

# **I-5 Corridor Reinforcement Project**

## **Final Environmental Impact Statement**

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

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# Comments and Responses

## Volume 3F

### Communication Log Numbers 14799 - 14827

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
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14799

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**From:** noreply@bpa.gov  
**Sent:** Saturday, March 23, 2013 6:58 PM  
**Subject:** 14799: 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](http://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:**

14799-1 • National Environmental Policy ACT Excerpt from NEPA • Throughout NEPA, environment is referred to in three ways: natural environment, human environment and environment. When just the natural or human environment is intended in the text, it is so identified. When "environment" is used alone it must, therefore, be intended to refer to both the human and natural environment. That is the result of just common sense reading of the statutory language. The general term means the "whole," the specific term means the "part of the whole." Those of us from the property rights perspective tend to react to the word "environment" as something only for nature. When reading NEPA, "environment" includes both the human and natural. • FOIA – FREEDOM OF INFORMATION ACT Government transparency is an integral part of a democratic society. Citizens should be able to peer into their government's darkest corners and look for things that are wrong. For only when citizens know their government can they participate effectively in its operation. FOIA has served us well over the last decades, but lawsuits followed by more lawsuits have been necessary to keep the dark corners lit. These dark corners are just where FOIA is most valuable, and it is just where FOIA stumbles — in the delays, in the withholdings, and in the redactions — because agencies are most wary of exposing the darkest corners of their administration. Without accountability, we cannot ensure that FOIA keeps these dark corners lit. BPA has allowed access to only a few documents on the I-5 project • MEMORANDUM FOR FEDERAL AGENCIES

14799-2

14799-3 Freedom of Information Act SUBJECT: Freedom of Information Act A democracy requires accountability, and

14799-4 accountability requires transparency. As Justice Louis Brandeis wrote, "sunlight is said to be the best of

- 14799-1 Comment noted.
- 14799-2 Comment noted. BPA agrees that FOIA can be a valuable tool, particularly as BPA does not post or distribute every internal document about our projects.
- 14799-3 BPA has taken many steps beyond our typical outreach for this project. BPA has posted hundreds of documents on the project website and provided individuals with one-on-one time with many members of the project team since 2009. We have worked hard to make all documents relevant to the EIS publicly available, and have made many more documents available through our responses to the many FOIA requests that we have received.
- 14799-4 BPA has shown its commitment to transparency by hosting multiple public meetings, answering questions in person, by phone and email and by sharing project information and updates as BPA makes progress in the analysis.

14799

14799-4

disinfectants." In our democracy, the Freedom of Information Act (FOIA), which encourages accountability through transparency, is the most prominent expression of a profound national commitment to ensuring an open Government. At the heart of that commitment is the idea that accountability is in the interest of the Government and the citizenry alike. The Freedom of Information Act should be administered with a clear presumption: In the face of doubt, openness prevails. The Government should not keep information confidential merely because public officials might be embarrassed by disclosure, because errors and failures might be revealed, or because of speculative or abstract fears. Nondisclosure should never be based on an effort to protect the personal interests of Government officials at the expense of those they are supposed to serve. In responding to requests under the FOIA, executive branch agencies (agencies) should act promptly and in a spirit of cooperation, recognizing that such agencies are servants of the public. All agencies should adopt a presumption in favor of disclosure, in order to renew their commitment to the principles embodied in FOIA, and to usher in a new era of open Government. The presumption of disclosure should be applied to all decisions involving FOIA. The presumption of disclosure also means that agencies should take affirmative steps to make information public. They should not wait for specific requests from the public. All agencies should use modern technology to inform citizens about what is known and done by their Government. Disclosure should be timely. I direct the Attorney General to issue new guidelines governing the FOIA to the heads of executive departments and agencies, reaffirming the commitment to accountability and transparency, and to publish such guidelines in the Federal Register. In doing so, the Attorney General should review FOIA reports produced by the agencies under Executive Order 13392 of December 14, 2005. I also direct the Director of the Office of Management and Budget to update guidance to the agencies to increase and improve information dissemination to the public, including through the use of new technologies, and to publish such guidance in the Federal Register. This memorandum does not create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person. The Director of the Office of Management and Budget is hereby authorized and directed to publish this memorandum in the Federal Register. BARACK OBAMA Jan 1, 2009 WHAT ABOUT BPA TRANSPARENCY? See slides in attachment pages 10 -13 showing map was redacted but BPA overlooked the bottom that indicated a 2150 ft. EMF Right of Way. • Golder FOIA Part 22. • The following is part of a FOIA of the US \$2.3 million dollar Environmental Impact Study that BPA ordered from Golder and Assoc. BPA has redacted most content. Here are some pieces that slipped by. • EMF evidence of legal and also PR importance. • Perhaps some of our elected local officials would like to see the whole report? • BPA was studying EMF in Nov 2010 while denying it publically. • Page 21 of Part 22 Golder FOIA • The drawing was redacted but the Legend remaining shows what the Golder study calls the "EMF Right of Way" as 2150 ft. That figure is close to what the more recent epidemiological studies have found. See slide in attachment..... • Exponent is the company that made this exculpatory report of EMF placed as Annex G of the I-5 DEIS • The report contradicts and distorts the evidence provided by: <http://www.exponent.com/history/> Name and address of the study mill responsible for creating inaccurate data for BPA to supply to the public: Exponent 420 Lexington Avenue, Suite 1740 New York, NY 10170 Who is Exponent? In April 1967, five Ph.D.-level researchers, with expertise in materials science, engineering mechanics, and structural analysis, decided to start a consulting business called Failure Analysis Associates® (FaAA). By the early 1970s, FaAA's work for the energy industry in stress and fracture mechanics-how things crack and break-brought the company national recognition. Within a few years, we were investigating and analyzing accidents and failures of all kinds. People began to talk about our work in structural and stress analysis, mechanical engineering, materials engineering and metallurgy, transportation and utilities, the process industry, and risk analysis. In 1989, a holding company for FaAA was formed, called The Failure Group, Inc. The Failure Group went public in August 1990, trading on NASDAQ under the symbol FAIL. During the 1990s, we began looking to develop alliances with companies that offered services complementary to those already offered by FaAA. In late 1996, The Failure Group acquired Environmental Health Strategies (now Exponent's Health Centers). Since that time, it is one of our largest growth practices. Our scientists, physicians, and regulatory specialists provide unparalleled, interdisciplinary expertise to evaluate the full range of environmental and public health issues that face our nation and the world. In May 1997, The Failure Group acquired Performance Technologies, Inc. (dba PTI Environmental Services) which is now Exponent's Environmental Practices. Exponent's scientists and engineers provide proven, cost-

14799-5

14799-6

14799-7

- 14799-5 BPA has been involved in supporting and reviewing research on EMF for decades. This work has been publically disclosed in reports, presentations, and other communications.

BPA was preparing the Draft EIS, including the section on EMF, in 2010.

Please see the response to Comment 14328-6.

- 14799-6 The Golder report the commenter refers to was BPA's original attempt to characterize potential use of the right-of-way based on county zoning designations. However, in the end BPA determined it was more appropriate to count houses instead of using zoning to approximate houses. Distances of 2,150 feet were used to look at the zoning 1,000 feet on either side of a 150-foot right-of-way.

BPA calculates the appropriate transmission line right-of-way width based on industry standards for safe clearances to activities that might happen outside the right-of-way.

- 14799-7 Comment noted.

- 14799
- 14799-7 effective, scientifically defensible, and realistic assessments and solutions to complex environmental issues. Soon, we realized that the firm was offering a broader range of services than just our traditional "failure analysis," and the name of our organization needed a change. In March of 1998, we changed our name to Exponent, meaning "one who expounds or interprets" - which is exactly what we are best at! In May 2002, Exponent acquired Novigen Sciences, Inc. (now Exponent's Center for Chemical Registration and Food Safety). Our staff in this area specializes in timely, high-quality, creative, and practical solutions to problems that affect our clients' ability to conduct business globally. In June 2005, Exponent opened its first office in China. Exponent Science and Technology Consulting Co., Ltd. (Hangzhou), also known as Exponent China Ltd., is located in the Hangzhou Hi-Tech Development Zone, and provides engineering and scientific consulting services to meet the increasing demand for technical support to U.S. and international companies operating in East Asia. In 2008, we added to our presence in Europe, opening an office in Switzerland. We now service our European clients through offices in the United Kingdom, Germany and Switzerland. EXPONENT Our staff in this area specializes in timely, high-quality, creative, and practical solutions to problems that affect our clients' ability to conduct business globally. Today, Exponent offers more than 90 different disciplines through a network of 20 U.S. and 5 international locations. Our staff totals over 900 and includes more than 350 Ph.D.s and M.D.s. Example of the report's approach: Exponent's Comments to an independent and peer reviewed study report that focuses on children and paid by a children's foundation in Australia. Lines of 220kv or less.: Lowenthal et al. (2007) grouped cases in five diagnostic categories as lymphoproliferative disorders (LPD) (including acute lymphoblastic leukemia [ALL]) and cases in three diagnostic categories (including acute myeloid leukemia [AML] and other leukemias) as myeloproliferative disorders (MPD). These groups included both adults and children of all ages. The authors estimated exposure by obtaining a lifetime residential history and assessing distance of residences from 88-kV, 110-kV, and 220-kV power lines. They reported elevated, but not statistically significant, ORs for those who lived within 50 m of any of these power lines, and an indication of decreasing ORs with increasing distance. This study adds very little to the existing database of information on adult leukemia and residential exposure, however, because of fundamental limitations. For example, different cancer types were combined as were different ages of diagnosis. It is well known that cancer etiology varies by cancer type, cancer subtype, and diagnostic age. 22 Conclusion: This study adds very little to the existing database of information on adult leukemia and residential exposure because of fundamental limitations.
- 14799-8 • EFSEC asks why all the spaghetti of routes? • Contract for contingent purchase of the Troutdale Sub-station was signed before public notice of the I-5 project • NEPA requires impacted citizens have a say in projects like this. • What options are required by law? • I-5 public perception milestones • See slides for summary of NEPA violations in attachment. • NEPA SHORTCUTS -1 Proposes to build dangerous, invasive, unsightly high voltage towers and lines through populated areas which fails to create and maintain conditions under which man and nature can exist in productive harmony. • NEPA SHORTCUTS -2 Avoidance of the National Environmental Policy Act Sec. 101 [42 USC § 4331] following sections: A. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations and failed to note school locations within the proposal and on any map. B. Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings. C. Obtain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences. • NEPA SHORTCUTS -3 BPA failed to accurately recognize property devaluation, economic impact and sales depression in and around proposed routes. Poverty data in the DEIS is outdated (2000) Current data would have excluded the West Alternative if used. • NEPA SHORTCUTS-4 The BPA failed to work with local officials (early) as required under Washington State and Federal Law Failed to follow NEPA timeline requirements and regional government support model related to cooperative agency status. • NEPA SHORTCUTS -5 The BPA failed to provide or improperly withheld content on FOIA documentation. Documents were received with completely blacked out content in violation of the freedom of information act. • NEPA SHORTCUTS -6 Oregon route options were removed from consideration before scoping began in violation of the NEPA. Other alternates were not studied as required by law. • NEPA SHORTCUTS -7 BPA has not shown to be trustworthy stewards in the public interest. Minimizes local ordinance and law. • NEPA SHORTCUTS -8 The BPA has not met national reliability standards for the transmission system as required by law. Over the past few years, there were insufficient grid improvements to support many current green energy sources and other regions load growth. •
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- 14799-14
- 14799-15
- 14799-16
- 14799-17

- 14799-8 Please see the response to Comment 14332-1.
- 14799-9 Comment noted.
- 14799-10 Comment noted. BPA believes that through its proposed project and mitigation measures identified for implementation in the EIS, BPA is acting consistently with the cited provisions of 42 USC § 4331(b), as well as with its other provisions such as "achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities."
- 14799-11 Please see the response to Comment 14642-2.
- 14799-12 Updated poverty data is included in the Final EIS.
- 14799-13 Section 1.6, Public Involvement, describes how BPA worked early in the NEPA process to inform and involve local jurisdictions, and has continued these efforts throughout the process. BPA believes that these involvement efforts fully comport with applicable NEPA requirements.
- 14799-14 Documents that BPA has redacted or withheld fall into categories of protected information either due to privacy or particular legal issues.
- 14799-15 Please see the response to Comment 14443-1.
- 14799-16 Comment noted.
- 14799-17 Please see the response to Comment 14790-19.

- 14799-18 NEPA SHORTCUTS – 9 BPA misrepresented power calculations and local need in an effort to persuade the public that the I-5 project was needed for Clark and Cowlitz counties when there are no connections to either county. • NEPA and Environmental Justice Environmental Justice under the National Environmental Policy of 1970, NEPA, is “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work. The actual text of this aspect of NEPA here: <http://www.epa.gov/oecaerth/environmentaljustice/index.html>, The federal government is sovereign. It answers only to: WE THE PEOPLE Terry Constance
- 14799-19

Attachment

- 14799-18 Please see the response to Comment 14685-1.
- 14799-19 Comment noted. Sections 11.1.9, Environmental Justice, and 11.2.2.9, Environmental Justice, and Appendix H discuss Environmental Justice.

# **BPA TRANSPARENCY**

- N** Another Way BPA
- L** Citizens Against the Towers
- D**
- A** Yale Valley Coalition



**NO LINES IN POPULATED AREAS – RURAL or URBAN**

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## What is NEPA?

### National Environmental Policy ACT

14799-20 Congress enacted NEPA in December, 1969, and President Nixon signed it into law on January 1, 1970. NEPA was the first major environmental law in the United States and is often called the “Magna Carta” of **environmental** laws.

Importantly, NEPA established this country’s national **environmental** policies.

To implement these policies, NEPA requires agencies to undertake an assessment of the **environmental** effects of their proposed actions prior to making decisions.

Two major purposes of the environmental review process are better informed decisions and citizen involvement, both of which should lead to implementation of NEPA’s policies.

14799-20 Comment noted.



## Excerpt from NEPA

- *Throughout NEPA, environment is referred to in three ways: natural environment, human environment and environment. When just the natural or human environment is intended in the text, it is so identified. When "environment" is used alone it must, therefore, be intended to refer to both the human and natural environment. That is the result of just common sense reading of the statutory language. The general term means the "whole," the specific term means the "part of the whole." Those of us from the property rights perspective tend to react to the word "environment" as something only for nature. When reading NEPA, "environment" includes both the human and natural.*

14799-20

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## FOIA – FREEDOM OF INFORMATION ACT

Government transparency is an integral part of a democratic society.

Citizens should be able to peer into their government's darkest corners and look for things that are wrong.

For only when citizens know their government can they participate effectively in its operation.

FOIA has served us well over the last decades, but lawsuits followed by more lawsuits have been necessary to keep the dark corners lit.

These dark corners are just where FOIA is most valuable, and it is just where FOIA stumbles – in the delays, in the withholdings, and in the redactions – because agencies are most wary of exposing the darkest corners of their administration. Without accountability, we cannot ensure that FOIA keeps these dark corners lit.

**BPA has allowed access to only a few documents on the I-5 project**

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14799

# MEMORANDUM FOR FEDERAL AGENCIES

## Freedom of Information Act

**SUBJECT:** Freedom of Information Act

A democracy requires accountability, and accountability requires transparency. As Justice Louis Brandeis wrote, "sunlight is said to be the best of disinfectants." In our democracy, the Freedom of Information Act (FOIA), which encourages accountability through transparency, is the most prominent expression of a profound national commitment to ensuring an open Government. At the heart of that commitment is the idea that accountability is in the interest of the Government and the citizenry alike.

The Freedom of Information Act should be administered with a clear presumption: In the face of doubt, openness prevails. The Government should not keep information confidential merely because public officials might be embarrassed by disclosure, because errors and failures might be revealed, or because of speculative or abstract fears. Nondisclosure should never be based on an effort to protect the personal interests of Government officials at the expense of those they are supposed to serve. In responding to requests under the FOIA, executive branch agencies (agencies) should act promptly and in a spirit of cooperation, recognizing that such agencies are servants of the public. All agencies should adopt a presumption in favor of disclosure, in order to renew their commitment to the principles embodied in FOIA, and to usher in a new era of open Government.

The presumption of disclosure should be applied to all decisions involving FOIA.

**The presumption of disclosure also means that agencies should take affirmative steps to make information public.**

**They should not wait for specific requests from the public.**

**All agencies should use modern technology to inform citizens about what is known and done by their Government.**

**Disclosure should be timely.**

**I direct the Attorney General to issue new guidelines governing the FOIA to the heads of executive departments and agencies, reaffirming the commitment to accountability and transparency, and to publish such guidelines in the *Federal Register*. In doing so, the Attorney General should review FOIA reports produced by the agencies under Executive Order 13392 of December 14, 2005. I also direct the Director of the Office of Management and Budget to update guidance to the agencies to increase and improve information dissemination to the public, including through the use of new technologies, and to publish such guidance in the *Federal Register*.**

This memorandum does not create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

The Director of the Office of Management and Budget is hereby authorized and directed to publish this memorandum in the *Federal Register*.

**BARACK OBAMA** Jan 1, 2009

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14799-21

14799-21 Please see the response to Comment 14799-4.



### Is BPA following the NEPA on the I-5 Proposal?

14799-22

Are NEPA guidelines and rules being ignored?
What are the legal considerations on impacted property?
Was regional government policy considered?
Were citizens opposition group alternatives discarded?
Does the BPA environment definition ignore humans?
How important are aesthetic changes to communities?

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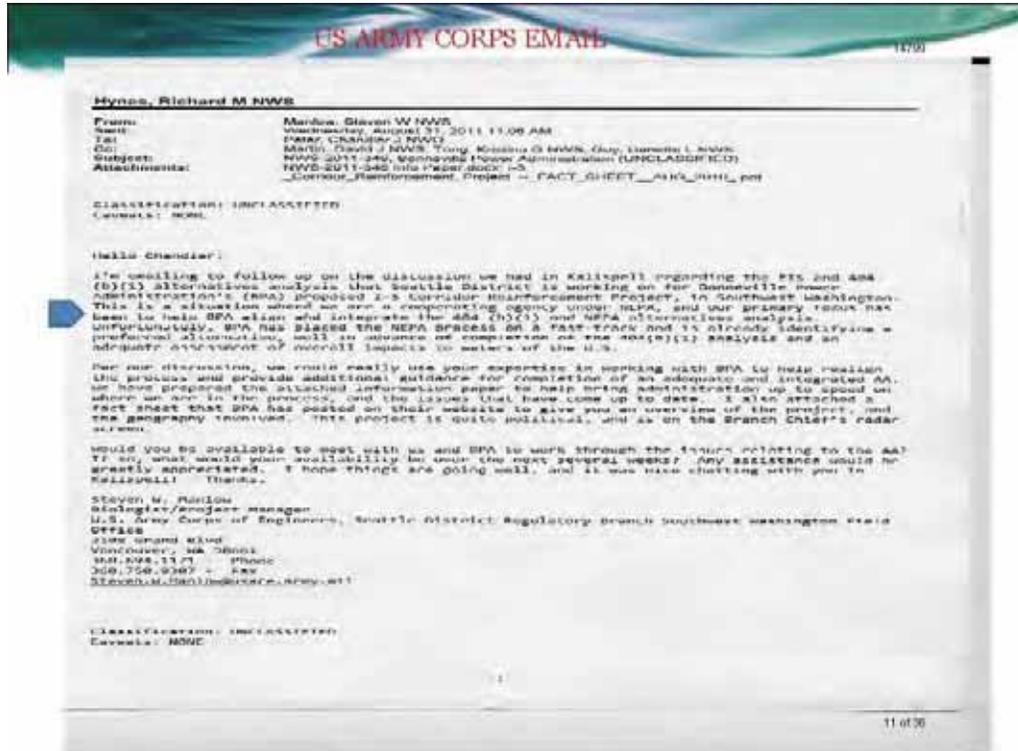
14799-22 BPA, as a federal agency, must follow NEPA. BPA continues to meet the requirements of NEPA on this project. Please see the response to Comment 14771-14.

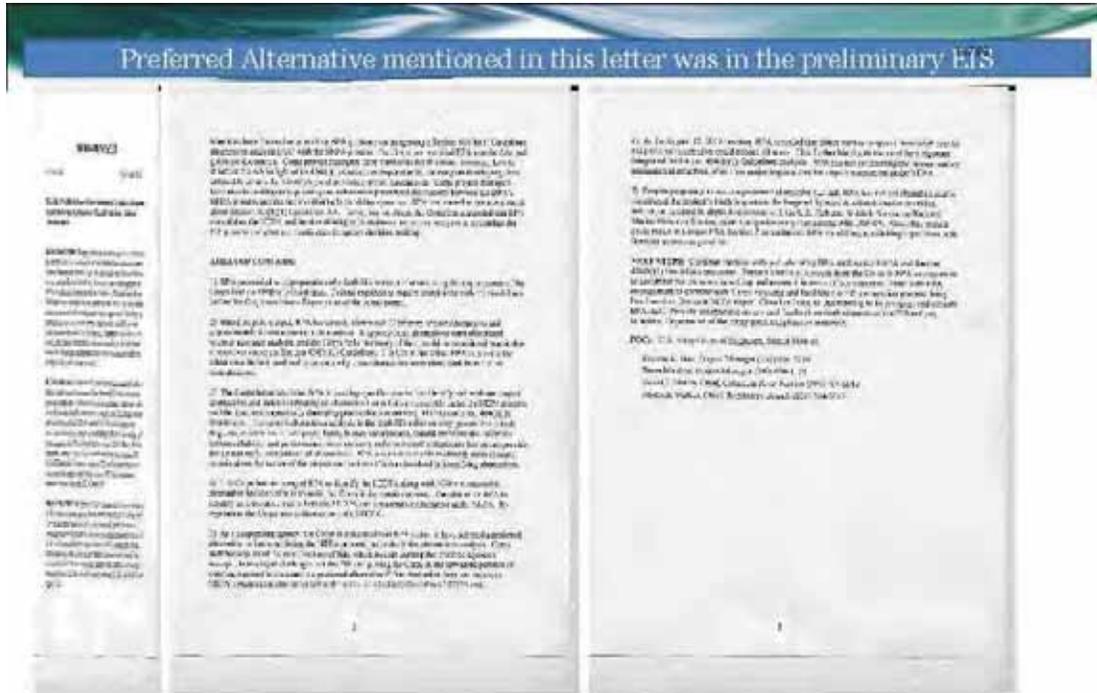
Chapter 27, Consultation, Review, and Permit Requirements, discusses project consistency with federal, state and local laws and ordinances.

Section 4.7, Alternatives Considered but Eliminated from Further Consideration, discusses various alternatives suggested by the public.

NEPA addresses the human and natural environment.

Chapter 7, Visual Resources, discusses visual impacts to communities in the project area.





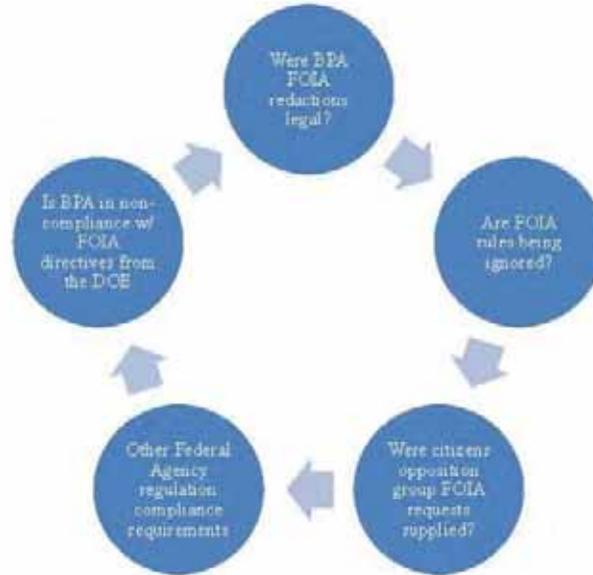
US Army Corps 3 page letter of concern



14799

## Is BPA following the FOIA on the I-5 Proposal?

14799-23



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14799-23 To our knowledge, BPA is following all rules for FOIA disclosures.



# BPA TRANSPARENCY

14799-23

- Golder FOIA Part 22.
- The following is part of a FOIA of the US\$2.3 million dollar Environmental Impact Study that BPA ordered from Golder and Assoc. BPA has redacted most content. Here are some pieces that slipped by.
- EMF evidence of legal and also PR importance.
- Perhaps some of our elected local officials would like to see the whole report?
- BPA was studying EMF in Nov 2010 while denying it publically.

## Email header for following 3 slides

**Smith,Dalontae L (CONTR) - NWPP-B1**

**From:** Brooks, Glenn [EX 6]  
**sent:** Tuesday, November 09, 2010 5:03 PM  
**To:** Stearns, Jack D - TEL-TP1A-3; Dan Bracken; Liebhaber, Donna J - TELG-TP1A-3  
**CC:** Bailey, Grant; Wittpern, Nancy A - REC-4; Bingaman, Claire D - REC-4  
**Subject:** FW: EMF reference material  
**Attachments:** Proposed EMF Zoning Definitions.xls; ProjectPopDensityv2.xls; 09393513F96\_EMF\_KelsoLongviewZoningFigure.pdf; 09393513F99\_EMF\_VancouverCamasZoningFigure.pdf; 09393513F97\_EMF\_ZoningFigures.pdf; 09393513F100\_EMF\_PopulationFigure.pdf; 09393513F101\_EMF\_PopulationKelsoLongview.pdf; 09393513F102\_EMF\_PopulationVancouver.pdf [EX 5]

Hello Dan and Rick,

|

The next 59 pages are redacted

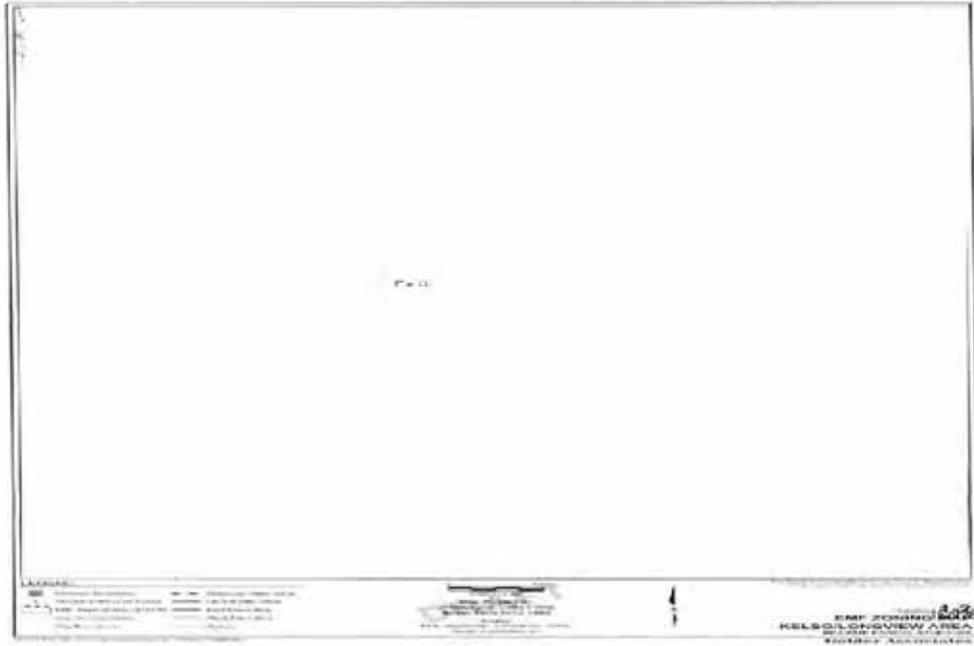
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14799

# BPA TRANSPARENCY

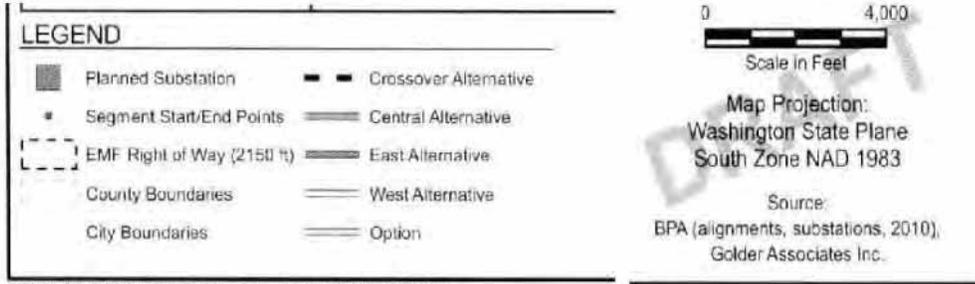




14799

# BPA TRANSPARENCY

- Page 21 of Part 22 Golder FOIA
- The drawing was redacted but the Legend remaining shows what the Golder study calls the "EMF Right of Way" as 2150 ft. That figure is close to what the more recent epidemiological studies have found.



06303513F98\_EMF\_Kelval.mxd | 11/9/2010 | THAMMOND



14799

# BPA TRANSPARENCY



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## BPA TRANSPARENCY

14799-24

- Exponent is the company that made this exculpatory report of EMF placed as Annex G of the I-5 DEIS
- **The report contradicts and distorts the evidence provided by: <http://www.exponent.com/history/>**

Exponent

420 Lexington Avenue, Suite 1740

New York, NY 10170

18-0130

14799-24 Please see the response to Comment 14322-1.



# BPA TRANSPARENCY

14799-25

In April 2015, the U.S. House of Representatives held a hearing on the environmental, regulatory, and economic impacts of the proposed expansion of the BPA hydroelectric project. The hearing was held in the House of Representatives, Subcommittee on Energy and Environment, Committee on Energy and Commerce, U.S. House of Representatives. The hearing was held in the House of Representatives, Subcommittee on Energy and Environment, Committee on Energy and Commerce, U.S. House of Representatives. The hearing was held in the House of Representatives, Subcommittee on Energy and Environment, Committee on Energy and Commerce, U.S. House of Representatives.



**Our staff in this area specializes in timely, high-quality, creative, and practical solutions to problems that affect our clients' ability to conduct business globally.**  
**Today, Exponent offers more than 90 different disciplines through a network of 40 U.S. and 5 international locations. Our staff totals over 900 and includes more than 350 Ph.D.s and M.D.s.**

14799-26

*Example of Exponent's approach:*  
 Exponent's approach to the study was to conduct a comprehensive review of the existing literature and to identify the key areas of concern. The study was conducted in a systematic and transparent manner, and the results were presented in a clear and concise format. The study was conducted in a systematic and transparent manner, and the results were presented in a clear and concise format.

**Note: This study adds very little to the existing database of information on adult leukemia and residential exposure because of fundamental limitations.**

14799-25 Comment noted.

14799-26 Please see the response to Comment 14332-1.



14799

**EFSEC asks why all the spaghetti of routes?**

14799-27

Was it necessary to have over 50 segments on the map?

20 of 35

14799-27 Comment noted.



Contract for contingent purchase of the Troutdale Substation was signed before public notice of the I-5 project

14799-27

Did excluding the Pearl Station Route remove the best option?

21 of 36

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NEPA requires impacted citizens have a say in projects like this.

14799-27

Citizen outrage and thousands of people impacted, why?

22 of 36

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14799

What options are required by law?

a. A LEDPA compliant unpopulated route

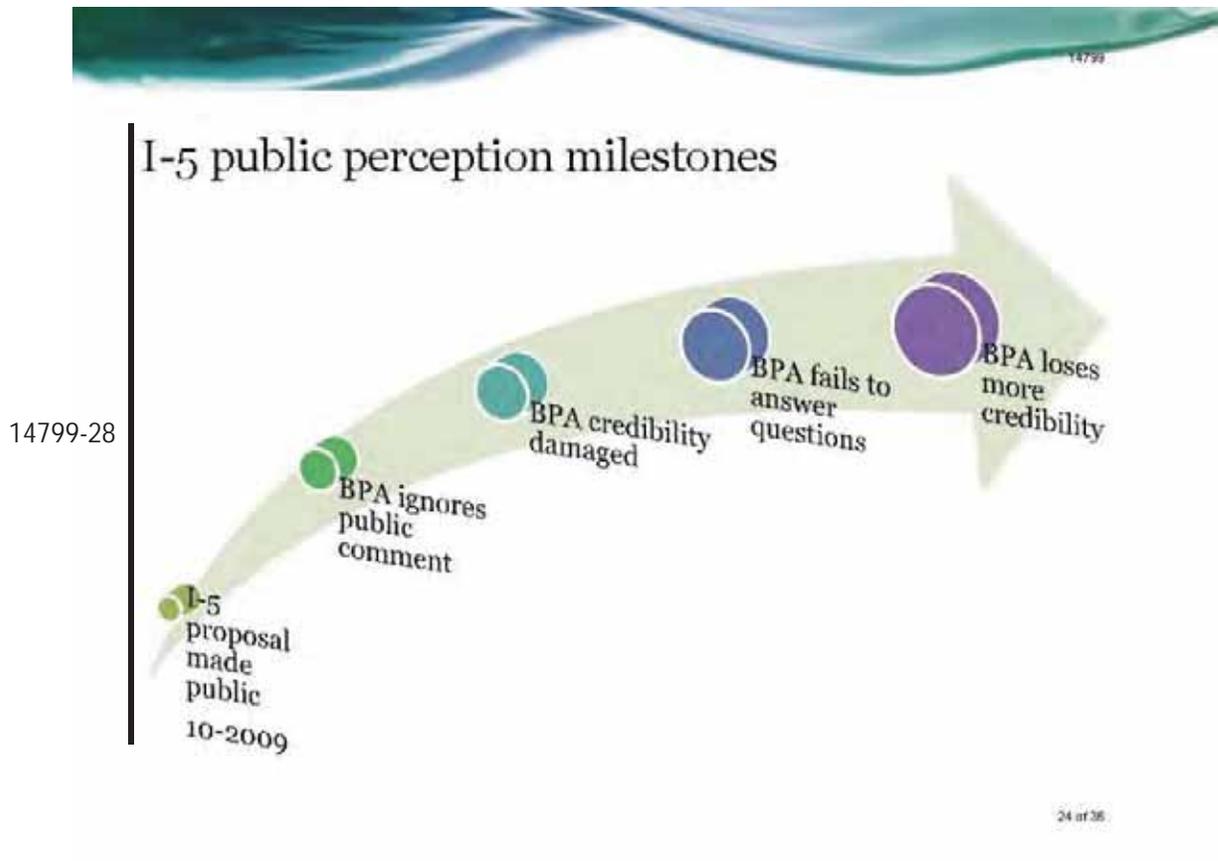
b. Columbia River crossing alternatives

c. No build option

14799-27

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14799-28 Comment noted.



14799

## BPA I-5 MAJOR PLANNING ISSUES

14799-28

- Removing Pearl Station without a study.
- Concern with EMF risk ignored in DEIS
- Actions cause local officials to threaten appeal
- Northeastern Route not fully considered
- Falling to answer questions at public meetings
- Perception of transparency missing
- Local power need misrepresented, public confidence lost
- NEPA - FOIA - LOCAL rules and regulations bypassed



Florescent lamps under 500kv

25 of 36

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## NEPA SHORTCUTS -1

*Proposes to build dangerous, invasive, unsightly high voltage towers and lines through populated areas which fails to create and maintain conditions under which man and nature can exist in productive harmony.*

26 of 36

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## NEPA SHORTCUTS -2

*Avoidance of the National Environmental Policy Act Sec. 101  
[42 USC § 4331] following sections:*

*A. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations and failed to note school locations within the proposal and on any map.*

*B. Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.*

*C. Obtain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences.*

14799-29

27 of 36

14799-29 Please see the response to Comment 14799-10.



## NEPA SHORTCUTS - 3

*BPA failed to accurately recognize property devaluation, economic impact and sales depression in and around proposed routes.*

*Poverty data in the DEIS is outdated (2000)  
Current data would have excluded the West  
Alternative if used.*

26 of 36



## NEPA SHORTCUTS– 4

*The BPA failed to work with local officials (early) as required under Washington State and Federal Law*

Failed to follow NEPA timeline requirements and regional government support model related to cooperative agency status.

29 of 36



## NEPA SHORTCUTS -5

*The BPA failed to provide or improperly withheld content on FOIA documentation. Documents were received with completely blacked out content in violation of the freedom of information act.*

30 of 36



## NEPA SHORTCUTS – 6

*Oregon route options were removed from consideration before scoping began in violation of the NEPA.*

*Other alternates were not studied as required by law.*

31 of 36



## NEPA SHORTCUTS – 7

BPA has not shown to be trustworthy stewards in the public interest.

Minimizes local ordinance and law.

32 of 36



14798

## NEPA SHORTCUTS – 8

*The BPA has not met national reliability standards for the transmission system as required by law.*

*Over the past few years, there were insufficient grid improvements to support many current green energy sources and other regions load growth.*

33 of 36



## NEPA SHORTCUTS – 9

*BPA misrepresented power calculations and local need in an effort to persuade the public that the I-5 project was needed for Clark and Cowlitz counties when there are no connections to either county.*

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## NEPA and Environmental Justice

14799-30

Environmental Justice under the National Environmental Policy of 1970, NEPA, is “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation.

It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work. The actual text of this aspect of NEPA here:

<http://www.epa.gov/oecaerth/environmentaljustice/index.html>.

35 of 36

- 14799-30 Comment noted. Sections 11.1.9.1, Minority Populations and 11.1.9.2, Low-Income Populations, address Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, by describing low-income and minority populations in the project area. Impacts to minority and low-income populations are not disproportionate to impacts on non-minority or non-low-income populations living in the census blocks crossed by the project, as described in Section 11.2.2.9, Environmental Justice.

Thank You for your time

**NLPA**

- Another Way BPA
- Citizens Against the Towers
- Yale Valley Coalition

The federal government  
is sovereign.  
It answers only to:  
***WE THE PEOPLE***



**NO LINES IN POPULATED AREAS - Rural or Urban**

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14800

Public Comments for BPA I-5 Corridor Reinforcement Project attached  
John Keatley

Page 1 of 3

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To: Mark Korsness, B.P.A. Project Manager

March 24, 2013

To: Steve Manlow, U.S.A.C.E.

This letter is in response to the Draft EIS of the I-5 Reinforcement project published November 2012 by The Bonneville Power Administration.

14800-1

Our farm is negatively impacted by the preferred alternative route by placement of 3 or 4 towers which include over 4,000 lineal feet (approx. .8 of a mile) of high voltage overhead lines passing the majority of our property heading East then turning at a approximate 90degree turn to once again run through the majority of our farm in a North to South direction! This appears to be poor planning on a poorly thought out route segment (F) created late in your process and as an example of the haste in engineering with tower F10 only a few hundred feet from tower F11 on flat land (< 2% slope), on stable ground in our open field.

14800-2

This comment letter, however, addresses the broader issue; **public policy**. We submit that this preferred alternative route is extremely poor public policy for the following reasons:

- Bisects and goes thru Castle Rock, Washington's Future Urban Reserve (growth area) on both the East and West side of the Cowlitz River.
- Bisects and severs higher and better use tax lands adjacent and close to paved county roads with power and other utilities.
- The route impacts many small parcels of private land needlessly when crossing the congested Cowlitz Valley, while other alternatives are available and have not been assessed or adequately evaluated.
- This is particularly and especially egregious, when the Preferred Substation of three options is the northern-most Casey Road site.

When looked at, the Casey Road site, for the switchyard, and the beginning of the line heads south for several miles adjacent and parallel to BPA's existing ROW, to near Baxter Creek, turns S.E. and **needlessly** impacts the populated area of Castle Rock. This is not logical, not good economics in the short term or permanently and is socially unacceptable.

14800-3

On September 3, 2010, a small group of Cowlitz County citizens met with BPA's project manager with a Washington Department of Natural Resource map outlining a one mile wide possible path from Casey Road Substation East crossing a less congested Cowlitz Valley site in one tangent to Interstate 5, mostly on public trust lands managed by WDNR. Can this route be selected within the current process?

14800-4

This preferred alternative route adversely impacts not only Castle Rock's Urban Growth Area but our schools. Our school district is not an asset wealthy one. It has no major industry for tax base; is a Levy Equalization District as classified by Washington State, and currently over 50% of our enrolled students are eligible to receive free or reduced lunch under a Federal program. This preferred alternative route will cause undue harm, is socially unwarranted, unnecessary and appears to not be in compliance with the concept and doctrine of Fairness and Rule of Environmental Justice.

14800-1 Please see the response to Comment 14097-1.

14800-2 Comment noted.

14800-3 Please see the response to Comment 14097-1.

14800-4 Please see the response to Comment 14677-4.

14800-5

We request that BPA reopen the scoping process to address the poor public policy if the Preferred Alternative Route is built especially from the preferred substation at Casey Road. There are several alternatives that we request be fully evaluated in the standard process under the National Environmental Policy Act ...N.E.P.A. Some of these alternatives are listed in the Economic and Social Paper by No Lines in Populated Areas (N.L.P.A). We support all alternatives listed on p.6, and in their transmittal letter.

14800-6

How do other public and privately proposed projects affect the timing of B.P.A.'s I-5 Reinforcement Project? Two of these projects are P.G.E.'s new 220MW power production plant located in Clatskanie, Oregon and the second is BPA/PGE memorandum of understanding on modifying the Cascade Crossing 500KV line. These projects, along with generation redispatch as discussed in D.E.I.S. Summary document p.52, suggest that there is time to reopen the scoping process in order to evaluate additional and better route(s). Are there other planned projects that will impact the reliability and timing to reinforce the grid?

14800-7

Good public policy is paramount and all citizens, taxpayers, and rate payers want and deserve nothing less.

Please, respectfully do a better job with this important public policy issue. Can you accept that this needs more work by reopening the scoping process to fully evaluate better alternatives than the preferred alternative? Please release those routes and segments of lesser importance than the preferred as based on the D.E.I.S. evaluation to date.

Thank you,

John Keatley and Darleen Keatley

Cc: U.S. Senator Maria Cantwell and Patty Murray  
U.S. Congresswoman Jamie Herrera-Beutler  
Governor Jay Inslee  
WA. Senator Brian Hatfield, Rep. Brian Blake, Rep. Dean Takko  
Cowlitz County Commissioners: Chairman Mike Karnofski, James Misner, Dennis Weber  
Castle Rock Mayor Paul Helenberg  
Castle Rock School Superintendent Sue Barker

- 14800-5 BPA has evaluated a wide variety of alternative routes in the EIS, and has explained in the EIS why other routes (such as those referenced by the commenter) have been considered but eliminated from detailed study in the EIS. In addition, Chapter 1, Purpose of and Need for Action, describes how BPA has allowed for an extensive and lengthy public involvement process during development of the Draft EIS. Accordingly, BPA does not believe it is necessary to reopen the scoping process at this time.
- 14800-6 PGE's new generation project is a 220 MW plant located near Rainier, Oregon. It is expected to be a "peaker" plant, which means it is intended to run only when loads are high (or peaking). This plant is expected to have little impact on the need for the I-5 Project.

PGE has discontinued work on the Cascade Crossing Transmission Project (CCTP) so that project is not moving forward. The project was expected to have little impact on the need for the I-5 Project.

BPA is continuing to evaluate the operational feasibility of generation redispatch, and whether contracts with regional generators would be cost effective. If BPA finds that generation redispatch is cost effective and commercially and operationally feasible, those measures could be separately and independently implemented to maintain system reliability in the I-5 project area. This could delay the date a new line would need to be operational to satisfy reliability needs by 2 to 6 years. However, none of these factors would completely eliminate the need for the project or change the preferred alternative.

- 14800-7 Please see the response to Comment 14800-5.

Please receive and note my attached letter of concern. Thank you.

14801

BOB KEATLEY



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Page 1 of 2

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March 24, 2013

To: Mark Korsness, B.P.A. Project Manager  
To: Steve Manlow, U.S.A.C.E

This brief letter is in response to the B.P.A. Draft E.I.S. and is in opposition to the I-5 Corridor Reinforcement Project's preferred alternative route.

14801-1 I am part owner of a commercial farm in Castle Rock, Washington; Sections and and Sections . My farm includes both agricultural lands and the larger portion is forest land. Your preferred alternative route bisects my farm in two directions, severing several units of timber. Due to the topography, location of creeks, property lines and now the severing of my forested land with your proposed preferred alternative route, I will no longer be able to economically fully harvest my timber asset and investment. This property also has significant area which borders the Castle Rock City Urban Reserve as shown on maps; has access to two county roads and our current Comprehensive Plan shows this property as Higher Density Rural Residential for development.

14801-2 The forgone opportunity from not being able to build structures on this prime, stable property, not unduly impacted by other environmental issues, is largely devastating, unnecessary and worsens as the proposed line enters and crosses the Urban Growth Area of Castle Rock. The damage to the community is of far greater importance than the above negative devaluation of this land for me and my children. Some public issues are: taking options away from Castle Rock's urban growth area; lowering options and values of H.B.U. (higher better use) lands, lowering assessed values for state, county and many other local taxing districts. There are better options with less economic and social issues. Now

14801-3 that the northern substation at Casey Road is the preferred substation, please reopen the Federal Scoping Process and evaluate fully the routes citizens have previously proposed. Specifically, look at

14801-4 crossing the Cowlitz River Valley due east from the Casey Road substation to the I-5 freeway. This three and one half mile segment is 70% public trust land with much less impact to citizens and private property.

Thank you for the opportunity to comment on the I-5 Corridor Reinforcement Project.

Robert Keatley  
Impacted Landowner and Concerned Citizen

Cc: U.S. Senator Maria Cantwell  
U.S. Senator Patty Murray  
Congresswoman Jaime Herrera-Beutler  
Governor Jay Inslee  
Representative Brandon Vick, Liz Pike, Dean Takko, and Brian Blake  
Senator Ann Rivers, Brian Hatfield

- 14801-1 See Chapter 5, Land and Chapter 11, Socioeconomics for discussions of timber resources and BPA compensation for affected properties. 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.
- 14801-2 Please see the response to Comment 14674-1.
- 14801-3 The route referenced by the commenter was included as part of the more northeastern route for the project that was considered but eliminated from detailed study in the EIS. The reasons for eliminating the portion of this route that extends due east from the Casey Road substation site to the I-5 freeway were explained in a January 2012 BPA Factsheet entitled "Evaluation of Northeastern I-5 Route," and which was summarized in Section 4.7.2.4, Northeastern Alternative, North of Silver Lake, Washington. Accordingly, BPA does not believe it is necessary to reopen scoping to further address this route.
- 14801-4 Please see the response to Comment 14801-3.

14802

To BPA I-5 Corridor DEIS Staff:

14802-1

As best I can tell, you have nearly ignored the very popular sport of kayaking on waters affected by the East alternative. The Northwest Creeking Competition event, known nation-wide, has been held on Canyon Creek and the East Fork Lewis annually for over 20 years. <http://www.northwestcreekcomp.blogspot.com/p/race-info.html> In 'Notes to Readers: Navigating the EIS', pg. 2, you state the impacts for recreation are studied for an area 1000' on either side of the transmission line centerline. Under that guideline, Canyon Creek is impacted for over a mile! In fact, the East alternative crosses the creek between towers K-94 and W-2; and creekers paddle down Merwin to the take-out at the Hwy. 503 high bridge, so they would also go under the line between K-93 and K-94, and would be visually assaulted by the line between N-6 to N-8. In addition, kayakers run Canyon Creek almost daily during the five months or so of prime season, and frequently even during the off season. Yes, I think it is safe to say that their 'viewer sensitivity' would rate as 'high' when they saw the visual and aesthetic damage the East alternative had done to Canyon Creek; that is to say, what, 180 foot tall towers (even taller over the lake?) and clear-cuts over 500 feet wide along their beloved route.

14802-2

My observations regarding the recreation data in general are similar to those re: your Visual Impacts and Noise Impacts conclusions. While there are many more formal man-made recreation sites in the more densely populated areas along the West Alternative, they offer an entirely different experience than do the natural woods and streams along the East and Central Alternatives. In urban area parks, most people would not look askance at views of buildings beyond the park limits, or be surprised at the sounds of traffic, other human activities, etc. When people make the commitment in time, gas expense, and so on, to come out into the more remote, less structured natural environment, they expect, and are looking for, an entirely different recreational experience. Therefore, how the view of a power-line tower (or just a tower that is taller than the one that was

1

1 of 2

- 14802-1 Section 6.2.2, Impacts Common to All Alternatives, discusses impacts on kayaking activities. Recreational activities that occur in navigable waters are considered to be compatible with the right-of-way uses. During the construction phase of the project there would be temporary, low-to-moderate impacts on kayaking activities in areas where line crossings require temporary closures for removal of vegetation, overhead wire stringing and other project-related actions. During the operation and maintenance phase of the project, while there would be infrequent (twice yearly) maintenance inspections of the line, these would not be considered to create permanent impacts to kayaking activities.
- 14802-2 The visual assessment in Chapter 7, Visual Resources, acknowledges that visual resources would be affected with localized areas of high impacts on some parks and natural areas. Viewer sensitivity was determined based on the BLM's Visual Resource Management system. This system is explained in Chapter 7, Visual Resources, and Appendix E. It is acknowledged that sparsely populated locations have fewer potential viewers and sensitivity is generally considered low compared to densely populated areas. However, localized public concern may give viewers higher expectations, making them more sensitive to potential changes.

14802-2

14802  
already there) would affect someone in a suburban park is vastly different than how someone would feel if he paddled his kayak around a corner of Lake Merwin and came full-face to a monstrous power-line crossing over the lake just above his head, complete with 400 or 500 foot-wide clearcut wounds marching off through the foothills on either side of the lake. Surely you would have to concede that! I don't feel you have adequately addressed these differences in your data.

Sincerely, Patti Olson

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Dear BPA I-5 Corridor DEIS staff:

14803-1 I take issue with your comments regarding 'scenic quality' and 'viewer sensitivity' for the East Alternative. In 7.2.3 you state "The East Alternative and its options have a low overall landscape rating based on having a low level of scenic quality and an average medium viewer sensitivity level." In the 32 years we have lived in our home just east of K-84, not one of the many hundreds of people who have come here have stepped out of their vehicle and said, "My, it's too bad your place has such low-level scenic quality." Or anything even remotely like that. Not one. And, speaking for myself, my viewer sensitivity level is NOT medium. When I think of what it would be like to look out my upstairs window, out over my beloved 3-acre country garden, and see a 20' wide swath bulldozed through the center of it (more with cut and fill across the 22% slope,) a permanent wound to endure for the rest of my life, to used by Federal Government employees at will, I assure you my viewer sensitivity level would be extreme. Extremely extreme. And you say, "These activities (i.e. use of the access road) would have no-to-low temporary impact on visual resources." Come on. If I were out working in my garden (or looking out a window) and saw one or a parade of government employees driving across the front of my house and up through my garden, the experience would NOT have a no-to-low impact on my visual resources. Or on my day, or on my life.

14803-2 You state in 7.3, page 7-12, "To assist with the evaluation of potential visual resource impacts, a series of photographs were taken from viewpoints in the project area." "Using visual simulations...visual impact was then determined as a function of the landscape...which evaluates how the project features would fit into the existing landscape..." I note great care was taken to illustrate a number (6, plus the 4 or 5 shared with other alternatives) of sites on the West alternative. What stands out, to MY eye, is..."Why, there are already towers and cleared r/w there!! In all of them!" On the other hand, what you chose to illustrate the impact of the proposed line where it crosses the Yale Valley is nothing but a blatant insult. It does NOTHING to show what the intrusion of the line would look like where, for instance, it comes down from the northern foothills and passes within 200 feet of the historic Yale Valley Cemetery, which has been here for

- 14803-1 The methodology used for the visual assessment and evaluating scenic quality and viewer sensitivity is based on the BLM's Visual Resource Management System. This system is widely accepted and frequently used for visual assessments. Details about scenic quality classification are in Sections 7.1.1.1, Scenic Quality, and 7.1.1.2, Viewer Sensitivity Levels, and Appendix E. These are technical classifications of the potential for scenic value created by physical features, and the expectations of viewers of the landscape, and not intended as estimates of beauty.
- 14803-2 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. Please see the response to Comment 14171-10 for further explanation of the methodology used in the visual assessment.

The Eastern Alternative is not BPA's Preferred Alternative.

Chapter 3, Project Components and Construction, Operation, and Maintenance Activities, gives an overview of project components. This includes details about vegetation clearing.

14803-2 over one hundred years. That photo could ALSO have been taken from the comfort and convenience of the state highway shoulder, and could have been taken from under the proposed r/w, instead of 2000 feet away. Or the photographer could just have turned around from that location and taken a photo south across the Yale Valley to where the proposed r/w is going to cut a swath through the foothills where they rise up on the south edge of the valley. That clear-cut will be 350' wide, or more, where it passes our house, due to the cutting down of our 110 year old firs, although outside the 150' r/w, for another 200' width along its path. And tower K-84 will be prominently visible on or very near the crest of that first ridge, for all to see from miles either way up and down the valley. All that could have been illustrated. If distant views were the preference, shots from either the Hwy 503 high bridge across upper Lake Merwin, or from the Saddle Dam recreation area, would have illustrated what visual damage the line will do as it crosses the upper end of Lake Merwin. But your staff chose not to make use of any of those much more telling views. It really does make one wonder.

14803-3 In spite of your dozens of definitions and charts manipulating your copious quantities of 'data,' one thing has been inadequately dealt with. That is, what were the expectations and priorities of the humans along the various routes, as illustrated by the choices they have made regarding where they live. You state in S.3.3.1 "the (West) alternative would pass relatively close to residential areas for most of its length and these viewers can have high levels of viewer sensitivity." But, they consciously chose to live next to a BPA right-of-way with a sizable existing power line on it!!! How 'high' can their level of viewer sensitivity be? For reasons of convenience, economics, status, or whatever, they made the conscious choice to live in a visual environment that already includes a power line, along with other nearby buildings of various types, roads, highways, etc.! So all of a sudden they become 'highly sensitive' when the prospect of an additional tower, or perhaps a replacement tower, is proposed in the BPA right-of-way they willingly bought homes beside? Those homeowners' priorities clearly did NOT include a pristine visual experience when they made the choice to live where they do. On the other hand, humans who have chosen to live in a rural environment have accepted the inconvenience and additional time and expense it takes to do mundane necessities, such as work, shopping, education, medical care, etc., because their priorities include a private landscape that is not saturated with the views of the typical urban and suburban community. Yet because there are fewer of them (that was the whole point!) you rate their viewer sensitivity as 'medium.' But to each of the individual 'viewers' their sensitivity is almost certainly much much more acute than the people who demonstrated that they didn't really give a heck about the appearance of a power line in their back yard from the very beginning! I really don't think you have analyzed these aspects fairly, to the extreme detriment of the rural alternatives.

14803-4 You rhapsodize in 7.3.2.2 about how the "lattice steel towers have spaces between their structural members through which the background can be seen, (and therefore) the towers would blend in with the landscape." In our case, tower K-84 would be located approximately 550' nearly due West from our house. I am told that 200 feet of the 300 foot wide swath of mature (180'+ tall) firs between my garden and the r/w line would be cut down as 'danger trees.' Therefore, instead of seeing the setting sun through the branches of our wonderful old firs, we would see it through the spaces between the structural members of the lattice steel tower. Not the same thing, not the same feeling at all.

Sincerely, Patti Olson

- 14803-3 The visual assessment in Chapter 7, Visual Resources, acknowledges that visual resources would be affected with localized areas of impacts on some rural areas in both the West and East alternatives. Viewer sensitivity was determined using the BLM's Visual Resource Management system, discussed in Chapter 7, Visual Resources, and Appendix E.

Although population density varies, visual sensitivity is rated high along most of the West Alternative because it is relatively close to residential areas for most of its length. Public comments received during the scoping period indicate residents along the West Alternative are highly sensitive to change. Please see the response to Comment 14777-2.

Visual sensitivity is rated generally low along most of the East Alternative because there are fewer residences close to the alternative.

- 14803-4 Through project design and mitigation measures, BPA has worked to minimize impacts to visual resources for all action alternatives. Mitigation measures proposed as part of the project are included in Chapter 3, Project Components and Construction, Operation, and Maintenance Activities. Additional recommended mitigation measures are included in Chapter 7, Visual Resources, and Appendix E.

14804

To BPA I-5 Project DEIS Staff:

14804-1

I realize you take for granted that your tower and line design for the proposed I-5 Corridor Project will withstand any weather-related challenges. However, I'm not sure you realize exactly what kind of weather it would be subjected to if built on the Easterly Alternative. We have lived in the Yale Valley for 32 years - our home is just east of the proposed location for tower K-84 - and my husband has kept records of precipitation, snowfall, temperatures, etc. for all that time. Besides the fact that we get an average of 114 inches of precipitation a year, our weather conditions here are unique, as we are located just on the division between the more temperate climate of central and westerly Clark and Cowlitz Counties and the colder, snowier weather conditions of the Cascade foothills. Our weather vacillates between the two, sometimes with dramatic results. For instance, in the winter of 2008-2009, we received over nine feet of snow, total. Several feet of snow would fall; then temperatures would warm back up a couple of degrees, it would rain, and the snow would become totally saturated and would compress somewhat but not melt. Then temperatures would drop again and it would snow another couple of feet; then it would rain on that, and that cycle continued for six weeks. The snow never melted, it just became frozen and compacted into what amounted to virtually a layer of ice about four feet thick. That persisted into April! Meanwhile, where it had frozen onto our metal house roofing and into our gutters, it created massive damage. When the weight of the saturated, frozen snow reached a certain point, it slid off, ripping off every gutter on the house and garage and some of the roofing panels, as well. The alternating of heavy snowfall with copious quantities of rain can have disastrous results. Even on the towers and associated elements, which you might not consider would have enough horizontal surface to hold much snow, if some did begin to built up during one of these cycles, then get rained on, then re-frozen, and that cycle continued over and over, it could build up to a considerable weighty chunk of ice.

In addition, local highways were completely impassable for a day or more after each of the heavy snow cycles. (i.e. no access to the power lines if there was a problem.)

1 of 2

Sincerely, Patti Olson

- 14804-1 BPA operates and maintains over 15,000 circuit miles of transmission lines across the region which includes Washington, Oregon, Idaho, western Montana, western Wyoming, and northern California. This area contains a variety of extreme weather conditions in any given year. BPA is well aware that towers, conductors, and insulators can fail for any number of reasons and have done so over the last 75 years. When this has occurred, maintenance crews have appropriate equipment and are quick to respond in all weather conditions to repair the problem and get the transmission system up and running as soon as possible. See also the response to Comment 14771-8.

14805

To BPA I-5 Project DEIS Staff:

14805-1

I would like to comment on the criteria you have used as the basis for your assumptions in S.3.5, "Noise." You state your conclusions are "Based on several years' meteorological records (2005-2009) from the Portland International Airport," and show "...foul weather conditions occur about 20 percent of the time in the general project area." The weather in Portland, OR varies greatly from our weather in Yale, WA, and to paint the whole 'project area' with that broad brush is very misleading. My husband has kept weather records for the entire 32 years we have lived here just east of the proposed K-84 tower, for the past 28 years or so, his findings have been published monthly in the Battle Ground Reflector, along with the data from other rural amateur meteorologists. Our precipitation amounts are invariably just about exactly three times what falls in the Portland-Vancouver urban area, and twice that which falls in the Battle Ground and central Clark County area. Over the past 32 years, an average 114 inches of precipitation has fallen each year in the Yale Valley. We average 182 days a year that have some (or lots) of precipitation. In fact, the photo which you include in Chapter 7-11, Page 7-32, while absolutely useless (and insulting) for showing the visual damage a 500kv line would do in Yale Valley, does lend itself perfectly to illustrating our normal weather conditions for about eight months of the year:

1 of 3

14805-1 Please see the response to Comment 14587-1.

14805-1



14805-2

So you determine (9.2.6) that for the East Alternative, audible noise levels at the edge of new r/w would be 47 dBA, but would increase by 6dBA during foul weather. You state "During foul weather, the East Alternative and options would meet (just barely, by the foregoing calculations!) the EPA's 55 dBA guideline..." Then you assert, "During fair weather, which occurs about 80 percent of the time, audible noise levels at the edge of the r/w would be about 20 dBA lower..." However, fair weather does NOT occur "about 80 percent of the time" in the Yale Valley; thus one must conclude that the higher dBA levels would exist much more often here, so corona noise would be more frequent, irritating and detrimental to our quality of life than it would be to residents on the westerly alternatives.

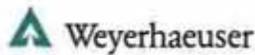
In addition, I think it is appropriate to examine the expectations of the human beings who live in such different environments. Obviously many more people have chosen to live in the urban/suburban areas through which the existing r/w runs. They made a choice to live next to it for reasons of convenience and economics; easier and much quicker access to employment, shopping, cultural offerings, education, etc; and status. That environment just naturally comes with much more ambient noise: automobile, truck, and other vehicular noise; people talking and shouting; music or tv/radio noise, etc., and possibly even occasional corona noise. Obviously those homeowners realized that when they chose to live there! People move out to rural homesites, on the other hand, partly to have peace and quiet and to be away from the activity and noise of a more

14805-2 Please see the response to Comment 14792-8.

14805-2 crowded environment. It takes a huge commitment and a lot of hard work to create and maintain a rural home. We have chosen to give up the conveniences and economic advantages of the suburban lifestyle because privacy and quiet are essential to our happiness and well-being. The new, frequent (possibly almost continuous, for weeks at a time!) intrusion of corona noise would be devastating to our quality of life.

Sincerely, Patti Olson

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Corporate Headquarters • PO Box 9777 • Federal Way, WA 98063-9777

March 25, 2013

Ms. Nancy Wittpenn  
 Environmental Protection Specialist  
 Bonneville Power Administration  
 905 NE 11<sup>th</sup> Avenue  
 Portland, OR 97208

**RE: Weyerhaeuser Company Comments on the I-5 Corridor Reinforcement Project Draft  
 Environmental Impact Statement**

Dear Ms. Wittpenn:

14806-1

Thank you for the opportunity to review and comment on the I-5 Corridor Reinforcement Project Draft Environmental Impact Statement (DEIS). We would like to acknowledge the willingness of the Bonneville Power Administration (BPA) to meet with us and address concerns we have with the Central Route—the BPA preferred alternative—and the Eastern alternative. Additionally, we have discussed with BPA the project-level impacts and potential mitigation measures associated with the project.

We have two very serious concerns with the proposal: environmental impacts and costs. From our perspective—that of a major electrical customer and a large timberland owner and manager—the proposed preferred alternative is neither the best economically nor the best environmentally. While there are worse alternatives in both respects (in particular, the East alternative), the Central Alternative would have significant costs for Weyerhaeuser, both as a ratepayer and timber manager. As one of the largest consumers of BPA power, we expect the agency to hold down both the environmental and economic impact of this project, which is best done by using the existing right of way.

14806-2

The Central alternative would cross approximately 17 miles of Weyerhaeuser ownership, with over 90% of the proposed 79-mile-long power line right-of-way area located on forestlands. Like many other timberland owners, Weyerhaeuser would experience the permanent loss of highly productive timberlands and a substantial loss in land development valuations. Additionally, if approved, the Central alternative would have a significant environmental footprint on regional forest-related public resources such as water quality, fisheries, wildlife, geology, soils and wetlands. The Central alternative is the second-most-costly proposal.

In terms of both cost and environmental impact, only the East alternative ranks worse. The East alternative is the most expensive because it would be the longest route proposed through largely undeveloped forestland and would require new right-of-way for most of its length. Accordingly, we support BPA's decision to not pursue the East alternative as it has the greatest set of economic and environmental impact of all the options.

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14806-1 Thank you for your comments. Specific comments are addressed below.

14806-2 Comment noted. Specific comments are addressed below.

14806

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14806-2

If, instead, BPA selected the least-costly West alternative, it would reduce the economic impact to ratepayers by nearly \$70 million. Because the West alternative is located largely (98%) on existing right-of-way, it has the least-high impact on landowners among the alternatives. Additionally, the West alternative is located in a well-developed environment consisting of a combination of urban/suburban, rural, agriculture and open space lands. Clearly the environmental impact from locating a new transmission line on an existing corridor in an already-disturbed urban and suburban area has the least environmental impact. Accordingly, we recommend that BPA select the West alternative in its final decision.

In proposing the Central alternative, BPA recognized that it is neither the least expensive nor the easiest to construct. However, that alternative appears to limit project impacts and disruptions across many communities and neighbors largely because over 90% of the project occurs in the forest environment, avoiding urban/suburban corridors. Essentially, in deciding to avoid impacting urban and suburban areas associated with the West alternative, BPA is proposing to shift the social/economic burden onto the rural natural-resource-dependent communities, and the environmental impact is shifted from a disturbed and developed urban/suburban corridor to regional forests of environmental significance, which provide multiple benefits to public resources.

In summary, Weyerhaeuser lands would be significantly impacted by the current I-5 proposal and—like many private and public landowners—Weyerhaeuser has major concerns and will be recommending mitigation and compensation measures to offset unavoidable impacts associated with the Central alternative. However, we must continue to stress that the best approach to minimizing impacts is for BPA to select the West alternative.

The remainder of this comment letter will focus on our concerns associated with the following general subject areas:

**Impacts to Weyerhaeuser Lands**

14806-3

- 1) Loss of economic value across our integrated timberlands and manufacturing base.
- 2) Timber valuation assumptions and methods.
- 3) Value reductions due to loss of higher and better use opportunity and values.
- 4) Potential for increased wildfire risk and associated liability on Weyerhaeuser and other adjacent forestlands.
- 5) Danger trees adjacent to the right-of-way and potential landowner liability.
- 6) Increased logging cost and creation of isolated timber parcels.
- 7) Limits on land development, geothermal and mineral extraction due to height restrictions and proximity of transmission line.
- 8) Construction of new roads, long-term maintenance and increased sediment delivery to streams.
- 9) Control of unauthorized access.
- 10) Unanticipated future regulatory burdens and ability to seek compensation for unforeseen circumstances.
- 11) Preparation and processing of forest practice applications.

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14806-3 Comment noted. Specific comments are addressed below.

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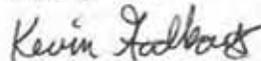
- 12) Mitigation and/or compensation should be achieved with direct replacement of timberlands by fee purchase or land exchange.
- 13) Impacts to the Department of Natural Resources' (DNR) "Forests & Fish" Habitat Conservation Plan (HCP).

While we understand that the issues identified above will be part of an ongoing dialogue between Weyerhaeuser and BPA, we suggest that BPA further refine its general approach to mitigating adverse impacts to the human and natural environment in the Final EIS. As this project moves into a more detailed phase of analysis, i.e., refinements to the proposed transmission line location and related ground- and water-disturbing activities, we may need to seek additional mitigation and compensation that are likely to be identified through project refinements. In summary, it is our expectation of BPA that all Weyerhaeuser issues will be clearly mitigated or dealt with in some manner prior to any grant of easement.

14806-3 In its comment letter to BPA, the DNR is seeking from BPA commitments to prepare an EIS that can be adopted under the State Environmental Policy Act (SEPA) for use by all state and local agency actions. We support that approach and strongly suggest that BPA undertake the full set of federal consultation and analysis needed for all phases of the project. As you may understand, the project will impact non-federal lands covered by DNR's Forest Practices HCP, issued pursuant to the Endangered Species Act (ESA), the "Forests and Fish" HCP. It is important that BPA conduct all federal ESA consultations and pass-through "federal assurances coverage" to Weyerhaeuser.

Thank you for the opportunity to comment on this important project. As an energy-intensive manufacturer, our company does recognize the need for improved transmission capacity in southwestern Washington, but achieving improved transmission capacity should not result in unmitigated loss of productive commercial timberlands. Unfortunately, the proposed Central alternative will have a significant adverse effect on our timberland operations and—as previously stated—we continue to recommend that BPA utilize the existing right-of-way and select the West alternative in its final decision.

Sincerely,



Kevin Godbout  
Director, External & Regulatory Affairs

Attachment

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**1) Loss of Economic Value across our Integrated Timberlands and Manufacturing Base**

14806-4 **Concern:** We evaluate the I-5 Corridor Reinforcement Project from an integrated perspective. Significant Weyerhaeuser timberlands as well as multiple manufacturing operations will be affected by this project. Our manufacturing complex in Longview employs approximately 1,500 employees, produces a variety of finished goods for both domestic and global customers, and is a vital component of the local southwestern Washington economy. The energy needed to operate this complex makes Weyerhaeuser BPA's largest non-DSI load. In addition to our diversified manufacturing assets, we also own approximately 418,000 acres of timberlands, which make up our St. Helens Tree Farm. Our southwestern Washington timberland holdings in both Clark and Cowlitz Counties represent some of the company's most valuable and globally strategic timberlands. All of the proposed alternative transmission routes, with the exception of the expansion of the existing right-of-way (ROW), will be sited in the core of our St. Helens Tree Farm. The first concern is the permanent loss of the timberlands that need to be cleared for the creation of the new ROW. In addition, land on either side of the transmission lines will effectively have to be taken out of production as well, multiplying our loss. Due to safety requirements and other operational constraints, productive timberlands in and around the ROW will have to be set aside or will be very difficult to manage at best. We have extensive experience managing around these structures and it is difficult to think of anything that is more disruptive to timberland management on a permanent basis.

14806-5  
 14806-6  
 14806-7 The impact of a major transmission line on safety cannot be overstated. In particular, this size of an installation creates unique and significant hazards to routine forestry aviation (particularly helicopters) used for silviculture operations, storm and animal damage review, general management reconnaissance, as well as fire patrol and fire fighting. At a minimum, BPA must ensure high visibility of lines for low-flying aircraft. Unfortunately, we have seen tragic consequences with other lines when this had not been done. Even with these measures, some safety risk is unavoidable. In many cases (in particular, with silviculture being performed near the lines), we will be forced to consider alternatives to the use of aircraft, which options are less effective and less cost-efficient. Plus, those options carry their own adverse safety implications; in particular circumstances, we may end up losing the ability to practice our preferred silviculture entirely.

14806-8 In addition to the concerns about impacts on our timberland holdings, Weyerhaeuser is also troubled by the impact increased energy costs associated with the building of new transmission routes will have on our manufacturing operations. Although the increased costs for this project would be spread across the BPA system, as the largest non-DSI load, our integrated manufacturing complex is sure to experience a noticeable increase in energy costs. These facilities operate in an extremely competitive global market and an increase in energy costs will make it that much more challenging for our manufacturing operations to stay competitive in this current economic climate compared to other global suppliers operating in countries where labor, raw materials and energy are all less costly. While the company supports the need for improved transmission capacity, it is critical that the cost implications of this project be given serious consideration.

14806-9 **Recommendations:** The Central alternative is the second-most-costly proposal and will likely have a significant impact on our timberlands. If BPA selected the least-costly West alternative, it would reduce the economic impact to ratepayers by nearly \$70 million and significantly reduce impacts to Weyerhaeuser and other forest landowners.

14806-4 Comment noted.

14806-5 Please see the response to Comment 14566-9.

Section 11.2.2.7, Private Timber Production, describes the potential impacts of the project on private timber production. BPA acknowledges the project may negatively impact this production. Section 11.2.8, Recommended Mitigation Measures, identifies recommended measures to mitigate these impacts.

14806-6 Chapter 5, Land and Chapter 11, Socioeconomics discuss impacts to timber resources. Throughout the NEPA process, BPA has worked closely with Weyerhaeuser and AKS Engineering and Forestry to analyze the impacts to all aspects of timber harvesting on Weyerhaeuser and Columbia Timberlands property. This information has helped site the transmission line to minimize impacts to timber harvest as much as possible.

14806-7 BPA also considers safety one of its highest priorities. Chapter 10, Public Health and Safety, discusses safety precautions needed when living and working around transmission lines. Throughout the NEPA process, BPA has worked closely with Weyerhaeuser and AKS Engineering and Forestry to site the transmission line to avoid impacts to timber production as much as possible. BPA would continue to work with Weyerhaeuser to discuss and implement safety protocols that would allow all aspects of timber production to continue in the vicinity of the transmission line.

14806-8 The I-5 Project is needed to increase the electrical capacity of the transmission system to respond to the increasing system congestion and system reliability concerns. The congestion on the transmission system is caused by increased demand in southwest Washington and northwest Oregon and transfers through the I-5 corridor. The reduced congestion as a result of the project would improve access to lower cost power.

14806-9 Please see the responses to Comments 14806-5 and 14806-6.

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14806-9 If the Central alternative goes forward, BPA should understand the impacts on the total integrated value of our Weyerhaeuser's timberland, export facilities, and mill operations.

## 2) Timber Valuation Assumptions and Methods

14806-10 **Concern:** BPA has provided estimates of the value of timber to be cleared for each alternative and option. The DEIS also provides estimates of foregone timber and tax revenue. However, assumptions behind these calculations are not explicitly defined and we have concerns about the assumptions. Estimating the revenues realized from the immediate harvest of timber is a function of numerous assumptions, such as the volume and nature of merchantable timber that can be harvested and how much the timber is worth (the stumpage price). Estimating the foregone revenues from permanent land conversion is a function of numerous assumptions, including other key factors like how many acres are affected, a rate of inflation, a real growth rate for the stumpage price, a discount rate, the age classes of existing timber, and an assumption about rotation age. Clearly, there is not enough information presented by BPA to determine how the value of the timber cleared and the net present value of foregone future timber harvests were calculated. It is also not clear how the value of timber reproduction (trees of age class younger than merchantable timber rotation age) or loss of value from danger tree management is accounted for.

14806-11 **Recommendation:** It is critical that current market data be utilized and that factors like discount rates reflect values associated with marked-based private land transactions. We will work with BPA to determine the level of compensation needed to address foregone revenues due to permanent conversion of timberland to non-timber production and other valuation impacts.

## 3) Value Reductions Due to Loss of Higher and Better Use Opportunity and Values

14806-12 **Concern:** Inherent in the fee ownership of land is the right of the landowner over time to put that land to the most economic lawful use available to it. While Weyerhaeuser Company owns timberland for the purpose of growing and harvesting timber, it is common experience certain lands are or can become non-strategic over time, for a number of reasons, including neighboring land use patterns that are incompatible with timber production. The placement of a major transmission line has a significant effect on current land values by effectively precluding some future uses of that land or adversely affecting the desirability of those lands for other purposes. This, in effect, reduces the current market value of the property by denying the opportunity for the landowner (or future landowners) from enjoying the full attributes of the land.

14806-13 One example of this is the impact has already been experienced by a Weyerhaeuser subsidiary, Weyerhaeuser Real Estate development Company (WREDCo). WREDCo developed a Forest Reserve community named Skyline Ridge Forest Reserve (located off Headquarters Road near Castle Rock). This property will be impacted by the Central alternative as the proposed route will cut through the northeast corner of the community. WREDCo has not sold a single parcel in that community since the announcement of BPA ROW in 2010. Moreover, many owners in the community have put their building plans on hold to await a decision by BPA on whether a BPA line would affect Skyline Ridge Forest Reserve. If the Preferred alternative goes forward, WREDCo expects properties values to decline and that many property owners will choose not to build a home on the properties they own inside the community, and WREDCo's ability to sell its remaining ownership will be jeopardized.

- 14806-10 Section 11.2.2.7, Private Timber Production, has been updated to include a more detailed description of the assumptions used for the analysis of timber impacts. This analysis is not intended to serve as an appraisal of the value of timber on individual properties. It is instead intended to provide information sufficient to allow BPA to compare timber-related impacts across the action alternatives. Timber landowners whose land the project would cross would have an opportunity to negotiate compensation with BPA.
- 14806-11 Please see the responses to Comments 14806-5 and 14806-10.
- 14806-12 Please see the response to Comment 14566-9.
- 14806-13 Please see the response to Comment 14097-1. The proposed right-of-way does not cross the northeast corner of the Skyline Ridge Forest Reserve.

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- 14806-14 Additionally, WREDCo has noticed that the general real estate market has slowed significantly around any areas in which a potential BPA line might be coming. The BPA I-5 Corridor Reinforcement Project has created a lot of uncertainty in the Clark and Cowlitz County real estate market and its prolonged process for a decision has impacted real estate sales in much of Clark and Cowlitz County as a consequence.
- 14806-15 WREDCo has also identified numerous tracts of timberland—particularly in the Yacolt block—that are strategically located where future development will likely occur. The proposed Central route crosses over a number of these tracts and takes away WREDCo’s ability to capture higher and better use values or at least will substantially lower the market value of these tracts. The DEIS does not address how compensation will be established when a landowner suffers loss due to restrictions in use or negative impacts on the property, like loss of scenic views. It is important that lost values from land use development be accounted for, and traditional market or government appraisal methods may not always capture such values.
- 14806-16 **Recommendation:** It is critical that current real estate market data be utilized to reflect the real and ongoing improvement in real estate values. The direct and indirect loss of value from homeowners not deciding to build homes in projects like Skyline Ridge Forest Reserve will need to be compensated. Entities like WREDCo—with development plans impacted by the project—will need to be compensated for specific project impacts and future opportunity loss. Weyerhaeuser will need to be compensated for loss value potential in those areas where higher and better use values, such as in our Yacolt block exist and will be destroyed by this project.
- 4) Potential for Increased Wildfire Risk and Associated Liability on Weyerhaeuser and other Adjacent Forestlands**
- 14806-17 **Concern:** We are very concerned with the construction of 17 miles of high-voltage transmission lines across Weyerhaeuser ownership, as it will greatly increase the risk of wildfire on our timberlands. While it is not common, high-voltage transmission lines do ignite fires when an energized line comes into contact with a fuel source. BPA should accept liability for all such fires. In addition, the removal of danger trees or other vegetation management activities conducted in or adjacent to the ROW corridor may increase fuel loading. Timber harvest conducted near or adjacent to the ROW corridor may also need supplemental fuels treatment, not otherwise required but for the presence of the ROW. Additionally, ROWs often serve as an attractive nuisance or a conduit into our adjoining lands by providing uncontrolled access points for trespass, creating additional fire risk due to increased presence of off-road vehicles and camp/party fires.
- 14806-18 During construction and maintenance activities, it is our understanding that BPA intends to follow safety requirements developed by Weyerhaeuser when operating on existing ROWs. We generally require all vehicles to carry a fire extinguisher and a serviceable shovel. All construction and maintenance operations will also need to comply with applicable Washington Administrative Code (WAC) 332-24-301 (industrial restrictions) and WAC 332-24-405 (Spark emitting requirements). During the active construction phase we may require pre-positioning of tanker trucks and water tenders. In addition to operational concerns, we will request that BPA follow best practices to address accumulations of slash from vegetation removal operations, danger tree removal or other activities that pose a hazard for wildfire ignition or spread.

- 14806-14 Comment noted.
- 14806-15 Please see the response to Comment 14508-5.
- 14806-16 Please see the responses to Comments 14508-5 and 14806-13.
- 14806-17 Please see the responses to Comments 14242-1 and 14357-2.
- 14806-18 Safety is also a very high priority for BPA. If BPA decides to build this project, BPA and its contractors would follow all safety requirements required by landowners before accessing properties, both for construction and maintenance. During the planning phase, BPA and its contractors participated in extensive safety training required by various landowners before they were able access properties for field surveys. BPA anticipates these safety requirements would continue through all phases of the project. Construction specifications would identify where safety plans are required and also best management practices for slash and danger tree removal, and other activities that pose fire hazards.

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14806-19 **Recommendation:** BPA should take all reasonable measures to prevent and minimize the start and spread of fire on to adjacent forested areas. Measures should include ensuring all vehicles carry a fire extinguisher and a serviceable shovel and BPA contractors follow Weyerhaeuser construction site safety operating procedures. As stated previously, compliance with the substantive requirements of the current Washington Administrative Code (WAC) 332-24-301 (Industrial restrictions) and WAC 332-24-405 (Spark emitting requirements) will be expected during operations. During the active construction phase we may require pre-positioning of tanker trucks and water tenders to perform initial attack fire suppression. Aerial surveillance in lieu of "watch men" may be needed during the fire season. As mentioned above, BPA should accept liability for such fires that are caused by this project.

14806-20 Additionally, Weyerhaeuser will seek compensation for additional fuels reduction measures that we undertake due to the presence of the transmission corridor and measures we undertake to control and reduce access due to unauthorized access from off-road vehicles and individuals starting camp/party fires.

**5) Danger Trees Adjacent to the ROW and Potential Landowner Liability**

14806-21 **Concern:** We are uncertain how BPA will estimate the amount and location of danger trees that would require removal adjacent to the proposed ROW and if it will require low-growing vegetation to be maintained similar to within the transmission line corridor. Clearly if height limits are established for areas adjacent to the ROW that will restrict our ability to practice commercial forestry and harvest timber, at an economic maturity level that is standard for Weyerhaeuser. While we understand the need by BPA to address the potential impact of danger trees to the transmission corridor, we believe landowners should not be held liable for any interruption of service, or repair, if a danger tree impacts the corridor.

14806-22 **Recommendation:** BPA should be responsible for managing the safety backline area and provide mitigation to Weyerhaeuser for areas outside the typical 150' ROW width that it needs to protect the transmission line corridor. BPA should indemnify Weyerhaeuser for interruption of service or repair if a danger tree impacts the corridor.

**6) Increased Logging Cost, the Creation of Isolated Timber Parcels and the General Increase in Operational Restrictions to Current and Future Uses**

14806-23 **Concern:** The complete set of impacts to timber harvest and hauling operations have not been clearly identified in the DEIS. The DEIS lacks any details on the setback distance or vertical offset distance of guyline cables to the ROW corridor. Further, there is no mention of the potential for reconstructing existing landings outside of the ROW due to harvest restriction nor the cost associated with such a need. It is likely that height restrictions for operations that must occur under a transmission line will also be imposed. We believe this situation will limit our ability to freely determine future timber haul roads, resulting in longer trucking routes and associated increase in operating cost. The economic impact to Weyerhaeuser for what timber haul roads would be impacted by this requirement has not yet been identified. It is possible that the sag of transmission lines could make some existing timber haul roads unsafe for the operation of log trucks or transport of harvest equipment. Our experience with other transmission corridors has shown that a new ROW combined with a safety backline may create an

- 14806-19 Please see the response to Comment 14806-18. BPA and its contractors develop a fire safety plan prior to construction, and include the underlying landowner's guidelines in the plan. Contractors would comply with all state requirements.
- 14806-20 Please see the response to Comment 14806-19. BPA includes fire prevention procedures in its contracts. Reimbursement for damages caused by BPA are reviewed on a case-by-case basis.
- 14806-21 If BPA decides to build the proposed project, BPA would determine the actual amount and location of danger trees that would require removal when the selected route is surveyed and marked in the field. Geospatial information of danger trees will be collected. Data will include quantities, locations, species, volumes and defects for affected property owners. BPA does not propose that areas outside the transmission line easement be maintained as low-growing vegetation. For new transmission line easements, BPA would acquire rights to cut vegetation outside the easement that presents a real or potential hazard to the transmission line's reliability. Property owners would be unrestricted by BPA in the management of their land outside of the transmission line easement. If a tree that is outside the easement falls into the transmission line by natural causes, and not by human influence, landowners would not be held liable for interruption of services or repairs.
- 14806-22 If a Full Safe Backline is prescribed outside the 150-foot easement width, BPA would purchase rights to cut the subject vegetation based on its fair market value when identified. BPA would be responsible for cutting the trees in the Full Safe Backline. It would be the property owner's option to retrieve the materials or allow BPA to remove them. If a tree that is outside the easement falls into the transmission line by natural causes, and not by human influence, landowners would not be held liable for interruption of services or repairs.
- 14806-23 The timber analysis in Chapter 11, Socioeconomics, is not intended to serve as an appraisal of the value of timber on individual properties. It is instead intended to provide information sufficient to allow BPA to compare timber-related impacts across action alternatives. BPA worked with Weyerhaeuser and AKS Engineering and Forestry to study the detailed impacts of the project on Weyerhaeuser and Columbus Timberland timber operations. These studies addressed the issues in this comment to the extent possible at the time the studies were done.

Please see the response to Comment 14665-17 for a discussion on height restrictions and timber operations under the transmission line.

Stranded use caused by a new transmission line corridor is discussed in Chapter 11, Socioeconomics.

Timber landowners whose land the project would cross would have an opportunity to negotiate compensation with BPA. During those negotiations, specific details such as those raised in this comment may be addressed.

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14806-23 unmanageable timber stand and, in some situations, the physical location of the transmission corridor creates isolated timber parcels that limit our ability to manage and/or access timber.

14806-24 During the construction phase, we also are concerned about the creation of temporary use areas outside the ROW. Apparently BPA will not designate the location of staging areas and pulling and tensioning sites until after the easement is signed. This work will be left for BPA contractors to define. It is likely that such work will occur on Weyerhaeuser sites outside the permitted ROW. In order to evaluate this proposal or develop an easement package, we will request that BPA define all temporary and permanent use areas prior to execution of an easement and/or access agreement. This would include other temporary use areas like helicopter landings and other staging sites.

14806-25 **Recommendation:** BPA needs to analyze the impacts of harvest restrictions including what the long-term economic impacts will be to Weyerhaeuser due to our need to construct new timber haul roads, new landings, guyline setbacks and to apply different logging systems. Weyerhaeuser will need to be compensated for the long-term economic impacts of harvest restrictions from inside or outside of the ROW, including those involving new timber haul roads, reconstruction of landings and avoiding guyline cables, utilizing different logging systems and longer haul routes. Compensation should include: cost recovery for staff time, permitting, construction, materials, and abandonment costs. We will also seek mitigation for impacts to temporary use and disturbance areas on Weyerhaeuser lands outside the ROW.

**7) Limits on Wind Development, Geothermal and Minerals Extraction due to Height Restrictions and Proximity of Transmission Lines**

14806-26 **Concern:** Weyerhaeuser has entered into agreements with wind energy developers to assess potential wind resources, and those agreements include options for construction of future wind development projects near the transmission corridor. Weyerhaeuser has also entered into agreements with energy developers to explore and develop geothermal energy development on the St. Helens Tree Farm. We also have an active minerals group involved in multiple energy development projects. We are concerned that the 17-mile transmission corridor will limit our ability to transport large/tall structures, such as cranes, under the transmission lines.

14806-27 There are a number of existing and likely future wind energy sites in the area that will be affected by the proposal. BPA has not yet analyzed impacts to lost wind power opportunities on Weyerhaeuser lands in the project area and specifically in the Yaocolt portion of our ownership. While there is some limited information about wind power potential in the document, it does not adequately address proposed mitigation for impacts to potential wind power sites. For instance, it will be important to identify locations in which wind turbines and other large structures can access areas beyond the transmission corridor. The DEIS has not attempted to locate such likely transportation routes and needs to determine and mitigate the impact of imposing limits on our ability to assess Weyerhaeuser lands for alternative projects like wind power, mineral extraction, geothermal energy development or other manufacturing opportunities.

14806-28 **Recommendation:** This project will create an unavoidable impact to our land use that will need to be mitigated. BPA will need to mitigation impacts to Weyerhaeuser land use due to increased wind power development costs and for reimbursement for losses of our ability to generate revenue from these sites.

- 14806-24 Preliminary pulling and tensioning sites outside the right-of-way have been identified and included in the Final EIS analysis. BPA would work with Weyerhaeuser on locating temporary and permanent use areas after a decision is made to build the project.
- 14806-25 Please see the response to Comment 14566-9.
- 14806-26 Consistent with NEPA, the environmental analysis contained in Chapters 5 through 22 of the EIS addresses the potential impact of the proposed project on the existing environment, including existing land uses and conditions. Reasonably foreseeable future projects are considered in Chapter 26 of the EIS. As discussed in this chapter, reasonably foreseeable future actions require a level of certainty that they will occur in order to be included in the EIS. This level of certainty is typically met for a proposed future project by completing a permit application, receiving approvals from local, state, or federal siting authorities, being included in local or other planning documents, or other similar evidence. NEPA does not require an EIS to evaluate impacts to the “potential” for different types of future land use when no formal proposal has been made and many different future outcomes are possible. BPA is not aware of any formal proposed projects resulting from the agreements and activities referenced by the commenter. If such projects are proposed in the future and if access routes for associated vehicles carrying large/tall structures are planned to cross the transmission line right-of-way, BPA would cooperate with the commenter to identify feasible limitations on any such vehicles and to ensure that they can cross the transmission line corridor at a safe location or otherwise facilitate access.
- 14806-27 Please see the response to Comment 14806-26 concerning analysis of different types of potential future land uses such as those suggested by the commenter, as well as steps BPA would take to resolve access issues. In addition, 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 larger 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. Mitigation measures for impacts on land values from this project are identified in Chapter 11, Socioeconomics.
- 14806-28 Please see the responses to Comments 14806-26 and 14806-27.

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14806-28 | Additionally, limitations imposed on our ability to generate revenue from mineral extraction, geothermal energy development and other manufacturing opportunities will need to be mitigated.

#### 8) Construction of New Roads and Long-term Maintenance

14806-29 | **Concern:** Weyerhaeuser requests that BPA meet Washington Forest Practice Road Maintenance, Construction and Planning standards for all new road construction and WDFW hydraulic code design requirements for all fish passage structures. Apparently BPA continues to rely upon the 1987 BPA access road planning and design manual road standards. We suggest that BPA evaluate the 1987 standards and determine if those meet or exceed forest practices road construction and maintenance standards. Areas of specific interest to Weyerhaeuser include the following: wet-weather use, sediment delivery, the installment of structures and culverts on stream crossings; long-term road maintenance and temporary diversion structures such as drain dips and water bars.

14806-30 | Long-term and ongoing maintenance of forest roads should fully be addressed by BPA. BPA will need to prepare wet weather operating plans to address when roads become inoperable due to flooding and when damage and repair is necessary to maintain the road. It is important that specific minimum road standards be developed. These standards need to address items like: clearing and brushing limits, aggregate needs, bridge load limits, and curve-widening requirements. BPA will need to determine if bridges have correct load capacity and, if necessary, install new structures if bridges have been compromised or do not meet anticipated load capacity.

14806-31 | **Recommendation:** BPA needs to ensure that roads constructed and or utilized be operated in a manner compliant with Washington forest practices road maintenance and construction regulations. Structures installed on any stream need to be sized properly based on hydraulic calculations similar to those in the WDFW manual for 100-year flood plus debris events: Design of Road Culverts for Fish Passage. It is important that BPA use appropriately sized culverts/bridges on fish and non-fish bearing streams. The WDFW has published guidelines for structures allowing fish passage (*Design of Road Culverts for Fish Passage*). We recommend that be utilized by BPA. We generally do not utilize drain dips and water bars on timber haul roads as they increase log and equipment transportation costs due to slower speeds and damage to log trucks.

#### 9) Control of Unauthorized Access

14806-32 | **Concern:** Power line corridors and tower access roads create high potential for unauthorized public use, especially by off-road users. There is high potential for the tower access roads and the power line corridor to increase unauthorized use due to off-road access and ORV use, trash dumping, camp/party fires, vandalism and theft. Unauthorized use will require Weyerhaeuser to expend management time and resources, creating uncompensated costs. Unauthorized public use will occur over the life of the project and mitigation is needed for the life of the easement both within and outside the ROW.

14806-33 | **Recommendation:** BPA will provide long-term funding and cooperative management with Weyerhaeuser to prevent unauthorized access, provide enforcement, and restore areas due to unauthorized public access. Agreements with Weyerhaeuser will include funding to avoid or otherwise mitigate damages from unauthorized use. Funding needs to be sufficient to address activities such as enforcement and posting/maintaining new signs, gates, and other barriers when new/other access

- 14806-29 BPA's access road group has revised their access road standards (Bonneville Power Administration Access Road Design Standard STD-DT-000056 Revision 2, September 13, 2013) and they now more closely reflect forest practices standards and are in use for access road design on the I-5 Project.

Environmental, engineering, economic, and maintenance factors are considered in locating and designing access roads. Access road planning, as described in the BPA Manual, takes into account many factors including seasonal constraints for construction, steep slopes, present and potential land uses, soil conditions, soil erosion potential, water quality impacts, visual impacts, and impacts to cultural resources. The BPA Manual also describes erosion and sediment control measures that are implemented during access road construction.

For reconstructed and new access roads, BPA plans to have greater than 40 tons per station as surfacing on either the landowners typical section for shared roads or the BPA typical section for single use roads (spurs to towers). Additional rock would be applied as needed during construction for maintenance and in the future for maintenance based on agreements between BPA and landowners. All bridges on heavy equipment transportation routes would be inspected to verify they have the working load capacity to handle construction equipment and insure the safety of workers and the public. BPA would ensure a safe working load capacity on any deficient structures prior to their use by BPA heavy equipment.

The use of waterbars continues to be coordinated with landowners. Water bar type (rock or rubber) would depend on access road usage and grades. Dips are not intended to convey water from ditches or streams. They are used to armor areas where the road is in a sag; also, where there is a need to minimize maintenance by armoring because adjacent basins are causing the road to be soft or to offset roadway flows which may propagate through rutting. Road sections continue to be evaluated to determine if an uphill ditch would be needed and cross drains used at intervals based on road grade.

Any structure installed on any stream regardless of fish presence would be appropriately sized based on hydraulic calculations similar to those in the WDFW manual for 100-year flood plus debris events: Design of Road Culverts for Fish Passage <http://wdfw.wa.gov/publications/00049/>. For fish bearing streams specifically, BPA would use the stream simulation method for sizing the crossings with a hydraulic analysis of the 100-year flows performed as a check of the culvert or bridge size. Hydraulic analysis is not used for ditch relief culverts.

BPA would use appropriately sized round culverts on non-fish bearing streams. Fish bearing stream crossings may contain an embedded round or arch pipe in addition to open bottom culverts and bridges. For embedded culverts BPA typically sets the invert of the culvert a minimum of 1 foot or 2D90 below the lowest potential scour elevation (Vertical Adjustment Potential [VAP]). WDFW published guidelines linked above specifies embedded culverts as an option with the stream simulation method.

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- 14806-30 Please see the response to Comment 14806-29.
- 14806-31 Please see the response to Comment 14806-29.
- 14806-32 Please see the responses to Comments 14246-2, 14357-2 and 14457-2.
- 14806-33 Please see the response to Comment 14306-4.

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14806-33 points are used by trespassers. BPA will also need to share in the responsibility of enforcement, installation of gates, culvert replacement, access roads, closing and unauthorized trails, etc.

**10) Unanticipated Future Regulatory Burdens and Ability to Seek Mitigation for Unforeseen Circumstances**

14806-34 **Concern:** The I-5 Corridor Reinforcement Project is clearly a perpetual encumbrance imposed upon Weyerhaeuser timberlands. While BPA states the life of the project is simply 50 years, the easements they will seek may be perpetual in duration. Weyerhaeuser experience with managing for transmission lines demonstrates the need for continued BPA involvement. Environmental issues persist for decades beyond construction, especially with increased unauthorized use, vegetation management including control of noxious weeds and invasive species, management of danger trees and impacts associated with road use in general and during wet weather periods specifically. Potentially additional requirements will arise as to water and fish, geologic hazards, and protection from wildfire.

Over long time periods, it is likely the current regulatory environment in which this project will be permitted is likely to change. And new and emerging issues like transmission security, cyber-terrorism or the development of new technologies like next generation fiber optics, or issues like electromagnetic interference or microwave beam path disruption, will emerge. When new regulatory requirements are imposed or new technologies emerge that require additional measures by Weyerhaeuser, we will seek mitigation.

14806-35 **Recommendation:** Mitigation will need to be applied over the life of the project and the term of the easement. It is important that easement terms include provisions to reopen conditions and address changed circumstances. BPA cannot simply limit the duration for implementing mitigation measures to a period immediately following the construction needs. We would expect a minimum of at least a 50-year or longer mitigation period. The BPA must ensure that there is funding available to deal with noxious weeds and invasive species. A fund should be established to ensure that short-term budget constraints do not hamper the BPA's ability deal with this ongoing cost.

**11) Preparation and Processing of Forest Practice Applications**

14806-36 **Concern:** To facilitate the project, Weyerhaeuser will have to prepare and submit forest practice applications to numerous state and local agencies. To facilitate this project, BPA will need to mitigate this impact. While we recognize that BPA is not required to submit a forest practice application for the removal of standing timber as part of the transmission line corridor clearing, if BPA relinquishes the timber back to the landowner, the landowner may be required to submit a forest practices application for the removal of the cut timber. It is also possible that Weyerhaeuser may need to seek forest practice permits, including preparing alternate plans.

14806-37 **Recommendation:** Weyerhaeuser will be compensated for all activities related to the preparation, processing and oversight of permits necessary to facilitate the project.

- 14806-34 Please see the response to Comment 14306-4.
- 14806-35 Please see the response to Comment 14306-4.
- 14806-36 If BPA decides to build the project, BPA would work with WDNR forest practices staff to develop notification and informational materials for forest landowners who wish to harvest (remove) cleared timber generated from the clearing of the transmission line corridor. The informational materials should be designed to inform landowners of their responsibilities to reduce or eliminate impacts covered by WDNR forest practices rules. See also the response to Comment 14306-4.
- 14806-37 Please see the responses to Comments 14306-4 and 14806-36.

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**12) Mitigation and/or Compensation should be Achieved with Direct Replacement of Timberlands by Fee Purchase or Land Exchange**

14806-38 **Concern:** Weyerhaeuser will experience permanent loss of timberlands cleared for the new ROW. In addition, land on either side of the transmission lines will effectively be taken out of production, multiplying our loss. Due to safety requirements and other operational constraints, productive timberlands in and around the ROW will have to be set aside or will be very difficult to manage at best.

14806-39 Over 90% of the project occurs in the forest environment, avoiding urban corridors. In deciding to avoid impacting urban and suburban areas associated with the West alternative, the social/economic burden has been shifted to the rural resource-dependent communities. Likewise, the environmental impact has been shifted from an urban/suburban corridor, a "backyard ROW," to forests which provide significant benefits to multiple public resources and natural-resource-dependent communities. Over 90% of the 79-mile ROW will impact forest of regional timber supply significance and will impact many important forest resources. Forestland owners should be granted the ability to seek replacement lands.

14806-40 **Recommendation:** BPA will either purchase timberlands in fee or facilitate land exchanges with interested parties as either mitigation for project impacts or direct compensation for Weyerhaeuser's permanent loss of timberlands. Because the social/economic burden has been shifted to the rural communities and forestland owners whose forests provide significant benefits to multiple public resources and natural resource-dependent communities, BPA should mitigate the regional loss of forestland by replacing timberlands on at a replacement ratio greater than 1:1. BPA should lead or facilitate a regional land exchange process or seek other methods to compensate timberland owners, such as creating a federal land and timber bank.

**13) Impacts to DNR's "Forests and Fish" Habitat Conservation Plan (HCP)**

14806-41 **Concern:** Weyerhaeuser operations impacted by the proposal are covered by DNR's "Forests & Fish" Forest Practice HCP. Under the current proposal, clearing and removal of vegetation along fish-bearing streams will be inconsistent with forest practice rules. As a private entity, we are prohibited from such actions, as it would be inconsistent with the Washington forest practice regulations and may also subject a landowner to an ESA-takings claims or enforcement by a federal agency such as the US Fish and Wildlife Service (USFWS), National Oceanic & Atmospheric Administration/Fisheries (NOAA Fisheries). BPA should evaluate the project's impacts on HCP-covered species, and BPA should initiate consultation with the USFWS and NOAA Fisheries to determine whether the project will adversely affect listed threatened and endangered species covered by the Forest Practices HCP.

14806-42 **Recommendation:** It is important that BPA provide an analysis of the impacts to listed threatened and endangered species under DNR's "Forests & Fish" Forest Practice HCP. Additionally, BPA should initiate consultation under Section 7 of the ESA with the USFWS and NOAA Fisheries and document that the construction of a new transmission line will not adversely affect listed species covered under DNR's Forest Practice HCP. It is our expectation that at a project level BPA will be responsible for conducting all federal ESA consultation resulting in "pass-through" ESA coverage for Weyerhaeuser activities.

- 14806-38 Please see the responses to Comments 14306-4 and 14806-36.
- 14806-39 Please see the responses to Comments 14806-5 and 14806-6.
- 14806-40 BPA pays market value, based on an appraisal, for the land rights acquired. The consideration may be used by the landowner to acquire replacement property. If an exchange opportunity exists in the market at the time of the sale, it may be possible for BPA to coordinate an exchange for a comparable property. It is not possible to predict future market opportunities at this time.
- 14806-41 BPA agrees that it will not be able to meet the requirements of the Forest Practices HCP in riparian zones along fish- and non fish-bearing streams. BPA is addressing mitigation of aquatic impacts from reduced/removed riparian buffer zones through an analytical and field approach. The approach combines a GIS assessment of channel and landscape characteristics that when combined with known resource distributions will be the basis for a sensitivity analysis to identify mitigation needs. BPA anticipates that some mitigation will occur on-site and some off-site. The degree of mitigation and exact measures prescribed for each riparian crossing impacted will depend on the level of impact and particular sensitivity identified through the analysis. BPA will continue to work with regulatory agencies to develop appropriate riparian mitigation.

BPA has submitted a Biological Assessment to the USFWS and NOAA Fisheries (the Services) under the Endangered Species Act that assesses impacts to federally-listed species, their habitat, and overall ecological needs. This assessment defines the level of impact caused by the project. The Services will evaluate these impacts, define mitigation, and make conclusions in their Biological Opinion for the project.

BPA will continue to coordinate with the Services and the underlying landowners who have ESA coverage under Section 10 through the Forest Practices HCP to identify impacts and appropriate mitigation that would uphold the landowners commitments under the HCP.

- 14806-42 Please see the response to Comment 14806-41.

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14806-43

**SUMMARY**

Weyerhaeuser appreciates the opportunity to provide these comments to BPA. Weyerhaeuser has extensive and valued experience managing around these structures and it is difficult to think of anything more disruptive to our operations on a permanent basis. While we recognize the need for improved transmission capacity in southwestern Washington, we continue to recommend that BPA utilize the existing ROW and select the West alternative in its final decision.

14806-43 Comment noted.

TO: Steven W. Manlow, Army Corp of Engineers &  
I-5 Corridor Reinforcement Project

SUBJECT: Bonneville Power Administration, NWS-2011-346

14807-1 It has been communicated that Casey Road is now the preferred site for the addition of a needed substation. I am an impacted landowner under this route in terms of right-of-way requirements. I am requesting information to answer questions regarding the impact of the subsequent Segment F location regarding BPA's directive to maintain system reliability and performance, ensure there is sufficient capability to serve its customers through safe and reliable transmission, to use taxpayer funds responsibly and efficiently, and to minimize the impact to natural and human environment that were not adequately addressed by Mark Korsness', Project Manager, written Evaluation of Northeastern I-5 Route dated January 18, 2012.

**Segment F**

BPA has identified, that adding a parallel 500KV line to the existing crossing of the Columbia River west of Longview, WA. as a problem, when in close proximity to each other. How then does adding the new 500KV, per the preferred alternative, option 1, alongside of the already existing 500KV lines(s) from Casey Road to Baxter Creek (now termed Baxter RD.) fit with any problem, logic or guideline or rule?

14807-2 How does the proposed I-5 line, with the proposed substation at the Casey Road site north of Castle Rock, WA. tie into an existing north bound 500KV line with no transforming/no transformers; add capacity and reliability to the congestion issue south of Alston's Corner, Oregon?

The current location of the northern portion of Segment F runs through the City of Castle Rock's Urban Growth Area, public/private higher and better use properties, public/private timberlands, and public/private property. When evaluating the value of timberland and higher and better use properties:

1. Why was cost of forgone opportunity estimated for timber identified lands and not for other lands which likely have higher forgone losses and often shorter time horizons?
2. Why does the timber that must be harvested within the right of way only show as revenue?

14807-3 To agree that there is a loss of forgone opportunity to one class of owners – timber – and to not identify and plan for lost opportunity in other classes of landowners – highest and best use for example- is inappropriate, wrong, and distorts the cost and relationship within and between alternatives and segments of alternatives.

In reciprocity, the valuation of timberland in the EIS appears inadequate. In many cases, including my property, the timber is merchantable today and is in an accelerating growth stage; much less than culmination of mean annual increment and not yet to financial peak maturity and much sooner than my wife and I's needs and specifically our children's' needs. In addition to these stands of timber increasing in volume (knee of biological growth curves for Douglas Fir) they are rapidly increasing in volume in higher grade and sort especially the increasing volume in export quality and value. The net present value

- 14807-1 BPA plans its system to comply with industry Reliability Standards. To comply with the reliability standards, outages (single element and credible multiple element outages) must not result in overloaded equipment or voltages beyond their limits. For a new line built on a separate corridor, only the outage of the new line, by itself, must be considered and planned for. When a new line is built adjacent to another circuit, the simultaneous outage of both facilities must be planned for. In general, more elements out of service simultaneously have a greater (potentially adverse) impact to the power system. From a planning and operations perspective, it is preferable to construct new facilities on a separate corridor to avoid the potential for multiple line outages and the associated consequences.
- 14807-2 For the proposed I-5 Project, the action alternatives would build a new 500-kV line to a new substation at the Sundial site. The new line would connect to the 500-kV corridor that runs north to south through the Castle Rock area via a new substation. Transformation is not needed because all of the facilities are at the same voltage level (500 kV) and existing transformation is sufficient. Any new double-line outages in this area have been analyzed and their impacts are acceptable. The new line would benefit utilities throughout the southwest Washington and northwest Oregon area by providing a parallel network to the existing 500-kV transmission system that reinforces the congested South of Allston path.
- 14807-3 The EIS recognizes there may be impacts to property owners from impacts on other (i.e., non-timber) land uses. These other potential land-use impacts are primarily addressed qualitatively, because they are highly property-specific and not monetizable given the scale of analysis used for the EIS, or data available for the EIS.

The timber analysis presents both the increase in revenue from project-related harvest, and the costs associated with forgone revenue from project-related lost production over the long term. The analysis is not intended to be an appraisal of the project-related changes in property value or timber harvest for any particular property. To facilitate decision-making and comparison across alternatives, the timber analysis assumes average values for timber age at harvest across the project area, differentiating only between public and private land. The analysis does not necessarily reflect actual conditions on the ground for any particular property, as a property-specific appraisal of value or impacts was not the purpose of the analysis. If BPA decides to build this project, individual appraisals would be done for all affected properties. See also the response to Comment 14566-9.

14807-3 (N.P.V.) of these stands exceeds the market value especially given the historic and current difference between domestic and export logs. There is a lost opportunity in harvesting many stands that are "merchantable", therefore the cost to B.P.A. and value to timber owners needs to include N.P.V. not just the value of merchantable, marketable timber.

14807-4 By realigning the northern portion of Segment F only, is there a better alternative more north and more east to better satisfy BPA's directives of:

- maintaining system reliability and performance
- ensuring there is sufficient capability to serve its customers through safe and reliable transmission
- using taxpayer funds responsibly and efficiently
- minimizing the impact to natural and human environment

14807-5 Specifically, by realigning Segment F would the impact to the city of Castle Rock and its schools taxing districts be minimized? Will Castle Rock and its school district raise tax rates to overcome this loss, impacting a large number of property owners who are also BPA rate payers?

14807-5 By realigning the northern portion of Segment F would the impact to the number and value of properties that will need to be crossed or will become adjacent to the right-of-way be minimized? It appears that most of the path from Casey Road directly east to I-5 is state trust lands managed by the Washington Department of Natural Resources. These lands have less value than higher and better use lands and do not generate annual taxes to local taxing districts. Mark Korsness describes, in the Segment Summaries section, (3) Pros and (3) cons of the northern segment of Segment F. The Pros, indisputably and significantly, minimize the impact to human environment re: number of people impacted, proximity of impact, and value of impact. The Cons do not appear to have any measurable discount to a more northern more eastern route when contrasting the chosen location that runs through Castle Rock's UGA. The impact of the cons pale in comparison to the achievements of the pros which seem to satisfy the directives of the project the most.

14807-6 **Mark Korsness', Project Manager, written Evaluation of Northeastern I-5 Route dated January 18, 2012.**

14807-7 The scale of this evaluation was tremendous in size but appears to be inadequate when measuring precise impacts to the use of taxpayer funds responsibly and efficiently while minimizing the impact to natural and human environment to the northern portion of Segment F. Additionally, the conclusion section references the negative impact of delaying the EIS project 1.5-2yrs. Below are questions around the significance of hastily advancing a project that impacts will extend into perpetuity.

What is the impact of the announced B.P.A. /Portland General Electric Memorandum of Understanding (M.O.U.) on modification to Cascade Crossings 500KV line on The I-5 Reinforcement Project's need and

14807-4 Please see the response to Comment 14395-2.

14807-5 Please see the response to Comment 14642-2.

14807-6 Comment noted.

14807-7 Please see the response to Comment 14800-6.

timing? Does this M.O.U. concept and projects aid in getting more power and reliability to the west of the Cascades, N.W. Oregon and farther south? Please evaluate this in detail before the I-5 Reinforcement Project alternatives move to the final E.I.S.

14807-7

What impact does Portland General Electric's planned, announced, and to begin construction in April 2013, 220MW power production plant located in Clatskanie, OR have on the power congestion issue in Oregon re: available power compared to projected load and transmission of this power? Please describe the impact in terms of reliability and timing on the need to add a 500KV line to the mix of alternatives for The I-5 Reinforcement Project.

Generation redispatch as discussed in your D.E.I.S. summary (page 5-2) states ... "while generation redispatch could defer the need for the new line by 2 to 6 years". What is the cost estimate of generation redispatch? Will this aid in future system flexibility?

#### Conclusion

14807-8

While no route will be without impact, without answers to these questions it seems that an evaluation of realigning the northern portion Segment F has not been completed adequately after the decision to select the Casey Road site for the substation was made (November 2012). A farther north and farther east route appears to better satisfy BPA's directives of:

- maintaining system reliability and performance
- ensuring there is sufficient capability to serve its customers through safe and reliable transmission
- using taxpayer funds responsibly and efficiently
- minimizing the impact to natural and human environment

Thanks for your consideration,

Travis Keatley  
Impacted landowner and concerned citizen

Residence:

CC: Governor Jay Inslee  
Senator John Braun  
Representative Richard DeBolt  
Representative Ed Orcutt  
U.S. Senator Maria Cantwell  
U.S. Senator Patty Murray  
U.S. Representative Jamie Herrera-Beutler

14807-8 Please see the responses to Comments 14807-3 through 14807-5.

14808

TESSIE M CHERRINGTON

03/25/2013

- 14808-1 We own property on Starflower Lane, just off Firlane Rd in Castle Rock, WA. My husband's parents gave this property to my husband and his brother to build houses on for their family. They purchased this property in 1989 as gift to their children when they got married. My husband and I were married in 2002, and we have always planned on building our dream home there. The property is part of an
- 14808-2 upscale gated community, where the prices of property were not cheap. Lot #37 is currently listed for \$118,900. Placing the towers inside the gated community will not only lower our value of property, but every piece of property in the gated community, as you will have to drive under the towers to enter.
- 14808-3 The proposed plan has 2 towers on our property and cuts our property directly in half diagonally. The power lines will go directly over both of the proposed building sites. One site has already been cleared, has an existing septic, and several fruit trees planted. The other site was in the process of being cleared when we first heard of the power lines coming through our property and we have now put it on hold.
- 14808-4 Both my Brother-in-law and Sister in law are in their early 30's and are both cancer survivors. They have two small children and would never take a risk of building near the towers. My husband and I also have two small children. My family has a huge history of cancer. Between my four Grandparents and my parents, there is just about every kind of cancer you can think of: Colon, Leukemia, Brain, Breast, Cervical, Lung, Skin, and Prostate. For this reason, we would never build near an existing line and increase the chance of cancer for ourselves and for our children.

In my opinion, the BPA should keep the re-open the scoping period and look further into moving the power lines further North and further East. Below are a few other options that I see possible.

- A. I've read over the information on The Northeastern Route and really think the BPA should look further into this for several reasons.
1. Both my Husband and I have lived in Castle Rock our entire lives. Both of our families were among the first to settle in this area. Our town has that special charm that people want to come back to raise their families in. With all the cuts the past few years, our town is struggling to survive. Placement of the towers in our small community will only hurt our community more. The Towers will cross directly over the area that was planned for a future housing development that would have helped our community survive.
2. The Northeastern Route will affect fewer home owners by a significant amount.
3. The Northeastern Route will cost less money to build. In today's economy, this is huge.
- B. Another option would be moving a few towers in our area to impact less homeowner. In the proposed plan, we have towers #40 and #41 on our property. If you start from tower #43 and go East of Firlane Rd, you will stay away from several houses and stay more on Weyerhauser and Longview Timberland Property. Basically if you look at your interactive map, and starting at Tower #43, head North and follow what you have listed as the Notification Buffer Line. Then, connect back up around Towers 24-26. This will save our property from being dissected, the Stoners property from being
- 14808-5
- 14808-6

14808-1 Thank you for your comments. Specific comments are addressed below.

14808-2 Please see the responses to Comments 14097-1 and 14140-2.

There are two entrances to this community. Using the west entrance would not require driving under the transmission line and likely homeowners would not be able to see the line from this entrance.

14808-3 Please see the response to Comment 14097-1. After meeting with the commenter on-site, BPA moved the proposed location of the transmission line to the east, mostly off the large hilltop parcel that is most important to the landowner, and on to their smaller parcels downhill and across the road. Placing the line adjacent to Firlane Road avoids dissecting the landowners property. BPA also looked at moving the line even farther east but found it would cross other private landowners with homes on their property.

14808-4 Please see the response to Comment 14328-6.

EMF information specific to this area is provided in Table 7 and Figure 2 of Appendix F.

14808-5 Please see the responses to Comments 14638-4 and 14642-3.

14808-6 Please see the responses to Comments 14097-1 and 14808-3.

- 14808-6 dissected, property values in the housing development to decrease, and several houses on Lookout Rd and Firlane Rd will no longer be affected. This will leave the BPA to deal more with Weyerhauser and Longview Timberland, which I would think would be cheaper than dealing with each individual homeowner.
- 14808-7 C. Another obvious option would be to use the existing power line route. This is by far the least expensive route. All of the homeowners who live along these routes, obviously don't care, because they chose to build or buy their homes next to the power lines. We chose to live in the country and now might not have that chance.
- 14808-8 D. I urge the BPA to re-open the scoping period and explore more of these options. My last  
14808-9 suggestion would be that if the BPA insists on using the Central Route with Segment F, that the BPA would at least consider moving the towers closer to Firlane Rd and not cut our property in half.

14808-7 Please see the response to Comment 14769-1.

14808-8 Please see the responses to Comments 14808-5 through 14808-8.

14808-9 Please see the response to Comment 14808-3.

14809-1

BPA's choice of the Central Alternative Project is fiscally and environmentally irresponsible.

According to BPA's own estimates it will cost 74 million more dollars to build on the Central Alternative than on the existing corridor.

BPA only needs to acquire 127 acres of land along the existing corridor versus 1287 acres of new easement for the Central alternative.

Obviously there will be significantly more damage to the environment using the Central Alternative versus the West Alternative not only

in the amount of land consumed but in the herbicides used year after year for brush control. An additional spraying of 1287 acres in the county

with the concomitant runoff into the rivers and streams is unconscionable.

BPA acknowledges that the Central Alternative is more environmentally damaging. 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."

Regarding the West Alternative in chapter 19.2.4, "Because of the existing degree of impairment and disconnection of floodplains crossed by this

alternative, impacts...would be low.

BPA needs to take its own facts seriously and act in a fiscally and environmentally responsible way by using the West Alternative.

Beverly Turner

14809-1 Comment noted.

14810

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**From:** noreply@bpa.gov  
**Sent:** Saturday, March 23, 2013 9:28 PM  
**Subject:** 14810: 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](http://www.bpa.gov/goto/i-5)

Sincerely,  
 Bonneville Power Administration

**Name:** Richard none van Dijk  
**Organization:** AnotherWayBPA  
**E-mail:**  
**Phone:**  
**Address:**

USA

**Please ADD me to the mailing list.**

14810-1

**Comment:**

A correctly formatted version is as an attachment. Hubris – BPA and the I-5 Over the past three years BPA and their propaganda machine have unsuccessfully tried to mislead the people of SW Washington and their elected officials with misrepresentations, obfuscations, and outright lies to hide the true reason they want this line. Let's analyze each of BPA assertions NEED: BPA argues it is for a multitude of reasons but mainly it is to support local load growth and without it keeping the lights on in Portland Metro, the Willamette valley and especially SW Washington will be a major challenge. Other reasons mentioned are added system reliability, to allow for scheduled maintenance and once in a while during the summer months transfer power through our local area. The I-5 project is one of four Commercial Infrastructure Projects (also known as NOS or CISP projects) identified by BPA cluster study results of the Network Open Season 2008. None of the key drivers show that this is needed to support load growth. Below an extract from the 2008 BPA Transmission Services Plan. Start of reference 3.1.3 Commercial Infrastructure Projects In the Northwest, there is considerable development of new generating resources by Independent Power Producers (IPP's). These developers need access to transmission in order to move their resources to the load centers. This has led to a need for increased capacity in many portions of the transmission system in order to accommodate these transmission service requests as required by the FERC Open Access Transmission Tariff. This category of Commercial Infrastructure Projects includes transmission reinforcements needed to accommodate long-term firm point-to-point transmission service requests. Network Open Season In Spring 2008, BPA is initiating a Network Open Season process (NOS) which will affect the implementation of most projects in the following category. The intent of this process is to

1

1 of 7

14810-1 Thank you for your comments. Specific comments are addressed below.

14810

ensure priority transmission is built by offering precedent agreements to those parties who want to secure long-term firm capacity on BPA's network transmission system. These parties may include generation developers as well as existing customers. Those who accept the precedent agreements are committed to take transmission service at a specified time and under specified terms. Those not yet ready to sign a precedent agreement will have other opportunities as NOS is expected to be offered at least annually. Once precedent agreements are signed, BPA proposes to "cluster" those requests to determine how much available transfer capability can be offered and which new transmission facilities, if any, will be required to accommodate the requests. By studying confirmed requests in a "cluster," BPA will be able to more efficiently determine collective system impacts and new facility requirements. The NOS approach is expected to improve transmission queue management by winnowing out the speculative transmission requests for potential future projects and those who are not yet ready to commit to new resources. BPA's current first-come, first-served queue for network transmission requests has grown to a size that makes it difficult if not impossible to manage. Currently, requests in the queue total about 8,500 megawatts of new capacity. At times, the requests have exceeded 12,000 MW. Speculative requests can make it impossible to evaluate the region's priority transmission needs. The following areas are impacted by Commercial Infrastructure Projects and the Network Open Season process. I-5 Corridor

The I-5 Corridor transmission system extends from the Canadian to the California border and west of the Cascades Mountain Range. However, the present area of concern is the portion of the path which extends roughly from Chehalis, Washington, to Oregon City, Oregon. With the recent development of new resources along the I-5 Corridor, congestion along this path has increased to the point where transmission facilities no longer have adequate capacity to accommodate the growing demands. There are presently several long-term firm service requests to the Bonneville Power Administration (BPA) which impact the I-5 Corridor transmission system. In order to accommodate these requests, as required by BPA's Open Access Transmission Tariff (OATT), additional transmission reinforcements are needed for the I-5 Corridor.

**I-5 Corridor Reinforcement Project Description:** Construct a new 500 kV line (approximately 70 miles) between southwest Washington (in the vicinity of Castle Rock, WA ) and northwest Oregon (alternatives of Troutdale or Pearl are being considered). This is a Commercial Infrastructure Project. The project schedule depends on the outcome of BPA's Network Open Season (NOS) process. If a decision is made to launch the project, the energization date is expected to be approximately 6 years after initiating the project.

**Key Drivers:** – Point to Point (PTP) Transmission Service Requests – Interconnection of new resources along the I-5 Corridor – Congestion Relief – Improved service to a major load center – System Reliability Issues Being Addressed; This project addresses the issue of meeting the FERC Open Access requirements by building the necessary transmission facilities to accommodate new generation resources seeking access to BPA's transmission network. The project also addresses the issue of increased reliability to loads in the southwest Washington and Willamette Valley vicinity.

**Discussion of Alternatives:** Other alternatives considered, included: – Sub-grid reinforcements to the lower-voltage system – New 500 kV line from a new substation in the vicinity of Castle Rock, WA to Troutdale Substation – New 500 kV line from a new substation in the vicinity of Castle Rock, WA to Pearl Substation

**End of Reference** This 2008 document is just one of many that show the reason for the line is not to provide power to our area. A map date 4/30/2012 [http://transmission.bpa.gov/PlanProj/regional\\_tx\\_projects\\_map.pdf](http://transmission.bpa.gov/PlanProj/regional_tx_projects_map.pdf) confirms again the I-5 is a NOS project. BPA has conceded that the I-5 will not have any effect on Cowlitz County as it will not change nor improve power delivery. The Castle Rock substation is NOT a substation - it is a switchyard - allowing power from the existing 500KV Napavine line to be switched to the I-5. Cowlitz County gets its power from other lines. The I-5 cannot provide any power to Cowlitz County. The I-5 also has no direct benefit to Clark County. The topology of the grid and how the power flows from generation to the local Clark County load on the grid shows that it is not possible for the I-5 to supply any additional power. BPA claims it will reinforce an existing 115KV line belonging to Pacific Power. This is like building an unasked for six lane freeway to allow access to a one lane unimproved dirt road which is adequately serviced by Pacific Power from their substation and incoming transmission lines. If BPA is to be believed, 80% of the power from the new I-5 will be used locally ([http://www.bpa.gov/Projects/Projects/I-5/2012documents/How\\_power\\_from\\_the\\_I-5\\_project\\_will\\_get\\_to\\_you.pdf](http://www.bpa.gov/Projects/Projects/I-5/2012documents/How_power_from_the_I-5_project_will_get_to_you.pdf)), the problem is we have way more power than we could ever use. The table below shows that even today BPA has more than enough power available to flow into the region to more than adequately meet our needs for many decades. The problem arises

14810

when BPA commits to moving more and more power under the NOS process and we the citizens of SW Washington get the line but no benefits -- only the continued misery this project has caused and will do so for many years to come.. Powerflow Availability / Usage 10-year Normal Winter 10-year Summer Drop from W->S % of used W/S Maximum Available 10000 10000 Power flow into "Region" 8076 8300 PGE uses\* 4350 3975 -8% 53.8 / 47.8 ClarkPUD uses\* 1025 800 -22% 12.7 / 9.6 Excess power today 2701 3525 \* = 2016 Excess power with I-5 3701 4525 +1000MW This table and other points below need to be addressed in the FEIS are how the following affect the need for and/or the impact to the line to serve local loads in SW Washington and Oregon. • Portland General Electric (PGE) is building out their own system to support their customers in Oregon. They are adding 300-550MW of gas generation at Port Westward using existing transmission rights to move it into their service area, upgrading many sub grid lines and substations. • A MOU was recently signed with PGE for cooperation on the Cross Cascade Project for which PGE will get 2900MW of transmission rights. • An EIS is underway for a Gas plant with 635MW at Troutdale. • Oregon has also committed not increasing its base load and all load growth will be managed through conservation. • PGE has bids out for additional power. What if the selected vendor would primarily use Cascade South instead of South of Allston. • Load growth for both ClarkPUD and PGE are lower than BPA used in the DEIS • Validate that Clark PUD will no longer be a winter peaking. • Washington revisiting renewables. The following needs to be addressed in the FEIS to validate who real beneficiaries of this line really are if the need is still justified: • The names of all customers that signed PTSAs with BPA from the NOS2008/09/10 that are dependent on the I-5, Megawatts requested, Point of Receipt (POR), Point of Destination (POD) and the impact the requests would have on the South of Allston cutplane • An analysis of the power flows into and out of the area during both a 10 year summer and winter. This to include typical/max MW flow on each of the BPA lines 115KV and higher, lines must be identified (BPA naming convention ok) and the direction of the powerflow identified. This is to include the PGE owned 230KV lines that make up part of the S of Allston Cutplane as BPA manages those lines on PGE's behalf. • Revisit reinforcing the sub grid in light of what PGE is doing with their buildout. Review new technologies that would allow for a more robust reinforcement.

[Attachment](#)

14810

**Hubris – BPA and the I-5**

14810-2 Over the past three years BPA and their propaganda machine have unsuccessfully tried to mislead the people of SW Washington and their elected officials with misrepresentations, obfuscations, and outright lies to hide the true reason they want this line.

Let's analyze each of BPA assertions

**NEED:**

14810-3 BPA argues it is for a multitude of reasons but mainly it is to support local load growth and without it keeping the lights on in Portland Metro, the Willamette valley and especially SW Washington will be a major challenge. Other reasons mentioned are added system reliability, to allow for scheduled maintenance and once in a while during the summer months transfer power through our local area.

14810-4 The I-5 project is one of four Commercial Infrastructure Projects (also known as NOS or CISP projects) identified by BPA cluster study results of the Network Open Season 2008. None of the key drivers show that this is needed to support load growth. Below an extract from the 2008 BPA Transmission Services Plan.

***Start of reference*****3.1.3 Commercial Infrastructure Projects**

*In the Northwest, there is considerable development of new generating resources by Independent Power Producers (IPP's). These developers need access to transmission in order to move their resources to the load centers. This has led to a need for increased capacity in many portions of the transmission system in order to accommodate these transmission service requests as required by the FERC Open Access Transmission Tariff. This category of Commercial Infrastructure Projects includes transmission reinforcements needed to accommodate long-term firm point-to-point transmission service requests.*

**Network Open Season**

*In Spring 2008, BPA is initiating a Network Open Season process (NOS) which will affect the implementation of most projects in the following category. The intent of this process is to ensure priority transmission is built by offering precedent agreements to those parties who want to secure long-term firm capacity on BPA's network transmission system. These parties may include generation developers as well as existing customers.*

*Those who accept the precedent agreements are committed to take transmission service at a specified time and under specified terms. Those not yet ready to sign a precedent agreement will have other opportunities as NOS is expected to be offered at least annually.*

*Once precedent agreements are signed, BPA proposes to "cluster" those requests to determine how much available transfer capability can be offered and which new transmission facilities, if any, will be required to accommodate the requests. By studying confirmed requests in a "cluster," BPA will be able to more efficiently determine collective system impacts and new facility requirements.*

Page 4 of 7

14810-2 Please see the response to Comment 14096-3.

14810-3 Chapter 1 describes the need for the project and the Network Open Season process, specifically Sections 1.1.2.3, Existing Obligations and New Requests for Transmission Service and 1.1.3, Planning for Transmission Additions in the I-5 Corridor.

See also the responses to Comments 14316-2 and 14685-1.

14810-4 Please see the response to Comment 14685-1.

The NOS approach is expected to improve transmission queue management by winnowing out the speculative transmission requests for potential future projects and those who are not yet ready to commit to new resources. BPA's current first-come, first-served queue for network transmission requests has grown to a size that makes it difficult if not impossible to manage. Currently, requests in the queue total about 8,500 megawatts of new capacity. At times, the requests have exceeded 12,000 MW. Speculative requests can make it impossible to evaluate the region's priority transmission needs.

The following areas are impacted by Commercial Infrastructure Projects and the Network Open Season process.

### **I-5 Corridor**

The I-5 Corridor transmission system extends from the Canadian to the California border and west of the Cascades Mountain Range. However, the present area of concern is the portion of the path which extends roughly from Chehalis, Washington, to Oregon City, Oregon.

With the recent development of new resources along the I-5 Corridor, congestion along this path has increased to the point where transmission facilities no longer have adequate capacity to accommodate the growing demands. There are presently several long-term firm service requests to the Bonneville Power Administration (BPA) which impact the I-5 Corridor transmission system. In order to accommodate these requests, as required by BPA's Open Access Transmission Tariff (OATT), additional transmission reinforcements are needed for the I-5 Corridor.

#### **I-5 Corridor Reinforcement Project**

##### **Description:**

Construct a new 500 kV line (approximately 70 miles) between southwest Washington (in the vicinity of Castle Rock, WA) and northwest Oregon (alternatives of Troutdale or Pearl are being considered). This is a Commercial Infrastructure Project. The project schedule depends on the outcome of BPA's Network Open Season (NOS) process. If a decision is made to launch the project, the energization date is expected to be approximately 5 years after initiating the project.

##### **Key Drivers:**

- Point to Point (PTP) Transmission Service Requests
- Interconnection of new resources along the I-5 Corridor
- Congestion Relief
- Improved service to a major load center
- System Reliability

##### **Issues Being Addressed:**

This project addresses the issue of meeting the FERC Open Access requirements by building the necessary transmission facilities to accommodate new generation resources seeking access to BPA's transmission network. The project also addresses the issue of increased reliability to loads in the southwest Washington and Willamette Valley vicinity.

##### **Discussion of Alternatives:**

Other alternatives considered, included:

- Sub-grid reinforcements to the lower-voltage system
- New 500 kV line from a new substation in the vicinity of Castle Rock, WA to Troutdale Substation
- New 500 kV line from a new substation in the vicinity of Castle Rock, WA to Pearl Substation

##### **End of Reference**

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14810

14810-4

This 2008 document is just one of many that show the reason for the line is not to provide power to our area. A map date 4/30/2012 [http://transmission.bpa.gov/PlanProj/regional\\_tx\\_projects\\_map.pdf](http://transmission.bpa.gov/PlanProj/regional_tx_projects_map.pdf) confirms again the I-5 is a NOS project.

BPA has conceded that the I-5 will not have any effect on Cowlitz County as it will not change nor improve power delivery. The Castle Rock substation is NOT a substation - it is a switchyard - allowing power from the existing 500KV Napavine line to be switched to the I-5. Cowlitz County gets it power from other lines. The I-5 cannot provide any power to Cowlitz County.

The I-5 also has no direct benefit to Clark County. The topology of the grid and how the power flows from generation to the local Clark County load on the grid shows that it is not possible for the I-5 to supply any additional power. BPA claims it will reinforce an existing 115KV line belonging to Pacific Power. This is like building an unasked for six lane freeway to allow access to a one lane unimproved dirt road which is adequately serviced by Pacific Power from their substation and incoming transmission lines.

If BPA is to be believed, 80% of the power from the new I-5 will be used locally ([http://www.bpa.gov/Projects/Projects/I-5/2012documents/How\\_power\\_from\\_the\\_I-5\\_project\\_will\\_get\\_to\\_you.pdf](http://www.bpa.gov/Projects/Projects/I-5/2012documents/How_power_from_the_I-5_project_will_get_to_you.pdf)), the problem is we have way more power than we could ever use.

The table below shows that even today BPA has more than enough power available to flow into the region to more than adequately meet our needs for many decades. The problem arises when BPA commits to moving more and more power under the NOS process and we the citizens of SW Washington get the line but no benefits - only the continued misery this project has caused and will do so for many years to come..

14810-5

Powerflow Availability / Usage	10-year Normal Winter	10-year Summer	Drop from W->S	% of used W/S
Maximum Available	10000	10000		
Power flow into "Region"	8076	8300		
PGE uses*	4350	3975	-8%	53.8 / 47.8
ClarkPUD uses*	1025	800	-22%	12.7 / 9.6
Excess power today	2701	3525		* = 2016
Excess power with I-5	3701	4525		+1000MW

This table and other points below need to be addressed in the FEIS are how the following affect the need for and/or the impact to the line to serve local loads in SW Washington and Oregon.

14810-5 Please see the responses to Comments 14800-6 and 14144-2.

14810

14810-5

- Portland General Electric (PGE) is building out their own system to support their customers in Oregon. They are adding 300-550MW of gas generation at Port Westward using existing transmission rights to move it into their service area, upgrading many sub grid lines and substations.
- A MOU was recently signed with PGE for cooperation on the Cross Cascade Project for which PGE will get 2900MW of transmission rights.
- An EIS is underway for a Gas plant with 635MW at Troutdale.
- Oregon has also committed not increasing its base load and all load growth will be managed through conservation.
- PGE has bids out for additional power. What if the selected vendor would primarily use Cascade South instead of South of Allston.
- Load growth for both ClarkPUD and PGE are lower than BPA used in the DEIS
- Validate that Clark PUD will no longer be a winter peaking.
- Washington revisiting renewables.

The following needs to be addressed in the FEIS to validate who real beneficiaries of this line really are if the need is still justified:

14810-6

- The names of all customers that signed PTSAs with BPA from the NOS2008/09/10 that are dependent on the I-5, Megawatts requested, Point of Receipt (POR), Point of Destination (POD) and the impact the requests would have on the South of Allston cutplane

14810-7

- An analysis of the power flows into and out of the area during both a 10 year summer and winter. This to include typical/max MW flow on each of the BPA lines 115KV and higher, lines must be identified (BPA naming convention ok) and the direction of the powerflow identified. This is to include the PGE owned 230KV lines that make up part of the S of Allston Cutplane as BPA manages those lines on PGE's behalf.

14810-8

- Revisit reinforcing the sub grid in light of what PGE is doing with their buildout. Review new technologies that would allow for a more robust reinforcement.

Page 7 of 7

- 14810-6 All of the requested information is posted publicly to our Transmission Services website <http://transmission.bpa.gov>. Signed PTSAs from the 2008 NOS can be viewed at the following link - [http://transmission.bpa.gov/Customer\\_Forums/open\\_season/docs/PTSA\\_Summary\\_by\\_Cluster.pdf](http://transmission.bpa.gov/Customer_Forums/open_season/docs/PTSA_Summary_by_Cluster.pdf). To quickly summarize, there were 10 PTSAs totaling 745 MW for the I-5 project identified in the 2008 NOS. Signed PTSAs from the 2009 NOS can be viewed at the following link - [http://transmission.bpa.gov/Customer\\_Forums/open\\_season\\_2009/PTSA\\_Summary\\_by\\_Cluster\\_2009.pdf](http://transmission.bpa.gov/Customer_Forums/open_season_2009/PTSA_Summary_by_Cluster_2009.pdf). To quickly summarize, there were 3 PTSAs totaling 225 MW for the I-5 project identified in the 2009 NOS. Signed PTSAs from the 2010 NOS can be viewed at the following link - [http://transmission.bpa.gov/Customer\\_Forums/open\\_season\\_2010/cluster\\_study\\_summary\\_by\\_cluster\\_020411.pdf](http://transmission.bpa.gov/Customer_Forums/open_season_2010/cluster_study_summary_by_cluster_020411.pdf). To quickly summarize, there were 13 PTSAs totaling 1033 MW for the I-5 project identified in the 2010 NOS. The above documents include a number for each transmission request that can be cross-referenced with BPA's posted long-term firm transmission queue for additional information on each request, including POR, POD and MW impact to the South of Allston flowgate (cutplane) - [http://transmission.bpa.gov/tx\\_availability/LTF\\_Pending\\_Queue.xlsx](http://transmission.bpa.gov/tx_availability/LTF_Pending_Queue.xlsx) (for future reference this can be accessed by going to the "Transmission Availability" section of the Transmission Services website).
- 14810-7 The technical studies for the I-5 Project have been updated several times using the latest load forecast provided by local utilities. BPA works closely with the local utilities to model an accurate description of the transmission system and future loads. PGE provides their load forecast annually and the latest forecast is used in the technical study.
- 14810-8 BPA studied making system upgrades to the existing 115- and 230-kV transmission lines in this area, but these upgrades would not provide the added reliability, stability and flexibility that a new 500-kV line would. See Section 4.7.3, Lower Voltage Line Upgrades, in the EIS. Adding additional 115- and 230-kV transmission lines and substations would add more total miles of transmission line upgrades than are being proposed with the I-5 Project.
- BPA plans the transmission system for future projects with the support of local utilities that provide their expected aggregate demand and resource plans, which should include their improved efficiency and resource portfolio. The utilities' effort to incorporate distributed generation and increased efficiencies, such as solar panel systems and improved insulation, are taken into consideration as part of the load forecast used in the planning process.

Draft Environmental Impact Statement Comments-March 24, 2013:

- 14811-1 BPA has narrowed the transmission line alternatives to four (4) general routes with options and has identified the preferred route as Central Alternative using Option 1. This preferred route includes using the Casey Road site as the substation location. This alternative crosses directly north of the small town of Castle Rock and encroaches on the town's urban growth boundary area. Any route through this area will have high and permanent impacts on the City of Castle Rock, the Castle Rock School District, it's citizens, and the private property owners.
- We request that you completely eliminate any of the current Central or Eastern Route Alternatives and their options due to these high and permanent impacts. Of the four (4) general routes that were proposed, the West Alternative would be the best option, and in BPA's own words included in the draft EIS, "Because the West Alternative would occupy 98% existing right-of-way and a larger portion of existing access roads, it would have the least overall impact on landowners of the action alternatives."
- 14811-2 There is another very viable option to consider prior to determining a permanent route. Now that BPA has chosen the Casey Road substation site, there are better options across the Cowlitz Valley. The Northeastern route option as proposed by the "No Lines in Populated Areas" organization would reduce the high and permanent impacts to communities, school districts, and individuals.
- By implementing BPA's "generation redispatch" system, as summarized in BPA's draft EIS on page S-2, this would allow between 2-6 years to evaluate the Northeastern route.
- 14811-3 Our family respectfully **requests BPA to re-open the scoping period to fully evaluate this Northeastern route.** In our humble opinion, we believe that City, County, and State governments, school districts, along with citizens, private property owners, and concerned organizations would favor this Northeastern route. This new route would completely accomplish BPA's objectives, without all the high and permanent impacts and burdens that would be caused by any of the proposed current Central or Eastern alternatives.
- Again, please **re-open the scoping period to fully evaluate this Northeastern route.**
- Please acknowledge that you have received our comments regarding the Draft EIS.

14811-1 Comment noted.

14811-2 Please see the response to Comment 14395-2.

14811-3 Please see the responses to Comments 14638-4 and 14642-3.

Corp of Engineers  
Public Comments, BPA – I-5 Corridor Reinforcement Project

March 25, 2013

To Whom It May Concern:

These comments represent the position of the members of Haslinger Properties LLC regarding the proposed siting of the I-5 Corridor Reinforcement Project.

Sincerely,

Kris DeSylvia

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March 25, 2013

I-5 Corridor Reinforcement Project

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.

14812-1

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 (\$-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.

14812-2

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

14812-1 Please see the response to Comment 14777-1.

14812-2 Please see the response to Comment 14777-2.

- 14812-2 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 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*
- 14812-3 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.
- 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.
- 14812-4 Because of the human and natural world impacts of new power line construction, construction along existing easements generally is favored.
- 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

14812-3 Please see the response to Comment 14777-3.

14812-4 Please see the response to Comment 14777-4.

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*

14812-4

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:

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. 5-9*

14812-5

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-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).

14812-5 Please see the response to Comment 14777-5.

- 14812-5
- 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.
- 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.
- 14812-6
- 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.

14812-6 Please see the response to Comment 14777-6.

14812

14812-7

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 other alternatives require the creation of a second power corridor that will cause human and natural world impacts along two routes instead of one.

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.

14812-8

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.

14812-9

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.

14812-10

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.

6 of 11

14812-7 Please see the response to Comment 14777-7.

14812-8 Please see the response to Comment 14777-8.

14812-9 Please see the response to Comment 14777-9.

14812-10 Please see the response to Comment 14777-10.

14812-11

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.

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.

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).

14812-12

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.

7 of 11

14812-11 Please see the response to Comment 14777-11.

14812-12 Please see the response to Comment 14777-7.

14812-13 | 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: Sate of the Art and State of the Science – Next Steps Toward Mitigation, Albert M. Manville II, 2005*

14812-14 | 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 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.

14812-15 | 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.

- 14812-13 Please see the response to Comment 14777-13.
- 14812-14 Please see the response to Comment 14565-15. See also the response to Comments 14480-3 and 14777-14.
- 14812-15 Please see the response to Comment 14777-15.

- 14812-16 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.
- 14812-17 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](http://psc.wi.gov/the_library/publications/electric/electric10.pdf)
- 14812-18 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.
- 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.
- 14812-19 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.

14812-16 Please see the response to Comment 14777-16.

14812-17 Please see the response to Comment 14777-17.

14812-18 Please see the response to Comment 14777-18.

14812-19 Please see the response to Comment 14777-19.

- 14812-19 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.
- 14812-20 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.
- 14812-20 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.
- 14812-21 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.

14812-20 Please see the response to Comment 14790-28.

14812-21 Please see the response to Comment 14777-21.

14812-22 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.

14812-23 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 )."

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

14812-22 Please see the response to Comment 14777-22.

14812-23 Please see the response to Comment 14777-23.

- 14813**  
DR SHARON YOUNG  
03/25/2013
- 14813-1 | While am grateful that, at this time, the Western Alternative is not favored, the line still should be moved farther east than the Central Alternative, to unpopulated areas.
- 14813-2 | Regarding the EMF effects in the draft EIS on the Summary of Electrical Effects:  
The selected year for modeling was 2019; in the initial years of operation. But what would these amounts and effects be like in later years with max loads on the lines or any future line capacity upgrade? On page 10, quote "The calculated electric fields on and at the edge of the right of way of the proposed transmission line would be much higher than the levels normally encountered in residences or offices". Only short term effects associated with the interaction of EMF from transmission lines with people on and near a right of way was mentioned but the summary does acknowledge possible long term effects. How might that affect us and our children 20, 30, or more years from now?  
The edge of right of way electric fields from the proposed line would be above the limits set in Montana and New York, two of 6 states that have set limits. The State of WA does not have guidelines.  
Per the summary, from the right of way edge out to 1,000 feet on either side of the line, the West Alternative and options would encompass a greater percentage of property zoned for residential use; about 46% of the property along the West Alt. is zone for residential use. The overall electrical effects would be greater along the West Alternative was the final determination.
- 14813-3 | Using the Western Alternative, the system reliability would have inherent increased risk by placing the new line on towers immediately adjacent, or in some cases with limited right of way, replacing the existing tower and placing all lines on a single tower.  
Per the draft EIS, the West Alternative would have the moderate-to-high visual impact, the highest of the alternative routes.  
Per the draft EIS, the West Alternative would have the highest impact of right of way clearing of wetlands, with the most amount or approximately 116 acres cleared. Fill for tower footings would impact an additional 25 acres of forested, scrub-shrub, emergent, and aquatic beds wetlands with mostly high impact.  
Per the draft EIS, the West Alternative would have the highest impacted vegetation—forest and mature (not production) forest and the greater number of special-species impacted and special-status plants habitats, including the greatest acreage of biodiversity areas and corridors. It would also have a greater risk of bird collisions and would remove or alter some WDFW priority habitats  
Per the draft EIS, the West Alternative has source wells and water heads along the entire route. Plus the line would be within the sole source aquifer and Critical Aquifer Recharge Areas Category 1 and 2

14813-1 Please see the response to Comment 14289-3.

14813-2 When BPA begins the NEPA process, system engineers choose a date sometime in the future (often 10 years out) to estimate the typical capacity of the line past the first years of operation.

Appendices G and G1 further discuss the research that has been done on electric and magnetic field effects over the last 30 years. Most of the research on EMF health effects examines long-term exposure.

14813-3 Comment noted.

14813-3

Multiple agencies: Board of Cowlitz County Commissioners, Board of Clark County Commissioners, Senators Maria Cantwell and Patty Murray, Member of Congress Jaime Herrera Beutler, the Washington Education Association, several state representatives, and the Vancouver City Council, among others, have sent letters urging BPA to position the lines to impact the fewest people possible.

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March 14, 2013

I-5 Corridor Reinforcement Project  
Att: BPA Administrator

Re: I-5 Corridor Reinforcement Project

Good Morning:

14814-1

My property lies immediately adjacent to BPA's current high voltage transmission line known as the West Alternative and as such I have a more direct first-hand experience than most citizens of Clark and Cowlitz counties. Understanding the current impacts to my private property and my families' living situation as well as the compounding effect additional 500 KV lines and towers would have, I strongly support BPA's preferred Central Alternative. My support is based on my attendance at public meetings, periodic BPA newsletters throughout the process, a careful reading of the DEIS and associated documents, and BPS's rationale why the Central Alternative is their preferred alternative.

14814-2

Please accept and consider my following comments within your ongoing DEIS process:

1. The nearest consistently used structure on my property is a mere 45 feet from the power line and my residence a mere 90 feet. I have serious concerns about an additional 500 KV power line and attendant health risks of EMF magnetic radiation. Despite comments by BPS staff at public meetings, the jury is still very much out regarding such health risks, especially related to children and elderly citizens. The sheer number of over 3000 homes subjected to these health risks along the West Alternative is a serious cause for alarm. I come from a family that has been impacted by cancer and fully understand the difficulty and complexity that it presents. Prudent action must err on the side of caution based on sound science and where the jury is still out, no action.
2. We have already experienced the negative impact and uncertainty regarding the value of our property as a result of this proposal. In some cases financially stressed neighbors have lost badly needed sales based on buyers uncertainty about how the proposal may affect their purchase. This represents a large negative impact on high value private property and a direct loss of significant property taxes necessary to fund essential governmental services such as schools, fire and rescue services, law enforcement, libraries, etc. I appreciate BPA's efforts to analyze and quantify these impacts and believe their preferred Central Alternative offers the least negative impacts by a wide margin.
3. One of the goals of this proposal is to offer increased capability and reliability for electric power users across the board. In today's world of severe weather events and possible terrorism adding an additional line right next to an existing line

14814-1 Comment noted.

14814-2 Comments noted.

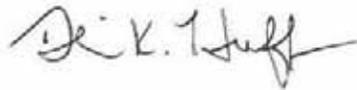
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14814

14814-2

- offers nothing to enhance either reliability or capability. In reality, just the opposite. If indeed capability and reliability are primary goals, the Central Alternative or other routes further east are the most prudent. As heavy power users increasingly look to our region as favorable for locating large job creating operations in our midst, they want and demand a common sense power system that is both capable and reliable. The Central Alternative offers that hands down.
4. Our area is well regarded for our support to maintain excellent water quality that in turn supports our healthy lifestyles and wildlife. After careful study I support BPA's conclusion that the preferred Central Alternative helps minimize impacts to wetlands and waterways and should be pursued.
  5. The DEIS notes that cost of the Central Alternative is not the cheapest, nor the most expensive alternative considered. When issues like property values, tax revenues, health issues, litigation, etc. are considered it may turn out to be the most economical. Even if not, any additional costs spread across the entire array of ratepayers is certainly manageable and not dramatic.
  6. I have relatives living near a 500 KV electric line in Oregon and have observed this line's dramatic impact on natural quiet. The buzzing and cracking destroys the quiet and peace that should accompany a family home and is unacceptable. Routes further east offer the best option for minimizing impacts to families, but the Central Alternative can offer new, common sense placement of the line to avoid homes or at least offer broader buffering from these impacts. BPA's preferred Central Alternative can provide intelligent placement of the line to avoid many of these impacts.
  7. The current western power line provides a critical wildlife corridor through an area otherwise well developed. In many respects it is the only pathway for wildlife to travel without impacting homes, farms, parks and schools. Constructing a major new 500 KV line next to the existing line will wipe out this corridor and spread wildlife migration throughout the locations noted above.

Thank you for considering my concerns and comments.



Dennis K. Huffman

2 of 2

**14815**

LONGVIEW TIMBERLANDS LLC, ADRIAN MILLER

03/25/2013

Longview Timber, Corp

[Address]

[Phone]

[Fax]

March 25, 2013

I-5 Corridor Reinforcement Project

PO Box 9250

Portland, OR 97207

Submitted Electronically

14815-1 Longview Timber LLC is a significant landowner directly impacted by the proposed BPA I5 Corridor Reinforcement Project. We offer the following comments on the Draft Environmental Impact Statement.

Chapter 1-Purpose and Need for Action

14815-2 Longview Timber supports the need for expanding the power infrastructure to southwest Washington. Given the alternatives presented, Longview Timber supports the West Alternative since it minimizes; the financial impact to rate payers and landowners and results in fewer adverse environmental impacts. Longview Timber recognizes that BPA's preferred option is the Central Alternative, and we will continue to work cooperatively with BPA to minimize the impact to our ownership if the Central Alternative is ultimately selected.

Chapter 5 - Land

14815-3 Longview Timber supports the mitigation measures presented and offers the following additional measures or expanded detail on the proposed mitigation measures:

Longview Timber would consider a cooperative agreement to control unauthorized public access or use on private lands that could result from the project. Such an agreement would need to be expanded beyond "immediately after" the project completion since the impacts from unauthorized access can continue in perpetuity. Longview Timber recommends that BPA participate and provide funding for development and implementation of a plan to control unauthorized public access. In addition to the mitigation measures proposed to address this issue throughout the DEIS, Longview Timber recommends that a strategy include, but not be limited to:

- 14815-4
- Reciprocal notification of damage to public or private resources,
  - Establishment of criteria for the quality of gates or other access limitations,
  - Prompt replacement of gates or other barriers to unauthorized access,

14815-1 Thank you for your comments. Specific comments are addressed below.

14815-2 Comment noted.

14815-3 Please see the responses to Comments 14246-2, 14357-2 and 14457-2.

14815-4 Please see the response to Comment 14815-3.

- 14815-4
- Prompt mitigation of damage to public or private resources,
  - Prompt notification of BPA or BPA contractors for the removal and location of hazard trees, and
  - BPA funded or BPA on the ground security to address unauthorized access.
- Chapter 6-Recreation
- 14815-5
- Longview Timber does not allow or have the following activities or facilities in the project area: boat launching, camping, motorized trails, parks, or recreation facilities. Longview Timber does allow non-motorized access to our land to accommodate; sightseeing, hunting, or dispersed recreation. Access to our lands is limited during active logging by gates and signage and during fire season by signage, press releases, and our website and information line.
- 14815-6
- A cooperative agreement between Longview Timber and BPA to control unauthorized public access as described in our comments to Chapter 5 would provide the necessary mitigation to address the impact of the project on these recreational resources.
- Chapter 10-Health and Safety
- 14815-7
- Longview Timber has worked hard to create a culture of safety for our employees and our contractors. As this project will have significant interaction between BPA, BPA Contractors and Longview Timber employees and contractors, it is imperative that all parties work together to provide a consistent and effective safety program.
- Longview Timber supports the mitigation measures presented and offers the following additional measures or expanded detail on the proposed mitigation measures:
- All activities associated with this project when taking place on forestland will comply with the provisions of WAC 332-24, Forest Protection. After clearing and construction, maintenance activities associated with the life of the project, should also comply with WAC 332-24. The key portions of these regulations relate to ensuring that during and after construction, workers have proper wildfire suppression equipment and also abide by the shutdown provisions for specific activities during periods of high fire risk
- BPA and BPA Contractors will abide by landowner safety policies when traveling through or working on private lands.
- Chapter 11-Socioeconomics
- 14815-8
- Many of the variables used to calculate metrics to compare the various alternatives are highly suspect and should be revisited to reflect a broader range of market conditions. For example, Chapter 11.1.7, references an average timber value of \$200 per mbf, a record low. Chapter 11.2.2.7 indicates a discount rate of 4% was used to calculate the net present value. Additionally, there are many other variables used to properly evaluate the lost production values as a result of this project. A range of values should be used to describe a range of potential impact of lost production values on private timberlands. While this

- 14815-5 Comment noted.
- 14815-6 Please see the response to Comment 14815-3.
- 14815-7 BPA also considers safety one of its highest priorities. Chapter 10, Public Health and Safety, discusses safety precautions needed when living and working around transmission lines. Throughout the NEPA process, BPA has worked closely with Columbia Timberlands and AKS Engineering and Forestry to site the transmission line to avoid impacts to timber production as much as possible. BPA would continue to work with Columbia Timberlands to discuss and implement safety protocols that would allow all aspects of timber production to continue in the vicinity of the transmission line. If BPA decides to build this project, BPA and its contractors would develop a safety plan before construction that would include the underlying landowner's guidelines. BPA maintenance crews would also follow underlying landowner safety requirements.
- 14815-8 Sections 11.2.2.4, Government Revenue, and 11.2.2.7, Private Timber Production, have been updated to include a more detailed description of the assumptions used for the analysis of timber impacts. This analysis is not intended to serve as an appraisal of the value of timber on individual properties. It is instead intended to provide information sufficient to allow BPA to compare timber-related impacts across the action alternatives. If BPA decides to build this project, timber landowners whose land the project would cross would have an opportunity to negotiate compensation with BPA.

See also the response to Comment 14566-9.

- 14815-8 analysis provides a relative comparison of impact between options, in no way should any information in this analysis be used in any future appraisals, easement, or compensation discussions.
- 14815-9 Longview Timber supports the mitigation measures presented and offers the following additional measures or expanded detail on the proposed mitigation measures:  
 Timberland properties vary significantly in characteristics such as merchantable volume, species mix, site productivity, age class distribution, terrain, location relative to markets, and other factors. Typically, the Income Approach is used in timberland valuations in the form of a Discounted Cash Flow analysis using future expectations of harvest volume, revenues, costs, and other assumptions.
- 14815-10 BPA will work with landowners throughout the project to make alterations to the selected route in order to minimize the impact to lands outside of the right of way and roads within and outside the right of way.  
 Chapter 12-Transportation  
 Longview Timber supports the mitigation measures presented and offers the following additional measures or expanded detail on the proposed mitigation measures:  
 All new roads will be built and maintained through the entire project period to the standards established in WAC 222-24. All existing roads, not yet to standard of WAC 222-24, that are used during construction or anticipated to be used as access roads into the future shall be upgraded to the standard of WAC 222-24. All existing access roads that currently meet the standard of WAC 222-24 shall be maintained to that standard.
- 14815-11 Specifications for road construction, reconstruction, and maintenance will be consistent with Washington State Forest Practice Regulations and additional BMPs prescribed by the landowner. For Longview Timber, these include, but are not limited to the following:  
 Road Design
- Cut and fill slopes angles should be no steeper than the angle of repose.
  - Road should be wide enough to accommodate the anticipated traffic.
  - Turnouts should be designed to add an additional 10 feet of width to the specified single lane road width.
- 14815-12
- For single lane roads, the spacing of turnouts should be specified. Spur roads should be considered as a turnout when specifying the turnout spacing. Examples of spacing:
    - o Inter-visible
    - o Every 1,000 feet
    - o Where they fit the terrain

- 14815-9 See also the responses to Comments 14566-9 and 14815-8.
- 14815-10 Throughout the NEPA process, BPA has worked closely with Columbia Timberlands and AKS Engineering and Forestry to site the transmission line to avoid impacts to timber production as much as possible.
- 14815-11 In general, BPA access road designs, and construction and maintenance methods are, and will continue to be, in compliance with WAC 222-24. WAC 222-24 does not require BPA to upgrade all existing road systems needed for construction and maintenance or even upgrade crossings on roads BPA would plan to improve. Although the permitting requirements of WAC 222-24 do not apply to BPA as a federal agency, BPA would continue to meet the substantive requirements of state and local law where practicable.

During the design process, landowners may request road design elements to be in excess of WAC requirements. In these cases, BPA has continued to work closely with the underlying landowner to find a mutually agreeable solution.

Before construction, BPA would secure access rights to existing roads identified in its final transportation plan, would maintain those roads during construction, and at the end of construction would leave them in as good or better condition than found at the start of construction. Where BPA decides it is necessary to improve or reconstruct existing roads, it would secure those rights at the time of acquisition.

Where BPA needs to construct new roads, the design requirements would be negotiated at the time of acquisition. In general, joint use, newly constructed roads would be constructed to a higher standard than roads built solely for BPA use.

- 14815-12 Please see the response to Comment 14815-11.

- 14815-12
- Roads should be in-sloped, out-sloped or crowned to provide adequate road drainage.
  - Horizontal curves should be 50 feet or greater.
  - Grades should fit the terrain within these standards as possible:
    - o Adverse-Optimum: 0% to 8%; Sustained Max: 12%; Pitch Max: 15%
    - o Favorable-Optimum: 0% to 10%; Sustained Max: 15%; Pitch Max: 20%
  - For site-specific conditions where excavated material is unsuitable for incorporation into the road, the material should be hauled and deposited at a stable location.
  - No woody debris will be placed in the fill.
  - All roads will be rocked.
  - Clearing and Grubbing: Stumps and other woody material will be removed from within 2 feet of the finished grade. No clearing slash will be buried in the fill material. Debris should be piled on flat stable ground. Stumps & Rocks from the clearing and grubbing are not to be piled against standing trees.
  - Roads will be constructed in a manner that allows safe use by LVT in order to access adjacent stands which have been isolated due to the route.
- Road Surface
- 14815-13
- In slope, out slope or crown the road surface to facilitate surface drainage.
  - Surfacing material should vary depending on the intended use of the road, the timing of anticipated road use and the potential impact on water quality and other resources.
    - o Dirt roads should be used for dry-season roads.
    - o Pit-run rock can be used on low traffic volume mainlines and wet-season roads.
    - o Pit-run or crushed rock should be used on main year-round haul roads and especially winter haul-roads.
  - Road surfaces, turnouts and shoulders should be graded and shaped to provide a suitable travel surface and control water runoff.
  - Roadside berms should be used for specific design purposes such as keeping the surface water off of an unstable slope.
- Drainage Structures
- 14815-14
- On fish bearing streams, drainage structures should be sized to allow fish passage at all life stages.
  - On non-fish bearing streams, drainage structures should be sized for the maximum design flow.

14815-13 Please see the response to Comment 14815-11.

14815-14 Please see the response to Comment 14815-11.

14815-14

- Drainage structures designed to intercept road surface and ditch water should be installed uphill from stream crossings.
- Drainage structures should be spaced to prevent ditch and/or road surface scour.
- Ditch relief culverts installed on roads with 3% or greater road grade should be installed with the appropriate skew.
- Catch basins for the inlet should be a minimum of 1.5 times the diameter of the culvert up to four feet.
- Outlets for culverts should discharge onto natural ground where possible with little to no drop in elevation from the culvert to the ground to avoid a "shotgun" outlet. • When it is not possible to discharge a culvert onto native ground, dissipate the energy and mitigate erosion potential. The discharge should fall onto a stable surface such as riprap, woody debris, a culvert downspout or an erosion control mat.
- Cross drains should have adequate forest floor below the outlet to disperse road-generated sediment.
- When installing a culvert or other appropriate drainage structure on seeps, springs or streams, the natural drainage channel should be maintained.
- Water bars, dips, grade breaks and other surface water intercepting structures should be designed and maintained to drain onto stable slopes and not deliver runoff into streams.
- Culverts that are removed will be hauled to a centrallocation(s) designated by the landowner.

14815-15

#### Bridges-Bridge Inspection and Inventory Program

- Bridges should be inspected at least every two years.
- Rub rails and guardrails should be designed and maintained to withstand the impact of a vehicle and deflect it back on to the running surface.
- The running surface should be maintained to support the anticipated uses and vehicles.
- Support structures such as stringers, girders, and abutments should be inspected at regular intervals to assure the bridge is able to support the design load.
- Bridges should have adequate height and stream clearance to pass anticipated debris during flood events.
- Stream channels should not be constricted to cause scour.
- Stream channels should be free of stream blocking debris that would threaten the bridge structure.

#### Ditches

- Drainage ditches should be a minimum of one foot below the road surface elevation.

14815-15 Please see the response to Comment 14815-11.

- Ditches should be designed to drain water from the road to prevent standing water from saturating the subgrade.
- Vegetation growth in the ditch line to control erosion, as long as the drainage is maintained, should be encouraged.
- Ditch maintenance should occur early in the growing season to allow grasses and forbs to become re-established.
- When necessary, erosion controls structures should be installed in the ditch line to catch sediment. It is especially important to install erosion control structures where the ditch discharges directly into a stream. Some types of erosion control structures are:
  - o Rock armoring
  - o Sediment catch ponds
  - o Rock weirs
  - o Straw Bales
  - o Silt fencing

#### Other Road Related Issues

- Roadside vegetation should be managed to maintain a safe sight distance
- o Chemical vegetation control will comply with Longview Timberlands LLC's herbicide policy and will be accomplished by licensed contractors.
- 14815-16 o Mechanical brush cutting will follow all the safety rules for operating equipment including appropriate safety signage.
- Critical road segments should be inspected during or shortly after a storm event.
- Slide materials from road failures should be removed and disposed of in a safe stable location away from water.
- Unstable cut or fill slopes should be repaired as soon as possible after their discovery.

#### Chapter 13-Cultural Resources

- 14815-17 Longview Timber supports the mitigation measures presented and offers the following additional measures or expanded detail on the proposed mitigation measures:
  - Any inadvertent discovery plan should also require notification of the landowner if the landowner is not BPA.

- 14815-16 Please see the response to Comment 14815-11.
- 14815-17 If BPA decides to build this project, an inadvertent discovery plan will be included in the construction specifications. Landowner notification will be included in the plan.

## Chapter 14-Geology and Soils

- 14815-18 Longview Timber supports the mitigation measures presented and offers the following additional measures or expanded detail on the proposed mitigation measures:  
See comments to Chapter 12 for recommendations to clarify road construction standards.  
Temporary roads and any other areas cleared of vegetation outside of the right of way need to be rehabilitated back to pre-operation site capacity and replanted with trees coordinated with the landowner. BPA will be required to actively maintain reforestation activities until the trees meet the stocking levels mutually agreed to for the site for a period of five years.
- 14815-19 Mitigations to avoid landslide risk are well established, however, the DEIS provides no mention of mitigation for landslides should they occur during construction or after, as a result of the project. Should a landslide occur during or after construction, BPA will follow the specific mitigation measures provided by a licensed geologist to stabilize the slide. BPA will be responsible to repair or compensate for the loss of any infrastructure associated with a landslide. BPA will compensate landowners impacted by any landslide for damages to their property that cannot be repaired, including, but not limited to the value of timber and the underlying timberland. BPA will retain full liability for any damage to property or personal injury resulting from a landslide associated with the project.

## Chapter 15-Water and Chapter 16-Wetlands

- 14815-20 The analysis provided in the DEIS fails to consider the fact that while the West Alternative may impact a greater number of watercourses and wetlands, and thus carries a perception of higher impact across many specific environmental variables, these impacts are occurring within an existing right of way that has already been impacted. Rating a particular impact as "high" when the existing baseline is already impacted at a "high" level does not accurately allow for an objective comparison across options. BPA should weigh the incremental additional deterioration of a particular resource in the West Alternative against the complete impact associated with the other alternatives.
- 14815-21 Longview Timber supports the mitigation measures presented and offers the following additional measures or expanded detail on the proposed mitigation measures:  
See comments to Chapter 12 for recommendations to clarify road construction standards.  
See comments to Chapter 5 for recommendations to control unauthorized access.

## Chapter 17-Vegetation

- 14815-22 Longview Timber supports the mitigation measures presented and offers the following additional measures or expanded detail on the proposed mitigation measures:  
Managing invasive species effectively is a process that will need to be managed well beyond the completion of the construction phase. BPA should establish or implement an existing invasive species management plan that includes annual surveys and prompt treatment of invasive species for the

14815-18 Temporary access roads would be constructed and maintained during construction and returned to a condition that meets or exceeds the existing ground condition with features such as gates or culverts to remain in place as permanent features so that future access across the easement would be possible.

BPA would acquire rights to cut vegetation outside the transmission line easement that presents a real or potential hazard to the transmission line's reliability. BPA would compensate landowners for the rights to cut danger trees based on the fair market value of the danger trees at the time they are identified. Criteria for these conditions would include but not be limited to vegetation exhibiting characteristics of failure such as trees on unstable slopes, isolated tree or tree fringes exposed to adverse winds, diseased trees or communities of diseased trees, damaged trees, and defective trees. Otherwise, property owners would be unrestricted by BPA in the management of their land outside of the transmission line easement.

14815-19 Please see the response to Comment 14665-40.

14815-20 Portions of the right-of-way along the West Alternative have been cleared because of the existing line but there are many areas in the existing right-of-way where there is no line that have not been cleared. These areas would require clearing for a new line. If wetland clearing occurs in those areas, the impact would be high. In addition to wetland clearing, filling of wetlands along the West Alternative is about two to fifteen times the amount of fill compared to other the other action alternatives.

14815-21 Please see the responses to Comments 14246-2, 14357-2, 14457-2, and 14815-11.

14815-22 BPA recognizes that ground disturbance caused by the project could facilitate the spread of noxious weeds along the right-of-way in spite of mitigation measures that include limited herbicide use and reseeding disturbed ground. Along easements, the underlying landowner is responsible for noxious weed control. If the project is constructed, BPA would work with landowners and county noxious weed control districts to incorporate weed control measures into regularly scheduled maintenance. Please see Section 17.2.2, Impacts Common to Action Alternatives, Section 17.2.2.2, Vegetation Maintenance, and Section 17.2.8, Recommended Mitigation Measures for further discussion.

14815-22 | lifetime of the project. Due to the unique nature of a power line right, which must be kept in an early successional stage, and the challenges in controlling unauthorized access, this level of vigilance is well warranted. If invasive species become established in the power line right of way and colonize adjacent private lands, BPA will be responsible for the costs of control on those private lands.

Chapter 18-Wildlife

14815-23 | Longview Timber supports the mitigation measures presented and offers the following additional measures or expanded detail on the proposed mitigation measures:  
If consultation with the National Oceanic and Atmospheric Administration and U.S. Fish and Wildlife Service result in the need for habitat assessments or surveys for the northern spotted owl or the marbled murrelet, those habitat assessments and surveys should be conducted in a consistent manner with WAC 222-16 and associated Board Manuals.

Chapter 19-Fish

14815-24 | Longview Timber supports the mitigation measures presented and offers the following additional measures or expanded detail on the proposed mitigation measures:  
See comments to Chapter 12 for recommendations to clarify road construction standards.  
Private Forestlands in Washington State are covered by a Habitat Conservation Plan for aquatic species and an associated Incidental Take Permit. BPA will initiate consultation under Section 7 of the Endangered Species Act with U.S. Fish & Wildlife Service and/or National Oceanic & Atmospheric Administration to demonstrate and document that the construction of a new transmission line, considering appropriate environmental impact mitigation, will not adversely affect the agreement and the commitments made in the Forest Practices HCP.

14815-25 | We will be happy to provide any additional information regarding these comments.

Sincerely,

Adrian Miller

Manager of Policy and Sustainability

- 14815-23 BPA conducted surveys for northern spotted owl and marbled murrelet in 2015 and surveys for those species will be completed again in 2016. Protocols being used are consistent with WAC 222-16. Sources for the protocols used in the surveys are listed here:

Evans Mack, D., W. P. Ritchie, S. K. Nelson, E. Kuo-Harrison, P. Harrison, and T. E. Hamer. 2003. Methods for surveying Marbled Murrelets in forests: a revised protocol for land management and research. Pacific Seabird Group Technical Publication Number 2. Available from <http://www.pacificseabirdgroup.org>

USFWS. 2011. Protocol for surveying proposed management activities that may impact Northern Spotted Owls. US Fish and Wildlife Service. February 2nd, 2011 (Revised January 9, 2012).

Sources used for northern spotted owl and marbled murrelet habitat definitions are listed here:

Thomas, J.W., E.D. Forsman, J.B. Lint, E.C. Meslow, B.R. Noon and J. Verner. 1990. A conservation strategy for the northern spotted owl. Interagency Scientific Committee to Address the Conservation of the Northern Spotted Owl. US Forest Service, US Bureau of Land Management, US Fish and Wildlife Service, and US National Park Service, Portland, Oregon.

USFWS. 2011. Endangered and Threatened Wildlife and Plants: Revised Critical Habitat for the Marbled Murrelet. Federal Register 76(193): 61599-61621.

USFWS. 2012. Endangered and Threatened Wildlife and Plants: Revised Critical Habitat for the Northern Spotted Owl (*Strix occidentalis caurina*). Federal Register 77(106): 32483–32493.

USFWS. 2013. Biological Opinion for Effects to Northern Spotted Owls, Critical Habitat for Northern Spotted Owls, Marbled Murrelets, Critical Habitat for Marbled Murrelets, Bull Trout, and Critical Habitat for Bull Trout from Selected Programmatic Forest Management Activities March 25, 2013 to December 31, 2023 on the Olympic National Forest Washington. USFWS Reference Number: 13410-2009-F-0388. Washington Fish and Wildlife Office Lacey, Washington.

- 14815-24 Please see the response to Comment 14815-11.

BPA provided an analysis of the impacts to listed threatened and endangered species in the Biological Assessment as required under Section 7 of the Endangered Species Act, and submitted the BA to the Services in spring 2015. BPA will continue to coordinate with the agencies and the underlying landowners who have ESA coverage under Section 10 and WDNR's Forest Practices HCP to identify impacts and appropriate mitigation that will uphold the landowners' commitments under the HCP.

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14815-25 Please see the response to Comment 14596-5.

14816

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**From:** noreply@bpa.gov  
**Sent:** Monday, March 25, 2013 12:02 AM  
**Subject:** BPA I5 Comment Submission Confirmation

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

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](http://www.bpa.gov/goto/i-5).

Sincerely,  
Bonneville Power Administration

**Name:** Bruce J Watson  
**Organization:**  
**E-mail:**  
**Phone:**  
**Address:**

**Group type:** Private citizen

**Please ADD me to the mailing list.**

**Comment:**

[Attachment](#)

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March 24, 2013

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

To Whom It May Concern:

14816-1 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.

14816-2 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

14816-1 Please see the response to Comment 14596-1.

14816-2 Please see the response to Comment 14460-1.

14816-2

risks, as found on BPA's web site<sup>1</sup> and in their Draft Environmental Impact Statement<sup>2</sup> (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"
- 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.

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)<sup>3</sup> 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.

14816-3

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?

<sup>1</sup> BPA Engineers Build A Better Tower, Saving Millions: <http://www.bpa.gov/news/newsroom/Pages/BPA-engineers-build-a-better-tower-saving-millions.aspx>

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

<sup>2</sup>

<sup>3</sup> [http://abetterway4bpa.org/index.php?option=com\\_docman&task=cat\\_view&qid=92&Itemid=77](http://abetterway4bpa.org/index.php?option=com_docman&task=cat_view&qid=92&Itemid=77)

14816-3 Please see the response to Comment 14596-3.

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.

**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,"*

14816-3 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.

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.

14816-4 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.

14816-5 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.

14816-6 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

14816-4 Please see the response to Comment 14596-4.

14816-5 Please see the response to Comment 14596-5.

14816-6 Comment noted.

- 14817-1 <sup>14817</sup>  
Sirs, I respectfully request BPA to reopen the scoping process due to the severe impact the preferred route will have on the residents in the Castle Rock area and in the southwest Cowlitz County region. There are more and better options with less impact to the land owners, public schools, residents and the environment than in the preferred proposed route for the 500-kilovolt high voltage power line route chosen by the Bonneville Power Administration
- 14817-2  
I am opposed to the preferred alternate route for the reasons following:
- a. Declined property values
  - b. Increased tax rates
  - c. Health concerns, risks, hazards associated with the electromagnetic energy given off the power transmission and the use of the herbicides to maintain the Right of Way.
  - d. Environmental implications, ie., loss of pollinators due to the future ongoing maintenance of the powerline right-of-way
  - e. The preferred route runs through the Castle Rock growth area, on both sides of the Cowlitz River leaving the associated properties worth much less.
  - f. the "Route" also runs through other "higher, better use lands" causing diminished value.
- 14817-3  
Please reopen the scoping process for the good of the residents and taxpayers of Cowlitz County and Castle Rock.

14817-1 BPA believes that the EIS adequately addresses the potential impacts of the agency's preferred alternative and that re-opening the scoping process at this time is not necessary. The preference of the commenter for other routes is noted.

14817-2 For a response to the topic of property values, please see the response to Comment 14140-2.

For a response to the topic of property assessments and local tax revenues, please see the response to Comment 14291-3.

Chapter 8 discusses electric and magnetic fields generated by the project. More information on the predicted field levels for the alternatives is included in Appendix F. A discussion of the current state of health effects research related to electric and magnetic fields is also included in Appendix G.

For a response to the topic of future vegetation maintenance of the right-of-way, please see the response to Comment 14160-1.

Please see the response to Comment 14565-19 regarding line routing and advantages of crossing the Cowlitz river at the selected site.

14817-3 Please see the response to Comment 14817-1.

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**From:** noreply@bpa.gov  
**Sent:** Sunday, March 24, 2013 3:27 PM  
**Subject:** 14818: BPA 15 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](http://www.bpa.gov/goto/i-5)

Sincerely,  
Bonneville Power Administration

**Name:** John A Mills  
**Organization:** Mills Family LLC  
**E-mail:**  
**Phone:**  
**Address:**

**Group type:** Business

**Please ADD me to the mailing list.**

**Comment:**

Summary: Opposed to West Alternative; Washington Supreme Court's recent ruling in Clark County v. W. Wash. Growth Mgmt. Hearings Review Bd. (85989-2, 3/21/2013) reconfirms validity of Urban Growth Areas under the state Growth Management Act (GMA, RCW 36.70A.110). DEIS fails to acknowledge socioeconomic impacts of project on adopted comprehensive plans, capital facility plans and zoning (especially future residential development) as projected in Growth Management Plans adopted in 2007 by Clark County and its cities.

[Attachment](#)

14818-1

14818-1 Thank you for your comments. Specific comments are addressed below.



MILLS FAMILY LLC ♦

Submitted: Sunday, March 24, 2013

RE: Comments on Draft Environmental Impact Statement for I-5 Reinforcement Project (BPA)

**Summary: *Opposed to West Alternative*; Washington Supreme Court's recent ruling in Clark County v. W. Wash. Growth Mgmt. Hearings Review Bd. (85989-2, 3/21/2013) reconfirms validity of Urban Growth Areas under the state Growth Management Act (GMA, RCW 36.70A.110). DEIS fails to acknowledge socioeconomic impacts on **adopted comprehensive plans, capital plans and zoning** (especially future residential development) as projected in Growth Management Plans adopted in 2007 by Clark County and its cities.**

14818-2

The Washington Supreme Court's unanimous ruling last week in Clark County v. W. Wash. Growth Mgmt. Hearings Review Bd. (85989-2, 3/21/2013) reconfirms the legality of Urban Growth Areas under the state Growth Management Act (GMA), RCW 36.70A.110, within study area.

BPA's DEIS (I-5 Reinforcement Project) is incomplete due to its reliance on **current land uses** for its analysis of land-use and socioeconomic impacts, in particular issues under "Consistency with State Substantive Standards" (Ch. 28) and "Consultation, Review, and Permit Requirements" (Ch. 27).

**The EIS will be out of compliance with the state GMA** without analysis of population and employment forecasts in the affected Urban Growth Areas (UGAs). It must **address current plan and zoning designations** within 500 feet of the 500 kV power lines (especially future residential units) as projected in the Growth Management Plans adopted in 2007 by Clark County and its cities – not simply current land uses. Failure to do so would be like BPA planning for future power needs and impacts on the region based entirely on present-day electrical demand.

The West Alternative (and Options) crosses the most land of any alternative, causing the most conflicts with GMA, and disruption to planned and zoned land uses. It removes an additional 401 acres for new easement acquired for right-of-way and new or improved roads. Roughly two-thirds of this new easement is inside Urban Growth Areas and/or city limits.

The West Alternative does not anticipate the cities' legal, revenue, or facility plan impacts because they no longer provide adequate land for housing growth to meet the state's 20-year forecast.

14818-3

Clark County and its cities must ensure that their comprehensive plans and zoning provide sufficient capacity of land suitable for development within their jurisdictions to accommodate their allocated housing and employment growth (**RCW 36.70A.115**), as adopted in the applicable countywide planning policies and consistent with the twenty-year population forecast from the state office of financial management.

In conclusion, the Mills Family LLC endorses BPA's decision to select a preferred route for the I-5 Reinforcement Corridor other than the West Alternative – steering clear of Segment 50, which cuts in half a 512-acre jobs-creation and housing area annexed into the City of Camas in 2008 named the North Urban Growth Area (NUGA), and recently validated by the state Supreme Court.

Sincerely,

Mills Family LLC  
Camas, Washington

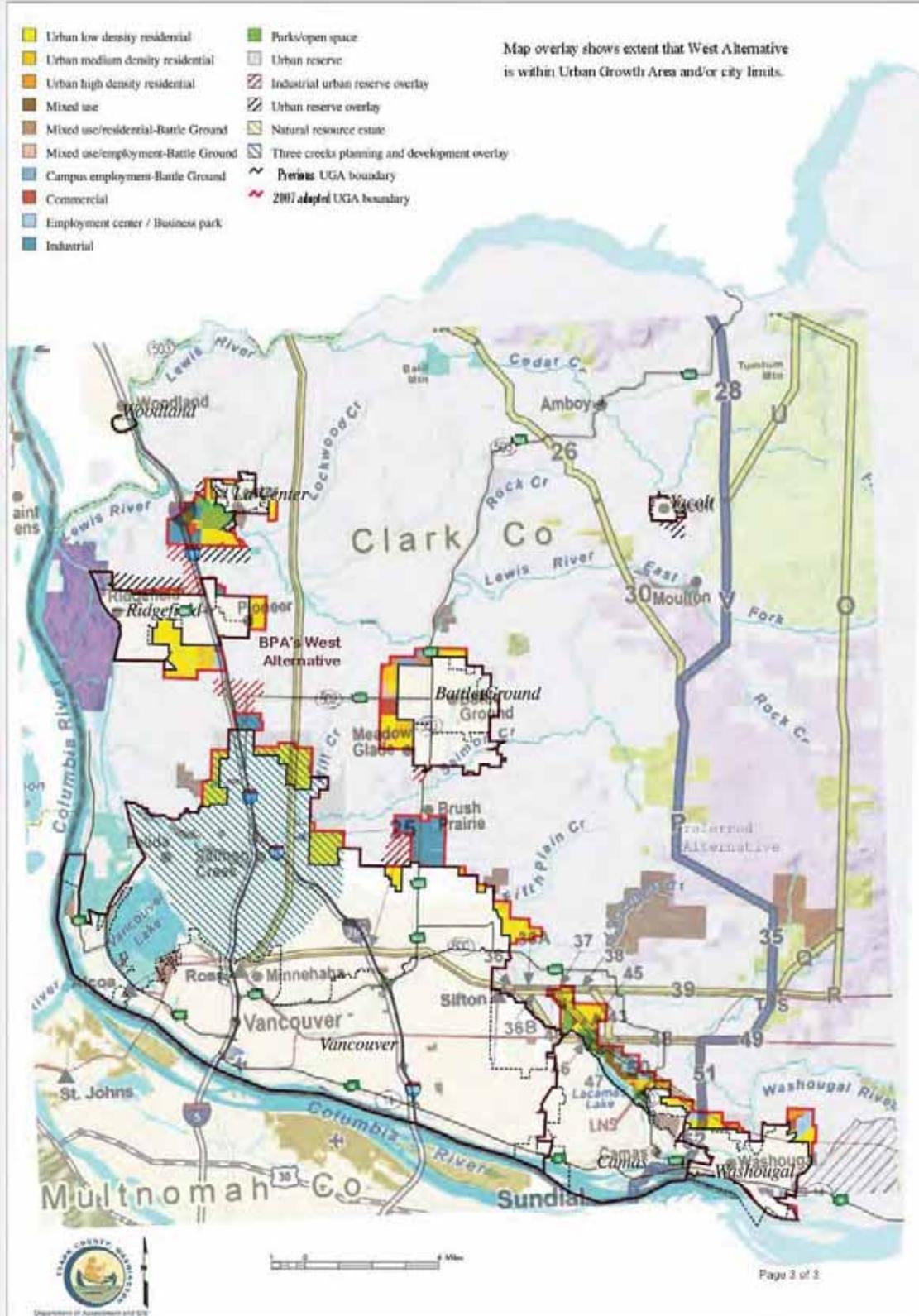
Michael Pittock Mills, President

John A Mills, Vice-President

- 14818-2 Section 24.4, Economic Productivity, describes the project's long-term impacts on economic productivity in the region. It recognizes the possibility that some areas could be excluded from future urban development. See also the response to Comment 14171-7.
- 14818-3 Comment noted.

# COMPREHENSIVE PLAN UPDATE, FEIS

14818



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**From:** noreply@bpa.gov  
**Sent:** Sunday, March 24, 2013 2:49 PM  
**Subject:** 14819: BPA I5 Comment Submission Confirmation

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

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](http://www.bpa.gov/goto/i-5)

Sincerely,  
Bonneville Power Administration

**Name:** Julie K Ainsworth-Taylor  
**Organization:** Bricklin & Newman LLP  
**E-mail:**  
**Phone:**  
**Address:**

**Group type:** Special interest group

**Please ADD me to the mailing list.**

**Comment:**

14819-1

Bonneville Power Administration: On behalf of A Better Way for BPA, a coalition of rural property owners in Cowlitz and Clark Counties, I submit the attached comments in regards to the I-5 Corridor Reinforcement Project Draft Environmental Impact Statement dated November 2012. The attach comments relate to the impact of the project on wetlands and includes an analysis by Professional Wetland Scientist and Certified Ecologist Joseph D Leyda. If you should have any problems in opening this attachment or questions about its content, please do not hesitate to contact me.

[Attachment](#)

14819-1 Thank you for your comments. Specific comments are addressed below.



**Bricklin &  
Newman  
LLP**

Seattle Office:

Spokane Office:

Contact:

Reply to: Seattle Office

March 24, 2013

Bonneville Power Administration  
I-5 Corridor Reinforcement Project  
PO Box 9250  
Portland, OR 97207  
Email: [I-5@bpa.gov](mailto:I-5@bpa.gov)

**RE: Comments on the November 2012 Draft Environment Impact Statement  
for the I-5 Corridor Reinforcement Project - Wetlands**

Bonneville Power Administration:

I write on behalf of A Better Way for BPA and its members to provide comments on the Draft Environment Impact Statement for the I-5 Corridor Reinforcement Project (DEIS) in regard to wetland impacts. Thank you providing the opportunity for the members of the community impacted by this proposed project to comment.

14819-2

A Better Way for BPA is a coalition of rural property owners in Cowlitz County and Clark County working together to address concerns over the construction of the Bonneville Power Administration's (BPA) proposed I-5 Corridor Reinforcement Project in southwest Washington. A Better Way for BPA is concerned about the impacts - economical, environmental, and aesthetical - that this proposed transmission line will have in their communities. A Better Way for BPA believes that a thorough evaluation must be conducted in regards to wetlands that will be encountered along the routes of action alternatives so that BPA will ensure the maintenance of a healthy and diverse environment in the southwestern Washington communities of A Better Way for BPA's members.

**WETLANDS**

14819-3

Wetlands provide a variety of functions within the ecosystem including, but not limited to, groundwater recharge, water filtration, wildlife habitat, and flood control.<sup>1</sup> BPA should be no stranger to public and governmental concern over wetlands as the adverse impact of this project on wetlands has been raised throughout the public comment period. *January 2010 Scoping Summary at 38; April 2011 Supplemental Comment Report at 32; March 2012 Supplemental comment Report at 30.*

<sup>1</sup> Washington State Department of Ecology: <http://www.ecy.wa.gov/programs/sca/wetlands/index.html>  
Oregon State Lands - Wetlands Program: [http://www.oregon.gov/dsl/WETLAND/Pages/about\\_us.aspx](http://www.oregon.gov/dsl/WETLAND/Pages/about_us.aspx)  
U.S. Environmental Protection Agency: <http://water.epa.gov/type/wetlands/index.cfm>

14819-2 Thank you for your comments. Specific comments are addressed below.

14819-3 Please see the response to Comment 14753-1.

Bonneville Power Administration – I-5 Corridor Reinforcement Project  
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Given the significance of this issue, A Better Way for BPA retained the services of Joseph D. Leyda, a Professional Wetland Scientist and Certified Ecologist, to review the DEIS in regards to the disclosure and discussion of impacts to these valuable resources. Mr. Leyda's comments are attached to this comment letter and incorporated by reference.

Mr. Leyda's observation that the wetland delineations were done remotely<sup>2</sup> and the evaluation of wetland functions was based entirely on existing information sources and not field assessments must be given emphasis. *Leyda Comments, Section 1; DEIS, Appendix L at 7.* According to the DEIS, wetland acreage will be permanently lost as these valuable resources are filled to accommodate transmission towers, access roads, and substations. *DEIS, Chapter 16, Table 16-1.* Wetlands will be transformed as vegetation is cleared, threatening the ability of the wetlands to continue to properly function and survive. *Id.* Yet, as Mr. Leyda noted in his comments, BPA's superficial analysis in regards to wetlands is flawed and inadequate due to the fact that no on-site, individualized assessment has been made in regards to either the delineation of impacted wetlands or to the true functional classification of impacted wetlands along any of the routes for the proposed transmission line. *Leyda Comments at 3.* Even the DEIS acknowledges the inability to accurately address wetland impacts, stating that impacts could be low-to-high depending on wetland quality. *See, e.g. DEIS at 16-16, 16-17.*

14819-3

Pursuant to NEPA's regulations, 40 CFR 1502.22, if information is essential to a reasoned choice among alternatives and, the overall costs of obtaining it is not exorbitant; BPA must include the information within the EIS. Given the recognized importance of wetlands within the ecosystem, specific information related to the actual size and function of wetlands in the project area is essential to making a reasoned choice among the action alternatives BPA has proposed for this project. BPA gives no rationale why on-site analysis was not performed, nor that the cost of securing it would be exorbitant, or that it is not essential information as required by 40 CFR 1502.22.

BPA cannot attempt to cure this deficiency by relying on post-decision delineations and functional classifications conducted as the transmission line is constructed. NEPA requires BPA to consider the environmental consequences of its actions *before* any decision is made with respect to those actions. Thus, the primary purpose of NEPA is to ensure that an agency, in reaching its decision will have available to it, and carefully consider, detailed information concerning impacts to the environment so that it can make a reasoned, informed decision. *Winters v. Natural Resource Defense Council*, 555 US 7, 129 S.Ct. 365, 376 (2008) (citing *Robertson v. Methow Valley Citizens Coalition*, 490 US 332, 109 S.Ct. 1835 (1989)). BPA's failure to appropriately delineate and classify wetlands will result in a substantial lack of information about the prospective environmental harm and potential mitigation measures.

Therefore, as stated in Mr. Leyda's DEIS Comment Letter, **BPA must conduct on-site delineation and functional classifications of wetlands within all of the proposed corridors for the action alternatives.** This information is essential to understanding the impacts to these vital components of the environment – both due to permanent loss and significant modification -

<sup>2</sup> With the exception of six "test" sites, with four delineated "on the ground"; the other two had been previously delineated. Draft EIS Appendix L at 2.

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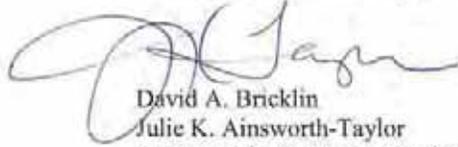
Bonneville Power Administration – I-5 Corridor Reinforcement Project  
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Page 3

14819-3 and will allow the decision-maker and the public to be fully informed prior to making a final determination on the routing alternative. BPA must proceed to prepare a Supplemental DEIS to ensure that this critical information is fully disclosed and fully analyzed.

Thank you for your consideration of these comments.

Very truly yours,

BRICKLIN & NEWMAN, LLP



David A. Bricklin  
Julie K. Ainsworth-Taylor  
Attorneys for A Better Way for BPA

Enclosure

cc: Client

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I FYDA CONSULTING, INC.

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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 (P.O. Box 704 Amboy, WA 98601) 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

14819-4

14819-4 Please see the response to Comment 14753-1.

**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).*

14819-4

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

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

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

14819-4

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.

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


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The Washington Wetland Rating System “should be used only on vegetated wetlands as defined using the delineation procedures in WAC 173-22-80.”<sup>1</sup> The delineation procedures in WAC 173-22-80 have been repealed,<sup>2</sup> and replaced with the U.S. Army Corps of Engineers 1987 Delineation Manual<sup>3</sup> and Regional Supplements.<sup>4</sup>

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.

14819-4

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

<sup>2</sup> 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>

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

<sup>4</sup> 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.

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


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**III. Further Concerns**

- 14819-5
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.
- 14819-6
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..."

- 14819-5 New and improved access roads are needed for all the action alternatives. Impacts from access roads for all action alternatives are included in Chapters 5 through 22. The Preferred Alternative uses many existing access roads that have already been developed by large landowners for timber harvesting. These roads are primarily located in upland areas but do have some limited riparian crossings.
- 14819-6 Please see the response to Comment 14753-3.

**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."

14819-6

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.

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

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**IV. Context and Intensity of the Impacts**

14819-7 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.

14819-8 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.

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.' "<sup>5</sup>

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<sup>5</sup> 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\\_wetlands15ml.html](http://seattletimes.com/html/localnews/2004407515_growth_wetlands15ml.html).

14819-7 Comment noted. Potential impacts to these resources are disclosed in the EIS.

14819-8 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."<sup>6</sup>

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."<sup>7</sup>

14819-8

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



<sup>6</sup> 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\\_wetlands15ml.html](http://seattletimes.com/html/localnews/2004407515_growth_wetlands15ml.html).

<sup>7</sup> 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\\_wetlands15ml.html](http://seattletimes.com/html/localnews/2004407515_growth_wetlands15ml.html).

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Print

## Saving wetlands: a broken promise

The state's commitment to our fragile wetlands dates back two decades. On Dec. 12, 1989, Gov. Booth Gardner announced that half the state's...

By Craig Welch and Lynda V. Mapes  
Seattle Times staff reporters

The state's commitment to our fragile wetlands dates back two decades.

On Dec. 12, 1989, Gov. Booth Gardner announced that half the state's wetlands were gone, and 2,000 acres more were vanishing each year. So he issued an order: For each marshy piece of ground paved, another would be created to replace it.

Not only would the state stop losing wetlands, Gardner vowed, but wetlands in Washington would actually increase.

Twenty years later, the promise has proved hollow. Destruction of wetlands, vital to the health of Puget Sound, is still routine, and attempts to replicate them are too often a failure.

This year, even as Gov. Christine Gregoire, the newly formed Puget Sound Partnership and teams of scientists all work to protect and restore Puget Sound, the management of wetlands in Washington remains in disarray. It's part of a pattern of failure that taints Washington's "green" veneer. While we may not be breaking the law, we are breaking our promise to protect Puget Sound:

- The rules for wetlands protection are mired in a regulatory swamp. Regulations are varied, and efforts to protect one wetland can be wiped out by upstream neighbors operating completely within the law.
- Time and again, efforts to re-create nature by replacing wetlands fail, if the effort is made at all. The science is relatively new and evolving, and wetlands replacements are often allowed to be afterthoughts for developers. Even the most well-planned, well-financed efforts can go awry.
- Oversight of wetland projects is weak or nonexistent. At every level — city, county, state and federal — job one for most agency staffers is promptly issuing more permits, not following up to make sure that mitigation intended to make up for wetland destruction actually works.



Gwarg MARK HARRISON / THE SEATTLE TIMES  
Unintended consequences can result when natural wetlands are replaced. Bullfrogs thrive in the algae-choked stormwater ponds at Trilogy Golf Club at Redmond Ridge. The invasive frogs, which aren't native to the West, gobble juvenile salmon and native amphibians.

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Even the concede they are determin- Manning, Ecology.

But the p system a require a Puget Sc preservat prepared.

"We are Ecology f ourselve impacts.

"It's a sta

**Flubbed**

Nowhere

Here, on old cropland west of the airfields, bisected by Miller Creek, the Port of Seattle has spent almost \$4 million creating a freshwater aystem to make up for destruction of wetlands in the Miller Creek basin filled to build a third runway.

The Port tore down 300 homes and planted 188,000 willows and other native plants. Workers hauled out old tires and garbage and dropped 200 grafted logs into Miller Creek for salmon and trout habitat. As a backup plan, the Port also spent \$14 million and took 68 acres of fallow pasture several miles away in Auburn and converted them into wetland.

The project had everything going for it: heavy funding, a motivated developer, meticulous maintenance, and plenty of oversight. If any mitigation project was set up to succeed, it was Miller Creek. But results are mixed. While the Auburn pasture conversion is looking good so far, engineers miscalculated when they took on Miller Creek.

Part of the new creek bottom slopes so little that the water moves too slowly to provide the salmon-spawning habitat it was supposed to. Sun warms the slow-moving water, allowing thick mats of algae to grow that threaten to suffocate young trout and salmon.

No one knows yet if the project will work as intended. "Most of it is doing very well, but the jury is still out," said Gail Terzi, a senior wetlands scientist with the Army Corps of Engineers.

"We had money, oversight, stringency, everything, and we still have a problem."

**Nature's kidneys**

From the squishy mats beneath Sitka-spruce forests to the banks of swampy ponds everywhere, wetlands hold and filter water. Soggy marshes, rushes and cattails help moderate storm runoff and absorb foodwater.

A single acre of wetland can store a million gallons of water. In summer, it is released to nurture hundreds of species of insects, amphibians and fish, and replenish groundwater.

"We can't manage Puget Sound from the shoreline seaward," said Mike Ryko, Puget Sound coordinator for the Environmental Protection Agency in Seattle.

"We have to manage it from the Cascades down through the watershed, and everything has to move through those wetlands. They are the kidneys, the filter, and the buffer against flooding."

Wetlands can be destroyed only as a last resort. And then they have to be replaced by something that serves the same ecological function. But that so-called "mitigation" strategy is a tricky alchemy of hydrology, engineering and gardening.

"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," Ryko 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."

Instead of protecting wetlands, too often people destroy them and replace them with mitigation sites that are too dry, flat or isolated to do what the natural wetland did.

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Engineers plant the wrong shrubs or let them shrivel up and die. Invasive weeds take over and drive out native plants. Some replacements are never built at all.

"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.

There's no way to count the lost acres of natural systems. The state's acres of wetlands have never been tallied.

The Ecology Department's files on wetlands projects before 2004 are incomplete, scattered in archives or missing.

In 1998, a King County sampling of wetlands projects found only 3 percent functionally replaced wetlands destroyed by development. In 2002, a similar Ecology Department survey found fewer than half of the wetlands it examined were even moderately successful.

Terzi estimates that anywhere between 20 and 50 percent of wetlands mitigation permitted by the corps is successful. And that's typical of wetlands projects around Puget Sound.

"You have a bunch of wetlands out there that are glorified stormwater ponds with a chain-link fence surrounded by pavement," Terzi said.

During a recent tour of wetlands projects in South King County, Dyanne Sheldon, a private wetlands consultant, noted dying young trees along Oakesdale Avenue in Renton.

The city of Renton planted 5,000 trees and shrubs there in 2001 to make up for wetlands destroyed by a road project. Only 8 percent survived. The city planted more — this time putting the wrong plants in the wrong spots.

"Look, it's the golden cedar," Sheldon joked darkly of the dead trees' hue, "a species rarely seen — unless you take a red cedar and plant it in the bright sun."

When projects succeed, it's no accident. On Issaquah Creek in King County, new spruces have finally taken root after several failed plantings to make up for wetlands lost to build the Issaquah courthouse.

But it's only considered a success now because King County — which has strengthened its wetland-protection efforts since the 1998 survey — bothers to send employees out to check and recheck. Few others do.

#### Rules "a bit of a joke"

Of about 700 projects statewide permitted by the Army Corps, only about 5 percent are inspected on the ground.

In Pierce County a few years ago, the county government made plans to hire a consultant to improve environmental enforcement, including wetlands. Instead, the money went to processing development applications.

Until a few years ago in Snohomish County, biologists used to visit wetlands projects. But then county managers ordered them to focus on processing wetland-development applications instead. Code-enforcement officers, who are trained in construction standards, not ecology, were assigned to check wetlands projects instead.

Then again, wetlands rules have never been palatable to builders, farmers and forestland owners. They have long questioned the value of rules they say stymie responsible and legal development.

"It's a mess," said Jodi Slavik, general counsel for the Building Industry Association of Washington, a trade group in Olympia.

It's not fair to blame builders for the failure of the system, Slavik says. Builders know how to build buildings, not wetlands. And when they are finished with their projects, they want to move on.

"Then it's up to homeowner associations to maintain these wetlands and open areas, but frankly it is just not practical, and to keep these wetlands functioning in an urban area, well, the landscape has changed," Slavik said.

The building industry carries considerable clout in Olympia, and efforts to boost wetland protection in the 1990s resulted in industry and property-rights activists pushing for ballot measures and budget cuts to squeeze the Ecology Department.

So even as development pressure increased, Democratic Gov. Gary Locke and the state Legislature slashed Ecology Department staffing by 15 percent. The wetlands program was among the hardest-hit.

"We were just keeping our heads down, trying to keep from getting cut more," said McMillan, the Ecology Department wetlands manager.

Today, the Ecology Department still doesn't have an employee assigned to look for illegally filled wetlands. It was only last July that the department got money to check mitigation sites for permit compliance.

On the local level, governments usually require developers to post monetary bonds to ensure they will complete mitigation projects. But local governments rarely follow up and call developers to account.

Lisa Brandt, King County's only wetlands-compliance officer, said the county has kept the bonds only three times — out of about 400 recent projects that she can recall. And in Snohomish County, Tom Rowe, a manager with the planning and development department, couldn't recall a single instance.

"It got to a point where the regulations were a bit of a joke," agreed Snohomish County Councilman Dave Sommers.

"If you don't enforce them, and everybody knows it, what's the point?"

**Change on the way?**

Snohomish County biologists started inspecting wetlands again last fall. The Corps of Engineers says it has hired more people for its regulatory program and is issuing new rules to beef up wetland protection and permit compliance.

State Ecology Director Manning says he wants a regionwide wetland-restoration program that would recapture some of what's been lost. Protection and restoration of estuarine wetlands, critical to the health of Puget Sound, is bringing back some of the 70 percent of salt marshes destroyed by development.

Manning also pitches mitigation banks, in which developers buy credits for large-scale restorations performed by professionals to benefit entire watersheds — rather than the piecemeal mitigation projects done by developers.

"We've not shown yet, historically, that we can deal with the death-by-a-thousand-cuts problem," he said.

But Manning said he believes public opinion is finally on his side.

"This is the best environment for the environment in this state since the 1970s," he said.

Lynde V. Mapes: 206-464-2736 or [lmapes@seattletimes.com](mailto:lmapes@seattletimes.com)

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**From:** noreply@bpa.gov  
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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](http://www.bpa.gov/goto/i-5)

Sincerely,  
Bonneville Power Administration

**Name:** Julie K Ainsworth-Taylor  
**Organization:** Bricklin & Newman  
**E-mail:**  
**Phone:**  
**Address:**

**Group type:** Special interest group

**Please ADD me to the mailing list.**

**Comment:**

14820-1

Bonneville Power Administration: On behalf of A Better Way for BPA, a coalition of rural property owners in Cowlitz and Clark Counties, I submit the attached comments in regards to the I-5 Corridor Reinforcement Project Draft Environmental Impact Statement dated November 2012. The attach comments relate to the socioeconomic impact of the project on property value. If you should have any problems in opening this attachment or questions about its content, please do not hesitate to contact me.

[Attachment](#)

14820-1 Thank you for your comments. Specific comments are addressed below.



**Bricklin & Newman  
LLP**

Seattle Office:

Spokane Office:

Contact:

Reply to: Seattle Office

March 24, 2013

Bonneville Power Administration  
I-5 Corridor Reinforcement Project  
PO Box 9250  
Portland, OR 97207  
Email: [I-5@bpa.gov](mailto:I-5@bpa.gov)

**RE: Comments on the November 2012 Draft Environment Impact Statement  
for the I-5 Corridor Reinforcement Project - Socioeconomic Impacts**

Bonneville Power Administration:

I write on behalf of A Better Way for BPA and its members to provide comments on the Draft Environment Impact Statement for the I-5 Corridor Reinforcement Project (DEIS) in regard to wetland impacts. Thank you providing the opportunity for the members of the communities impacted by this proposed project to comment.

14820-2

A Better Way for BPA is a coalition of rural property owners in Cowlitz County and Clark County working together to address concerns over the construction of the Bonneville Power Administration's (BPA) proposed I-5 Corridor Reinforcement Project in southwest Washington. A Better Way for BPA is concerned about the impacts - economical, environmental, and aesthetical - that this proposed transmission line will have in their communities. A Better Way for BPA believes that reasonable alternatives are available to BPA that will maintain a healthy and diverse environment, while protecting the economy, in their southwestern Washington communities.

**SOCIOECONOMIC IMPACTS – PROPERTY VALUES**

14820-3

Some of the primary concerns raised by commenters in regards to socioeconomic impacts were the negative effect the siting of the transmission line would have on their property values, the loss in the economic use of their property, and their quality of life and community derived from their property, especially in more rural areas. January 2010 Scoping Summary at 20-24, 34. These concerns were reiterated during the supplemental comment periods. April 2011 Supplemental Comment Report at 18-21; March 2012 Supplemental Comment Report at 21-23; January 2013 Supplemental Comment Report at 16-17. In regards to property, the DEIS fails to

14820-4

truly disclose or analyze the impact on property owners within any of its action alternatives'

14820-2 Thank you for your comments. Specific comments are addressed below.

14820-3 Please see the responses to Comments 14140-2, 14291-3, and 14328-5.

14820-4 Please see the response to Comment 14104-2.

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14820-4 corridors. Despite significant comments raising concerns over a loss in property values, the DEIS only superficially speaks to this issue.

NEPA does require the consideration of socioeconomic impacts. 40 CFR 1508.8, 1508.14. The DEIS sites to various studies, including BPA self-initiated studies, showing that values are nominally impacted (one to six percent) when a high voltage transmission line is sited. DEIS at 11-20 to 11-21. This, misstates many studies which have shown impacts of up to 10 percent. *Chambers and Voorvaart, High-Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effect*. And, more importantly, while these studies may qualify the impact, BPA has done no analysis to quantify the impact. The DEIS makes no reference to the average value of property within the project area which is intrinsically link to the impact of that percentage loss of value. A de-valuation in property value by upwards of 10 percent on a \$200,000 homestead amounts to a loss of \$20,000; a significant loss in what is many families largest investment. With many families “underwater” with their mortgages, another loss in value will simply exacerbate the situation. The quantification of property values is directly related to the significance of impact.

14820-5 In addition, most studies (done decades ago) analyzed urban or suburban areas and not rural residential or natural resource areas and were surely not done under today’s housing market conditions. Only recently have a few limited studies looked at the impact on rural lands. In 2010, Thomas Jackson reviewed sales occurring in rural Wisconsin, with parcels averaging 50 acres in size, which experienced a 1.1 percent to 2.44 percent reduction. *Jackson, T. Electric Transmission Lines: Is there an Impact on Rural Land Values*. The location of the transmission line easement further impacts the value, with an easement passing through the middle devaluing property by 3.8 percent while a diagonal pattern resulted in a 2.1 percent loss. *Id.* This study demonstrates the importance of proper alignment so that, if easements are secured over private property, the impact on property values can be mitigated to the lowest amount.

Another recent study attempting to analyze impacts on rural lands was published in 2012. *Chambers, J. High-Voltage Transmission Lines and Rural, Western Real Estate Values*. This study divided property into different types of agricultural land (e.g. production, high amenity recreation/natural features), rural recreation, and various types of rural residential (e.g. lots of 5 acres or less, large acreage). And, for this study, the majority of the land was impacted by a 500 kV line. While large acreage parcels, whether residential or agricultural did not have evidence supporting an impact, rural residential land of either size (5 acres or less; 5 acres or greater) were impacted both as to price and as to marketing period. For example, data showed some lots selling for as much as 50 percent less due to the transmission lines. In addition, data showed that the time property was on the market – the absorption effect – was doubled in some areas. The author notes that in a distressed housing market, the doubling of the market period could result in years passing before a sale is accomplished. Although the DEIS sites to this study, it fails to reveal this important information. DEIS at 11-21. This study demonstrates that rural residential land is more greatly impacted than resource land, such as solely agricultural or timber land. BPA must consider the appropriate alternative route with this in mind.

It must be emphasized that all of these studies recognize that many factors come into play when ascertaining the value of property. And, therefore, analyzing the data is a complicated task. But, what the studies do reveal is that “location” is still a driving factor in value and demand. In

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14820-5 Please see the response to Comment 14140-2.

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14820-5 BPA's type of situation, it is not the location of public facilities or services in relationship to property that influences the price, it is the proximity of a high-voltage transmission line's to the property's location that does. In other words, not only is the property that an easement directly crosses impacted by the transmission line but, neighboring properties are also impacted. The DEIS either fails to acknowledge this or, if it does, discounts this impact to non-significance when clearly it is not.

14820-6 Another consideration that should have been disclosed is the ability of present homeowners and potential buyers to secure financing. The Federal Housing Administration (FHA) requires an analysis as to whether or not a "dwelling and related property improvements" are located with an easement and their relationship to the tower's engineered fall distance. FHA Handbook 4150.2, Section 2-2(J). Even if outside the easement, the "effect on marketability resulting from the proximity to such site hazards and nuisances" is to be addressed by the appraiser. Id. In other words, for many median income families living along proposed action alternatives (or future buyers) may be precluded from securing federal loans for the financing of their property due solely to the presence of BPA's transmission lines. The lack of federal financing further impacts property values as it narrows the pool of potential buyers and, because of this, the length of time that a house may take to sell.

14820-7 BPA must accurately consider the full impact of its proposed transmission line, regardless of the routing alternative. There should be mitigation measures that fully compensate property owners within the communities impacted by the transmission line. On March 12, 2013, A Better Way for BPA submitted various mitigation measures that would address property use and value impacts. A copy of that submittal is attached for BPA's consideration and inclusion when addressing this important issue.

#### **Conclusion**

14820-8 A Better Way for BPA cannot deny that in Chapter 11 Socioeconomic BPA disclosed the overarching concept of impacts to property values that comes with a high voltage transmission line. But despite BPA's knowledge as to a primary concern of property owners within its action alternative routing corridors, it provides no meaningful quantitative analysis as to those impacts. NEPA doesn't just require an impact to be disclosed, it must be analyzed. 40 CFR 1502.1, 1502.9. The decision-maker and the public are devoid of information on the significance of the impact, even generally, on landowners within the proposed action alternatives routing corridors that quantitative analysis would provide.

BPA should provide, at a minimum, the average value of properties within the action alternative corridors. By providing this basic information, BPA can present a quantitative analysis based on the various studies as to the potential impact on property values. If alternatives are eliminated due to, in part, economic cost, then the cost to landowners when their property is adversely impacted should be disclosed and analyzed. BPA has done an analysis for the loss of timber and agricultural value when land can no longer be used in that manner. DEIS at 11-30 to 11-38. A similar analysis should be done for property values. In addition, the potential loss of federal financing should have been disclosed and analyzed. It is only after such an analysis is complete, will the information be available to base a reasoned, informed choice upon.

14820-6 Please see the response to Comment 14566-9.

The appraiser at the time of appraisal should analyze financing considerations as part of their appraisal work. BPA would use these appraisals when negotiating with property owners.

14820-7 BPA pays market value, based on an appraisal, for the land rights acquired. Thank you for documenting your recommendations for mitigation measures. Table 3-2, Mitigation Measures Included as Part of the Project, lists those measures included as part of the project. Chapters 5 through 22 include additional recommended mitigation measures that will be considered for inclusion in the Record of Decision for this project.

14820-8 Please see the responses to Comments 14140-2 and 14291-3.

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14820-8

Understanding the loss in property values is vital to this project as it directly relates to the overall cost of the transmission line. Decision-makers and the public should be aware of just how much the alternatives will “cost” the communities. BPA must prepare a Supplemental DEIS to ensure these socioeconomic impacts are properly addressed.

Thank you for your consideration of these comments.

Very Truly Yours,

BRICKLIN & NEWMAN LLP



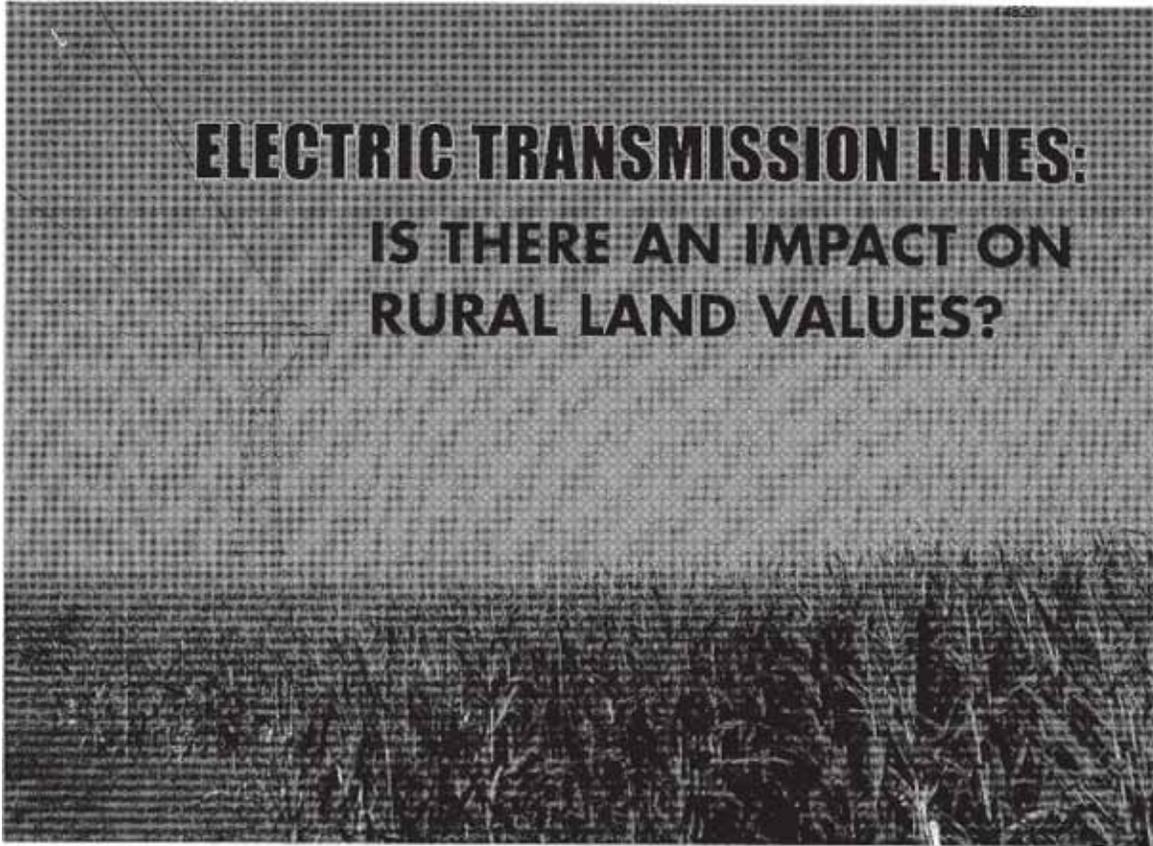
David Bricklin  
Julie Ainsworth-Taylor  
Attorneys for A Better Way for BPA

Enclosures

cc: Client

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BY THOMAS JACKSON, Ph.D., AICP, MAI, CRE, FRICS

While a number of studies have been published about the impact of transmission lines on residential properties in urban and suburban settings, there have been relatively few studies that address the impact to rural land used for agricultural or recreational purposes.

To shed some light on this important sector, sales of properties in Wisconsin were analyzed through a series of multivariate statistical models. In essence, these models evaluated price differences between online and offline properties, while controlling for price differences based on the year sold (general market conditions), and the various types of land comprising each property, such as wooded acres, open acres and wetlands.

Prices for online sales, which are properties that are sold with a transmission line easement, were 1.1% to 2.4% less

than otherwise comparable sales located at least one-quarter mile away from any transmission line (offline sales). None of these differences were statistically significant, however. These findings are generally consistent with other studies, albeit of different property types, where the impact has been measured from 10% and below.

#### PRIOR RESEARCH

Those studies analyzing the effects on residential property value found that high-voltage electric transmission lines have the potential to negatively impact sales price, but the effects are small, with proximity to a transmission line decreasing residential property values by zero to ten percent. Some studies found that sales prices of urban or suburban residential properties increase as distance to a transmission line increases,

and that any negative effect typically diminishes over time. In some studies, the presence of a power line was found not to have a negative effect on residential properties at all, and properties that were one to two lots away from a tower may actually experience a market premium due to increased visual clearance and privacy.

GA TE?

Two regression-based studies were also reviewed that considered the effects of transmission lines on rural acreage. One of these considered agricultural land from 136 to 350 acres, and the other focused on recreational properties of 10 to 160 acres. Both of these studies found that power line structures and easements do not have a significant impact on the price and value of rural acreage tracts.

Lastly, a 2009 article published in *The Appraisal Journal* also addressed the issue of impacts on residential property values and prices using a multiple regression framework. Based on a study of residential properties in Connecticut and Massachusetts sold between 1999 and 2007 located in proximity to 345 kV transmission lines, the authors analyzed the effects of proximity and encumbrance and found proximity to have an insignificant effect on sales price. They concluded that the only variable that appears to have any kind of systematic effect is the encumbrance variable, although its statistical significance varied and the effect was generally small. The authors also addressed potential effects due to the visibility of the transmission line structures and found a lack of any significant impact on sales price.

**SALES PRICE ANALYSIS**

In the following study, as well as those previously mentioned, transmission line impacts were analyzed through a statistical modeling technique known as multiple regression analysis, a well-accepted method used for this purpose. In this type of analysis, sales price was modeled as a function of the characteristics of the property, its sale and whether or not the property had a transmission line easement. The sales data was collected by first identifying rural land transactions that involved properties with a transmission line easement.

The transmission lines ranged from 115kV to 345kV, with approximately 75% at 345kV. Once the online sales were identified, comparable offline sales were selected by an experienced team of Wisconsin appraisers.

Approximately three to four offline comparables for each online sale were selected on the basis of similarity in land use, property type, size and land features. The comparables were confined to the same general time period (generally bracketing the subject online sale by one year) and location in the same general market area. The sale properties (online and offline) averaged approximately 50 acres in size, with about 55% wooded and 45% open property. The tracts had approximately 3.8 acres of wetlands areas. All sales were confirmed as arms-length transactions.

Two models were estimated. In the first, differences in location were measured by categorical variables indicating the county in which the sales were located. This model only included those counties that had the most statistically significant effect on sales price. The model also included the type of land as measured by the number of wooded acres, number of open acres and number of wetland acres. Wooded acres are shown to have the strongest positive effect on sales price followed by open acres.

Wetland acres, which overlap the other two categories, had a negative effect. Another variable included in this model was an indicator for whether or not the sale involved a purchase by a government agency. These acquisitions typically have a significantly higher sales price than non-governmental purchases.

The results of the analysis are summarized below. The adjusted prices are the average prices, adjusted or controlling for all of the differences between the online and offline sales except the online/offline characteristic.

Mean Prices - Categorical Model

	Number of sales	Unadjusted sales price	Adjusted sales price
Online sales	88	\$119,301	\$103,643
Offline sales	297	\$101,591	\$106,231
Online difference			-\$2,588
Online percent difference			-2.44%
p-value for difference			p = 0.656

The results indicated that, after adjusting for factors unrelated to the presence of a transmission line, there was a small difference of 2.44% in the prices of online and offline properties. This difference was not statistically significant, as indicated by the probability of value (p-value) of 0.656. A p-value of 0.05 or less is generally considered statistically significant.

The second model substituted a land price index for the county indicator variables. The other independent variables were retained and specified in the same manner as the first model. The index variable was based upon a standard, or z-score, index which measures differences in county land prices in standard deviation units. These index scores were calculated on the basis of the average price per acre for the offline land sales in each county. The results of this model specification are summarized below:

**Mean Prices - Index Model**

	Number of sales	Unadjusted sales price	Adjusted sales price
Online sales	88	\$119,301	\$104,735
Offline sales	297	\$101,591	\$105,907
Online difference			-\$1,172
Online percent difference			-1.11%
p-value for difference			p = 0.849

Again, the results indicated that properties with electric transmission lines do not sell at a significant discount to otherwise similar properties without electric transmission lines. In this model specification, the difference is -1.11%, which is lower than the -2.44% from the categorical model specification. Differences this small do not reach any acceptable level of statistical significance.

In sum, these two analyses, which involve several hundred sales of rural land in various locations across central Wisconsin, indicate that the sales prices and market values of properties with electric transmission lines have not been significantly diminished due to the presence of these lines.

**OTHER CONSIDERATIONS**

Our analysis was based on the entire parcel or tract size, including the area encumbered by the transmission line

encumbrance. Accordingly, the diminution estimates would apply to the total or gross acreage of the online tracts.

Another perspective would be to attribute the entire loss to the encumbrance of the easement area. Calculation of the extent of the encumbrance can be accomplished by first determining an average easement area. Data on 79 online sales properties indicated that the average easement width was 139.9 feet. Data on 88 online sales properties indicated an average easement length of 1,187.5 feet for a total easement size of approximately 3.8 acres. Further, data on the 88 online sales properties indicated an average size of 62.84 acres.\* The average unadjusted price per acre for the online sales was approximately \$1,898.49 per acre (\$119,301 ÷ 62.84 acres). Applying the entire estimated loss from the categorical model of \$2,588 to just the approximate average value of easement area (3.8 acres × \$1,928 or \$7,233.25) indicates an encumbrance or loss to just the easement area of 35.8%. Using the estimated loss from the index model of \$1,172 indicates an encumbrance factor of 16.2%. Both of these factors assume no loss to the remainder.

Lastly, another consideration involves the placement of the easement across the tract. Four location categories were used: middle, edge, clipping and diagonal.

An edge pattern (Figure A) would be associated with easements along a road or highway while a clipping (Figure B) would generally be along the highway but would cross a small portion of the property. The clipping and edge patterns occurred in 60% (53 of the 88) of the online sales used in the statistical analysis. The middle pattern (Figure C) occurs when the easement is close to or in the middle of the property but not on a diagonal. This occurred in 31% of the online sales. The diagonal pattern (Figure D) crosses over from one-third to near the middle of the property. This pattern was least frequent, at 9% of the total online sales used in the analysis.

Preliminary regression models, similar to the categorical model described above, were used to estimate online and offline price differences depending on these easement locations. The results indicated that online sales in the middle pattern had an average adjusted price difference of -3.8%. The diagonal pattern was associated with a difference of -2.1%. The edge/clipping pattern sales had no loss.

**SUMMARY**

The analyses presented here investigated the extent to which rural land values in Wisconsin have been adversely impacted by the presence of high-voltage electric transmission lines. The general finding was that there were small (1.11% to 2.44%)

\* The larger average size for online compared to offline sales properties would account for a higher unadjusted sales price. Statistical adjustments explains the differences between the unadjusted and adjusted average sales prices in the two summary tables.

Figure A - Edge Position

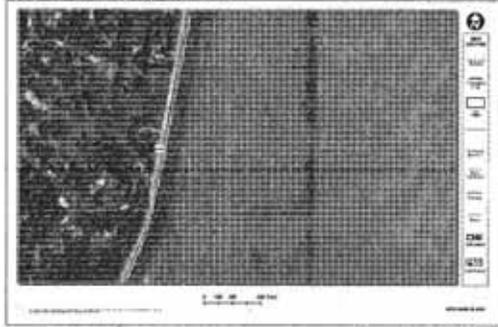


Figure B - Clipping

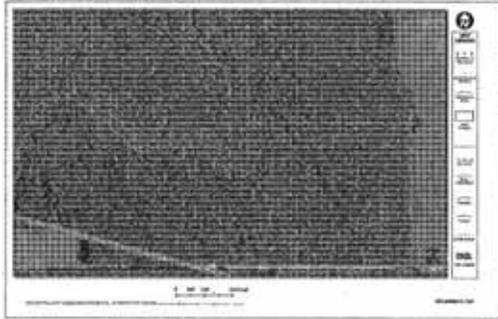


Figure C - Middle Position

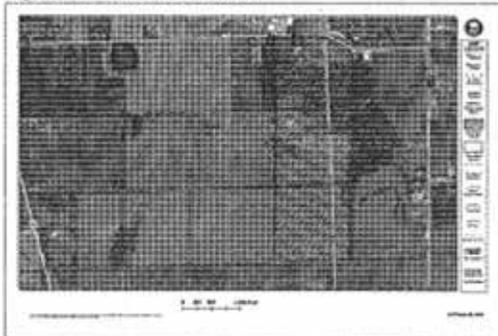


Figure D - Diagonal Position



discounts that could be attributable to the presence of the lines and the encumbrance of the properties by the easements. Neither of these small differences were statistically significant.

Nonetheless, these findings are consistent with previous findings, which indicated relatively small or non-existent differences. While prior studies had focused primarily on residential properties in urban settings, previous studies of farmland and recreational land found no impact on property values. Furthermore, the extent to which the easement area was encumbered and/or differences in impact due to the position of the easement and transmission lines, were found to be insignificant. In this regard, the encumbrance factors were found to range from 16.0% to 35.3%, assuming no damages to the remainder. Middle and diagonal line positions across the property were found to account for overall price reductions of 3.84% to 2.11% based on preliminary analyses. The patterns referred to as edge or clipping were not found to result in any price differences.

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## FEATURES

## ABSTRACT

This article reports on a study of 2000–2010 sales of properties located along 500 kV transmission lines that stretch across most of Montana. A combination of 49 individual transactions and an even larger number of lot sales in 7 subdivisions were studied using personal interviews, sales comparison, and paired sales techniques. The transactions are categorized into seven property types, representing a combination of agricultural, residential, and recreational uses. Results are summarized for each property type, and the conditions that make properties vulnerable to transmission line impact are identified. At the most general level, the dominant considerations affecting any impact are use, property size, and the availability of substitutes.

## High-Voltage Transmission Lines and Rural, Western Real Estate Values

by James A. Chalmers, PhD

**T**here is considerable interest across the northern Rocky Mountain/Intermountain West region in new sources of electrical generation and in additions to the transmission grid necessary to get that electricity to its ultimate market. Despite the extensive professional literature on the impact of high-voltage transmission lines (HVTL) on real estate values, there is no literature that addresses HVTL impact in the context of the mix of land uses that characterize this portion of the country.

This study pursues a case study approach using a combination of techniques, including paired sales and sales comparison analyses.<sup>1</sup> Results are reported for 56 cases across 7 property types. The number of cases is too small to support statistical conclusions; however, for some property types there is a sufficient number of cases and sufficient similarity of conclusions across the cases to draw some useful generalizations. It is possible at the end of the article to draw some useful generalizations across property types.

The case study approach presented also addresses an important methodological gap in the professional literature. Statistical analysis of large numbers of property sales is the definitive approach to answering the question of whether there is a well-defined, consistent effect of transmission lines on property values. As discussed in the next section, the literature concludes that, in terms of statistical significance, the effects are usually nonexistent or small. But, this simply means that there is no consistent relationship in the data. It does not rule out the possibility that some individual properties are significantly affected, nor does it provide any insight into the conditions shared by those individual properties that make them vulnerable to transmission line impact. This study, through the analysis of case studies, allows generalizations to be made about impact, but also identifies the exceptions to these generalizations and the particular conditions apparently responsible for the exceptions.

1. This research was carried out under contract to NorthWestern Energy during March 2010–December 2011. This article is a summary of findings in the research report, James A. Chalmers, *Final Report: High Voltage Transmission Lines and Montana Real Estate Values* (January 12, 2012), which is available upon request from NorthWestern Energy by contacting [cat.asay@northwestern.com](mailto:cat.asay@northwestern.com).

This article begins with a very brief overview of the extensive national literature on the subject of the impacts HVTL have on real estate values. Then the discussion addresses in more detail studies that appear to have relevance to rural environments similar to those that characterize the western United States. Finally, some of the unique characteristics of the western mountain states are compared to other areas that previously have been studied. Based on these observations, the overall approach and procedures followed in this study are outlined.

**Literature Review**

Beginning in the late 1960s, there has been in excess of 100 studies that in one way or another address the effect of HVTL on real estate values, and several recent publications review the literature in detail. The interested reader is referred to a 2009 article by Chalmers and Voorvaart,<sup>2</sup> a recently published review by Jackson and Pitts,<sup>3</sup> and a review prepared by Thomas Priestly for the Montana Department of Environmental Quality.<sup>4</sup>

The conclusions reached in these reviews indicate that multiple regression analysis is increasingly recognized as the most reliable technique to investigate whether HVTL systematically impact property values and, if so, to what extent. The results of these studies can be generally summarized as follows:

80-80 split

- Over time, there is a consistent pattern, with about half of the studies finding negative property value effects and half finding none.
- When effects on value have been found, they tend to be small; almost always less than 10% and usually in the range of 5% to 6%.
- Where effects on value are found, they decline rapidly as distance from the lines increases and usually disappear at about 200 to 300 feet.
- Two of the studies investigated behavior of the effect over time and found that, if there were effects, they tended to dissipate over time as well.

The relatively small effects on property value attributed to the proximity of HVTL in the published literature do not mean that the direction of the effect of transmission lines on property values is not negative. The general interpretation is that, even though transmission line issues have been a prominent concern in most of the communities studied, and even though the direction of effect on real estate value is generally negative, their presence is apparently not given sufficient weight by buyers and sellers of real estate to have had any consistent, material effect on market value.

The studies referenced above, and the overwhelming majority of the studies performed to date, analyze the effect of HVTL on improved residential properties in urban or suburban settings. The published studies in the professional literature that address the effect of HVTL on raw land are quite limited.<sup>5</sup>

Brown published an article in 1976<sup>6</sup> that used paired sales analysis to look at sales of farm parcels from 136 acres to 350 acres in size in southeastern Saskatchewan. He found no negative influence of number of towers or the presence of HVTL relative to otherwise similar parcels without HVTL. Rigdon published a study in 1991<sup>7</sup> in which he used multiple regression analysis to analyze the effect of a 156 kV line on recreational parcels ranging from 10 to 160 acres in size in Marquette County, Michigan. Based on 46 sales in the period from 1986 to 1991, he concluded there were no land value effects associated with proximity to the HVTL.

Finally, Jackson recently published an analysis of sales of rural land parcels in Wisconsin.<sup>8</sup> He studied the sale of 88 properties in Wisconsin, occurring over the period 2002–2008, that were encumbered by a transmission line easement. The properties averaged 50 acres in size. Local appraisers then selected unaffected property sales that were otherwise similar to the affected properties. The analysis controlled for

2. James A. Chalmers and Frank A. Voorvaart, "High Voltage Transmission Lines: Proximity, Viability, and Encumbrance Effects," *The Appraisal Journal* (Summer 2009): 227–246.  
 3. Thomas O. Jackson and Jennifer Pitts, "The Effect of Electric Transmission Lines on Property Values: A Literature Review," *Journal of Real Estate Literature* 18, no. 2 (2010): 239–259.  
 4. Thomas Priestly, *Transmission Lines and Property Values: Review of the Research and Summary of Key Findings* (report prepared for the Montana Department of Environmental Quality, July 2009).  
 5. *Ibid.*, 3-1–3-4. Priestly references five research reports that may have some relevance, but they do not appear in the professional literature and are very difficult to obtain and evaluate.  
 6. Dean J. A. Brown, "The Effect of Power Line Structures and Easements on Farm Land Values," *Right of Way* (December 1975/January 1976): 33–38.  
 7. Glenn J. Rigdon, "138 KV Transmission Lines and the Value of Recreational Land," *Right of Way* (December 1991): 8–19.  
 8. Thomas Jackson, "Electric Transmission Lines: Is There an Impact on Rural Land Values?" *Right of Way* (November/December 2010): 32–35.

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time, location, mix of land classification (agricultural, wooded, open, wetland), whether the purchaser was a government agency, and whether the property was transitioning to a higher use. His results indicate a small (1.1% to 2.4%), but statistically insignificant, effect for the sale of properties crossed by HVTL relative to uncrossed properties. When the sales were grouped by location of the line on the property, properties with edge locations showed no effect, while properties crossed by the line showed a small price effect of -2.1% to -3.4%.

Based on these studies, there are several important considerations that influence the need for, and the approach to, this study. First, contrary to the commonly expressed, but unsubstantiated opinion that there must be a significant effect of HVTL on real estate values, the professional literature makes it clear that one cannot start from a presumption of effect. That is not to say that there cannot be an effect, but rather that assertion of an effect must be grounded in market data specific to the circumstances in question. Second, if there is an effect of HVTL on real estate values, one would expect raw land values to be more sensitive than improved property values and there has been very little research to date on land value effects.<sup>9</sup> Finally, review of the literature shows a complete void of study in the northern Rocky Mountain states.

In the context of the western mountain states, the predominant land uses affected are large acreage, unimproved land tracts with some mix of agricultural, residential, and recreational highest and best uses as opposed to improved, small lot, residential properties. Existing research is largely silent on possible value effects on these types of properties. Their distinguishing characteristics relative to those examined in previous studies include the following:

- Land value is a much larger proportion of total property value.
- Natural features and amenities may be a more significant determinant of overall property value.
- Western viewsheds are often more susceptible to visual intrusion than those of urban residential subdivisions.

9. If HVTL are a material locational detriment to value, it presumably would be capitalized into the value of the land, not the improvements. For example, if lot value were typically 30% of the value of improved residential property, even a relatively large HVTL effect on land value, say 20%, would only show up as a 6% effect on the value of the improved residential property and might be difficult to identify in the data.

10. Both the 500 feet and the Year 2000 criteria are arbitrary. At the outset of the study, it was not known how many transactions these criteria would identify. In fact, the study began by looking at all transactions from 1990 or later, but the number of transactions was unmanageably large so the criterion was revised. The criteria ultimately used provided a representative, yet still manageable, number of sales.

- Recreational value is often a component of the overall value of both agricultural and residential properties.
- Buyers of these properties presumably have different criteria for their purchases, depending on the type of property purchased.

The bottom line is that the national literature provides generalizations that provide a useful starting point, but it has little to say about conditions specific to the western context. Our approach to filling that void is outlined in the next section.

### Study Approach

The essence of any approach to studying the effect of HVTL on real estate values is to identify existing HVTL, identify sales of properties crossed by or near the HVTL, and then analyze the sale price relative to otherwise similar properties not affected by the HVTL. The approach followed here takes advantage of the fact that beginning in the early 1980s, 500 kV lines were constructed from Montana Power's Colstrip power plants in eastern Montana to a location in central Montana where they connected to another 500 kV line built by the Bonneville Power Administration (BPA). These BPA lines then continue west to a substation near the Idaho border with the total distance from the Colstrip origination being 588 miles. An additional BPA 500 kV line segment runs 54 miles back to the northeast. In total, these lines cross 15 Montana counties that are broadly representative of western terrain and land uses. The route of the lines along their distance of over 640 miles is shown in Figure 1.

### Procedures

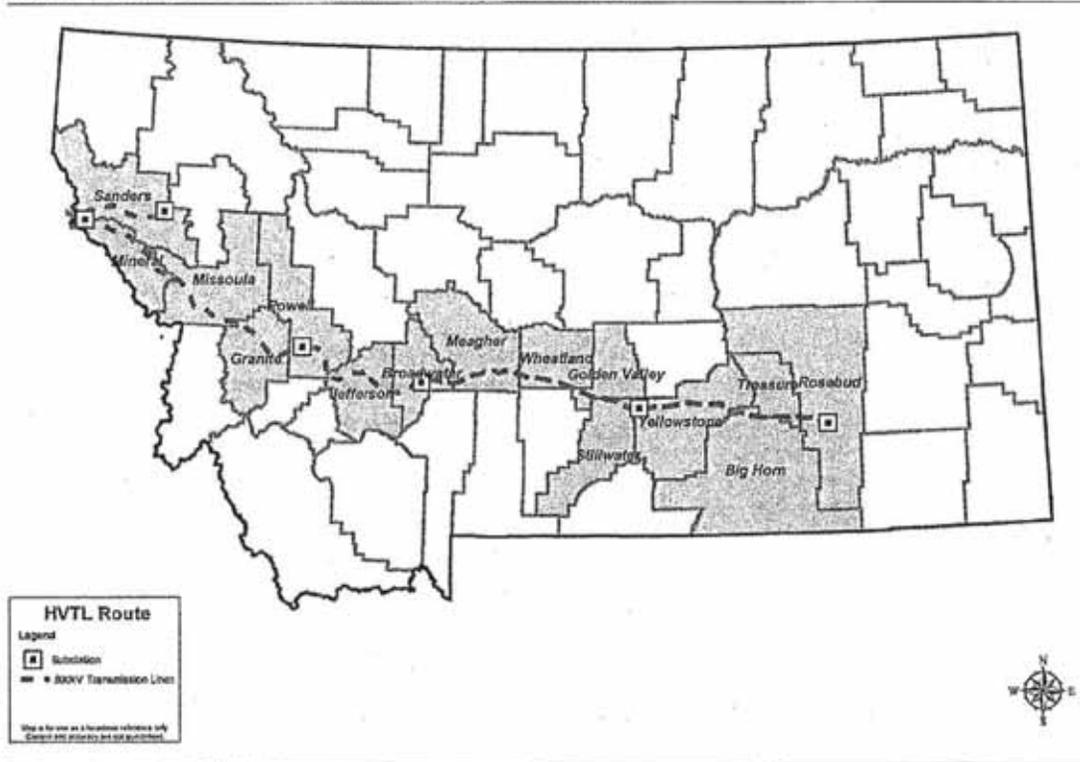
The general approach of the study was to identify and examine all arm's-length transactions that had occurred in 2000–2010 and involved properties within 500 feet of the approximate centerline of the 500 kV lines.<sup>10</sup> There were eight steps in the general approach to the study:

1. Identify all real estate parcels within +/- 500 feet of the centerline of the 500 kV lines.
2. Aggregate identified parcels into common property ownerships.

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**Figure 1** Route of 500 kV Transmission Lines across Montana



5. Retain a local title company to research public records and capture all significant recorded documents with respect to the identified ownerships.
4. If the recorded documents suggest a transfer of ownership occurred in 2000 or later, capture the chain of title for the property.
5. Review the recorded documents associated with the chain of title and identify those transactions that appear to be arm's-length transactions.<sup>11</sup>
6. Inspect the properties involved in these arm's-length transactions.
7. Contact the parties to these transactions and confirm as many of the details of the transactions as possible, including price, buyer and seller motivation, and role played by the 500 kV lines in the sale, if any.<sup>12</sup>

8. Assuming a sale price can be determined for the transaction, research comparable sales for the same land uses and determine whether the market evidence appears to be consistent with the interview evidence with respect to transmission line impact.<sup>13</sup>

Assuming a transaction was a legitimate arm's-length sale and that the sale price was determined, this process was then documented in what was called a "Sale Analysis Report." The Sale Analysis Reports were typically five to eight pages in length; the reports described the subject property and the location of the 500 kV lines relative to the property; summarized the interviews of parties to the transaction; identified comparison sales unaffected by the transmission lines; discussed each comparison sale; adjusted each

11. Foreclosures, intrafamily transactions, and changes in the form of ownership were the most common exceptions.  
 12. Montana is one of fourteen nondisclosure states, so interviews of the parties to the transaction were necessary to establish the terms of the sale.  
 13. It would not be practical to do a complete retrospective appraisal since most of the transactions, especially on the eastern half of the line, involved large farm and/or ranch properties. A full appraisal would require consideration of water rights; fencing; condition of improvements, if any; weed issues; threatened and endangered species issues; etc. Therefore, we initially relied on the interviews with the buyers and sellers and then looked at whether market data on a price/acre basis for the land classes involved for that area was consistent with the interview results.

comparison sale for market conditions and for land-class mix on the property; and drew conclusions with respect to the impact of the transmission lines on the subject by comparing value per acre by land class to the unaffected comparison properties. In some cases, it was possible to interview participants and get useful insights into a transaction, but the sale price could not be determined. This made it impossible to complete a Sale Analysis Report; but, an "Interview Summary Report" was prepared instead.

Finally, there were cases where no information was available beyond that provided by the public record search, and therefore, no report was possible. These properties were inspected, but attempts to make contact with any of the parties to the transaction and to obtain any third-party information were unsuccessful.

The procedures described resulted in the identification of 1,151 parcels, representing approximately 708 ownerships. The subsequent chain of title research on these ownerships identified a total of 74 cases where there appeared to be an arm's-length transaction occurring in 2000–2010. Of these transactions, there was sufficient information to prepare 37 Sale Analysis Reports and 12 Interview Summary Reports; in 25 cases it was not possible to complete a report because parties to the transactions could not be contacted.

The procedure described was followed for the sale of individual properties. There were several cases, however, where the unit of analysis was a subdivision, not an individual sale. The first occurred at the Aspen Valley Ranches (AVR) subdivision in Jefferson County, and several more occurred along the Clark Fork River in Sanders County. The procedures followed in these cases are described below.

The AVR subdivision is a 156-lot rural subdivision that was platted in 1985. The 500 kV lines pass through the middle of the subdivision, and the right-of-way easement encumbers 26 of the lots. There are a sufficient number of sales at AVR to support statistical analysis, but additional data collection and analysis are still in progress and will be reported at a later date.

The second area of subdivision analyses was in Sanders County, where the Clark Fork Valley

serves both as a highly scenic locale for recreational subdivisions as well as a transportation and utility corridor with three HVTL passing through much of the valley. Although the subdivisions had some commonalities, the real potential for research lay in comparing the experience of lots within a given subdivision that were affected by the HVTL with lots in the same subdivision that were not (or at least less) affected. A total of 12 residential subdivisions were identified of which 7 had sufficient sales to be included as case studies. For each of these, the timeframe of the analysis was extended back to their original platting dates.

The research of individual sale transactions combined with the subdivision analyses of the Sanders County developments resulted in a total of 56 case studies, which were then grouped into one of seven property types:<sup>14</sup>

1. Production Agricultural Lands
2. Agricultural Lands with Recreational Influence
3. Agricultural Lands with High Amenity Recreation and Natural Features
4. Rural Residential Subdivisions—Lot Size Less than 5 Acres
5. Rural Residential Subdivisions—Lot Size 5 Acres or Greater
6. Large Acreage Rural Residential Tracts
7. Rural Recreational Tracts/Cabin Sites

The following sections of this article address each of the property types individually.

### Findings

#### Production Agricultural Lands

A total of 19 transactions were identified that involved Production Agricultural Lands. The results of these investigations are summarized in Table 1. The largest number of these transactions occurred in locations where the 500 kV lines pass through the farm and ranch country of central and eastern Montana. Eight of the transactions were over 1,000 acres, with the remainder 640 acres or fewer. About half of the properties consisted entirely, or predominantly, of native range, while the others are a mix of range and cropland or predominantly cropland.<sup>15</sup>

14. Property type is generally synonymous with highest and best use.

15. In the few cases where there was irrigated land, the irrigation systems were not affected by tower locations. Tower locations could, however, significantly affect center-pivot and wheel-line irrigation systems.

Data was generally available on these transactions, and a total of 15 Sale Analysis Reports were prepared along with 4 Interview Summary Reports. Important conclusions drawn from those analyses are as follows:

- The interviews with individuals involved in these transactions uniformly asserted that there was no influence of the 500 kV lines on the price at which the property sold.
- The Sale Analysis Reports were uniform in their conclusion that there was no market evidence to support a claim of adverse effect of the transmission lines on sale price.
- The dominant considerations motivating the behavior of the buyers were the variety of factors influencing the productivity and operating costs of the property. Assemblage also played a very important role, especially when the smaller cropland properties became available.
- In general, negative comments with respect to the lines tended to regard them as a "nuisance," with the nuisance factor more significant to farm operations than livestock operations.
- Nuisance complaints mentioned in interviews included the following:
  - The HVTL corridor provides an unauthorized access route for trespassers.
  - Utility vehicles tear up farm and ranch roads when they are wet.
  - Trailers, gates, etc. near the lines pick up an electric charge.
  - The lines and towers attract lightning strikes, which can arc to the ground and start fires and injure livestock.
  - The utility access roads are a source of weed introduction.
  - Towers and guy lines are a nuisance to farm around.
  - The transmission lines, towers, and guy lines present an aviation hazard.
- Interestingly, there was no indication of adjustment to the sale price for the extent of the encumbrance of the property by the transmission line easement. The implication is that the owner at the time of construction gets compensated for the easement by the utility, but does not have to make a corresponding adjustment in the subsequent sale

of the property. Presumably this is because the overall agricultural productivity of the property is not affected by the transmission lines.

#### Agricultural Lands with Recreational Influence

There were four transactions in the study that involved agricultural properties that, because of their location and natural amenity features, are recreationally influenced. They are all large acreage properties, ranging from about 3,000 to 7,900 acres and are predominantly comprised of native range. In two cases, the Yellowstone River is the principal amenity in question. In the third transaction, the property is located at the easternmost edge of the Crazy Mountain foothills in Wheatland County. The property in the fourth transaction has a small amount of Bitterroot River frontage and is a well-known elk wintering range. Table 2 presents information on each of these transactions.

The conclusions from the analyses of these transactions include the following:

- The interviews on the two large Yellowstone River properties indicate no adverse effects on price from the 500 kV lines. In fact, one of the buyers saw a major enhancement to his property from river bank stabilization designed to protect tower footings. This is a good example of the kind of site-specific issues that need to be considered when analyzing a particular property and that can importantly influence the effect on value of the transmission lines.
- The seller of the Wheatland County parcel attributed significant market resistance and ultimately a reduced sale price due to the 500 kV lines. Interviews with other parties familiar with the transaction agree that the transmission lines may have been a negative factor, but the property had other, more significant problems including, most importantly, that it was priced well above market and that the entry to the property was very cluttered and unattractive. This was complicated further by the fact that the market was generally aware that the seller was under financial duress.
- Although much smaller at 3,000 acres, the buyer of the Missoula County property said the location of the 500 kV lines across the northern part of the ranch had no effect on his purchase decision. The conservation easement allows the buyer to develop six residential lots on the Bitterroot River, and the buyer said that if the 500 kV lines

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**Table 1 Production Agricultural Lands**

	Transaction Reference	Acres	Native Range Lands	Crop Lands	Report	Evidence Supporting Price Effect	Comments
1	Rosebud Trx 1	5,278	100%		Sale Analysis	no	No evidence of HVTL effect on price.
2	Treasure Trx 1	640	100%		Interview Summary	no	Buyer said no effect on operations or purchase price.
3	Treasure Trx 2	4,480	85% to 90%	10% to 15%	Interview Summary	no	Buyer said HVTL are a pain to farm around. Requires extra care in flying Super Cub when checking stock water. HVTL affected relocation of historic cabin.
4	Yellowstone Trx 32	1,441	28%	72%	Sale Analysis	no	Buyer said HVTL had "absolutely no effect" on transaction.
5	Yellowstone Trx 50	160	100%	100%	Interview Summary	no	"Farming around and under the guy wires is a nuisance."
6	Yellowstone Trx 59	300	8%	92%	Sale Analysis	no	"Guyed towers are a bigger problem to farm around than self-supporting towers. Transmission lines create a nuisance for farming, but not for grazing." No effect on sale price.
7	Yellowstone Trx 61	320	16%	84%	Sale Analysis	no	"Farming under guy wires is a nuisance," but said did not affect price he was willing to pay.
8	Yellowstone Trx 79	160	100%		Sale Analysis	no	"Trailers and gates near or under the transmission lines need to be grounded"
9	Yellowstone Trx 108	10,988	100%		Sale Analysis	no	"Transmission lines create an unwanted access route for hunters," But, no effect on acquisition price or use.
10	Yellowstone Trx 128	250	5%	95%	Sale Analysis	no	"Towers are a nuisance for farming." But, no effect on sale price.
11	Stillwater Trx 2	2,104	82%	18%	Sale Analysis	no	Two ranches on the market at the same price, one crossed by the HVTL and one not; buyer chose property not crossed and said would not pay same price for one that was.
12	Stillwater Trx 5 & 6	1,302	87%	13%	Sale Analysis	no	Buyer sensitive to view shed issues, but this transaction not affected. "Transmission lines may have had an impact on Big Coulee as a whole," but not on the buyers' specific purchase.
13	Stillwater Trx 7	332	33%	67%	Sale Analysis	no	"Wouldn't typically have paid this much for a half section crossed by transmission lines, but motivated by assemblage."
14	Stillwater Trx 10	3,400	75%	25%	Interview Summary	no	Major concern with lightning hitting HVTL and then arcing to the ground and starting fires.
15	Stillwater Trx 12	1,059	4%	96%	Sale Analysis	no	Buyer said HVTL did not influence his decision.
16	Golden Valley Trx 8	640	100%		Sale Analysis	no	Buyer complained that service vehicles impacted wet roads; but no effect on purchase price paid.
17	Golden Valley Trx 13	638	100%		Sale Analysis	no	Buyer uses as grazing land and said HVTL had no effect on price.
18	Golden Valley Trx 17	160	12%	88%	Sale Analysis	no	No effect on price according to buyer.
19	Wheatland Trx 9	314	100%		Sale Analysis	no	Buyer concerned with lightning strikes killing cattle close to the HVTL, but no effect on purchase price.

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had impacted these building sites, his purchase decision would definitely have been affected. This reinforces the point that, despite the recreational/residential interest, the size of the property is critical in determining the likelihood of impact. Size does not eliminate the possibility of effect; it just makes it increasingly unlikely.

- The Sale Analysis Reports on three of these properties and the Interview Summary Report on the fourth found no indication of adverse effect of the transmission lines on sale price.
- Even though there is recreational influence here, recreational use is small (and largely speculative) relative to agricultural use. The current use is still production agriculture, which tends to define the set of property attributes most relevant to the market.
- Size of the property is critical. All four properties are large (greater than 3,000 acres), which dilutes the overall impact of the HVTL on recreational use. If there is contemplated recreational use, the probability of there being a conflict with views of the transmission lines in the siting of residential improvements goes down rapidly as the size of the property increases.
- As soon as there is some recreational influence, the transmission lines are likely to result in some reduction in the size of the potentially interested buyer pool. The larger the recreational influence, the

larger the likely reduction in the buyer pool. Since all properties studied here had a relatively small recreational influence, the influence on the buyer pool appears to have been correspondingly small.

- For this property type, the larger the property and the smaller the recreational influence, the less likely are negative price effects and extended marketing periods.

**Agricultural Lands with High Amenity Recreation and Natural Features**

The previous property type, Agricultural with Recreational Influence, represents properties where, because of some combination of location and amenity, there is recreational influence but the agricultural use continues to dominate. The property type Agricultural Lands with High Amenity Recreation and Natural Features represents the case where these two influences begin to even out; or, in some cases, the recreational use may even come to dominate. This property type sometimes may be referred to as *recreational ranch* or *trophy ranch*, and the recreational amenity or natural feature(s) will frequently be the defining feature of the property.

Examples might include a property with frontage on a famous Montana river or a property with important historic attributes.

**Table 2 Agricultural Lands with Recreational Influence**

	Transaction Reference	Acres	Native Range Lands	Crop Lands and/or Other	Report	Evidence Supporting Price Effect	Comments
1	Yellowstone Trx 1	3,863	76%	24%	Sale Analysis	no	Buyer commented that river bank stabilization undertaken to protect HVTL tower provides major benefit to his property; but stated, "Transmission lines are a hazard for aerial applicators."
2	Yellowstone Trx 9	7,943	85%	15%	Sale Analysis	no	Buyer said HVTL are a hazard when flying his helicopter. No other effect on operations or purchase.
3	Wheatland Trx 4	4,380	93%	7%	Sale Analysis	no	HVTL probably thinned the buyer pool, but property suffered from several other, more serious issues at time of sale.
4	Missoula Trx 22	3,000	99.5%	0.5%	Interview Summary	no	Given specific location of the HVTL on the property, no effect on the transaction.

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The three transactions shown in Table 3 represent properties of this type. The first transaction involved the purchase of 332 acres south of Townsend in Broadwater County with over two miles of Missouri River frontage. The second involved the purchase in Powell County of two parcels totaling about 1,200 acres with mountain views and Little Blackfoot River frontage. The third was a very large transaction in southern Powell County which involved the transfer of approximately 50,000 deeded acres together with nearly 30,000 acres of public land leases.

Sale Analysis Reports were prepared for two of the three properties and an Interview Summary Report was completed for the third. The conclusions based on these transactions are as follows:

- The Broadwater County property sold in 2006, and there was conflicting interview evidence on the effect of the 500 kV lines on the transaction. The market data, however, was consistent with the interview of the individual that had operated the property for 30 years and is a real estate broker. He indicated no effect of the transmission lines on the 2006 sale price or marketing period.
- The smaller of the two Powell County transactions was analyzed, and there is no evidence suggesting adverse effect of the transmission lines in the purchase by the current owner.
- The sheer size and complexity of the larger Powell County transaction swamps any transmission line effects. The broker in the transaction said the 500 kV lines were not an issue in the sale.

- In summary, the probability of HVTL effects on these properties is low because:
  - The properties tend to be large.
  - The properties tend to have unique combinations of natural features and attributes, making them scarce with few substitutes.
  - There are so many other property attributes important to their buyers that the transmission line effects become diluted.
- There do not appear to have been any transmission line effects in the three transactions studied here.

**Rural Residential Subdivisions—Lot Size Less Than 5 Acres**<sup>16</sup>

The fourth property type encountered along the 500 kV lines was Rural Residential Subdivisions—Lot Size Less Than 5 Acres. There were two properties of this type that sold in the Town of Colstrip in Rosebud County and then multiple transactions were studied in four subdivisions in Sanders County. Table 4 identifies these transactions. The conclusions from these transactions are as follows:

- There was no sale price or absorption effect on the two Colstrip transactions. Parties to both transactions indicated that the housing market there was very tight and that the transmission lines were not a consideration.
- The four Sanders County small lot subdivisions demonstrate the conditions where property values are most vulnerable:

**Table 3 Agricultural Lands with High Amenity Recreation and Natural Features**

	Transaction Reference	Acres	Native Range Lands	Crop Lands and/or Other	Report	Evidence Supporting Price Effect	Comments
1	Broadwater Trx 65	332	15%	85%	Sale Analysis	no	Conflicting interview evidence, but market evidence is consistent with interviewee indicating no effect of HVTL on price.
2	Powell Trx 13	1,171	81%	19%	Sale Analysis	no	Purchase not affected by HVTL.
3	Powell Trx 18	50,000	65%	35%	Interview Summary	no	HVTL had no effect on transaction according to selling broker.

16. Analysis of the Sanders County subdivisions was a substantial research undertaking and required considerable documentation to fully assess the procedures followed and the findings. It is only possible to provide a very brief summary of results here. The interested reader is referred to Chalmers, *Final Report: High Voltage Transmission Lines and Montana Real Estate Values* available from NorthWestern Energy.

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- The lots are small implying little flexibility in siting improvements.
- The use is exclusively residential, i.e., no related rural uses such as livestock, farm or hay plots, pasture, exclusive hunting or fishing access, etc.
- The lots are relatively homogeneous so there are substitutes similar in most respects except for the transmission lines. Another way of saying this is that the transmission lines are a conspicuous differentiator of the lots.
- Cove View Estates had the clearest price effect where the lot adjacent to the lines sold for 50% of the sale price of the lot of the same size immediately next to it.
- In the Salish Shores Subdivision, the lines pass over two lots which sold at the same price as unaffected lots. Net of the easement area, however, the two lots are from 50% to 100% larger than the other lots in the subdivision. From the developer's perspective the loss is proportional to the extra land required to sell these lots at the same price. From a market perspective, buyers would not likely be willing to pay double for a 1.2 acre lot relative to a .6 acre lot, so directly applying the size allowance would overstate the purchase price effect. Nevertheless, the purchase price effect of doubling the lot size as a measure of impact would be significant.
- In Panorama Estates, the implied listing price discount is on the order of 30% which aligns with the extent to which the lots are encumbered.
- Absorption effects were evident at Panorama Estates, with marketing time doubled for affected lots relative to unaffected lots. Salish Shores was interesting in that it was hugely successful, selling out 44 lots in two years. Nevertheless, the 8 lots closest to the transmission lines took an average of 10 months to sell, while the other 36 lots sold in an average of 2 months. Cove View and Waterfront Estates had a much smaller number of lots and there was no absorption effect.
- In general, with these smaller lots, encumbrance was more of an issue because of siting constraints, as was adjacency, although it was surprising that no proximity effects on sale price were found beyond the adjacent lots. Proximity did impact marketing time at Salish Shores and at Panorama Estates.
- A 100% impact on the absorption period may not be a serious consideration in a very active market, but in the more distressed market of today it could mean an increased holding period of many years.

**Table 4 Rural Residential Subdivisions—Lot Size Less Than 5 Acres**

	SubD/Lot#	Lot Size (acres)	Report	Evidence Supporting Price Effect	Evidence Supporting Absorption Effect	Comments
1	Rosebud Trx 2	0.240	Sale Analysis	no	no	Buyer concerned with health effects and radio reception interference.
2	Rosebud Trx 3	0.246	Interview Summary	no	no	Broker commented that housing is so tight in Colstrip that HVTL have no impact on value.
3	Panorama Estates (Sanders Cty)	approx 1.0	SubD Study	yes	yes	Evidence of price effects is sketchy; but absorption period for encumbered lots is at least 2 times that for unencumbered lots.
4	Cove View Estates (Sanders Cty)	approx 3.0	SubD Study	yes	no	Lot abutting HVTL sold for 50% less than adjacent two lots of about the same size. No absorption effect.
5	Waterfront Estates (Sanders Cty)	1.5 to 3.5	SubD Study	no	no	Sold out 11 riverfront lots in one year; no evidence of price or absorption effects.
6	Salish Shores #1 (Sanders Cty)	approx 1.0	SubD Study	yes	yes	The two encumbered lots are about twice the size (net of the easement) of the other lots and sold at the same price. Lots closest to the line sold more slowly.

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**Rural Residential Subdivisions—Lot Size 5 Acres or Greater**

The analysis of Rural Residential Subdivisions—Lot Size 5 Acres or Greater is based on three properties in rural subdivisions south of Missoula and on three Sanders County Subdivisions. Each of these is identified in Table 5.

Although the property type is the same here, the study methodology varied across the two locations. The Missoula area properties were studied using comparable unaffected sales as summarized in Sale Analysis Reports. The three Sanders County subdivisions were studied with a combination of paired sales, interviews, and absorption studies.

The conclusions based on these transactions are as follows:

- The two Missoula subdivisions provide a good example of how the visual intrusion of the lines can be highly variable depending on site-specific considerations. The lots are of similar size (+/- 10 acres), but at Evans Ridge they pass below the subdivision at the base of an elevated knob and the developer of the subdivision had only the vaguest recollection that they were even there. At Avery Acres on the other hand, the lot and the lines are on the same grade, and broker

interviews attribute a considerable discount to the sale price due to the lines. The Sale Analysis Report concludes that the price effect may be on the order of 20% to 25%. It also appears that there was an extended marketing period.

- Two of the three Sanders County subdivisions showed sale price effects, and one showed an adverse effect on marketing time.
- Brown's Estates, the first of the Sanders County subdivisions is a 34-lot subdivision with most of the lots between 5 and 10 acres in size. It has open, unobstructed views of a 550-foot wide corridor containing the 500 kV line and two 250 kV lines. The adjacent lots have clearly suffered both a sale price effect of 25% to 30% and, at a minimum, a doubling of the marketing time relative to nonadjacent lots. This is pretty much a worst case, where the lots are relatively small, the use is primarily residential, there are good substitutes with much less influence from the lines, and the lines dominate the landscape in their immediate vicinity.
- Riverside Estates is another Sanders County Subdivision that sold out very quickly in 2001. There are two very similar lots, each 9.5 acres in size but one has 3.4 acres encumbered by the 500 kV line

**Table 5 Rural Residential Subdivision—Lot Size 5 Acres or Greater**

	SubD/Lot#	Lot Size (acres)	Report	Evidence Supporting Price Effect	Evidence Supporting Absorption Effect	Comments
1	Evans Ridge Lots 7 & 8 Missoula Trx 14 & 15	8.12 & 7.65	Sale Analysis	no	no	No indication of HVTL impacting price.
2	Avery Acres Lot 1 Missoula Trx 20	10.78	Sale Analysis	yes	yes	Evidence indicating 20% to 25% price effect on 10-acre lot.
3	Missoula Trx 58	approx 30.0	Sale Analysis	no	no	Buyer apparently secured a favorable price; but no evidence suggesting it was related to the HVTL.
4	Brown's Estates (Sanders Cty)	approx 5.0	SubD Study	yes	yes	Lots abutting the HVTL had at least 2 times the absorption period and sold for 25% to 30% less.
5	Riverside Estates (Sanders Cty)	approx 10.0	SubD Study	yes	no	Lots fully discounted for extent of the encumbrance.
6	Elk Park Estates (Sanders Cty)	approx 5.0	SubD Study	no	no	No indication of HVTL impacting price.

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easement and its sale price was fully discounted in the same proportion as it was encumbered.

- The third Sanders County subdivision studied was Elk Park Estates. No sales data was available but the developer was adamant that there were no discounts for the lots closest to the transmission lines and there was no absorption effect evident in the timing of the original lot sales.

**Large Acreage Rural Residential Tracts**

There are four properties that are Large Acreage Rural Residential Tracts; these are identified in Table 6. They range in size from 60 acres to 591 acres with a residential use that can be either seasonal or year around. A distinguishing feature of these properties is that they represent a broader set of uses often including some farming, livestock grazing, horse pasture, hay ground, etc. Further, even though they may have been carved out of larger holdings, they tend to be one-of-a-kind properties with no subdivision feel. Of the four property transactions identified in the study, Sale Analysis Reports were able to be prepared for three and an Interview Summary Report was able to be prepared for the fourth.

The conclusions for these transactions include the following:

- These properties are much less vulnerable to transmission line effects than the smaller lot residential subdivisions for three principal reasons:
  - The properties are larger, providing more flexibility in building site location.
  - The intended uses are more diverse, with residential use still important but considerations relevant to other rural property uses playing an important role.

- The properties have their own unique characteristics with no immediate supply of close substitutes not affected by HVTL. To the extent there are substitutes, the transmission lines are not likely to be the principal differentiator.

That being said, the properties are of a scale where the transmission lines are still a conspicuous attribute of the tract, and there is likely to be some thinning of the potential buyer pool as a result. For the four sales researched here, however, the transmission lines do not appear to have affected either the sale price or the marketing period.

**Rural Recreational Tracts/Cabin Sites**

Rural Recreation Tracts/Cabin Sites are distinguished from the Large Acreage Rural Residential Tracts by the fact that their primary orientation is recreation not residential. They are more common in the western counties and frequently are small inholdings within national forests.

Access is often seasonal and the tracts are typically densely timbered. Many remain unimproved although some have modest cabin type residential improvements. Utilities may or may not be available to these tracts.

Table 7 identifies the 14 transactions involving properties of this type that were close to, or crossed by, the 500 kV lines. These properties ranged in size from 16 acres to 197 acres. Sale Analysis Reports were able to be prepared for 10 of the 14 properties, with Interview Summary Reports for the four remaining properties.

The conclusions from these transactions are as follows:

- Buyer criteria are quite different for these tracts than for rural residential property and generally are less sensitive to transmission line effects. The

**Table 6 Large Acreage Rural Residential Tracts**

Transaction Reference	Acres	Report	Evidence Supporting Price Effect	Evidence Supporting Absorption Effect	Comments
1 Stillwater Trx 14	60	Sale Analysis	no	no	No effect on purchase decision or use of the property.
2 Broadwater Trx 21	591	Sale Analysis	no	no	No market evidence of HVTL effects.
3 Broadwater Trx 39	160	Sale Analysis	no	no	Has oriented built improvements so as to face away from the lines. HVTL did not impact purchase decision.
4 Jefferson Trx 2	143	Interview Summary	no	no	Based on seller interview only.

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buyers are less focused on year-round residential use and more focused on seasonal recreational use, often related to access to public lands for purposes of exploration, hunting, and fishing,

- The effect of the lines will depend on the location of the lines relative to access routes and the location of potential building sites. Given the size of many of these tracts and the screening effect of topography and tree cover, the effects of the lines on the site may not be significant.
- The unique recreational character of the site will frequently dominate considerations relative to the transmission lines. This will often relate to hunting or access to public lands for other recreational purposes. Some of these inholding tracts provide exclusive access to vast areas of National Forest land, and in this context, the transmission lines may be an insignificant consideration.
- Adverse sale price effects may have occurred in 2 of the 14 transactions, but the evidence is far from conclusive. In the remaining 12 transactions, both interview results and sale price analysis indicate no effect of the 500 kV line on the price at which these transactions occurred.

### Summary

This article summarizes findings from analysis of 49 individual transactions plus the analysis of 7 residential subdivisions in Sanders County. The properties studied stretch over 640 miles of Montana countryside and represent a wide range of terrain, character, and land use. When trying to generalize about the considerations that stand out when considering the potential effect of transmission lines on these properties, three issues are dominant.

- **Use.** The more heavily oriented the property is toward residential use, the more vulnerable it is to transmission line impact. Properties oriented more toward purely recreational use are much less vulnerable to HVTL impact, and properties with pure agricultural use show no price effects of transmission lines whatsoever.
- **Size.** The larger the property, the less vulnerable it is to transmission line impact. Larger properties have a greater likelihood that the location of the lines will not interfere with the use of the property; or, if they do interfere, that there are siting alternatives for dwelling or recreational improvements, which can mitigate the impacts.

- **Substitutes.** The availability of otherwise comparable substitutes is a third factor affecting the vulnerability of a property to transmission line effects. If there are alternative properties very similar to the subject except for the transmission line, there can be significant price and absorption effects. On the other hand, if a property is relatively unique and the transmission lines are but one of several differentiating factors, the property is less vulnerable to price and absorption effects.

As summarized earlier, there has been extensive research on the effects of high-voltage transmission lines on improved residential properties. However, the locations and development patterns of the areas previously studied are so different from the rural West that it is difficult to determine how much applicability they have in the West. In particular, it has been uncertain how the recreational influence on agricultural lands and residential properties would influence their vulnerability to transmission line effects. The suspicion was that this would increase their sensitivity.

Surprisingly, this seems not to be the case. When moving from residential subdivisions to large acreage rural residential tracts and rural recreational tracts/cabin sites, three significant things change. First, the range of uses is broadening, the properties are getting larger, and the properties tend to have their own unique combination of attributes, i.e., there are fewer close substitutes. Whenever the intended use of the property goes beyond pure residential, additional property attributes become relevant (horse pasture, access to hunting or fishing, all season access, specific viewsheds, etc.), which can outweigh the influence of the transmission lines. Second, the properties are getting larger, which reduces the extent of influence of the transmission lines. Finally, the transmission lines become one of many differentiating factors as opposed to the dominant differentiating factor as is the case in some residential subdivisions.

In the case of agricultural lands, the situation is a little different; but again, the effects of increasing recreational influence are not what might be expected. In this case, the starting point is production agricultural property whose value is unaffected by the lines. With modest levels of recreational influence added, there is some speculative interest beyond agricultural use that may be influenced by the transmission lines, but the basic agricultural characteristics of the property continue to dominate

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**Table 7 Rural Recreational Tracts/Cabin Sites**

Transaction Reference	Acres	Report	Evidence Supporting Price Effect	Evidence Supporting Absorption Effect	Comments
1 Yellowstone Trx 3	176	Sale Analysis	no	no	Buyer said not planning to build home on site, therefore HVTL had no effect; purely a recreational property for hunting and fishing.
2 Broadwater Trx 33	160	Sale Analysis	no	no	Property purchased for hunting and access to adjacent public lands. HVTL had no effect on transaction or price.
3 Broadwater Trx 53	130	Interview Summary	no	no	No effect of HVTL on purchase decision or transaction.
4 Broadwater Trx 56	69	Interview Summary	no	no	Buyer assumed the HVTL had no effect as property was already heavily impacted by mining and off-road vehicle use.
5 Jefferson Trx 42	16	Interview Summary	possible	no	No effect on purchase decision according to buyer, as they can orient built improvements to avoid the HVTL. Selling broker maintains HVTL have negative impact on sale price, but did not supply market data to support his opinion.
6 Granite Trx 2	71	Sale Analysis	no	no	No evidence of price effect. "Absolutely no effect," according to seller.
7 Granite Trx 4	79	Sale Analysis	no	no	HVTL are just one of many issues impacting the property.
8 Granite Trx 8	20	Sale Analysis	no	no	Buyer not happy that utility crew cleared brush in right of way, but no effect on purchase.
9 Granite Trx 16	20	Sale Analysis	no	no	Using property strictly as a recreational retreat. No HVTL effect on purchase price.
10 Missoula Trx 45	40	Interview Summary	no	no	Based on interview with the seller.
11 Mineral Trx 9	160	Sale Analysis	possible	no	Based on selling broker input, there may have been a price effect; buyer says principal motivation was recreation and hunting, as well as timber, and HVTL were not an issue.
12 Mineral Trx 10	160	Sale Analysis	no	no	No evidence of price effect.
13 Mineral Trx 11	160	Sale Analysis	no	no	No evidence of HVTL impact on transaction.
14 Mineral Trx 32	197	Sale Analysis	no	no	No evidence of HVTL price effect. Buyer said they had no impact on transaction or price.

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which are indifferent to the lines. As we get to agricultural lands with high amenity recreation and natural features, the combination of very large size and the importance of the amenity and natural features reduce the probability that the lines will have a material effect on value.

Part of what may seem surprising or counter-intuitive to many is explained by psychologists as the framing effect. When transmission lines are discussed in the abstract as an attribute of property with some recreational use, it will almost universally be a negative factor. But the effect on a transaction (price and marketing time) will depend on the full set of positive and negative attributes of a property. As a property transitions from either pure agriculture or pure residential, and assumes some recreational use, the number of relevant attributes increase that may have the effect of diluting the transmission line effect. This will be reinforced if the average size of the properties is increasing as well.

The second unanticipated result was the relative unimportance of the extent to which a property is encumbered by a transmission line easement. It would appear, for example, in the case of agricultural property that the purchase of the easement is a windfall benefit of sorts to the current owner, who will not have to make any discount in sale price for the easement if the property is sold.

Finally, over the past several years, multiple regression analysis has become the dominant methodology applied to the question of transmission line impact on real estate values. And indeed, if the objective is to determine whether there is a generalizable, statistically significant relationship between transmission lines and real estate value, multiple regression over a large number of observations is unquestionably the definitive methodology. But, it must be recognized that the result is essentially an average. It addresses the question of whether there is a consistent effect between the variables in

question. The absence of an effect in this context can be misinterpreted to mean that transmission line impact is a nonissue. On the contrary, transmission lines may be a big problem under certain specific circumstances, but those circumstances are sufficiently rare that they do not show up in the statistical analysis. Further, the statistical analysis does not help identify those circumstances where transmission lines may have an impact.

The research reported here is certainly consistent with the findings in the published literature that property value effects cannot be presumed and are generally infrequent. On the other hand, the current research reminds us that transmission lines can create significant price and absorption effects and provides guidance in identifying circumstances where these effects are most likely to occur.

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**Web Connections**

*Internet resources suggested by the Y. T. and Louise Lee Lum Library*

AGAlert, The Weekly Newspaper for California Agriculture

<http://www.agalert.com/story/?id=1054>

Electric Power Research Institute

<http://my.epri.com>

Electric Transmission Line Construction Standards and Policies, Illinois Department of Agriculture

<http://www.agr.state.il.us/Environment/LandWater/electrictransmissionlineconstructionstds.pdf>

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>

U.S. Department of Energy

<http://www.energy.gov>

U.S. Energy Information Administration

<http://www.eia.gov/>



attributed to the other if both are not adequately accounted for. Similarly, the effects of visibility and proximity must be considered in tandem if the effect of each is to be properly measured.

In the course of this research, three additional questions were investigated: (1) are higher-valued properties more vulnerable to HVTL effects than lower-valued properties? (2) are properties in general more vulnerable to HVTL effects in a down housing market? and (3) since much of the proposed expansion of the grid will take place in existing utility corridors, how can the incremental effect of these expansions be measured?

## Summary of the Literature

### Methodology

Reliable evidence of the effect of HVTLs on the value of adjacent or nearby residential property must rely on actual, arm's-length sales of property that lie in close proximity to an existing line. These sales are then compared to other selected transactions involving properties located outside of the potential area of influence. The three most common approaches for performing this comparison are paired data analysis, retrospective appraisal, and multiple regression analysis.

**Paired Data Analysis.** The paired data approach attempts to match the characteristics of a subject property sold within a claimed area of impact (the subject area) with individual sales of similar properties sold outside the claimed area of impact (the control area). The issues here center on the availability of sales and the ability to identify sales that can be considered a match to the subject property.<sup>3</sup>

**Retrospective Appraisal Based on Control Properties.** The retrospective appraisal approach recognizes that a perfect match is unlikely and relies on standard residential appraisal sales comparison methodology. A subject property is selected that has been sold, and it is then appraised retrospectively, i.e., at the date of its historical sale. The appraised value based on control area comparables can then be compared to the actual sale price to see if the HVTL had any effect

on the sale price of the subject property. This is obviously an improvement over the paired data analysis, but still suffers from the fact that, as discussed later, the effects under investigation are likely to be small, and may well be within the error range of standard appraisal methodology.

**Multiple Regression Analysis of Large Numbers of Subject and Control Area Sales.** The third approach, multiple regression analysis, uses statistical tools to try to isolate the effects of the HVTL from all of the other determinants of value. This is only possible with a relatively large number of subject area and control area sales. If the sales, property, and neighborhood data exist to carry out this approach, it is ideally suited to identifying the independent effect of the transmission line, holding the other value-determining factors constant.<sup>5</sup> In addition, it is the least subjective of the three potential approaches and is the only approach to give explicit measures of reliability, which helps the user determine what weight to give the results.

### Conclusions from the Literature

While the literature on the effect of HVTLs on property values is extensive, it is of uneven quality, ranging from anecdotal reports to large, rigorously conducted statistical studies. Several hundred articles were reviewed as part of the current study, and thirty-eight had direct relevance to either the methodological or empirical questions at issue here. These are referenced in footnotes or in the Additional Reading section at the end of this article.

Over the past twenty-five years, the literature has increasingly recognized multiple regression analysis as the most reliable technique to investigate whether HVTLs impact property values and, if so, to quantify the effect. As mentioned, multiple regression has the significant advantage of not relying on the subjective judgment of the appraiser. Rather, it represents an objective reflection of the data together with measures of reliability that attach to the results. A large number of studies have been undertaken since the 1980s using large databases and statistical

3. Analysis of trends, days on market, or turnover rates can be suggestive of the existence of effects, but are not useful in quantifying the magnitude of the effect. Surveys of market participants can also be instructive as to how these effects are perceived, but are no substitute for analysis of how these effects actually manifest themselves in the market.

4. The problem with this approach is evident by a review of residential appraisals; despite best efforts to find comparables, it is very rare to see a comparison sale to which no adjustments are made.

5. For a general discussion of the methodological issues associated with multiple regression, see Thomas O. Jackson, "Evaluating Environmental Stigma with Multiple Regression Analysis," *The Appraisal Journal* (Fall 2005): 363-369.

tools to investigate the effect of transmission lines on property values. Sixteen of these studies form the core of the professional literature and are widely quoted and cross-referenced one to the other. The results of these studies can be generally summarized as follows:

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- Over time, there is a consistent pattern with about half of the studies finding negative property value effects and half finding none.
- When effects have been found, they tend to be small; almost always less than 10% and usually in the range of 5%–6%.
- Where effects are found, they decay rapidly as distance to the lines increases and usually disappear at about 200 feet to 300 feet (61 meters to 91 meters).
- Two studies investigating the behavior of the effect over time find that, where there are effects, they tended to dissipate over time.
- There does not appear to have been any change in the reaction of markets to high-voltage transmission line proximity after the results of two widely publicized Swedish health effects studies were preliminarily released in 1992.

These general conclusions have characterized the appraisal and economic literature throughout the last twenty-five years, and there do not appear to be any new or different trends in the research. It is during this period that most of the medical studies on electromagnetic field (EMF) exposure were published, including the oft-referenced Swedish studies. One of the questions, therefore, is the apparent inconsistency between these statistical results and the intensity of opposition that new transmission line corridors generate. How can it be that if people are so intensely adverse to HVTLS, we do not see more of a market effect? This inconsistency is seen clearly when residents along existing HVTLS are interviewed.

The basic thrust of survey questioning is whether home purchasers were aware of the transmission lines prior to their purchases and, if so, whether their purchase decisions or the prices they paid were affected by the lines. Like the statistical analyses of sales, the results of these survey studies are quite consistent with one another. Their findings can be summarized as follows:

- A high proportion of the residents were aware of the lines at the time of purchase.

The sixteen referenced articles are the following: Judith Callanan and R.V. Hargreaves, "The Effect of Transmission Lines on Property Values: A Statistical Analysis," *New Zealand Valuers Journal* (June 1995): 35–38; Peter F. Colwell, "Power Lines and Land Values," *Journal of Real Estate Research* 5, no. 1 (Spring 1990): 117–127; Peter F. Colwell and Kenneth W. Foley, "Electric Transmission Lines and the Selling Price of Residential Property," *The Appraisal Journal* (October 1979): 490–499; J. R. Cowger, Steven C. Bottomiller, and James M. Cahill, "Transmission Line Impact on Residential Property Values: A Study of Three Pacific Northwest Metropolitan Areas," *Right of Way* [September/October 1996]: 13–17; François 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; Murtaza Haidor, "Influence of Power Lines on Freehold Property Values in the Greater Toronto Area" (Series in Spatial Econometrics, University of Toronto, January 2000); S. W. Hamilton and Cameron Caruthers, "The Effects of Transmission Lines on Property Values in Residential Areas" (University of British Columbia, Vancouver, April 1993); Stanley W. Hamilton and Gregory M. Schwann, "Do High Voltage Electric Transmission Lines Affect Property Value?" *Land Economics* 71, no. 4 (November 1995): 435–444; Patrice C. Ignelzi and Thomas Priestley, *A Statistical Analysis of Transmission Line Impacts on Residential Property Values in Six Neighborhoods* (Southern California Edison Environmental Affairs Division, 1991); William N. Kinnard, Jr., Mary Beth Geckler, and Jake W. DeLottie, *Post-1992 Evidence of EMF Impacts on Nearby Residential Property Values (Nevada)* (Storrs, CT: Real Estate Counseling Group of Connecticut, Inc., April 1997); William N. Kinnard, Jr., Mary Beth Geckler, and Jake W. DeLottie, *Post-1992 Evidence of EMF Impacts on Nearby Residential Property Values (Missouri)* (Storrs, CT: Real Estate Counseling Group of Connecticut, Inc., April 1997); William N. Kinnard, Jr., Phillip S. Mitchell, and James R. Webb, "The Impact of High-Voltage Overhead Transmission Lines on the Value of Real Property" (paper presented at Fifth Annual American Real Estate Society Conference, Arlington, VA, April 1999); William N. Kinnard, Jr., Mary Beth Geckler, and Phillip S. Mitchell, *Effects of Proximity to High-Voltage Electric Transmission Lines on Sales Prices and Market Values of Vacant Land and Single-Family Residential Property: January 1978–June 1988* (Storrs, CT: Real Estate Counseling Group of Connecticut, Inc., 1988); William N. Kinnard, Jr., Mary Beth Geckler, and Phillip S. Mitchell, *An Analysis of the Impact of High Voltage Electric Transmission Lines on Residential Property Values in Orange County, New York* (Storrs, CT: Real Estate Counseling Group of Connecticut, Inc., 1984); Phillip S. Mitchell and William N. Kinnard, Jr., "Statistical Analysis of High-Voltage Overhead Transmission Line Construction on the Value of Vacant Land," *Valuation* (June 1995): 23–29; and Marvin L. Wolvertson and Steven C. Bottomiller, "Further Analysis of Transmission Line Impact on Residential Property Values," *The Appraisal Journal* (July 2003): 244–252.

7. The two studies are Maria Feychting and Anders Ahlbom, "Magnetic Fields and Cancer in Children Residing Near Swedish High-Voltage Power Lines," *American Journal of Epidemiology* 138, no. 9 (1993): 467–481; and Birgitta Floderus et al., "Occupational Exposure to Electromagnetic Fields in Relation to Leukemia and Brain Tumors: A Case-Control Study in Sweden," *Cancer Causes Control* 4 (1993): 465–476. The results of these two studies were released preliminarily in 1992 by Susan Kolar, "Power Lines Increase Cancer Risk for Children," *Forskning & Praktik* [Solna, Sweden: National Institute of Occupational Health] (July 1992): 387–388; and Lars Gronkvist, "Cancers Related to Strong Electromagnetic Fields," *Forskning & Praktik* [Solna, Sweden: National Institute of Occupational Health] (July 1992): 383–385.

8. Five studies are prominent in the literature: William N. Kinnard, Jr., "Lower Lines and Residential Property Values," *The Appraisal Journal* (April 1967): 269–284; Thomas Priestley and Gary Evans, *Perceptions of a Transmission Line in a Residential Neighborhood: Results of a Case Study in Vallejo, California*, Southern California Edison Environmental Affairs Division, December 1990; Hsiang-te Hung and Charles F. Seagle, "Impact of Power Transmission Lines on Property Values: A Case Study," *The Appraisal Journal* (July 1992): 413–418; Sandy G. Bond, "The Impact of Transmission Lines on Property Values" (paper presented at Twelfth Annual American Real Estate Society Conference, South Lake Tahoe, CA, March 1995); and Cheryl Mittoness and Steve Mooney, "Power Line Perceptions: Their Impact on Value and Market Time" (College of Business, St. Cloud State University, 1998).

- Between one-half and three-fourths of the respondents have negative feelings about the lines.
- The negative feelings center on fear of health effects, aesthetics, and property-value effects.
- Of those who have negative feelings about the lines, the vast majority (67%–80%) report that the purchase decision and the price they offered to pay were not affected by the lines.

In summary, the relatively small effects on property value attributed to HVTL proximity in the literature does not mean that the direction of the effect of transmission lines on property values is not negative. The general interpretation is that, even though transmission line issues have been a prominent concern in most of the communities studied, and even though the direction of effect on real estate value is generally negative, the presence of transmission lines is apparently not given sufficient weight by buyers and sellers of real estate to have had any consistent, material effect on property values.

## Connecticut and Massachusetts 2008 Case Study

### Study Area Selection

Given the anticipated expansion of the 345-kV transmission grid in New England over the next decade, this study focused on Connecticut and Massachusetts. The objective was to find both rural residential and suburban residential developments along existing 345-kV corridors where the effects of the lines could be studied. The study called for at least 10 years of sales data (1998–2007). The criteria for study area selection were (1) the existing transmission corridor had to contain a 345-kV line, preferably on 150-foot steel poles; (2) the line had to have been built by 1997; and (3) the development patterns along the corridor had to produce a sufficient number of sales to make statistical analysis feasible.

Based upon a combination of field inspection, review of aerial photography, and review of maps of the existing electric transmission grid, nine areas were selected for the study.<sup>9</sup> Table 1 describes the location, configuration of transmission lines, and number of records for each area for the 10-year

period analyzed in this study; maps of the specific locations are shown in the Appendix 1.

### Database Development

Once the study areas had been selected, local appraisers were retained to assist in the data collection process.<sup>10</sup> A download from the Warren Group identified all sales within a set of street addresses that had been developed to describe an area that approximated 2,000 feet on either side of the transmission line corridor. Using this information, appraisers collected the assessors' record and the multiple listing service (MLS) "sold record" for each of the transactions in the data set. A sales database containing the information shown in Table 2 was then populated for each sale transaction.

Next, the sales database record for each property was returned to the appraisers together with a hard copy of the assessors' record and the MLS sheet. The appraisers were then asked to visit each property and record its location coordinates with a GPS device at the street curb opposite the front door. When obtaining the location information, they were also asked to verify the data entry to the sales database and to opine as to whether, in their judgment, the sale appeared to be an arm's-length transaction.

Next, the appraisers recorded the extent to which the transmission line structures were visible from the property.<sup>11</sup> For each property, the appraisers were given an aerial photograph that showed and labeled all structures in the vicinity of the property. Since the field observations were taken in July and August, it was important for the appraisers to know where structures might potentially be seen. Standing at the street curb, they made three observations and took photos of each; one from the right edge of the property, one from the left edge of the property, and one from the point on the street curb opposite the front door. These views were then coded for up to three of the most visible structures (or structure combinations) from each of the three locations.<sup>12</sup> Visibility was rated as follows:

- **Highly Visible**—At least one arm holding a conductor is fully visible and not obscured by trees or foliage.

9. When this research began, the number of sales that occurred in each area over the 10-year period was unknown. It was anticipated that some of the areas could be aggregated in the final analysis.

10. Raon Appraisal Services, LLC, was retained for the four Massachusetts study areas, Oles & Jerran, Inc., for the three western Connecticut areas, and Anchambault & Murray Appraisal Group for the two north-central Connecticut areas.

11. Structures would include steel poles, steel lattice towers, and wood H-frame towers.

12. In instances where a 345-kV structure was collocated with a 115-kV line or another 345-kV line, visibility ratings to both structures were recorded.

**Table 1 Study Area Locations and Transmission Line Configurations**

Area	Location	Transmission Line Configuration	Total Records Considered
<b>Study Area 1</b>			
Subarea 1.1 (South-Central MA)	Located in Ludlow, Hampton County, MA, approx. 5 miles east of I-291 and bordered by I-90 to the north.	345-kV line supported by steel poles and 115-kV line supported by H-frame structures.	71
Subarea 1.2 (South-Central MA)	Located on the CT and MA border in East Longmeadow, Hampton County, MA, approx. 7 miles east of I-91.	345-kV line supported by steel poles and 115-kV line supported by H-frame structures.	35
Subarea 1.3 (North-Central CT)	Located in Bloomfield, Hartford County, CT, approx. 3.5 miles west of I-95 and east of CT 189.	345-kV line supported by steel poles and 115-kV line supported by H-frame structures.	80
Subarea 1.4 (North-Central CT)	Located in Windsor and Bloomfield, Hartford County, CT, immediately west of I-91 and north of CT 218.	345-kV line supported by steel poles and 115-kV line supported by H-frame structures.	445
<b>Study Area 2</b>			
Subarea 2.1 (West CT)	Located in New Milford, Litchfield County, CT, approx. 13 miles north of I-84 along Route 202.	345-kV line supported by H-frame structures and 115-kV line supported by H-frame structures.	77
Subarea 2.2 (West CT)	Located in New Milford, Litchfield County, CT, approx. 10 miles north of I-84 along Route 202.	345-kV line supported by steel poles.	85
Subarea 2.3 (West CT)	Located in Brookfield, Litchfield County, MA, approx. 5 miles north of I-84 along Route 202.	345-kV line supported by steel poles.	237
<b>Study Area 3</b> (East MA)	Located in Stoughton, Norfolk County approx. 4 miles south of I-93 and east of State Hwy 138.	Two 345-kV lines supported by steel lattice towers.	206
<b>Study Area 4</b> (East MA)	Located in Randolph, Norfolk County approx. 4 miles south of I-93 and east of State Hwy 24.	Two 345-kV lines supported by steel lattice towers.	418
<b>All Areas</b>			<b>1,654</b>

- Somewhat Visible—Some portion of the structure is visible independent of trees or foliage, but not a full arm holding a conductor.
  - Barely Visible—The entire structure is mostly obscured by trees or foliage, but can be recognized, especially in winter.
- Given that the appraisers knew where to look, the ratings reflect the distinction between Barely

Visible and not visible as they would be recorded in the winter. That is not an issue with the first two categories as the structure elements are visible independent of trees or foliage. A larger issue is that visibility is being measured as of the summer of 2008 and not as of the date of the sale transaction. Thus, visibility of the structures is being underestimated, especially for sales early in the study period.<sup>13</sup> Another issue is the visibility of the conductors them-

13. Perhaps a forestry PhD candidate could develop a height and density foliage model that could be used to make visibility adjustments over time.

**Table 2 Sale and Property Characteristic Data**

Variable	Description
Sale Price	Transaction sale price
Liveable Area	Liveable area in square feet
Lot Size	Lot size in acres
A/C	Value of 1 if property has central A/C; zero otherwise
Age (at the time of sale)	Age of property at time of transaction (sale year minus year built)
Total Bathrooms	Sum of full, half, and three-fourths baths (full = 1; half = 0.5; three-fourths = 0.75)
Basement Area	Basement area in square feet
Deck-Small	Value of 1 if the property's deck size is less than or equal to the median deck size of the area; zero otherwise
Deck-Large	Value of 1 if the property's deck size is greater than the median deck size of the area; zero otherwise
Garage-Small	Value of 1 if the property's garage size is less than or equal to the median garage size of the area; zero otherwise
Garage-Large	Value of 1 if the property's garage size is greater than the median garage size of the area; zero otherwise
Patio-Small	Value of 1 if the property's patio size is less than or equal to the median patio size of the area; zero otherwise
Patio-Large	Value of 1 if the property's patio size is greater than the median patio size of the area; zero otherwise
Porch-Small	Value of 1 if the property's porch size is less than or equal to the median porch size of the area; zero otherwise
Porch-Large	Value of 1 if the property's porch size is greater than the median porch size of the area; zero otherwise
Sale Year 1999	Value of 1 if transaction occurred in 1999; zero otherwise
Sale Year 2000	Value of 1 if transaction occurred in 2000; zero otherwise
Sale Year 2001	Value of 1 if transaction occurred in 2001; zero otherwise
Sale Year 2002	Value of 1 if transaction occurred in 2002; zero otherwise
Sale Year 2003	Value of 1 if transaction occurred in 2003; zero otherwise
Sale Year 2004	Value of 1 if transaction occurred in 2004; zero otherwise
Sale Year 2005	Value of 1 if transaction occurred in 2005; zero otherwise
Sale Year 2006	Value of 1 if transaction occurred in 2006; zero otherwise
Sale Year 2007	Value of 1 if transaction occurred in 2007; zero otherwise
Subarea 1.1	Value of 1 if property is located in Subarea 1.1; zero otherwise
Subarea 1.2	Value of 1 if property is located in Subarea 1.2; zero otherwise
Subarea 1.3	Value of 1 if property is located in Subarea 1.3; zero otherwise
Subarea 2.1	Value of 1 if property is located in Subarea 2.1; zero otherwise
Subarea 2.2	Value of 1 if property is located in Subarea 2.2; zero otherwise

selves. It was observed that conductors were seldom noticeable without a structure or structures being visible and that structure visibility was the defining characteristic of the visibility of the conductor/structure combination.

The final field task carried out by the appraisers was to review assessor maps for all properties adjacent to the transmission line corridor to determine if each property was encumbered with an easement associated with the HVTL. If so, the size of the encumbrance was estimated from assessor maps.

Once the field data had been collected, the final step was to construct the proximity and visibility variables to be used in the analysis. Since the loca-

tion coordinates of all the structures were known, the distance could be calculated from the street curb opposite the front door of each property to any structure coded as visible by the appraisers. The perpendicular distance was also calculated, from the street curb opposite the front door to the centerline of the transmission line corridor. Using all the collected information, six variables were constructed designed to test for proximity, visibility, and encumbrance effects: Continuous Distance; Zone 0-75 Meters; Zone 75+-150 Meters; Number of Structures Visible; Weighted Number of Structures Visible; and Encumbrance. Table 3 describes these six variables.

### Aggregation of the Data

Based on the data on geographic proximity, sale prices, and sale prices per square foot, the nine initial areas were aggregated to four large study areas. Study Area 1 (A1) is an aggregated area consisting of the two South-Central Massachusetts areas (Subareas 1.1 and 1.2) and the two North-Central Connecticut areas (Subareas 1.3 and 1.4). Study Area 2 (A2) is an aggregated area consisting of the three West Connecticut areas (Subareas 2.1, 2.2, and 2.3). The two East Massachusetts areas continue to be treated independently as Study Area 3 (A3) and Study Area 4 (A4), respectively, due to the significant difference in their sale price per square foot and the practical consideration that both have large enough numbers of sales to support independent analysis.

The total number of sale transactions considered for each of the four areas is shown in Table 4. Of the initial 1,654 records, 508 records were discarded because they did not meet the arm's-length criterion in the opinion of the appraisers (or the sale transactions could not be confirmed). The two most common reasons given were (1) an institution was identified

as one of the parties to the sale, or (2) only a single party was identified in the transaction. There were also sales in which the buying and selling parties had the same last names or cases where the reported consideration was zero. For 38 transactions, the appraisers were not able to complete all required data fields for the analysis, the transaction appeared to be a duplicate transaction, or the transaction was otherwise sufficiently unrepresentative of the general study area as to be discarded.<sup>14</sup>

Finally, a relatively small number (22) of additional sales were eliminated to improve the fit of the regression model. A base model was estimated for each area and observations with residuals of more than  $\pm 2.5$  standard deviations were excluded from subsequent regression runs. Overall, this filter improved the fit of the regression models by several percentage points, but only eliminated 1.7% of the usable transactions. The residual filter did not impact the sign of the estimated coefficients, but generally improved the significance of the studied variables, i.e., if an estimated coefficient was negative and borderline significant before applying the residual filter, it

**Table 3 HVTL Variables**

Variable	Description
Continuous Distance	Shortest distance from the street curb opposite the front door of the property to the centerline of the transmission line
Zone 0-75 Meters	Value of 1 if the property is less than or equal to 75 meters away from the centerline of the transmission line; zero otherwise
Zone 75'-150 Meters	Value of 1 if the property is greater than 75 or less than or equal to 150 meters away from the centerline of the transmission line; zero otherwise
Number of Structures Visible	Number of unique structures visible from the property
Weighted Number of Structures Visible	Sum of the numeric value of the rating assigned to each tower visible from the property; Highly Visible = 4, Somewhat Visible = 2, Barely Visible = 1
Encumbrance	Square feet encumbered by the easement

**Table 4 Number of Records Considered**

	Study Area				Total
	A1	A2	A3	A4	
Total Records Considered	631	399	206	418	1,654
Less Non-Arm's-Length Transactions	142	37	48	81	308
Less Incomplete, Duplicate, or Otherwise Not Usable Transactions	8	12	1	17	38
Less Outliers Filtered by Residual Filter	6	6	4	6	22
Transactions Used in Regression Models	475	344	153	314	1,286

14. Nine transactions were excluded that were not representative of the general study areas. For example, we excluded a transaction with a sale price of \$800,000 in a neighborhood with average home values of \$192,611, a property (which sold twice during our study time period) that contained a 130 acre lake, and a property that appeared to be a lot sale only.

stayed negative, but typically became more significant after applying the residual filter. Appendix 2 contains descriptive statistics of the four Study Areas.

### The Base Model

Before working with the transmission line-related variables, a base model was estimated for each of the four study areas; the results are shown in Table 5. Various functional forms were explored during the model specification stage. Based upon guidance provided in the published literature and an evaluation of alternative specifications, the natural log of the sale price was used as the dependent variable. Three of the independent variables (*Liveable Area*, *Lot Size*, and *Basement Area*) were also entered as natural logs to allow for a nonlinear response of the sale price to increases in size.

Data for the total number of bedrooms was available, but it was not included in the model because it did not add statistical explanatory power after liveable area and number of bathrooms were accounted for. Data on square feet of finished basement was available for most sales, but it also did not add any explanatory power once total basement size was in the model, so it was dropped as well.<sup>15</sup> For deck, garage, and porch square footage, the dummy variables of small and large were used, depending on whether the feature was above or below the median size.<sup>16</sup> A regional home price deflator was not used to adjust sale prices, since there were plenty of observations and the annual dummy variable for year of sale (1998 is the excluded year) seemed more reliable. Finally, dummy variables were included for the subareas that were aggregated to form Study Area 1 (A1) and Study Area 2 (A2).<sup>17</sup>

Overall, the base models have very good explanatory power; the independent variables are

generally statistically significant with the anticipated sign and are of reasonable magnitudes.<sup>18</sup> Table 6 provides a sample interpretation of the regression coefficients for A2.<sup>19</sup>

### Testing for the Effects of Proximity, Visibility, and Encumbrance

Table 7 shows the frequency distribution and the summary statistics of the key transmission line-related variables in the sales database. As expected, encumbered properties are slightly larger than the unencumbered properties.

Out of the 1,286 sales, over 100 properties are within 75 meters of an existing 345-kV transmission line, 78 properties are encumbered with an easement associated with the transmission line, and 527 are of properties from which one or more transmission line structures can be seen.

Tables 8 and 9 summarize the results when the transmission line variables are added to the base model for each of the four study areas. There are two basic approaches to testing for proximity effects: (1) distance as a categorical variable representing distance zones, and (2) distance measured as a continuous variable. Both approaches are investigated, with distance zones shown in Table 8 and continuous distance shown in Table 9. The tables are structured so that distance is examined first by itself (Model 1), the encumbrance variable is then added (Model 2), and then two visibility variables are considered—the number of structures visible (Model 3) and the number of structures visible weighted by the degree of visibility (Model 4).<sup>20</sup>

Proximity. Tables 8 and 9 are striking in that there is no systematic effect of proximity to the transmission

15. Care must be exercised here not to misinterpret the effect of the variables in the base model. Because many of the variables are highly correlated (e.g., liveable area, number of bathrooms, number of bedrooms), the regression may not be able to sort out the independent effect of each. The coefficients on the included variables must, therefore, be interpreted as the joint effect of the included variables and any excluded, highly correlated variable(s).

16. Since for a significant number of transactions, the properties did not have a garage, deck, and/or porch, these variables exhibit a skewed distribution with most of the transactions centered around the '0' value (i.e., these variables do not follow a normal distribution). Therefore, to address the non-normal distribution of the variables these variables were entered as categorical variables (dummy variables). For a categorical variable, one category must be left out of the regression, and the coefficients on the included categories measure the effect on sale price relative to the excluded category. For the garage, deck, and porch dummy variables, the excluded groups are properties that do not have a garage, deck, and/or porch.

17. The excluded subarea for Study Area 1 was Subarea 1.4; for Study Area 2, it was Subarea 2.3.

18. Given that the dependent variable is in natural logs, the interpretation of the coefficients on the independent variables is as follows: (1) the coefficient of an untransformed continuous variable (e.g., number of bathrooms) approximates the percentage change in sale price due to a one-unit change in the underlying variable; (2) the coefficient of a dummy variable approximates the percentage change in the sale price if the value of the dummy variable is 1; and (3) the coefficient of a log transformed continuous variable approximates the percentage change in sale price given a 1% change in the log transformed variable.

19. Property characteristics were assumed that approximate the median values for Study Area 2.

20. Without additional research, the weights attached to the three categories of visibility are necessarily subjective. The results shown in the tables are based on a 4:2:1 scheme, i.e., highly visible carries twice the weight of somewhat visible, which has twice the weight of barely visible. Other schemes were tried, but the results were largely unaffected.

**Table 5 Base Model Estimation Results**

Variable	Study Area			
	A1	A2	A3	A4
Constant	9.3295** (51.3163)	9.0552** (41.2176)	9.7858** (33.2529)	9.5877** (53.7392)
lnLiveable Area (in sq. ft.)	0.3018** (11.9133)	0.3700** (11.9432)	0.3149** (7.6257)	0.3032** (11.8995)
lnLot Size (in acres)	0.0569** (4.1087)	0.0174 (0.9404)	0.0523** (2.2025)	0.0389** (2.0536)
A/C (yes/no)	-0.0012 (-0.0773)	0.0505** (2.7320)	0.0433* (1.7767)	0.0211 (1.6144)
Age	-0.0039** (-9.2045)	-0.0009** (-3.0085)	-0.0049** (-5.1140)	-0.0017** (-6.0633)
Total Bathrooms	0.0681** (5.9799)	0.0397** (2.5000)	0.0180 (0.9160)	0.0762** (6.5439)
lnBasement Area (ln sq. ft.)	0.0139** (5.2651)	0.0313** (4.8848)	0.0126** (4.0452)	0.0159** (5.1089)
Deck-Small	0.0160 (1.1576)	0.0150 (0.7761)	-0.0101 (-0.4087)	0.0145 (1.0105)
Deck-Large	0.0127 (1.0065)	0.0248 (1.2731)	0.0561** (2.1352)	0.0454** (3.0625)
Garage-Small	0.0738** (4.9800)	0.1211** (4.1899)	0.0224 (1.0559)	0.0528** (3.8013)
Garage-Large	0.1154** (7.2675)	0.1445** (4.7379)	0.0832** (3.3965)	0.0460** (2.8108)
Porch-Small	0.0332** (2.6389)	0.0389** (1.9962)	0.0120 (0.6302)	0.0163 (1.1652)
Porch-Large	0.0429** (3.2400)	0.0186 (0.9402)	0.0222 (1.0357)	0.0236 (1.5621)
Sale Year 1999	0.0647** (2.7723)	0.0884** (2.2858)	0.0898** (2.9167)	0.1312** (5.4847)
Sale Year 2000	0.1355** (5.5220)	0.2296** (5.5944)	0.3423** (9.3656)	0.2746** (9.3996)
Sale Year 2001	0.2293** (8.8978)	0.3085** (7.8390)	0.5027** (14.0765)	0.4011** (14.7889)
Sale Year 2002	0.2924** (12.7420)	0.4285** (11.4544)	0.5883** (18.0932)	0.5603** (23.1608)
Sale Year 2003	0.3676** (15.7658)	0.4953** (14.1213)	0.7308** (22.1995)	0.6712** (27.7454)
Sale Year 2004	0.5122** (21.5832)	0.6253** (18.4644)	0.7797** (22.7246)	0.7600** (32.8114)
Sale Year 2005	0.6244** (28.3895)	0.7255** (20.6101)	0.8802** (26.6213)	0.8589** (34.9250)
Sale Year 2006	0.7059** (30.4294)	0.7261** (20.1332)	0.8612** (26.1725)	0.7999** (31.2761)
Sale Year 2007	0.6968** (29.1600)	0.7147** (18.0000)	0.7850** (22.4262)	0.7522** (26.6658)
Subarea 1.1	0.0910** (4.4589)			
Subarea 1.2	0.2110** (9.3416)			
Subarea 1.3	-0.0062 (-0.3908)			
Subarea 2.1		-0.1789** (-8.8005)		
Subarea 2.2		-0.1773** (-6.8976)		
Adjusted R-Squared	88.25%	87.85%	93.52%	92.16%
Mean Sale Price	\$172,786	\$298,740	\$227,927	\$258,249
Included Observations	475	344	153	314

t-Statistics provided in parentheses.

\* Indicates variable is significant at the 90% level.

\*\* Indicates variable is significant at the 95% level.

**Table 6 Sample Calculation of Estimated Sale Price for Study Area 2 (A2)**

Variable	Assumed Value	Natural Log		Estimated Coefficient	Estimated Effect
		Transformed Values			
Constant	1			9.05516	9.05516
lnLiveable Area (in sq. ft.)	2,000	7.6009		0.37005	2.81269
lnLot Size (in acres)	0.75	-0.2877		0.01742	-0.00501
A/C (yes/no)	1			0.05048	0.05048
Age	35			-0.00092	-0.03234
Total Bathrooms	2.5			0.03969	0.09922
lnBasement Area (in sq. ft.)	1,000	6.9078		0.03126	0.21595
Deck-Small	1			0.01504	0.01504
Deck-Large	0			0.02480	0
Garage-Small	1			0.12108	0.12108
Garage-Large	0			0.14448	0
Porch-Small	1			0.03894	0.03894
Porch-Large	0			0.01855	0
Study Area 2.1	0			-0.17888	0
Study Area 2.2	0			-0.17732	0
Sale Year 1999	0			0.08843	0
Sale Year 2000	0			0.22960	0
Sale Year 2001	1			0.30849	0.30849
Sale Year 2002	0			0.42848	0
Sale Year 2003	0			0.49534	0
Sale Year 2004	0			0.62529	0
Sale Year 2005	0			0.72548	0
Sale Year 2006	0			0.72609	0
Sale Year 2007	0			0.71470	0
Estimated Natural Log Transformed Value (Sum of Effects)					12.67969
Estimated Value					\$321,159

**Table 7 Summary of Transmission Line Variables**

	Study Area			
	A1	A2	A3	A4
<b>Distance Zones</b>				
Zone 0-75 Meters				
Number of Properties	43	7	20	41
Median Distance	62	62	53	50
Zone 75*-150 Meters				
Number of Properties	63	65	20	55
Median Distance	97	118	103	104
Greater than 150 Meters				
Number of Properties	369	272	113	218
Median Distance	343	371	294	304
<b>Continuous Distance</b>				
Number of Properties	475	344	153	314
Median Distance	275	286	237	228
<b>Encumbrance</b>				
Number of Properties Encumbered	29	32	7	10
Median Sq. Ft. Encumbered	8,527	11,825	7,601	5,707
Median Lot Size of Encumbered Properties	0.50	0.99	0.35	0.33
Median Lot Size of Unencumbered Properties	0.40	0.93	0.21	0.28
<b>Number of Properties with Transmission Structure(s) Visible</b>				
1 Structure Visible	87	69	10	51
2 Structures Visible	71	24	30	61
3 Structures Visible	23	8	13	29
4 Structures Visible	6	0	14	15
More than 4 Structures Visible	2	0	13	1

**Table 8 Zone Distance Model**

	Study Area			
	A1	A2	A3	A4
<b>Model 1: Distance Zone Model</b>				
Zone 0-75 Meters	-0.0226 (-1.2734)	-0.0874 (-1.6429)	0.0131 (0.5278)	-0.0055 (-0.3159)
Zone 75*-150 Meters	0.0041 (0.2768)	-0.0388* (-1.9251)	0.0069 (0.2443)	0.0237 (1.5212)
<b>Model 2: Distance Zone Model &amp; Encumbrance</b>				
Zone 0-75 Meters	-0.0179 (-0.8636)	-0.0539 (-1.0068)	0.0306 (1.0550)	0.0050 (0.2711)
Zone 75*-150 Meters	0.0056 (0.3666)	0.0012 (0.0492)	0.0064 (0.2280)	0.0257 (1.6495)
Encumbrance	-0.0012 (-0.4387)	-0.0113** (-3.1867)	-0.0061 (-1.1684)	-0.0073* (-1.7323)
<b>Model 3: Distance Zone Model &amp; Encumbrance &amp; Number of Structures Visible</b>				
Zone 0-75 Meters	-0.0283 (-1.1314)	-0.0697 (-1.2515)	0.0151 (0.4562)	-0.0019 (-0.0832)
Zone 75*-150 Meters	-0.0034 (-0.1776)	-0.0122 (-0.4561)	-0.0033 (-0.1120)	0.0206 (1.1312)
Encumbrance	-0.0014 (-0.5065)	-0.0113** (-3.1996)	-0.0073 (-1.3663)	-0.0078* (-1.8018)
Number of Structures Visible	0.0055 (0.7434)	0.0139 (1.0312)	0.0069 (0.9784)	0.0038 (0.5519)
<b>Model 4: Distance Zone Model &amp; Encumbrance &amp; Weighted Number of Structures Visible</b>				
Zone 0-75 Meters	-0.0170 (-0.6796)	-0.0681 (-1.2174)	0.0218 (0.6204)	0.0011 (0.0479)
Zone 75*-150 Meters	0.0062 (0.3355)	-0.0117 (-0.4224)	0.0023 (0.0792)	0.0231 (1.3250)
Encumbrance	-0.0012 (-0.4281)	-0.0114** (-3.2124)	-0.0068 (-1.2424)	-0.0076* (-1.7606)
Weighted Number of Structures Visible	-0.0001 (-0.0621)	0.0034 (0.8760)	0.0009 (0.4443)	0.0006 (0.3291)

t-Statistics provided in parentheses; p-values available from authors upon request.

\* Indicates variable is significant at the 90% level.

\*\* Indicates variable is significant at the 95% level.

line corridor on sale price. The only exception is A2 in the continuous distance specification. In Models 1, 3, and 4, the distance variable is negative for A2 and statistically significant at either the 95% or 90% level. However, further analysis reveals that the distance variable of Model 1 becomes insignificant once encumbrance is accounted for (in Table 9, see Model 2 for A2). Further, even though both Models 3 and 4 show a significant distance effect, Model 3 also shows an unexpected positive effect of structure visibility. A possible interpretation is that although encumbrance clearly has a negative effect, the combination of greater distance and more structures visible may imply long views and the positive value of the

long views may outweigh any negative effects of the HVTLs. The only other remaining distance variable with a statistically significant value—Zone 75\*-150 Meters in Model 1 for A2 (Table 8)—also becomes insignificant once encumbrance is added to the model (Zone 75\*-150 Meters in Model 2 for A2).

**Encumbrance.** The only variable that appears to have any kind of systematic effect is the encumbrance variable, which for A2 and A4 is of the expected sign in both the Zone Distance and Continuous Distance models and is statistically significant at either the 90% or 95% level. However its magnitude is generally small. For example, for A2 the reported coefficient on

**Table 9 Continuous Distance Model**

	Study Area			
	A1	A2	A3	A4
<b>Model 1: Distance Zone Model</b>				
<i>Continuous Distance</i>	0.0008 (0.1030)	0.0351** (2.7181)	-0.0116 (-0.9393)	-0.0034 (-0.4711)
<b>Model 2: Distance Zone Model &amp; Encumbrance</b>				
<i>Continuous Distance</i>	-0.0031 (-0.3772)	0.0157 (1.0921)	-0.0214 (-1.5094)	-0.0091 (-1.1699)
<i>Encumbrance</i>	-0.0027 (-1.0350)	-0.0099** (-2.9613)	-0.0071 (-1.3956)	-0.0087** (-2.0392)
<b>Model 3: Distance Zone Model &amp; Encumbrance &amp; Number of Structures Visible</b>				
<i>Continuous Distance</i>	-0.0016 (-0.1378)	0.0327* (1.8681)	-0.0153 (-0.8046)	-0.0057 (-0.5704)
<i>Encumbrance</i>	-0.0028 (-1.0475)	-0.0101** (-3.0395)	-0.0075 (-1.4443)	-0.0090** (-2.0834)
<i>Number of Structures Visible</i>	0.0014 (0.1875)	0.0240* (1.6896)	0.0038 (0.4749)	0.0036 (0.5332)
<b>Model 4: Distance Zone Model &amp; Encumbrance &amp; Weighted Number of Structures Visible</b>				
<i>Continuous Distance</i>	-0.0085 (-0.7440)	0.0293* (1.7083)	-0.0220 (-1.1501)	-0.0078 (-0.7928)
<i>Encumbrance</i>	-0.0025 (-0.9308)	-0.0104** (-3.1019)	-0.0070 (-1.3383)	-0.0088** (-2.0471)
<i>Weighted Number of Structures Visible</i>	-0.0014 (-0.6849)	0.0057 (1.4415)	-0.0001 (-0.0500)	0.0004 (0.2160)

t-Statistics provided in parentheses; p-values available from authors upon request.  
\* Indicates variable is significant at the 90% level.  
\*\* Indicates variable is significant at the 95% level.

the encumbrance variable in Continuous Distance Model 2 (Table 9) implies an effect of approximately \$5,000 for a property with 12,000 square feet encumbered and a sale price of \$500,000.<sup>21</sup>

**Visibility.** With respect to the impact of visibility of the transmission tower, the results did not indicate any systematic impact with respect to sign or magnitude.<sup>22</sup> As previously discussed, the only time when the visibility variable was statistically significant, the sign of the coefficient was positive.

**Other Hypotheses Tested**

Two other hypotheses were offered that can be examined with the data collected in this study. First, it was suggested that property values would be particularly vulnerable to HVTL effects in a down market. Second, it was suggested that higher-valued

properties would be more vulnerable to HVTL effects than lower-valued properties.

**Effect in Market Downturn.** Looking back at the coefficients on the sale year variables for 2006 and 2007 in Table 5, the market downturn appears to have affected the four study areas quite differently. Study Area 1 still experienced a significant increase in real estate values in 2006 and experienced a slight drop in 2007. Study Area 2 properties leveled off in 2005 with only a nominal change between 2005 and 2006 and a small drop in 2007. However, the two areas south of Boston, Study Areas 3 and 4, clearly peaked in 2005 with significant drops in values between 2005 and 2007.

Therefore, the study investigated whether there was any evidence that property values were more sensitive to HVTL effects in 2006 and 2007 for Study

21. The coefficient of -0.0099 can be interpreted as the percentage change (i.e., approximately -0.01%) of a 1% change in encumbrance. Therefore, assuming a sale price of \$300,000 and an encumbrance of 12,000 square feet, a 1-square-foot change in encumbrance would correspond to a -\$0.25 change in sale price (0.25 = \$30,000/120).

22. Theory would suggest that the distance and visibility variables should be entered multiplicatively implying the effect of each depends on the value of the other. This was tried but had no effect on the results.

Areas (A5) and Study Area 4 (A4), i.e., the areas which experienced significant market softening. The hypothesis was that the effect of the encumbrance, proximity, and visibility variables would be more pronounced in these two years of falling market values. This was tested by adding interaction terms for sale years 2006 and 2007 with each of the transmission line variables shown in Table 9.<sup>23</sup>

The encumbrance variable and the encumbrance interaction term were both negative for A5, but not statistically significant. Since there were only two encumbered properties that sold in 2006 and 2007 in A5, no reliability can be attached to these results; the same situation existed for A4. The encumbrance variable stayed significant at the 95% level (similar in magnitude as in Table 9). However, the interaction term testing for the down-market effect was insignificant and since there was only one encumbered property transacted in the 2006–2007 period, no reliability can be attached to this result either. The remaining coefficients on the transmission line variables and the interaction variables were not significant at any conventional level of significance. Thus, there is no evidence here to support the hypothesis of greater vulnerability of values to HVTL effects in a down market, but it has to be recognized that the number of observations on the key transmission line variables is small for just two sale years and more observations over a longer period would yield a more definitive result.

**Effects on Higher-Valued Properties.** The second hypothesis often suggested is that higher-valued properties would be more vulnerable to transmission line effects than lower-valued properties. To investigate this, all of the models shown in Tables 8 and 9 were reestimated based on observations that fell above the median sale price in their sales year. The results showed the same pattern of lack of statistical significance for the HVTL variables as in Tables 8 and 9; this supports the conclusion that the higher-valued properties show no greater sensitivity to HVTL variables than lower-valued properties.

Finally, since almost all of the anticipated 345-kV line construction that motivated this study will take place in existing transmission corridors, a couple of

questions remain. First, is it possible to say anything about the incremental effect of a corridor upgrade? Second, and perhaps related, is it possible that there would be short-term proximity and visibility effects but that these would dissipate over time?<sup>24</sup> The first question does not seem relevant here. Since all of the sales studied here are in the vicinity of the corridor configuration that will exist after the upgrade, and since there are no proximity or visibility effects, it is hard to see how there could be upgrade effects.

This study, however, does not eliminate the possibility that the upgrade might induce short-term effects that would dissipate over time. The data represent situations where the existing HVTL corridor has been in place for some time, so it can be said with some confidence that there are no permanent property value effects of the corridor due to proximity or visibility. However, this does not rule out a temporary effect. Therefore, a useful complement to this study might look at the history of a corridor over a period that includes a pre-upgrade period, an announcement and construction period, and then a post-upgrade period.

## Conclusions

The research reported here investigates the effect of existing 345-kV transmission lines in Connecticut and Massachusetts on the value of properties sold over the period 1998–2007. Extra care has been taken in the research to account for encumbrance, proximity, and visibility effects. There are obvious relationships among the three variables, and if each is not considered, the effects of one could be mistakenly attributed to another. In particular, encumbrance effects could be mistakenly interpreted as proximity effects if both are not considered.

In the four study areas examined here, there is no evidence of systematic effects of either proximity or visibility of 345-kV transmission lines on residential real estate values. Encumbrance of the transmission line easement on adjoining properties does appear to have a consistent negative effect on value, although the statistical significance with which it is measured varies. The hypothesis that property values are more vulnerable to transmission line effects in a down market also is considered; although no evidence

23. The down-market hypothesis could not be tested with the zone distance models as there were not a sufficient number of transactions in each of the two distance zones; therefore, the hypothesis was only tested on the continuous distance model.

24. Colwell (1990) in a study in Illinois based on data from the 1970s finds small proximity effects, but also finds that the effects dissipated over the 10 or so years of sales that he studied. The transmission line in question, however, had been in place for several years prior to the study period. Most on point is the study by Ignelzi (1991), which finds small proximity effects following an upgrade, but that the effects disappeared after 4–5 years.

supports that proposition that there are greater effects in a down market, the number of observations in the relevant period is small. Finally, the hypothesis that higher-valued properties are more vulnerable to transmission line effects is considered; again, the data provides no support for that hypothesis.

The professional literature cited, combined with the results reported here, support the position that a presumption of material negative effects of HVTs on property values is not warranted. An opinion supporting HVTs effects would have to be based on market data particular to the situation in question and could not be presumed or based on casual, anecdotal observation. It is fair to presume that the direction of the effect would in most circumstances be negative, but the existence of a measurable effect and the magnitude of such an effect can only be determined by empirical analysis of actual market transactions.

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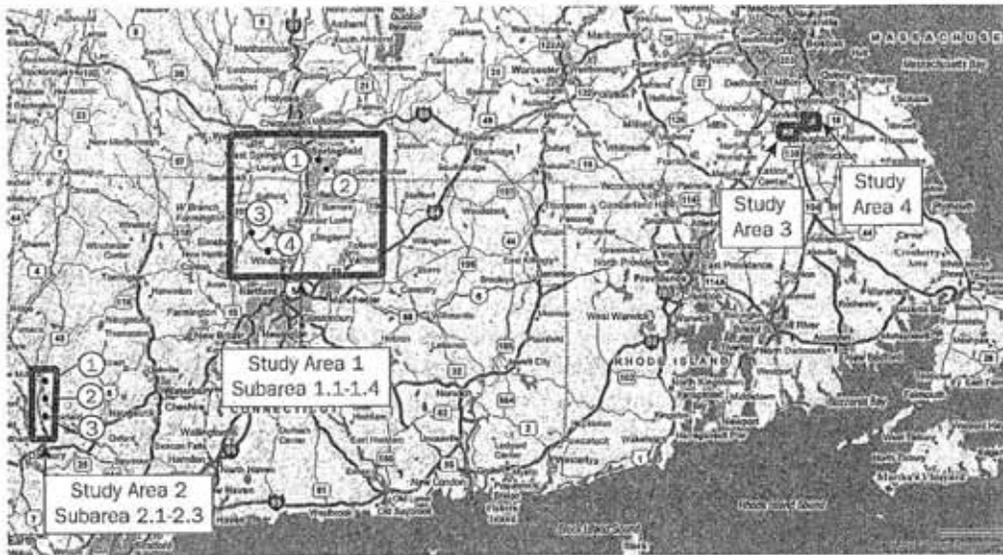
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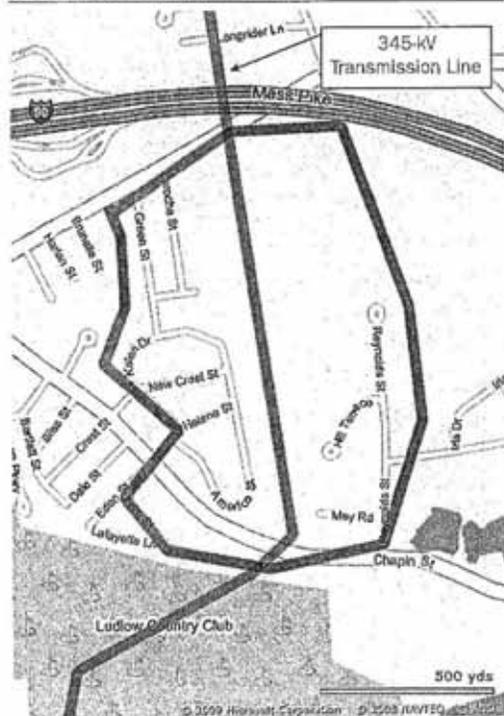
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### Appendix 1

#### Study Area and Subarea Locations



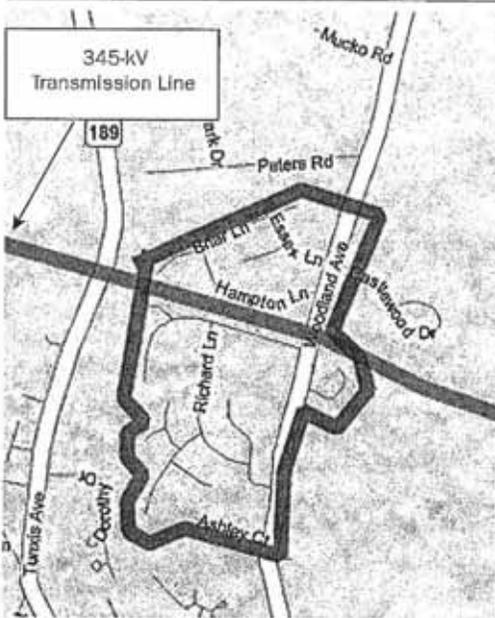
Study Area 1: Subarea 1.1



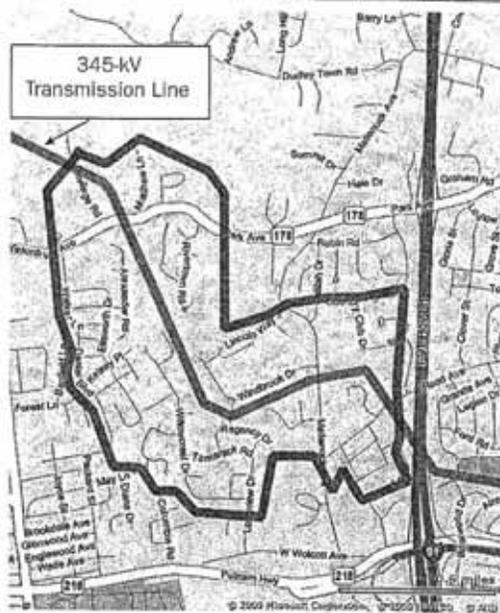
Study Area 1: Subarea 1.2



Study Area 1: Subarea 1.3



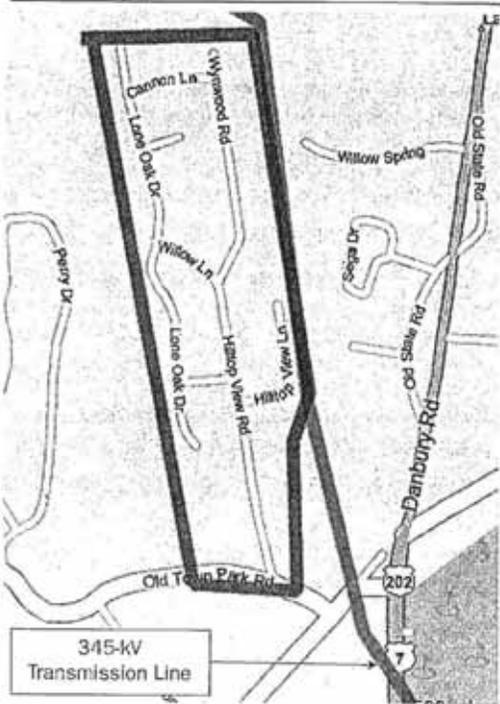
Study Area 1: Subarea 1.4



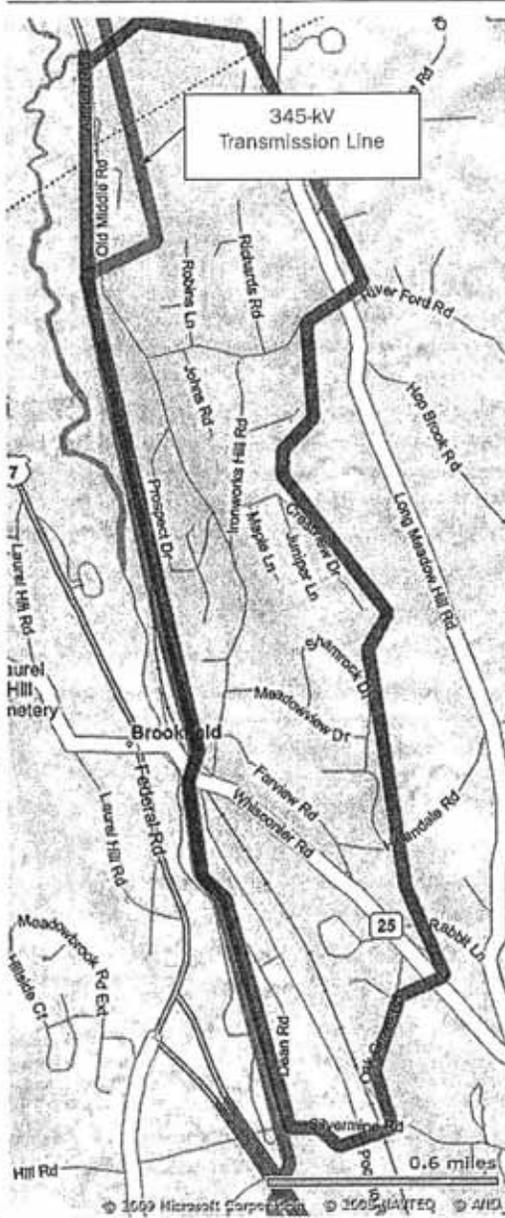
Study Area 2: Subarea 2.1



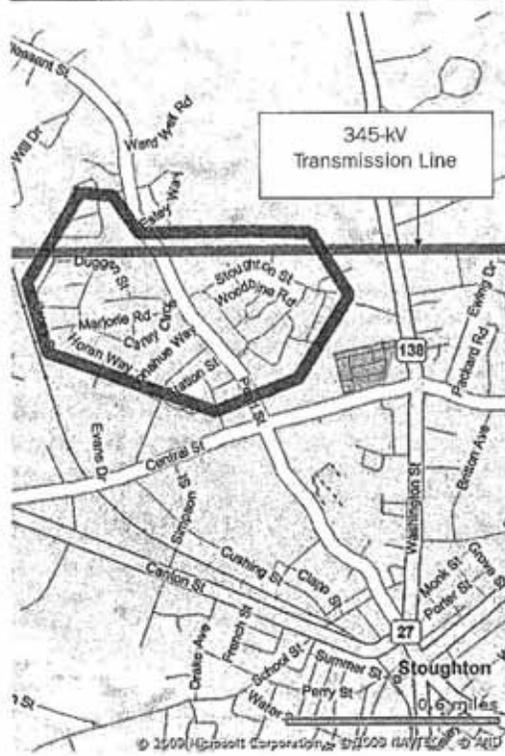
Study Area 2: Subarea 2.2



Study Area 2: Subarea 2.3



Study Area 3



Study Area 4



**Appendix 2****Descriptive Statistics by Study Area**

Property Characteristic	Study Area			
	A1	A2	A3	A4
Liveable Area (in sq. ft.)				
Mean	1,386.54	1,696.32	1,205.18	1,448.93
Median	1,288.00	1,500.00	1,144.00	1,346.00
Standard Deviation	363.98	678.62	307.85	478.05
Lot Size (in acres)				
Mean	0.4787	1.0542	0.2684	0.2936
Median	0.4140	0.9300	0.2180	0.2778
Standard Deviation	0.3978	0.9518	0.1476	0.1113
A/C				
Percent of Properties with A/C	25.05%	24.42%	23.53%	35.35%
Age				
Mean	34.20	37.24	50.07	46.78
Median	31.00	34.00	52.00	45.00
Standard Deviation	15.29	3.36	12.23	25.39
Total Bathrooms				
Mean	1.83	1.99	1.36	1.61
Median	2.00	2.00	1.00	1.50
Standard Deviation	0.56	0.76	0.55	0.71
Basement (in sq. ft.)				
Mean	793.85	975.87	384.40	867.82
Median	802.00	943.00	0.00	864.00
Standard Deviation	378.18	403.66	466.59	394.58
Deck (in sq. ft.)				
Number of Properties with Deck	295.00	240.00	43.00	178.00
Mean	204.53	312.21	219.33	168.74
Median	168.00	264.00	210.00	144.00
Standard Deviation	123.23	206.93	118.45	116.41
Garage (in sq. ft.)				
Number of Properties with Garage	393.00	316.00	53.00	170.00
Mean	452.67	470.23	335.72	440.16
Median	484.00	506.00	275.00	511.50
Standard Deviation	136.07	174.18	121.24	136.03
Porch (in sq. ft.)				
Number of Properties with Porch	225.00	152.00	87.00	176.00
Mean	138.12	166.41	128.86	128.98
Median	102.00	134.00	144.00	120.00
Standard Deviation	120.68	152.40	78.16	91.49

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## Is a property eligible for FHA if there are overhead or high voltage power lines nearby?

The appraiser must indicate whether the dwelling or related property improvements is located within the easement serving a high-voltage transmission line, radio/TV transmission tower, cell phone tower, microwave relay dish or tower, or satellite dish (radio, TV cable, etc).

1) If the dwelling or related property improvement is located within such an easement, the lender must obtain a letter from the owner or operator of the tower indicating that the dwelling and its related property improvements are not located within the tower's (engineered) fall distance in order to waive this requirement.

2) If the dwelling and related property improvements are located outside the easement, the property is considered eligible and no further action is necessary. The appraiser, however, is instructed to note and comment on the effect on marketability resulting from the proximity to such site hazards and nuisances.

Handbook 4150.2, Section 2-2(J)

[http://portal.hud.gov/hudportal/HUD?](http://portal.hud.gov/hudportal/HUD?src=/program_offices/administration/hudclips/handbooks/hsg/4150.2)

[src=/program\\_offices/administration/hudclips/handbooks/hsg/4150.2](http://portal.hud.gov/hudportal/HUD?src=/program_offices/administration/hudclips/handbooks/hsg/4150.2)

### REFERENCE

Handbook 4150.2, Section 2-2(J)

### REFERRAL LOCATION

### DISCLAIMER

DISCLAIMER: All policy information contained in this knowledge base article is based upon the referenced HUD policy document. Any lending or insuring decisions should adhere to the specific information contained in that underlying policy document.

**A. UNACCEPTABLE SITES**

FHA guidelines require that a site be rejected if the property being appraised is subject to hazards, environmental contaminants, noxious odors, offensive sights or excessive noises to the point of endangering the physical improvements or affecting the livability of the property, its marketability or the health and safety of its occupants. Rejection may also be appropriate if the future economic life of the property is shortened by obvious and compelling pressure to a higher use, making a long-term mortgage impractical.

These considerations for rejection apply on a case-by-case basis, taking into account the needs and desires of the purchaser. For example, a site should not be considered unacceptable simply because it abuts a commercial use; some commercial uses may not appeal to a specific market segment while other commercial uses may.

If the condition is clearly a health and safety violation, reject the appraisal and return it to the lender. If there is any doubt as to the severity, report the condition and submit the completed report. The lender must clear the condition and may require an inspection or reject the property. For those conditions that cannot be repaired, such as site factors, the appraised value is based upon the existing conditions.

**B. TOPOGRAPHY**

There are special hazards caused by unique topography. For example, denuded slopes, soil erosion and landslides often adversely affect the marketability of hillside areas. When evaluating the site, consider earth and mud slides from adjoining properties, falling rocks and avalanches. These occurrences are associated with steep grades and must be considered in the site analysis.

**C. SUBSIDENCE**

Danger of subsidence is a special hazard that may be encountered under a variety of circumstances:

- o where buildings are constructed on uncontrolled fill or unsuitable soil containing foreign matter such as organic material
- o where the subsoil is unstable and subject to slippage or expansion

In mining areas, consider the depth or extent of mining operations and the site of operating or abandoned shafts or tunnels to determine if the danger is imminent, probable or negligible.

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4150.2, CHG-1

hundred or dollars per thousand of assessed value. In the addendum to the VC, state the assessment, real estate tax liability and tax year. State the assessed market value of the subject property in the addenda.

- > If there is no method to relate the assessment to market value, such as new construction where reasonable assessment may not exist, mark the assessed market value response as "N/ A".

## 2. Special Assessment

A special assessment can be calculated in two ways:

- o the same way as real estate taxes, or
- o on a pro-rated basis

Determine how the special assessment is calculated and report the special assessment liability on the URAR.

- > If the property does not have special assessment, mark the URAR "N/A".

For example: An organization that services a community creates an annual operating budget. Each property becomes liable for its percentage of that budget based on the percentage of front feet their property has compared to the total amount of front feet as a special assessment in this community.

## ~~2-2. SPECIAL NEIGHBORHOOD HAZARDS AND NUISANCES~~

Physical conditions in some neighborhoods are hazardous to the personal health and safety of residents and may endanger physical improvements. These conditions include unusual topography, subsidence, flood zones, unstable soils, traffic hazards and various types of grossly offensive nuisances.

When reporting the appraisal, consider site hazards and nuisances.

- > If site hazards exist and cannot be corrected but do not meet the level of unacceptability, the appraisal must be based upon the current state.

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- > If the hazard and/or nuisance endangers the health and safety of the occupants or the marketability of the property, mark "YES" in VC-1 and return the unfinished appraisal to the lender.

(2-2) The lender, who is ultimately responsible for rejecting the site, relies on the appraiser's site analysis to make this determination. Guidelines for determining site acceptability follow. The appraiser is required to note only those readily observable conditions.

ownership rates, vacancies and the marketing time of dwellings in a neighborhood help the appraiser determine the strength of market demand and the extent of supply.

K. SMALL COMMUNITY MARKET PREFERENCES

A small town may have its own set of standards in architectural design, livability, style of mechanical equipment, lot size, placement of structures, nature of street improvements and in all features of the physical property and environment. Judge each in light of local standards and preferences.

L. OUTLYING SITES AND ISOLATED SITES

The segment of the market interested in purchasing homes in these sites compares the advantages and disadvantages of other outlying or isolated locations.

M. STUDY OF FUTURE UTILITY

The study of future utility is typically covered in the appraiser's Highest and Best Use Analysis and includes:

- o selecting possible uses
- o rejecting uses that are obviously lower or higher than the most probable use
- o analyzing differing motives of those buyers

The study of the future uses and utility of a particular property will lead the appraiser to the property's Highest and Best Use.

N. CONSIDERATION OF GENERAL TAXES AND SPECIAL ASSESSMENTS  
When estimating value, account for general taxes and special assessments:

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- o General real estate taxes related to specific sites are a recurring periodic expense in the ownership of taxable real property and must be accounted for in the value estimate.
- o Special assessments of various types are frequently an additional expense of

(2-1) ownership and must similarly be accounted for in the value estimate.

Determine the relative effect of the real estate tax and/or special assessment's burden on the desirability of the site. Enter this information on the URAR.

1. Assessment

The real estate tax liability is computed by multiplying the assessed value by the tax/ millage rate, which is typically expressed in dollars per

#### 7.. Character of Neighborhood Structures

The appraiser must carefully analyze the age, quality, obsolescence and appropriateness of typical properties in a neighborhood. Take into account the attitude of the user group as well as the alternative choices available to the specific market under consideration. This must be noted on the URAR and its effect must be quantified in the valuation analysis.

#### F. COMMUNITY SERVICES

Community services include commercial, civic and social centers. For a neighborhood to remain stable and retain a high degree of desirability, it should be adequately served by elementary and secondary schools, neighborhood shopping centers, churches, playgrounds, parks, community halls, libraries, hospitals and theaters. A lack of services in the community should be noted and quantified in the valuation analysis. The appraiser must note a change in these services and quantify the effect on value.

#### G. TRANSPORTATION

Ready access to places of employment, shopping, civic centers, social centers and adjacent neighborhoods is a requisite of neighborhood stability. The appraiser must take into consideration the transportation requirements of the typical family and quantify the effect on value.

2-3

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4150.2, CHG-1

#### H. UTILITIES AND SERVICES

(2-1)

The appraiser must consider these utilities and neighborhood services: police and fire protection, telephone services, electricity, natural gas, garbage disposal, street lighting, water supply, sewage disposal, drainage, street improvements and maintenance. Public services and utilities can affect value and must be quantified. A lack of these services should be noted and quantified in the valuation analysis.

#### I. NEIGHBORHOOD CHANGE CONSIDERATIONS

As time passes, desirability changes residential areas in any location. Therefore, give special consideration to the following:

- o infiltration of commercial, industrial or nonconforming use
- o positive and negative effect on value of gentrification
- o changes in the mobility of people (employment shifts)
- o weakly enforced zoning regulation or covenants

#### J. MARKETABILITY

The demand for home ownership in a neighborhood is directly related to the marketability of the homes in the neighborhood or in competitive neighborhoods. Home

characteristics or that a proposed or partially built-up neighborhood will develop in a desirable manner. Protective easements and covenants should be superior to any mortgage and should be binding to all parties and all persons claiming under them. These must be noted on the URAR and its effect must be quantified in the Valuation Analysis.

3. Inharmonious Land Uses

The appraiser must identify all inharmonious land uses in a neighborhood that affect value. Clearly define the current and long-term effect that inharmonious uses will have on the market value and the economic life of the subject property. If inharmonious land use represents a serious detriment to either the health or safety of the occupants or to the economic security of the property, clearly note safety of the occupants or

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CHG-1

to the economic security of the property, clearly note this on the VC and URAR. Recommend that the property be rejected by the Lender.

4. Natural Physical Features

(2-1)

The appraiser must consider favorable and underlying topography and site features, including pleasing views, wood lots, broad vistas and climatic advantages. Streets that are laid out with proper regard to drainage, land contours and traffic flow show good design and increase the desirability of the neighborhood. This must be noted on the URAR and its effect must be quantified in the valuation analysis.

5. Attractiveness of Neighborhood Buildings

The overall appeal of a neighborhood is strengthened if the buildings in a neighborhood harmonize with each other and their physical surroundings. A pleasing variety that results in harmoniously blended properties is desirable but not mandatory. The age of the structure is not in itself an important consideration; however, the maintenance of the structure over time has an important impact. Consider the amount of rehabilitation that has taken place or is taking place in a neighborhood. This must be noted on the URAR and its effect must be quantified in the valuation analysis.

6. Neighborhood Character

Mobility and economic growth can alter neighborhood patterns. Shopping, recreation, places of worship, schools and places of employment should be easily accessible. This must be noted on the URAR and its effect must be quantified in the valuation analysis.

placed. Digging of footing and placement of re-bar is not considered permanent.

Under Construction - From the first placement of concrete (permanent material) to 100% completion. Finalized and ready to occupy.

Existing - 100% complete and has occupancy permit.

2-1

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(2-1) Existing  
less than one year - Appraisal performed less than one year since receipt of final occupancy permit issued. For model homes, age begins with issuing of permit to use as a model.

For any home less than 2 years old, list month and year completed in the age box on the URAR.

#### D. ECONOMIC TRENDS

The appraiser must give consideration to, and include in the value analysis, the economic trends of a neighborhood and the general area, including:

- o price and wage levels (the purchasing power of community occupants)
- o employment characteristics
- o the current supply and demand for residential dwellings, including projects under construction
- o taxation levels
- o building costs
- o population changes
- o activity of real estate sales market and mortgage interest rates

#### E. LAND USE RESTRICTIONS

Site analysis determines the effects of actual and potential neighborhood land use on the subject site. The following factors form patterns for present and future land uses:

##### 1. Zoning

The appraiser should consider the effect on the value of appropriate and well-drawn zoning ordinances. Land-use controls that receive public approval and are strictly enforced protect residential sites from adverse influences that diminish the desirability of sites. This must be noted on the URAR, and its effect must be quantified in the valuation analysis.

##### 2. Protective Easement/Covenants

Properly drawn protective covenants have proven more effective than zoning regulations in providing protection from adverse environmental influences. When combined with proper zoning ordinances, these covenants provide the maximum legal protection to ensure that a developed residential area will maintain desirable

4150.2

4150.2 CHG-1

## 2 SITE ANALYSIS

### 2-0 INTRODUCTION

This Chapter addresses the site requirements for FHA-insured mortgages. Before the valuation process can begin, subject properties must meet specific site requirements. The appraisal process is the lender's tool for determining if a property meets the minimum requirements and eligibility standards for a FHA-insured mortgage. In addition, these standards provide a context for the appraiser in performing the physical inspection of the property.

### 2-1 SITE REQUIREMENTS

The purpose of site analysis is to identify the various site characteristics that affect the marketability and the value of the subject property. Site analysis requires the following:

- o determining the desirability and utility of the site
- o determining the degree and extent to which the site, because of external influences, shares in the market for comparable and competitive sites in the community
- o forecasting the likely changes at the site because of justifiable future trends
- o appraising the current situation and knowledge of the various trends that could affect the valuation of the real property

The principal of change is fundamental to appraising real estate and to properly analyzing a site. Value is created and modified by economic, social and governmental changes that occur outside the property. Evaluate the direction of these trends and determine their effect, if any, on the current value of the subject property.

#### A. NEIGHBORHOOD DEFINITION

The appraiser must clearly define the boundaries - north, south, east and west - of the subject neighborhood. By defining the neighborhood, the appraiser can extract pertinent information on which to base valuation conclusions.

#### B. COMPETITIVE SITES

Sites are competitive when they are improved with, or appropriate for, residential properties that are similar in accommodations and sales price or rental range for similar residents or prospective occupants. Compare features of the subject site with the same features of competitive sites within the community. An acceptable site must be related to the needs of the prospective occupants and to the alternatives available to them in other competitive locations.

#### C. DEFINITIONS - CONSTRUCTION STATUS

Proposed - No concrete or permanent material has been

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(also known as Runway Protection Zones) at civil airports or within Clear Zones at military airfields are ineligible for home mortgage insurance.

Properties located in Accident Potential Zone I at military airfields may be eligible for FHA insurance provided that the property is compatible with Department of Defense guidelines. For more information, see 24 CFR 51.303(b).

If new or proposed construction lies within these zones, mark "YES" in VC-1.

2. Existing Construction  
Existing dwellings more than one year old are eligible for FHA mortgage insurance if the prospective purchaser acknowledges awareness that the property is located in a Runway Clear Zone/Clear Zone. The lender will furnish this disclosure form to the

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4150.2 CHG-1

buyer. For a sample of the buyer's acknowledgment certification, see HUD Handbook 4150.1, REV-1, Chapters 4-26 (a) and (b).

- (2-2)  
> Note whether the property is in a Clear Zone and condition the appraisal on the buyer's acknowledgment.

I. PROXIMITY TO HIGH PRESSURE GAS

A dwelling or related property improvement near high-pressure gas, liquid petroleum pipelines or other volatile and explosive products - both above ground and subsurface must be located outside of the outer boundary of the pipeline easement.

- > If the property is less than ten feet away, mark "YES" in VC-1.

J. OVERHEAD HIGH-VOLTAGE TRANSMISSION LINES

No dwelling or related property improvement may be located within the engineering (designed) fall distance of any pole, tower or support structure of a high-voltage transmission line, radio/TV transmission tower, microwave relay dish or tower or satellite dish (radio, TV cable, etc.). For field analysis, the appraiser may use tower height as the fall distance.

For the purpose of this Handbook, a High-Voltage Electric Transmission Line is a power line that carries high voltage between a generating plant and a substation. These lines are usually 60 Kilovolts (kV) and greater, and are considered hazardous. Lines with capacity of 12-60 kV and above are considered high voltage for the purpose of this

Handbook. High voltage lines do not include local distribution and service lines.

Low voltage power lines are distribution lines that commonly supply power to housing developments and similar facilities. These lines are usually 12 kV or less and are considered to be a minimum hazard. These lines may not pass directly over any structure, including pools, on the property being insured by HUD.

> If the property is within the unacceptable distance, mark "YES" in VC-1.

K. SMOKE, FUMES, OFFENSIVE NOISES AND ODORS

Excessive smoke, fog, chemical fumes, noxious odors, stagnant ponds or marshes, poor surface drainage and excessive dampness are hazardous to the health of neighborhood occupants and adversely affect the market value of the subject property.

- > If these conditions threaten the health and safety of the occupants or the marketability of the property, mark "YES" in VC-1. If, however, the extent of the hazard is not dangerous, account for its effect in the valuation of the property.
- > Include other factors that may affect valuation such as offensive odors and unsightly neighborhood features such as stables or kennels.

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4150.2,CHG-1

L. FLOOD HAZARD AREAS

Designation of Special Flood Hazard Areas  
(2-2)

The Federal Emergency Management Agency (FEMA) determines Special Flood Hazard Areas nationwide, (SFHA). FEMA issues Flood Hazard Boundary Maps to designate these areas in a community. A special flood hazard may be designated as Zone A, AO, AH, AI-30, AE, A99, VO or VI-30, VE or V.

- o Only those properties within zones 'A' and 'V' require flood insurance.
- o Zones 'B' or 'C' do not require flood insurance because FEMA designates only zones 'A' and 'V' as "Special Flood Hazard Areas."

An appraisal report with a positive indication in a Special Flood Hazard Area (SFHA) activates a commitment requirement for flood insurance coverage. The appraiser must quantify the effect on value, if any, for properties within a designated flood map.

A lender shall reject a property in any of these circumstances:

- o if the property is subject to frequently recurring flooding
- o if there is any potential hazard to life or safety
- o if escape to higher ground would not be feasible during severe flooding conditions

#### FEMA Maps

For copies of FEMA's Flood Hazard Boundary Maps and Flood Insurance Rate Maps, contact:

Federal Emergency Management Agency (FEMA)  
 FEMA Map Service Center  
 P.O. Box 1038  
 Jessup, MD 20794-1038  
 Phone: 1-800-358-9616  
 Fax: 1-800-358-9620

#### Eligibility of Properties for FHA Insurance

The lender is responsible for determining the eligibility of properties in Flood Zones, and relies on the appraiser's notation on the URAR.

##### 1. New and Proposed Construction

If any part of the property improvements essential to the property value and subject to flood damage are located within the 100-year floodplain, then the entire property, improved and otherwise, is ineligible for FHA mortgage insurance unless a Letter of Map Amendment (LOMA) or a Letter of Map Revision (LOMR) is submitted with the case for endorsement. Proposed construction where improvements are located, or to be located, within a designated Special Flood Hazard Area (SFHA) is ineligible for FHA insurance. This is true regardless of whether the property is covered or will be covered by flood insurance unless the lender can furnish evidence of a LOMA, a LOMR or evidence that the property is not in a SFHA.

2-11

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 4150.2, CHG-1

(2-2) For existing properties located in a SFHA, make the appropriate notation in the URAR.

- > If the proposed improvements are located in a SFHA and there is no LOMA or LOMR mark "YES" in VC-1 and return the unfinished appraisal to the lender until these documents are retrieved.

##### 2. Existing Construction

Market attitude and acceptance determine the eligibility of existing properties located in a designated SFHA. Flood insurance is required for properties accepted for mortgage insurance in a FEMA-designated SFHA.

3. Condominium

The Homeowners Association is responsible for maintaining flood insurance on the project as a whole, not each individual unit. The appraiser must verify the location of a condominium in the floodplain and make the correct notation in the URAR.

M. STATIONARY STORAGE TANKS

Stationary Storage tanks containing flammable or explosive material pose potential hazards to housing, including hazards from fire and explosions.

- > If the property is within 300 feet of a stationary, storage tank containing more than 1000 gallons of flammable or explosive material, the site is ineligible. Mark "YES" in VC-1 and return the unfinished appraisal to the lender.

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2-12



March 12, 2013

**On behalf of all landowners impacted by Bonneville Power Administration, I-5 Corridor Reinforcement Project, we request that:**

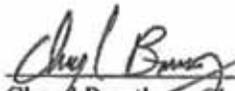
1. The project must minimize the impact on private property by not bisecting private land.
2. The corridor must follow property lines, running along the inside edges of land parcels. The corridor should be sited so that no trees will be taken from the adjoining property owner's land.
3. Wherever possible, the corridor must be sited on Department of Natural Resources land instead of private land.
4. On any land parcels that share boundaries with Department of Natural Resources land, lines and towers must be moved into DNR land so not to impact adjacent private land. The corridor should be sited so that no trees will be taken from the adjoining property owner's land.
5. Fish and wildlife habitat must be protected by following Washington State Forest Practices Act guidelines.
6. Water sources, both above and below ground cannot be adversely affected.
7. Property owners who lose real estate and property rights to this project must be paid full retail value.
8. Owners of agricultural and forest land should be paid for any present and future losses they may incur.
9. Loss of viewshed can have economic impact on property value and that loss must be fairly compensated.
10. BPA must comply with landowners' requests by offering natural alternatives to herbicide spraying.



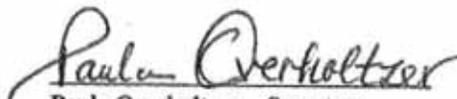
11. Due to questionable property lines, land surveyors must be provided to landowners who have lines and towers on or near their properties.
12. Upon landowner's request, BPA will reimburse the cost of biologists and foresters, each having a minimum 4-year degree and 5 years work experience in their respective fields.
13. BPA must pay a stipend of \$5,000 to each landowner toward expenses incurred as a result of responding to this proposed project.

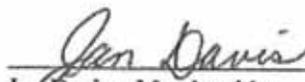
Thank you,

The board of A Better Way for BPA

  
Cheryl Brantley—Chair

  
Ray Richards—Vice Chair/Treasurer

  
Paula Overholtzer—Secretary

  
Jay Davis—Membership

A Better Way for BPA

14821

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**From:** noreply@bpa.gov  
**Sent:** Sunday, March 24, 2013 5:08 PM  
**Subject:** 14821: BPA I5 Comment Submission Confirmation

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

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](http://www.bpa.gov/goto/i-5)

Sincerely,  
Bonneville Power Administration

**Name:** Julie K Ainsworth-Taylor  
**Organization:** Bricklin & Newman  
**E-mail:**  
**Phone:**  
**Address:**

**Group type:** Special interest group

**Please ADD me to the mailing list.**

**Comment:**

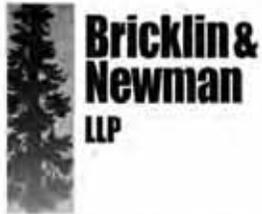
Bonneville Power Administration: On behalf of A Better Way for BPA, a coalition of rural property owners in Cowlitz and Clark Counties, I submit the attached comments in regards to the I-5 Corridor Reinforcement Project Draft Environmental Impact Statement dated November 2012. If you should have any problems in opening this attachment or questions about its content, please do not hesitate to contact me.

[Attachment](#)

14821-1

14821-1 Thank you for your comments.

14821



Seattle Office:

Spokane Office:

Contact:

Reply to: Seattle Office

March 28, 2013

Bonneville Power Administration  
 I-5 Corridor Reinforcement Project  
 PO Box 9250  
 Portland, OR 97207  
 Email: [I-5@bpa.gov](mailto:I-5@bpa.gov)

**RE: Comments on the November 2012 Draft Environment Impact Statement  
 for the I-5 Corridor Reinforcement Project - Dyrland Comments**

Bonneville Power Administration:

I write on behalf of A Better Way for BPA and its members to provide comments on the Draft Environment Impact Statement for the I-5 Corridor Reinforcement Project (DEIS) in regard to wetland impacts. Thank you providing the opportunity for the members of the communities impacted by this proposed project to comment.

A Better Way for BPA is a coalition of rural property owners in Cowlitz County and Clark County working together to address concerns over the construction of the Bonneville Power Administration's (BPA) proposed I-5 Corridor Reinforcement Project in southwest Washington. A Better Way for BPA is concerned about the impacts - economical, environmental, and aesthetical - that this proposed transmission line will have in their communities. A Better Way for BPA that, upon a more thorough review, BPA will realize that there are reasonable alternatives that will result in the maintenance of a healthy and diverse environment in the southwestern Washington communities of A Better Way for BPA's members.

Given the significance of the I-5 Corridor Reinforcement project to the communities it would impact, A Better Way for BPA retained the services of Richard Dyrland, a resource analysis and supervisory hydrologist. Mr. Dyrland's comments are attached.

While Mr. Dyrland's letter speaks for itself, A Better Way for BPA must emphasize a few key points. As A Better Way for BPA pointed out in their own comments as to the Troutdale Aquifer, Mr. Dyrland similar denotes the risk that comes with this project due to toxic contaminants. Risk to water, fish, and the public, according to Mr. Dyrland, are analyzed in a "light and basically inadequate" manner. Mr. Dyrland further points out the risk related to geological hazards given the presence of landslide and earthquake activity along transmission

14821-2

Page 2 of 3

14821-2 Thank you for your comments. Responses have been prepared for Mr. Dyrland's comments. Please see the responses to Comments 14775-1 through 14775-13.

14821

Bonneville Power Administration – I-5 Corridor Reinforcement Project  
March 28, 2013  
Page 2

routes. Based on his thoughtful review of the DEIS, Mr. Dyrland sets forth various recommendations to correct the deficiencies he discovered.

14821-2

BPA should carefully review Mr. Dyrland's analysis and recommendations. As with all of the inadequacies and deficiencies being raised to BPA, this information is essential to understanding the impacts the project will have and will allow the decision-maker and the public to be fully informed prior to making a final determination on the routing alternative. BPA must proceed to prepare a Supplemental DEIS to ensure that this information is fully disclosed and fully analyzed.

Thank you for your consideration of these comments.

Very truly yours,

BRICKLIN & NEWMAN, LLP

David A. Bricklin  
Julie K. Ainsworth-Taylor  
Attorneys for A Better Way for BPA

Enclosure

cc: Client

Page 3 of 3

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14822

March 22, 2013

TO: BPA

Here's what we know-

14822-1 It's the 21<sup>st</sup> century, yet you are still trying to apply mid 20<sup>th</sup> century concepts. We now know how devastating human impact and so called progress is to our environment. Yet, you somehow have failed to grasp the fact that we have to stop environmental destruction. We have the ability and technological tools to create innovative solutions and problem solve through new approaches, but you have chosen to take the easiest way out. Your preferred eastern route is just that, the easiest choice. It's not the harder correct choice, just the easiest one for you.

14822-2 For some reason our federal government has created an agency that seemingly reports to no one and has the authority to write its own limited and flawed report, review its own report, and approve its own report. Obviously, this extreme amount of latitude has corrupted your ability to choose the harder correct path for problem solving. With that amount of autonomous power, you should be leading us toward innovative yet tougher long term solutions, rather than following old policies and design concepts that have proven to be severely lacking in creating a harmonious balance with our environment.

14822-3 The electrical needs of California are driving your claim that this transmission line is needed. People there really don't care about how much of the environment here is destroyed or permanently impacted, all so that they can cool off with AC in the summertime. They don't even want to know where their power is coming from. They just want to be able to walk over to the wall, flip a switch, and have a light come on. Most people don't even need AC. I know this, because I lived in southern California for five years and lived quite comfortably without ever turning it on. AC is a luxury that marketing and commercialism has everyone convinced that they cannot live without. We certainly don't need it in the Pacific Northwest (except in poorly designed public and commercial structures). Better design, smarter living choices, alternative energy, etc. can solve any problems regionally without building this transmission line. Most people won't make those decisions on their own. They have to be led to the smarter solutions. That should be part of your mantra. Instead, you are ignoring any of these possibilities in your 20<sup>th</sup> century assumptions and 20<sup>th</sup> century calculations utilized in the attempt to quantify the need for this line.

14822-4 Your report has failed to evaluate the entire scope. Why? Because technically it's not required. However, that is no excuse for BPA not to do so. Here are a few places where you have faltered:

1. You have chosen a route that will result in substantially higher development and construction costs with no physical justification for doing so. To say this is poor business decision making is an understatement.

1 of 3

14822-1 Comment noted.

14822-2 Comment noted.

14822-3 Please see the responses to Comments 14144-2 and 14329-7.

14822-4 Please see the response to Comment 14110-1.

14822

- 14822-4 | 2. You have chosen a route that will result in substantially higher long term maintenance costs. To say this is poor business decision making is an understatement.
- 14822-5 | 3. You have chosen a route that will result in permanent negative impacts to business opportunities resulting from eco-tourism and equestrian tourism, etc.. There was no coordination with local entities regarding future plans for regional trail systems and there was no attempt to quantify the impacts. To say this is poor business decision making is an understatement.
- 14822-6 | 4. You have chosen a route that permanently increases our environmental footprint rather than reducing it. For instance, your report fails to quantify the number and quality of wetlands that will be impacted. You own staff has stated that is because you literally don't know, yet you are confident that the Army Corp will give you any needed permits. Considering that the Corp has an extremely poor reputation for timely cooperation in this region, that statement is quite bold, especially without knowing anything about quality or quantity. Unless, of course, you have already made special "arrangements" with them. It still amazes me how you have created an EIS that doesn't come close to adequately addressing the "E".
- 14822-7 | 5. While your industry claims that there is no proof of detrimental physical effects due to EMT, you have erred on the side of caution and chosen a route with a lower percentage of exposure, probably from concern of future lawsuits. Now, here is the million dollar question. If EMT is detrimental to humans, why is it OK for us to expose native flora, fauna, ecosystems, etc. to the same impacts? I'm sure science will prove that if it's bad for us, it's pretty much bad for the rest of the environment.
- 14822-8 | 6. Your math is creative at the least. I'm told that the number of property owners whose land, outside of your existing easement, who would be impacted is approx. 100. Not the thousands that you claim. However, the number of property owners along your chosen eastern route is 350-400.
- 14822-9 | 7. Permanent loss of land for any potential future revenue for property owners. Yet, they get to continue paying property taxes on the easement. What can be said, other than the phrase "cruel and usual governmental punishment". Also, you have failed to estimate the future economic loses, both to the individuals and with regard to tax revenue.
- 14822-10 | 8. The property values along your chosen eastern route will be severely impacted, obviously in a negative fashion. You have failed to approximate these in terms of tax revenue loses, as well as the shift of tax burden to other properties in the county.

Here's what I think-

- 14822-11 | I think you need to stand back for a moment. You have chosen a route that in the short and long term costs more (which means ultimately the consumer will be paying more), unnecessarily permanently decimates the ecosystems of numerous acres, unnecessarily negatively impacts substantially more property values, unnecessarily reduces known future revenue streams, unnecessarily negatively impacts the long term local economy, and in all probability you have already cut behind closed doors deals with

2 of 3

- 14822-5 Chapter 6, Recreation, describes the potential impacts of the project on recreational resources. Section 11.2.2.8, Community Values, describes the potential economic effects of changes in recreation. Please also see response to Comment 14674-1.
- 14822-6 Please see the response to Comment 14753-1.
- 14822-7 Please see the response to Comment 14332-1.
- 14822-8 Please see the responses to Comments 14096-1 and 14291-3.
- 14822-9 Please see the response to Comment 14140-2.
- 14822-10 Please see the response to Comment 14291-3.
- 14822-11 BPA's Preferred Alternative is the Central Alternative using Central Option 1. Please see the response to Comment 14110-1.

14822

both the Army Corp and the largest commercial property owners. Wow....that's quite a preliminary list. Shall I keep going? If you were my consultant, I would have already fired you.

I think you chose the eastern route and twisted the facts for justification, because it quiets the most voices. It certainly isn't the best choice. I also think that the politicians literally don't care. Their only concern is getting re-elected and there are fewer votes to lose along the eastern route than there are along your existing easement.

There are only two correct choices. The best choice is not to build the line at all and take all the money that would have been invested both short and long term and innovatively resolve energy issues on a regional basis. That is an extremely viable option that has not even begun to be thoroughly explored.

14822-11

The second best choice is to locate the line in your existing easement. That would minimize the budget and minimize impacts to the environment, economy, and private property. That physical area has already been permanently blighted, ecosystems destroyed, and property values reduced due to our human impact. The best option for all new development is to go back and redevelop where we have already destroyed the native environment.

Your preference for the eastern route is an unbelievable abuse of authority and absolute failure to act responsibly and intelligently. The blame for that rests squarely with you. The 20<sup>th</sup> century began with the industrial age and ended with the information age. Wouldn't it be wonderful if we could now enter into an age of enlightenment. Part of the invocation at the West Point Chapel goes like this: "Make us choose the harder right instead of the easier wrong, and never to be content with a half-truth when the whole truth can be won." That should be everyone's mantra, especially yours.

With all due unearned respect,

Cheryl Manford

3 of 3

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14823

March 25, 2013

Mr. Steve Manlow and Bonneville Power Administration:

14823-1

I am a part owner in a commercial farm, Keatley Cowlitz Farm L.L.C., located in Castle Rock, Washington and will be impacted by The I-5 Corridor Reinforcement Project (Permit Applicant's Name: Bonneville Power Administration, Reference Number: NWS-2011-346). I am currently not working on the farm but have plans to return to build a home on this farm in the near future. The best building sites on the farm are at the highest point – crown of the ridge – in a cleared portion currently used for agriculture and your proposed location for towers and line overpass. This preferred central alternative option 1 route has a negative impact to me, my family and our plans for the future.

14823-2

A question: Why did BPA choose this segment in the \_\_\_\_\_, to locate towers and line that passes over the city of Castle Rock's urban growth area? This is not necessary; especially now that the preferred substation site, Casey Road, is located miles north with a more direct path existing east across a less congested Cowlitz River Valley in one tangent, avoiding the populated area immediately in and around Castle Rock. The beginning 3.5 miles due east of the substation/switchyard is mostly (over 70%) public land which does not pay annual property tax. These state trust lands have lower economic value than private lands because public timber cannot participate in Free Trade (i.e. export markets) and generally have higher administration costs. Please refer to the map, of this one mile wide corridor, submitted to BPA on September 3, 2010, crossing the Cowlitz Valley east of the proposed Casey Road Substation to Interstate 5, well north of the populated area at Castle Rock.

14823

My request to BPA is to please reopen the scoping process to now fully evaluate this proposed route segment. This is one of several routes that would be better public policy than the preferred alternative and have much less impact to residents.

Thank you for this opportunity to comment on the I-5 Corridor Reinforcement Project.

Sincerely,

Darla Gilman

Cc: Steve Manlow, Army Corps of Engineers; Governor, Jay Inslee; U.S. Senator, Patty Murray; U.S. Senator, Maria Cantwell; Congresswoman, Jaime Herrera-Beutler

- 14823-1 Please see the response to Comment 14097-1. Between the distribution of the Draft and Final EIS, BPA was able to discuss the location of the alignment on the Keatley Cowlitz Farm LLC property with Mr. Keatley. BPA did move the proposed line to avoid existing residences and cleared areas identified for potential building sites.
- 14823-2 Please see the responses to Comments 14395-2 and 14801-3.

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**From:** noreply@bpa.gov  
**Sent:** Sunday, March 24, 2013 10:23 PM  
**Subject:** 14824: 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](http://www.bpa.gov/goto/i-5)

Sincerely,  
 Bonneville Power Administration

**Name:** Rodney L. Smith  
**Organization:**  
**E-mail:**  
**Phone:**  
**Address:**

**Group type:** Private citizen

**Please ADD me to the mailing list.**

**Comment:**

Mr. Mark Korsness, Project Manager I-5 Corridor Reinforcement Project Bonneville Power Administration  
 P.O. Box 9250 Portland, OR 97207 RE: Bonneville Power Administration I-5 Corridor Reinforcement Project  
 Draft EIS Comments Dear Mr. Korsness: My name is Rod Smith and I have property on Vinemaple Road along the "P-Line" section of BPA's "Central Alternative", your preferred route for the "I-5 Corridor Reinforcement Project". I have many concerns about this project and how it will affect my family, my property and my way of life. We are considering building a new home on our property. That will not happen if this project is built as currently configured. I am worried about the electromagnetic field (EMF) this project will create and the impact it will have on humans, wildlife and the general environment. I am worried I might be put at risk with such a powerful electric current so close to our property. What guarantees can BPA offer us to ensure there will be no problems if this project is built? Many of us are also concerned about the long term exposure to EMF. Some studies blame EMF for an increased risk of childhood cancer. What concrete steps will BPA take to make sure these risks are minimized? If EMF is safe, why wasn't the existing route, BPA's right of way, selected as the preferred route for this project? My wife has an electronic nerve stimulator. How will you ensure this project will not have any impact on her? Vinemaple Road is really nothing more than a dirt/gravel road that neighbors pooled their funds together to pay to have paved. If BPA decides to access our roads and properties we want to make sure BPA improves Vinemaple Road so it is left in a better condition than it was found. Heavy equipment and trucks will surely cause damage. It is only fair that BPA spend some money on infrastructure if BPA is

14824-1

14824-2

14824-3

14824-1 Please see the response to Comment 14097-1.

14824-2 Please see the responses to Comments 14328-6 and 14510-2.

14824-3 Please see the response to Comment 14119-2.

14824

14824-3 going to use our private roads and driveways. Our neighborhood is beside state Department of Natural Resources land. The state created fish and wildlife buffers in place as part of the Oceanspray Timber Sale, which was completed in 2010. BPA now proposes to destroy that buffer and build these transmission lines practically right on top of some of the homes in our neighborhood. I would like to see BPA find a route that is not in such a sensitive ecological area. BPA needs to do a complete wildlife inventory of this area. Trout swim in this fork of North Lacamas Creek; we also have Bald Eagles and many other migratory birds, bats, deer, salamanders, cougar, bears and a wide variety of other unique wildlife and plants. We want to make sure BPA spares no expense in protecting these sensitive areas if this configuration is chosen. Studies should be conducted which evaluate the danger the transmission lines and lattice towers will have on raptors and bats. Security is also an important issue for us. What steps will BPA be taking to ensure the general public has minimal access to the new transmission corridor? And what programs has BPA created to "hold harmless" property owners whose property or access becomes the focus of a lawsuit by a party injured by BPA infrastructure? Landowners should not be held responsible for anything that happens that might injure somebody if it's related to this project. With a unified voice, our neighborhood opposes the proposed location of this portion of this project. I have attached a review of the Draft Environmental Impact Statement (DEIS); we make comments specifically on BPA's findings, and we offer alternatives that will cause far less damage to the environment of the Vinemaple Road neighborhood. Please take all of our comments seriously. We are confident that if you read them and research our conclusions, you will realize the present configuration of the "P-Line" is catastrophic from an environmental standpoint. You will also see that we are presenting an alternative that does far less environmental damage and has far less impact on human beings. Thank you for your consideration, Rod Smith

[Attachment](#)

- 14824-4 Please see the response to Comment 14097-1.
- 14824-5 Please see the responses to Comments 14242-1, 14457-2, and 14532-3.
- 14824-6 The referenced attachment with specific Draft EIS comments has been processed separately. Please see the responses to Comments 14714-1 through 14714-15.

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

RE: Bonneville Power Administration I-5 Corridor Reinforcement Project Draft EIS Comments

Dear Mr. Korsness:

We are a group of homeowners who live adjacent to the "P Line" which has been selected by your agency as the preferred alternative for the I-5 Corridor Reinforcement Project. We offer the following comments:

**CONCERNS ABOUT THE PROCESS:**

As you know, the "P Line" alternative was added in 2010 after the official public scoping period had closed in 2009. We were told on numerous occasions by BPA personnel that although our comments<sup>1</sup> were being submitted after the scoping period ended, they would be treated as if they were submitted during the official scoping period (which of course had closed prior to the addition of this alternative).

A careful examination of the Draft EIS does not show any instances where our specific comments in regards to environmental impacts of the location of the "P Line" within approximately 3000 linear feet of the Riparian Management Zone (RMZ) and Wetland Management Zones (WMZ) of the North Fork of Lacamas Creek, adjacent to our properties were addressed.

Since our comments on this critical environmental issue do not seem to be addressed in the Draft EIS, we are concerned that our comments were not even evaluated. We also question whether we have been treated fairly and equitably in this process considering that the alternative that most impacts us was added after the close of the official scoping period. We believe your agency has made an error in locating a portion of the "P Line" adjacent to our properties and this alignment will result in significant impacts to water quality and wildlife. We have previously submitted most of the information contained herein. We are submitting these comments again as "official" comments to the Draft EIS.

**THE "P LINE": LOCATION**

The "P Line" adjacent to our property is located along the western boundary of the Department of Natural Resources (DNR) ownership in Section 25, Township 3 North, Range 3 East, Willamette Meridian. The enclosed Exhibit "A" shows proposed towers P/22, P/23 and P/24 along that boundary.

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<sup>1</sup> Comment submitted to BPA by Bolton Minister dated May 26, 2011

In 2009 and 2010 the DNR logged a portion of its property in that section under the file name "Oceanspray Timber Sale #84262". Enclosed (as Attachment #1) is a copy of the State SEPA document for that timber sale. According to that document, the DNR conducted a detailed study of the property to make sure that any logging conformed to the Washington State Forest Practices Act (Chapter 76.09RCW). As a result of the study, DNR developed a Forest Practices Habitat Conservation Plan (HCP) that conformed to the Act. DNR determined that the easterly branch of the North Fork of Lacamas Creek adjacent to our property was a "Type 3 Water" (the State's definition of a "Type 3 Water" is enclosed as Attachment #2). The creek is classified as "Type 3 Water" because it provides a significant habitat for fish and wildlife, and is highly significant for protection of downstream water quality.

We have personally observed the presence of cutthroat trout and salamanders in the creek have seen many black tailed deer, black bear, bald eagles, osprey, owls and blue heron in and around this section of Lacamas Creek. The DNR, following the requirements of the Forest Practices Act, established Riparian Management Zones (RMZ) and Wetland Management Zones (WMZ) which range between 175 and 190 feet wide per side for the Type 3 Streams to protect water quality, provide corridors for wildlife and maintain a habitat for fish and amphibians (see Mitigation Measures Attachment #1 SEPA document). These RMZ and WMZ were not logged or disturbed in any way during the Oceanspray timber sale (see Exhibit "A").

The alignment of the proposed "P Line" is almost entirely within the riparian and wetland management zones of this "Type 3" stream along approximately 3,000 linear feet of the western boundary of Section 25 and Section 24 to the north. This alternative would result in the clearing of native vegetation, logging mature trees, and building towers in this riparian and wetland management zone which would be in direct conflict with the Washington State Forest Practices Act and the Forest Practices Act Conservation Plan (HCP) that was established for the Oceanspray Timber Sale. Conducting these activities would significantly impact an ecosystem that was specifically protected by the State of Washington when they logged this area. The problem with this proposal is that the alignment of the "P Line" goes up the creek corridor rather than simply crossing the creek. Not only will this alternative destroy the local ecosystem, it will also seriously impact the downstream water quality by increasing turbidity, spreading noxious weeds and invasive species, raising stream temperatures and adding pollutants to the stream system through the use of herbicides that will be used to control vegetation under the transmission lines.

**DEIS RESPONSES:**

The Draft EIS addresses the impacts of the disturbance of these sensitive areas in several chapters.

**CHAPTER 5-FISH:**

This chapter addresses the long term impacts to streams. Section 5.3.15.1 states: "There will be long-term impacts to streams temperature caused by continued vegetation removal

maintaining less shade and woody debris." The section also states that elevated temperatures will have high impacts on fish and amphibians.

**Comment:** The alignment of the "P Line" adjacent to our properties would require the removal of over 10 acres of native vegetation from the RMZ and WMZ zones of the North Fork of Lacamas Creek. This would have a significant impact on local fish and wildlife, particularly amphibians.

Section 5.3.15.2 states: "Adherence to stream buffers would minimize impacts on fish".

**Comment:** The design of the "P Line" DOES NOT adhere to the avoidance of impacts to stream buffers. The current design would wipe out 10 acres of prime riparian and wetland management buffers.

Section 5.3.15.3 – Impacts Unique to the Central Alternative: This section addresses forested stream crossings and impacts on fish bearing streams for shade and increased temperature.

**Comment:** This section only addresses the impacts of stream crossings but does not address the construction of the transmission line corridor straight up a stream corridor. The impacts associated with stream crossings would likely be significantly less than the impacts associated with construction up an entire stream corridor.

#### **Chapter 15-Surface Water**

In section 15.1.4 of this chapter, it states that portions of Lacamas Creek are 303(d) listed for elevated levels of fecal coliform and low levels of dissolved oxygen and pH. The Washington Department of Ecology began studying water quality in the Lacamas Creek drainage in February of 2011; this study is ongoing. Publication number 11-030102 summarizes the findings to date. Sample site #6 is located in Camp Bonneville downstream of this portion of the North Fork of Lacamas Creek. The study shows that Lacamas Creek, approximately a half mile upstream of sample site #6, is 303(d) listed for elevated levels of dissolved oxygen and pH, elevated temperature and elevated fecal coliform.

**Comment:** If the "P Line" is constructed in its current location, directly upstream of sample site #6, the removal of over 10 acres of vegetation and woody debris from the riparian buffer zone will impact water quality in this 303(d) stream by elevating water temperature, increasing sediment loading and potentially exacerbating other water quality concerns such as low dissolved oxygen and high fecal coliform.

Section 15.22.2.1 – Construction: This section addresses the impacts to fish bearing streams by removal of vegetation and road construction.

**Comment:** Proposed access roads to construct and service towers P/22 and P/23 would require four (4) road crossings of Type 3 streams (see Exhibit "A"). These access roads would be built in Section 25, entirely within the RMZ and WMZ zones of the Type 3 streams, requiring additional clearing and logging. This would increase turbidity in the stream during construction. As these road crossings will be permanent they will have long-term, highly negative impacts on water quality and the riparian corridor of these Type 3 fish bearing streams.

The private driveway and private Vinemaple road were not constructed to support heavy construction equipment and would require BPA to completely reconstruct these private accesses.

Section 15.2.8 – Recommended Mitigation Measures: This section lists mitigation measures. One of the mitigation measures stated is: "Avoid or minimize clearing riparian vegetation where possible, especially where it may affect a 303(d) listed water".

**Comment:** The proposed alignment of the "P-Line" DOES NOT avoid or minimize clearing of riparian vegetation along the North Fork of Lacamas Creek which flows directly into a 303(d) listed water.

Another mitigation measure listed in this section recommends minimization of herbicide applications adjacent to streams.

**Comment:** We have been told by BPA officials that herbicides cannot be sprayed within the riparian zones. If this is true, this section of the "P Line" would require long term hand removal of more than ten (10) acres of vegetation in the RMZ and WMZ zones along over 1/2 mile of transmission lines.

#### **Chapter 16-Wetlands**

Section 16.2.2.1 – Construction: This section states: Towers and roads would be located to avoid wetlands as much as possible. Clearing trees and shrubs from medium-or high-quality forested and scrub/shrub wetlands and wetland buffers along right-of-way and new access roads also would be a long term, high impact. Conversion of medium- or high-quality wetlands and buffers to low- or medium-quality would remove habitat, alter hydrology through a decrease in evapotranspiration or increase in direct precipitation onto soils, increase soil and water temperatures from lack of shading, and possibly introduce weed species. Dense vegetation common in scrub/shrub wetlands, offering cover, breeding habitat, and foraging opportunities would be lost or modified. Vegetation removal would also cause impacts to species diversity and richness and continuity with adjacent habitat.

**Comment:** The "P line" location along the west line of Section 25 would be built over the RMZ and WMZ zones of the North Fork of Lacamas Creek. Along this Type 3 stream, there are many pockets of forested wetlands associated with the stream. There is also a large pond that was manmade that is partially on Craig Shigeno's property and partially on DNR land. The proposed transmission line would be built right over the top of this pond. The pond has been there for over 35 years and shows up as a wetland on the National Wetland Inventory Maps (See Exhibit "D"). The clearing and construction of the transmission corridor would have a significant impact on the functions and values of these wetlands. Tower P/23 is proposed to be built within the wetland buffer just south of the pond. The proposed access road to maintain the tower would also be built within the wetland and the associated wetland buffer. The pond is home to fish and amphibians. The overhanging vegetation provides shade and cover to these species. The pond is frequently visited by many migratory birds. Ducks mate and hatch young in the vegetation around the pond. Clearing the vegetation within the wetland buffer will raise water

temperatures, impact water quality, and destroy breeding and foraging opportunities for all of these species. The presence of the transmission corridor will have a permanent, highly negative impact on this ecosystem. The transmission lines and towers will create a hazard for migratory birds including, osprey, blue herons, owls and bald eagles flying into and out of this pond.

The access roads to towers P/23 and P/24 would be built partially within the forested wetlands and partially within the RMZ and WMZ zones associated with the Type 3 streams. The four (4) stream crossings would permanently impact the streams and associated wetlands. Water quality in the streams and wetlands would be impacted during construction and long after construction is complete by the loss of riparian vegetation and the runoff from the access roads.

#### **Chapter 17-Vegetation**

Section 7.2.2 states: that removal of vegetation in forested wetlands opens up those areas to non-native invasive plant species and the establishment of noxious weeds.

**Comment:** The removal of 10 acres of native vegetation in the forested wetlands and Riparian Management zones along the north fork of Lacamas Creek between towers P/21, P/22, P/23 and P/24 would open up those areas to non-native invasive species and noxious weeds.

#### **Chapter 18-Wildlife**

South of Rawson Road in Section 23 and 24 the "P Line" bisects a designated Washington State Department of Wildlife snag rich area. The area is known as "North Fork Lacamas Snags", a snag rich area for nesting raptors.

**Comment:** The "P Line" would clear 3 acres of this snag rich area. The Draft EIS lists this as a "high impact". This is discussed in chapter 18 under sections 18.1.2.6 and 18.2.5.2 tables 18-5 and 18-6 and shown on map 18-D.

#### **APPENDIX A – DNR LANDS ANALYSIS**

Section A.2.4.2 Best Practices: This section recommends best practices to accomplish the following objectives concerning the I-5 Corridor Reinforcement Project:

- Protect water quality and avoid sediment loading into water bodies.
- Protect sensitive areas and reduce ecosystem impacts.
- Maintain natural channels, natural stream flow and maintain passage for aquatic organisms.

**Comment:** The proposed alignment of the "P Line" from tower P/21 through tower P/24 is in direct conflict with these objectives and fails to implement any of these identified best management practices.

#### **CAMP BONNEVILLE IMPACTS:**

This branch of Lacamas Creek flows directly into Camp Bonneville to the south. Enclosed (as Attachment #3) is a "Site Description" of Camp Bonneville. This is Section 2 of an environmental review that was performed for the U.S. Army Corps of Engineers, Seattle District under Contract No.DACA87-00-D-0038, Task Order #17. Section 2.2.11 lists threatened and endangered species and Federal and State species of concern in Tables 2.1 and 2.2. If these

species exist in Camp Bonneville which is ½ mile to the south, it is logical to assume that these species exist partially or wholly along this branch of Lacamas Creek and could be impacted by the project. Even if the species are not found within the impact area, those species that exist within the boundaries of Camp Bonneville could be indirectly affected by any upstream deterioration of water quality caused by this project.

Camp Bonneville is currently undergoing an extensive environmental clean-up as a Superfund site. The lead agency in this project is the Washington State Department of Ecology (DOE). Any further water quality degradation caused by this BPA project will further aggravate DOE efforts to clean up the Camp Bonneville site.

**ALTERNATIVES TO THE CURRENT "P LINE" ALIGNMENT:**

We would like BPA to consider three re-alignment alternatives for the "P Line" that would be far less damaging to the ecosystem on the northern forks of Lacamas Creek.

We have prepared Exhibits "B" and "C" for your consideration which shows two potential realignment options.

**The first option**, as shown in orange on Exhibit "B" and "C", was actually proposed by the DNR in their comments dated May 10, 2011. As shown in attachment #4 as highlighted, this alignment would head north from tower P/27 across DNR land in Section 25, T3N, R3E, and Ek Family Trust timberland in the south half of Section 24 and Longview Timber LLC land in the north ½ of Section 24, then would turn west along the south line of Section 13 on DNR land and intersect the original "P Line" alignment between towers P/17 and P/18. This alignment would for the most part appear to cross streams at or near right angles which would minimize buffer impacts.

There is, however, a Type 5 stream that appears to lie beneath the proposed alignment of this alternative for a short distance. Type 5 streams tend to only have seasonal flow and do not support fish. There is also a potential wetland on a Type 4 stream in the SW ¼ of the NE ¼ of Section 24 along this alignment that shows up on the National Wetlands Inventory mapping (see Exhibit "D", National Wetlands Inventory map). While the towers could be located outside of the wetlands and buffers, the transmission lines would still pass over the wetlands. Vegetation clearing under the transmission lines could have a negative impact on those wetlands. Those impacts would, however, be far less damaging than the stream and wetland impacts along the Type 3 stream along the current alignment of the "P Line" on the west lines of Sections 24 and 25 as discussed previously. This alignment would also avoid impacts to the WDFW designated snag rich area known as the "North Fork Lacamas Snags" in the area of tower P/20.

**The second option**, as shown in green on Exhibit "B" and "C", would, in our opinion, be a better option to reduce impacts to the Lacamas Creek watershed. That option would head north between Towers P/29 and P/30 along the west lines of Section 30 and 19 of T3N, R4E on DNR land and then head west along the south line of Section 13 of T3N, R3E on DNR land and

intersect the original "P Line" alignment between towers P/17 and P/18. This alignment would cross DNR land in Section 30 and then go along the west boundary of DNR land in Section 19 and along the south boundary of DNR land in Section 13 of T3N, R3E. This alignment would cross several smaller streams at or near right angles. The stream classifications are mostly Type 4 and 5 streams with much narrower riparian buffer widths than the Type 3 streams along the west line of Sections 24 and 25. Type 4 Stream standard buffer widths are 65 feet. Type 5 Stream standard buffer widths are 15 feet (see Attachment #2). This option would not cross any known wetlands. This option would have far less impacts to the Lacamas Creek ecosystem than the original "P Line" alignment or the first option discussed previously. This option would also avoid any impacts to the "North Fork Lacamas Snags Area".

This option would follow the boundaries of DNR land except for the south mile, where it bisects DNR land. It however would eliminate about a mile of the original "P Line" that bisects DNR land on an angle. The option would be entirely on public land.

**A third option** would be to realign the corridor to the original "32 Line". That option would locate the transmission corridor high up on a ridge and would have minimal impact, if any, on the Lacamas Creek drainage.

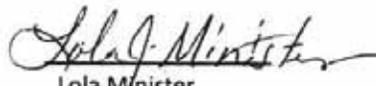
We are many neighbors, and we are speaking with one voice when we urge you to consider and specifically respond to these comments on the Draft Environmental Impact Statement for BPA's I-5 Corridor Reinforcement Project.

Sincerely,

Vinemapple Road Neighbors



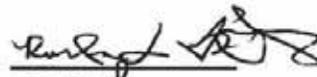
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Lola Minister



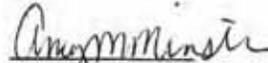
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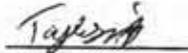


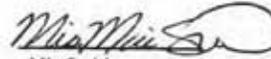
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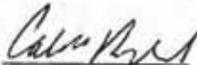
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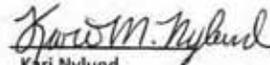
  
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Amy Minister

  
Taylor Smith

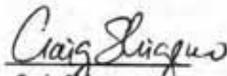
  
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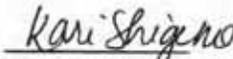
  
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Kari Nylund

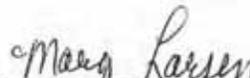
  
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Deanne Isaacson

  
Craig Shigeno

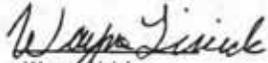
  
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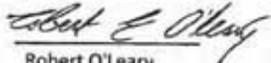
  
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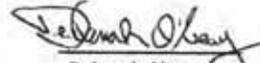
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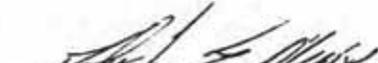
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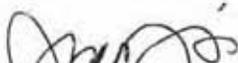
  
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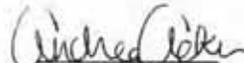
  
Robert O'Leary

  
Deborah O'Leary

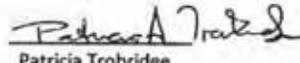
  
Rob O'Leary

  
Meghan O'Leary

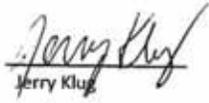
  
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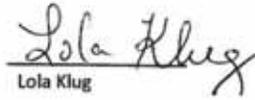
  
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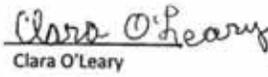
  
Patricia Trobridge

14824

  
Jerry Klug

  
Lola Klug

  
Gordon O'Leary

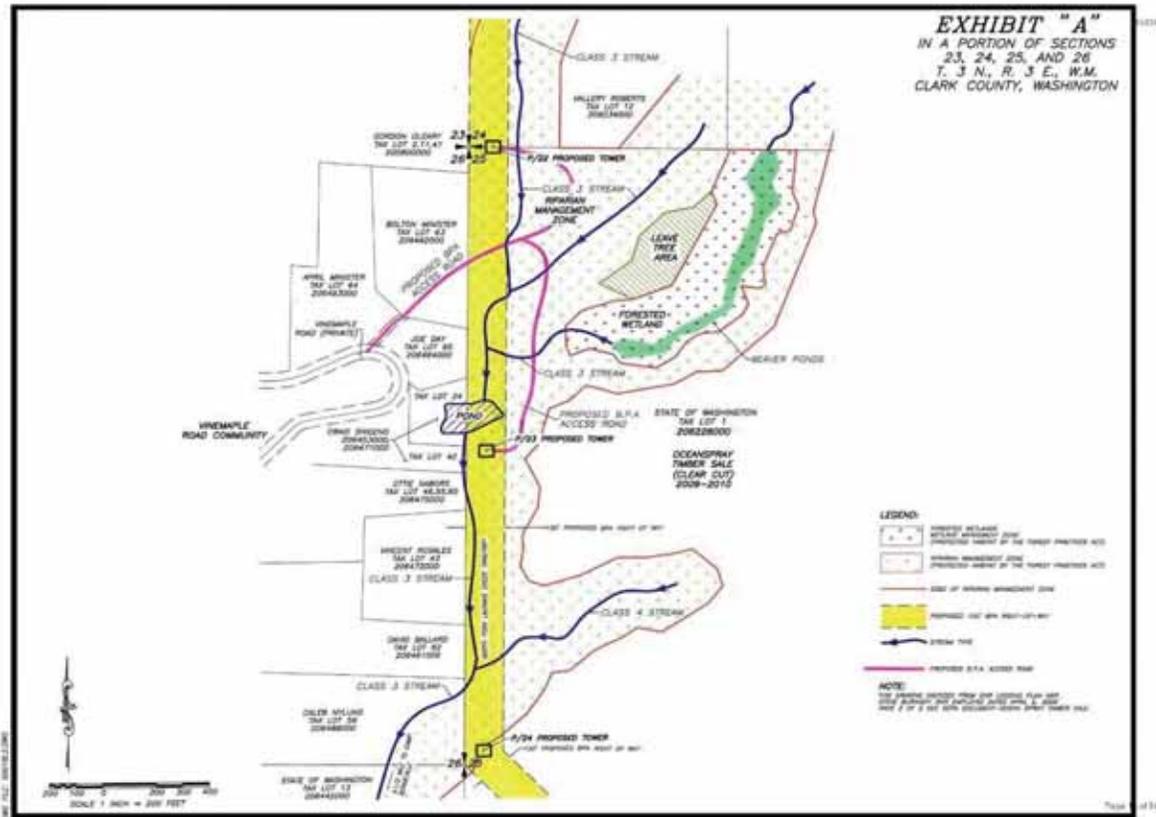
  
Clara O'Leary

  
David Ballard

  
Gordon O'Leary, Jr.

  
Rodney Nylund

  
Julie Nylund





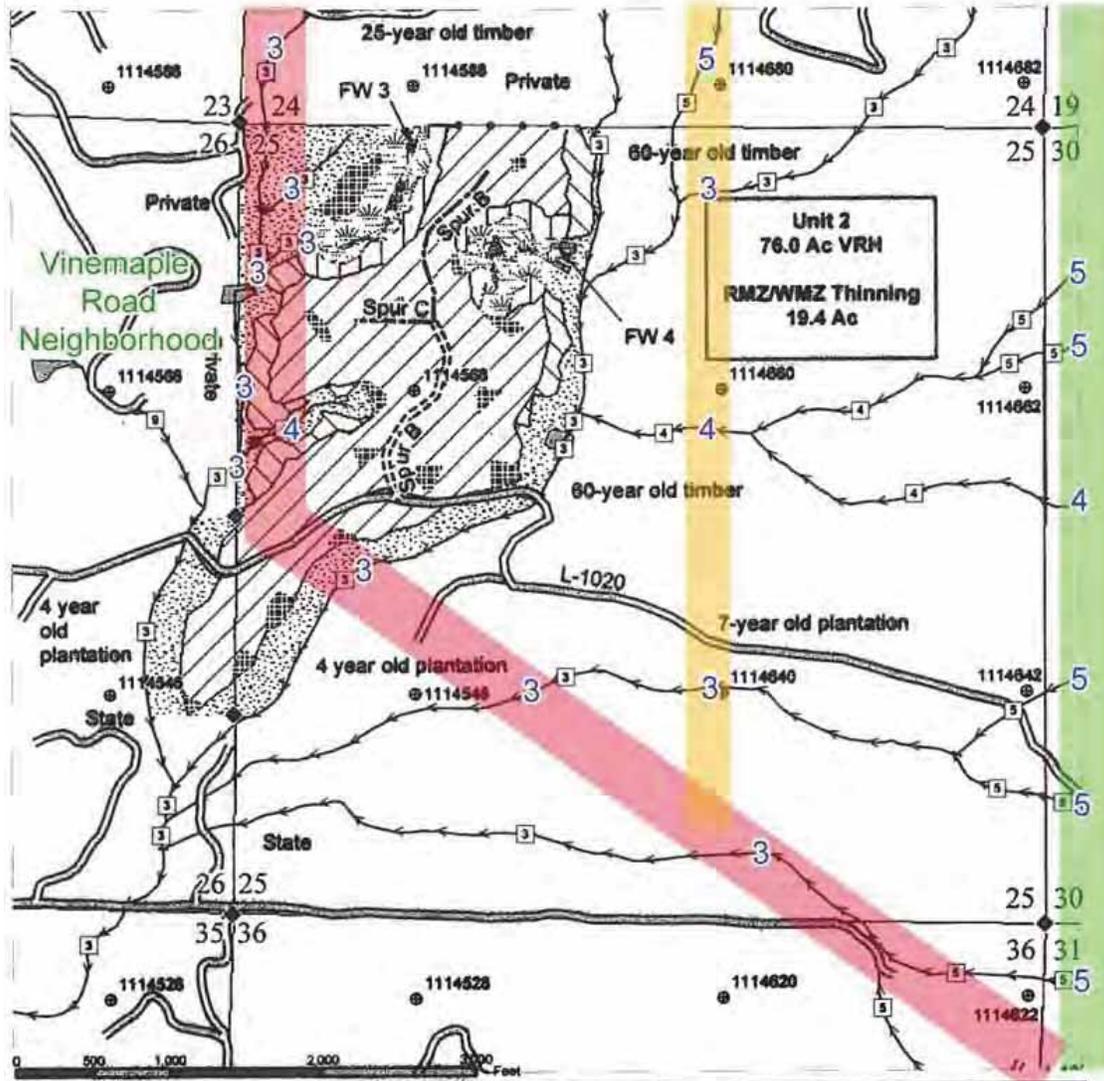
# EXHIBIT "C"

14824

## FOREST PRACTICES ACTIVITY MAP

SALE NAME: OCEANSPRAY  
APPLICATION #: 30-084262

COUNTY(S): CLARK  
TOWNSHIP(S): T03R03E, T03R04E



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	Take/Removal Trees
Leave Trees		

Prepared By: sbrr490

Creation Date: 2/26/2009

Modification Date: 4/8/2009  
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# ATTACHMENT #1

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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.

Equal Opportunity Employer

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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.



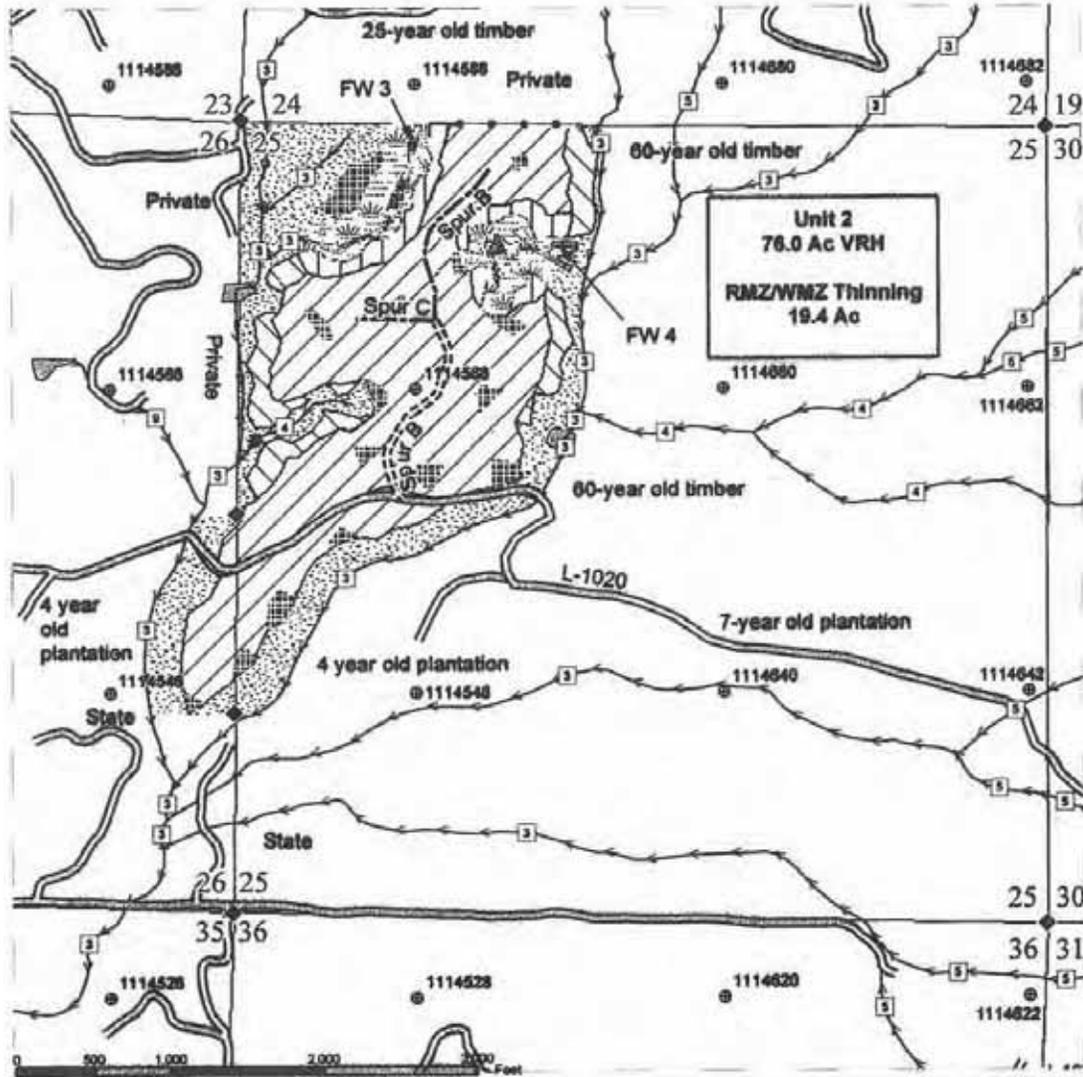
EQUAL OPPORTUNITY EMPLOYER

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### FOREST PRACTICES ACTIVITY MAP

SALE NAME: OCEANSPRAY  
APPLICATION #: 30-084262

COUNTY(S): CLARK  
TOWNSHIP(S): T03R03E, T03R04E



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	Take/Removal Trees
Leave Trees		

Prepared By: sbrr490

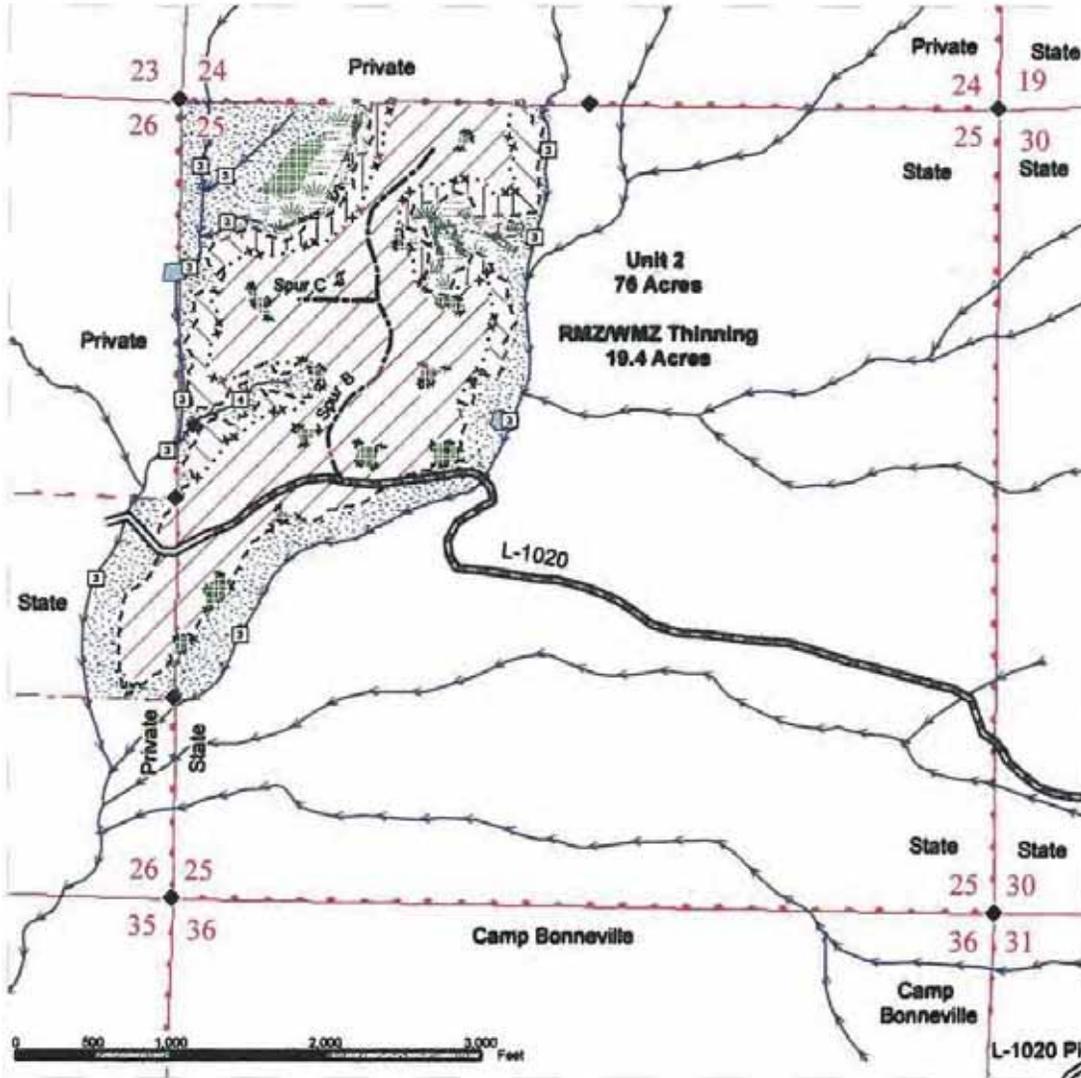
Creation Date: 2/26/2009

Modification Date: 4/8/2009

**TIMBER SALE MAP**

**SALE NAME:** OCEANSPRAY  
**AGREEMENT#:** 30-084262  
**TOWNSHIP(S):** T03R03E, T03R04E  
**TRUST(S):** State Forest Board Transfer(1), Common School and Indemnity(3)

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



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: sbr490

Creation Date: 1/8/2009

Modification Date: 4/23/2009

# ATTACHMENT #2<sup>4824</sup>

Arlington, Washington, Code of Ordinances >> Title 20 - ZONING >> Chapter 20.88 - ENVIRONMENTALLY CRITICAL AREAS >> Article VII. - Streams, Creeks, Rivers, Lakes and Other Surface Water >>

## Article VII. - Streams, Creeks, Rivers, Lakes and Other Surface Water

20.88.700 - Classification.  
 20.88.710 - Determination of boundary.  
 20.88.720 - Allowed activities.  
 20.88.730 - Requirements.  
 20.88.740 - Mitigation.

### 20.88.700 - Classification.

The city hereby adopts the stream classification system of the state, as specified in WAC 222-16-020 and 030, as may be amended. Briefly, these are as follows (see WAC 222-16-020 and 030 for complete definitions of types):

- (1) "Type 1 water" means all the waters, within their ordinary high-water mark, as inventoried as "shorelines of the state" under Chapter 90.58 RCW and the rules promulgated pursuant to Chapter 90.58 RCW, but not including those waters' associated wetlands as defined in Chapter 90.58 RCW.
- (2) "Type 2 water" shall mean segments of natural waters that are not classified as type 1 water and have a substantial fish, wildlife, or human use. These are segments of natural waters and periodically inundated areas of their associated wetlands, which:
  - (A) Are diverted for domestic use by more than one hundred residential or camping units or by a public accommodation facility licensed by the state to serve more than one hundred persons, where such diversion is determined by the Washington State department of ecology to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be type 2 water upstream from the point of such diversion for one thousand five hundred feet or until the drainage area is reduced by fifty percent, whichever is less;
  - (B) Are within a federal, state, local, or private campground having more than thirty camping units: Provided, that the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within one hundred feet of a camping unit, trail or other park improvement;
  - (C) Are used by substantial numbers of anadromous or resident game fish for spawning, rearing or migration. Waters having the following characteristics are presumed to have highly significant fish populations:
    - (i) Stream segments having a defined channel twenty feet or greater in width between the ordinary high-water marks and having a gradient of less than four percent.
    - (ii) Lakes, ponds, or impoundments having a surface area of one acre or greater at seasonal low water; or
  - (D) Are used by salmonids for off-channel habitat. These areas are critical to the maintenance of optimum survival of juvenile salmonids. This habitat shall be identified based on the following criteria:
    - (i) The site must be connected to a stream bearing salmonids and accessible during some period of the year; and
    - (ii) The off-channel water must be accessible to juvenile salmonids through drainage with less than a five percent gradient.
- (3) "Type 3 water" shall mean segments of natural waters that are not classified as type 1 or 2 water and have a significant fish, wildlife, or human use. These are segments of natural waters and periodically inundated areas of their associated wetlands which:
  - (A) Are diverted for domestic use by more than ten residential or camping units or by a public accommodation facility licensed to serve more than ten persons, where such diversion is determined by the Washington State department of ecology to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be type 3 water upstream from the point of such diversion for one thousand five hundred feet or until the drainage area is reduced by fifty percent, whichever is less;
  - (B) Are used by significant numbers of anadromous fish for spawning, rearing or migration. Waters having the following characteristics are presumed to have significant anadromous fish use:

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## Article VII. - Streams, Creeks, Rivers, Lakes and Other Surface Water

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- (i) Stream segments having a defined channel of five feet or greater in width between the ordinary high-water marks; and having a gradient of less than twelve percent and not upstream of a falls of more than ten vertical feet.
- (ii) Ponds or impoundments having a surface area of less than one acre at seasonal low water and having an outlet to an anadromous fish stream.
- (C) Are used by significant numbers of resident game fish. Waters with the following characteristics are presumed to have significant resident game fish use:
  - (i) Stream segments having a defined channel of ten feet or greater in width between the ordinary high-water marks; and a summer low flow greater than three tenths cubic feet per second; and a gradient of less than twelve percent.
  - (ii) Ponds or impoundments having a surface area greater than five tenths acre at seasonal low water; or
- (D) Are highly significant for protection of downstream water quality. Tributaries which contribute greater than twenty percent of the flow to a type 1 or 2 water are presumed to be significant for one thousand five hundred feet from their confluence with the type 1 or 2 water or until their drainage area is less than fifty percent of their drainage area at the point of confluence, whichever is less.
- (4) "Type 4 water" shall be applied to segments of natural waters which are not classified as type 1, 2 or 3, and for the purpose of protecting water quality downstream are classified as type 4 water upstream until the channel width becomes less than two feet in width between the ordinary high-water marks. Their significance lies in their influence on water quality downstream in type 1, 2, and 3 waters. These may be perennial or intermittent.
- (5) "Type 5 water" shall be applied to all natural waters not classified as type 1, 2, 3 or 4; including streams with or without well-defined channels, areas of perennial or intermittent seepage, ponds, natural sinks and drainageways having short periods of spring or storm runoff.
- (6) "Type 6 water" means constructed vegetated swales and ditches that are designed and installed for the express purpose of periodically moving storm water.

(Ord. 1309 § 5(part), 2003).

**20.88.710 - Determination of boundary.**

The planning manager, relying on delineation by a licensed engineer or other comparable expert, shall determine the boundary of the creek, stream, river, lake, or other surface water. For ravines with banks greater than ten feet in depth the boundary shall be contiguous with the top of the bank. Where there is no ravine or the bank is less than ten feet in depth, the boundary shall be contiguous with the ordinary high water mark.

(Ord. 1309 § 5(part), 2003).

**20.88.720 - Allowed activities.**

Except where regulated by other sections of this or any other title or law (e.g., see Article IV of this chapter, Fish and Wildlife Conservation Areas), the following uses shall be allowed within streams, creeks, rivers, lakes, and other surface waters when the requirements of Section 20.88.730 (Streams, Creeks, Rivers, Lakes and Other Surface Water—Requirements) have been met and mitigation adequate to alleviate any other impacts has been proposed:

- (1) Those activities allowed under Section 20.88.220 (General Provisions—Allowed Activities).
- (2) Bridges and other crossings for public and private rights-of-way.

(Ord. 1309 § 5(part), 2003).

**20.88.730 - Requirements.**

- (a) To retain the natural functions of streams and stream corridors, and unless modified by Article IV (Fish and Wildlife Habitat), the streamside buffers listed in Table 20.88-11: Non-ESA Stream Buffer Width shall be maintained on both sides of the environmentally critical area. All existing native vegetation within these buffers shall be preserved. (Note also that buffer averaging may be allowed pursuant to Section 20.88.320 (General Provisions—Buffer Width Averaging).)
- (b) To protect the natural functions and aesthetic qualities of a stream and stream buffer, a detailed temporary erosion control plan that identifies the specific mitigating measures to be implemented during construction to protect the water from erosion, siltation, landslides and hazardous construction materials shall be required. The city of Arlington shall review and approve the plan with the appropriate state, federal and tribal agencies, and any adjacent jurisdiction.

Table 20.88-11: Non-ESA Stream Buffer Width

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Article VII. - Streams, Creeks, Rivers, Lakes and Other Surface Water

Stream Type	Standard Buffer
1	115 feet
2	115 feet
3	100 feet
4	65 feet
5	15 feet
6	None

- (c) The applicant shall dedicate to the city an exclusive environmentally critical area easement for the protection of creeks, streams, rivers, lakes, or other surface water over the environmentally critical area and a buffer consistent with the standards listed in subsection (a).

(Ord. 1392 § 15, 2006; Ord. 1309 § 5(part), 2003).

**20.88.740 - Mitigation.**

- (a) In order to avoid significant environmental impacts for those activities allowed pursuant to Section 20.88.720 (Streams, Creeks Rivers, Lakes and Other Surface Water—Allowed Activities), the applicant for a land use or development permit may consider performing the following actions, listed in order of preference. What is considered adequate mitigation will depend on the nature and magnitude of the potential impact.
  - (1) On-site environmentally critical area restoration/improvement—Restoration or improvement in functional value of degraded on-site waterways and/or their buffers at a two is to one ratio (two square feet for every one square foot impacted).
  - (2) On-site ECA/creation—Creation of on-site waterways and their buffers at a two is to one ratio (two square feet for every one square foot impacted).
  - (3) On-site ECA buffer restoration—Restoration or improvement in functional value of degraded on-site waterway buffers at a ratio of six is to one.
- (b) All ECA restoration, creation and/or enhancement projects required pursuant to this chapter either as a permit condition or as the result of an enforcement action shall follow a mitigation plan prepared in conformance to the requirements of Section 20.88.390 (Mitigation Plan Requirements).

(Ord. 1309 § 5(part), 2003).

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# ATTACHMENT #3

## SECTION 2

### SITE DESCRIPTION

#### 2.1 FACILITY INFORMATION

Project Name: Camp Bonneville Military Reservation  
Project Manager: Mr. Eric Waehling, Base Environmental Coordinator

#### 2.2 SITE DESCRIPTION

##### 2.2.1 Site Location

2.2.1.1 The 3,840-acre Camp Bonneville site is located northeast of Vancouver, Washington, in the southeastern region of Clark County (Figure 2.1). The property is approximately five miles from Vancouver, Washington and approximately seven miles north of the Columbia River. Camp Bonneville is located along the western foothills of the Cascade Mountain Range, with Camp Hill and Little Elkhorn Mountain to the northwest, Munsell Hill to the west, and Little Baldy Mountain to the south.

2.2.1.2 Vehicular access to Camp Bonneville is restricted to a single entrance. The entrance is located on . and enters the site from the west at the Camp Killpack cantonment. The entrance is gated and monitored by the facilities managers.

##### 2.2.2 Climate

2.2.2.1 The Camp Bonneville area has mild, wet winters and moderately warm, dry summers. January is the coldest month, with an average temperature of approximately 38 degrees Fahrenheit (°F). July and August are the warmest months, with an average temperature of approximately 69°F. Typically, only 26 days a year experience temperatures below freezing, and 7 days have temperatures above 90°F.

2.2.2.2 Precipitation in the area is typically caused by the passage of low-pressure zones along a path from the north Pacific Ocean eastward during the winter and spring. The rainy season usually begins in late-September to mid-October and continues through March or April. An average of 154 days a year have measurable amounts of rainfall, with an average annual precipitation of approximately 47 inches. Annual snowfall in the Vancouver area averages about 8.4 inches. The average snow depth is typically only 2 or 3 inches, with continuous snow cover lasting one to three days at a time (USACE, 1999).

**DRAFT**

threatened and endangered species on Camp Bonneville (USACE, 1997). <sup>14824</sup> [Table 2.1](#) summarizes this information, as well as information on likely habitats for each species.

**TABLE 2.1  
LIST OF STATE AND FEDERALLY LISTED THREATENED AND  
ENDANGERED SPECIES LIKELY TO OCCUR ON THE CAMP BONNEVILLE SITE\***

Name	Status	Likely Habitat and Occurrence
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	Federal Threatened Species	Occasional visitor through area
Northern Spotted Owl ( <i>Strix occidentalis</i> )	Federal Endangered; State Endangered	Throughout site

\*Based on Summary of Agency Correspondence provided in USACE Final Archives Search Report, 1997

2.2.11.2 [Table 2.2](#) includes Federal Species of Concern, Federal Candidate Species, and Washington State Monitored Species. A Federal Species of Concern includes those species that were formerly classified as candidate species by the USFWS prior to 1997. A large number of candidate species were delisted in 1997 and reclassified as Species of Concern. Species of Concern are not formally "listed" species. However, these species are considered to be rare and are an important indicator of overall habitat quality of a particular area. The greater the number and diversity of these Federal Species of Concern, as well as their respective populations, reflects positively on the quality and viability of the habitat.

2.2.11.2 [Table 2.2](#) includes Federal Species of Concern, Federal Candidate Species, and Washington State Monitored Species. A Federal Species of Concern includes those species that were formerly classified as candidate species by the USFWS prior to 1997. A large number of candidate species were delisted in 1997 and reclassified as Species of Concern. Species of Concern are not formally "listed" species. However, these species are considered to be rare and are an important indicator of overall habitat quality of a particular area. The greater the number and diversity of these Federal Species of Concern, as well as their respective populations, reflects positively on the quality and viability of the habitat.

### 2.3 PROPOSED FUTURE LAND USE

2.3.1 The Camp Bonneville closure presents Clark County with the opportunity to transform property allocated as surplus by the BRAC process into publicly available lands that will provide the community with significant educational, environmental, and recreational benefits.

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**TABLE 2.2  
FEDERAL AND STATE SPECIES OF CONCERN LIKELY TO OCCUR ON THE  
CAMP BONNEVILLE SITE\***

Name	Status	Likely Habitat and Occurrence
Bull Trout ( <i>Salvelinus confluentus</i> )	Federal Candidate Species	Lacamas Creek and tributaries (Buck Creek, David Creek)
Northwestern Pond Turtle ( <i>Clemmys marmorata marmorata</i> )	Federal Species of Concern	Riparian areas along Lacamas Creek; Lacamas Creek
Larch Mountain Salamander ( <i>Plethodon larselli</i> )	Federal Species of Concern	Wooded areas; Lacamas Creek
Cascades Frog ( <i>Rana cascadae</i> )	Federal Species of Concern	Lacamas Creek and tributaries (Buck Creek, David Creek)
Spotted Frog ( <i>Rana pretiosa</i> )	Federal Candidate Species	Lacamas Creek and tributaries (Buck Creek, David Creek)
Pacific Western Big-Eared Bat ( <i>Corynorhinus (Plecotus) townsendii townsendii</i> )	Federal Species of Concern	Riparian areas; wooded areas
Long-eared myotis ( <i>Myotis evotis</i> )	Federal Species of Concern	Riparian areas; wooded areas
Long-legged myotis ( <i>Myotis volans</i> )	Federal Species of Concern	Riparian areas; wooded areas
Northern Goshawk ( <i>Accipter gentilis</i> )	Federal Species of Concern	Throughout site
Olive-sided flycatcher ( <i>Contopus borealis</i> )	Federal Species of Concern	Throughout site; riparian areas
Clackamas corydalis ( <i>Corydalis aquae-gelidae</i> )	Federal Species of Concern	Riparian areas along creeks
Tailed frog ( <i>Ascaphus truei</i> )	Federal Species of Concern, State Monitored Species	Moist habitats, wetlands, riparian areas, creeks
Cope's Giant Salamander ( <i>Dicamptodon copei</i> )	State Monitored Species	Moist habitats; wetlands, riparian areas, creeks
Cascade Torrent Salamander ( <i>Rhyacotriton cascadae</i> )	State Monitored Species	Moist habitats; wetlands, riparian areas, creeks

\*Based on Summary of Agency Correspondence provided in USACE Final Archives Search Report, 1997

**2.3.1 Camp Bonneville Local Redevelopment Authority**

2.3.1.1 The Local Redevelopment Authority (LRA) is responsible for determining cost-effectiveness and feasibility of the land reuse plans for Camp Bonneville. In 1995, the Clark County Board of County Commissioners (BOCC), as a board of the LRA, appointed a five member Reuse Planning Committee (RPC) to oversee the reuse planning

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# ATTACHMENT #4

Section 1  
Part h  
Subsection ii

**Segment P could be re-routed to avoid directly overtopping adjacent homes without significant additional negative trust land bifurcation impacts to those already incurred by P. Consider turning north at proposed tower site P/27 instead of at P/24, and turning westward onto the trust land boundary at proposed tower site P/18.**

Name: STATE OF WASHINGTON, DEPARTMENT OF NATURAL RESOURCES , LEONARD S YOUNG

Organization:

Attachments: NONE

Comment:

May 10, 2011

Mr. Mark Korsness

Project Manager, I-5 Corridor Reinforcement

Bonneville Power Administration

PO Box 9250 Portland, OR 97207

Dear Mr. Korsness:

This letter is to update Washington State Department of Natural Resources' (DNR) NEPA scoping comments (dated Dec. 10, 2009) in light of additional information BPA has made available to the public, such as removal and addition of proposed line segments. The enclosed document reiterates previously raised issues where applicable as well as new issues; it is intended to provide a quick reference to BPA regarding issues needing consideration throughout the development and implementation of the I-5 Project Draft Environmental Impact Statement. The concerns listed in the enclosure are referenced to the original comments submitted by DNR dated December 10, 2009 whenever the issue originated from those comments.

Sincerely,  
Leonard Young  
Department Supervisor

ENCLOSURE  
Washington DNR Updated Scoping Comments  
BPA I-5 Corridor Reinforcement Project

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May 10, 2011

Alternatives:

1) DNR appreciates BPA's willingness to propose new line segments, and remove others, in response to issues raised by DNR as well as members of the public. However, we believe additional work is required to ensure that a reasonable range of alternatives are analyzed in the project EIS.

- a) No alternative other than the existing right-of-way appears to substantially avoid conflict with DNR state trust land management mandates, or adequately mitigates, minimizes and avoids disproportionate impacts to DNR managed state trust lands.
- b) Two items require additional consideration relative to the existing right-of-way in order to be responsive to DNR and public issues raised in scoping:
  - i) A full analysis of the Non-Wires Screening Report recommendations is essential to establishing a reasonable range of alternatives that are responsive to the issues.
  - ii) In addition and in concert, analyze the extent to which the project's purpose and need could be achieved by replacing conductors and insulators on existing tower structures, within the existing right-of-way, with second-generation high temperature superconductors (G2 HTC) that allow far greater power transmission capacity and far lower line loss.
- c) Clearly develop and identify objectives in consultation with DNR to ensure the analyses of an adequate range of impacts and alternatives and future expansion plans. (Young, 12-10-09, p.2)
- d) Give equal consideration to federal Department of Defense lands, USDA Forest Service lands, county lands, e.g., Camp Bonneville, and Pacific Power and Light Lands in consideration of the expense of near-term and long-term impacts to trust land management and environmental stewardship on DNR managed state trust lands. (Young, 12-10-09, p.2) For example, routes through Camp Bonneville would straighten out segment P and cause significantly less severance to DNR managed trust lands.
  - i) DNR has previously requested consideration of a route to the east of DNR's Yacolt Block, along the DNR boundary shared with the Gifford Pinchot National Forest, which would avoid bifurcating DNR managed trust lands. Subsequently, a group of citizens proposed a "gray line" route that would follow a similar path. BPA's rationale in the February, 2011 project update document are insufficient to eliminate these route proposals from further study. The portion of the "gray line" proposal that would affect the Siouxi Block of trust lands located east of Yale Lake would incur negative impacts for federally listed spotted owls and their associated habitat. This should be avoided by a routing alternative that turns west at the southern Siouxi boundary and crosses the Lewis River at or just east of Yale Dam.
  - ii) Segment K has been proposed to replace Segments 11, 20, and 21 from early versions of publicly released routing alternative maps, in an effort to avoid PacifiCorp lands. This choice, in turn, has a negative bifurcation impact on DNR managed state trust lands to north of the Lewis River Road. Additional impacts to homes around Yale would be

incurred as well. The environmental, social and economic impacts of this decision have yet to be vetted publicly and should be included in the draft EIS analysis.

- e) Analyze and compare the costs of crossing state lands versus federal lands given the October 23, 2009 MOD between multiple federal agencies that expedite the siting and construction of qualified electric transmission infrastructure on federal lands. (DNR NEPA Scoping Comments, p.9, 12-10-09)
- f) Consider route (s) that avoid habitat identified specifically for or linked to threatened and endangered species.
- g) The Lacamas Prairie Natural Area was designated by the Commissioner of Public Lands to conserve populations of both federal- and state-listed endangered, threatened, and sensitive species, as well as wet prairie and oak woodland habitats that are rare within Washington State, and DNR is near closing on the purchase of the core area. BPA should avoid siting within areas identified as natural areas by the DNR. Proposed line segments 36, 40, and 46 (vicinity of T2N R3E, Sections 18, 20, 39, 50, and 52) cross through approximately 3.5 miles within the approved Lacamas Prairie Natural Area boundary. Construction of the proposed line segments could have direct impacts on these species' populations and high-quality habitats. A large portion of the proposed segments are located within the Lacamas Creek floodplain and associated wetlands that are included in the natural area design. Most of the species and habitats within the natural area are dependent on specific hydrological conditions and would be very sensitive to hydrological changes that may result from construction of new powerline segments. The federally listed *Lomatium bradshawii* that occurs within the natural area boundary is a wetland species dependent on sufficient water resources and has a fairly narrow hydrological regime tolerance. In addition, access road development and use may further alter hydrology and would present a vector for non-native invasive species that threaten the species and habitats. For additional information, contact the DNR Natural Areas Program.
- h) Consider route(s) that avoid transecting the Larch (Yacolt) block and the Yacolt Burn Recreation Area. Define impacts to current and planned DNR- provided recreation opportunities in the Larch (Yacolt) block, as outlined in the Yacolt Burn Recreation Plan. Include a cost projection for re-creating the Yacolt Burn Recreation Plan's implementation schedule to account for BPA's impacts to recreation. (DNR NEPA Scoping Comments, pp.10, 11, 12-10-09)
  - i) Segments O and 30 are unresponsive to this issue and should therefore be eliminated from consideration.
  - ii) Segment P could be re-routed to avoid directly overtopping adjacent homes without significant additional negative trust land bifurcation impacts to those already incurred by P. Consider turning north at proposed tower site P/27 instead of at P/24, and turning westward onto the trust land boundary at proposed tower site P/18.
- i) Consider route(s) that avoid DNR managed trust land transfer parcels or which are identified in potential land transactions.
  - i) A trust parcel in T2N, R3E, Section 16 under segment 43 (directly east of Vancouver) has been identified as a potential school site for the Camas School District which could be bifurcated by the power line.
- j) Consider route(s) that avoid forest riparian conservation easements held by the state, i.e., DNR currently holds a conservation easement in T07N, R01W, Section 4 lying within the segment 9 route that was purchased 12/23/08 at a value of \$118,878.63.
- k) Consider route(s) that avoid lands that have medium to high wind power potential, e.g., areas with 6.5 m/s and greater wind speeds at 80m as shown on maps at [windpoweringamerica.gov/images/windmaps/wa\\_80m.jpg](http://windpoweringamerica.gov/images/windmaps/wa_80m.jpg) or as designated to have wind power potential by DNR based on site-specific information. The transmission line should be located in

order to supply power from sources such as wind while not eliminating the best possible lands for harnessing wind.

- l) Consider route(s) that avoid genetically selected tree areas (Genetic Reserves). (DNR NEPA Scoping Comments, 12-10-09, p.17). There is currently one genetic reserve lying very close to route 30 in T4N, R3E, Sec.23.

2) BPA has added the Casey Roads Substation Site as possibly being located on state trust lands. This may require the sale of state land. The substation proposal requires detailed information for evaluation such as the exact location, the size, impacts outside the area, access to the substation, and others. For substation locations that may affect DNR managed trust lands, the EIS should identify and analyze:

- a) Unauthorized public access opportunities and resource damage issues.
- b) Land Transactions: easement vs. fee ownership transfer.
- c) Consistency with DNR's Road Maintenance and Abandonment Plan (RMAP) for access routes that could potentially be utilized by BPA.
- d) Storm water management of potential sites.

3) Disclose the potential environmental, economic and other impacts to DNR managed state lands as well as impacts to all non-federal lands related to DNR's regulatory and other programs, i.e., Geology and Earth Resources, Forest Practices, and Fire Protection. (Young, 12-10-09, p.2; DNR NEPA Scoping Comments, 12-10-09, pp.8,9)

- a) Develop and propose mitigation measures for DNR-managed lands that minimize potential short-term and long-term environmental, economic and social impacts of the alternatives through project design and development similar to those agreed upon with King County and documented in the Kangley-Echo Lake Transmission Line Project Record of Decision dated July 21, 2003. (DNR NEPA Scoping Comments, 12-10-09, p.10).

4) Analyze the impacts of the I-5 Corridor Options on the threatened and endangered species that are currently covered under DNR's Incidental Take Permit (ITP) (#PRT-812521 USFWS) and (#1168 NMFS) and Habitat Conservation Plan (HCP). (Also please refer to Mitigation Item 20 later in these comments.)

- a) Analyze whether BPA's proposed transmission line use will limit DNR's ability to protect the threatened and endangered species as envisioned in the ITP and HCP and seek DNR's input during any Endangered Species Action consultation between BPA and the National Marine Fisheries Service or the United States Fish and Wildlife Service for any project effects that have the potential to put DNR at risk of noncompliance with its ITP and HCP. b) Include the analysis of impacts on threatened and endangered species for those species that may be adversely affected by the I-5 Corridor Options (and include a draft of the Biological Assessment or Biological Opinion prepared pursuant to ESA consultation in the FEIS) and that are also covered by DNR's ITP and HCP in separate sections of the EIS to enable an efficient analytical structure for assessing project impacts on state owned lands.

5) Work with DNR to determine and confirm state-ownership of aquatic lands; Analyze the impacts on cultural, historic and archaeological resources on all aquatic crossings, preferably in conjunction with consultation pursuant to Section 106 of the National Historic Preservation Act; Identify impacted DNR aquatic licenses, leases, easements and sales; and calculate lost revenue to the state over the next fifty years. (DNR NEPA Scoping Comments, pp. 11,12, December 10,2009.)

6) Consider impacts to land that is subject to forest riparian conservation easements and provide compensation and/or mitigation for the loss of conservation capacity intended by these easements

impacted by the transmission line. Obtain consent from DNR on impacted easements prior to obtaining an easement from the landowner. (Young, 12-10-09, p.3; DNR NEPA Scoping Comments, 12-10-09, p.13) (SEE item 1.k. of this document)

7) Analyze and avoid negative impacts to the current use or reasonably foreseeable future development of any communication site, e.g., existing sites include DNR's Larch Mountain site in T3N, R4E, Sec. 27, SW1/4, NE1/4 and the Casey Road site in T10N, R2W, Sec.18, SE1/4. (DNR NEPA Scoping Comments, p.7,9, 12-10-09)

8) Analyze impacts to the local economy caused by impacts to the timber industry and recreation. (DNR NEPA Scoping Comments, 12-10-09, p.9)

- a) Analyze and avoid impacts to the potential future revenue from biomass production, carbon credits and development rights on DNR managed state trust lands. (DNR NEPA Scoping Comments, 12-10-09, p.7)

9) Analyze the effects, restrictions and other threats (negative easements) of BPA's proposed corridors on DNR trust management activities that occur outside of BPA's right-of-way and prevent DNR from fully managing state lands. (DNR NEPA Scoping Comments, 12-10-09, p.6)

- a) Define restrictions on current and reasonably foreseeable DNR managed state land activities outside the BPA right-of-way, particularly where the corridor will disallow, limit or increase the cost of timber harvest, timber hauling, wind power production, solar energy development, communication sites and recreation use or eliminate the potential for a special land management option. (DNR NEPA Scoping Comments, 12-10-09, p.9)
- b) Develop and model an estimation of the amount and location of current danger trees that would require removal. Identify areas outside of the normal R/W corridor width that would require low-growing vegetation to be maintained and include within the transmission line corridor. This would include areas with trees upslope of the line, diseased areas, areas with undesirable species, and other existing conditions that will be considered a hazard or concern once the transmission line is built.

10) Clearly identify the vegetation management activities that will occur within and outside the right-of-way per BPA's May 2000 Transmission System Vegetation Management Program Final EIS (DOE/EIS-0285) and supplements including those near any DNR-managed natural area or water body where State Owned Aquatic Lands are located. (DNR NEPA Scoping Comments, pp.10,12, 12-10-09)

11) Quantify and analyze the economic impact on long term trust revenue where the corridor will disallow, limit or increase the cost of timber harvest and timber hauling, or managing for other special forest products or agricultural land uses. This should include a mitigation and compensation plan in coordination with DNR for the life of the project. a) Determine the effects on DNR's timber harvest from the removal of lands by each Watershed Analysis Unit (WAU). Work with DNR using DNR's timber harvest modeling software to arrive at these impacts. This includes assessing hydrologic modeling for rain on snow related procedures and potential future DNR harvest limitations due to new corridors. DNR will supply the data. (DNR NEPA Scoping Comments, p. 10, 12-10-09)

12) Describe and analyze the cumulative impacts that may result from unauthorized use and damage to state lands and public resources, e.g., garbage dumping, trail building, ORV use, vandalism and theft. Prepare a sample survey on a given portion of existing power line representative of DNR ownership on the proposed I-5 project and prepare a quantitative prediction of unauthorized use and the cumulative

impacts that may result. Include costs to repair or mitigate predicted damage. (DNR NEPA Scoping Comments, p.11, 12-10-09)

13) Address the potential for geologic hazards (DNR NEPA Scoping Comments, 12-10-09, pp. 13-15):

- a) Identify landslide hazards using DNR's GIS Statewide Landslide database and then create a site-specific geologic map.
- b) Identify unstable slopes using DNR's Shalstab model or through landforms in the Landslide Hazard Zonation projects where available data exists.
- c) Identify slope hazards associated with slope modification or vegetation removal at construction areas. d) Identify seismic shaking potential on the Lacamas Lake Fault as well as movement potential.
- d) Reconsider corridor locations in moderate to high liquefaction sensitive areas by using GIS modeling to identify the least sensitive lands.

14) Define impacts to established research plots and propose measures to mitigate impacts. Potential plots of concern in addition to those for genetic reserves identified in l)n) above are listed in DNR NEPA Scoping Comments, 12-10-09, p.17. Mitigation

15) Develop mitigation such as a Statewide Memorandum of Agreement with DNR that addresses existing encumbrances on state land and management of existing, proposed and future corridors such as the I-5 Corridor Reinforcement Project to reduce environmental damage, assures state forest land productivity and ensures appropriate compensation to the legal beneficiaries of state trust lands when lands are used by BPA. Use this broader agreement to form the basis for easements and to establish a Maintenance and Operations Agreement for the I-5 Corridor project. (Young, 12-10-09, p.3) The Statewide Memorandum of Agreement should include the following items:

- a) Road design, construction, improvement, maintenance and abandonment best management practices and, separately, develop BPA Road Standards. Road standards should mimic DNR standards, or BPA should accept DNR standards that are acceptable and in accordance with Forest Practices Rules;
  - b) Managing low growing native vegetation;
  - c) Identification of adequate crossings for equipment required for hi-lead logging including towers and shovels and wind power related equipment.
  - d) Unauthorized uses that damage lands and public resources;
  - e) Removal of danger trees outside the right-of-way and other right-of-way corridor expansions w/o adequate compensation to the state (Also see DNR NEPA Scoping Comments, 12-10-09, p.9); and
  - f) Conflicts with the state's long-term forest management obligations and in some cases contractual obligations of the DNR's federally approved HCP.
- 
- a) Commit to meet the intent of the Forest Practices Act and Rules within BPA's ownership or easement corridors. Evaluating alternatives that mitigate impacts to riparian areas and threatened and endangered species throughout the construction phase and during future maintenance of the project will minimize the need for identifying additional mitigation under SEPA. (Young, 12-10-09, p.3,4; DNR NEPA Scoping Comments, 12-10-09, p.16) The project should incorporate the following considerations, impact analysis and mitigation:
  - b) Agree to implement the 2002 agreement between DNR and BPA regarding forest practices or Agree to work with the underlying and neighboring landowners to obtain Forest Practices Applications and comply with the Forest Practices Act and rules. Notification should be done

- either via coordination at annual meetings or in writing. This should also include maps of activities identifying where work along the line segment will be.
- c) Evaluate the project alternatives based on the impacts they will have on threatened and endangered fish species, and water quality concerns.
  - d) Limit the impacts to potentially unstable slopes as defined in WAC 222-16-050(1)(d)(i).
  - e) Conduct an environmental analysis of the impacts to unstable slopes, riparian function and water quality for all stream crossings that will be impacted. Provide a mitigation plan for the project to specifically guide the removal and manipulation of vegetation near stream crossings not limited to topping of trees or leaving riparian vegetation where adequate conductor clearance is anticipated.
  - f) Minimize vegetation and ground disturbance during construction adjacent to streams. Emphasize native vegetation that will provide for riparian function. Where trees must be removed, consider replacing existing tree species within the corridor with a native species that will provide forest vegetation both within and adjacent to the corridor for riparian function while limiting the hazards to the lines and providing reliable service to the customer.
  - g) Work with landowners(s) in identifying and adhering to any prescriptions/requirements within the Upper Coweeman Watershed Analysis area.
  - h) Agree to apply only pesticides that are registered for forest use, follow the label requirements and adhere to the Forest Practices Rules relating to pesticide use.
- 17) Agreement from BPA, in writing or via some other form of agreement, that its actions and those of its contractors will comply with Chapter 76.04 RCW Forest Protection and Chapter 332.24 WAC Forest Protection. (Young, 12-10-09, p.4; DNR NEPA Scoping Comments, p.16, 12-10-09)
- a) Work with DNR to mitigate concerns of increased fire susceptibility and safety concerns and limitations they place on firefighting efforts. (Young, 12-10-09, p.4)
  - b) Take responsibility for extreme fire hazard abatement related to falling of danger trees and follow state extreme fire hazard abatement laws. (Young, 12-10-09, p.4)
  - c) Reimburse DNR Resource Protection 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. (DNR NEPA Scoping Comments, p.16, 12-10-09)
- 18) Identify and map all existing and new roads on state lands that BPA will use and construct, and agree to meet DNR standards for road construction and maintenance. This should include analysis/coordination with developed RMAP plans. (DNR NEPA Scoping Comments, 12-10-09, p.9)
- 19) Ensure protection to species and special habitats while providing mitigation equal to that required by DNR's Habitat Conservation Plan that will be necessary as a result of:
- a) Fragmenting of habitat by corridors and roads;
  - b) Introducing noxious and invasive weeds;
  - c) Impacting water quality;
  - d) Increasing slides on unstable slopes;
  - e) Creating or failing to remove fish barriers;
  - f) Inviting unregulated public use,
  - g) Generally providing a lesser standard of environmental protection. (Young, 12- 10-09, p.3; DNR NEPA Scoping Comments, p.9, 12-10-09); and
  - h) Threats to cultural resources or significant local Tribal areas.

- 20) Develop mitigation measures to address impacts on endangered and threatened species on state lands and that are covered by DNR's ITP and HCP.
- a) Incorporate any conservation measures or aspects of the proposal that are relied upon to support informal or formal consultation with the National Marine Fisheries Service and the US Fish and Wildlife Service (Federal Services) under the Endangered Species Act and obtain input during consultation from DNR for any project effects that relate to any species covered by DNR's ITP and HCP on state lands (DNR NEPA Scoping Comments, pp.10, 12-10-09):
  - b) Develop a mitigation plan for new construction and establish a mitigation account for future habitat restoration that may be needed if BPA's proposal results in the removal of Permit Lands (as defined in DNR's ITP) from coverage along the proposed corridors and their buffers or otherwise affects DNR's ability to comply with its ITP and HCP due to impacts associated with BPA's transmission line construction or ongoing operation and maintenance.
  - c) Develop a mitigation plan in coordination with the Federal Services and DNR that reflects commitments DNR has made in its ITP and requires BPA to incorporate additional measures needed to address project effects to maintain DNR's compliance with its ITP as it relates to BPA's intended use of Permit Lands (as defined in DNR's ITP).
- 21) Follow the DNR/BPA Appraisal MOU. (DNR NEPA Scoping Comments, p.11, 12-10-09.) DFD

**14825**

ALLISON O'BRIEN, U.S. DEPARTMENT OF THE INTERIOR, OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE OFFICE OF THE SECRETARY

03/25/2013

United States Department of the Interior  
OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
[Address]

Electronically Filed

March 25, 2013

Nancy Wittpenn  
Project Environmental Lead  
Bonneville Power Administration  
[Address]

Dear Ms. Wittpenn:

14825-1

On February 26, 2013, the U.S. Department of the Interior (Department) submitted a letter to you stating that we had no comments to offer regarding the Draft Environmental Impact Statement (DEIS) for the I-5 Corridor Reinforcement Project. Following our submission, the comment deadline was extended by Bonneville Power Administration (BPA) to March 25, 2013. This letter supersedes the letter dated February 26, 2013.

14825-2

Section 6(f)(3) of the Land and Water Conservation Fund (LWCF) act grants protections to more than 42,000 projects in the United States. Administered by the National Park Service (NPS), the protected parks and outdoor recreation areas are owned and operated by local, state, and tribal agencies. Conversion of a protected site to other than outdoor recreation use requires mitigation that includes acquisition of new park land that is of equivalent fair market value and recreation utility. Conversions must be approved by the NPS prior to impact and require compliance with other applicable federal laws including the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA).

Similar protections are also granted to local parks through other programs administered by the NPS, including the Federal Lands to Parks (FLP) program and the Urban Park and Recreation Recovery Program (UPARR).

Of the recreation sites BPA has identified with the potential to be impacted by this project, the following are protected by the NPS:

Washington:

Yacolt Burn State Forest

14825-1 Comment noted.

14825-2 BPA has coordinated with the National Park Service to identify recreation sites funded through the Land and Water Conservation Fund Act, the Federal Lands to Parks program and the Urban Park and Recreation Recovery Program. The proposed project would not affect the Marine Drive Trail in Oregon since there is a gap in the trail where BPA's project is proposed and the completed portions of the Marine Trail is to the west of the project and out of the project area. BPA has coordinated closely with the Port of Portland on any developments to design and construct another piece of the 40-Mile Loop Trail in the project area. This section of trail is funded and in the ODOT State Transportation Improvement Program. Project design began this year and construction is expected to begin in 2017 or 2018. The new lines would cross over the proposed trail and not interfere with the trail at any point in the future if it gets constructed. Depending on actual construction of the trail and BPA's transmission project, BPA and the Port would continue to coordinate closely on schedules to minimize any potential construction conflicts.

BPA has also coordinated closely with the Port of Portland and the Oregon Parks and Recreation Department on the Company Lake Conservation Easement. BPA holds a utility easement within the conservation easement boundaries for its existing right-of-way and transmission facilities. BPA's preferred location for the Sundial Substation (Lot 11) would not require a crossing of the conservation easement. Using Lot 12 would. After discussions with the Port and ODPR, and only for Lot 12, BPA would redirect the existing BPA easement to accommodate the new alignment. The Conservation Easement document would be modified by OPRD as needed to reflect this change.

In Washington, the proposed project would have no impact on Moulton Falls Park and Riverside Park. The project would cause impacts to the Yacolt Burn State Forest and the Lower Washougal River Greenway. BPA has coordinated with WDNR, state contacts included in this communication, and the City of Camas to identify specific impacts and potential mitigation.

Lower Washougal River

Greenway Moulton Falls Park

Riverside Park

Oregon:

Marine Drive Trail

There may be additional sites not identified by BPA specifically as recreation sites that are protected by the LWCF. This project impacts a number of regional terrestrial and riparian trail corridors where the NPS has invested in water access sites, land acquisitions, and trailheads. The Department recommends that BPA work closely with the NPS to coordinate the NEPA and NHPA processes once BPA determines which parks will potentially be impacted. At that point,

14825-2 NPS will closely review the proposal to ensure all potentially impacted LWCF sites have been identified.

LWCF is administered in partnership with a Governor designated state agency. In the state of Oregon the contact is:

Tim Wood - Director [Address]

In Washington, the contact is:

Kaleen Cottingham - Director [Address]

The NPS Partnership Programs contact for Washington and Oregon is:

Heather Ramsay LWCF & UPARR Project Manager [Address] [Phone]

Thank you for the opportunity to review and comment on the DEIS. If you have any questions, please contact me at [Phone].

Sincerely,

Allison O'Brien

Regional Environmental Officer

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14826

14826-1 After losing your battle with Weyerhaeuser about the current chosen route, I know this route through my property will be the ONLY option. We all know there are other options, including using land you already own, or extending the poles that already exist.

14826-2 You hide behind MY government to bully your way into private lives to undermine any progress in sustainable resources that also provide power. Stating costs as compared to a currently unproven wind power just muddies the water (no pun intended).

Please consider some forward thinking support of all sources of power generation and cooperate with other agencies who don't have the protection of a government still lodged in the past.

Page 1 of 2

14826-1 BPA has identified the Central Alternative using Central Option 1 as the Preferred Alternative. Segment 3 is not part of the Preferred Alternative.

14826-2 Please see the response to Comment 14144-2.

14826

**BPA I-5 Corridor Reinforcement DEIS comment form**

**Received: 03/25/2013 3:46 PM**

Name: Barbara K. Byker

Address:

We have cleared this property of Scotch Broom & increased the variety of wildlife over the last 12 years.

14826-3 Your proposed route through my property is wasteful & senseless. In order to access your power poles on the South end of my land, your plans show using ¼ mi of my personal driveway (unpaved) and the full length of my 67 acres of farm land down the middle.

Not only are you closer on Riverdell Rd, but it is paved.

14826-4 Single minded, greedy and insensitive to residential property owners.

Bullies!!

Page 2 of 2

14826-3 Please see the responses to Comments 14097-1 and 14119-2. BPA has identified the Central Alternative using Central Option 1 as the Preferred Alternative. Segment 3 is not part of the Preferred Alternative.

14826-4 Comment noted.



*proud past. promising future*

**CLARK COUNTY**  
WASHINGTON

March 21, 2013

Bill Drummond, Administrator  
Bonneville Power Administration

Steven Manlow, Project Manager  
U. S. Army Corps of Engineers

**Subject:** Clark County’s official comments regarding the draft Environmental Impact Statement for the I-5 Corridor Reinforcement Project.

Dear Mr. Drummond and Mr. Manlow,

Please accept this as Clark County’s formal response regarding the accuracy and appropriateness of Bonneville Power Administration’s analysis of impacts resulting from the proposed I-5 Corridor Reinforcement Project. We hope you find these comments about the draft EIS useful to the process and helpful in determining the best outcome for our community.

An environmental impact statement is designed to provide thorough and complete information to decision-makers and the community. We believe the draft will benefit from the addition of information in several sections.

We have formatted this document to follow the Table of Contents in Volume 1 & 2, focusing on Central Alternative Option 1 as BPA’s “preferred alternative.” We reiterate that for a document this long and a project this complex, it would have been valuable to have more time to review each section. Also, we were disappointed by your decision this month not to meet with major stakeholders regarding your draft EIS and preferred alternative. We feel this was a missed opportunity for BPA to hear comments directly from stakeholders and the community it is proposing to permanently alter with this project.

1300 Franklin Street • P.O. Box 5000 • Vancouver, WA 98666-5000 • cell: [360] 397-2232 • fax: [360] 397-6058 • www.clark.wa.gov

14827-1

14827-2



- 14827-1 Thank you for your comments. Specific comments are addressed below.
- 14827-2 The National Environmental Policy Act requires a comment period of at least 45 days on a Draft EIS. Given the project's complexity and the size of the Draft EIS, BPA scheduled the initial comment period for 108 days, from November 13, 2012 to March 1, 2013. In response to public comment, BPA extended the comment period until noon March 25, 2013. This extended the comment period to a total of 132 days.

During that time, BPA hosted six public meetings where the project team was available to meet with stakeholders, answer questions, discuss the project and take comments.

14827

**Chapter 1: Purpose of and Need for Action and Chapter 2: Facility Siting, Route Segments, and Action Alternatives**

14827-3 A critical component of any NEPA document is a clearly defined Purpose and Need statement. We do not find one here. Without a clear purpose, it is difficult for BPA to demonstrate why a certain alternative should be chosen. It is critical that Clark County residents are persuaded that there is a local need for this project and you will see the current skepticism reflected in our comments. Throughout the NEPA process, we have spent a great deal of time struggling to understand whether this project is actually locally driven or is more about regional capacity-building for BPA and this power will just be moving through our communities. Now, citizens of Southwest Washington are convinced they are being asked to bear the entire burden of this project without receiving much, if any, of the benefit.

We want to comment on the two chapters together as they are, in our opinion, inextricably linked. The draft EIS tries unsuccessfully to split them, leaving the reader struggling to understand the differences between BPA's internal siting processes and the public scoping process for the project. We found the sections in chapters 1 and 2 confusing, often with overlapping information or referencing information (studies and processes) without enough detail, backup or description.

**Purpose & Need**

14827-4 **Comment:** Given the importance of this chapter, we find it curious that there is only one table, figure or appendix to help paint a clear explanation of the purpose and need for the project.

*Request: If BPA is certain local load growth is driving the need for this project, we think it would be beneficial to show that in a simple, clear way. Please add a table or chart showing where the power goes and where the load growth is in our local area.*

14827-5 **Comment:** BPA's documentation of August 2010 says that 80 percent of power flowing on the new line will be used locally.

*Request: Please explain where the other 20 percent will go. This information would be useful for those who decide who should bear the inevitable impacts of this project.*

14827-6 **Comment:** The draft EIS includes no discussion about how the recession has impacted the need for this project. The discussion would be more complete with detailed information about specific power users. BPA approaches this in Chapter 4.7.4 regarding the closing of Reynolds Aluminum in Longview, Wash. but stops short of including any detail about the closure's impact on transmission capacity.

2

- 14827-3 Please see the responses to Comments 14329-7 and 14685-1. BPA believes that because of the complexity of the project and interest of the public to understand the siting process, separating the public scoping information and siting process steps would help in this effort.
- 14827-4 Please see the response to Comment 14329-7. BPA believes that the EIS, particularly Chapter 1, provides a sufficient explanation of power flows and load growth in the area.
- 14827-5 The South of Allston path is a set of lines that are monitored to ensure reliability of the transmission system in the southwest Washington and northwest Oregon load service area. The technical studies show that approximately 80-85 percent of the power flowing on the South of Allston path goes to serve local loads in southwest Washington and northwest Oregon. Approximately 15-20 percent of the power on this path flows through the area to load centers in southwest Oregon and the remaining 3-5 percent flows south to California.
- 14827-6 Please see the responses to Comments 14329-7 and 14827-4. Down-turns in the economy and its impact on loads should already be incorporated into the load forecasts provided to BPA by the local utilities. BPA plans the system and determines project need dates based on these load forecasts, which account for recession-based actions such as industrial closures.

14827

14827-6 | **Request:** Please provide this information.

14827-7 | **Comment:** BPA cites many "Firm Transmission" requests for service as a critical reason to add capacity, but BPA does not say who is making the requests or where they are.

| **Request:** Please provide this information.

14827-8 | **Comment:** The draft EIS states the Project Coordination process included agencies sharing study results.

| **Request:** Please make these results available as part of the final EIS.

14827-9 | **Comment:** The work BPA did on the non-wires study seems inconsistent with BPA's conclusions that this project is of immediate necessity. The study found implementing non-wires strategies could conservatively delay the need for two to six years.

| **Request:** We ask the BPA whether this project is of immediate importance given the non-wires study and national economic downturn.

14827-10 | Overall, we find the Purpose and Need section to be confusing and inadequately supported for a project that could have such a permanent impact to the natural and human environments.

#### Scoping

14827-11 | For almost four years, citizens in Clark County have been watching and participating in the process leading up to selection of a preferred alternative for BPA's proposed I-5 Corridor Reinforcement Project. During this time, many citizens have faced uncertainty about the future of their property. While we have appreciated our relationships with BPA staff, we also think the NEPA process has been inadequate and inconsistent. Specifically, we are pleased BPA honored our request to become a cooperating agency under the provisions of the Council on Environmental Quality's regulations, but have been frustrated by BPA's decision not to form a citizens' advisory committee for the project. This panel could have worked directly with BPA to bring local input and perhaps buy-off to the proposal. BPA's decision not to form this committee is just one example of an insufficient process and what we think is the absence of reasoned decision-making.

14827-12 | Also, we found it difficult to understand BPA's inconsistent reasoning for not studying other reasonable alternative routes such as the "Pearl Alternatives" or the "grey-line." In January 2012, Project Manager Mark Korsness wrote, "developing a new route (grey-line) would...add 1.5 to 2 years to the EIS schedule because (BPA) would need to further develop and analyze this route for inclusion in the draft EIS." We find this reasoning

3

- 14827-7 Section 1.1.2.3, Existing Obligations and New Requests for Transmission Service, provides information about requests for transmission service. Specific requests and needs for capacity were identified through a series of cluster studies completed for BPA's 2008, 2009, 2010, and 2013 Network Open Seasons. The results of these studies are available at the following websites:
- 1) 2008 NOS -  
[http://www.bpa.gov/transmission/CustomerInvolvement/NOS/NOS2008/Documents/PTSA\\_Summary\\_by\\_Cluster.pdf](http://www.bpa.gov/transmission/CustomerInvolvement/NOS/NOS2008/Documents/PTSA_Summary_by_Cluster.pdf)
  - 2) 2009 NOS -  
[http://www.bpa.gov/transmission/CustomerInvolvement/NOS/NOS2009/Documents/PTSA\\_Summary\\_by\\_Cluster\\_2009.pdf](http://www.bpa.gov/transmission/CustomerInvolvement/NOS/NOS2009/Documents/PTSA_Summary_by_Cluster_2009.pdf)
  - 3) 2010 NOS -  
[http://www.bpa.gov/transmission/CustomerInvolvement/NOS/NOS2010/Documents/cluster\\_study\\_summary\\_by\\_cluster\\_020411.pdf](http://www.bpa.gov/transmission/CustomerInvolvement/NOS/NOS2010/Documents/cluster_study_summary_by_cluster_020411.pdf).
  - 4) 2013 NOS -  
<http://www.bpa.gov/transmission/CustomerInvolvement/NOS/NOS2013/Documents/cluster-study-grouping-handout.pdf>
- 14827-8 During early development (2007-2008 timeframe), the I-5 project went through the WECC Regional Planning Review process. ColumbiaGrid facilitated the process which included a series of open meetings at ColumbiaGrid. BPA shared I-5 project study results, alternatives considered, and why the I-5 project was chosen as the preferred alternative. Those attending had opportunities to ask questions and request additional information about the project and studies that BPA provided. In early 2008, the project successfully completed the WECC Regional Planning Review process. Study results are contained in the technical study report dated September 7, 2007. While the technical study report was not shared publically at the time of the Regional Review, it has since been released through the FOIA process. The report can be found on the BPA FOIA web site at <http://www.bpa.gov/Projects/Projects/I-5/Pages/FOIA-Requests-.aspx>. Click on requested document for FOIA #2010-00629 submitted by Mr. Richard van Dijk and posted on 12/22/2009.
- 14827-9 The non-wires analysis showed the potential to delay the need for the project by 2-6 years. These solutions continue to be studied in parallel to the I-5 Project to determine their feasibility and if feasible, to determine whether they will be implemented. For example, substation upgrades were made at Pearl Substation in summer 2015 that increased reliability on the transmission system that serves the northwest Oregon and southwest Washington, helping to delay the need for this project.
- It takes many years to complete a project with the magnitude of the I-5 Project. Therefore, BPA must continue the process of developing the project to meet the

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- 14827-12 | flawed because BPA summarized scoping for the project in February 2010 and formally added six more route segments in August 2010, a period of only five months. In our estimation, when BPA needed or wanted to add route segments, it could be done quickly.
- 14827-13 | The magnitude of potential adverse impacts to our community was evident at the first scoping meeting. More than 500 concerned citizens were at rural Amboy Middle School on Oct. 27, 2009 to learn about the project and comment on the scope of the EIS. Despite this obvious widespread community interest, BPA did not extend the comment period for the scoping after the addition of the six new route segments. Citizens affected by the new segments never had a chance to formally comment on the scoping of the project.
- 14827-14 | **Comment:** Regarding the draft EIS scoping discussion, we had difficulty following the analysis through the document's different sections. Scoping is discussed first in Chapter 1.6.1, but only after what we feel is an important yet vague discussion on BPA's 2008-10 NOS processes and other "planning studies" from 2006-07 found in chapters 1.1.2.3 and 1.1.3.  
*Request: Please clarify the differences between the internal processes BPA uses for route selection and the public scoping process in the final draft EIS. These processes and studies, which we understand included consideration of the Pearl Alternatives, were critical to the eventual decisions about scoping. We think these earlier BPA processes or studies are not well linked to the scoping process description or section.*
- 14827-15 | **Comment:** All the process and study leading up to the project scoping seem to focus on load growth and new generation projects as the driving need for added capacity.  
*Request: Please explain why in section 1.7.1, BPA concludes that proposed generation development is outside the scope of the project? This seems inconsistent or at least confusing.*
- 14827-16 | **Comment:** Given what BPA says it considers for route location in Chapter 2, the Pearl Alternatives would have received a similar or more positive assessment for route selection than the alternatives chosen for scoping.  
*Request: Please explain why BPA excludes any clear discussion of this.*
- 14827-17 | **Comment:** The Pearl Alternatives are not mentioned specifically until Chapter 4.7, despite being a major process element studied until the moment of public scoping. In Chapter 4.7, the Pearl Alternatives are summarily dismissed for reasons inconsistent with the chosen preferred alternative.

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- 14827-9 projected need date and will also pursue non-wires solutions as they become feasible.
- 14827-10 Please see the response to Comment 14329-7.
- 14827-11 BPA's goal from the beginning of this project has been to listen and learn from all potentially affected residents and communities, and the project team has and will continue to be available to meet and listen to the public. Advisory committees for federal agencies are governed by the Federal Advisory Committee Act. The Act requires Department of Energy and Office of Management and Budget approval. Both agencies stress very limited use of advisory committees for Federal agency decision making. In light of this, we considered your request, but believe that BPA's outreach approach has and continues to provide varied and equitable opportunities to engage interested members of the public so that they can provide comments on the project. Please also see the responses to Comments 14340-1 and 14340-2.
- 14827-12 Please see the responses to Comments 14638-4 and 14642-3. The reasons for eliminating these alternatives from detailed study in the EIS are explained in Section 4.7, Alternatives Considered but Eliminated from Detailed Study. The information about the potential effect to the EIS schedule from developing and adding analysis of a new northeast route (the "grey line") was a reasonable estimate given where BPA was in the EIS process at the time and the magnitude of anticipated additional work that would be required for this brand new route.
- 14827-13 Although BPA did not extend the formal scoping comment period through additions of new segments, BPA continued to take comments on the project after the scoping period ended and will take comments throughout the environmental process. We hosted four additional public meetings to discuss project changes with the public and to accept public comment and questions. BPA also provided project updates and additional opportunities for public input between scoping and the release of the Draft EIS. Outreach is further described in Section 1.6.5, Post Scoping Outreach and Public Comments.
- 14827-14 To clarify, Section 1.6, Public Involvement and Major Issues, provides information about the EIS scoping process, as that term is commonly used and understood under NEPA. The subsections of Section 1.1, Background, referenced by the commenter provides background information on how the need for the project developed and related transmission planning efforts. BPA believes the EIS adequately describes these aspects of project and EIS development, as well as the interplay between each.
- 14827-15 As explained in the section of the EIS referenced, ""Generation projects are not proposed, constructed, or operated by BPA. Instead they are proposed and undertaken by private entities and their siting and development is controlled by state or local jurisdictions and other regulating entities. BPA's role is typically limited to deciding whether to interconnect these proposed projects, in

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14827-17 **Request:** Please explain why the Pearl Alternatives are left out of any discussion in Chapter 2.

14827-18 **Comment:** In chapter 4.7.2.1, BPA admits the Pearl Alternatives would address the transmission capacity issues the project seeks to remedy. However, all 40 route segments studied on the Oregon side of the river are then quickly dismissed.

**Request:** Explain how this is consistent with NEPA's requirement for careful consideration of alternatives and reasoned decision-making.

14827-19 **Comment:** Among the dismissed options was minimal discussion about the adequacy of routes used by the former Trojan Nuclear Plant. BPA explains that the 230-kv lines on the Trojan routes were reassigned to carry other power, but the agency stops short of explaining why this existing route would not be capable of also carrying a 500-kv line. This lack of explanation seems inconsistent with BPA's facility siting factors, specifically the conclusion in Chapter 2 that states, "placing a new line next to the existing 230-kv transmission line could be considered for the project."

**Request:** Please provide more explanation than what is offered in section 4.7.2.6.

14827-20 **Comment:** BPA's primary reason for administratively dropping the Pearl Alternatives just before scoping began is that "no existing BPA right-of-way was vacant and available for any of the segments in the proposed Pearl Routes."

**Request:** Despite dropping the Pearl Alternatives for lack of right-of-way, BPA's preferred alternative, Central Alternative Option 1, will require 2,123 acres of new easement, resulting in 90 percent of the total route requiring new right-of-way. Please explain BPA's highly inconsistent logic?

14827-21 **Comment:** BPA's second reason for not including any of the 40 Pearl routes in the scoping process is that these routes "would require a new Columbia River crossing...with much different conditions than the proposed crossing into Troutdale, Oregon." BPA fails to acknowledge there already is a 500kv crossing with those "different conditions" at Longview, leading to the Allston station. Seemingly, BPA could achieve such a crossing or at least study its costs and impacts. Studying alternatives with only a singular river crossing at Camas is inconsistent with NEPA principles, which require an agency to look at a reasonable range of alternatives.

**Request:** Please explain how studying only one Columbia River crossing location, when others are available, meets NEPA's requirement to study a reasonable range of alternatives.

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14827-15 compliance with its OATT, after an evaluation of the environmental effects of the proposed interconnection is done under NEPA. As a result, BPA does not have a region-wide program or plan related to wind or other generation projects, and does not dictate or direct where these projects are proposed." For these reasons, they are outside the scope of the EIS.

The proposed project would be able to accommodate expected load growth, proposed generation development, and firm transmission service requests.

14827-16 Please see the response to Comment 14443-1 regarding the elimination of the Pearl routes from detailed study in the EIS.

14827-17 Please see the response to Comment 14443-1 regarding the elimination of the Pearl routes from detailed study in the EIS. Chapter 2, Facility Siting, Route Segments, and Action Alternatives, focuses on the development of the wide range of alternatives that are studied in detail in the EIS. Accordingly, Chapter 2 generally does not provide information on alternatives considered but eliminated from detailed study in the EIS, such as the Pearl routes. As indicated by the commenter, these alternatives are discussed in Chapter 4, Proposed Action and Alternatives.

14827-18 Please see the response to Comment 14443-1 regarding the elimination of the Pearl Routes from detailed study in the EIS.

14827-19 Please see the response to Comment 14812-17.

In addition, other considerations when building the new 500-kV line adjacent to another line (to maximize use of existing corridor) are described below. In each case, the problems result from the need to plan for the outage of more than one line, because the circuits are adjacent.

- Building adjacent to an existing 500-kV line in the area, is not acceptable because we would have to plan for the common outage of the new line with the existing line, which would put us back in the same situation that we have today for the loss of the existing line alone, which limits the system capacity.
- Building adjacent to another lower voltage line in the same path (South of Allston). This is less desirable than building on a separate corridor, because we would have to plan for an outage of two facilities in the same path, instead of one, which would result in a greater reduction of capacity for that path (or higher costs to mitigate the impacts). Building adjacent to the PGE lines from Trojan Substation would fall into this category.
- Building adjacent to another lower voltage line that is not part of the same path, would need to be studied on a case-by-case basis to determine whether it would diminish the benefits of the project.

- 14827-22 **Comment:** Studying alternatives that all lead through Camas seems inconsistent with NEPA principles, which require an agency to look at a reasonable range of alternatives.  
**Request:** Please explain how BPA's studying only routes through Camas, when others are available, meets NEPA's requirement of studying a reasonable range of alternatives.
- 14827-23 **Comment:** We find it troubling that section 1.6.3, Scoping Comment Summary, does not include a mention of local jurisdictions' or citizens' requests for BPA to review alternative routes through Oregon. We find this curious given the number of times we, as a board, requested this of BPA. Similarly, in section 1.6.4, there is no mention of BPA Administrator Steve Wright's meeting with six Southwest Washington county commissioners on in November 2010.  
**Request:** Please include this information in the EIS.
- 14827-24 **Comment:** BPA's documentation released in August 2010 states that, "between March and September 2009, prior to the official scoping effort, we carefully examined" the Pearl Alternatives.  
**Request:** Please explain why, then, there is so little discussion about this examination in the early sections of the draft EIS.
- 14827-25 **Comment:** BPA staff often reasoned that reviewing other routes would "significantly affect the project schedule." This reasoning is undermined by the statement in section 1.1.2.2 that concludes redispach measures and upgrades at BPA's Pearl Substation "could delay the date a new line would need to be operational...by 2 to 6 years." It seems BPA is concluding it most likely will have plenty of time to look at other alternatives.  
**Request:** Given the extended time the non-wires study gives BPA, please clarify whether the agency has time to study other routes?
- 14827-26 **Comment:** BPA justifies this project by saying, "growing power demands in this metropolitan area are driving the need for this line." Even if the statement were true, BPA's decision to administratively drop the Pearl Alternatives from scoping remains inequitable for Washingtonians. It means BPA ignored its own evidence that the largest population base of the metropolitan area – Portland and Multnomah County – is driving the need. Oregon (PGE) customers have the highest five-year load growth increases, with 17 percent for winter and 18 percent for summer. BPA charts show the greatest need for future capacity is driven by Oregon users. Some studies show that the Pearl Alternatives would impact fewer homes. A recent article pointed out that Portland and Multnomah County are the fastest growing areas in Oregon.

- 14827-20 Please see the response to Comment 14443-1 regarding the elimination of the Pearl Routes from detailed study in the EIS. The reason cited by the commenter was one of many factors considered by BPA.
- 14827-21 Please see the response to Comment 14715-6 regarding issues with a river crossing for a Pearl Route. BPA believes that it has complied with NEPA by considering a reasonable range of alternatives, that it has provided sufficient reasons in Section 4.7, Alternatives Considered but Eliminated from Detailed Study for the elimination of certain alternatives from detailed study, and that the alternatives analyzed in detail in the EIS permit a reasoned choice from among a variety of alternatives.
- 14827-22 Please see the response to Comment 14677-6.
- 14827-23 Section 1.6.3, Scoping Comment Summary, contains a list of issues raised by the public and local jurisdictions. This list is a summary and does not include all issues raised, but does include a bullet for ""Route segments and alternatives."" Routes through Oregon would be included in this bullet. In addition, there is a reference to the scoping comment summary, available on the project website that includes a reference to routes in Oregon and all other comments received during scoping.
- The inset box on page 1-17 of the Draft EIS, referenced in Section 1.6.5, Post Scoping Outreach and Public Comments, described the November 2010 meeting and stated that BPA's Administrator Steve Wright attended and answered questions.
- 14827-24 Routes through Oregon or the "Pearl Routes," are described in Section 4.7.2.1, Alternate Routes from Castle Rock, Washington to near Wilsonville, Oregon (Pearl Routes). These routes were considered and eliminated before the scoping period began for the project. Because no Pearl routes were proposed, the information about these routes was only described in Section 4.7.2.1. Comments received during scoping about these routes are contained in the scoping reports available on the project website.
- 14827-25 The concern that BPA staff has expressed has been more about the EIS schedule rather than the schedule for the project itself. With this concern, BPA was being sensitive to what it was hearing from many landowners and interested parties - that the region wants a decision on a route sooner rather than later, and delaying the EIS would affect that. BPA also has practical and pragmatic reasons for working to keep the EIS on schedule as much as possible. Regardless, BPA believes it has provided sufficient reasons in Section 4.7, Alternatives Considered but Eliminated from Detailed Study, for why other routes have been considered but eliminated from detailed study in the EIS. See also the responses to Comments 14638-4 and 14642-3.

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14827-26 **Request:** *If the need for added transmission capacity is driven by local load growth and the majority of growth is driven by power users in Oregon, please explain how BPA justifies excluding study of any Oregon alternative as a reasonable range of alternatives in its draft EIS. Also, please explain what census data BPA relies on for the draft EIS and why.*

14827-27 **Scoping Summary:** We believe a complete discussion of the Pearl Alternatives was knowingly and inappropriately left out of the public scoping process and excluded from this draft EIS. In 2009, when BPA decided to move forward with the I-5 project after the 2008 NOS process, it feared too much opposition from Oregon landowners and elected officials to keep those routes on the map. Mr. Wright stated in a letter following that process that, “the basis for my decision is explained in more detail in Attachment A to this letter.” Attachment A was entitled, “Agency Decision Framework Analysis – 2008 Network Open Season.” Section (b) of the matrix “Landowners” reads, “There would be severe landowner challenges with I-5 if we keep western (Oregon) route alternatives on the table.”

We know that a short time later, outside of the public scoping process, Mr. Wright administratively decided to take the Oregon routes off the table. We think that decision was a critical flaw in the NEPA process. We, therefore, reaffirm our position that it was improper for BPA to prematurely and administratively remove the Pearl Alternatives from the scope of the EIS just months before the public was provided the opportunity to participate and comment. These actions were arbitrary and capricious.

### **Chapter 3: Project Components and Construction, Operation, and Maintenance Activities**

#### **Mitigation**

14827-28 The BPA’s proposed mitigation measures do not include details of implementation or how its general statements and goals will be achieved. The draft EIS mitigation measures can be characterized as general statements about doing as little harm as possible or compensating people when BPA is legally required to. This is inadequate. In addition, there is no detail about mitigation for lost numbers of endangered species and their habitats.

14827-29 **Comment:** In Table 4-10 under “socioeconomics,” BPA says the preferred alternative would “cause long-term decreases in government revenues by diminishing the property tax base, reducing future timber-related revenue from state trust lands, and decreasing future revenue from taxes on private timber harvests – potential **high** impacts on Cowlitz or Clark counties in some years.” Despite this admission, the Chapter 3 table describing “mitigation measures” does not include mention of BPA’s plans to help local governments make up lost revenue and prevent lower levels of service for citizens.

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- 14827-26 Please see the response to Comment 14443-1 regarding the elimination of the Pearl routes from detailed study in the EIS. The proposed project would help reinforce transmission for the whole region, meaning that it would help benefit both Washingtonians and Oregonians.

BPA mostly used the 2000 census data for the Draft EIS because the 2010 data, for the most part, had not been processed yet. The Final EIS has been updated with 2010 census data.

- 14827-27 Please see the response to Comment 14443-1.

- 14827-28 Please see the response to Comment 14306-4.

- 14827-29 Section 11.2.2.4, Government Revenue, and Table 4-10, Summary of Environmental Impacts by Alternative, have been updated with additional information for the Final EIS. The text the commenter points to in Table 4-10 is based on the discussion in Section 11.2.2.4. See also the response to Comment 14291-3 regarding property tax base.

Table 3-2 lists mitigation measures that BPA typically does as part of project design or during construction. Mitigation requested by local governments is project- and site-specific and is considered during the NEPA process. Oftentimes these discussions continue after the Record of Decision if a decision is made to build the project. BPA would continue to work with local governments to identify appropriate mitigation on or adjacent to BPA's easements.

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14827-29 **Request:** Please explain how BPA will help local governments make up this lost revenue leading to lower levels of service.

14827-30 **Comment:** Section 3.12 Mitigation Measures exposes a lack of knowledge about mitigation measures BPA could use to help our community deal with the permanent impacts of this project. With only generalizations and no detailed Mitigation Action Plan, local officials have no way of making informed decisions about route alternatives or BPA's intentions to properly compensate individuals and the community. Table 3-2 is limited in detail and scope.

**Request:** Please notify Clark County about when BPA will work on a Mitigation Action Plan and when local officials become involved in that process so they can properly represent the needs of their constituents.

#### **Chapter 4: Proposed Action and Alternatives**

14827-31 **Comment:** In Chapter 4.7.7, BPA concludes that, "For these cost, reliability and environmental reasons, undergrounding the transmission line has been considered but eliminated from detailed study in this EIS." We strongly object to this conclusion. We concur with our friends in Camas, and insist that within the city limits and urban growth area, the only acceptable means by which additional transmission lines and facilities could be routed is by underground transmission in accordance with adopted city ordinances. Furthermore, we think BPA should study using routes that avoid Camas and go farther east into unpopulated areas, crossing the Columbia River at Bonneville Dam.

**Request:** We ask BPA to reconsider the underground option and add "placing portions of the 70-mile new line underground" to its listed Recommended Mitigation Measures in Chapter 7.3.8. We also ask BPA to show the relative costs of underground cable segments requested by Camas and their impact on the total project budget, and the impact to BPA as it amortizes its financing of the project. In addition, we ask BPA to consider a route that avoids Camas by going farther east. If BPA declines to do any of these, please explain why.

14827-32 **Comment:** In substation impacts Table 4-11, the word "unauthorized" recreation does not seem appropriate. People are authorized to shoot and recreate on lands owned by the state. Also, to say the Rock Creek area at the proposed Casey Road substation site has "low scenic quality" is a purely subjective comment. People who live in or visit the area might not agree with that assessment. Besides which, calling the scenic value low because of adjacent transmission lines undermines statements throughout the draft EIS that downplay the visual impacts of transmission lines.

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14827-30 Please see the response to Comment 14306-4.

14827-31 Additional underground studies of the Washougal/Camas and the Castle rock area have been included as Appendix D1.

Section 4.7.2.4, Northeastern Alternative, North of Silver Lake, Washington, Section 4.7.2.7, Transmission Line Routes Bordering U.S. Forest Service and WDNR Land East of the Project Area, and Section 4.7.2.8, Transmission Line Route East to Bonneville Dam, 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.

Please see the response to Comment 14377-3 for information about potential financing options if BPA decides to build this project.

14827-32 According to WDNR, shooting, both authorized and unauthorized per WAC 332-52 - Public Access and Recreation, occurs on state land at the Casey Road substation site.

The visual resource analysis in the EIS is based on the Bureau of Reclamation's Visual Resource Management System which is described in Chapter 7 and Appendix E of the EIS. This method is effective for a variety of different development types, including transmission line projects. The visual resource inventory process involves rating an area of land, in this case the area underlying and surrounding the proposed transmission line segments, measuring its visual appeal, determining the sensitivity or public concern for the scenic quality, and determining the visibility of the land to sensitive viewing locations (USDI 1986a). Ratings are performed with the understanding that all land has scenic value and that certain landscapes have more broadly appealing features than others.

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*Request: We ask BPA to consult Washington Department of Natural Resources about whether a majority of people are illegally recreating on state property in the Rock Creek area.*

### **Chapter 5: Land**

14827-33

**Comment:** In RCW 76.19 (1), the legislature finds and declares that: forest land resources are among the most valuable in the state; that a viable forest products industry is of prime importance to the state's economy; it is in the public interest for public and private commercial forest lands to be managed consistent with sound policies of natural resource protection; along with maintenance of a viable forest products industry, it is important to afford protection to forest soils, fisheries, wildlife, water quantity and quality, air quality, recreation and scenic beauty. Of land in the preferred alternative, 80 percent is forested and most of it is owned by large entities such as Weyerhaeuser, Longview Timber and Washington State Department of Natural Resources.

*Request: Clark County and the state of Washington prioritize maintaining forest land resources as among the most valuable in the state. We ask that when BPA mitigates its impacts on forest land, it recognize that state statute and county codes put a high value on forest land.*

14827-34

**Comment:** One of the major reasons forest land resources are so highly valued is that they are a renewable resource.

*Request: Please clarify BPA's policies toward compensating landowners for loss especially when the loss is ongoing revenue generated by a renewable resource. It only seems logical and equitable that BPA recognize future value when compensating land owners.*

14827-35

**Comment:** Because 69 miles of the preferred alternative will require new right-of-way easements, many land owners will be affected and asked to work with BPA on route location.

*Request: Please better explain BPA's process of working with individual land owners to create the least impact on them by placing route segments on property lines, not bisecting property where possible.*

14827-36

### **Chapter 7: Visual Resources**

**Comment:** In Chapter 7, section 7.1.1.1, despite the preferred alternative having high levels of all positive factors for scenic quality, BPA dismisses this fact using arbitrary valuation tables. BPA continually refers to the scenic quality of the routes in Clark County as "low" or "low-to-moderate." We find BPA's judgment about the scenic quality of our county to be urban-centric. We think BPA's methodology for determining impacts on scenic quality is fundamentally flawed and arbitrary. The methodology that results in a

- 14827-33 Comment noted. BPA continues to work with WDNR, USFWS, and NOAA Fisheries to understand and meet the substantive requirements of Forest Practices.
- 14827-34 Please see the response to Comment 14566-9.
- 14827-35 Land use and ownership is one of many factors that BPA considers when siting a new transmission line. Chapter 2, Facility Siting, Route Segments, and Action Alternatives, explains the siting process. BPA considered property lines and homes at various distances from the line when developing route alternatives. After considering the Draft EIS, BPA continued to meet with landowners, agencies, and Tribes to understand their concerns and consider route adjustments that could lessen the impacts to affected properties.
- 14827-36 Please see the response to Comment 14171-10 for further explanation of the methodology used in the visual assessment.

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14827-36 "low-to-moderate" visual impact for a line that cuts between our largest population bases, against a backdrop of the Cascade Mountains and across dozens of major rivers, streams and wetlands needs additional explanation.

*Request: We ask for time to review the methodology BPA used for determining visual impact values, any scientific literature that supports it and its appropriate application in a northwest environment.*

#### **Chapter 8: Electric and Magnetic Fields**

14827-37 **Comment:** Because so much remains unknown about the relationship between EMF and human health, we think BPA should continue to support scientific studies on this issue. The association between childhood leukemia and EMF remains controversial and we think more studies in this area are needed.

*Request: Please continue to study and share the results of those studies with the public regarding the impacts of EMF on human health.*

#### **Chapter 10: Health and Safety**

**Comment:** In Chapter 10, BPA identifies three hazardous waste sites along various alternatives: 1) BPA's Ross Complex in the West Alternative; 2) International Paper Company Mill and Solid Waste Site in the Central Alternative; and, 3) Reynolds Metals Site in all alternatives. A brief description of each site is given.

14827-38 For the International Paper Mill, BPA mentions the mill site and the landfill, but not the Chelatchie Tank Farm. Under the section describing impacts to each specific alternative, BPA suggests that impacts resulting from the Central Alternative crossing the paper mill site would be "low." First, BPA suggests that, "This location is likely not within areas potentially contaminated by prior mill operations." Then, BPA admits, "Available information on the International Paper Company is limited and is archived in Ecology records." BPA then suggests the impacts would be low because, "the site would be investigated further and would be mitigated if the Central Alternative is selected."

*Request: Please explain how BPA can say impacts would be low or the location of the Central Alternative is not within potentially contaminated areas if they don't have reliable information about the hazardous waste sites or have identified all waste sites in the Chelatchie Prairie area. Also, please explain how BPA can suggest all three alternatives have been thoroughly analyzed if records regarding the International Paper Company Mill are "archived in Ecology" and have not been reviewed.*

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14827-37 Comment noted.

14827-38 Please see the responses to Comments 14683-9 and 14775-2.

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**Chapter 11: Socioeconomics**

14827-39 We find this chapter woefully inadequate. Critical information is not included and studies are not complete. We are unable to gain full understanding of how this project will impact our community's quality of life and our ability as a local government to provide critical services on which our citizens rely.

14827-40 **Comment:** Continuing to include so many route segments in the project places a hold on thousands of acres in our county and leaves many residents concerned about the future of their property.

**Request:** Please reconsider route segments in Oregon and remove as many Clark County routes as possible from study so many Clark County landowners can make better-informed decisions about the future of their property.

**Comment:** In tables 11-5 and 11-11, values are assigned for timber that would be cleared from state trust and large industrial forest landowners, but no value is assigned to non-industrial forest landowners. The methodology for how the agency arrived at these values is not explained. The draft EIS assumes these values are a one-time project expense, when in fact, permanently removing any area from the commercial forest land base is a permanent annual loss to the local economy.

14827-41 This is demonstrated with data from the Washington Forest Protective Association which shows Clark County has slightly more than 202,000 acres of "working" forest land. In Clark County, this forest land base annually generates 2,974 direct jobs and 7,267 total jobs, translating into more than \$342 million in annual wages. Based on Washington Department of Revenue data, the area immediately within the 150-foot right-of-way along the 39 miles of the Central Alternative would result in the loss of 253 jobs and \$1.2 million in annual lost wages. When expanded to include the acreage impacted by the NERC Transmission Vegetation Management Program under R3.4.3 Category 3, the total job wages lost would exceed \$3.7 million.

The draft EIS does not mention "Lost Jobs" primarily because it assumes harvesting trees for the right-of-way is a one-time event and not a sustainable resource. It fails to recognize the generational nature of a forest managed for multiple yields. The same problem exists when this assumption is applied for stumpage fees and excise taxes.

**Request:** The BPA needs to develop a methodology for accurately assessing the present net and future net economic and social losses relating to all alternatives. The methodology must be recognized and accepted by all stakeholders impacted by the project. An unbiased third party should have oversight authority regarding BPA's methodology.

14827-42 **Comment:** While Section 11.2.2.4, Government Revenue, acknowledges, "The project would cause long-term decreases in government revenue," it fails to describe these losses with any detail or how BPA will mitigate the losses. In Chapter 4 Table 4-10 under

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14827-39 Please see the response to Comment 14328-5.

14827-40 The opinion of the commenter is noted. Please see the response to Comment 14443-1.

14827-41 Please see the response to Comment 14793-36.

14827-42 Please see the response to Comment 14827-29.

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14827-42 “socioeconomics,” BPA says the preferred alternative would “cause long-term decreases in government revenues by diminishing the property tax base...potential **high** impacts on Cowlitz or Clark counties in some years.” We expected a detailed analysis of this revenue loss to be in the “Property Tax” section, but instead were disturbed to only find statements such as “data are insufficient to determine...what the net effect on property tax collections would be” and “available data are insufficient to fully quantify the impacts.”

*Request: For the final EIS, BPA should document potential long-term and permanent financial impacts attributable to decreases in property value along each alternative.*

14827-43 **Comment:** BPA studies of private property sales adjacent to and near transmission lines and away from transmission lines suggest a decline in sales value of at least 1-2 percentage points. For a \$250,000 property, that would mean a \$2,500 to \$5,000 loss in the sale price. Despite this evidence, BPA states, “BPA would not pay compensation to owners of other property, such as residences outside but near the right-of-way, if they should experience a decline in market value.”

*Request: For the final EIS, please explain the reasoning behind the policy of not recognizing and compensating property owners for this real value loss caused by BPA's needed easement.*

14827-44 **Comment:** In section 11.2.2.5 Property Values, BPA says the law “limits BPA to paying compensation equal to the fair market value.” But it also states, “BPA would take into consideration current economic conditions.”

*Request: Please further explain BPA's policies about compensating property owners, specifically how BPA takes current economic conditions into consideration. This information is critical, given the decline in the housing market and values since BPA proposed this project.*

14827-45 **Comment:** In section 11.2.2.5, BPA says “If, after good faith negotiations, BPA and a landowner are unable to agree on terms of a purchase, BPA would ask the U.S. Department of Justice to begin condemnation.”

*Request: Please explain how the parties will determine who is qualified to decide what “good faith negotiations” are. If a property owner disagrees, please explain the appeal process.*

## 14827-46 **Chapter 12: Transportation**

**Comment:** The review of Chapter 12, Transportation, indicated a number of critical questions are still unanswered. Specifically, the driveway and intersections where heavy and oversized vehicles/equipment will intersect the county road system are not identified, nor are the specific impacts at those locations. For example, the safety and delay times for non-project traffic at those locations are not addressed. Additionally, the number and

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- 14827-43 Please see the response to Comment 14566-9.
- 14827-44 Please see the response to Comment 14566-9.
- 14827-45 BPA's Realty Specialists are responsible for documenting efforts made to successfully negotiate with landowners to acquire the necessary land rights. BPA's Administrator must approve any recommendation by the Realty Specialist to proceed with the condemnation process. As stated in the US Code Title 42 Chapter 61 Subchapter III Section 4651, "In order to encourage and expedite the acquisition of real property by agreements with owners, to avoid litigation and relieve congestion in the courts, to assure consistent treatment for owners in the many Federal programs, and to promote public confidence in Federal land acquisition practices, heads of Federal agencies shall, to the greatest extent practicable, be guided by the following policies" (refer to the US Code for more details).
- 14827-46 During construction, contractor traffic is "street legal" meaning BPA expects the contractor to meet county and state requirements for weight and size limits on public roads. If oversized equipment is used that may need special signage and/or pilot cars then again BPA would expect the contractor to meet those county and state requirements on public roads. In regards to driveway and intersections where roads the contractor would use intersect the county road system, BPA plans on identifying those approaches and providing that information to the affected County. At that time, all safety requirements and delay times would be identified in coordination with local authorities. This information is not yet available and cannot be included in the Final EIS. Once BPA makes a decision on whether to build the project and a contractor(s) is secured for construction, efforts will begin to identify and gather the transportation information.

Safety is of an utmost concern to BPA. A prospective contractor's safety record and safety plan is a major factor in BPA's selection of a suitable contractor. Some impacts (inconvenience, delays etc.) can occur to existing businesses and residents in the project area but it is BPA's expectation that the contractor would be actively working with those impacted and the County to minimize those impacts.

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14827-46

extent of oversized loads on narrow, windy, rural roads and resulting safety issues were not addressed. The extent and frequency to which existing businesses and residents in the project vicinity will encounter roadway and intersection closures, lane closures and detours also were not defined.

*Request: Please address the impacts on the county road system more specifically in the final EIS.*

#### **Chapter 14: Geology and Soils**

**Comment:** According to BPA's analysis of soils and geological hazards along the preferred alternative, most of the Central Alternative is within potentially landslide-susceptible terrain, and it crosses several mapped landslides. Through mitigation measures, BPA will conduct site-specific geologic evaluation of potential landslides areas, and if they cannot be avoided, site-specific designs will be developed.

BPA also acknowledges that impacts would be high where erosion occurs at road, tower or substation construction and when clearing sites on soils with severe or very severe erosion-hazard potential, or in areas of permanent soil compaction. Additionally, BPA acknowledges that impacts would be moderate where erosion occurs at road, tower, or substation construction and when clearing sites on soils with a moderate erosion-hazard potential.

14827-47

Along the preferred alternative, 596 acres are considered soils with severe or very severe erosion hazard, 262 acres will become permanently compacted, and 30 acres are considered soils with moderate erosion hazard. With mitigation measures, such as the Washington Department of Ecology's Best Management Practices for construction stormwater pollution prevention, BPA suggests impacts of construction of the preferred alternative would be low-to-moderate. In addition, BPA suggests erosion during operation and maintenance would be low because temporary erosion control measures would be maintained until vegetation reestablishes or permanent erosion control measures are in place.

Previously, under Chapter 5 Land, BPA acknowledges that a majority of the preferred alternative is currently forested, whether in production or not. The mitigation measures above suggest BPA both will implement site-specific designs for towers and access roads in areas of landslide potential and implement Best Management Practices for temporary and permanent erosion control. BPA does not, however, address the permanent conversion of forest vegetation on soils with geological hazards such as landslide potential or severe erosion hazard.

*Request: We ask that BPA analyze the long-term impacts of removing forest vegetation from soils with severe erosion hazard and landslide susceptibility, and use effective*

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14827-47 Chapter 14, Geology and Soils, acknowledges that site-specific geotechnical investigations would be done at potential landslide and liquefaction prone areas (and other areas where sub-surface information is needed) to evaluate the potential for these areas to experience landslides or liquefaction. Some of these investigations have been done and there are more to do. The results from these studies have been incorporated into the location and design of project facilities and subsequent results from additional studies will be used the same way. If needed, mitigation measures, such as those described in Chapter 14, Geology and Soils to reduce the risk of landslides, erosion, and liquefaction to the towers would be implemented.

Chapters 14, Geology and Soils, and 17, Vegetation, describe how the right-of-way would be reseeded after construction with appropriate seed mixes and would be expected to reestablish within a few growing seasons. Once vegetation has reestablished, it is expected that erosion and landslide potential would be similar to pre-construction conditions.

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14827-47 | *mitigation measures as prescribed by a qualified Geotechnical Engineer across the entire length of the preferred alternative.*

### **Chapter 15: Water**

14827-48 | **Comment:** According to BPA, clearing of up to 1,000 acres results in less than a 1 percent change in runoff and sediment delivery. BPA suggests this is a minimal or low impact on water quality. However, this level of vegetation clearing and the new impervious surfaces created for maintenance access roads and tower pads could be subject to Clark County's stormwater manual, as required by the county's Phase I NPDES Municipal Stormwater Permit. At a minimum, a detailed stormwater analysis would have to be done for the entire corridor just to assess applicability with Clark County's Stormwater Management Manual.

*Request: Please explain how BPA intends to do a detailed stormwater analysis for the corridor and how it will meet or exceed local standards.*

**Comment:** BPA suggests the proposed project's cumulative impacts on water quality will be small. BPA's recognition that the preferred alternative will have the greatest impact on water quality and the highest number of new stream crossings (301) seems inconsistent with that conclusion. BPA also recognizes the loss of 1,000 acres of forest habitat along this alternative, which also does not support the "low impact" conclusion.

14827-49 | BPA fails to understand that conversions of forested habitats to invasive species-dominated habitats, which are commonly found in transmission line corridors, will have a substantial cumulative impact on water quality. Regardless of BPA's analysis of potential impacts on water quality, mitigation measures should ensure all BPA's development activities comply with the Washington Department of Ecology's most current stormwater management manual. However, complying with the state stormwater manual may not address the cumulative impacts on water quality that will result from clearing 1,000 acres of forest land on the Central Alternative. In addition, BPA's selection of the Central Alternative will result in a much greater loss of highly valued forest land.

*Request: Will BPA comply with the Washington Department of Ecology's most current stormwater manual and address this project's cumulative impacts on water quality? If not, specifically, how will BPA meet or exceed local requirements?*

### **Chapter 16: Wetlands**

14827-50 | **Comment:** BPA's remote sensing approach to wetland delineation is not consistent with the U.S. Army Corps of Engineer's 1987 Delineation Manual and the Western Mountains and Valleys Regional Supplement. Wetlands are delineated by confirming hydrology, hydric soils and hydrophytic vegetation. Because this information is absent, BPA has neglected to accurately analyze the full range of impacts any alternative would have on wetlands. All wetlands on the various routes must be delineated using methodologies accepted by the U.S. Army Corps of Engineers (the Corps), Washington State Department

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14827-48 Section 27.10, Clean Water Act, states that in Washington, NPDES construction stormwater permits require notification to Ecology in advance of ground disturbing activities of one acre or more. Stormwater controls must be developed to address during- and post-construction erosion control, treatment and discharge of dewatering water (if any), and other construction-related activities that could affect receiving water quality. These controls must be documented in a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP is developed during final project design, adapted by the contractor before construction, and revised on site as necessary. A copy of the SWPPP is maintained on-site during construction and is a basis for environmental compliance inspection during construction. The BMPs specified in the SWPPP must be inspected periodically by a state-certified inspector. Sampling and analysis of stormwater runoff is required to demonstrate compliance with discharge limits.

In Oregon, NPDES stormwater regulations also require the notification of ODEQ for ground disturbance activities greater than one acre. State regulations require the use of BMPs for control of erosion, stormwater discharges, and non-stormwater discharges to waters of the state.

Table 3-2, Mitigation Measures Included as Part of the Project, states that a SWPPP will be prepared and implemented using management practices contained in the Washington State Department of Ecology, Stormwater Management Manual for Western Washington.

14827-49 Please see the response to Comment 14827-48.

14827-50 BPA did rely on a remote sensing methodology and approach to evaluate wetlands potentially occurring within the Preferred Alternative. This approach was consistently applied across all action alternatives studied in the Draft EIS to allow for a comparison of impacts appropriate for the Draft EIS stage. Formal wetland delineations have now been done for the Preferred Alternative to accurately determine wetland acreages and calculate impact areas. Wetland delineations are fully consistent with the US Army Corps of Engineers 1987 Manual and regional supplement. This federal manual is also consistent with the Ecology guidance and methods outlined in the Clark County critical areas ordinance. BPA has coordinated with Clark County staff to determine permit requirements and administrative procedures.

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of Ecology (Ecology), and Clark County Environmental Services before impacts of the routes on wetland habitats are analyzed and added to the final Environmental Impact Statement.

BPA says identifying and fully analyzing these impacts could mean the loss of 19-43 acres of wetlands and the conversion of 83-123 wetland acres because of vegetation clearing. BPA states it will, "Obtain all required permits with approved wetland delineations and compensatory mitigation plans prior to construction, and implement required wetland compensation in accordance with these plans and permits."

It is unclear, however, whether BPA would be able to obtain a permit from Clark County for the preferred alternative because, according to Title 40.450.010(B)(4):

d. The application of this chapter shall not be used to deny a development proposal for a linear facility from a public agency or public utility, provided the agency or utility meets the following criteria:

- (1) There is no practical alternative to the proposed project with less impact on the wetland and buffer area; and
- (2) The application of this chapter would unreasonably restrict the ability to provide public utility services to the public.

Without accurate wetland delineations for all three alternatives, it is impossible to determine whether the preferred alternative would result in the least impact on wetlands and buffers. BPA's failure to clearly define the necessity of this project suggests that a reasonable use exemption from Clark County might not be warranted. Denial of a wetland permit might not unreasonably restrict BPA's ability to provide services to the public.

*Request: Considering the absence of adequate wetland determinations, please explain whether BPA will meet local standards and apply for permits from Clark County. If not, specifically how will BPA meet or exceed local requirements?*

**Comment:** If BPA resolves the many issues with its wetlands analysis and submits permit applications and a compensatory mitigation plan, Clark County would seek wetland mitigation commensurate with the impacts as defined by Clark County's Wetland Protection Ordinance and guidance provided by the Corps and Ecology in *Wetland Mitigation in Washington State – Part II: Developing Mitigation Plans*. Mitigation for any impacts to wetlands in Clark County should occur in Clark County, not elsewhere in the region.

*Request: Please explain whether BPA will work with Clark County on wetland mitigation in accordance with the county's Wetland Protection Ordinance and mitigate impacts to Clark County in Clark County. If BPA will not work with Clark County on mitigation, how will it meet or exceed local mitigation standards and where will the mitigation be?*

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- 14827-51 Mitigation for project impacts to wetlands will follow the guidelines in Ecology's Wetland Mitigation in Washington State - Part II and the Corps federal guidance for compensatory mitigation. In 2008, EPA and the U.S. Army Corps of Engineers issued revised regulations governing compensatory mitigation for authorized impacts to wetlands, streams, and other waters of the U.S. under Section 404 of the Clean Water Act. These regulations are designed to improve the effectiveness of compensatory mitigation to replace lost aquatic resource functions and area. As part of the federal permitting process, BPA has worked with the Corps and Ecology to develop mitigation as required by the Section 404/401 permit process. Mitigation for wetland and stream impacts are generally accomplished on a watershed basis and mitigation areas are identified in the same watershed as project impacts. A compensatory mitigation plan is being prepared based on project impacts as they are finalized.

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**Chapter 17: Vegetation**

14827-52

**Comment:** BPA's draft EIS suggests that vegetation impacts of the Central Alternative can be considered a low impact. This assessment is inaccurate as BPA failed to analyze the impacts of permanently removing forested vegetation from more than 1,200 acres. Once cleared, this land will be maintained by BPA with some other form of vegetation, making it: more susceptible to noxious weeds; less desirable as wildlife habitat; more susceptible to erosion; and, less visually appealing. Contrarily, if left for production, forests are managed for timber harvest and replanted on a recurring basis. That way, the impacts of timber harvest are temporary, not permanent.

**Request:** Please address this inaccuracy.

**Chapter 18: Wildlife**

**Comment:** Because the Central Alternative will have the greatest impact on all forest vegetation types, it follows that impacts, such as fragmentation, on wildlife habitats also will be greater. Chapter 15 discusses the impacts stream crossings will have on riparian habitats. The overall number of crossings per alternative is similar. However, the forested nature of the Central Alternative means its impact will have a more detrimental effect on riparian habitats and the wildlife that depends on them.

Looking strictly at the impacts of vegetation clearing in riparian crossings, it is clear that the Central Alternative will result in the greatest environmental impact. We suggest that BPA should have a clear and concise Purpose and Need statement tied to the preferred alternative in order to justify its selection.

14827-53

According to Clark County's Habitat Conservation Ordinance (Title 40.440), impacts on forested riparian zones have temporal impacts that are often difficult or impossible to approve. Specifically, the ordinance has two simple approval criteria as shown in Title 40.440.020(A):2. Basic Criteria. Applicants proposing activities subject to this chapter shall demonstrate that the activity:

- a. Substantially maintains the level of habitat functions and values as characterized and documented using best available science; and
- b. Minimizes habitat disruption or alteration beyond the extent required to undertake the proposal.

Removal of mature forests inherently means a change in the level of habitat function and value, and no mitigation can replace the loss of mature conifers. As such, the ordinance is clear with regards to projects proposed by a public entity, as seen in Title 40.440.020(B):

4. This chapter shall not be used to deny a development proposal from a public agency or public utility, if:

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- 14827-52 Chapter 5, Land, describes the potential impacts of permanently removing land from timber production for the transmission line right-of-way and access roads and subsequent maintenance of these areas.

Removal of forest vegetation and potential impacts from noxious weeds are discussed in Section 17.2.2, Impacts Common to Action Alternatives. BPA would address control or eradication of noxious weeds during construction and afterwards during maintenance of the project. Chapter 18, Wildlife describes the project's potential impacts on wildlife and mitigation measures identified to minimize those impacts.

- 14827-53 Chapter 1 describes the purpose of and need for the project.

To maintain safe operation of the transmission line, the removal of some, most, or all tall conifers and deciduous trees in riparian areas is unavoidable no matter where BPA would choose to locate a new transmission line. Each riparian crossing is different and BPA must take into account many different factors when determining what vegetation may remain in these sensitive areas.

As a federal agency, BPA is not subject to the environmental regulations and standards of local jurisdictions; however, BPA attempts to comply with substantive requirements when possible. Chapter 27, Consultation, Review, and Permit Requirements, outlines the regulatory framework for the proposed project. Although BPA would not seek a habitat permit from Clark County, BPA continues to work with various agencies to develop mitigation for riparian areas.

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- a. There is no practical alternative to the proposed project with less impact on the habitat area;
- b. The ability of the public agency or utility to provide services to the public would be unreasonably restricted; and
- c. The application is approved through a Type III process pursuant to Section 40.510.030, (Type III Processes). Fees are subject to the Type III Variance fee schedule in Section 6.110A.010 (Development Fees).

14827-53

Similar to the discussion provided under Chapter 16 Wetlands, BPA has not demonstrated that there is no practical alternative to the proposed project with less impact on habitat areas. In fact, BPA admits selecting the alternative with the most impact on habitat areas. Also, lacking a clear Purpose and Need statement, BPA fails to make the case that in the absence of the preferred alternative, its ability to provide public services would be unreasonably restricted.

*Request: Please clarify whether BPA will seek a habitat permit from Clark County. If not, how will BPA meet or exceed local requirements?*

14827-54

**Comment:** If BPA resolves the many issues with the preferred alternative and impacts on forested habitats, Clark County would seek habitat mitigation commensurate with the impacts as defined by Clark County's Habitat Conservation Ordinance and as defined by any Biological Opinion issued by the U.S. Fish and Wildlife Service or National Marine Fisheries Service or by any Hydraulic Project Approval issued by the Washington Department of Fish and Wildlife. For any impact to habitats in Clark County, mitigation should occur in Clark County, not in a nearby region.

*Request: Please clarify whether BPA will mitigate habitat impacts in Clark County. If not, where will BPA mitigate?*

### **Chapter 19: Fish**

14827-55

**Comment:** BPA recognizes the Preferred Alternative will result in: clearing forested vegetation along two to three miles of fish-bearing streams; the highest number of new stream crossings (301); and, the highest number of stream crossings with forested riparian areas (49). BPA acknowledges the local impacts of sediment delivery would be high. However, BPA also suggests the long-term changes or impacts on the watershed will be low.

*Request: Please explain this recurring inconsistency in many sections of the draft EIS, namely that BPA acknowledges impacts will be high, but states that overall, change or effect on the resource will be low.*

14827-56

**Comment:** In Chapter 27, when discussing Section 7 Consultant for endangered species, BPA suggests, "While none of the alternatives and options would cause a substantial risk

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- 14827-54 Impacts to suitable habitat for federally-listed species resulting from construction of this project would be mitigated according to the requirements in the Biological Opinion issued by the US Fish and Wildlife Service and/or National Marine Fisheries Service. BPA anticipates that an Advisory HPA would be issued for the project by WDFW. Any impacts to habitats in Clark County as identified through these processes would be mitigated as required. BPA will continue to work cooperatively with Clark County to determine how mitigation would be accomplished within county lands.
- 14827-55 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 associated with potential habitat impacts at the crossing, reach, and ESU scale. Summary level impacts are reported in Table 25 in Appendix K. Though impacts to a specific small area could be high, the overall impact to the entire watershed, a much larger area, would be low.
- 14827-56 Please see the response to Comment 14827-55.

BPA has revised the last paragraph on page 27-2 to be consistent with the discussion of fish impacts in Appendix K. In addition, BPA has also corrected this paragraph to indicate that critical habitat for fish species is crossed by the action alternatives.

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14827-56 to listed species, additional impacts will further degrade the state of ESA-listed species from current levels.” BPA contradicts itself. On the one hand, it acknowledges that removing two to three miles of forested vegetation along fish-bearing streams and a high number of new stream crossings will result in high impacts from sediment delivery. On the other hand, it says there is no substantial risk for listed species and impact on water quality will be minimal or low.

**Request:** Please address this inconsistency in the EIS.

14827-57 Comment: Through the process of Section 7 Consultant, BPA will be required to provide mitigation for impacts on listed species. As described in chapters 16 and 18, for any impacts to habitats in the county, mitigation should occur here, not in a nearby region.

**Request:** Please clarify whether BPA will mitigate its impacts in Clark County.

#### **Chapter 25: Irreversible or Irretrievable Commitment of Resources**

14827-58 **Comment:** BPA acknowledges in Chapter 25.2 that “an irretrievable loss of soil stability and increased soil compaction and landslide potential would occur between construction and vegetation.”

**Request:** Please explain specifically how BPA will mitigate for this impact.

14827-59 **Comment:** In Chapter 25.3, BPA says, “Resulting wildlife losses from these permanent alterations and during construction and operation of the project would represent an irretrievable commitment of biological resources.”

**Request:** Please explain how this statement is consistent with the conclusions in Chapter 4 that say “Overall impact on the watershed functions” will be low and also that impacts to wildlife would be “low from habitat loss.”

#### **Chapter 26: Cumulative Impacts**

14827-60 **Comment:** BPA has selected the Central Alternative as the preferred alternative despite its higher level of cumulative impacts and harm to the natural environment.

**Request:** As discussed in the analysis of Chapter 1, Purpose & Need, Clark County feels that BPA has not crafted a clear, concise Purpose and Need statement demonstrating that selecting the Central Alternative as the preferred alternative was an appropriate decision. Please address these issues before finalizing the draft EIS?

#### **Chapter 27: Consultation, Review, and Permit Requirements**

14827-61 **Comment:** Given the intentional destruction and irreversible commitment of resources this project will cause, the Endangered Species Act consultation discussion in section 27.2 seems inconsistent and incomplete. Chapter 19.2.9 acknowledges this project would

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- 14827-57 Please see the response to Comment 14827-54.
- 14827-58 The loss of soil stability, and increased soil compaction, and landslide potential between construction and revegetation would be irretrievable, as acknowledged by BPA in Section 25.2, Irreversible or Irretrievable Commitment of Resources, and as noted by the commenter.
- Chapter 14, Geology and Soils, describes BMPs that would be implemented to reduce the impacts to soil (such as those described above) to the extent possible. However, implementing BMPs cannot completely eliminate impacts to soils. The irretrievable effects on soil are inherently related to the construction of the project, e.g., vegetation and topsoil must be removed to build access roads, staging areas, and worksites for tower construction and installation. Soil underneath access roads and towers must be compacted to have stable foundations for the roads and towers. BPA would not specifically mitigate for these irretrievable effects to soil. These effects are also acknowledged and described in Section 14.2.9, Unavoidable Impacts.
- 14827-59 BPA has added language to Chapter 25, Irreversible or Irretrievable Commitment of Resources, to clarify that irreversible and irretrievable (permanent) losses could occur to both species and habitat. The impact levels to wildlife in Table 4-10, Summary of Environmental Impacts by Alternative, are consistent with impact definitions for low (habitat loss) and moderate (species mortality) in Chapter 18, Wildlife. Regarding watershed functions, Table 4-10 also recognizes that specific areas of high impacts could occur. Chapter 25 recognizes that watershed functions could be restored after construction (see Chapters 15 through 19 for recommended mitigation measures).
- 14827-60 BPA believes Chapter 1, Purpose of and Need for Action, adequately and appropriately describes the purpose of and need for the proposed project. See also the response to Comment 14472-3 concerning how BPA identified its Preferred Alternative.
- 14827-61 The EIS summarizes impacts to fish resources in Section 19.2, Environmental Consequences. BPA has consulted with NOAA Fisheries pursuant to the Endangered Species Act and has addressed effects to listed species through a Biological Assessment. This would incorporate findings reported in Section 19.2 and in Appendix K, which estimate the percentage loss of priority fish populations due to project actions.

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“reduce the production of affected fish species in these streams” and Chapter 27.2 says that “eight federally protected fish species could occur in the project area.” Along with these admissions BPA states that “loss of riparian function would be greatest along the preferred alternative.”

14827-61

BPA then contradicts itself concluding that while the project will “degrade the state of ESA-listed species,” there is no “substantial risk to listed species.” The conclusion seems not only inconsistent, but unsubstantiated. BPA states that it is only now consulting with U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration Fisheries. No fish surveys have been done, and a Biological Assessment isn’t available to “analyze the potential effects of the action on listed species and critical habitat,” BPA says. Local jurisdictions and citizens cannot make informed judgments without this critical, legally required information.

*Request: Please explain how BPA will incorporate consultation documentation into the final EIS. Also please explain whether BPA will prepare a Biological Assessment so USFWS and NOAA Fisheries can issue a Biological Opinion and possible Letter of Concurrence for the project.*

14827-62

**Comment:** The Magnuson-Stevens Fishery Conservation Management Act requires NOAA Fisheries to provide essential fish habitat conservation and enhancement recommendations.

*Request: Please explain when BPA will consult with NOAA Fisheries to ensure appropriate mitigation measures are made public and part of the final EIS.*

#### **Chapter 28: Consistency with State Substantive Standards Shoreline Master Program**

14827-63

**Comment:** Under its analysis of the Washington State Shoreline Master Program, BPA lists little information about complying with Clark County’s Shoreline Ordinance. BPA also suggests the current Shoreline Master Program was adopted by Clark County in 1974. However, Clark County adopted a new shoreline ordinance in July 2012. As such, BPA has not adequately analyzed impacts of the transmission line alternatives on Shorelines of the State through a majority of the preferred alternative. BPA will need to re-evaluate the various alternatives and analyze impacts on shoreline environments for the final Environmental Impact Statement.

*Request: Please re-evaluate the various alternatives using the most current shorelines ordinance.*

14827-64

**Comment:** The following Clark County code sections will be difficult for BPA to address with the preferred alternative:

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- 14827-62 The EIS summarizes impacts to fish resources in Section 19.2, Environmental Consequences. BPA has consulted with NOAA Fisheries pursuant to the Magnuson-Stevens Act and has addressed potential effects to essential fish habitat (EFH) through a Biological Assessment. This would include recommendations for conservation and enhancement measures for project actions that may adversely affect EFH.
- 14827-63 BPA has updated the Final EIS to recognize that Clark County adopted a new Shoreline Master Program in July 2012. An analysis of impacts to shorelines of the state in all local jurisdictions from the Preferred Alternative is included in Chapter 27, Consultation, Review, and Permit Requirements, and Appendix O.
- 14827-64 If BPA decides to build this project, a comprehensive mitigation plan will be developed by BPA that identifies measures to offset impacts to shoreline ecological functions adversely affected by the I-5 Corridor Reinforcement Project. This mitigation plan will strive to reduce and minimize project impacts, where possible, to waterbodies considered Shorelines of the State in Washington. BPA will strive to meet the substantive requirements of the Clark County Shoreline Ordinance.

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14827-64 "40.460.510 General Shoreline Use and Development Regulations

B. Shoreline uses and developments shall fully mitigate for impacts and shall not cause impacts that require remedial action or loss of shoreline ecological functions on the subject property or other properties."

*Request: Please explain how BPA will meet the mitigation requirements of the Shoreline Ordinance.*

**Comment:** Regarding reasonable use provisions of the Habitat Conservation Ordinance and Wetland Protection Ordinance, the Shoreline Ordinance states:

"40.460.530(1)(F)(1)

f. The reasonable use provisions in Chapter 40.440 do not apply to habitat conservation areas regulated under this Program.

40.460.530(1)9G)(1)

k. The reasonable use provisions in Chapter 40.450 do not apply to wetlands regulated under this Program."

As such, for any crossing of Shorelines of the State, impacts to wetlands or riparian habitats within those shorelines will not be granted a reasonable use exception or public interest exception, but would be required to meet the criteria for a Shoreline Variance as described here:

14827-65

1. That the strict application of the bulk, dimensional or performance standards set forth in this Program precludes, or significantly interferes with, reasonable use of the property;
2. That the hardship described in subsection (A) of this section is specifically related to the property, and is the result of unique conditions such as irregular lot shape, size, or natural features and the application of this Program, and not, for example, from deed restrictions or the applicant's own actions;
3. That the design of the project is compatible with other authorized uses within the area and with uses planned for the area under the Comprehensive Growth Management Plan and this Program and will not cause adverse impacts to the shoreline environment;
4. That the variance will not constitute a grant of special privilege not enjoyed by the other properties in the area;
5. That the variance requested is the minimum necessary to afford relief; and
6. That the public interest will suffer no substantial detrimental effect."

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14827-65 Please see the responses to 14827-54, 14827-63, and 14827-64.

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14827-65 **Request:** *Because BPA has not analyzed the various alternatives, we find it difficult to determine if the preferred alternative could meet the criteria for a variance. Please explain how BPA intends to do this analysis or apply for a variance.*

**Comment:** According to the vegetation conservation components of Clark County's Shoreline Master Program under Title 40.460.570:

"A. Existing vegetation within shoreline jurisdiction shall be retained in the riparian area closest to the water body but landward from the OHWM."

B. Removal of native vegetation shall be avoided to the extent possible. Where removal of native vegetation cannot be avoided, it shall be minimized to protect shoreline ecological functions.

14827-66 D. If vegetation removal cannot be avoided, it shall be minimized and then mitigated at a minimum ratio of one to one (1:1), and shall result in no net loss of shoreline ecological functions. Lost functions may be replaced by enhancing other functions; provided, that no net loss in overall functions is demonstrated and habitat connectivity is maintained. Mitigation shall be provided consistent with an approved mitigation plan.

G. Vegetation that cannot be replaced or restored within twenty (20) years shall be preserved."

**Request:** *BPA almost certainly will need to remove vegetation that cannot be replaced or restored within 20 years. As such, any crossing of a Shoreline of the State where this is necessary will mean the proposed project would be out of compliance with local or state standards. Please address this concern.*

#### **Critical Areas Protection**

14827-67 **Comment:** Under its analysis of local critical areas ordinances, BPA says: "BPA has incorporated some of the standards and guidance from the CAOs in analyzing and proposing mitigation for impacts on potentially critical areas. See Sections 14.2.8, 15.2.8, 16.2.8, 17.2.8, 18.2.8, and 19.2.8 for mitigation measures. BPA would use these measures to meet or exceed critical area ordinance requirements to the extent practicable."

**Request:** *As discussed under the Wetlands and Wildlife chapters, BPA might not be able to meet or exceed Clark County's Wetland Protection or Habitat Conservation Ordinances. Some form of reasonable use exception will be required for both. Please explain BPA's intent to apply to the county for some type of exception.*

#### **Noxious Weed Laws**

14827-68 **Comment:** Under its analysis of noxious weed control laws, BPA suggests: "Construction and maintenance activities would create some risk of spreading undesirable plant species in the project area in Cowlitz and Clark counties, Washington and Multnomah County, Oregon."

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14827-66 Please see the responses to Comments 14827-54, 14827-63, and 14827-64.

Section 28.4.1, Shorelines and Wetlands, discusses Section 16 of the Shoreline Management Act and BPA consistency. Chapter 15, Water and Chapter 16, Wetlands discuss mitigation measures identified to reduce potential impacts on water and wetlands.

14827-67 As a federal agency, BPA is not required to apply for or obtain permits from local governments. However, BPA seeks to meet the substantive goals and intent of the Clark County Wetland Protection and Habitat Conservation Ordinance where possible. Should the project be unable to meet or exceed the standards, BPA will continue to coordinate with various agencies on appropriate mitigation options including avoidance, minimization and compensation for impacts.

14827-68 Please see the response to Comment 14566-6.

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If privately or state-managed undesirable plant species are found or spread during project construction or maintenance, BPA will coordinate with the state, county, and landowners regarding their control or eradication (BPA 2000a).

14827-68 ***Request:*** *Mitigation measures should ensure agreements are drafted wherein BPA will support noxious weed control for all state listed noxious weeds whose populations develop or increase in the vicinity of the new transmission line. Please discuss whether BPA will work with the county to make sure agreements to control noxious weeds are in place before work begins.*

### **Closing**

14827-69 The Board of County Commissioners' paramount duty is to maintain the high quality of life and livability of its community. While we recognize the importance of a dependable power grid and BPA's need for reliable transmission capacity, we will not allow that need to slice through our sense of place and community without proper study and mitigation. We stress: it is critical that Clark County residents are persuaded that there is a local need for this project. We believe Chapter 1's explanation of that need is inadequate. In our estimation, the citizens of Southwest Washington are being asked to bear most of the burden for this project without receiving much of the benefit.

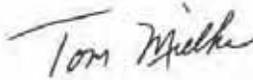
14827-70 To be clear, we have enjoyed working with BPA's staff during the past four years. But our appreciation does not preempt our conclusions about the draft Environmental Impact Statement and NEPA process thus far. Both are inconsistent and inadequate.

Thank you for your consideration,

Sincerely,



Steve Stuart  
Commissioner, Chair



Tom Mielke  
Commissioner



David Madore  
Commissioner

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14827-69 Please see the response to Comment 14827-3.

14827-70 Comment noted.

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