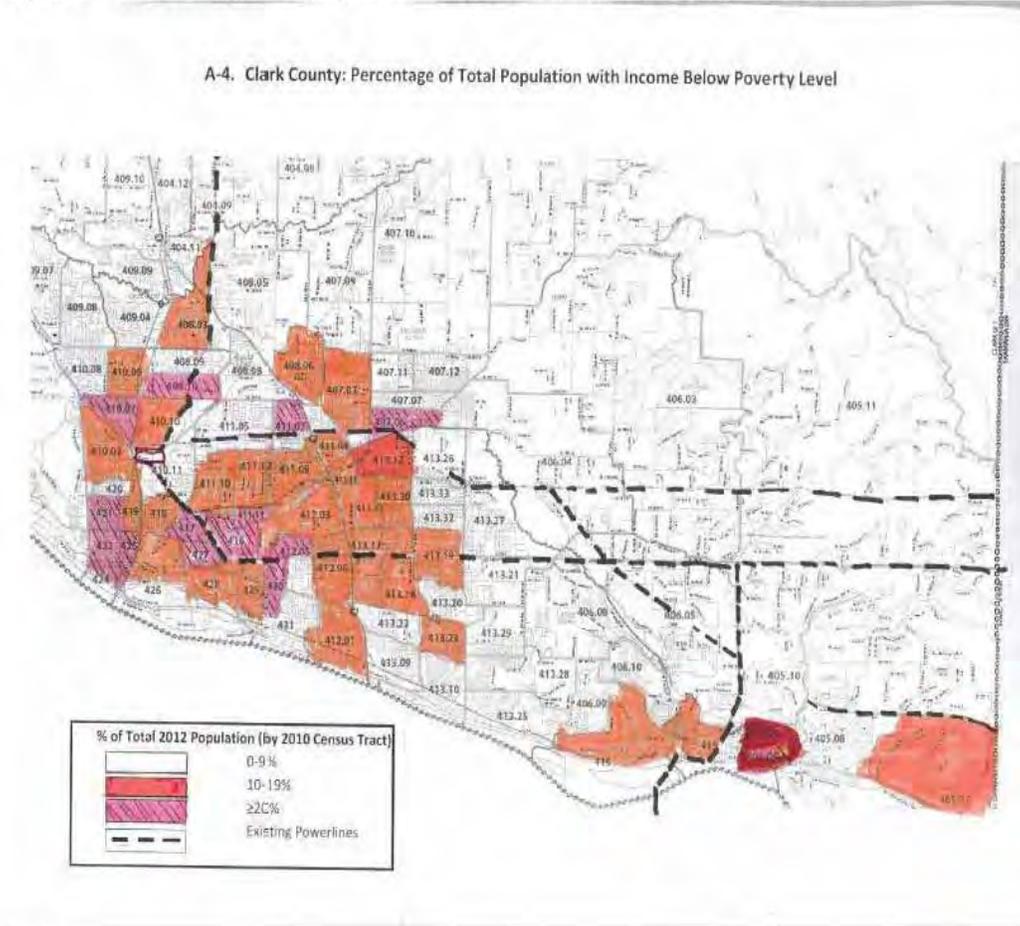
19 of 34

14790-36 Comment noted. All action alternatives would include limited census tracts with minority or low-income populations, but effects to residents in these census tracts are the same in range and extent as to all other census tracts crossed by the action alternatives. Therefore, impacts to low-income populations are not disproportionate to impacts on non-low-income populations living in the census blocks crossed by the project. Overall, although five out of the 43 census tracts crossed by the project reported low-income populations in 2013, the median incomes of the block groups crossed by the project were higher than the respective county incomes, and poverty rates in those census tracts were lower than the county (and state) poverty rates. Section 11.1.9, Environmental Justice, and Appendix H include analyses of low-income populations, using U.S. Census Bureau definitions of poverty. The Final EIS has been updated using the most recent income and poverty level data available.

Please see the responses to Comment 14140-2 for a discussion about property values, and Comment 14291-3 for a discussion about assessed value and Clark County's tax base.

14790_attachment

Fig. III-3 Clark County: Percentage of Total Population with Income Below Poverty Level



This page intentionally left blank.

IV. CONCLUSIONS AND IMPLICATIONS

- 14790-37 The focus of this study was the indirect or external economic impacts of the BPA I-5 power line. The study results show that:
- routing HVTL’s through higher value and best use lands creates large permanent economic burdens to all taxpayers, now and in perpetuity;
 - these large permanent economic public impacts wipe out the savings from using routes in existing ROW’s or short routes through towns, cities or rural residential areas;
 - placing HVTL’s through suburban growth areas degrades their zoning, economic potential and urban character and,
 - placing HVTL’s close to homes, anywhere, is not wise public policy since it ignores the prudent avoidance approach taken by California regarding the possible health effects of EMF, electrocution risks.
- These findings fly in the face of BPA’s DEIS statements that “the proposed transmission line is not expected to have long-term impacts on property values in the area for a variety of reasons” and that “Zoning and permits are the primary means by which most local governments protect property values.”
- 14790-38 Because the Project’s power cannot be used locally (“no connections to the local network”), there is no technical or marketing requirement that can justify downgrading small towns, valuable suburban growth lands and rural residential communities and lands as all BPA routes do.
- 14790-39 BPA’s DEIS¹⁵ acknowledges that “the project would cause long-term decreases in government revenue by diminishing the base value of property subject to property taxation, reducing future timber-related revenue from state trust lands, and decreasing future revenue from taxes in private timber harvests and some agricultural products”. However, BPA’s DEIS only evaluated the lost revenues in perpetuity from agricultural and timber interests and state trust lands. The DEIS ignores the more significant losses from real estate development and the resulting property tax shifts which will burden all taxpayers in perpetuity.
- 14790-40 BPA, a public-owned federal entity, is legally required by NEPA to evaluate all indirect costs and benefits of the project. The EIS must do so not only from BPA’s capital minimizing perspective but also from the cost/benefit perspective to the public of Southwest Washington.

A. Main Parties Impacted by BPA I-5

- 14790-41 **1. Disproportionate burdens to Cowlitz, Clark Counties.**
By focusing on minimizing its direct capital costs (existing ROW’s and shortest routes), BPA is generating large external burdens for smaller incorporated cities and lower income rural communities¹⁶ which cannot use the power from the new line. Under current transmission accounting practices, the direct costs of the project will be spread out over all BPA rate payers in California, Oregon and Washington. The additional capital investment of this new transmission line will

¹⁵ Chapter 11, Socio-economics, page 11-16

¹⁶ In Castle Rock schools 52% of the children qualify for reduced-cost or free lunch.

14790-37 Comment noted.

14790-38 Please see the responses to Comments 14316-2 and 14685-1.

14790-39 Please see the response to Comment 14291-3.

14790-40 Please see the response to Comment 14771-14.

14790-41 Please see the responses to Comments 14316-2 and 14685-1.

- 14790_attachment
- 14790-41 get averaged with more than 15,000 miles of existing transmission lines. So, a one-time extra investment US\$ 60-70 million, amortized over many decades, might add a few pennies to a monthly utility bill. However small, it will also affect SW Washington customers who cannot use the additional power from his line.
- 14790-41 This inequity issue has been identified by the National Governors Association as one of the key policy issues impeding the expansion of interstate transmission infrastructure nationally (26).
Developing mechanisms for compensating the inequities of burdens to non-beneficiary states from pass through transmission lines is indeed needed. But an obvious step is to minimize the external burdens in the first place.
2. **Impacts to Washington DNR**
- 14790-42 The use of public lands for ROW's is one of WDNR's multiple-use objectives (27). Since WDNR manages approximately two million acres, the removal of 1000 acres from its timberlands management plan would not have a discernible impact over its overall operations.
- a. Forest Trust-lands contribution to schools and State Fund**
- 14790-43 In 2009 WDNR timber sales generated \$115 million to be shared state wide for schools and the General State Fund. This averages to \$58/year per acre under management. A third of the total amount, or about \$42 million, was in funds for common schools and universities (6). According to BPA's DEIS in 2009 the State Forest Lands Trusts sent Clark County \$700,000 and Cowlitz County \$1.7 million (6).
- To put these contributions in perspective, in 2003 WDNR gave the Washington Common Schools Construction Fund about \$75 million. These statewide construction funds are not distributed regularly but rather bid statewide by schools with construction projects. While these sporadic capital contributions are important for the schools receiving the award, they only accounted for about 1% of the schools' total operating budget in 2003. By comparison, state property taxes contributed 26% and general sales taxes over two-thirds of the schools' annual operating budget.
- b. Win-Win Opportunity for DNR and the Public?**
- 14790-44 Large timberland owners routinely exchange tracts of land which are better suited to their operating plans. For example, WDNR has divested or exchanged about 30% of the original trust lands.
- For some time, the relatively low returns from DNR's managed timberlands have created increasing pressure for DNR to diversify to non-forest and other higher yielding investments (28). The present level of WDNR's contribution to the relevant school funds and the State General Fund could be enhanced by re-investing an eventual BPA payment in higher yielding investments¹⁷.
- BPA's DEIS (6) estimated that the net present value of all the DNR future timber revenues that would be lost in perpetuity to the new ROW required by the Project are: for the East Route, \$1.1 million; for the Central route \$1.8-2.0 million; for the Crossover route \$1.3 million and for the West route \$1860. When these lost revenues are compared to the much larger annual taxable assets shifts in Fig III-1 it should be clear that, from the public perspective, saving the prime taxable lands at the expense of DNR's lower yielding and tax exempt lands is a win-win for both DNR and the public (29).

¹⁷ Historic returns on investment for DNR managed trust land have been reported at 3.6%. The Common Schools Permanent Fund of alternative investments has returned 5-6% for the last ten years.

14790-42 Comment noted.

14790-43 Comment noted.

14790-44 Comment noted. Net present values of timber revenues have been updated in the final EIS.

14790_attachment

c. Protecting Biodiversity and Implementing a Habitat Conservation Plan

Compared to the BPA's preferred route, the Northeastern route would likely be a net plus for total biodiversity and endangered species such as wild salmon and trout. A fact often missed by some nature advocates is that forestlands in small timber farms and the mixed landscapes of the rural populated areas generally support higher levels of biodiversity than industrial timberlands in higher altitude and many closed forests (30), (31).

When rejecting the Northeastern route that citizens suggested, BPA argued that it might potentially affect spotted owl habitat involved in Habitat Conservation Plans (HCP) (32) which could be costly to mitigate. Although BPA's fieldwork for the DEIS did not find spotted owl or bald eagles nests south of Yale Lake (33), this may be an opportunity for both BPA and DNR to collaborate while fulfilling their public mandates. For example, WDNR has started a Forest Watch volunteer program in some HCP areas which could be synergistic with BPA's line maintenance and security efforts. BPA could easily fund a modest cooperative agreement for applied field research and monitoring that backstops the overall management of the area.

3. Weyerhaeuser Co Impacts

The total area of industrial timber lands to be impacted by BPA's East route is roughly estimated at 1600 acres. The 150 ft. ROW defined by BPA does understate the impacted area because of the need to prevent tall trees from falling into the lines. This fact and the limitations placed on cable logging near the HVTL should be integral part of a fair settlement.

14790-45

The potential land losses for Weyerhaeuser Co. from a Northeastern Route are surely an operational nuisance. But in relative terms, the affected area is less than half of one percent of the timberlands it manages in the immediate region. The loss of these timberlands should have no discernible impact over Weyerhaeuser Co.'s industrial operations, regional employment levels or taxes generated¹⁸. A major area of concern both for Weyerhaeuser Co., BPA and other neighbors of the line is to ensure that BPA's ROW access controls, line maintenance and security, effectively minimize the risk of forest fires and vandalism.

4. Homeowners and Private land owners

As shown in Fig. III-1, BPA's preferred route (Central, Nov. 2012) leaves 173 homes within 300 ft. of the ROW and 2321 homes within 1320 ft. The Northeastern route crossing the Columbia River at the Bonneville dam site with the relocated substation East of Troutdale as proposed by NLPA, would leave approximately 8 homes within 300 ft. of the ROW. This is a twenty fold reduction.

In addition to the impacts to large timberland holders and homeowners just discussed, all routes would also cross un-built private land. While not minimizing the impacts and inconvenience to any property owner, the fact is that most un-built properties intersected by the half-mile wide strip about the Northeastern route tend to be larger tracts or lots. The average lot size there is close to 18 acres and the average parcel size is over 190 acres. Larger parcels provide flexibility for development and opportunities for edge placement by BPA which can help reduce the loss of value to the property.

B. Payback Periods for Longer Routes

It is important to recall that the base level of *measured* impacts shown in Fig IV-1 below, excludes the potential reduced market value of individual properties immediately adjacent to the HVTL which were discussed earlier (see Fig. III-2). If

¹⁸ The BPA DEIS has estimated the present value of the stream of timber tax revenues lost from future timber harvests in private timberlands due to the Project's East route at \$262,000 in 2011\$. For Central route \$183,000.

21

23 of 34

14790-45 Please see the response to Comment 14790-3.

14790_attachment

14790-45 those additional *estimated* impacts were to be considered, even at their lowest level, the annual taxable asset shifts shown below for 2012 would increase by at least 30%.

Therefore, the impact numbers below are extremely conservative. This means that the actual payback periods for citizens to recuperate the public investment of the longer routes will be significantly shorter than shown.

Fig. IV-1 YEARS FOR RECUPERATING ADDED PUBLIC INVESTMENT OF LONGER LINES

Route	Estimated BPA Capital Cost \$millions	Estimated Annual Taxable Asset Losses** 2012	Years Needed *** to Recuperate Added Public Investment Versus Preferred	Homes Within 300 ft. of ROW Edge
BPA Preferred ,Nov 2012	407	13	NA	173*
BPA East with Camas crossing	-1	7	0	157*
Northeastern with Camas crossing	+30*	6	< 5	140E**
Northeastern with Bonneville Crossing, return on Oregon ROW	+(60 -80)**	4	< 7-9	16**

*BPA Estimate;**NLPA Estimate;***Nominal values grow at 2-5% per year so all payback periods would be slightly shorter (<) than shown.

C. Federal policies to facilitate inter-state transmission projects

1. Defining utility corridors on federal lands

14790-46 Section 368 of the Energy Policy Act of 2005 requires the Federal government to designate corridors for development of oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities on Federal land in the eleven states in the West (Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming), and to expedite applications for authorization to construct or modify oil, gas, hydrogen pipelines and electricity transmission and distribution facilities within such corridors. This requirement has not been met in Washington State or in Northern Oregon (34). It would appear that public bureaucracies such as the BLM and the USFS, backed by environmental groups, are protecting their turf ahead of the broader public interest.

2. Sharing costs and benefits of inter-state transmission

14790-47 Fair sharing of the costs and benefits of interstate transmission projects has been flagged as one of the issues affecting a growing national backlog in transmission investments (26). Under the common principle that “the user pays” it would be only natural that citizens in Oregon and California, the users of the energy of BPA I-5, would absorb their fair share of the indirect or external costs of the project.

Under BPA’s current accounting the transmission investments for BPA I-5 would be pooled and amortized with 15,000 miles of existing lines. While the marginal impact on a retail customer’s monthly bill will be almost undetectable to all customers¹⁹, this approach does not allow for the major beneficiaries of a transmission line to compensate the pass through states for their burden.

¹⁹ The capital and operating costs of HVTL average less than 5%-7% of the retail customer bill (DOE, 2005; NGA, 2000).

- 14790-46 The proposed project does not cross federal land. Though in the past BPA has worked with federal agencies to plan transmission corridors on federal land, there were no such planned transmission corridors near the area where this project is proposed.
- 14790-47 Please see the responses to Comments 14316-2, 14377-3, and 14685-1.

14790_attachment

V. RECOMMENDED ACTIONS

A. Short Term

NLPA respectfully requests elected officials at federal, state, county and city level and the Washington State Governor to urge BPA to re-open the scoping period to fully evaluate the routes suggested by citizens in Oregon and Skamania, as follows:

1. **Fully evaluate the Northeastern route option as mapped by BPA** on January 18, 2012 ending with segment "O".
- 14790-48 2. **Fully evaluate a Bonneville dam crossing for the Northeastern route** from the end of segment "O" using existing ROWs on forested public lands to reach and cross the Columbia River at the dam site. Suggested route follows the existing ROW as it climbs out of the gorge area. Continues on existing public-owned ROW and ends at a substation on the Oregon side, preferably East of Troutdale. This alternate substation site would avoid impacts to private properties and suburban growth lands closer to Troutdale. A Google Earth map is attached as Annex 3.
3. **Fully evaluate the Oregon alternative to reinforce the path South of Alston** where transmission congestion is expected to become critical first.

B. Medium and Long Term

- 14790-49 1. NLPA respectfully requests the federal, state and county elected officials and the Washington State Governor to **follow-up with the Executive branch and federal agencies** so they comply with Section 368 of the Energy Policy Act of 2005 and **define the Utility Corridors on federal and public lands in the State of Washington.**
- 14790-50 2. NLPA respectfully recommends the **Washington State Governor, state legislators and county officials to adopt the California "prudent risk avoidance" regulations regarding magnetic fields.** They mandate minimum setbacks to keep new schools away from high voltage power transmission lines (At least 350 ft. from the ROW of a 500 kV line) (35) (36).

23

25 of 34

14790-48 Please see the response to Comment 14790-5.

14790-49 Comment noted.

14790-50 Comment noted.

14790_attachment

Works Cited

1. **NLPA.** *Why Do We Need This Line?* 2009.
2. **GAO.** *BPA: Borrowing Practices and Financial Conditions.* 1994. 788444.
3. **BPA.** *BPA.FY2013_Proposed_Budget_US Congress.* 2012.
4. **Cooper, Peter.** *BPA,The _Worst_Mess...Policy Analysis No66,Cato Inst.* 1986. 1986.
5. US Health Statistics by County. [Online] <http://www.countyhealthrankings.org/app/washington/2012/compare-counties/011+015+033>.
6. **BPA.** Draft EIS: I-5 Corridor Reinforcement Project. [Online] 2012. <http://www.bpa.gov/Projects/Projects/I-5/Pages/Draft-EIS.aspx>.
7. **Clark County, Dept. of Community Services.** *Poverty in Clark County, 2012.* 2012.
8. **Clark County.** *Complete Report, Poverty in Clark County, January 2005 (updated Dec. 2006).* 2006.
9. **BPA.** *BPA's Mr. Johnson, D. Transcribed Excerpts_750am_Radio interview_BPAwith Mr. Larson. April 23, 2010.* Portland, OR : s.n., 2010.
10. **Lowenthal, R.M et al.** *Residential exposure to electric power transmission lines and risks of lymphoproliferative and myeloproliferative disorders: a case control study.* [Internal Medicine Journal 37(2007), 614-619] 2007.
11. **Draper, Gordon et al.** *Childhood cancer in relation to distance from high voltage power lines in England and Wales: a case control study.* [BMJ 2005; 330:1290-94] 2005.
12. **BPA.** *Electrical and Biological Effects of Transmission Lines:A review,December 1996, BPA.ELF_3_Bonneville.* [295 pages] [ed.] PhD Jack Lee. Portland, OR : s.n., 1996. DOE/BP 2938 December 1996 1 M.
13. **Exponent Inc.** *Research on Extremely Low Frequency Electrical and Magnetic Fields and Health.* [DEIS Appendix G] New York : s.n., 2011.
14. **Sick, Kent.** *Power lines and Property Values,The Good the Bad and the Ugly.* Literature review,1998. [Online] 1998. <http://www.harriscompanyrec.com/files/articlePowerLines.pdf>.
15. **Boardman to Hemigway.** *Bibliography on power line effects on property values.* [Online] http://www.boardmantohemingway.com/documents/bibliography_trans_lines_prop_value.pdf.
16. **Edison Electric Institute.** *The Effects of Overhead Transmission Lines on Property Values: A review and analysis of the literature.* [Online] 1992. <http://staff.haas.berkeley.edu/kroll/pubs/tranline.pdf>.
17. *Electric Power Transmission Lines, Property Values and Compensation.* **Furby, L. et al.** Eugene, OR. : Journal of Environmental Management, 1988, Vol. 27, pp. 69-83.
18. **Bottemiller, S.C. (BPA Staff Appraiser).** *PNW.Residential Value Loss.July2000, IROW magazine. Impacts on residential property values along powerlines, Portland, Vancouver, Seattle.* [Online] IROW Magazine, JUL/AGO 2000.

24

26 of 34

14790_attachment

19. **Chalmers, J.** *Large rural properties by 500kv in Montana 2012*. [Online] Chalmers and Associates, Billings, Montana. www.irwaonline.org/eweb/upload/web_mayjune12_Transmission.pdf.
20. **Western Energy, Montana.** Final High Voltage Transmission and Property Values Study, by Chalmers and Assoc. . [Online] 2012. <http://www.northwesternenergy.com/documents/ElectricTransmission/HighVoltageFinalReport.pdf>.
21. **Stowe, Thomas.** Highest and Best Use. *International Right of Way Magazine*. [Online] Sep/Oct 2011. http://www.irwaonline.org/eweb/upload/web_sep11_HighestBestUse.pdf.
22. **Assessor, Cowlitz County.** Cowlitz County Assessor, Annual Report. [Online] 2012. <http://www.co.cowlitz.wa.us/assessor/Online%20Forms/2013%20Payable%20Annual%20Report%20FINAL.pdf>.
23. **Perez Garcia, John et al.** Assessment of Expected Rates of Return from State Granted Lands. [Online] Cintrafor, Univ. of WA, 2007. http://www.ruraltech.org/projects/fwaf/final_report/pdfs/06_study5_dnrgrantedlands.pdf.
24. **Kauko, Tom et al.** *Mass Appraisal Techniques*. s.l. : Blackwell Publishing, Wiley, 2008. Vols. ebook, Powell Books.
25. **BPA/HDR.** *Right of Way Schematics based on Nov 2010 Project Map. Submitted on 3/30/2011*. 2011. Includes all segments except 4,9,25,40,41,45,46,47,48,49,50,51.
26. **National Governors Assoc.** Interstate Strategies for Transmission Planning and Expansion. [Online] 2000. <http://www.nga.org/files/live/sites/NGA/files/pdf/INTERSTATESTRATEGIESPLANNING.pdf>.
27. **WDNR.** Background on State Forest Policies. *DNR*. [Online] http://www.dnr.wa.gov/Publications/lm_psf_background_context.pdf.
28. **Berk and Associates.** Higher Education Capital Facilities Investment Strategies. [Online] December 2008. http://www.ofm.wa.gov/budget/capital/higher_ed_capital_finance_study.pdf.
29. **Lincoln Institute.** Managing WDNR state trust lands. [Online] <http://www.lincolnst.edu/subcenters/managing-state-trust-lands/publications/trustlands-wa.pdf>.
30. **Zobrist, K.** Diversifying forest structure to promote wildlife biodiversity in Western Washington Forests WSU, Extension, EM044. [Online] Washington State University. <http://www.onrc.washington.edu/Publications/2012/ZobristHinckleyForestBiodiversity12R.pdf>.
31. **Lindenmayer, David et al.,** . *Conserving Forest Biodiversity: A comprehensive multiscaled approach,*. s.l. : Island Press , 2002, p. 368 pp.
32. **DNR.** Trust Lands, Habitat Conservation Plan. 2010 Annual Report. [Online] 2011. http://www.dnr.wa.gov/Publications/lm_trust_land_hcp_annual_rprt_2010.pdf.
33. **NLPA.** *Owl_maps_by_BPA.pdf*. 2013.
34. **Wagner, Schaumberg and.** Power to the People - Electric Transmission Siting on Public Lands. [Online] <http://www.bdlaw.com/assets/attachments/Power%20to%20the%20People%20-%20Electric%20Transmission%20Siting%20on%20Public%20Lands%20Schaumberg%20Wagner.pdf>.
35. **Health, California Dept.** *California Prudent-Avoidance Regulations: EMF and Schools Setbacks*. 1993.

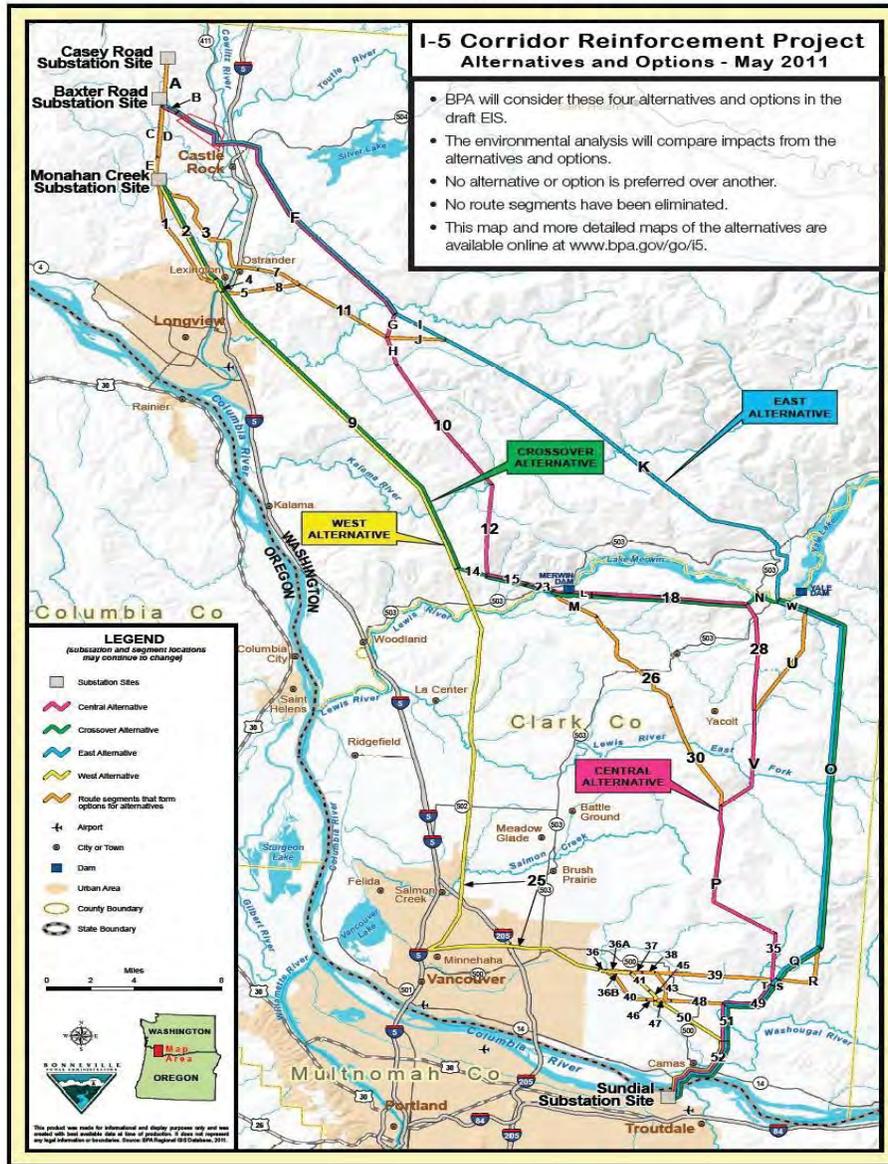
25

27 of 34

- 14790_attachment
36. **Carpenter, David et al.** *Setting Prudent Health Policy for EMF Exposures*. [Reviews of Environmental Health, Vol 23, Nr 2, 2008] Albany, NY : Institute for Health and the Environment, Univ. of Albany, Rensselaer, 2008.
37. **BPA**. September 2009.
38. **DOE/EIA**. *EIA.NorthwestPowerPool.Stats2009.DemandSupplyProjections,suptab_82*. 2009.
39. **TDN**. *Downed power line(12kV) in San Bernardino,CA electrocutes dad,mom, brother*. TDN,Jan 15,2011. s.l. : The Daily News, 2011.
40. **Project, BPA-I-5**. Home Counts by route alternative. [Online] <http://www.bpa.gov/Projects/Projects/I-5/Documents/I-5-project-data-by-segments-and-alternatives.pdf>.
41. **BPA**. *Evaluation_Northeastern_route_Jan18,2012*. [8 page memo, 2 maps] 2012.
42. **US DOE**. *National Transmission Congestion Study*. 2006.

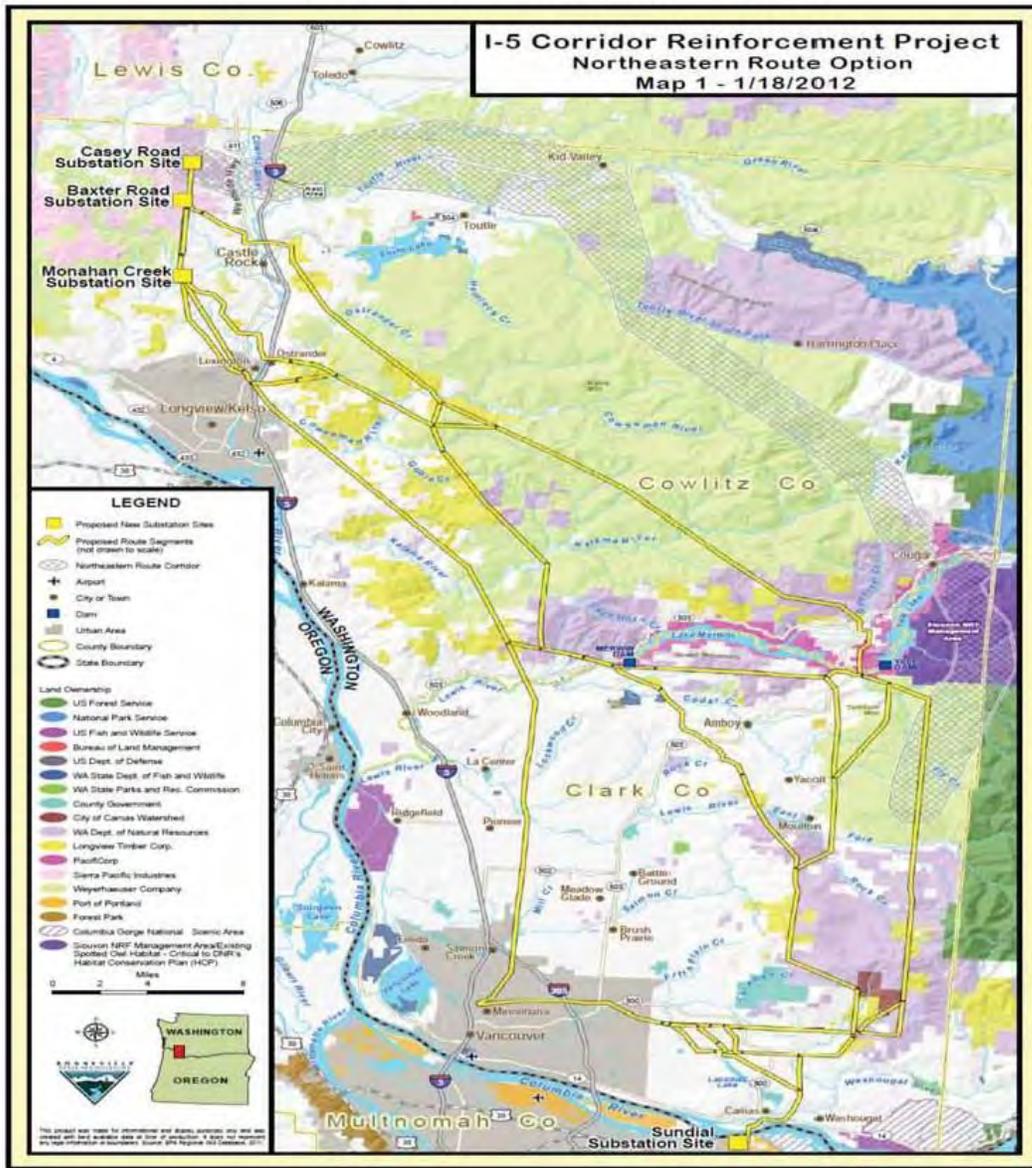
Annexes: Maps of routes proposed by BPA, citizens

A-1. Map of BPA Selected Routes, May 2011



14790_attachment

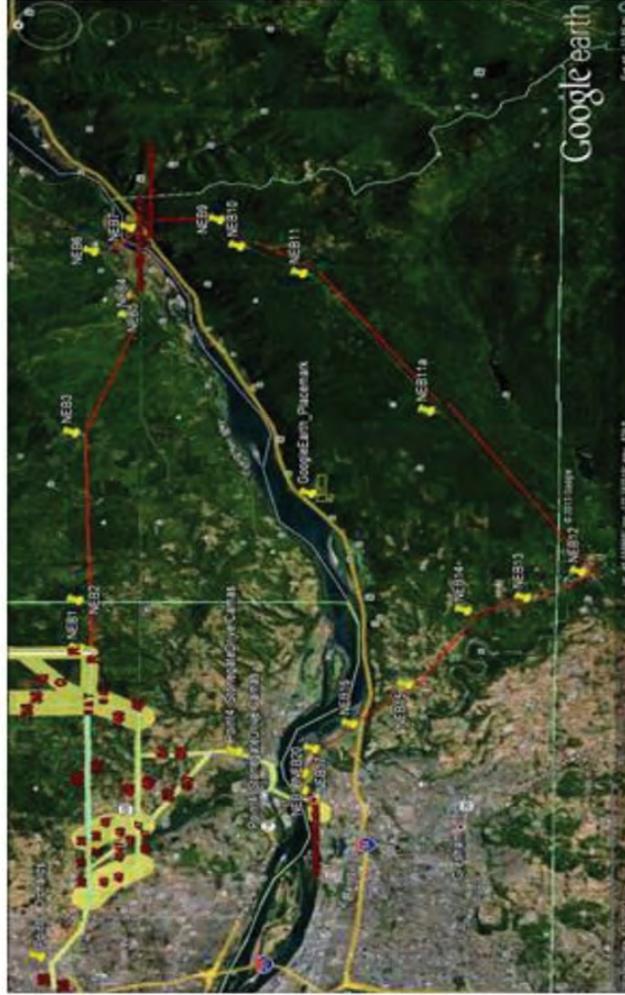
A-2. Map of Northeastern route by BPA, January 2012



14790_attachment

A-3. Northeastern route suggested by NLPA (crossing Columbia R. at Bonneville Dam)

Northeastern Route via Bonn. Dam (-)



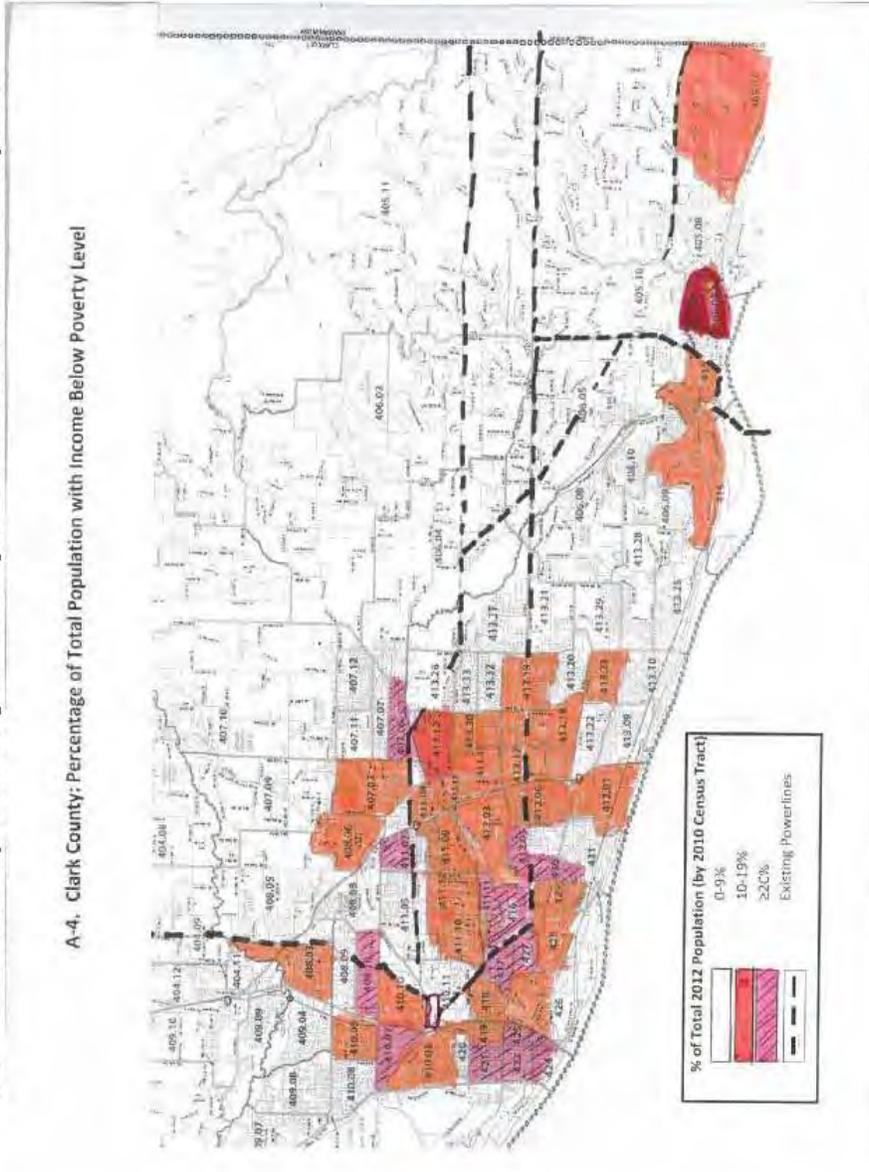
Note: NLPA suggests BPA consider relocating substation to placemark NEB-12 at southern end.

29

31 of 34

14790_attachment

A-4. Clark County: Percentage of Total Population with Income Below Poverty Level



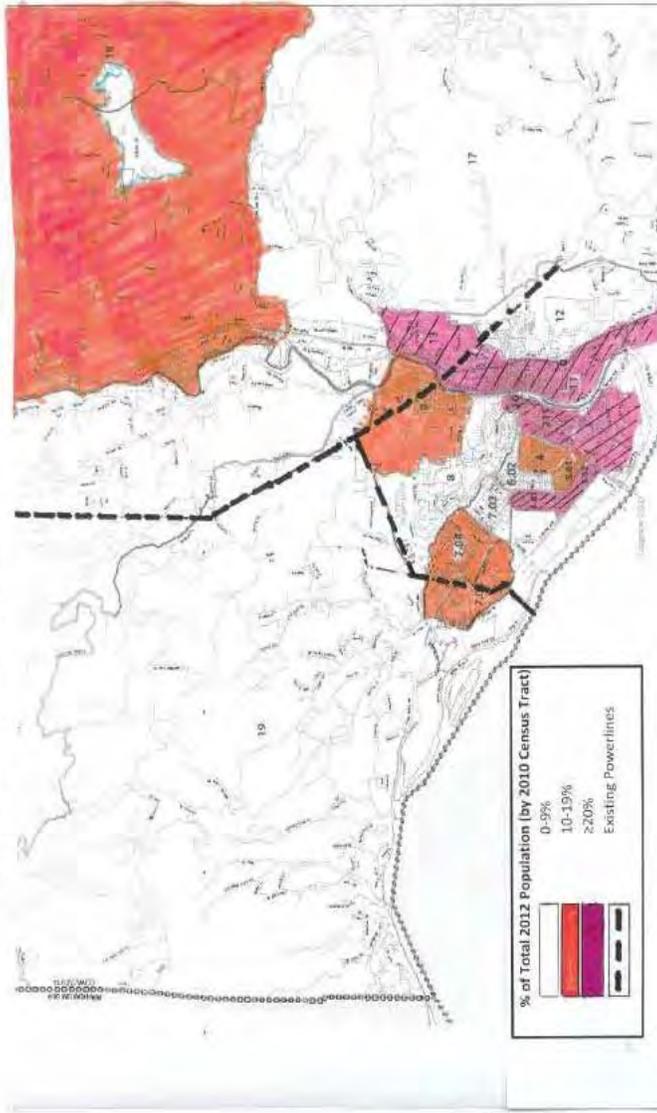
30

32 of 34

14790_attachment

A-5. Cowlitz County Poverty Map

A-5. Cowlitz County: Percentage of Total Population with Income Below Poverty Level

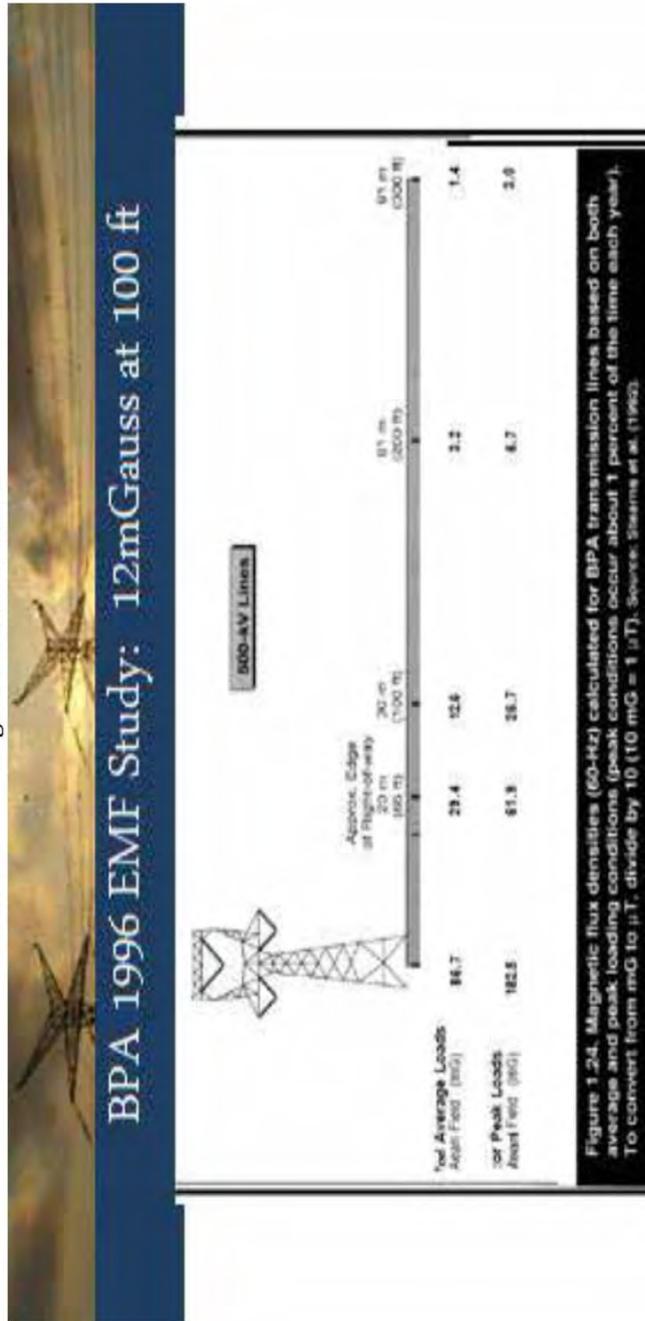


31

33 of 34

14790_attachment

A-6. Magnetic Fields for 500 kV



1-17

EPA Technical and Biological Effects Review

(Note by NLP: 2005 and 2007 studies show long-term exposure to 4mGauss doubles risk of blood cancers)

32

This page intentionally left blank.

14791-1 | Attached please find EPA's comments on the Draft EIS. A copy of the same was sent today by mail. EPA appreciates the opportunity to comment. ¹⁴⁷⁹¹

Sincerely,

Teresa Kubo
US EPA Oregon Operations

1 of 9

14791-1 EPA's comments were received. Thank you.

14791

March 25, 2013

Nancy Wittpenn
 I-5 Corridor Reinforcement Project
 Bonneville Power Administration
 P.O. Box 9250
 Portland, Oregon 97207

Re: EPA Region 10 Comments on the I-5 Corridor Reinforcement Project Draft Environmental Impact Statement (EPA Project Number: 09-059-BPA).

Dear Ms. Wittpenn:

- In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act, the US Environmental Protection Agency has reviewed the Bonneville Power Administration Draft Environmental Impact Statement for the proposed I-5 Corridor Reinforcement.
- 14791-2 The DEIS analyzes the potential environmental impacts associated with building a 500-kilovolt lattice-steel-tower transmission line that would run from a new 500-kV substation near Castle Rock, Washington, to a new 500-kV substation near Troutdale, Oregon. The DEIS considers four alternative transmission line routes (West, Central, East and Crossover, each with optional route variations); three sites for the proposed substation near Castle Rock, and one site for the proposed substation near Troutdale. The Central Alternative – Option1 has been identified as the Preferred Alternative.
- 14791-3 The EPA appreciates the effort taken on the part of BPA to develop a robust range of alternatives. We also appreciate the inclusion of a non-wires option in the analysis process, and the extensive public involvement undertaken in support of the DEIS. Overall we find the EIS to be well structured. The inclusion of criteria for defining impact levels for each analyzed resource is useful, and helps to ensure a consistent analytical approach across alternatives.
- 14791-4 Our analysis of the DEIS has also identified information gaps that we believe need to be addressed in the FEIS. Specifically, additional baseline information related to impacts from the existing energy corridor is needed for the West Alternative. Without this baseline information, it is difficult to effectively evaluate the significance of impacts. In addition, our comments discuss the identification of the environmentally preferred alternative. Based on the analysis in the DEIS, we believe the West Alternative would best promote the national environmental policy as expressed in NEPA's Section 101. Finally, we offer potential mitigation measures and BMPs for inclusion in the Final EIS, and recommend that the Final EIS more effectively coordinate the NEPA process and the Clean Water Act Section 404 permitting process by including information that demonstrates compliance with the Clean Water Act Section 404(b)(1) Guidelines. Please see the enclosed comments for specific detail.

2 of 9

14791-2 Thank you for your comments. Specific comments are addressed below.

14791-3 Comment noted.

14791-4 Thank you for your review of the Draft EIS. Specific comments are addressed below.

14791

14791-4 | Due to the information gaps identified, we have rated the DEIS EC-2 (Environmental Concerns – Insufficient Information). An explanation of this rating is enclosed for your reference.

14791-5 | We appreciate the opportunity to review this DEIS. If you have question about our comments, please contact me at _____ or by electronic mail at _____, or you may contact Teresa Kubo of my staff at _____ or electronic mail at _____.

Sincerely,

//s//

Christine B. Reichgott, Manager
Environmental Review and Sediment Management Unit

14791-5 Comment noted.

14791

**EPA Region 10 Comments
I-5 Corridor Reinforcement Project
Draft Environmental Impact Statement**

Affected Environment

14791-6 Describing impacts of an action requires an understanding of the current conditions of affected resources (baseline conditions). For the Central, East and Crossover Alternatives, we find the level of baseline information to be adequate. Baseline information for the West alternative, however, is lacking. Because the West alternative follows the existing right of way, information is needed about how the existing right of way currently affects resources, ecosystems, and human communities. Impacts from the existing ROW are alluded to in the cumulative effects chapter of the DEIS (Chapter 26), but we believe a broader and more quantitative discussion of existing effects should be incorporated into the document.

14791-7 As an example, Table 5-1 considers the numbers of homes from the edge of the right-of-way, and notes that under the West Alternative, 3,032 residences would be within 500 feet of the ROW. It would be instructive to know to what extent this represent an increase from existing impacts (i.e. how many residences are currently within 500 feet of the ROW?) Similarly, it is not clear from reading Chapters 16

14791-8 and 18 (Wetlands and Wildlife, respectively) the extent to which the existing ROW is affecting wetland structure and function, and wildlife habitat and connectivity.

14791-9 We recommend that the DEIS include an assessment of impacts from the existing I-5 power corridor in the baseline assessment for the West Alternative, with particular focus on impacts to homeowners, wetlands, and wildlife habitat.

Environmentally Preferable Alternative

14791-10 40 CFR 1505.2(b) requires that the Record of Decision identify all alternatives that were considered, ". . . specifying the alternative or alternatives which were considered to be environmentally preferable." The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

The identification of the environmentally preferable alternative may involve difficult judgments, particularly when one environmental value must be balanced against another. The EPA's guidance directs us to assist the lead agency in developing and determining the environmentally preferable alternative through our comments on the Draft EIS.

Based on the analysis of alternatives presented in the DEIS, we cannot conclude that the preferred alternative (Central with Option 1) is the environmentally preferable alternative. This conclusion is based on the following factors:

14791-11 Impacts to Wetlands. The DEIS indicates that the West alternative potentially affects a greater acreage of wetland than does the Central alternative (31 additional acres of clearing and 18 additional acres of fill¹). However (as noted above) because it is not clear to what extent wetland function is already altered within the West corridor, we cannot determine whether the West alternative represents a greater impact

¹ DEIS Table 16-1

4 of 9

- 14791-6 We appreciate the perspectives of the commenter concerning the importance of understanding baseline conditions and the adequacy of the EIS's description of these conditions for the Central, East and Crossover alternatives. Concerning the West Alternative, we believe that the EIS adequately describes baseline conditions for this alternative as well. The EIS's description of the Affected Environment focuses on describing currently-existing environmental conditions for a wide variety of resources in the vicinity of this alternative. This affected environment is the widely recognized and accepted "baseline" under NEPA. It is in comparison to this baseline that the potential impacts of the proposed action - construction of a proposed transmission line and associated facilities - are properly examined and described. Accordingly, we believe that the approach used in the EIS to identify the West Alternative baseline and analyze potential project impacts is consistent with NEPA requirements.
- 14791-7 Table 5-1 represents the number of existing homes that are within specified distances from the existing right-of-way. Because the West Alternative uses existing right-of-way for most of the distance, the number of homes in the table for the West Alternative would remain the same.
- 14791-8 Please see the response to Comment 14753-1.
- 14791-9 Please see the response to Comment 14791-6.
- 14791-10 Thank you for your input regarding the identification of the environmentally preferable alternative in the Record of Decision, and your opinion concerning the agency's preferred alternative identified in the EIS.
- 14791-11 Please see the response to Comment 14753-1.

14791

- 14791-11 to wetland resources than the Central Alternative. The Central Alternative would require entirely new Right of Way through previously unimpacted wetlands that may be functioning at a higher level than those within the West corridor. Without site specific surveys we are reticent to conclude that the Central Alternative represents a lower impact to wetlands. We recommend that the FEIS include information regarding site-specific wetland types and functions. This information will be necessary to compare the environmental impacts of the various alternatives and identify the Least Environmentally Damaging Preferred Alternative pursuant to the CWA Section 404(b)(1) Guidelines. Additional recommendations related to wetlands are included below under the heading "CWA Section 404(b)(1) Guidelines."
- 14791-12 Roads. The Central Alternative would require the construction or improvement of 159 miles of road, whereas the West Alternative would require the construction or improvement of 64 miles of new road (the fewest miles of any of the alternatives)². Roads are of key concern to the EPA because roads contribute more sediment to streams than any other management activity and interrupt the subsurface flow of water, particularly where roads cut into steep slopes. In addition, roads and their use contribute to habitat fragmentation, wildlife disturbance, and the introduction or exacerbation of noxious weeds. Because of these factors, the EPA in general favors alternatives that minimize road construction.
- 14791-13 Unstable Terrain. Most of the Central Alternative is within potentially landslide-susceptible terrain and would cross several mapped landslides. Overall, the Central Alternative would disturb about 596 acres of soil with severe erosion hazard, the second-highest among the action alternatives. The West Alternative would disturb about 211 acres of soil with severe erosion potential, the least of the action alternatives³. While we recognize towers and roads would be built to appropriate design standards, we believe that unstable landforms should be factored into the consideration of the environmentally preferable alternative.
- 14791-14 Waterbody Crossings. Under the West Alternative, riparian vegetation would be cleared at 47 forested crossings of fish-bearing streams, the least among the action alternatives. Of those crossings, nineteen would occur where existing shade provides effective stream cooling. Under the Central Alternative, riparian vegetation would be cleared at 68 forested crossings of fish-bearing streams, the greatest among the action alternatives. Of those crossings, 49 would occur where existing shade provides effective stream cooling⁴. At the watershed scale, these impacts may be low, but because of the potential for localized impact, we believe that loss of shade/potential for large wood recruitment should be factored into the consideration of the environmentally preferable alternative.
- 14791-15 We recognize that the preferred alternative is a different concept from the idea of the environmentally preferred alternative. We also recognize that identification of the environmentally preferable alternative is subjective and requires a certain amount of judgment on the part of the federal agency decision maker. In practice, one alternative may be preferable for some environmental resources while another alternative may be preferable for other resources. Based on our review of the existing information, we believe the West Alternative is the alternative that best promotes NEPA's goals. If the BPA proceeds with selection of the Central Alternative, the FEIS should lay out a clear rationale for its selection, and why it best fulfills the purpose and need of the proposed action in light of noted environmental concerns.

² DEIS Table 12-1³ DEIS page S-44⁴ DEIS page S-50

5 of 9

- 14791-12 The length of access roads to be improved or reconstructed, or are new, for the Central Alternative has been updated in the Final EIS. The amount is still greater than the West Alternative.
- 14791-13 BPA agrees that geologic hazards, including landslides (unstable landforms) should be factored into the decision identifying the environmentally preferable alternative.
- 14791-14 Impacts to riparian vegetation from the Preferred Alternative would be calculated and fully mitigated. Riparian functions including but not limited to water temperature regulation and large wood recruitment potential, have been considered in the impact assessment and mitigation planning. BPA agrees effects to riparian vegetation should be factored into the identification of the environmentally preferable alternative.
- 14791-15 Please see the response to Comment 14472-3 concerning the reasons why BPA identified the Central Alternative using Central Option 1 as its agency's preferred alternative in the Draft EIS. Furthermore, if BPA issues a ROD deciding to build the project, that ROD will identify the alternative that has been selected and the rationale for that selection, consistent with NEPA.

14791

- 14791-16** **Wetland Mitigation**
We note that, according to page 3-2 of the DEIS, double circuit towers use less right-of-way. Although tower configurations are presented in Appendix B, it is difficult to determine whether the DEIS considered installing double circuit towers through wetland areas in an effort to reduce the number of acres impacted. We recommend that the FEIS provide additional information about the types of towers proposed for installation within wetland areas, and a discussion of the potential for double circuit towers to further reduce impacts to wetland areas.
- 14790-17** **Mitigation Measures Included as Part of the Project**
We appreciate the inclusion of Table 3-2 (Mitigation Measures Included as Part of the Project). We have reviewed the measures included in the table and offer the following comments and recommended additions:
- 14791-18** Under “Geology and Soils” we support the inclusion of BMPs listed (including the Manual for Western Washington). Given the amount of new road construction and road improvement proposed, we also recommend including the following BMPs:
- Use suitable surface drainage and roadway stabilization measures to disconnect the road from the waterbody to avoid or minimize water and sediment from being channeled into surface waters and to dissipate concentrated flows.
 - Inspect drainage structures and road surfaces after major storm events and perform any necessary maintenance.
 - Repair and temporarily stabilize road failures actively producing and transporting sediment as soon as practicable and safe to do so.
 - Restrict use if road damage such as unacceptable surface displacement or rutting is occurring.
- 14791-19** We also We appreciate that on page 3-15 the DEIS stipulates that where new roads cross year-round, seasonal, or fish-bearing streams, open bottomed culverts or bridges would be needed. We recommend that this measure be incorporated into Table 3-2. We further recommend that this measure be expanded upon to include the following:
- Design the crossing to pass a normal range of flows for the site.
 - Install stream crossings to sustain bankfull dimensions of width, depth, and slope and maintain streambed and bank resiliency and continuity through the structure.
 - Design Bridge or culvert to prevent restriction of flood flows.
 - Use site conditions and local requirements to determine design flood flows.
 - Use suitable measures to protect fill from erosion and to avoid or minimize failure of the crossing at flood flows.
- 14790-20** Under “Public Health and Safety” and/or “Soils and Geology” we recommend adding BMPs related to blasting:
- Develop and follow blasting plans when necessary.
 - Use restrictive blasting techniques in sensitive areas and in sites that have high landslide potential.
 - Avoid blasting when soils are saturated.

6 of 9

- 14791-16 Please see the response to Comment 14460-1.
- 14791-17 Comment noted.
- 14791-18 BPA has access road design standards that provide for suitable road surface drainage and stable roads once the road is constructed. BPA inspects its access roads on a regular schedule and makes repairs as needed. Landowners typically contact BPA about roads on their land that may be in need of repair.
- 14791-19 Please see the response to Comment 14665-3. The suggested measures are included in BPA's access road standards.
- 14791-20 These BMPs recommended by the commenter have been added to Chapter 14, Geology and Soils.

Sundial Substation

14791-21 All of the action alternatives propose to utilize part of the Reynolds Metals Superfund site for the Sundial Substation. In addition, lines and access roads would cross a portion of the site. On page 10-13 the DEIS concludes that there would be low impact where the alternatives cross the Reynolds Metals Superfund Site. The DEIS also notes that BPA would notify the EPA and DEQ and prior to construction, and that "plans would be in place to address and mitigate any known or potential areas of contamination that may be encountered."

14791-22 The EPA agrees that it will be critical for BPA to coordinate with DEQ and the EPA prior to construction of the Sundial Substation. Based on our previous investigations and site history, we would not expect to find any significant contamination in the area shown for the proposed substation. Tower footings, however, will require additional consideration. We recommend that the FEIS reaffirm the BPA's intention to work with DEQ and the EPA on identifying any potential areas of contamination and mitigation actions for the Reynolds Metals Superfund site as locations for project facilities are finalized.

14791-23 We also note that habitat restoration has been completed on a 21 acre site adjacent to Company Lake (a portion of the "Outside the Dike" area in Figure 10-2). This action was part of a Natural Resource Damage Settlement. A permanent conservation easement for the Company Lake parcel is now in place. We recommend that FEIS acknowledge this habitat restoration site, and clarify that the proposed project will not impact the easement area.

Aquatic Resources, Wetlands and Riparian Areas

Section 16.2.8 of the DEIS notes need to obtain all required permits with approved wetland delineations and compensatory mitigation plans prior to construction. We recommend that the FEIS discuss this permitting requirement more specifically.

14791-24 The proposed activities will require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers. The Clean Water Act Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material require that impacts to aquatic resources be avoided, minimized, and compensated for in that sequence.⁵

To more effectively coordinate the NEPA process and the Clean Water Act Section 404 permitting process, we recommend that the FEIS include information that demonstrates compliance with the Guidelines.

14791-25 For unavoidable impacts, compensatory mitigation should be consistent with the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule.⁶ We recommend that the FEIS include a discussion of all mitigation options, including on-site mitigation. For unavoidable losses to aquatic resources, compensatory mitigation should be implemented in advance of the impacts to avoid temporal habitat losses.

14791-26 The FEIS should include an aquatic resources/wetlands mitigation plan, developed consistent with the requirements outlined at 40 CFR 230 Subpart J. To the extent possible, the following information from the draft mitigation plan should be included in the FEIS:

⁵ 40 CFR 230.91(c)(2) and (c)(3)

⁶ 33 CFR 325 and 332, and 40 CFR 230

- 14791-21 As engineering design continues, BPA has been and will continue to be in contact with the Reynolds Metals Site Manager at EPA and the Environmental Engineer at Oregon DEQ. As the agreements for the Reynolds Metals Superfund Site dictate, BPA will fully comply with all requirements during both construction and operation and maintenance (if BPA decides to build the project).
- 14791-22 BPA has and fully intends to continue to coordinate and fully cooperate with both EPA and Oregon DEQ regarding geotechnical investigations, potential placement of towers and construction of the proposed Sundial Substation.
- 14791-23 BPA is aware of the Company Lake Conservation Easement and has coordinated with the Port of Portland and the Oregon Parks and Recreation Department to modify the easement document to accommodate the I-5 Project if BPA decides to build this project and Lot 12 is chosen as the site for Sundial Substation. BPA has an existing easement, towers, and access roads within the conservation easement and the existing covenant language allows for operation and maintenance of these facilities. If Lot 12 is chosen for the substation, the existing easement would be redirected to accommodate the change in alignment. At this time, Lot 11 is BPA's preferred location for the proposed substation. The Lot 11 design does not require any work within the conservation easement. Section 5.1.3 General Land Ownership and Use - West Alternative and Options, and Section 5.2.2.3 Sundial Substation Site, have been updated to acknowledge this conservation easement.
- 14791-24 Section 27.10, Clean Water Act, describes BPA compliance with the Section 404(b)(1) guidelines.
- 14791-25 Section 27.10, Clean Water Act, describes how BPA would prepare a mitigation plan in accordance with the Final Rule that lists compensatory mitigation options, in order of priority, to include mitigation banks, in-lieu fee programs, and permittee-responsible (either on- or off-site) compensatory mitigation. BPA would implement the mitigation plan on a timeline developed in coordination with the Corps and other regulatory state agencies.
- 14791-26 Please see the response to Comment 14791-25.

14791

- 14791-26
- A description of the resource type and amount that will be provided, the method of compensation, and the manner in which the resource functions of the compensatory mitigation project will address the needs of the ecoregion, physiographic province, or other geographic area of interest.⁷
 - A description of the factors considered during the compensatory mitigation project site selection process.⁸
 - A description of ecological performance standards that will be used to assess whether the project is achieving its objectives.⁹
 - A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed.¹⁰
 - Descriptions of the long-term management plan, adaptive management plan, and financial assurances.¹¹

⁷ 40 CFR 230.94 (c)(2)

⁸ 40 CFR 230.94 (c)(3)

⁹ 40 CFR 230.95

¹⁰ 40 CFR 230.94 (c)(10)

¹¹ 40 CFR 230.94 (c)(11-13)

8 of 9

This page intentionally left blank.

14791

**U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action***

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment, February, 1987.

9 of 9

This page intentionally left blank.

14792

B. P. A.

I-5 Corridor Reinforcement

PO Box 9250

Portland, OR. 97207

I am writing to you in regard to the business and property at
. The preferred central alternative route line which B.P.A. now has mapped
(towers F-15, F-16) is next to the nicest barn in Cowlitz County.

1. What's different about this barn?

A. Many days out of each week horses are hauled in and out with lots of people coming to do horse business. Many come from neighboring states, but also from all over the U. S. A.

B. This business (even in recession) has always remained full with a waiting list to get in, and with horses from all over, not just Washington state.

C. Special footing was putting in using U. S. Dressage Federation standards. A special base under the footing helps horses relax their backs and produces less wear and tear on the body.

D. Mirrors inside the arena are to help riders make minute changes with the horse and monitor each step and footfall.

E. Horse comfort.

- a. The way stalls are designed, let horses see each other and reduces stress.
- b. The stalls are also designed to allow horses not to see each other during feeding times. A horse may feel competitive or threatened at feeding time if allowed to make eye contact with other horses.
- c. There is good light and air flow for good health and comfort of the horse.
- d. Stall feeders adjust to each horses needs. Horses do have a way they prefer their feeders.
- e. The footing in the round pen is designed to condition horses for competition. The footing also helps with balance, body focus, and muscling.
- f. The sand turnout has ideal footing for horses to play and exercise in all weather.
- g. The sandy paddocks are favorable for healthy hoofs and comfort versus mud

14792-1

1 of 4

14792-1 Comment noted.

14792

- (like most barns have).
- h. Trees in the turnouts help protect in the winter and provide shade from the hot sun in the summer.
- 14792-1 F. Specialty care. The specialty care of horse athletes (much like football players) takes time and knowledge to specialize each horses diet, supplements, and work program.

The barn at [redacted] is not like other horse barns.

- Business at this dressage barn.
- 14792-2 This business starts with young horses and young children. The horses are trained up for competition and to sell. The children begin riding lessons as young as four and five years old (much like gymnastics, music, dance, and sports). The students are very interested in competing in horse shows.

I have taught many children to compete at high levels (well above the level of 4-H horse showing). Many compete in dressage and jumping, but also in other horse sports. One young lady that started at four years old is now in the U. S. Advanced FEI Dressage program and showing at international level shows after training with Regina and myself.

I have taught at the public schools in the special education department. I use those skills each day with my students (children and adults). Many of my students have been young and some have had learning problems. Although I do not call my program a therapy for children, I have had children with all the below problems, and helped with each one.

- 14792-3
- A. Anger and self behavior management
 - B. Autism
 - C. Introverted personality
 - D. MS
 - E. Tourette's syndrome
 - F. ADD and ADHD

Each child taught became a better student in school, was more respectful to others, learned how to set goals, and learned how to work toward those goals. One mother of a child I taught (that is now in college) cries each time I see her in Longview. She always thanks me for helping her daughter to become a strong achiever. I also teach adults. Many love horses and always wanted to ride but were afraid. I take special care to teach them horse related information, safety, and confidence. It is very rewarding to see them happily enjoying their horses. Their riding helps them destress.

2 of 4

14792-2 Comment noted.

14792-3 Comment noted.

14792

THIS BARN IS IMPORTANT TO A LOT OF FAMILIES.

14792-4 Regina Agren does horse training and upper level dressage lessons. She is a TOP RIDER at all her shows and has been for years. She has studied with top equestrians from all over the U.S. and many from Europe. The dressage community needs this barn to continue for classical dressage learning in the Pacific Northwest (for sure). Regina helps other trainers and instructors with her knowledge of horses and classical riding.

This is a list why the powerline would not be compatible with a riding-training horse facility.

1. Three metal roof buildings. Garage, large barn with 22,440 sq. ft. of roofing, and a small barn with 2000 sq. ft. of roofing.
2. Horses wear steel shoes and use metal bits.
3. Hay and other flammable materials are stored in buildings.
4. People from the public may come that have pacemakers.
- 14792-5 5. All people, and especially children, are put in danger when handling spooky horses due to hissing and crackling noise and shocks.
6. Shocks can be continuous as long as you are touching metallic objects (horseshoes, fencing, metal buildings, and metal horse trailers). Shocks are a danger to horses and may cause colic. Weaving is a nervous habit that may cause lameness. Cribbing results in poor appetite and poor muscling. A nervous horse is a dangerous liability due to people and horses being injured.

Environmental impact

14792-6 A. The well that provides water for all of the property is close the proposed power line.

14792-7 B. Bald eagles each year are at this location. They come during breeding season and are hunting and feeding their young from spring until fall. They require safety while foraging, nesting, and perching.

C. Red legged frogs live in a small part of the Cowlitz River that is a natural inlet pool that is a unique habitat for the frogs and other species.

3 of 4

14792-4 Comment noted.

14792-5 Please see the response to Comment 14495-1 for a discussion of county zoning consistency and final proposed routing of the transmission line.

Please see the response to Comment 14328-6 for a discussion of EMF and electric shocks.

Please see the response to Comment 14744-2 for a discussion of implanted medical devices.

14792-6 If a decision is made to build the transmission line, the location of all wells and water rights would be confirmed with landowners during land negotiations and during engineering field surveys along the transmission line route before construction. Wells and surface water diversions potentially disturbed by project activities would be relocated, or project activities would be adjusted to avoid them before construction.

14792-7 Please see the response to Comment 14480-3.

14792

14792-8 The concern about the impact of EMF and Corona from high-voltage lines is greater because of:

1. A huge amount of Cottonwood tree seeds each spring (much like snow) would have a serious impact as they fly into the lines.
2. Electronic and mechanical equipment (trackers and vehicles).
3. Foul weather. A (B.P.A.) study says that at PDX, foul weather is 20% each year. Foul weather is more like 44.6% in Castle rock, or the equivalent of 163 days a year. I live in Longview and travel to Castle Rock daily. Many days Castle Rock gets rain but Longview does not.

B.P.A.s own literature said, "B.P.A. weighs EMF exposure as one of the important factors as to where to locate". B.P.A. also wrote, "we have an obligation to fully consider the public concern".

Financial impact on jobs, lives, and business:

A. The devaluing of the Agren family property would impact the college money for their child and security for the family's future.

B. The high-voltage power line would negatively affect the Agren family business and the loss of income would be such that the business could not continue.

C. Loss of income for Sue Sabata.

14792-9 D. There would be a loss of tax revenues for the state of Washington, and other tax receiving entities.

E. Many businesses benefit from the Agren family business (Alpha Riding Academy) and would be affected if it was unable to continue. Some of these include: Chip service businesses, saddle and tack repair businesses, feed stores, farriers, acupuncturists, equine massage businesses, hay suppliers/truckers and several local businesses like restaurants, coffee shops, and the bakery.

The Agren family business and the other businesses I have mentioned above would suffer loss of income through no choice of their own, and would be impacted negatively by the preferred line being installed next to the family business at . (towers F-15 & F-16).

Summary.

14792-10 . A decision not to proceed with the preferred central alternative route line would be for the best public interest and the best economic interest, and would also be the best liability decision. There is certainly a safety issue to expect people and children to coexist beside high-voltage lines when hundreds are hurt and killed each year by these lines. The preferred alternative line (F-15 & F-16 towers) present a new risk and a new danger to people other than a line falling down. I request that B.P.A. reopen the scoping of the preferred central alternative line route for the I-5 corridor reinforcement project in the best interest of all concerned. Also look at the proposed line the Cowlitz PUD suggested in 2003.

Sue Sabata

4 of 4

- 14792-8 EMF, corona, and noise are discussed in Chapter 8, Electric and Magnetic Fields, and Chapter 9, Noise. Please see the responses to Comments 14097-1, 14328-6, and 14587-1.

More weather data has been analyzed and added to Section 9.1.2, Existing Noise.

Please see the response to Comment 14328-6. See also the response to Comment 14097-1. In this location the proposed right-of-way has been moved to the north away from the horse facility.

- 14792-9 Please see the response to Comment 14792-5. In this location the proposed right-of-way has been moved to the north away from the horse facility. Please see the responses to Comment 14140-2 for a discussion of property values, and Comment 14291-3 for a discussion of assessed value.

- 14792-10 Chapter 10, Public Health and Safety, discusses safety issues for each proposed alternative, including the Preferred Alternative. BPA believes that re-opening the EIS scoping period to further assess these alternatives is not warranted.

BPA is unaware of a Cowlitz PUD proposal made in 2003. A check-in with Cowlitz PUD revealed the same response. BPA has engaged with Cowlitz PUD on their proposed transmission line proposal with PacifiCorp near Merwin Dam because of its proximity to BPA's proposed transmission line as it crosses PacifiCorp property near the fish facilities and the existing substation.

14793

From: noreply@bpa.gov
Sent: Monday, March 25, 2013 10:30 AM
Subject: BPA I5 Comment Submission Confirmation

Thank you for submitting your comments on the Bonneville Power Administration's draft environmental impact statement (EIS) for the I-5 Corridor Reinforcement Project. All comments submitted between November 13, 2013 and noon on March 25, 2013 will be responded to in the final EIS, which is expected in 2014.

A copy of your information, as submitted using our online form, is included below for your records. If you provided your contact information and submitted a question we can answer at this time, you will receive a response. Your contact information will also be added to our project mailing list. All comments including names will be processed and then posted on BPA's website at www.bpa.gov/goto/i-5

Sincerely,
Bonneville Power Administration

Name: Thomas J Keiran
Organization: City of Castle Rock
E-mail:
Phone:
Address:

Group type: City Government

Please ADD me to the mailing list.

14793-1

Comment:

I am the City Planner for the City of Castle Rock. The attached comments are the official city comments submitted on behalf of the city. Please consider the City of Castle Rock as the party of record, not me individually.

[Attachment](#)

14793-1 Comment noted. Thank you for submitting the City of Castle Rock's comments.

City of Castle Rock



March 24, 2013

I-5 Corridor Reinforcement Project
PO Box 9250
Portland, OR 97207

SUBJECT: CITY OF CASTLE ROCK'S OFFICIAL COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE I-5 CORRIDOR REINFORCEMENT PROJECT

14793-2

Please accept this correspondence as the City of Castle Rock's formal response regarding the adequacy of the Bonneville Power Administration's analysis of impacts in and around our jurisdiction of the proposed I-5 Corridor Reinforcement Project. We have formatted this document to follow the table of contents in Volumes 1 & 2, focusing on the Central Alternative using Central Option 1 (Line F) because that is identified by BPA as the 'preferred alternative' and because that alternative has the potential to have the greatest adverse impacts to the City of Castle Rock as a municipality as well as the Castle Rock School District and the citizens of Castle Rock and north Cowlitz County.

14793-3

We have identified inaccurate information in the DEIS and are concerned some important findings and conclusions which led to BPA selecting the preferred alternative are not substantiated in the studies included in the DEIS appendixes and in some instances actually contradict the sub consultants' recommendations. We also identified instances where BPA has simply ignored or glossed over information when its position cannot be substantiated. It is the City of Castle Rock's position this DEIS has not sufficiently evaluated the negative environmental effects of the proposed action and a Final EIS based on its conclusions will be found out of compliance with the National Environmental Policy Act (NEPA) when challenged.

14793-4

The DEIS is incomplete and is not a tool that can be used by decision makers because of vast amount of outstanding concerns. Washington State's Energy Facility Site Evaluation Council (EFSEC) coordinated state agencies' review of the DEIS. Each and every agency commented the DEIS does not contain the information necessary to evaluate potential impacts, including:

14793-2 Thank you for your comments. Specific comments are addressed below.

14793-3 Comment noted. See the responses to specific comments below.

14793-4 Comment noted. Please see the responses to Comments 14596-1 and 14777-13.

- 14793-5 1. Washington Department of Ecology (DOE) found BPA's method of relying on course National Wetland Inventory (NWI) data to identify wetlands unacceptable and requested wetland delineation reports and proposed mitigation measures.
- 14793-6 2. The Department of Archeology & Historic Preservation (DAHP) noted the DEIS identifies adverse impacts to cultural resources and that Section 106 of the National Historic Preservation Act "has not been completed for this project".
- 14793-7 3. Washington State Department of Natural Resources (DNR) provided twenty nine pages of comments that identified factual errors, inaccuracies in use of data, and recommends the EIS be amended to include nineteen new analysis in order to properly identify impacts.
- 14793-8 4. State of Washington Department of Fish and Wildlife (WDFW) requested BPA provide more information regarding wetlands and priority habitats and species. WDFW commented "the DEIS is too ambiguous to determine actual impacts" on habitat features and requests the BPA comply with the Endangered Species Act (ESA) and initiate consultation under ESA section 7. The fact that WDFW requests "that a committee be formed among WDFW, DNR, industrial forest land owners, U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, the National Ocean and Atmospheric Administration, the Lower Columbia Fish Recovery Board and BPA, to address the impacts of the proposed transmission line" speaks volumes regarding the insufficiency of this DEIS to act as a tool for decision makers.
- 14793-9 The BPA states it is working with EFSEC to help ensure that this EIS is adoptable under SEPA for all state and local agencies, yet each agency states the document lacks the information necessary for them to perform their review. The city contends identifying the Central Alternative using Central Option 1 as the preferred alternative is premature because the DEIS does not contain sufficient information to gauge potential impacts and necessary mitigation.
- 14793-10 **QUESTION 1: Will the BPA defer identifying the preferred alternative until the analysis required by NEPA and SEPA is conducted? If not, why not?**
- 14793-11 Another important point to make concerning the inadequacy of the DEIS to serve as a tool for decision makers is the fact that many of the studies conducted by sub-consultants only purported to analyze the potential impacts on lands within proposed easement of the proposed transmission line when evaluating potential impacts of the action. This measurement distance is seventy five feet (75') on either side of the line for a total of one hundred fifty feet (150') in width. This evaluation method is comparable to viewing the landscape with blinders on, seeing only what is in the immediate path of the proposed easement. For instance, this DEIS does not discuss the potential adverse impact of locating a new transmission line on known landslide hazard areas immediately adjacent to two existing gas pipelines simply because that existing pipeline use is outside the proposed 75' easement. Similarly, in the discussion of potential impacts to land use, the DEIS only considers the lands immediately within the

- 14793-5 Section 16.1, Wetlands, describes how wetlands were mapped within the study area. The study area was mapped using wetland delineations at the Sundial, Casey Road, and Baxter Road substation sites, aerial imagery interpretation, available databases including National Agriculture Imaging Program (NAIP) imagery, LIDAR imagery, Natural Resources Conservation Service (NRCS) hydric soils, U.S. Geological Survey (USGS) topography, WDNR hydrography, and U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory. Wetland delineations were completed on the Preferred Alternative and provide the information necessary for the Section 404 Joint Aquatic Resources Application submittal to Ecology. All mitigation will be proposed using the impact amounts determined through delineations and other aquatic resources fieldwork. Please see the response to Comment 14753-1 for more information on field work completed for the Preferred Alternative.
- 14793-6 Please see the response to Comment 14156-1.
- 14793-7 Comment noted.
- 14793-8 Please see the response to Comment 14793-5 regarding how wetlands were identified. Wetlands in the study area were mapped using wetland delineations at the Sundial, Casey Road, and Baxter Road substation sites and on the Preferred Alternative. These delineations were provided in the Section 404 Joint Aquatic Resources Application submittal to the US Army Corps of Engineers. All mitigation was proposed using the impact amounts determined through delineations and other aquatic resources fieldwork.
- A Biological Assessment has been prepared under Section 7 of the Endangered Species Act. While BPA has not formed a committee, it is coordinating with federal, state, and local agencies on project impacts and proposed mitigation.
- 14793-9 Please see the response to Comment 14596-1.
- 14793-10 As allowed by NEPA, BPA identified its preferred alternative in Section 4.9 of the Draft EIS. The reason why BPA identified the preferred alternative in the Draft EIS was explained in a Nov. 2012 fact sheet entitled "Why BPA prefers Central Alternative using Option 1" (see also the response to Comment 14472-3).
- 14793-11 As stated in the Notes to Readers and the resource chapters in the EIS, the analysis used two different terms to discuss areas. The project area is the general vicinity of the project alternatives. The study area is a more defined area, and was defined for individual resources and usually extended beyond the right-of-way. For example, the study area for recreation was 1,000 feet either side of a proposed corridor, that is, 2,000 feet total. Chapter 14, Geology and Soils, addresses landslides. Appendix J, Geologic Assessment – Geologic Hazards, Soil and Slope Gradient, Geology, Shallow Bedrock, Shallow Groundwater, is an extensive study of hazards in the area of the proposed project. Engineers consider these hazards and existing pipelines when designing transmission line facilities. Please also see the response to Comment 14495-1.

14793-11

proposed easement, as if cutting this swath through the environment will only impact the lands immediately underneath.

When the DEIS uses this limited study area to evaluate the potential impacts on the built and natural environment, ignoring potential impacts to existing uses on neighboring properties or environmentally sensitive lands located in the shadows of the towers, we can only assume the intention is to minimize the discussion and stifle the evaluation of the true impacts of the proposed action.

QUESTION 2: Will the BPA expand the study area an appropriate distance to effectively evaluate potential impacts of the proposed action? If not, why not?

VOLUME 1: Chapters 1-13

- **S.1.3 – Public Involvement**

When the BPA initiated scoping in the Fall of 2009, no new easements were proposed near the City of Castle Rock and the discussion between the BPA and the city revolved around potential siting of a substation northwest of city limits. With respect to potential location of the transmission line, the city's comments at that time were the BPA should avoid the urbanized area of Lexington *and all urbanized areas*. There was no reason to take a stance against the Central Alternative using Central Option 1 (Line F) because that option didn't exist – *there was nothing to oppose or even make comment on regarding the eventual preferred alternative.*

14793-12

Since the preferred alternative was presented and the city realized the new transmission line is proposed to surround the city on the north and east and encroach into our Water System Service Area and Urban Growth Area, the city has discussed our concerns with the DEIS project manager on multiple occasions, only to be told recently that information shared in those conversations meant nothing because comments need to be submitted in writing during the designated comment period.

At a recent open house event in Castle Rock, the BPA had a team of staff handle the attendees by engaging in a one way conversation where BPA received comments and questions in a panel setting, but provided no responses to the audience. The BPA staff attending the informational displays provided practiced and canned responses and legitimate concerns were simply discounted.

QUESTION 3: What specific comments were received during the scoping period's public involvement process that led the BPA to introduce the 'preferred alternative' when that option was not originally considered?

14793-12 Public engagement for this project included many forms of outreach and communication from BPA which are identified and described in Section 1.6, Public Involvement and Major Issues. All input BPA received at our public meetings (and other smaller meetings with individuals and groups) was considered as the project team determined alternatives and options for this project. Input received in conversation is not typically documented as part of the formal comment record, but was also considered. Submitting official comments on the Draft EIS and the Preferred Alternative is the only way to assure comments will be responded to directly in the Final EIS.

See response to Comment 14793-10 for information concerning BPA's identification of its preferred alternative in the Draft EIS.

Before BPA proposed Segment F as a new segment, BPA received many comments asking for an alternative farther north and east of existing alternatives. Segment F and other segments were developed by the project team, including siting engineers, to respond to these comments. Comments summaries from the scoping period and from the period between the end of the scoping period and release of the Draft EIS are on the project website.

14793-12 **QUESTION 4: What documents contain public or administrative comments that introduced the concept of creating the new Line F?** (Please also provide the section number or page number of the document).

14793-13 The scoping discussion included in this section is an incomplete summary of actual occurrences that led to selection of the preferred alternative. Chapter 4.7.2.1 states BPA originally considered a number of potential routes from the Castle Rock area south to BPA's existing Pearl Substation near Wilsonville, OR (the Pearl Routes) that were administratively dismissed prior to project scoping "although the Pearl Routes could address the transmission capacity issue" (page 4-22). The city believes BPA exceeded its administrative authority when dismissing the Pearl Routes from consideration and that the proper procedure to comply with NEPA and SEPA is to evaluate those alternatives as part of the DEIS. BPA's stated decision to dismiss the Pearl Route options based on potential high impacts is disingenuous considering the number of high impacts deemed acceptable under the selected preferred alternative.

14793-14 Cowlitz County Commissioners are on record that they prefer the new transmission line be located outside of populated areas by locating the new lines north and east of the proposed preferred alternative, a "North-East" option. The City of Castle Rock and the citizens in and around the city stand to be severely impacted by the proposed action. As proposed in the preferred alternative, the new transmission line would create a no-build easement across properties located inside the city's adopted Urban Growth Area and Water Service Area at a strategic location that may likely result in ceasing further expansion of the water system and growth to the north. Cowlitz County is a sparsely populated area and there are plenty of opportunities to use existing easements or otherwise avoid populated areas. The City of Castle Rock agrees with the Cowlitz County Commissioners that a "North-East" option should be included in the FEIS and request the BPA re-open scoping to consider that alternative.

14793-15 The BPA acknowledges the project is proceeding behind schedule and a "Non-Wires Solution" is being considered that will take measures to temporarily relieve congestion and add two to five years for project construction. Considering that the preferred alternative, Option "F", was quickly added between the scoping period and drafting the DEIS, there is sufficient time when preparing the FEIS to include evaluating the "Pearl Routes" and "North-East" options. The City of Castle Rock requests the scoping be re-opened and the FEIS include evaluation of the "Pearl Routes" and "North-East" alternatives.

14793-17 **QUESTION 5: Will the BPA re-open the scoping process and consider the options of using the "Pearl" and "North-East" routes? If not, why not?**

- **5.3.1.1 Land – Affected Environment**

14793-18 The preferred alternative (Line F) traverses through properties located within the City of Castle Rock's adopted Water Systems Service Area and Urban Growth Area, and the BPA's use restriction no-

- 14793-13 Please see the response to Comment 14472-3 concerning how BPA identified its preferred alternative. See also the response to Comment 14443-1 concerning the elimination of the Pearl Routes from detailed study in the EIS.
- 14793-14 Comment noted.
- 14793-15 Please see the response to Comment 14638-4 concerning the reasons why potential routes farther northeast were considered but eliminated from detailed study in the EIS.
- 14793-16 Please see the response to Comment 14638-4. BPA believes there are sufficient reasons for eliminating the Pearl Routes and routes to the northeast from detailed study in the EIS. It is therefore not necessary to re-open the scoping process for the EIS.
- 14793-17 Please see the response to Comment 14793-16.
- 14793-18 BPA's Preferred Alternative is routed outside of the current city limits of Castle Rock. Although homes cannot be built in BPA's right-of-way, water, sewer, natural gas and other utilities can be permitted to cross the right-of-way.

14793-18 build easements will have an effect on the municipality's ability to provide urban services (discussed in greater detail below).

14793-19 **QUESTION 6: Will the FEIS identify the City of Castle Rock in its description of affected environments under the Central Alternative and Options description on page S-9? If not, why not?**

• **S.3.1.3 Land – Impacts Unique to Action Alternatives, Central Alternative (pages S-13,14)**

The description of the affected lands rightfully identifies a high impact to landowners adjacent to new right-of-way and BPA easements restricting use. However, it does not identify that some properties along Line F, located between tower locations F13 and F16, are within the City of Castle Rock's adopted Water Systems Service Area, and that restricting the use of these properties will have an adverse impact on the city's ability to extend its urban services in that direction, which will likely stifle future urban growth north of the city.

Like all cities in Washington State, the City of Castle Rock is required to adopt a Water Systems Service Area Plan that is agreed upon by both Cowlitz County and the State of Washington's Health Department. The city is required to plan for future needs on the system based on anticipated population growth and is also required to estimate costs associated with expanding and maintaining its system by anticipating new connections and customers.

14793-20

The city recently paid \$43,750 for consulting services and adopted its updated Water Systems Plan on 12/12/12. Cowlitz County officially agreed with the service area and the geography of the Water Systems Plan is being used by the Cowlitz County Comprehensive Plan Update Steering Committee as the geography for the City of Castle Rock's "Future Urban Reserve Area", meaning the area is designated to develop at urban densities with urban services and the properties will likely be annexed into the city at some time in the future.

When the BPA encroaches into the city's service area with easements restricting use, as proposed in Line F, the city is affected because fewer homes will be built and the municipality will not see a return in its infrastructure investment. The BPA proposes to encroach into the Water System Service Area with a no-build easement one hundred and fifty feet (150') wide for a distance of 2,800 linear feet, which equals four hundred twenty thousand square feet (420,000 sf). The average lot size in a Castle Rock subdivision is six thousand square feet (6,000 sf) meaning that when this no-build easement cuts a swath through the service area, the city will lose, at a minimum, the ability to permit seventy (70) new single family residential units.

When considering that the Green Acres residential subdivision, located within city limits approximately two thousand feet (2,000 ft) south of the proposed Line F, is a combination of single family and duplex properties, it is conceivable the city is actually losing more than 70 potential new residential customers. Of course, the loss of these customers also applies to the city's wastewater system as well.

- 14793-19 The proposed project would cross unincorporated Cowlitz County properties northeast of Castle Rock, which is recognized on Page S-9. Since this section is a summary, it is not meant to list all communities or discuss details. More information about the city's water systems service and urban growth areas has been added to Section 5.1.2.1, Urban/Suburban in Chapter 5, Land, and Section 27.26.2.2, Cowlitz County Comprehensive Plan in Chapter 27 Consultation, Review, and Permit Requirements. Castle Rock is prominently displayed on all maps.
- 14793-20 Section S.3.1.3, Impacts Unique to Action Alternatives, is a summary of impacts to land uses the project crosses. The properties from towers F/13 to F/16 are in the Urban/Suburban, Agriculture, or Open Space land use categories for this project. Impacts range from low to high depending on the existing or planned land use. Chapter 5, Land, also discusses impacts to these categories along the Preferred Alternative. More information about the city's water systems service and urban growth areas has been added to Section 5.1.2.1, Urban/Suburban and Section 27.26.2.2., Cowlitz County Comprehensive Plan.

Please see the response to Comment 14793-18. Water, sewer, natural gas and other utilities can be permitted to cross the right-of-way. The property between towers F/14 and F/15 has not been platted and remains for sale. BPA would negotiate directly with the property owner at the time of easement acquisition.

Section 24.4, Economic Productivity, acknowledges that the project may negatively impact economic development. Mitigation measures in Chapter 3 have been identified as part of the design. Additional mitigation measures are recommended in Chapters 5 through 22. If BPA decides to build this project, it will continue to work with local governments to identify mitigation actions on or adjacent to BPA easement.

Conservative estimates of potential losses are:

70 new residential connections X \$2,770 (\$ of water connection rates) = \$193,900

+ \$4,100 (\$ of wastewater connection rates) = \$287,000

In addition to the direct loss of new utility customers, the encroachment onto these properties is significant because the location of the properties is in a strategic location that is vital to the overall extension of the system. As mentioned above, the existing water main lines extend to the Green Acres subdivision, approximately 2,000 feet south of the proposed Line F. If, as a result of a BPA no-build easement, a property owner loses the ability to develop his or her property at its highest potential it may not be economically feasible to extend the utilities through the subject property. Therefore, the true impact of the new transmission line could be the cessation of extending the urban services and the stifling of urban growth north of the city, west of the Cowlitz River.

14793-20

The estimates provided here are very conservative and meant to demonstrate there will be an impact to the city's ability to provide urban services. The estimates do not account for potential duplex or multifamily development, nor do they calculate potential customers lost if a developer decides larger lots are necessary to provide separation from the BPA right-of-way. It will be necessary to hire a consultant to re-evaluate the system plans and calculate the true financial impacts of the transmission line crossing through the urban service area.

QUESTION 7: Will the FEIS Section S.3.1.3 Land – Impacts Unique to Action Alternatives, Central Alternative - discuss the potential impacts to the City of Castle Rock's Water, Wastewater and Stormwater systems? If not, why not?

QUESTION 8: As mitigation for encroaching into the urban services area, will the BPA provide sufficient funds to calculate the true financial impacts of the transmission line crossing through the urban service area? If not, why not?

QUESTION 9: As mitigation for encroaching into the urban services area, will the BPA provide sufficient funds to extend the urban services through the point of crossing? If not, why not?

14793-21

• **S.3.2.3 Recreation – Impacts Unique to Action Alternatives, Central Alternative (page 19)**

As mentioned in the prologue above, the BPA's evaluation of the environment is deficient because only the lands within the proposed 150' wide easement are considered. As it relates to the impacts of the new towers and transmission lines on recreation, this 'blinders on' technique is especially ineffective for gaging the true impacts in and around the City of Castle Rock.

Line F is proposed to cross the Cowlitz River, and towers F16 and F17 are proposed to be located on the shorelines of an important stretch of the Cowlitz River renowned for both Salmon and Steelhead fishing. If constructed, the proposed line will be situated approximately one and a half

14793-21 The study area for recreation resources is defined in Section 6.1, Affected Environment, in Chapter 6, Recreation. It includes a 2,000-foot-wide corridor along the entire route of each action alternative, 1,000 feet on either side of the transmission line centerline.

Fishing activities are considered to be compatible with right-of-way uses. Please see the response to Comment 14493-2.

- 14793-21 miles south of the confluence of the Toutle River and approximately one half mile north of the Al Helenberg Memorial Boat Launch, which opened in June, 2010.
- The recreational impacts to local citizens would be real and long-term. Boaters and anglers using that stretch of the river will be adversely affected by the visual and noise impacts of the hulking towers and overhead lines. In addition to affecting the quality of life for local residents, the potential impact to the commercial community cannot be understated.
- 14793-22 Tourism related to recreational uses on and around the Cowlitz River is important to the community. The potentially impacted stretch of the Cowlitz River provides fishing opportunities that draw anglers from the entire Pacific Northwest when the fish are running. The city's Comprehensive Plan and Strategic Marketing Plan provide the goals, policies and objectives to develop recreation properties as a means of drawing tourists. The City of Castle Rock has spent \$1,530,600 on planning, designing and constructing the boat launch. In fact, it is still being improved under Phase II of the development. It is conceivable that recreational charter boat captains will avoid the area because of the aesthetic impacts caused by the transmission line, especially the towers.
- The North County Recreational Facility is located approximately 2,500 feet south of the proposed line on property owned by Castle Rock School District. As its name suggests, the park is a regional facility with amenities and events that serve the citizens of North Cowlitz County and Southwest Washington/Northwest Oregon. On the facility there exists a portion of the Riverfront Trail system, which is the City of Castle Rock's portion of a larger regional trail system identified in the Regional Trails Plan adopted by all the local jurisdictions. The City of Castle Rock has applied for grant funds to improve the northern extent of that trail at the very point of the park property closest to the proposed new towers and transmission lines. For people using the trail, the experience will be diminished because of the adverse impacts of the towers and transmission lines.
- 14793-23 Additionally, the City of Castle Rock believes if the BPA encroaches through residential properties as proposed in the preferred alternative, it will essentially negate future discussions of expanding the regional trail system to the north, as it will not be appropriate to request further dedications of private lands for public use. Therefore, the city and county will have to look south for regional trail expansion and connectivity and will likely have to build a bridge to cross the Arkansas Creek and connect to the existing Camelot Trail in Cowlitz County, an option that would otherwise not be necessary were it not for the proposed action. Therefore, the City of Castle Rock requests five hundred thousand dollars to mitigate for impacts to recreational uses as follows:
- \$100,000 for the bridge engineering and construction
 - \$200,000 to buy properties and or easements across 4 properties to connect to the Camelot Trail
 - \$100,000 for construction of the trail
 - \$100,000 for mitigation and creek enhancement.

14793-22 Please see the response to Comment 14493-2.

14793-23 The City of Castle Rock has a Final Parks & Recreation Plan dated April 2011 that includes updates for proposed extensions of the Riverfront Trail system. BPA contacted the City of Castle Rock and was told the proposed extensions have not been built. Discussion of the Riverfront Trail (east) is included in Chapter 6, Recreation.

BPA considers trails and rights-of-way to be compatible recreation uses. BPA would meet with and discuss conditions of right-of-way agreements and compensation with affected property owners. See also the response to Comment 14097-1.

14793-24 **QUESTION 10: Will the FEIS Section S.3.2.3 Recreation – Impacts Unique to Action Alternatives, Central Alternative - discuss the potential impacts to the City of Castle Rock's recreational uses of the Cowlitz River and the Regional Trails System? If not, why not?**

14793-25 **QUESTION 11: As mitigation for causing visual, noise and fish habitat impacts to disturbing a stretch of the Cowlitz River, will the BPA provide sufficient funds to stock the section of the river, on an annual basis, with salmon and steelhead fry? If not, why not?**

14793-26 **QUESTION 12: As mitigation for causing disruptions to regional trail expansion potential, will the BPA provide sufficient funds to construct a trail crossing of Arkansas Creek? If not, why not?**

- **S.3.3.3 Visual Resources – Impacts Unique to Action alternatives, Central Alternative**

Included within the DEIS Appendix D is a report by Power Engineers titled Environmental Impacts Associated with Overhead and Underground 500-kV Transmission Line Construction, Operation and Maintenance Activities. This report, hereafter referred to as the "Power Report", does not discuss the impacts of BPA's proposed I-5 Corridor Reinforcement Project, but rather it provides information about potential environmental impacts associated with 500-kV transmission lines in general. Its stated objective is to assist transmission line project proponents in assessing the potential environmental impacts for their own specific projects (page 1). Since it is included in the appendixes, we assume BPA staff used it when preparing the DEIS.

14793-27

Section 3.8 of the report, pages 46-51, provides proponents with techniques for assessing the value of visual resources, discusses potential impacts to visual resources and suggests mitigation strategies for minimizing potential impacts. The report states, in part, that designated scenic byways and steep sloped terrains are sensitive areas with respect to visual resources and the potential impacts to these visual resources need to be analyzed as part of an environmental analysis.

State Route 504 is designated as both a State Scenic Byway identified in 47.39 Revised Code of Washington (RCW) and a National Forest Scenic Byway. Line F crosses SR 504 just northeast of city limits, inside the city's designated Urban Growth Area (UGA). Towers F20 and F21 are proposed to be located in close proximity to the state highway and will have an adverse impact on the visual resource values. Additionally, towers F21 through F61 and their service roads are proposed to be located in steep sloped areas running north to south along the Cowlitz/Chehalis Foothills ridgeline that will have an adverse impact on views from the Castle Rock area.

Unfortunately, the DEIS does not adequately identify these sensitive areas, nor does it sufficiently analyze potential impacts of proposed Line F and the associated towers and service roads. DEIS Appendix E, Visual Resource Report in Support of the I-5 Corridor Reinforcement Project Environmental Impact Statement, prepared by Golder Associates (hereafter referred to as the Golder Report) includes an incorrect statement that the views along the ridgeline in proximity to

- 14793-24 Section S.3.2.3, Impacts Unique to Action Alternatives, provides an abbreviated discussion of the full impact analysis in Chapter 6, Recreation. Chapter 6 provides a complete discussion of potential impacts on the Cowlitz River and the Regional Trails System in the City of Castle Rock. Please also see the response to Comment 14493-2.
- 14793-25 Please see the response to Comment 14493-2. Section 6.2.2, Impacts Common to All Alternatives, discusses impacts to recreational fishing. Chapter 19, Fish, discusses impacts to fish and includes recommended mitigation measures. If BPA decides to build this project, it will continue to work with local governments to identify mitigation actions on or adjacent to BPA easement.
- 14793-26 Please see the response to Comment 14793-23. If BPA decides to build this project, it will continue to work with local governments to identify mitigation actions on or adjacent to BPA easement.
- 14793-27 State Route 504 is discussed in Chapter 6, Recreation, and Chapter 7, Visual Resources, with viewer sensitivity identified as “high.” BPA acknowledges that the project could create moderate visual impacts in the Castle Rock area. Through project design and mitigation measures, BPA has worked to minimize impacts to visual resources for the action alternatives. Mitigation measures are provided in Table 3-2, Mitigation Measures Included as Part of the Project, and Section 7.3.8, Recommended Mitigation Measures. Please see the response to Comment 14171-10 for further explanation of the methodology used in the visual assessment. Photographs and simulations are included for the Castle Rock area, including 2 views from the SR 504 (see Figures 7-11 through 7-13).

- 14793-27 Castle Rock are "non-dramatic and of little visual interest" (page 9). Further, it states "The visual characteristics of this region are common in much of southwestern Washington and northwest Oregon." (page 10). Again, the city finds this assessment to be incorrect. In fact, this section of the Cowlitz/Chehalis Foothills is the closest to I-5 than anywhere else and there are viewing opportunities here that are special. One gets a calming, comforting and protected feeling from the enveloping atmosphere of the ridgeline. Couple the closeness of the ridgeline to the east with the closeness of the Cowlitz River to the west and one understands why people value these views. The views here are special and will soon become unique as the metropolitan areas continue to develop.
- 14793-28 Table 1-1 on page 2 of the Golder Report lists the viewpoints selected for the consultant to perform a visual resource assessment. **Incredibly, no points along Line F, BPA's preferred alternative, were selected for the view impact analysis!** The report states: "Due to the size of the project and remoteness of certain segments, only selected key areas were visited" (page 2). Well, the view locations near Castle Rock are not in remote areas; they are immediately off the interstate highway. The vast majority of the view analysis locations were in the Washougal/Camas area, which happens to be closest to the consultant's office in Portland. It is disingenuous for the consultant to say local view concerns were not raised previously, because Line F was not proposed during the original scoping and so we had no knowledge BPA was proposing to impact the views in our area.
- 14793-29 The northeast corner of the city is referred to as "The Gateway to Mount St Helens" and approximately five hundred thousand visitors travel through on the scenic byway where the BPA proposes to locate Line F. For some visitors travelling long distances, this will be their only impression of the Pacific Northwest and Towers F20 and F21, proposed to straddle SR 504, will be particularly impactful to the views of these visitors. Impacting the views will likely diminish the experience for tourists and will have a great financial impact to local businesses that are comprised of hotels, gift shops, restaurants, and visitor centers all of which rely on income generated by tourists.
- The City of Castle Rock believes it will be necessary to focus the viewing attention away from the new transmission line, which effectively means focusing attention away from the Gateway to Mount St. Helens. In order to do so, it may be necessary to construct new viewing platforms focusing on the Cowlitz River, the Cowlitz Valley and other sections of the foothills not adversely impacted by the siting of the transmission lines and towers. It will also be necessary to install wayfinding signs directing tourists to these new facilities.
- 14793-30 **QUESTION 13: Will the FEIS Section S. 3.3.3 Visual Resources – Impacts Unique to Action alternatives, Central Alternative - discuss the potential impacts to the City of Castle Rock's visual resources? If not, why not?**
- 14793-31 **QUESTION 14: Will the BPA direct its consultant to work with the city and perform a visual impact assessment of views identified by the city? If not, why not?**

- 14793-28 Chapter 7, Visual Resources, and Appendix E explain the methodology used for the visual assessment. Realizing that there are a large number of potential viewing locations that could have been chosen for simulations, and using the methodology indicated above, we identified key public viewing locations where visual changes could occur. Generally, Segment F was considered to have relatively few residences, roads, or public recreation areas than other segments. Appendix E includes the Impact analysis was conducted for all segments of the action alternatives.
Photographs and simulations are included for the Castle Rock area which include viewpoints of Segment F (see Figures 7-15, 1-16 and 7-17).
- 14793-29 Viewer Sensitivity is based on the standards in the BLM's Visual Resource Management System. This system is discussed in Chapter 7, Visual Resources, and Appendix E. Section 6.2.5.2, Operation and Maintenance, discusses impacts to SR 504 and sightseeing. Section 11.2.2.8, Community Values, discusses recreation and tourism-related socioeconomic impacts. Mitigation measures are provided in Chapter 3, Project Components and Construction, Operation, and Maintenance Activities, Chapter 7, Visual Resources, and Appendix E.
Photographs and simulations are included for the Castle Rock area with 2 views from the SR 504 (see Figures 7-11 through 7-13).
- 14793-30 The Summary chapter provides an abbreviated discussion of the full impact analysis in Chapters 5 through 22. The Central Alternative as it passes northeast of Castle Rock is discussed in Section 7.3.5, Central Alternative. The Central Alternative is also discussed in Appendix E.
Please see the response to Comment 14171-10 for further explanation of the methodology used in the visual assessment.
Photographs and simulations are included in the Final EIS for the Castle Rock area (see Figures 7-11 through 7-13).
- 14793-31 Please see the response to Comment 14793-28.

14793-32

QUESTION 15: As mitigation for causing visual impacts to sensitive view corridors, will the BPA provide sufficient funds to construct new viewing platforms and wayfinding signs? If not, why not?

• **S.3.4.2 Electric and Magnetic Fields – Impacts Common to Action Alternatives**

The city recognizes there are not conclusive findings stating that electric and magnetic fields cause health impacts and we do not want to be alarming regarding this sensitive issue. However, the DEIS states there are reports finding there are potential health impacts associated with the magnetic effects of transmission lines when certain levels are exceeded and the city believes the BPA is not doing enough to avoid exposing people to those levels.

Research included in Appendix G of the DEIS, Research on Extremely Low Frequency Electric and Magnetic Fields and Health, states there is a statistically significant association between rare average magnetic field exposure above 3-4 mG and childhood leukemia. Specifically, the report states the pooled analysis "indicated that children with leukemia were about two times more likely to have had an estimated magnetic field exposures above 3-4 mG" (page 15). However, in Appendix F, Electrical Effects, the BPA proposes to radiate an average of 12 mG at the edge of the right-of-way! (page 37) That same table states the average magnetic field of 4 mG, which is still associated with potential health risks will be emitted one hundred and fifty feet from the centerline.

14793-33

The city believes the BPA should avoid locating the transmission line in populated areas. While that may not be possible in metropolitan areas, there are certainly plenty of opportunities to locate the lines away from populated areas in sparsely populated Cowlitz County. Regardless of what route the BPA eventually chooses, the city believes that when negotiating right-of-way easements the BPA should actively notify individual property owners of the radiation levels that will be emitted at various distances from the lines and that information should be drafted in laymen's terms. Individual property owners should have the right to select the easement width they feel comfortable with until such radiation levels fall below the documented levels of health risk association.

QUESTION 15: Will the BPA notify individual property owners of the radiation levels that will be emitted at various distances from the lines and allow individual property owners the right to select the easement width they feel comfortable with until such radiation levels fall below the documented levels of health risk association?

S 3.7.3 – Socioeconomic Impacts Unique to Action Alternatives

14793-34

The city finds the Socioeconomic impacts have not been sufficiently identified and discussed, specifically as it relates to potential losses to the Castle Rock School District of funds obtained through timber-harvest revenues on state trust lands. In its formal comment letter, WA

- 14793-32 Through project design and mitigation measures, BPA has worked to try to minimize residual impacts to visual resources for all action alternatives. Mitigation measures are provided in Chapter 3, Project Components and Construction, Operation, and Maintenance Activities, Chapter 7, Visual Resources, and Appendix E. These mitigation measures can help reduce visual clutter and minimize visual intrusion of a new line. If BPA decides to build this project, it will continue to work with local governments to identify mitigation actions on or adjacent to BPA easement.
- 14793-33 Appendix F and the updated Appendix F1 include calculations of magnetic fields along the segments and at various distances from the proposed line.
- BPA calculates the appropriate transmission line right-of-way width based on industry standards for safe clearances to activities that might occur outside the right-of-way.
- Please see the response to Comment 14771-5.
- 14793-34 Please see the response to Comment 14665-9.

14793-34 DNR points out the DEIS uses incorrect assumptions when conducting its analysis and that the DEIS understates the potential impacts. DNR recommends "At a minimum, an analysis of impacts to the local economy caused by impacts to the timber industry should include an estimate of: (1) The revenues to be realized in the short-term due to immediate harvesting of timber from the proposed right-of-way; (2) The revenues over the life of the project that will be forgone due to conversion of timberland to non-timber production on the proposed right-of-way."

14793-35 A local citizens action group, No Lines in Populated Areas, produced an analysis titled I-5 Corridor Reinforcement: Economic and Human Impacts to Southwest Washington State from Bonneville Power Administration's Transmission Line that, quite frankly, does a more thorough analysis of socioeconomic impacts than attempted in the DEIS. Their analysis cites credible references and among its conclusions is that the DEIS does not sufficiently address the tax-shift burden that will be borne by all tax payers as a result of removing properties with urban level development potential from the tax rolls. As discussed above, the City of Castle Rock stands to lose a minimum of seventy residential lots from its Water Service Area, and the financial impact of those losses should be discussed in the Socioeconomic discussion as well.

14793-36 **QUESTION 16: Will the BPA analyze the lost revenues over the life of the project that will be forgone due to conversion of timberland to non-timber production on the proposed right-of-way? If not, why not?**

14793-37 **QUESTION 17: Will the BPA provide the Castle Rock School District with funds to mitigate the lost revenues over the life of the project that will be forgone due to conversion of timberland to non-timber production on the proposed right-of-way? If not, why not?**

QUESTION 18: Will the BPA conduct a more thorough socioeconomic analysis that includes a study of the tax-shift burden that will result from removing properties with urban-level development potential from the tax base? If not, why not?

S.3.10.3 – Geology and Soils, Impacts Unique to Central Alternative and Options

14793-38 This section of the DEIS is particularly disturbing to citizens in and around the City of Castle Rock because it neglects to discuss potential impacts associated with locating the proposed transmission line, its towers and associated service roads on known landslide hazard areas in close proximity to the existing Williams Company gas pipeline. This pipeline exploded near Castle Rock on March 6, 1995 and again near Kalama, also in Cowlitz County, on February 9, 1997, both times due to landslide occurrences. The FEIS needs to discuss this issue, and we believe a different alternative for locating the transmission line needs to be identified.

Please see the map titled BPA Proposed Transmission Line in Relation to the City of Castle Rock's Environmental Concerns prepared by the City of Castle Rock and attached with this letter as Exhibit A. Note towers F22 through F28 are proposed to be located on steep slopes identified in the DEIS as high

14793-35 BPA has reviewed the document cited by the commenter; this document is available at http://www.nowaybpa.com/images/stories/NLPA-ECONOMIC_AND_HUMAN_IMPACTS_OF_BPA-I5.pdf (last accessed Apr. 24, 2015). To the extent that the commenter is suggesting that the analysis of socioeconomic impacts in the EIS is not sufficient because of the information in this document, BPA believes that the project's potential socioeconomic impacts are adequately addressed in Chapter 11 of the EIS. Furthermore, while the document cited by the commenter may have used a particular approach to reviewing property tax and property value impacts, BPA believes that the methodology and approach that BPA relied on to analyze potential property tax and property value impacts was reasonable. Regarding the property in the City of Castle Rock's Water Service Area that is referenced by the commenter, this property has been vacant since this project began in 2009 and remains for sale by the owner. No permits have been granted for construction of homes nor applications been made for a future subdivision. Accordingly, whether the property ultimately will be subdivided into residential lots in the future is highly speculative at this point. If BPA were to build the I-5 Project across this property, it would negotiate easements for the transmission line right-of-way and access roads. The underlying landowner would still continue to pay taxes on the property.

14793-36 Section 11.2.2.7, Private Timber Production, discusses the impacts related to forgone timber production on private lands, and Section 11.2.2.4, Government Revenue, discusses the impacts related to the same on WDNR lands. Tables 11.2.3 through 11.2.7 show the value of forgone revenue from conversion of timberland to transmission line right-of-way and other areas where timber is permanently cleared.

Federal law allows BPA to compensate property owners whose property the project physically affects. If BPA decides to build this project, timber landowners whose land the project will cross will have an opportunity to negotiate compensation with BPA. Also, BPA will continue to work with local governments to identify appropriate mitigation on or adjacent to BPA easements.

14793-37 Please see the response to Comment 14793-35.

14793-38 BPA has met with representatives of Williams Pipeline on-site for the Preferred Alternative to share information and discuss potential impacts. These discussions will continue.

Chapter 14, Geology and Soils, describes site-specific investigations that would be performed at potentially landslide prone areas to evaluate the potential for these areas to experience landslides. These investigations have begun and will continue if BPA decides to build this project. To the extent possible, towers and access roads will be sited to avoid potentially landslide prone areas. If needed, mitigation measures to reduce the risk of landslides to the project, other utilities, and the public would be implemented (e.g. developing a landslide monitoring plan).

erosion hazard areas. Tower F27 is proposed to be located directly on top of a DNR mapped known landslide occurrence, also known as a scarp. The DEIS does not discuss the potential impacts of locating the towers on these slopes in close proximity to the existing pipeline, which is troubling considering:

- The Geologist who conducted the study included in Appendix J informed the city he was not contracted to evaluate potential impacts of the project on existing utilities and so the pipeline is not discussed in the DEIS.
- The DNR Geologist did not review this issue because that agency's review of the DEIS was limited to DNR managed lands.
- WA's Utilities and Transportation Commission (UTC's) Pipeline Safety was not routed the DEIS for comment and their Engineer only became aware of the issue when it was brought to his attention by the city. We are not aware if the UTC's Pipeline Safety ultimately reviewed the DEIS and what comments, if any, were provided.
- Williams Company is currently undergoing an environmental review to add a third gas line to that existing easement in order to serve development at the Port of Kalama. William's manager of that project was not routed the DEIS and was surprised to learn from the city that BPA is proposing to put towers on the slope above their existing and proposed lines.

14793-38

Please note that BPA is on record as stating on of the reasons it administratively dismissed the "Pearl Route" alternatives is for safety reasons, and terrorist concerns, and they could not locate the new line in close proximity to existing transmission lines. Yet, they find it appropriate to locate the new line on known slope hazard areas immediately adjacent to the gas pipelines with a history of exploding? The city finds this position illogical and unacceptable and requests the FEIS include a detailed site specific geotech analysis of the situation and remove the Central Alternative using Central Option 1 (Line F) from consideration as the preferred alternative.

QUESTION 19: Will the BPA select another alternative that avoids locating the proposed transmission line, its towers and associated service roads on steep slopes with known land slide hazards immediately adjacent to and on top of existing gas pipelines? If not, why not?

S.3.12.3 – Wetlands, Impacts Unique to Central Alternative and Options

As mentioned above, both WDFW and DOE, two state agencies directly responsible for issuing state permits related to wetland impacts, found the analysis in the DEIS insufficient and have requested additional information, including site specific delineations be provided. In a letter dated February 27, 2013 that was submitted to BPA as part of the public comments, Leyda Consulting, Inc. performed a detailed analysis of BPA's use of GIS and remote sensing data as the basis for the wetland discussion and

14793-39

14793-38 Please also see the response to Comment 14665-40.

14793-39 The GIS and remote sensing method developed and used to assess potential wetland areas and impacts during the Draft EIS stage was applied in an equal manner across all action alternatives. This approach to the analysis was reasonable and allowed the method developed to be applied in the same manner for each alternative and provided a level of precision that is appropriate for comparison at the Draft EIS stage. Field delineation of wetlands began in 2013 and continued into 2015. Delineation methods are consistent with federal and state requirements. The requirements of the Shoreline Management Act have been discussed with both Clark and Cowlitz counties and BPA would meet the substantive requirements of the Act where practicable. Information provided to the counties would include a full and accurate account of wetland impacts.

14793-39

found the methodology to be flawed in many aspects and out of compliance with the 1987 Delineation Manual (as did DOE).

The City of Castle Rock contends the DEIS wetland analysis is flawed and the selection of Central Alternative using Central Option 1 (Line F) (or any other preferred route for that matter) is inappropriate until the true impacts are identified. We agree with Clark County's position that when this project attempts to receive local Shoreline Management Permits (for which it is not exempt), the analysis in the EIS will be deemed insufficient.

QUESTION 20: Prior to making a determination on selecting the route, will the BPA conduct proper wetland analysis in accordance with the 1987 Delineation Manual and as requested by both DOE and WDFW? If not, why not?

- **Chapter 27 – Consolation, Review, and Permit Requirements**

Because the proposed preferred alternative encroaches into both the City of Castle Rock Urban Growth Area and Water Systems Service Area, we request to be identified officially as a party for consultation.

Included in the discussion of consultation, review and permit requirements is a description of how Washington State's Energy Facility Site Evaluation Council (EFSEC) coordinated state agencies' review of the DEIS. While we appreciate the fact that EFSEC ultimately shared state agencies' comments with the City of Castle Rock, those comments were only shared after the city submitted public document disclosure requests and the city received the comments on Friday, March 22 with barely few working hours remaining before our comments were due. Obviously, this did not allow reasonable time for our staff and the public to effectively use the information. This is unacceptable on various levels, including:

14793-40

- o State agencies were contractually obligated to provide comments no later than thirty days from the issuance of the DEIS. The city recognizes there have been staffing cutbacks to all agencies and they were stressed to perform reviews. However, had they performed their reviews in the time required under their contracts, city staff and the public would have been made aware of issues and concerns raised by agencies' experts and had time to gauge how these issues affected the local environments.
- o While preparing their comments, staff from these state agencies were unable to assist local governments because they were contractually obligated to report only to EFSEC. Small cities like Castle Rock do not employ wetland biologists, geotech engineers or other experts and rely on state agencies to assist with permit reviews when questions of a scientific nature arise.
- o Please note the reviews of the experts from state agencies were limited in their scope and breadth of their review. For instance, DNR states their review of the DEIS was limited to potential impacts upon DNR managed lands only. When city staff attempted to discuss potential impacts of locating towers on known landslide areas as mapped by

- 14793-40 Section 27.26.2, Washington Local Plans and Programs, has been revised to reflect that the transmission line corridor could pass through a future urban growth area for the City of Castle Rock. Concerning public review of agency comments, while under NEPA there is no formal review period identified for a Final EIS, BPA will consider comments that it receives on the Final EIS to the extent that time allows.

14793-40

DNR, we were told they were unable to assist. That is just an example – representatives of the other agencies responded similarly. (DAHP staff was not contacted because it was obvious the DEIS did not attempt to discuss impacts to cultural resources and so we did not waste their time).

We do believe EFSEC is committed to coordinating and streamlining the permit process and that stifling state agencies from assisting local governments was an unintended consequence of the agencies' contractual obligation to report to EFSEC. We ask that BPA, EFSEC, the Army Corps of Engineers and the agencies ensure there is sufficient time for public review of agency comments prior to the commenting deadline of the FEIS.

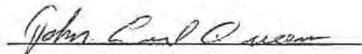
Conclusion

14793-41

The City of Castle Rock is committed to protecting the health, safety and well-being of the citizens in city limits and our growth area. We have demonstrated the transmission line, as proposed, will have immediate and long-term adverse impacts to our community far greater than any other and that BPA erred when selecting the Central Alternative using Central Option 1 (Line F) as the preferred alternative. We have also demonstrated the DEIS is deficient in assessing true impacts to the environment and fails to serve as a tool for decision making. We urge the BPA to use the time it will gain by implementing actions identified in the "Non-Wires Solution" and re-open the scoping process to include evaluate both the "Pearl" and "North-East" routes.

We hope to be included as a consulting entity and look forward to working with the BPA, EFSEC, the Army Corps of Engineers, state agencies, property owners and other stakeholders in finding a fair and equitable solution to the challenges presented by the proposed actions.

Sincerely,

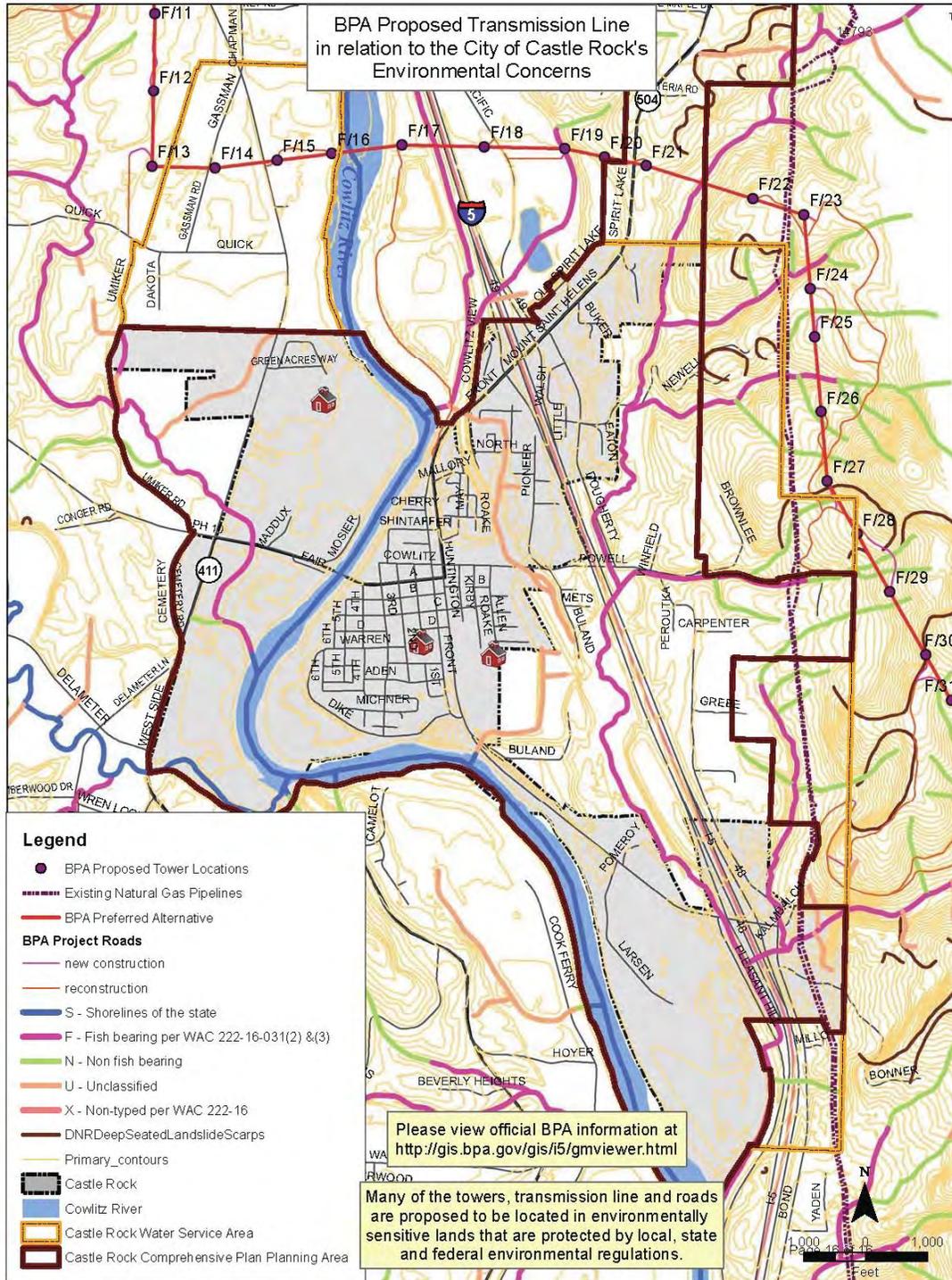


John Earl Queen, Mayor Pro Tem

Attachments: BPA Proposed Transmission Line in Relation to the City of Castle Rock's Environmental Concerns prepared by the City of Castle Rock

- CC: Castle Rock City Council Members
- Congresswoman Herrera Beutler
- Cowlitz County Commissioners
- Clark County Commissioners
- Steve Manlow, U.S. Army Corps of Engineers
- Castle Rock School District
- Castle Rock Chamber of Commerce
- Frank Randolph, City Attorney

- 14793-41 Please see the response to Comment 14793-16. BPA will continue to work with the City of Castle Rock and the other entities listed to avoid or minimize potential impacts from the proposed project.



This page intentionally left blank.

14794

B O N N E V I L L E P O W E R A D M I N I S T R A T I O N

BPA's Proposed I-5 Corridor Reinforcement Project Draft environmental impact statement comment form

Public review of and comment on this draft EIS will continue through March 1, 2013. Comments should be as specific as possible, with references to particular pages, sections and chapters. Additional or clarifying information that should be considered is helpful. Factual corrections are appreciated. BPA staff will review all comments received and respond to them in the final EIS.

Name (will be included with your comment in the final EIS) Tom & Linda Wilson

Address _____

Please add me to the mailing list

Please remove me from the mailing list

Comments:

14794-1

First of all; in regards to trespassing, misuse of public and private land, noise, erosion, impact to wildlife and the spread of evasive plant life, chapter 5 of the EIS draft mentions but does not address these issues. We would like you to note that you have not mentioned a solution or a remedy to solve any of these problems on your part. B PA needs to budget every year for patrolling and enforcement of trespass and environmental laws on public and private lands and the misuse of off road vehicles within BPA's right of way.

14794-2

Secondly ; the maps that are sent out by you with the road names are grossly inaccurate. How can you even begin plans or even permitting with such inaccurate maps!
For example: Aho Carson Road is noted on your maps as Aho Carson Creek Road. There is no Aho Carson Creek Road. Davis Peak and Aho Carson Roads are transposed on the map that you have sent out.

**Comment period extended
until noon on March 25, 2013**



1 of 1

- 14794-1 Chapter 5, Land, acknowledges that the impacts the commenter describes from the proposed project could occur. Section 5.2.8, Recommended Mitigation Measures, identifies potential mitigation measures BPA could take to control unauthorized access, periodic inspection for unauthorized access, and damages from unauthorized access. Mitigation measures included as part of the project, including measures that would mitigate these impacts, and other impacts raised by the commenter, are included in Table 3-2.
- 14794-2 BPA provided the commenter a screenshot of the November 2012 interactive map available on the project website. The November 2012 interactive map is powered by Google maps and inherits any naming inaccuracies of Google maps. The July 2014 interactive map update displays Aho Carson Road as the commenter describes.

While the interactive maps may have some inaccuracies, it is generally a helpful tool that enables stakeholders to study the proposed project in detail and provide BPA with useful feedback. It is not the only map used by the project team.

The aerial photomaps found in Appendix C of the Draft EIS have Aho Carson Road labeled correctly. The commenter was provided with a CD copy of the Draft EIS and it is also available on the project website.

March 23, 2013

Mr. Mark Korsness, Project Manager

- 14795-1 We ask that you you reopen your project scoping and reevaluate the northeastern route or the Oregon site alternative before you make a final decision. The reasons for this request are listed below.
- 14795-2 THE TRANSMISSION LINE THROUGH THE CASTLE ROCK URBAN AREA THAT YOU ARE PROPOSING WILL REDUCE THE PROPERTY VALUE AND WILL GREATLY AFFECT THE PROPERTY TAX RATES OF CITIZENS OF THE CASTLE ROCK SCHOOL DISTRICT.
- 14795-3 THE PROPOSED LINE WILL DECREASE THE DESIRABILITY OF PEOPLE WISHING TO MOVE INTO THE CASTLE ROCK AREA.
- 14795-4 IT WILL DISCOURAGE POTENTIAL INDUSTRIES AND BUSINESSES FROM LOCATING IN THE CASTLE ROCK AREA.
- 14795-4 Please evaluate better routes that will have less financial, health, and future growth impacts on the children and adults of north Cowlitz County.

Fred and Janet Amrine
Retired Public School Educators

14795-1 Please see the response to Comment 14793-16.

14795-2 Please see the response to Comment 14642-2.

14795-3 Please see the response to Comment 14328-5.

14795-4 Comment noted.

14796

JANE M REVESZ, PETER REVESZ, PATRICIA LEE WITTER

03/25/2013

To Whom It May Concern,

14796-1

Our recognition of the applicability of the DNR Final Comments is in the attached file. It is unfortunate that this DEIS process severely curtails our time to analyze this very useful, to- the-point document in regard to the BPA I-5 Project.

Peter and Jane Revesz Patricia Lee Witter

March 25, 2013

To Whom It May Concern:

14796-2

We have just received the Final Comments of the Department of Natural Resources on the BPA I-5 Corridor Reinforcement Project. It shows that ongoing analysis and the exchange of information with BPA in interactive communications over several years had led to DNR's identification of many real issues and ongoing concerns that are imposed on productive forestlands from a large utility project. The actual observations and results in the field helped identify the real problems that arise on an ongoing basis. Most of the issues identified by the DNR are also relevant to small forest landowners (Witter/Revesz Family Tree Farms) and we are stating firmly that we expect to utilize their hard work and demand that the considerations that they have itemized be recognized as applicable to us as a timber business as well.

We have also addressed, under separate cover, these and other issues for the ongoing presence of a high-voltage power line.

Sincerely

Peter T. and Jane M. Revesz

[address]

Phone: [phone number]

e-mail: [email]

Patricia Lee Witter

[address]

Phone: [phone number]

e-mail: [email]

14796-1 Comment noted.

14796-2 Comment noted.

14797

From: noreply@bpa.gov
Sent: Monday, March 25, 2013 4:09 PM
Subject: BPA I5 Comment Submission Confirmation

Thank you for your interest in the Bonneville Power Administration's I-5 Corridor Reinforcement Project.

A copy of your information, as submitted using our online form, is included below for your records. If you provided your contact information and submitted a question we can answer at this time, you will receive a response. Your contact information also will be added to our project mailing list.

Sincerely,
Bonneville Power Administration

Name: John A Mills
Organization:
E-mail:
Phone:
Address:

Group type: Business

Please ADD me to the mailing list.

14797-1 **Comment:** RE: Price Effects of HVTLs on Abutting Houses; Appraisal Journal, Winter 2013. This very recent article examines property value effects in Portland and Seattle from BPA's High Voltage Transmission Lines.

[Attachment](#)

14797-1 Please see the response to Comment 14140-2.

The Price Effects of HVTLs on Abutting Homes

by Steven C. Bottemiller, MAI, and Marvin L. Wolverton, PhD, MAI

The Bonneville Power Administration (BPA) was created in 1937 to market electricity generated at the then new Bonneville Dam on the Columbia River. In fulfillment of its mission, BPA now operates a system of 15,000 circuit miles¹ of high-voltage transmission lines (HVTLs). BPA's 300,000-square-mile service area includes the states of Washington, Oregon, and Idaho as well as parts of extreme northeastern California, western Montana, northern Nevada, extreme northwestern Utah, and far western Wyoming. BPA is a federal agency within the US Department of Energy and operates as a nonprofit entity, selling wholesale power to the region's utility companies at cost. It provides about one-third of the electricity used in the Pacific Northwest region.

Although a high percentage of its HVTLs cross open and agricultural land in these western states, they also run throughout the urbanized western regions of Oregon and Washington in and around dense housing markets in Portland and Seattle. Also, BPA is adding HVTLs to its grid to keep up with population growth in the Pacific Northwest, especially in the urban centers of Portland and Seattle. Its HVTLs primarily range in voltage from 69 kV to 1,000 kV,² although the most frequently occurring line voltages are 115 kV (25.4% of the HVTLs), 250 kV (35.0% of the HVTLs), and 500 kV (31.1% of the HVTLs). The HVTLs abutting the study properties range from 115 kV to 500 kV.

BPA rights of way consist of HVTL easements maintained to prevent line damage from trees, other forms of vegetation, and structural improvement interference. Benefits of right of way management include reducing the possibility of adverse electrical impacts on the environment. BPA rights of way also provide amenities to the cities they cross. BPA permits the construction of parks and trails in some locations on its fee title property. Alternatively, many of its easements are jointly used by abutting property owners, who own the underlying fee title, for gardening or other agrarian purposes subject to BPA's need for maintenance access.

1. A *circuit mile*, as the name implies, is the distance covered by a circuit. A transmission right of way often accommodates more than one circuit. For example, a right of way containing three circuits would include three circuit miles for each right-of-way mile.
2. A kV is a kilovolt (1,000 volts).

FEATURES

ABSTRACT

This article reports findings of an empirical study of Portland, OR, and Seattle, WA, housing markets. It examines the price effect of abutting high-voltage transmission line (HVTL) rights of way. The results are based on an examination of a rich sample of single-family home sales occurring in 2005, 2006, and half of 2007. It adds to an understanding of residential HVTL proximity price effects in a number of ways: it revisits the Portland and Seattle housing markets during a different market period; it relies on data from a seller's market in the housing market cycle; it relies on richer and larger data sets than prior research in these markets; it confirms many findings of a previous study concerning how abutting homes are affected by HVTLs; and it provides a new perspective on the Seattle market by investigating the HVTL price effect on higher-priced homes. It also buttresses the idea that all markets do not react in the same way to HVTL proximity.

This study was undertaken to gain further understanding regarding the effect of BPA's HVTL rights of way on abutting single-family home prices. The sample data was sufficient to derive precise market price equations via multiple linear regression analysis for both Portland and Seattle. In addition, due to where the rights of way are located in the Seattle area, there are enough higher-priced home sales in the Seattle sample to facilitate a study of HVTL proximity effects on homes averaging \$1 million in price, in comparison to HVTL effects on more typically priced homes. Lastly, the study looks at price movement in response to changing market conditions over the 2½ year study period to determine whether or not HVTL abutting homes appreciated in value at a rate different from non-HVTL abutting homes.

Given the moderate marine climate in Portland and Seattle, it is not unusual for power line visibility from abutting homes to be fully or partly obscured by trees. This differs from many areas of the country where trees grow smaller, less vigorously, or not at all. As a result, the findings of this study relate best to the portion of the service area located west of the Cascade Mountains where the marine climate prevails and large trees are abundant. There are nevertheless differences between the Portland sample and the Seattle sample. In particular, lot sizes are typically much smaller in the Portland sample (roughly 6,500 square feet, compared to roughly 1 acre on average in Seattle). Therefore, Portland homes cover a much greater proportion of the typical lot, leaving less room for HVTL view-blocking trees. For this reason alone, the Portland results are not applicable to Seattle and the Seattle results are not applicable to Portland.

The study is organized as follows. A literature review places the study into the context of prior research and information regarding HVTL rights of way. The data is presented next, including descriptive statistics tables comparing the treatment sample (abutting properties) to the control sample (non-abutting properties) for each market. These tables illustrate the extent to which the affected and unaffected property sales are as similar as possible in

all other respects. The data presentation is followed by data analyses, including a full-sample Portland home price model, a full-sample Seattle home price model, Seattle high-priced and typically priced subsample price models, and a discussion of price appreciation rates by abutting and non-abutting homes in each market. A summary statement of findings and conclusions is included as the last section of the article.

Literature Review

The literature review presented here, in chronological order by topical classification, sets the context for the current HVTL property price effect study. Prior articles and studies are sorted into three topics for the purposes of discussion and relevance to the present study—informational articles, surveys and case studies, and statistical methods (mostly linear regression) applied to sample data. Inquisitive readers might want to also read Pitts and Jackson³ for an entrée into a more comprehensive literature review.

Informational Articles

Rikon⁴ focuses on the 1995 New York Court of Appeals ruling in *Criscuola v. Power Authority of the State of New York* concerning the reasonableness of the basis of a price response to fear of electromagnetic field (EMF) health effects. Rikon notes that the court ruled if there is market evidence of a price effect in the after condition, then the price effect is compensable. Bryant and Epley⁵ cast a wider net in their summary of legal precedent regarding compensation from the real or perceived effects of exposure to EMFs, which culminates in the *Criscuola* case. According to these authors, legal precedent relieves appraisers of the need to assess whether market behavior is rational or not (if this need ever actually existed), and frees them to base their conclusions solely on market data.

Tikalsky and Willyard⁶ chime in on the health issue, stating “extensive research has yet to establish a link between health risks and EMF.” In addition, they provide a historical study of HVTL structure design over three decades and how design relates to “public perception of transmission lines.” In 2008,

3. Jennifer M. Pitts and Thomas O. Jackson, “Power Lines and Property Values Revisited,” *The Appraisal Journal* (Fall 2007): 323–325.

4. Michael Rikon, “Electromagnetic Radiation Field Property Devaluation,” *The Appraisal Journal* (January 1996): 87–90.

5. James A. Bryant and Donald R. Epley, “Cancerphobia: Electromagnetic Fields and Their Impact in Residential Loan Values,” *Journal of Real Estate Research* 15, no. 1/2 (1998): 115–129.

6. Susan M. Tikalsky and Cassandra J. Willyard, “Aesthetics and Public Perception of Transmission Structures,” *Right of Way* (March/April 2007): 34–38.

Holisko⁷ adds a list of factors that affect the impact of power lines and design elements to consider as ways to mitigate the impact. He notes that diverse impacts stem from differences in development density, right of way width (power line distance), right of way amenities, and topography. Tree cover is important as well, although not included in Holisko's list.

These legal perspectives, as well as personal experience with high-voltage transmission lines, led to the study's focus on the "what" rather than the "why" of HVTL home price effects. In addition, differences in development density and related tree cover (among other factors) between the Portland and Seattle Study Areas, suggested that there would not be similar results for these markets.

Surveys and Case Studies

In 1967, Kinnard reported on a survey of owners of residential properties located in subdivisions either abutting power line right of way easements or encumbered by them.⁸ His findings were based on 361 responses from residents of 15 subdivisions located in Hartford, Connecticut. He also surveyed appraisers, builders, real estate sales professionals, and lenders. Kinnard's main findings were (1) the value of most residential properties is unaffected by overhead electric transmission lines, (2) overhead electric lines do affect land development by reducing density due to larger lots being typical of abutting and encumbered properties, and (3) real estate sales professionals and appraisers expressed more negativity toward power line proximity than actual market participants. Reese⁹ put a public voice to appraiser negativity toward power lines in his response to the Kinnard article while also posing two important questions: (1) are survey responses valid, and (2) are survey methods powerful enough to measure and control for all of the factors affecting market value?

In 1992, Kung and Seagle¹⁰ analyzed 47 responses to a survey of homeowners living near power lines. They also analyzed a small sample of four home sales near the same power lines and seven home sales located in the same neighborhood but not

near the power lines. They did not control for differences in elements of comparison prior to computing and comparing price per square foot differences—a troubling issue foreseen by Reese in 1967 extending here to Kung and Seagle's small sample empirical analysis. In addition, their survey questionnaire included strong language linking power line proximity to cancer, resulting in a predictable response.

Delaney and Timmons¹¹ surveyed a random sample of residential appraisers holding the Appraisal Institute's RM designation, obtaining 219 usable responses. In summary, appraiser opinions reported by them were (1) proximity to power lines reduces home value by about 10% and (2) reasons for the value diminution are unattractiveness, health concerns, and sound. Surveyed appraisers also noted that developers attempt to mitigate power line effects on sales activity through price reductions, larger lot sizes near the lines, and creation of buffer zones. Delaney and Timmons make a tacit assumption that the opinions of the responding appraisers on the effects of HVTLs are an accurate reflection of market response, which may or may not be true (see Kinnard). However, use of random sampling methods does support the validity of their results in so far as they represented the opinions of RM designated appraisers at that time.

Chapman¹² provides a different perspective on the effects of HVTLs by examining industrial properties. He reports on more than 100 interviews of property owners, brokers, and property managers. Based on his interviews, Chapman finds no basis for consequential damages to industrial properties based on proximity to HVTLs. He also provides an informative discussion of property rights issues and remainder parcel configuration issues that can arise when appraising industrial properties in an eminent domain setting. He speaks to the issue of the difficulty of doing matched pairs (and by implication the benefit of multiple linear regression analysis) when there are numerous property characteristics to control.

7. Gary Holisko, "Developing Near Transmission Lines?" *Right of Way* (July/August 2008): 32–36.

8. William N. Kinnard, Jr., "Tower Lines and Residential Property Values," *The Appraisal Journal* (April 1967): 269–284.

9. Louie Reese, "The Puzzle of the Power Line," *The Appraisal Journal* (October 1967): 555–560.

10. Hsiang-te Kung and Charles F. Seagle "Impact of Power Transmission Lines on Property Values: A Case Study," *The Appraisal Journal* (July 1992): 413–418.

11. Charles J. Delaney and Douglas Timmons, "High Voltage Power Lines: Do They Affect Residential Property Value?" *Journal of Real Estate Research* 7, no. 3 (Summer 1992): 315–329.

12. Dean Chapman, "Transmission Lines and Industrial Property Value," *Right of Way* (November/December 2005): 20–27.

Most recently, Chalmers¹⁵ employs case study methods to investigate HVTL effects on generally large land parcels located across west-central Montana. Properties studied were classified as agricultural production land, agricultural land with a recreation influence, agricultural land with high recreation and natural feature amenities, rural residential subdivisions with either less than or greater than five-acre lots, large rural residential acreages, and rural residential tracts (cabin sites). The author concludes that properties oriented toward residential use are more vulnerable to a (negative) HVTL price effect, larger properties are less vulnerable, and when a market provides more purchase alternatives (substitute properties) HVTL-impacted properties are more apt to experience a price effect. Price effect evidence presented by Chalmers is primarily anecdotal, a consequence of a paucity of data and information due to the rural nature of the power lines' locations and difficulties inherent in obtaining information in a non-disclosure state.

Credible and reliable results are much more difficult to obtain using survey and case study methods. As these studies reveal, (1) survey methods exhibit inherent difficulty controlling for all of the factors affecting market value, (2) the opinions of market participant proxies (brokers, lenders, and appraisers) may not accurately represent the opinions of buyers and sellers, and (3) case study evidence is mostly anecdotal in nature.¹⁴ For these reasons, revealed-preference analyses (e.g., regression modeling of actual market prices) are much more popular for addressing these questions today than stated-preference methods (e.g., questionnaires, contingent valuation methods, and case studies). Revealed-preference (price) analyses are used here. The database is relatively large and regression modeling allows control for many property characteristics and takes advantage of the method's statistical power.¹⁵

Statistical Modeling

Colwell and Foley¹⁶ and Colwell¹⁷ analyzed 200 home sales located in Decatur, Illinois. The Colwell and Foley study found that proximity to an HVTL reduced sale price and that lots encumbered by a power line easement tended to be larger than unencumbered lots. Colwell's later study looked at the same data as the earlier study, finding that the HVTL price effect diminished over time. This finding is rationalized by observed tree growth (screening), changing attitudes, and reduced uncertainty regarding the effects of an HVTL. Both analyses relied on multiple regression equations relating the natural log of sale price to elements of comparison, capturing the effects of home and site characteristics, changing market conditions, varying neighborhoods, and proximity to an HVTL.

Hamilton and Schwann¹⁸ analyzed 12,907 transactions from four neighborhoods in Vancouver, Canada, occurring over the 1985–1991 period. The study found a 6.3% diminution in value for homes in close proximity to power lines and towers. An important aspect of this study is the rich (large and detailed) sample, which enabled the authors to investigate the effects of numerous elements of comparison and to examine many functional forms for the regression equation. Price equations were found to be heteroskedastic, and estimation methods were used to account for this and derive credible estimates of statistical significance. The article is silent, however, concerning whether the power lines are on easements or fee title land, the prevailing topography, prevalence or lack of tree screening, and the like.

Cowger, Bottemiller, and Cahill¹⁹ used matched pairs to test for significant HVTL proximity effects. They examined 296 matched pairs consisting of a home sale abutting an HVTL right of way paired with a sale of a highly similar, nearby home unaffected by an HVTL. They used *t*-tests to examine differences between pairs in mean price per square foot, finding that HVTL proximity had no impact on home price.

13. James A. Chalmers, "High-Voltage Transmission Lines and Rural, Western Real Estate Values," *The Appraisal Journal* (Winter 2012): 30–45.

14. Note also that Bryant and Epley, cited earlier, question the viability of survey-based, stated-preference measures due to difficulties in an survey respondent estimating "his/her reaction without the pressure of the transaction, negotiation and financial commitment."

15. Statistical power can be thought of as the ability to isolate and assess the significance of small price movements.

16. Peter F. Colwell and Kenneth W. Foley, "Electric Transmission Lines and the Selling Price of Residential Property," *The Appraisal Journal* (October 1979): 490–499.

17. Peter F. Colwell, "Power Lines and Land Value," *Journal of Real Estate Research* 5, no. 1 (Spring 1990): 117–127.

18. Stanley W. Hamilton and Gregory M. Schwann, "Do High Voltage Electric Transmission Lines Affect Property Value?" *Land Economics* 71, no. 4 (November 1995): 436–444.

19. J. R. Cowger, Steven C. Bottemiller, and James M. Cahill, "Transmission Line Impact on Residential Property Values," *Right of Way* (September/October 1996): 13–17.

14797

The study did not analyze or control for the impact of lot size differences between affected and unaffected properties, nor did it control for minor differences in other elements of comparison. These potential weaknesses were addressed in a follow-up study by Wolverton and Bottemiller,²⁰ where multiple regression modeling was used to control for element of comparison disparities. The follow-up study confirmed the “no-effect” conclusion of the earlier matched pairs analysis.

Des Rosiers²¹ used a microspatial approach involving 50 multiple linear regression models, which found disparate power line effects, ranging from negative 23% to positive 22%. However, the primary result was a 9.6% reduction in value for a home adjacent to a power line and facing a pylon. The regression models used included both nominal price and natural log of price as dependent variables. The data consisted of 257 sales transactions located in three neighborhoods of Brossard, Quebec, differentiated by mean price—CNS\$225,924, CNS\$160,209, and CNS\$115,260. The HVTL pylons were described as being of “enhanced visual appearance” conical steel; however, the pylons and power lines were highly visible and mostly unscreened by vegetation.

Chalmers and Voorvaart²² analyzed 1,286 single-family residential transactions located in four study areas in the northeastern United States. They regressed the natural log of sale price on housing characteristics, year of sale, and neighborhood subareas. Their study found no significant price effect from proximity to, or visibility of, HVTLs. They did investigate whether or not higher-valued properties were affected, operationalizing “higher valued” as prices in excess of the median price.

Jackson²³ examined rural agricultural and recreational land located in Wisconsin. He used regression modeling to compare online (HVTL power line proximate) sales to offline sales (more than one-quarter mile from an HVTL power line). Although the models indicated online sale prices 1.1% to 2.4% lower than offline sale prices, the differences were not statistically significant—meaning one

cannot reject the null hypothesis of no power line price effect. The article also provides guidance for identifying variations in types of power line intersections—such as edge position, clipping, middle position, and diagonal position—that could be useful for appraisal report-writing purposes.

The data set in the study reported on in this article is a rich one, allowing examination of and control for numerous price effects stemming from market conditions, seasonality, topography, lot size, lot configuration, landscaping, building characteristics, and location (school districts, high schools, neighborhoods, counties, state, and zip code). Multiple linear regression analysis is used, with the natural log of price as the dependent variable. This functional form is the most prevalent in the literature, and it provided the most predictive precision.

The results were examined for heteroskedasticity (non-constant regression error variance) and none were found, unlike the data examined by Hamilton and Schwann. In addition, higher-valued homes in Seattle were investigated (similar to what was done by Chalmers and Voorvaart), operationalizing “higher valued” as the upper price quartile. This resulted in a more price-differentiated higher-priced subsample than the greater-than-median-priced subsample selected by Chalmers and Voorvaart. Finally, the study investigated price change over time for HVTL-affected properties versus unaffected properties, confirming the earlier results reported by Wolverton and Bottemiller.

Data

Sample data covered a 2½ year period spanning 2005, 2006, and the first half of 2007. Some non-abutting sales were included from outside of this time frame when they were deemed to have been most comparable to a nearby HVTL-abutting sale. In these few, exceptional instances the out-of-range sales were either from late 2004 and comparable to a nearby early 2005 sale or from early in the third quarter of 2007 and comparable to a nearby second quarter 2007 sale.

20. Marvin L. Wolverton and Steven C. Bottemiller, “Further Analysis of Transmission Line Impact on Residential Property Values,” *The Appraisal Journal* (July 2003): 244–252.

21. Francois Des Rosiers, “Power Lines, Visual Encumbrance and House Values: A Microspatial Approach to Impact Measurement,” *Journal of Real Estate Research* 23, no. 3 (2002): 275–301.

22. James A. Chalmers and Frank A. Voorvaart, “High-Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effects,” *The Appraisal Journal* (Summer 2009): 227–245.

23. Thomas O. Jackson, “Electric Transmission Lines: Is There an Impact on Rural Land Values?” *Right of Way* (November/December 2010): 32–35.

The data collection protocol involved identifying a sufficient number of HVTL-abutting sales in each study area (Portland and Seattle) then searching for at least two, and preferably three, non-abutting sales from the same neighborhood and time frame as similar in square footage, lot size, and other elements of comparison as possible. This resulted in a “treatment” sample of HVTL-abutting homes and a “control” sample of non-HVTL-abutting homes. Tables 1 and 2 illustrate that the data collection effort was successful in its attempt to acquire highly similar treatment and control samples. In the analytical phase of the study, any remaining variation in elements of comparison between sample and within each sample was controlled for by use of a multiple regression model using an “Abutting HVTL” dummy variable to distinguish the HVTL price effect, all else being equal.

Sales were eliminated from consideration if the recorded title transfer relied on a deed that indicated something other than a market transaction. Also, each property ultimately included in the data set had been sold through the multiple listing service, a good indication that the transaction occurred in the open market. In conclusion, there is high confidence that the data satisfies the goal of the treatment and control subsets being as identical as possible, except for the treatment sales abutting a HVTL right of way.

Portland Study Area Sample

The Portland Study Area sample included 538 home sales: 152 treatment sales (HVTL abutting) and 386 control sales (non-HVTL abutting) located in three Portland metro-area counties—Washington County and Clackamas County in Oregon and Clark County in Washington. As shown in Table 1, central tendencies and dispersions for numerical variables were highly similar across control (non-abutting) and treatment (abutting) data subsets. The same holds true for categorical (dummy) variable proportions.

Data were assembled from numerous sources. Two secondary data sources were county tax assessment records and each area's multiple listing service (MLS). Primary data sources were property inspection (noting the appearance of each home viewed from the fronting street), aerial photographs, and recorded documents. In addition, assessor quality and condition ratings were cross-referenced

with MLS descriptions and photographs included in the MLS database. Lot shape was confirmed by recorded plat, aerial photography, and field inspection. Lot topography and landscape quality were field assessed. Landscape quality assessments were verified as being consistent with the date of sale by examining exterior MLS photos to determine if the landscape had been altered after the sale date.

Other variables not listed in Table 1 include the sale's municipal address, each sale's school district and serving high school, market area's name (neighborhood), and zip code. The sample data also included cell phone tower visibility, the type of exterior and roof finish, existence of nearby parks, and membership in a homeowner's association. Distribution across treatment and control properties was similar for these additional variables as well. Nearly all of the additional variables (except for a few select location identifiers) proved to be statistically insignificant and were not included in the final models reported here.

Seattle Study Area Sample

The Seattle Study Area sample included 568 suburban home sales: 155 treatment sales and 415 control sales—all located in King County, WA (none were within the Seattle city limits).²⁴ As shown in Table 2, central tendencies and dispersions for numerical variables were highly similar across control (non-abutting) and treatment (abutting) data subsets. The same holds true for categorical (dummy) variable proportions.

As in Portland, data collection relied on secondary sources (county tax assessment records and MLS) and primary data collection (property inspection from the fronting street, aerial photographs, and recorded documents). Assessor quality and condition ratings were relied on and cross-referenced with MLS descriptions and photographs included in the MLS database. Lot shape was confirmed by recorded plat, aerial photography, and field inspection. Lot topography and landscape quality were field assessed, and the landscape was cross verified by exterior MLS photos to determine if it had been altered after the sale date.

Also similar to Portland, other variables not listed in Table 2 include the sale's municipal address, each sale's school district and serving high school, market

24. Bonneville Power has no transmission line rights of way within Seattle's city limits. Seattle is totally within King County, as are the suburbs studied here. These suburbs are considered to be part of the Seattle Metropolitan Area, and are included in the Seattle MSA, although they are outside of the Seattle city limits.

14797

Table 1 Descriptive Statistics for Portland Area Sample Data, Control and Treatment Groups

Variable	Control Mean	Control Std. Deviation	Treatment Mean	Treatment Std. Deviation
Price	\$294,048	\$74,812	\$291,122	\$72,210
State of Oregon	0.648	**	0.665	**
State of Washington	0.352	**	0.335	**
Clark County, WA	0.352	**	0.336	**
Clackamas County, OR	0.042	**	0.040	**
Washington County, OR	0.606	**	0.625	**
2004 Sale	0.008	**	0.000	**
2005 Sale	0.301	**	0.270	**
2006 Sale	0.505	**	0.474	**
2007 Sale	0.187	**	0.257	**
Living Area (sf)	1,775	514	1,748	498
Lot Size (ac)	6,455	1,904	6,700	2,772
Bedrooms	3.380	0.580	3.360	0.560
Bathrooms	2.310	0.390	2.310	0.420
Age at Sale (yrs)	15.320	10.750	13.840	9.330
Garage (cars)	2.030	0.350	1.990	0.270
Fireplaces	0.852	0.496	0.783	0.473
Pool	0.005	**	0.013	**
Hot Tub	0.044	**	0.079	**
Deck	0.386	**	0.434	**
Patio	0.609	**	0.572	**
Outbuilding/Shed	0.158	**	0.204	**
Central Air Cond.	0.560	**	0.599	**
Fair Quality	0.005	**	0.013	**
Below Avg. Quality	0.067	**	0.086	**
Avg. Quality	0.738	**	0.737	**
Above Avg. Quality	0.109	**	0.059	**
Good Quality	0.080	**	0.105	**
Fair Condition	0.008	**	0.013	**
Below Avg. Condition	0.021	**	0.000	**
Avg. Condition	0.785	**	0.790	**
Above Avg. Condition	0.036	**	0.033	**
Good Condition	0.150	**	0.165	**
Poor Landscape	0.016	**	0.000	**
Fair Landscape	0.109	**	0.158	**
Avg. Landscape	0.733	**	0.691	**
Good Landscape	0.143	**	0.153	**
Level Site	0.749	**	0.645	**
Gentle Slope	0.184	**	0.283	**
Moderate Slope	0.062	**	0.072	**
Steep Slope	0.003	**	0.000	**
Rectangular Lot	0.676	**	0.763	**
Cul-de-Sac Lot	0.135	**	0.105	**
Corner Lot	0.145	**	0.053	**
Irregular Lot	0.044	**	0.072	**
Flag Lot	0.000	**	0.007	**
Quarter 1 Sale	0.218	**	0.178	**
Quarter 2 Sale	0.345	**	0.401	**
Quarter 3 Sale	0.251	**	0.263	**
Quarter 4 Sale	0.187	**	0.158	**

* Totals for any particular construct may not add to 100% due to rounding.

** Sample standard deviations are not included for 0,1 dummy variables.

14797

Table 2 Descriptive Statistics for Seattle Area Sample Data, Control and Treatment Groups

Variable	Control Mean	Control Std. Deviation	Treatment Mean	Treatment Std. Deviation
Price	\$483,435	\$333,165	\$502,261	\$418,691
2005 Sale	0.506	**	0.497	**
2006 Sale	0.386	**	0.366	**
2007 Sale	0.108	**	0.137	**
Living Area (sf)	2,249	909	2,305	965
Lot Size (ac)	1.030	1.49	1.550	2.37
Bedrooms	3.580	0.68	3.620	0.77
Bathrooms	2.390	0.66	2.410	0.69
Age at Sale (yrs)	21.160	13.47	19.370	13.44
Garage (cars)	2.430	1.11	2.410	1.06
Fireplaces	1.330	0.74	1.350	0.73
Pool	0.019	**	0.000	**
Hot Tub	0.147	**	0.118	**
Deck	0.639	**	0.634	**
Patio	0.605	**	0.556	**
Outbuilding/Shed	0.080	**	0.053	**
Greenhouse	0.017	**	0.046	**
Sports Court	0.017	**	0.020	**
Apt./MLS ^a	0.051	**	0.026	**
Below Avg. Quality	0.075	**	0.105	**
Avg. Quality	0.518	**	0.500	**
Above Avg. Quality	0.241	**	0.222	**
Good Quality	0.123	**	0.105	**
Very Good Quality	0.034	**	0.052	**
Below Avg. Condition	0.051	**	0.085	**
Avg. Condition	0.692	**	0.654	**
Above Avg. Condition	0.222	**	0.190	**
Very Good Condition	0.034	**	0.072	**
Fair Landscape	0.082	**	0.118	**
Avg. Landscape	0.706	**	0.712	**
Good Landscape	0.190	**	0.131	**
Exc. Landscape	0.022	**	0.039	**
Level Site	0.451	**	0.490	**
Gentle Slope	0.378	**	0.353	**
Moderate Slope	0.194	**	0.150	**
Steep Slope	0.022	**	0.007	**
Rectangular Lot	0.554	**	0.510	**
Cul-de-Sac Lot	0.142	**	0.163	**
Corner Lot	0.135	**	0.052	**
Irregular Lot	0.142	**	0.242	**
Flag Lot	0.027	**	0.033	**
Quarter 1 Sale	0.207	**	0.170	**
Quarter 2 Sale	0.316	**	0.333	**
Quarter 3 Sale	0.272	**	0.268	**
Quarter 4 Sale	0.205	**	0.229	**

^a Mother-in-law suite.
 * Totals for any particular construct may not add to 100% due to rounding.
 ** Sample standard deviations are not included for 0,1 dummy variables.

14797

area's name (neighborhood), and zip code. The sample data also included cell phone tower visibility, the type of exterior and roof finish, existence of nearby parks, membership in a homeowner's association, and gated entries. With one exception, distribution across treatment and control properties was similar for all variables. The exception is lot area, which averaged 1.05 acres for non-HVTL abutting properties and 1.5 acres for HVTL-abutting properties.²⁵ Use of multiple regression modeling in the analytical phase controlled for any differences between treatment and control groups to isolate and measure the HVTL proximity effect on price. Similar to the Portland data, most of the additional variables (except for a few select location identifiers) proved to be statistically insignificant.

Analysis

Portland Study Area Analysis

As illustrated in Table 5, the price effect of abutting a HVTL transmission line was found to be negative and statistically significant in the Portland Study Area. The magnitude of the effect was $(e^{-0.016915} - 1) \times 100\% = -1.65\%$ for the average priced treatment group (abutting) home in the study area. Given the Portland Study Area treatment group's \$291,122 average sale price, the Portland treatment group's typical home would have sold for \$4,884 more if not abutting an HVTL.²⁶

The adjusted R^2 for Portland Study Area multiple regression analysis is 92.9%. The analysis indicates significantly lower 2004 prices and significantly higher prices in 2006 and 2007 in comparison to 2005. Double-digit percentage increases in price over the study period are consistent with the seller's market the Portland area experienced during this time. In addition, the market exhibits the sort of cyclicity expected in a northern climate, with significantly higher market prices during non-winter quarters.

As expected, the improved living area of the home is the most significant element of comparison for the price model. Bedroom and bathroom variables are opposite in sign, which is not unusual for these sorts of models given the high correlations among bedroom counts, bathroom counts, and a home's improved living area. Property condition

and landscaping quality both affect sale price, as do lot size and property age. The significance of the age squared element of comparison indicates a nonlinear improvement depreciation rate. It appears that swimming pools may not be advantageous from a market price perspective in this market, whereas hot tubs do show a positive price effect.

The Portland Study Area real estate market is made up of numerous submarkets, and several of them are associated with significantly different home prices. The Rock Creek, Northwest Portland, Southwest Beaverton, Scholls Ferry, and Mt. Vista submarkets all indicate significantly higher-than-average prices. In Forest Grove and Covington-Orchards, prices tend to be significantly lower than average. In addition, after controlling for submarket identification, a Beaverton School District location provides an additional price increment. At a more macro-location level, prices tend to be higher in Clackamas County, OR, and lower in Clark County, WA (Vancouver), in comparison to the base location (Washington County, OR).

Seattle Study Area Analysis

As shown in Table 4, the price effect of abutting an HVTL was also negative and statistically significant for the Seattle Study Area sample. The magnitude of the effect was $(e^{-0.02459} - 1) = -2.429\%$ for the average-priced treatment group (abutting) home in the study area. Given the Seattle Study Area treatment group's \$502,261 average sale price, the Seattle treatment group's typical abutting home would have sold for \$12,504 more if not abutting an HVTL.²⁷

The adjusted R^2 for Seattle Study Area multiple regression analysis is 93.5%. The analysis indicates significantly higher prices in 2006 and 2007 in comparison to 2005. As in Portland, double-digit percentage increases in price over the study period are consistent with the seller's market the Seattle area experienced during this time. In addition, the Seattle market also exhibited the sort of cyclicity expected in a northern climate, with significantly higher market prices during non-winter quarters.

Again, improved living area of the home is the most significant element of comparison for the price model. As in the Portland model, bedroom

25. Larger HVTL-abutting lots are not unusual, given the data descriptions included in many of the articles cited in the literature review.

26. $\frac{291,122}{(1 - 0.0165)} - 291,122 = 4,884$

27. $\frac{502,261}{(1 - 0.02429)} - 502,261 = 12,504$

14797

Table 3 Multiple Regression Analysis of the Natural Log of Sale Price, Portland Study Area

Predictor	Coefficient	t-Statistic	P-Value
Constant	11.73260000	320.64	0.000
Abuts HVTL	-0.01661500	-2.61	0.009
2004 Sale	-0.16722000	-4.13	0.000
2006 Sale	0.12987800	19.06	0.000
2007 Sale	0.17290100	19.24	0.000
Quarter 2	0.03179700	3.94	0.000
Quarter 3	0.05439400	6.04	0.000
Quarter 4	0.06355800	6.40	0.000
Age	-0.00444460	-5.85	0.000
Age Squared	0.00003131	2.96	0.003
Lot Size (ac)	0.42296000	5.01	0.000
Fair Landscape	-0.02980600	-3.26	0.001
Good Landscape	0.04986000	5.64	0.000
Above Avg. Condition	0.04020000	2.58	0.010
Good Condition	0.03544300	3.98	0.000
Living Area (sf)	0.00028992	25.02	0.000
Bedrooms	-0.01217100	-1.59	0.113
Baths	0.03968000	3.44	0.001
Garage (cars)	0.04602000	4.51	0.000
Central AC	0.01409400	2.21	0.027
Pool	-0.05634000	-1.64	0.102
Hot Tub	0.02659000	2.14	0.033
Rock Creek Market	0.03855000	2.64	0.009
NW Portland Market	0.06520000	4.88	0.000
Forest Grove Market	-0.07477000	-4.05	0.000
SW Beaverton Market	0.08464000	4.41	0.000
Scholls Ferry Market	0.03421000	1.84	0.066
Covington-Orchards Market	-0.07356000	-1.95	0.052
Mt. Vista Market	0.12579000	3.22	0.001
Beaverton School Dist.	0.07845900	8.02	0.000
Clackamas County	0.11841000	7.02	0.000
Clark County	-0.10052000	-9.82	0.000

S = 0.0640650 R² = 93.3% F²(adj) = 92.9%

and bathroom variables are opposite in sign as a consequence of the high correlations among bedroom counts, bathroom counts, and improved living area. Property quality, property condition, and landscaping quality affect sale price here, as does lot size. Unlike Portland, a visible cell phone antenna ($n=55$) was a significant negative influence on price in the Seattle market.

The Seattle Study Area sample covers a much wider price range than the Portland data. Therefore, some of the significant elements of comparison may actually be more applicable either to higher-priced homes or to more typically priced homes, entering the regression equation via significance in a given price segment but not in the other (this phenomenon is studied in more detail later in the article).

14797

Table 4 Multiple Regression Analysis of the Natural Log of Sale Price, Seattle Study Area

Predictor*	Coefficient	t-Statistic	P-Value
Constant	12.03530000	348.58	0.000
Abuts HVTL	-0.02459000	-2.07	0.039
2006 Sale	0.16855000	15.48	0.000
2007 Sale	0.21629000	11.95	0.000
Quarter 2	0.03103000	2.10	0.036
Quarter 3	0.06668000	4.18	0.000
Quarter 4	0.07266000	4.38	0.000
Living Area (sf)	0.00025187	21.93	0.000
Garage (cars)	0.02904600	5.47	0.000
Lot (ac)	0.05042200	12.96	0.000
Moderate Slope	-0.02618000	-1.79	0.074
Creek River or Lake View	0.10392000	3.10	0.002
Rural Land View	-0.09454000	-1.94	0.052
Fair Landscape	-0.02911000	-1.62	0.106
Good Landscape	0.04146000	2.77	0.006
Exc. Landscape	0.29246000	7.99	0.000
Bedrooms	-0.02395300	-2.66	0.008
Bathrooms	0.03472000	2.75	0.006
Pool	0.06714000	1.52	0.130
Barn	0.13152000	6.05	0.000
Above Avg. Quality	0.05190000	3.85	0.000
Good Quality	0.08680000	4.32	0.000
Above Avg. Condition	0.03614000	2.61	0.009
Cement Fiber Board and Masonry	0.03089000	1.94	0.053
Torch Down Roof	-0.09631000	-1.94	0.053
Cell Phone Ant. Visible	-0.06327000	-3.46	0.001
Federal Way	-0.08459000	-3.22	0.001
Maple Valley	-0.03311000	-1.74	0.082
Issaquah	0.14206000	4.92	0.000
Sammamish	0.16244000	4.52	0.000
Lake Washington SD	0.24369000	15.63	0.000
Snoqualmie Valley SD	0.15103000	3.54	0.000
Auburn SD	-0.05125000	-2.88	0.004
Issaquah HS	0.13107000	2.51	0.012
Skyline HS	0.11901000	3.52	0.000
Cedar Crest HS	0.26239000	4.83	0.000
Woodinville HS	0.34840000	2.92	0.004
Inglewood HS	-0.28170000	-2.26	0.024
ZIP98045	-0.07825000	-1.44	0.149
ZIP98010	0.17823000	2.54	0.011
ZIP98059	0.06275000	1.34	0.181
ZIP98023	0.04924000	1.59	0.112

S = 0.115197 R² = 94.0% R²(adj) = 93.5%

*Unlike the Portland Study Area model, there is no age variable in this model because age was highly correlated with the quality and condition variables. The age variable was insignificant in the presence of the data's quality and condition variables, and the standard error of the regression was lower without the age variable in the model (i.e., the model provides more precise price estimates without an age variable).

14797

Examples of these sorts of variables include some of the geographic location identifiers, torch down roofing,²⁸ swimming pools, and a cement fiber board and masonry exterior finish.

Unlike Portland's multistate and multicounty data, all of the Seattle transactions were in the same state (WA) and the same county (King). Although named submarkets exist in the Seattle Market, city name, school district, and high school influences provide more precise price models, accompanied by zip code micro-location information. However, the significant location identifiers proved to vary between higher-priced homes and more typically priced homes.

Seattle Study Area—Higher-Priced Home Market

For the Seattle Study Area, the higher-priced home market was operationalized by isolating and analyzing the upper price quartile of the data (25% of the sample with a mean treatment group sale price of \$1,055,105). As shown in Table 5, for higher-priced homes the effect of abutting an HVTL right of way was a much greater percentage of price and the effect was more significant than for the data as a whole, $(e^{-0.11906} - 1) \times 100\% = -11.225\%$. Given the Seattle Study Area higher-priced home subset's \$1,055,105 average treatment group sale price, the Seattle Study Area's typical abutting, higher-priced home would have sold for \$130,882 more if not abutting an HVTL.²⁹

Table 5 Multiple Regression Analysis of the Natural Log of Sale Price, Seattle Study Area, Higher-Priced Homes

Predictor	Coefficient	t-Statistic	P-Value
Constant	12.48510000	126.59	0.000
Abuts HVTL	-0.11906000	-3.34	0.001
2006 Sale	0.17862000	5.39	0.000
2007 Sale	0.23082000	4.85	0.000
Living Area (sf)	0.00020814	8.23	0.000
Garage (cars)	0.04791000	4.01	0.000
Lot (ac)	0.03763200	5.43	0.000
Rural Land View	-0.33530000	-2.68	0.009
Good Landscape	0.09738000	3.04	0.003
Exc. Landscape	0.25137000	5.28	0.000
Bedrooms	-0.05165000	-2.47	0.016
Bathrooms	0.03153000	1.12	0.266
Fireplace	0.03115000	1.50	0.137
Pool	-0.11282000	-1.81	0.074
Barn	0.14622000	2.74	0.007
Above Avg. Quality	-0.07293000	-2.00	0.049
Cell Phone Ant. Visible	-0.09878000	-1.05	0.296
Issaquah	0.16150000	2.73	0.008
Sammamish	0.32308000	5.71	0.000
Lake Washington SD	0.14799000	4.49	0.000
Cedar Crest HS	0.18930000	2.54	0.013
Inglewood HS	-0.39710000	-2.45	0.016
ZIP98010	0.19440000	1.34	0.185

S = 0.139418 R² = 89.8% R²(adj) = 87.1%

28. A colloquial expression identifying a multi-ply, flat, rubberized asphalt roof.

29. $\frac{1,035,105}{(1 - 0.11225)} - 1,035,105 = 130,882$

The magnitude of this effect also suggests that the significant -2.429% HVTL price effect for the full Seattle data set was impacted by inclusion of higher-priced homes in the full sample.

Many of the quality, condition, and location elements of comparison are not evident in this more-parsimonious, higher-priced home model—often as a consequence of there being no sales exhibiting the missing characteristics (e.g., no homes with fair landscaping and no homes located in Federal Way). Cell phone antenna visibility loses significance (presumably due to relatively larger average lot size), and city address, school district, and high schools are reduced to a few relevant locations.

The adjusted R^2 is 87.1% for the Seattle Study Area higher-priced home multiple regression analysis. The analysis indicates significantly higher prices in 2006 and 2007 in comparison to 2005, similar to the larger Seattle data set. Unlike the Portland data and the larger Seattle data set, seasonal cyclicity was not a significant factor for the higher-priced home market.

Seattle Study Area—More Typically Priced Home Market

For the purposes of this analysis, the Seattle Study Area's more typically priced home sample consists of the lower three price quartiles of the data (75% of the sample with a mean treatment group sale price of \$366,866). As shown in Table 6, the effect of abutting an HVTL right of way was a much smaller percentage of price and statistically insignificant for typically priced Seattle Study Area homes, $(e^{-0.006415} - 1) \times 100\% = -0.6415\%$. If statistically significant, this percentage would amount to -\$2,369 for homes in the subsample's average-priced treatment group.³⁰ However, due to the small t -statistic of -0.65, there is no strong statistical evidence to support the existence of an HVTL effect for more typically priced homes in the Seattle Study Area. The small magnitude and lack of significance of this effect suggests that the apparently significant -2.429% HVTL price effect for the full Seattle data set was almost entirely the result of including higher-priced homes in the full Seattle Study Area sample.

The adjusted R^2 is 87.5% for Seattle Study Area's more typically priced homes multiple regression

analysis. The analysis also indicates significantly higher prices in 2006 and 2007 in comparison to 2005, similar to the larger Seattle data set. Like the Portland data, seasonal cyclicity was a significant factor for the Seattle more typically priced home market, and in contrast with Portland, cell phone tower visibility did have a significant negative impact on home price.

Analysis of Price Sensitivity to Various HVTL Voltages

The Portland sales data and the Seattle sales data include treatment (HVTL-abutting) effects from a variety of power line voltages. Four levels of power line voltage are present in the Portland data—115 kV, 250 kV, 345 kV, and 500 kV. Whereas, three levels are present in the Seattle data—250 kV, 345 kV, and 500 kV. HVTL voltage distributions among the treatment sales are summarized in Table 7.

Two additional regression models were developed, replacing the "Abuts HVTL" variable in the models shown in Tables 3 and 4 with interaction variables representing the maximum line voltage present at each abutting (treatment) sale. All other variables were left unchanged. The result is an indication of the HVTL proximity effect broken down by line-voltage category. Line voltage is a variable of interest because voltage affects the tower type and configuration, width of right of way, and amount of line noise.³¹

Since the kV interaction variables fully capture the "Abut HVTL" effect in both regression models, R^2 and adjusted R^2 remained the same as reported in Tables 3 and 4, and the full list of variable coefficients and significance levels are unchanged. Results of the kV category effects are included in Table 8.

As shown in Table 8, the data do not support the idea that price effects are greater or more significant when a home abuts a higher-voltage HVTL. Although the Portland results in Table 8 suggest a lesser price effect from higher-voltage lines, there are too few higher-voltage abutting sales in the Portland data to support the credibility of this counter-intuitive indication.

The Seattle results in Table 8 also suggest a counter-intuitive result—a greater and more significant price effect associated with the Seattle

30. $\frac{366,866}{(1 - 0.006415)} - 366,866 = 2,369$

31. Higher voltages are associated with larger towers, wider rights of way, and greater line noise.

14797

Table 6 Multiple Regression Analysis of the Natural Log of Sale Price, Seattle Study Area, More Typically Priced Homes

Predictor	Coefficient	t-Statistic	P-Value
Constant	12.07930000	87.44	0.000
Abuts HVTL	-0.00641500	-0.65	0.517
2006 Sale	0.16601800	18.13	0.000
2007 Sale	0.21829000	14.64	0.000
Quarter 2	0.02720000	2.26	0.024
Quarter 3	0.07700000	5.96	0.000
Quarter 4	0.07728000	5.84	0.000
Living Area (sf)	0.00021149	17.10	0.000
Garage (car)	0.02019100	4.17	0.000
Lot (ac)	0.05990600	12.63	0.000
Fair Landscape	-0.03319000	-2.42	0.016
Bedrooms	-0.00993700	-1.20	0.231
Bathrooms	0.02874000	2.42	0.016
Pool	0.39380000	4.33	0.000
Barn	0.11218000	5.63	0.000
Above Avg. Quality	0.07294000	6.24	0.000
Good Quality	0.11901000	5.88	0.000
Above Avg. Condition	0.03663000	2.97	0.003
Cement Fiber Board and Masonry	0.02538000	1.76	0.079
Torch Down Roof	-0.09667000	-2.36	0.019
Cell Phone Ant. Visible	-0.05643000	-3.93	0.000
Federal Way	-0.08896000	-4.43	0.000
Maple Valley	-0.06119000	-3.94	0.000
Issaquah	0.07793000	3.63	0.000
Lake Washington SD	0.25318000	18.17	0.000
Auburn SD	-0.05947000	-4.17	0.000
Issaquah HS	0.21774000	4.82	0.000
Skyline HS	0.20463000	9.28	0.000
ZIP98010	0.16664000	2.65	0.008
ZIP98023	0.05955000	2.52	0.012

S = 0.0872944 R² = 88.1% R² (adj) = 87.3%

Table 7 Treatment Sales, HVTL Frequency Distributions by Line kV

Portland Data		Seattle Data	
HVTL kV	Frequency	HVTL kV	Frequency
115 kV	41	115 kV	0
230 kV	89	230 kV	80
345 kV	12	345 kV	3
500 kV	10	500 kV	70

14797

Table 8 HVTL Proximity Price Effect by Line Voltage Category

Portland Data			
Line Voltage	Coefficient	t-Statistic	P-Value
115 kV	-0.01285	-1.14	0.253
230 kV	-0.02099	-2.66	0.008
345 kV	-0.00628	-0.31	0.759
500 kV	-0.00293	-0.13	0.897
Seattle Data			
Line Voltage	Coefficient	t-Statistic	P-Value
230 kV	-0.03535	-2.29	0.023
345 kV	+0.03275	0.42	0.677
500 kV	-0.01457	-0.88	0.381

Dependent variable is natural log of price.

data's lowest line voltage. This result is misleading, because 87% of the higher-priced, most-affected home sales reported in the Seattle data (analyzed in Table 5) are abutting 230 kV lines. Therefore, the 230 kV variable in the Seattle regression model reported in Table 8 serves as a proxy for the much greater, higher-priced home HVTL effect in Seattle.

Market Conditions Adjustment and HVTL Proximity

Rates of price change for 2005 to 2006 and 2005 to 2007 were isolated for HVTL-abutting and non-HVTL abutting properties in both Portland and Seattle. These were isolated and estimated by running multiple regression models identical to those shown previously for "abutting" and "non-abutting" subsets of each study area's data. Table 9 includes coefficients on 2006 and 2007 market conditions adjustment coefficients for each study area, using a 2005 base year (the data did not include enough 2004 sales to allow meaningful 2004 comparisons).

As Table 9 shows, there was very little difference in percentage change in price from 2005 to 2006 and from 2005 to 2007 for HVTL-abutting and non-HVTL-abutting homes in either the Seattle or Portland Study Areas. Rates of price change during the 2005–2007 study period were not materially affected by HVTL proximity, having been slightly greater in Portland for HVTL-abutting properties and slightly less in Seattle for HVTL-abutting properties in 2006, but greater in 2007. Therefore, HVTL proximity price effects appear to have been limited to the sale price

as of the date of the transaction, with no material effect on rates of price change. Figure 1 provides a graphic representation of these market condition adjustment percentages.

Findings and Conclusions

Results from the Portland Study Area represent a refinement to the earlier work by Wolverton and Bottemiller³² by provision of a more precise model, principally due to the current study's data set allowing for better statistical control of the pricing influence of the city's market areas (neighborhoods) and school districts. The resulting improved precision, in terms of smaller regression error, uncovers the significance of the HVTL price effect, which was not evident in the prior study. In addition, this study confirms the earlier Portland area finding of no appreciable difference in the price response to changing market conditions for HVTL-abutting and non-abutting homes.

The Seattle study is unique in regard to its breadth of home price coverage (25% of the data having a mean price of approximately \$1 million). Like the Portland portion of this study, the Seattle area data benefits from inclusion of a wealth of location data, including municipalities, school districts, market areas (neighborhoods), high schools, and zip codes. At first blush, the Seattle findings appear to be consistent with the Portland analysis—a small, significant, negative HVTL price effect. However, when the higher-priced homes and more typically priced homes are analyzed separately the price effects are found to be quite different. The

32. Wolverton and Bottemiller, "Further Analysis of Transmission Line Impact on Residential Property Values."

Table 9 Market Conditions Coefficients for HVTL Abutting and Non-Abutting Homes

	Coefficient	t-Statistic	P-Value
Seattle Study, HVTL Abutting			
2006 Sale	0.14140	7.31	0.000
2007 Sale	0.21984	7.27	0.000
Seattle Study, Non-HVTL Abutting			
2006 Sale	0.16813	12.99	0.000
2007 Sale	0.20509	9.36	0.000
Portland Study, HVTL Abutting			
2006 Sale	0.13520	9.98	0.000
2007 Sale	0.17971	10.15	0.000
Portland Study, Non-HVTL Abutting			
2006 Sale	0.128525	16.25	0.000
2007 Sale	0.171420	16.33	0.000
2007 Sale	0.171420	16.33	0.000

Dependent variable is natural log of sale price, convert to percentages using $[e^{beta} - 1] \times 100\%$

data for more typically priced homes reveal a very small negative and statistically insignificant HVTL price effect. One cannot conclude that the HVTL price effect differs from zero for this subset of the data. Conversely, the negative HVTL price effect for the higher-priced Seattle Study Area homes is substantial and highly significant. Finally, as in Portland, there is no evidence that HVTL proximity affected the rate of change in home prices in the Seattle area during the study period.³³

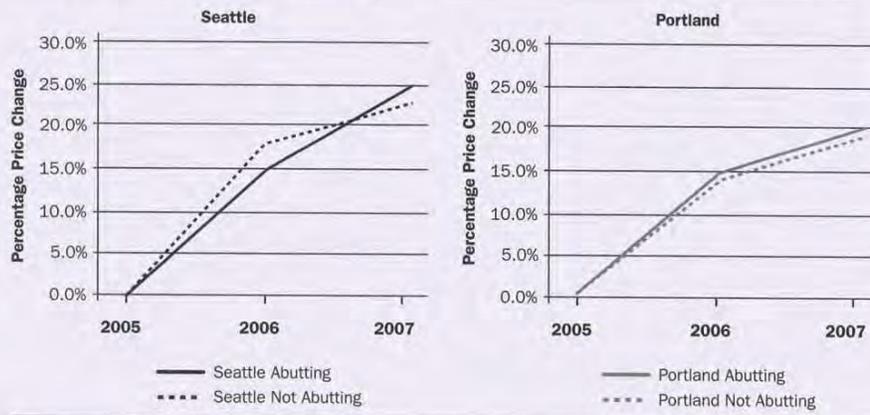
These outcomes, like all studies of this sort, are derived from sample data intended to be representative of their markets. Such samples are not generalizable to other markets due to differences in climate, government, terrain, vegetation, and local attitudes toward HVTL proximity and views. Furthermore, as the relatively high market price appreciation rates herein indicate, these markets could be described as occurring during an up-sloping segment of the real estate price cycle. One should not necessarily expect similar buyer and seller pricing behavior during other segments of the market cycle—such as balanced markets with very little price movement over time or under-demanded markets evidenced by falling prices.

Additionally, there are material differences between the Portland market and the Seattle market. Portland is a multicounty, multistate housing market; Seattle is not. The choice of state of residence in the Portland area determines income tax rates and sales tax rates. No such dynamic occurs in Seattle. Also, Portland's Washington County is highly urban whereas Clackamas County (OR) and Clark County (WA) are less so. In contrast, Seattle's King County includes urban, suburban, and exurban lands. The Seattle sale data locations are almost exclusively suburban, and some of the higher-priced homes are at the suburban fringe where land uses rapidly transition into an exurban environment. Therefore, the Portland findings are not directly applicable to Seattle, and the Seattle findings are not directly applicable to Portland. The most stark, and revealing difference between the data from these two markets is the much larger percentage-of-price effect exhibited for higher-priced homes in Seattle. It seems more likely that this effect is more attributable to home price than it is to city location (Seattle versus Portland). Unfortunately, there is no available Portland data for testing this supposition.

33. For completeness, standard errors were examined for evidence of heteroskedasticity and none was apparent. To further ensure that the results were credible, each regression model was also estimated using White's heteroskedasticity consistent covariances and the findings were unchanged from those reported here.

14797

Figure 1 Market Conditions Adjustment Percentages



The study's regression equations also reflect what appraisers generally find to be axiomatic. Location matters in these two housing markets. Unlike investment income, housing is not fungible. Families care about the state, county, city, school district, high school service area, and neighborhood they live in. In addition, all else being equal, improved living area is usually the most important factor in home price. Furthermore, living area, bedroom counts, and bathroom counts are highly correlated. The appraisal "Principal of Balance" is confirmed by these correlations, and when room counts depart from market norms for a given floor area, SF-BR-BA balance is disturbed. Also, the analyses found here highlight the importance of market condition adjustments. When prices are varying by 20% to 25% over a brief 2½ year period, market condition adjustments quickly add up to meaningful amounts of money. Lastly, markets often exhibit a significant amount of seasonal cyclicity. Therefore, a winter season sale may not be comparable to a

summer season sale absent a seasonality adjustment, regardless of longer term market condition effects.

Considerable research has been conducted regarding the price effects of HVTL proximity. This study adds to an understanding of this complex phenomenon in a number of ways: it takes a second look at Portland and Seattle during a different market period; it focuses on a seller's market segment of the market cycle; it offers a first-ever empirical HVTL study of the Seattle upper-priced housing market; and it confirms findings of a previous study regarding how abutting and non-abutting homes react to changing market conditions. The study also confirms that all markets do not react in the same way to HVTL proximity. Portland appears to differ from Seattle, and higher-priced homes in Seattle differ from more typically priced Seattle homes. Given this finding, it would be beneficial if a future study were to compare higher-priced custom homes with typically priced homes in other locations to determine if this result can be confirmed elsewhere.

14797

Steven C. Bottemiller, MAI, is chief appraiser for the Bonneville Power Administration US Department of Energy. Bottemiller is a graduate of Seattle Pacific University in the disciplines of business administration and economics. He has extensive experience in appraising and reviewing elderly health care and psychiatric/substance abuse facilities, electrical transmission line/fiber optic corridors, electrical substations, mountain-top communication sites, beam path easements, conservation easements, timber lands, unique rural/recreational properties, farm/ranch properties and all forms of special partial interests (e.g., mineral, water, various land rights). He has published articles in *Right of Way* and *The Appraisal Journal* concerning impacts of transmission lines on property values. He is an instructor for the Appraisal Institute. **Contact:** sbottemiller@bpa.gov

Marvin L. Wolverton, PhD, MAI (ret.), is an emeritus professor of business at Washington State University. Since his retirement from WSU he has been engaged in real property valuation and litigation consulting and also worked as a clinical professor in the Finance and Economics Departments of UNLV. He has served on the Review Panel for *The Appraisal Journal* for many years, is a coauthor of *The Valuation of Billboards*, and is the author of *An Introduction to Statistics for Appraisers* both published by the Appraisal Institute.

Contact: marvin.wolverton@sbcglobal.net

The authors would like to acknowledge the tireless work of Rosemary Tobiga, who worked as a contract employee with Bonneville Power Administration engaged in data collection, verification, and inspection in support of this research endeavor.

Web Connections

Internet resources suggested by the Y. T. and Louise Lee Lum Library

Electric Power Research Institute

<http://my.epri.com>

Environmental Impacts of Transmission Lines, Public Service Commission of Wisconsin

<http://psc.wi.gov/thelibrary/publications/electric/electric10.pdf>

Federal Energy Regulatory Commission—Transmission Line Siting

<http://www.ferc.gov/industries/electric/indus-act/siting.asp>

US Department of Energy

<http://www.energy.gov>

US Energy Information Administration

<http://www.eia.gov/>

62

The Appraisal Journal, Winter 2013

Price Effects of HVTLs on Abutting Homes

19 of 20

14797

Copyright of Appraisal Journal is the property of Appraisal Institute and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

14798

BPA I-5 Corridor Reinforcement DEIS Comment Form**Received: 03/25/2013 9:35 AM**

Nancy Chennault

- 14798-1 | As a business owner within the Castle Rock community, I ask that the BPA reconsider the proposed route for the power line, that will close any potential for urban development on 2 sides of Castle Rock.
- 14798-2 | We are a community comprised of small businesses, such as my own – The Plant Station, that depend on local shoppers and tourist to sustain them. The proposed power line will not only cut off any chance for city expansion, it will create a visual obstruction that will dominate the horizon – This will turn tourist townspeople and business away from Castle Rock. Our very livelihood depends on them.
- 14798-3 | I and many community volunteers have worked diligently along with city leaders to invest man hours and funds into revitalizing the downtown core to attract businesses and shoppers. We are beginning to turn the corner and come out of a weak economy with hope. Please reopen the ‘scoping’ process and select another route.
- 14798-4 | As a property owner who has invested in Castle Rock area home and acreage as an investment for retirement, I have seen the Great Recession reduce my property values substantially. I can not afford to have my investment value decline further. A decrease in property value also increases the amount of taxes and money that each property must pay in order to have good schools.
- Castle Rock schools are supported by a dedicated community and the schools are also very involved with the community, less support from struggling property values will undermine the quality.
- 14798-5 | The part that is unpalatable the most – why route a power line on 2 sides of a struggling community. – Bisecting one urban growth boundary is bad enough – but 2? Please don’t!

1 of 3

- 14798-1 Please see the responses to Comments 14793-18 and 14793-20.
- 14798-2 Regarding city expansion, please see the responses to Comments 14793-18 and 14793-20. Recreational activities in the Castle Rock area such as fishing and hiking along urban trails, are considered a compatible use and can continue within a transmission line right-of-way or under a transmission line. The EIS acknowledges potential impacts to recreation and tourism in Section 11.2.2.8, Community Values, and impacts to visual resources in Chapter 7, Visual Resources.
- 14798-3 Please see the response to Comment 14793-16.
- 14798-4 Please see the response to Comment 14140-2.
- 14798-5 Comment noted.

03/25/2013 09:22 3602743295

CHENNAULT JIM NANCY

PAGE 01/02

14798

B O N N E V I L L E P O W E R A D M I N I S T R A T I O N

BPA's Proposed I-5 Corridor Reinforcement Project
Draft environmental impact statement comment form

Public review of and comment on this draft EIS will continue through March 1, 2013. Comments should be as specific as possible, with references to particular pages, sections and chapters. Additional or clarifying information that should be considered is helpful. Factual corrections are appreciated. BPA staff will review all comments received and respond to them in the final EIS.

Name (will be included with your comment in the final EIS) NANCY CHENNAULT

Address

Please add me to the mailing list

Please remove me from the mailing list

Comments:

As a business owner within the Castle Rock community, I ask that the BPA re-consider the proposed route for the power line, that will close any potential for urban development on 2 sides of Castle Rock.

We are a community comprised of small businesses, such as my own - The Plant Station, that depend on local shoppers and tourists to sustain them. The proposed power line will not only cut off any chance for city expansion, it will create a visual obstruction that will dampen the horizon - this will turn tourists, townspeople and business away from Castle Rock. Our very livelihood depends on them.

I and many community volunteers have worked diligently, along with city leaders to invest manhours and funds into revitalizing the downtown core to attract businesses and shoppers. We are beginning to turn the corner to come out of a weak economy with hope. Please reopen the 'Scoping' process and select another route.

Comment period extended
until noon on March 25, 2013



2 of 3

As a property owner who has invested in Castle Rock area home and acreage as an investment for retirement, I have seen the Great Recession reduce my property values substantially. I can not afford to lose my investment value decline further. A decrease in property value also increases the amount of taxes and money that each property must pay in order to have good schools. Castle Rock Schools are supported by a dedicated community and the schools are also very muched with the community. Less support from struggling property values will undermine the quality.

The part that is unpalatable the most - why route a power line on 2 sides of a struggling community. Bisecting one urban grade boundary is bad enough but 2?

Thank you for taking the time to give us your thoughts and help shape the future of this project. You are welcome to include additional pages as needed.

Please don't!

Forms and comments may be submitted in these formats:

Mail
I-5 Corridor Reinforcement Project
PO Box 9250
Portland, OR 97207

Fax
888-315-4503

Online
www.bpa.gov/goto/i-5

Email
i-5@bpa.gov

At public meetings
Place completed form in a comment box or give to a staff member

Phone
800-230-6593 (voice mail)

This page intentionally left blank.