



PUGET SOUND ENERGY
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TERRESTRIAL RESOURCE MANAGEMENT PLAN

SETTLEMENT AGREEMENT ARTICLE 501

BAKER RIVER PROJECT
FERC No. 2150-033



Puget Sound Energy
Bellevue, Washington

September 30, 2009

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Puget Sound Energy
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Bellevue, Washington
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1.0 Executive Summary

This Terrestrial Resource Management Plan (TRMP) has been prepared for the Baker River Hydroelectric Project (FERC No. P-2150) (project) pursuant to the Order on Offer of Settlement, Issuing New License and Dismissing Amendment Application as Moot dated October 17, 2008 (license). Settlement Article (SA) 501, “Terrestrial Resource Management Plan,” specifies the TRMP shall cover the planning, implementation and reporting requirements for measures related to terrestrial resources. The Settlement Articles addressed in this TRMP include SA 502, “Hardwood Forest,” SA 503, “Elk Habitat,” SA 504, “Wetland Habitat,” SA 506, “Osprey Nest Structures,” SA 507, “Loon Floating Nest Platforms,” SA 508, “Noxious Weeds,” SA 509, “Plants of Special Status,” SA 510, “*Carex flava*,” SA 511, “Decaying and Legacy Wood,” SA 512, “Bald Eagle Night Roost Surveys,” SA 513, “Bald Eagle Management Plans,” SA 514, and “Use of Habitat Evaluation Procedures.” The detailed implementation plans for these articles are provided in individual terrestrial resource plans that are named according to the respective Settlement Agreement Articles. Upon FERC approval the individual terrestrial resource plans are to be attached as appendices to this plan. The implementation of SA 515, “Late Seral Forest Growth,” SA 516, “Mountain Goats,” and SA 517, “Grizzly Bear Road Management,” will be addressed elsewhere by the U. S. Forest Service (USDA-FS). Planning for SA 505, “Aquatic Riparian Habitat,” will be developed as a separate plan, although reporting on SA 505 will occur as part of this TRMP. This TRMP was prepared collaboratively by the Baker River Project Terrestrial Resources Implementation Group (TRIG), which includes representatives of Puget Sound Energy and the other signatories to the Settlement Agreement.

The project consists of two hydroelectric dams and associated reservoirs (Baker Lake and Lake Shannon) on the Baker River, a tributary to the Skagit River, in Skagit and Whatcom counties, Washington. The entire project lies within the Western Hemlock (*Tsuga heterophylla*) Zone of the North Cascades Physiographic Province (Franklin and Dyrness 1973). Terrain is generally steep and rugged, and the dominant vegetation is dense conifer forest typical of the west slopes of the Cascade Mountains. Wildlife habitats in the vicinity of the project are those associated with young and mature forests of Douglas-fir (*Pseudotsuga menziesii*), western hemlock, western redcedar (*Thuja plicata*), red alder (*Alnus rubra*), bigleaf maple (*Acer macrophyllum*), and black cottonwood (*Populus balsamifera* ssp. *trichocarpa*). A number of small non-forested wetlands also are present on a series of glacial terraces and river channels in the otherwise steep terrain.

A number of wildlife species in the Baker River Basin have a high management priority to Federal, State and Tribal governments. These include elk (*Cervus elaphus*), grizzly bear (*Ursus arctos*), bald eagle (*Haliaeetus leucocephalus*), northern spotted owl (*Strix occidentalis*), marbled murrelet (*Brachyramphus marmoratus*), osprey (*Pandion haliaetus*), and common loons (*Gavia immer*). No Federally-listed threatened or endangered plant species have been identified in the project area, but a number of species in the basin are considered “plants of special status.” One example, yellow sedge (*Carex flava*), a State Sensitive species, is present at one location along the shoreline of Baker Lake. Terrestrial resource

management in the Baker Basin focuses on providing habitats for these and other species with similar requirements.

The TRMP will be implemented by Puget Sound Energy with TRIG oversight. The TRMP identifies the programs Puget Sound Energy will establish to comply with the terrestrial resource articles of the Settlement Agreement. Puget Sound Energy will need to develop various site-specific and resource-specific procedures to implement the programs successfully. Puget Sound Energy and the other TRIG members will collaborate on site-specific and resource-specific procedures as needed, and implement them according to the programs identified in the TRMP. Puget Sound Energy will report on TRMP implementation to the TRIG and the FERC. If Puget Sound Energy and other TRIG members find it necessary to modify the TRMP, they will collaboratively propose amendments for submittal to the FERC.

Over the term of the new license, the TRIG will convene at least annually by meeting, conference call, or other medium to review TRMP implementation since the previous meeting and discuss implementation planned for the upcoming period. Puget Sound Energy will present summaries of past and proposed implementation for the TRIG to review.

Puget Sound Energy is required by SA 502, “Forest Habitat,” SA 503, “Elk Habitat,” and SA 504, “Wetland Habitat,” to acquire and manage habitats in the vicinity of the project. The process for habitat acquisition is described in detail in this TRMP. When identifying and evaluating potential land acquisitions, Puget Sound Energy and the other members of the TRIG will:

- Consider any potential to impair, diminish, or abrogate tribal treaty or cultural rights, by identifying suitable alternative sites or management activities if the designated representative of any affected tribe notifies the TRIG of its conclusion that a particular site or management activity will impair, diminish, or abrogate specific tribal treaty or cultural rights and describes the basis for its conclusion.
- Consider appropriate land acquisition costs.
- Consider the potential for integration of the site acquisition and management required by two or more articles to optimize the resulting ecosystem benefits.
- Consider the potential to secure grant funds to supplement the funds otherwise for implementation of these three articles.
- Consider other resource-specific concerns for hardwood forest, elk forage and wetland habitat identified in the Settlement Agreement.

The existing project boundary encompasses NFS lands as well as lands owned by Puget Sound Energy or leased from other non-federal parties. Unless otherwise decided by Puget Sound Energy and the other TRIG members and approved by the FERC, lands acquired and managed under the provisions of this TRMP will remain in Puget Sound Energy ownership for the term of the license. Puget Sound Energy will include lands managed under SA 501 within the project boundary pursuant to License Articles 203 and 304.

This TRMP includes provisions for monitoring as required by SA 506, “Osprey Nest Structures,” SA 507, “Loon Floating Nest Platforms,” SA 508, “Noxious Weeds,” SA 509, “Plants of Special Status,” SA 510, “*Carex flava*,” and SA 514, “Use of Habitat

Evaluation Procedures.” Monitoring will serve two purposes; to verify implementation and to evaluate effectiveness of the terrestrial articles. Implementation monitoring will entail periodic documentation that the requirements of an article, such as the placement of loon floating nest platforms, are being fulfilled. Effectiveness monitoring will be more involved, and will include the collection of various data, such as annual loon use and nesting productivity of platforms, to determine whether the article is achieving its biological objectives. Where effectiveness monitoring demonstrates that the objectives of an article are not being met, modification of the appropriate site-specific or resource-specific procedures will be considered in consultation with the TRIG. The results of monitoring will be reported to the TRIG and the FERC.

Puget Sound Energy will also provide annual reports of expenditures associated with all terrestrial articles of the Settlement Agreement (SA 501-517). The reports will contain:

- A summarization of expenditures made during the preceding year.
- An accounting of funding expenditures.
- Interest earned.
- Disbursements made.
- Adjustments made for inflation in accordance with SA 602.

The Settlement Agreement includes detailed provisions for the funding of terrestrial resource articles. Those provisions are also presented in this TRMP for reference.

2.0 Introduction

2.1 Overview of the Baker River Project

2.1.1 Project Setting

The Baker River Hydroelectric Project (FERC No. P-2150) (project) consists of two hydroelectric dams and associated reservoirs on the Baker River, a tributary to the Skagit River, in Skagit and Whatcom counties, Washington. Lower Baker Dam, which impounds 2,278-acre Lake Shannon, was completed in 1925. The dam is located within the city limits of Concrete, Washington, but most of Lake Shannon is in unincorporated Skagit County where it is surrounded by State and private industrial timberlands. The Upper Baker development is directly upstream (north) of the Lower Baker development, in Whatcom County. It was completed in 1959 and consists of Upper Baker Dam and Baker Lake, a 4,980-acre reservoir. The Upper Baker development is on National Forest System (NFS) lands administered as part of the Mt. Baker-Snoqualmie National Forest.

The entire project lies within the Western Hemlock (*Tsuga heterophylla*) Zone of the North Cascades Physiographic Province (Franklin and Dyrness 1973). Terrain is generally steep and rugged, and the dominant vegetation is dense conifer forest typical of the west slopes of the Cascade Mountains.

Forest on the State and private timberlands surrounding Lake Shannon is predominantly second-growth, the result of clearcut logging at least once — and in many cases twice — since Euro-American settlement in the late 1800s. These lands are now managed for commercial timber production on “even-aged” (commonly referred to as clearcut)

harvest rotations of 35 to 50 years. Wildlife habitats in the vicinity of Lake Shannon are those associated with young forests of Douglas-fir (*Pseudotsuga menziesii*), western hemlock, western redcedar (*Thuja plicata*), red alder (*Alnus rubra*), bigleaf maple (*Acer macrophyllum*), and black cottonwood (*Populus balsamifera* ssp. *trichocarpa*). A number of small non-forested wetlands also are present on a series of glacial terraces and river channels in the otherwise steep terrain.

While much of the NFS land surrounding the Upper Baker development has also been clearcut and replanted since the 1960s, some large portions of old-growth forest remain. NFS lands in the Baker Basin are now managed as late successional reserve, and are no longer harvested for timber. Wildlife habitats around Baker Lake are similar to those around Lake Shannon, except the Baker Lake area contains more old-growth and mature second-growth conifer forest, less hardwood forest, less mixed conifer-hardwood forest, and fewer wetlands.

2.1.2 Terrestrial Resource Considerations in the Baker River Basin

State and Federal agencies have given a number of the Baker River Basin's wildlife species a high management priority. The basin lies within the core area for the North Cascades (Nooksack) elk (*Cervus elaphus*) herd and the North Cascades Recovery Area for the grizzly bear (*Ursus arctos*). The bald eagle (*Haliaeetus leucocephalus*), northern spotted owl (*Strix occidentalis*), and marbled murrelet (*Brachyramphus marmoratus*) are known to nest in the basin, and both Baker Lake and Lake Shannon support breeding populations of osprey (*Pandion haliaetus*). Common loons (*Gavia immer*) have been observed on both reservoirs for several years, although nesting has never been reported. Although no Federally-listed threatened or endangered plant species have been identified in the project area, a number of species found within the basin are considered "plants of special status." One example, yellow sedge (*Carex flava*), a State Sensitive species, is rare south of British Columbia but is present at one location along the shoreline of Baker Lake.

Terrestrial resource management in the Baker Basin focuses on providing habitats for these and other species with similar requirements. Federal, State and Tribal management priorities in the basin include:

- Restoring old-growth forest on NFS lands.
- Protecting and enhancing native plant communities on NFS lands.
- Protecting and enhancing riparian forest habitat on non-Federal lands.
- Protecting and enhancing habitat for native pond-breeding amphibians.
- Sustaining a harvestable population of elk.

The project's ability to influence these and other terrestrial resources is largely a function of location. The project occupies much of the narrow valley bottom in this steep, mountainous basin. Habitat for old-growth species like the northern spotted owl and marbled murrelet is mostly limited to the upper slopes of the basin, although it abuts portions of the project. Similarly, high-elevation summer habitat for big game like elk and wide-ranging species like the grizzly bear is mostly outside the area of project influence. Conversely, low-elevation winter and spring habitat, wetlands, and calm water (lake) habitat are mostly confined to the project area and adjacent forest. Consequently,

this Terrestrial Resource Management Plan (TRMP) emphasizes management for low-elevation habitats like wetlands, lakes, and winter forage areas.

2.2 Basis for the Terrestrial Resource Management Plan (TRMP)

2.2.1 Relicensing Process and Outcome

This Terrestrial Resource Management Plan (TRMP) has been prepared for project pursuant to the Order on Offer of Settlement, Issuing New License and Dismissing Amendment Application as Moot dated October 17, 2008 (license). Specifically, Settlement Agreement Article (SA) 501, “Terrestrial Resource Management Plan,” at Appendix A of the license sets forth the applicable requirements for this plan. SA 501 provides for the planning, implementation and reporting requirements for terrestrial resources measures related to terrestrial Settlement Agreement articles in the license. This plan was prepared collaboratively by the Baker River Project Terrestrial Resources Implementation Group (TRIG), which includes representatives of Puget Sound Energy and the other signatories to the Settlement Agreement.

A group of biologists and other professionals representing Puget Sound Energy, State and Federal agencies, Indian tribes, and non-governmental organizations, collectively called the Terrestrial Working Group or TWG, met regularly between May 2000 and mid-2004. In these meetings, the TWG assessed the effects of continued project operation on plants and wildlife, and developed protection, mitigation, and enhancement (PME) measures to address those impacts. The result was 17 terrestrial PME measures that became articles in the Settlement Agreement signed in late 2004 and made part of the FERC Order Issuing New License in October 2008.

The first of the 17 terrestrial articles, SA 501, directs the preparation of this TRMP. The full text of SA 501 is presented in Section 2.2.2 below. The remaining 16 terrestrial articles are specific to habitats and/or species in the Baker Basin that:

- Are of concern due either to their status as endangered or threatened species, or other management importance (elk, for example).
- May be affected by continued operation of the project.

These 16 terrestrial articles address hardwood forest, elk foraging habitat, wetlands, osprey nests, common loon nests, *Carex flava* and other plants of special status, noxious weeds, legacy wood (snags and logs), bald eagles, late-seral forest, mountain goat habitat, and grizzly bears. As directed by SA 501, this TRMP includes the planning and implementation requirements identified in 12 of the 16 terrestrial articles:

- SA 502, “Forest Habitat”
- SA 503, “Elk Habitat”
- SA 504, “Wetland Habitat”
- SA 506, “Osprey Nest Structures”
- SA 507, “Loon Floating Nest Platforms”
- SA 508, “Noxious Weeds”
- SA 509, “Plants of Special Status”
- SA 510, “*Carex flava*”

- SA 511, “Decaying and Legacy Wood”
- SA 512, “Bald Eagle Winter Roost Surveys”
- SA 513, “Bald Eagle Management Plans”
- SA 514, “Use of Habitat Evaluation Procedures”

Implementation of three other articles (SA 515, “Late-seral Forest Growth,” SA 516, “Mountain Goats,” and SA 517, “Grizzly Bear Road Management”) will be addressed elsewhere by the U. S. Forest Service (USDA-FS). Implementation of SA 505, “Aquatic Riparian Habitat,” is addressed in a separate plan, although reporting on SA 505 will occur as part of this TRMP.

2.2.2 Settlement Agreement Article 501

This plan has been prepared to comply with SA 501, “Terrestrial Resource Management Plan,” which reads as follows:

Within one year from license issuance, or on an alternative schedule to be submitted to the Commission for approval, the licensee shall file the Terrestrial Resource Management Plan (TRMP) with the Commission for approval.

If licensee needs to submit an alternative schedule to the Commission, licensee shall prepare the schedule in consultation with the Terrestrial Resources Implementation Group (TRIG). In the event the licensee elects to submit an alternative schedule, the licensee shall forward a copy of the proposed alternative schedule to the TRIG at least 30 days prior to submitting the alternative schedule to the Commission, and shall forward any comments on the alternative schedule to the Commission along with the proposed alternative schedule. Upon approval, the alternative schedule becomes a requirement under the license, and the licensee shall implement the alternative schedule, including any changes required by the Commission.

The licensee shall develop the TRMP in consultation with the TRIG, and shall review the TRMP annually thereafter during the first ten years of the license, and every fifth year for the remaining term of the license. Within six months from license issuance, the licensee shall submit a draft of the TRMP to the TRIG for review and comment. At least 30 days prior to submitting the TRMP (or any revisions to the TRMP) to the Commission for approval, the licensee shall provide a revised draft of the TRMP (or any revisions to the TRMP) to the TRIG for review and comment. The licensee shall include, with the TRMP (or any revisions to the TRMP) filed with the Commission, an implementation schedule, documentation of consultation, copies of consulting entity comments and recommendations on the completed plan and schedule, after they have been prepared and provided to consulting entities, and specific descriptions of how the entities’ comments are accommodated by the plan and schedule. The licensee shall allow a minimum of 30 days for entities to comment and to make recommendations before filing the plan and schedule with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee’s reasons, based on Project-specific information.

The TRMP shall include the planning and implementation requirements identified in the following Articles: Article 502 (Forest Habitat); Article 503 (Elk Habitat); Article 504 (Wetland Habitat); Article 506 (Osprey Nest Structures); Article 507 (Loon Floating Nest Platforms); Article 508 (Noxious Weeds); Article 509 (Plants of Special Status); Article 510 (*Carex flava*); Article 511 (Decaying and Legacy Wood);

Article 512 (Bald Eagle Winter Roost Surveys); Article 513 (Bald Eagle Management Plans); and Article 514 (Use of Habitat Evaluation Procedures). The TRMP shall be consistent with Articles 502-517. Planning shall not be required for Articles 505, 515, 516, and 517. The TRMP shall include a schedule for monitoring only as required by Articles 506, 507, 508, 509, 510, and 514.

For license Articles 501-517, licensee shall provide an annual summary of expenditures made during the preceding year in conformance with the requirements of the license, as well as an accounting of funding expenditures, interest earned, disbursements made as required by any article, and a report indicating adjustments made for inflation in accordance with Article 602.

2.2.3 Relationship to Other Articles of the License and Settlement Agreement

Articles SA 501-504 and SA 506-517 (ordered at Paragraph F of the license) contain 16 terrestrial resource PME measures developed by the TWG. SA 505 contains an aquatic-terrestrial PME measure developed jointly by the TWG and the Aquatic Resource Group (ARG). SA 501 directs the preparation of this TRMP and calls for inclusion of the planning and implementation requirements of 12 other terrestrial articles (SA 502-504 and SA 506-514). As further specified in SA 501, planning and implementation for SA 505, SA 515, SA 516 and SA 517 are not included in this TRMP, but provisions for the annual reporting of expenditures for all 17 articles are included.

2.3 TRMP Organization

This TRMP is organized into 8 chapters. Chapter 1 is the Executive Summary. Chapters 2 through 6 contain information on the general implementation process that applies to all or most terrestrial resource articles. Chapter 7 contains the full citations for material referenced elsewhere in the TRMP, and Chapter 8 documents Puget Sound Energy's consultation with the other TRIG members during preparation of this TRMP.

The detailed implementation plans for the other articles covered by this TRMP are provided in individual terrestrial resource plans that are named according to the respective Settlement Agreement Articles. Upon FERC approval the individual terrestrial resource plans are to be attached as appendices to this plan.

3.0 TRMP Development and Implementation

3.1 Terrestrial Resource Implementation Group

This TRMP has been prepared collaboratively by the Baker Project Terrestrial Resource Implementation Group (TRIG), which consists of representatives of the signatories to the Settlement Agreement and other parties with interest in the terrestrial resources of the Baker River Basin (table 1). The purpose of the TRIG is to collaboratively implement the terrestrial articles of the license. TRIG meetings may be convened to address one or more of the following issues, or other issues identified by the TRIG, or for any other purpose consistent with the license, or at the request of two or more members of the Baker River Coordinating Committee (BRCC):

- Puget Sound Energy’s implementation of the terrestrial articles (SA 501-517).
- Planning required by the terrestrial articles.
- The scope, design, and conduct of any studies required to implement the terrestrial articles.
- The discussion of study results pertaining to the implementation of the terrestrial articles.
- Land acquisition and selection criteria required by any articles.
- Resource project funding decisions, as described in SA 602, related to the terrestrial articles.
- Any issues identified during any required monitoring related to the terrestrial articles.
- Any required annual reporting for the terrestrial articles.
- Terrestrial resource decision-making as specified in SA 601

The TRIG met regularly during preparation of the TRMP to review and comment on drafts of the TRMP prepared by Puget Sound Energy and its consultant team.

Table 1. Parties represented in the Terrestrial Resource Implementation Group.

Signatories to the Settlement Agreement
Puget Sound Energy
USDA Forest Service, Mt. Baker-Snoqualmie National Forest
US Fish and Wildlife Service
National Park Service, North Cascades National Park
National Marine Fisheries Service
Upper Skagit Indian Tribe
Sauk-Suiattle Indian Tribe
Swinomish Indian Tribal Community
Washington State Department of Ecology
Washington Department of Fish and Wildlife
Washington Department of Natural Resources
Skagit County
City of Anacortes
Town of Concrete
Public Utility District No. 1 of Skagit County
Interagency Committee for Outdoor Recreation
The Nature Conservancy of Washington
North Cascades Conservation Council
North Cascades Institute
Rocky Mountain Elk Foundation

Signatories to the Settlement Agreement
Skagit Fisheries Enhancement Group
Washington Council of Trout Unlimited
Wildcat Steelhead Club
Mr. Bob Helton
TRIG Participants Who Are Not Signatories to the Settlement Agreement
Northwest Indian Fisheries Commission
Whatcom County Noxious Weed Control Board

3.2 Initial TRMP Development and Review

Informal preparation of the TRMP began shortly after completion of the Settlement Agreement in late 2004. The TRIG met several times during 2005 to discuss a number of terrestrial matters, including the approach for completing the TRMP. In May 2005, the TRIG reviewed and commented on a draft outline for the TRMP prepared by Puget Sound Energy. In October 2005, Puget Sound Energy provided the TRIG with the first full draft of the TRMP. Comments on the October 2005 draft were incorporated into a second draft that was distributed to the TRIG in December 2005.

Work continued on individual chapters of the TRMP in 2006 through 2008, particularly those dealing with plants of special status, *Carex flava*, and noxious weeds. Because most of the TRIG efforts during 2006-2008 focused on identifying potential elk foraging habitat acquisitions, further revisions to the TRMP were postponed. After issuance of the new license in October 2008, the TRIG again turned its attention to completing the TRMP. A number of revisions were made to the December 2005 document's format, and minor revisions were made to its content. Individual chapters dealing with SA 502-504 and SA 506-514, which were contained within the draft TRMP in 2005, were converted to stand-alone plans and provided to the TRIG for review in 2009. The third draft of the TRMP was provided to the TRIG by Puget Sound Energy on April 1, 2009. The TRIG members reviewed and commented on the third draft, and Puget Sound Energy incorporated those comments into a fourth and final draft that was provided to the TRIG on July 15, 2009. The TRIG comments on the third and fourth drafts are included in Chapter 8 and Appendix A.

3.2.1 Process for TRMP Implementation and Modification

The TRMP will be implemented by Puget Sound Energy with TRIG oversight. The TRMP and individual terrestrial resource plans identify the programs Puget Sound Energy will establish to comply with the Settlement Agreement's terrestrial articles. Puget Sound Energy will need to develop various site-specific and resource-specific procedures to implement the programs successfully. Puget Sound Energy and the other TRIG members will collaborate on site-specific and resource-specific procedures as needed, and implement them according to the programs identified in the TRMP and

individual terrestrial resource plans. Puget Sound Energy will report on implementation of the terrestrial articles to the TRIG and the FERC as specified in Chapter 5. If Puget Sound Energy and other TRIG members find it necessary to modify the TRMP, they will collaboratively propose amendments for submittal to the FERC.

Over the term of the new license, the TRIG will convene at least annually by meeting, conference call, or other medium, to review TRMP implementation since the previous meeting and discuss implementation planned for the upcoming period. Puget Sound Energy will present summaries of past and proposed implementation for the TRIG to review.

3.2.2 Schedule for TRMP Implementation

Full implementation of the TRMP will begin upon approval by the FERC. The following elements of the TRMP will begin prior to FERC approval, as required by the Settlement Agreement.

- Efforts to identify and acquire elk foraging habitat parcels will begin within one year after license issuance, as specified in SA 503.
- A minimum of ten artificial osprey nest structures will be maintained at Lake Shannon beginning no later than one year after license issuance, in accordance with SA 506.
- Three common loon floating nest platforms will be installed in suitable locations on one or both project reservoirs within one year after license issuance, and maintained according to SA 507.
- Bald eagle communal winter night roost surveys will be designed and conducted during the first three years after license issuance, as required by SA 512.
- Within one year after license issuance, management plans will be developed for all bald eagle nests and communal winter night roosts that were known to exist within the project boundary at the time of license issuance, as specified in SA 513.
- Plans for SA 509, “Plants of Special Status,” and SA 510, “*Carex flava*,” were submitted to the FERC by April 1, 2009 for approval. They may be implemented prior to FERC approval of other portions of the TRMP.

3.3 Preparation of Site-specific and Resource-specific Procedures

Implementation of the TRMP and individual terrestrial resource plans will require the preparation of site-specific and resource-specific procedures. Puget Sound Energy will prepare these procedures, as needed, in collaboration with the other members of the TRIG. Procedures will be consistent with the Settlement Agreement, the new license, the TRMP, and the individual terrestrial resource plans. They will be reviewed by the TRIG, and modified as determined by the TRIG, prior to implementation.

Implementation results will be presented in scheduled reports to the TRIG and the FERC.

3.4 Response to Climate Change

Predicted changes in climate over the term of the license have the potential to alter the feasibility and/or effectiveness of the TRMP and individual terrestrial resource plans. Changes in the feasibility or effectiveness of the plans will be detected through the

monitoring described in Chapter 5 and reported to the TRIG. Minor changes in feasibility or effectiveness will be accommodated through adjustments to site-specific and resource-specific procedures within the management budgets specified in Chapter 6. If there are major changes in the feasibility or effectiveness of the TRMP or individual terrestrial resource plans over the term of the license, Puget Sound Energy and the other members of the TRIG will collaboratively develop amendments to the TRMP or individual plans for submittal to the FERC, as specified in Section 3.2.1.

4.0 Habitat Acquisition

4.1 Criteria for Habitat Acquisition

4.1.1 General Acquisition Criteria

License Articles SA 502, “Forest Habitat,” SA 503, “Elk Habitat,” and SA 504, “Wetland Habitat,” require Puget Sound Energy, in consultation with the other members of the TRIG, to acquire and manage specified types of habitat to benefit wildlife. While selecting and acquiring lands to satisfy SA 502, SA 503 or SA 504, Puget Sound Energy and the other members of the TRIG will:

- Consider any potential to impair, diminish, or abrogate tribal treaty or cultural rights, by identifying suitable alternative sites or management activities if the designated representative of any affected tribe notifies the TRIG of its conclusion that a particular site or management activity will impair, diminish, or abrogate specific tribal treaty or cultural rights and describes the basis for its conclusion.
- Consider appropriate land acquisition costs.
- Consider the potential for integration of the site acquisition and management required by two or more articles to optimize the resulting ecosystem benefits.
- Consider the potential to secure grant funds to supplement the funds otherwise for implementation of these three articles.

4.1.2 Criteria for Forest Habitat Acquisition

When reviewing forest habitat parcels for possible acquisition, Puget Sound Energy and the other TRIG members will consider the criteria and select the parcel or parcels they believe best meet the overall TRMP objectives and satisfy Settlement Agreement requirements. The following are general guidelines for selecting and acquiring forest habitat parcels.

- **Vegetative condition.** Qualifying deciduous forest habitat will be comprised of land with 40 percent or greater deciduous tree composition. Highest priority for acquisition will be given to sites with the highest total canopy cover occupied by broadleaf deciduous forest (as opposed to coniferous forest and non-forest cover types) and to sites with the highest percentage of broadleaf deciduous trees (particularly black cottonwood and bigleaf maple) in the overstory. Sites that support deciduous shrubs as the climax condition may also be considered.

- **Location.** Preferred locations, in decreasing order, are:
 - Sites within the Baker River Basin.
 - Sites elsewhere within the Skagit River Basin.
 - Sites elsewhere in Skagit and Whatcom counties.
- **Parcel Size.** Parcels of at least 10 acres are preferred, but smaller parcels will be considered if they meet other selection criteria. Parcels under 10 acres that are contiguous with larger protected parcels of similar condition will be given consideration equal to that of parcels 10 acres and larger. Priority will be given to parcels that are contiguous with other protected areas that would effectively increase overall habitat patch size.
- **Proximity to Other Land Uses.** Sites adjacent to or near land uses that would conflict with the objectives of deciduous forest habitat management (such as residential areas) will be given low priority for acquisition.
- **Cost.** Where all other selection considerations are equal for two given forest habitat parcels, priority for acquisition will be given to the parcel with the lowest combined cost for acquisition and management.
- **Status.** Priority will be given to parcels that are not already protected from timber harvest or other habitat alteration by Washington Forest Practices Rules, Skagit County Critical Areas Ordinance, or other laws or ordinances.

4.1.3 Criteria for Elk Foraging Habitat Acquisition

When reviewing elk foraging habitat parcels for possible acquisition, Puget Sound Energy and the other TRIG members will consider the criteria and select the parcel or parcels they believe best meet the overall TRMP objectives and satisfy Settlement Agreement requirements. The following are general guidelines for selecting and acquiring elk foraging habitat parcels.

- **Elk Forage Habitat Value.** Elk forage habitat will be acquired in two phases. The selection of habitat in Phase 1 will be based on its elk forage equivalency value (table 2). Puget Sound Energy will make a good faith effort in Phase 1 to acquire approximately 300 acres with a combined elk forage equivalency value of at least 1,437. Acquisitions in Phase 2 will be determined by the funding limits of the Settlement Agreement. Acquisitions in Phase 2 will not be required to meet specific elk forage equivalency values, but preference will be given to those habitat parcels that contribute most to a high forage equivalency value.

Table 2. Per-acre elk forage equivalency rankings of habitat types in the Baker River basin.

Habitat Type; Successional Stage	Elk Forage Equivalency Rank	Elk Forage Equivalency Score per Acre
Upland Conifer Forest; Shrub/Seedling Stage	Good	3
Riparian Conifer Forest; Shrub/Seedling Stage	Good	3
Upland Mixed Forest; Shrub/Seedling Stage	Good	3
Riparian Mixed Forest; Shrub/Seedling Stage	Good	3
Upland Deciduous Forest; Shrub/Seedling Stage	Good	3
Upland Deciduous Forest; Sapling/Pole and Small Tree Stages	Moderate	1
Riparian Deciduous Forest; Shrub/Seedling Stage	Good	3
Riparian Deciduous Forest; Sapling/Pole and Small Tree Stages	Moderate	1
Forested Wetland; Shrub/Seedling Stage	Good	3
Shrub Wetland; Grass/Forb and Shrub/Seedling Stages	Good	3
Wet Meadow; Herbaceous Wetland Stage	Good	3
Cultivated Pasture (under management to provide elk forage)	Excellent	9
All Other Habitats	To be determined by TRIG	

- **Location.** Preferred locations, in decreasing order, are:
 - Sites within the core area of the North Cascade (Nooksack) elk herd.
 - Sites within the peripheral area of the North Cascade elk herd, if consultation with the WDFW determines that animal damage complaints are unlikely to occur.
 - Sites within the Sauk Game Management Unit, if consultation with the WDFW determines that animal damage complaints are unlikely to occur.

These priorities may be changed by a consensus of the TRIG in response to changes in scientific information, land ownership patterns, game management agreements, or WDFW elk management plans. Changes in priority will not reduce the credit allocated to lands already acquired for elk foraging habitat under this TRMP, or increase the total cost to Puget Sound Energy for elk foraging habitat acquisition.

- **Proximity to Other Land Uses.** Sites adjacent to or near land uses that would conflict with the objectives of elk foraging habitat management will be given low priority for acquisition. Of particular concern will be sites near agricultural areas where increased presence of elk could lead to crop damage. Sites near current or impending residential development will also be avoided.
- **Cost.** Where all other selection considerations are equal for two given elk foraging habitat parcels, priority for acquisition will be given to the parcel with the lowest combined cost for acquisition and management.

4.1.4 Criteria for Wetland Habitat Acquisition

When reviewing wetland habitat parcels for possible acquisition, Puget Sound Energy and the other TRIG members will consider the criteria and select the parcel or parcels

they believe best meet the overall TRMP objectives and satisfy Settlement Agreement requirements. Consideration will be given to the potential for integrating site acquisition and management of other habitats in order to simultaneously address one or more other requirements of the license and/or Settlement Agreement and optimize ecosystem benefits. However, the primary consideration during the acquisition and management of wetland parcels will be habitat for native wetland-dwelling species. Wetland parcels may be entirely wetland, or they may be a combination of wetland, upland, and riparian if the non-wetland portion contributes to the function of the wetland (such as a buffer) or satisfies the requirements of another element of the TRMP. For purposes of this TRMP, wetland habitat includes wetlands and their buffers. Acquisition of wetland buffer alone is the least preferred option unless long-term protection of the wetland is dependent upon and assured by the buffer. The following are general guidelines for selecting and acquiring wetland habitat parcels.

- **Wildlife Habitat Type and Condition.** Priority will be given to acquiring and protecting high-quality wetlands that support native amphibians, waterfowl, shorebirds, other wildlife species, and native wetland-associated plant species; and lack non-native amphibians (such as bullfrogs) and non-native warm-water fishes. Highest priority will be given to functioning habitat for pond-breeding amphibians. Secondary priority will be given to those wetlands not currently exhibiting high-quality conditions for native wildlife and plant species, but which can be restored or enhanced to increase their value to native wildlife.
- **Location.** Preferred locations, in decreasing order, are:
 - Sites within the Baker River Basin.
 - Sites elsewhere within the Skagit River Basin.
 - Sites elsewhere in Skagit and Whatcom counties.
- **Parcel Size.** Parcels of at least 10 acres are preferred, but smaller parcels will be considered if they meet other selection criteria. Parcels less than 10 acres that are contiguous with larger protected parcels of similar condition will be given consideration equal to parcels of at least 10 acres. Parcels should be large enough to accommodate recommended wetland buffers.
- **Proximity to Other Land Uses.** Current and expected future land uses on adjacent and nearby properties will be reviewed for their potential effects on wetlands and wetland buffers. Sites adjacent to or near land uses that would conflict with the objectives of wetland management may be given low priority for acquisition, unless the sites are priorities for acquisition to protect them from encroachment and/or degradation. Adjacent and nearby properties also will be reviewed for wetlands and other high quality habitats. Landscape position and connectivity to other undisturbed habitats and sustainability of that habitat will be considered when assessing which wetland has greater value as habitat.
- **Cost.** Where all other selection considerations are equal for two given wetland parcels, priority for acquisition will be given to the parcel with the lowest combined cost for acquisition and management.

4.2 Identification and Selection of Habitat Parcels

Parcels of forest, elk forage, and wetland habitat will be identified and selected collaboratively by the TRIG. Any TRIG member may propose a parcel for consideration. If the TRIG decides to consider a parcel, Puget Sound Energy will initiate a pre-acquisition assessment of the parcel's physical, biological, and legal status. Landowners will be contacted through either the Puget Sound Energy Real Estate Department or a third party designated by Puget Sound Energy. The pre-acquisition assessment may include the following information, based on reconnaissance-level surveys and reviews of available documentation.

- Maps and/or aerial photos (where available) showing parcel boundaries, approximate locations of structures, roads, surface water features (streams, lakes and wetlands), vegetative types, and topography.
- Parcel ownership, zoning, and comprehensive plan designation.
- Regulatory encumbrances that may limit TRMP management of the parcel, such as Shoreline of the State, floodplain, or other zoning restrictions.
- A general description of the forest cover types present, including approximate canopy closure, species, Diameter at Breast Height (DBH), and height of trees.
- A general description of forest understory vegetation, including species composition, height, density, and presence of wetland indicator species.
- Qualitative descriptions of the major wetlands and wetland complex types present, and their categories based on either the WDOE *Washington State Wetland Rating System for Western Washington* (Hruby 2004) or another model approved by the TRIG.
- Qualitative descriptions of the non-wetland habitat types present (forest types, meadows, and so on), per the Relicensing Study T2/T5 list of cover types (Hamer Environmental et al. 2004)).
- Observations on forest habitat management potential based on site conditions, current forest stand conditions, and accepted principles of forest plant succession.
- A preliminary assessment of the current and potential elk forage equivalency value.
- The known presence of any unique, sensitive, or otherwise important wildlife or their habitats, based on review of the current WDFW Priority and Habitats and Species (PHS) database (if available) and consultation with the WDFW Area Biologist.
- The known presence of any nests, dens, or important habitats for animals listed by the USFWS or NMFS as threatened or endangered, and candidates for such listing, based on review of the USFWS and NMFS databases, and the potential for their presence based on general knowledge of site conditions.
- The known presence of any special-status plant species that may need to be managed pursuant to SA 509.
- The presence of noxious weeds that may need to be managed pursuant to SA 508.
- The known presence of non-native amphibians or warm-water fishes.
- Use and ownership of surrounding land, as indicated on County zoning maps.
- The potential for agricultural or residential conflicts with TRMP management, based on input from the WDFW.

- The status of any Watershed Analyses or Road Maintenance and Abandonment Plans (RMAP) prepared for the parcel in compliance with Washington Forest Practices Rules (WAC 222).
- Signs of slope instability or erosion hazards, such as slopes in excess of 60 percent, trees with deformed or “pistol” butt, unvegetated slopes, and signs of recent slope failure.

The amount of time required to complete field reconnaissance surveys will depend on the size and complexity of the parcel being considered, but will generally be done as expeditiously as possible. The TRIG will review the results of pre-acquisition surveys and determine whether Puget Sound Energy or a designated third party should enter into negotiations with landowners. Approval of the TRIG will be required prior to:

- Additional pre-acquisition surveys to collect information on one or more items identified during the initial survey.
- The initiation of formal negotiations with landowners or their representatives.
- The use of habitat acquisition funds for appraisals or evaluations of parcels.
- Offers to landowners to purchase parcels.

4.3 Ownership of Acquired Lands

The existing project boundary encompasses NFS lands as well as lands owned by Puget Sound Energy or leased from other non-federal parties. Unless otherwise decided by Puget Sound Energy and the other TRIG members and approved by the FERC, lands acquired and managed under the provisions of this TRMP will remain in Puget Sound Energy ownership for the term of the new license.

4.4 Inclusion of Acquired Lands in the Project Boundary

Puget Sound Energy will include lands managed under SA 501 within the project boundary pursuant to License Articles 203 and 304.

5.0 Monitoring and Reporting

5.1 Introduction

Implementation of the TRMP will be monitored as required by the Settlement Agreement and the license. The general approach to monitoring is described in Section 5.2, and the overall schedule for monitoring is presented in Section 5.3. As specified in SA 501, Section 5.3 also includes a summary schedule for the monitoring of osprey nest structures (SA 506), loon floating nest platforms (SA 507), noxious weeds (SA 508), plants of special status (SA 509), *Carex flava* (SA 510), and use of Habitat Evaluation Procedures (SA 514). The monitoring programs for these and other terrestrial articles are described in detail in the individual terrestrial resource plans. SA 501 also calls for an annual accounting of expenditures made in conjunction with all terrestrial articles. Annual accounting is described in Section 5.4.

5.2 Approach to Monitoring

Monitoring will serve two purposes under the TRMP; to verify implementation and to evaluate effectiveness of the terrestrial articles. Implementation monitoring will entail periodic documentation that the requirements of an article, such as the placement of loon floating nest platforms, are being fulfilled. Effectiveness monitoring will be more involved, and will include the collection of various data, such as annual loon use and nesting productivity of platforms, to determine whether the article is achieving its biological objectives. Where effectiveness monitoring demonstrates that the objectives of an article are not being met, modification of the appropriate site-specific or resource-specific procedures will be considered in consultation with the TRIG.

All monitoring will be conducted by Puget Sound Energy or a third party selected by Puget Sound Energy and approved by the TRIG. The results of monitoring will be reported to the TRIG and the FERC according to the schedule described in Section 5.3

5.3 Schedule for Monitoring and Reporting

The summary schedule for monitoring of SA 506, SA 507, SA 508, SA 509, SA 510 and SA 514 is provided in table 3. The schedule for reporting on all terrestrial articles is provided in figure 1.

5.4 Annual Accounting of Expenditures, Interest Earned and Adjustments for Inflation

Puget Sound Energy will provide annual reports of expenditures associated with SA 501-517, according to the schedule provided in figure 1. The reports will contain:

- A summarization of expenditures made during the preceding year.
- An accounting of funding expenditures.
- Interest earned.
- Disbursements made.
- Adjustments made for inflation in accordance with SA 602.

Table 3. Monitoring schedule for terrestrial articles SA 506-510 and SA 514.

Article No.	Article Name	Monitoring
SA 506	Osprey Nest Structures	Inspect artificial nest structures at Lake Shannon at 2-year intervals for the term of the license. Monitor osprey nesting and productivity at Lake Shannon and Baker Lake every year between April 1 and August 31 for the term of the license.
SA 507	Loon Floating Nest Platforms	Monitor floating nest platforms for nesting success and effectiveness of public access restrictions twice per month between April 1 and July 31 for the first 15 years after installation. Monitor beyond Year 15 if the program is continued.
SA 508	Noxious Weeds	Acquire updates to the Skagit County and Whatcom County noxious weed lists from the county noxious weed control boards each year. Re-survey designated portions of the Plan Area and re-evaluate treatment methods every 5 years. Review current copies of county, State and Federal weed control regulations and policies and management techniques every 5 years. Monitor implementation and effectiveness of treatments as specified in site- and species-specific weed management protocols.
SA 509	Plants of Special Status	Monitor implementation and effectiveness of protection measures as specified in site- and species-specific management protocols. Evaluate the program for plants of special status within the area encompassed by surveys to satisfy the requirements of SA 509.
SA 510	<i>Carex flava</i>	Monitor implementation and effectiveness of protection and noxious weed management measures as specified in the <i>Carex flava</i> site management protocols. The monitoring and evaluation program is designed to answer the questions posed in Appendix A-4 of the Settlement Agreement.
SA 514	Use of Habitat Evaluation Procedures	Monitor the effectiveness of SA 502, SA 503, SA 504, SA 506, SA 507 and SA 513 through periodic assessment of habitat quantity and quality over the term of the license using HEP, or another methodology selected in consultation with the TRIG. Effectiveness monitoring of SA 502, "Forest Habitat," SA 503, "Elk Habitat," and SA 504, "Wetland Habitat," will occur according to site-specific monitoring programs developed for those lands as they are acquired. Monitoring of the acquired lands will occur in three intervals: a) between 2008 and 2017; b) between 2028 and 2037; and c) after 2037.

6.0 Funding

6.1 Terrestrial Habitat Acquisition Budgets

The following budgets are stated in 2006 dollars. Adjustments for inflation will be made according to the procedures described in Section 6.6.

6.1.1 Forest Habitat (SA 502) Acquisition Funding

The total budget for forest habitat acquisition is \$430,000; to be made available within 3 years after license issuance.

6.1.2 Elk Habitat (SA 503) Acquisition Funding

The total budget for elk foraging habitat acquisition is \$3,700,000; to be made available according to the following schedule:

- \$1,200,000 within 3 months after license issuance
- \$1,250,000 in the 1st year after license issuance
- \$1,250,000 in the 5th year after license issuance

6.1.3 Wetland Habitat (SA 504) Acquisition Funding

The total budget for wetland habitat acquisition is \$340,000; to be made available within 4 years after license issuance.

6.2 Terrestrial Habitat Management Budgets

The following budgets are stated in 2006 dollars. Adjustments for inflation will be made according to the procedures described in Section 6.6.

6.2.1 Capital Funding

6.2.1.1 Osprey Nest Structures (SA 506)

The budget for this article is not capped. This is a delivered item.

6.2.1.2 Loon Floating Nest Platforms (SA 507)

The budget for this article is not capped. This is a delivered item.

6.2.2 Operational Expense Funding

6.2.2.1 Forest Habitat (SA 502)

The total budget for forest habitat management is \$20,000; to be made available according to the following schedule:

- \$5,000 in the 4th year after license issuance
- \$5,000 in the 5th year after license issuance
- \$5,000 in the 6th year after license issuance
- \$5,000 in the 7th year after license issuance

6.2.2.2 Elk Habitat (SA 503)

The total budget for elk foraging habitat management is \$2,500,000; to be made available at \$50,000 per year for 50 years.

6.2.2.3 Wetland Habitat (SA 504)

The total budget for wetland habitat management is \$190,000; to be made available according to the following schedule:

- \$10,000 within 4 years after license issuance
- \$140,000 in the 5th year after license issuance
- \$20,000 in the 6th year after license issuance
- \$20,000 in the 7th year after license issuance

6.2.2.4 Osprey Nest Structures (SA 506)

The budget for this article is not capped. This is a delivered item.

6.2.2.5 Loon Floating Nest Platforms (SA 507)

The budget for this article is not capped. This is a delivered item.

6.2.2.6 Noxious Weeds (SA 508)

The budget for noxious weeds located on lands within the project boundary as of the date of license issuance (October 2008) is not capped, with the exception noted in Section 6.2.2.6.1 below.

Noxious weed management on lands acquired to comply with SA 502, SA 503, SA 504 and SA 505 will be funded by the management budgets established for those articles, with the exception noted in Section 6.2.2.6.2 below.

6.2.2.6.1 Reed Canarygrass Management at Seven Wetlands. A separate portion of the noxious weed article addresses management of reed canarygrass (*Phalaris arundinacea*) on seven high quality wetland areas located on NSF lands. The total budget for reed canarygrass management at these wetlands is \$800,000; to be made available according to the following schedule:

- \$25,000 in the first year after license issuance
- \$25,000 in the 2nd year after license issuance
- \$25,000 in the 3rd year after license issuance
- \$25,000 in the 4th year after license issuance
- \$25,000 in the 5th year after license issuance
- \$15,000 per year throughout the remainder of the license term

6.2.2.6.2 TRIG Agreement on Management of Noxious Weeds on Acquired Lands (04-05-2007). The following text describes how noxious weed management will be approached with respect to acquired lands, per Article 508 of the Settlement Agreement, which specifies that, “The plan [TRMP] shall address how noxious weed management considerations will be addressed when evaluating land acquisition proposals or other activities pursuant to Articles 502, 503, 504, and 505.”

Puget Sound Energy shall evaluate the extent of noxious weed management required for each parcel under consideration for acquisition or land management activities. The evaluation will include the steps described below. Each step will be developed in coordination with the TRIG, and will require TRIG approval prior to implementation.

Prior to acquisition:

1. Conduct reconnaissance level field surveys to determine occurrence of weeds listed by Washington State and/or the county. This will be a cursory look without extensive data gathering or analysis.
2. If weeds occur on the site, determine if any of the following three conditions exist:
 - a. The species is a Class A or Class B designate in the county/region where the parcel occurs; or
 - b. The weeds preclude or inhibit attaining the habitat value for the species for which the parcel was acquired; or
 - c. There is a comprehensive strategy on adjacent lands that applies to the weed species on the parcel (e.g., Skagit basin knotweed control strategy).
3. If any of the three conditions (2a, b, or c) exist, then complete more accurate surveys, develop site and species-specific treatment plans for the parcel, and estimate costs for management of the weeds, so the TRIG can evaluate the cost/benefits of acquiring the parcel.

After acquisition:

4. Management funds from the acquisition articles will only be used to manage weed sites if any of the three conditions (2a, b, or c) above are applicable.

6.2.2.7 Plants of Special Status (SA 509)

The budget for this article is not capped. This is a delivered item.

6.2.2.8 Carex flava (SA 510)

The budget for this article is not capped. This is a delivered item.

6.2.2.9 Decaying and Legacy Wood (SA 511)

The total budget for decaying and legacy wood management is \$550,000; to be made available according to the following schedule:

- \$35,000 within 1 year after license issuance
- \$35,000 in the 2nd year after license issuance
- \$10,000 per year throughout the remainder of the license term

6.2.2.10 Bald Eagle Night Roost Surveys (SA 512)

The total budget for bald eagle winter night roost surveys is \$50,000; to be made available according to the following schedule:

- \$25,000 in the first 3 years after license issuance
- \$25,000 in years 15-17 after license issuance

6.2.2.11 Bald Eagle Management Plans (SA 513)

The budget for this article is not capped. This is a delivered item.

6.2.2.12 Use of HEP (SA 514)

The total budget for the evaluation of TRMP effectiveness under SA 514 is \$300,000; to be made available according to the following schedule:

- \$100,000 in the first 10 years after license issuance
- \$100,000 in years 20-30 after license issuance
- \$100,000 after year 30 after license issuance

6.2.2.13 Late Seral Forest Growth (SA 515)

The budget for late seral forest growth enhancement is up to \$80,250 total; to be made available by December 31, 2008.

6.2.2.14 Mountain Goats (SA 516)

The budget for mountain goat habitat enhancement is up to \$70,000 total; to be made available within 3 years after license issuance.

6.2.2.15 Grizzly Bear Road Management (SA 517)

The budget for road closures to benefit grizzly bears is up to \$120,000 total (\$20,000 has been previously spent on the USDA-FS Roads EA); to be made available within 6 months after license issuance.

6.3 Funding for Settlement Article 505

The initial budget for aquatic riparian habitat acquisition, protection, restoration and enhancement is \$8,600,000 in 2006 dollars. Adjustments for inflation will be made according to the procedures described in Section 6.6. Funding will be made available according to the following schedule:

For planning and site evaluation activities:

- \$50,000 within 1 year after license issuance
- \$50,000 in the 2nd year after license issuance
- \$50,000 in the 3rd year after license issuance
- \$50,000 in the 4th year after license issuance
- \$50,000 in the 5th year after license issuance
- \$50,000 in the 6th year after license issuance

For protection, restoration, enhancement and management activities:

- \$300,000 within 2 years after license issuance
- \$2,000,000 in the 3rd year after license issuance
- \$2,000,000 in the 8th year after license issuance
- \$2,000,000 in the 13th year after license issuance
- \$2,000,000 in the 18th year after license issuance

Another \$1,600,000 will be made available for aquatic riparian habitat acquisition, protection, restoration and enhancement if phase two of SA 105 is not implemented.

6.4 Terrestrial Enhancement and Research Fund

The Terrestrial Enhancement and Research Fund (TERF) may be used for actions to enhance, conserve, acquire and/or restore habitat for terrestrial species. Actions funded by the TERF will be reviewed and approved by the TRIG subject to the decision-making and dispute resolution procedures described in SA 601, “Baker River Coordinating Committee.” Projects may be considered based upon any written requests to the TRIG sponsored by any member of the BRCC and following review and comment by all members of the TRIG. Projects funded will be located in the Skagit River basin, including, and with emphasis on, the Baker River basin. TERF Funds may be used for necessary studies designed to evaluate and monitor the potential benefits or environmental effects of any requested project. Specific funding mechanisms, including funding amounts, dates of deposit, guidelines for acquiring and using the funds, adjustments for inflation, and other provisions are presented in SA 602.

The total budget for the TERF is \$1,225,000; to be made available according to the following schedule.

Table 4. Terrestrial Enhancement and Research Fund schedule.

Year of License	Annual Amount	Year of License	Annual Amount
10-30	\$25,000	41	\$36,667
31	\$28,333	42	\$37,500
32	\$29,167	43	\$38,333
33	\$30,000	44	\$39,167
34	\$30,833	45	\$40,000
35	\$31,667	46	\$40,833
36	\$32,500	47	\$41,667
37	\$33,333	48	\$42,500
38	\$34,167	49	\$43,333
39	\$35,000	50	\$44,167
40	\$35,833		

6.5 Adjustments for Inflation

6.5.1 Escalation of Funding

All budgets specified in this chapter are stated in 2006 dollars. Budgets will be escalated as of January 1 of each following year (starting in January 2006) according to the following formula:

$$AD = D \times (NGDP \div IGDP)$$

Where:

AD = Adjusted dollar amount as of January 1 of the year in which the adjustment is made

D = Dollar amount prior to adjustment

IGDP = GDP-IPD for the third quarter of the year before the previous adjustment date (or, in the case of the first adjustment, the third quarter of the year before the effective date of the license)

NGDP = GDP-IPD for the third quarter of the year before the adjustment date

“GPD-IPD” is the value published for the Gross Domestic Product Price Deflator by the U.S. Department of Commerce, Bureau of Economic Analysis in the publication *Survey of Current Business*, table 7.1 (being on the basis of 2000 = 100), in the third month following the end of the applicable quarter. If that index ceases to be published, any reasonably equivalent index published by the Bureau of Economic Analysis may be substituted by the agreement of the parties. If the base year for GPD-IPD is changed or if publication of the index is discontinued, the licensee shall promptly make adjustments or, if necessary, select an appropriate alternative index acceptable to the parties to achieve the same economic effect.

6.5.2 Interest on Funding Reserve

Funds credited to the account for a terrestrial article but not spent on that article will accrue interest, which will be credited to the fund and used for the purposes described in the article for the fund. Any funds intended to be applied for the purposes of a specific article that remain at the end of any year will be carried over into succeeding years during the term of the license.

The accrued interest rate on all funds will be the 90-day T-Bill rate. An accounting of interest accrued using this rate will be provided by Puget Sound Energy in the annual reports described in Section 5.3. If the 90-day T-Bill rate ceases to be published in the Wall Street Journal, the BRCC will meet and agree upon an alternate source for the interest rate. If at the end of the license term, including any annual licenses, contributions and accrued interest remain unallocated or uncommitted to a specific project, they will be retained by Puget Sound Energy and Puget Sound Energy’s funding obligation will cease.

7.0 References

- Franklin, J.F. and C.T. Dyrness. 1973. Natural vegetation of Oregon and Washington. U.S. For. Serv. Gen. Tech. Rep. PNW-8. Portland, OR. 417p.
- Hamer Environmental L. P., R2 Resource Consultants, Inc., and Associated Earth Sciences, Inc. 2004. Vegetation mapping in the project area and wetland inventory, Baker River Project Studies T2 and T5. Unpublished report prepared for Puget Sound Energy, Bellevue, WA., 94 pp.
- Hruby, T. 2004. Washington State wetland rating system for western Washington – Revised. Washington State Department of Ecology Publication # 04-06-025.

8.0 Review Comments and Responses

Puget Sound Energy distributed a draft TRMP via e-mail to the TRIG for a 30-day review period on April 1, 2009. Comments on the draft were due to Puget Sound Energy on May 1, 2009. Puget Sound Energy then prepared a final draft and distributed it via certified US Mail to the TRIG for a second 30-day review period on July 21, 2009. Comments on the final draft were due August 20, 2009.

8.1 First Review Period, April 1 – May 1, 2009

The list of parties that received the draft documents is provided in table 5. All comments and responses to comments are summarized in table 6. Copies of the original transmittal letters and comment letters are provided in as well.

8.1.1 Distribution List

Table 5. Terrestrial Resource Management Plan reviewers, first review period.

Name	Organization	Address
Brock Applegate	WA Dept of Fish & Wildlife	Post Office Box 1100 La Conner, WA 98257
Cathy Baker	The Nature Conservancy	1917 First Avenue Seattle, WA 98101
Len Barson	The Nature Conservancy	1917 First Avenue Seattle, WA 98101
Mignonne Bivin	National Park Service	7280 Ranger Station Road Marblemount, WA 98267
Bob Carey	The Nature Conservancy	410 N. 4th Street Mount Vernon, WA 98273
Chris Danilson	Sauk-Suiattle Indian Tribe	5318 Chief Brown Lane Darrington, WA 98273
David Geroux	WA Dept of Fish & Wildlife	600 Capitol Way North Mail Stop 43143 Olympia, WA 98501
Patrick Goldsworthy	North Cascades Conservation Council	P.O. Box 95980 Seattle, WA 98145

Name	Organization	Address
Joann Gustafson	WA Dept of Natural Resources	919 North Township Sedro-Woolley, WA 98284
Mark Hunter	WA Dept of Fish & Wildlife	600 Capitol Way North Mail Stop 43143 Olympia, WA 98501
Rich Johnson	WA Dept of Fish & Wildlife	Post Office Box 1100 La Conner, WA 98257
Lou Ellyn Jones	US Fish & Wildlife Service	510 Desmond Dr. SE, Suite 102 Lacey, WA 98503
Robert Kuntz	National Park Service	810 State Route 20 Sedro-Woolley, WA 98284
Chris Madsen	Northwest Indian Fisheries Commission	6730 Martin Way East Olympia, WA 98512
Greta Movassaghi	USDA Forest Service	810 State Route 20 Sedro-Woolley, WA 98284
Bob Nelson	Rocky Mountain Elk Foundation	45 Overmeyer Road Raymond, WA 98577
James Roberts	Sauk-Suiattle Indian Tribe	5318 Chief Brown Lane Darrington, WA 98241
William Rogers	Skagit County Noxious Weed Control Board	302 South First Street Mount Vernon, WA 98233
Scott Schuyler	Upper Skagit Indian Tribe	25944 Community Plaza Sedro-Woolley, WA 98284
Jon-Paul Shannahan	Upper Skagit Indian Tribe	25944 Community Plaza Sedro-Woolley, WA 98284
Laurel Shiner	Whatcom County Noxious Weed Control Board	901 W. Smith Road Bellingham, WA 98226
Stan Walsh	Swinomish Indian Tribe	P.O. Box 368 La Conner, WA 98233
Brenda Werden	WA Dept of Natural Resources	919 North Township Sedro-Woolley, WA 98284
Todd Wilbur	Swinomish Indian Tribe	P.O. Box 368 La Conner, WA 98233

8.1.2 Transmittal Letter



PUGET SOUND ENERGY
The Energy To Do Great Things

Puget Sound Energy
P.O. Box 97034
Bellevue, WA 98009-9734
PSE.com

April 1, 2009

Project No. 2150
Terrestrial Resource Management Plan

Certified Mail Return Receipt Requested

Name
Address

**Re: Baker River Project, FERC No. 2150 – Draft Terrestrial Resource Management Plan,
Settlement Agreement Article 501, Submittal for 30-Day Review**

Dear *Name*:

On October 17, 2008, the Federal Energy Regulatory Commission (FERC) issued a new license for Puget Sound Energy, Inc.'s (PSE's) Baker River Project, FERC No. 2150. In the license at Paragraph F, the FERC directed PSE to comply with conditions of the comprehensive Settlement Agreement for the Baker River Project which includes a minimum "30-day" review within 6 months after license issuance of a preliminary draft Terrestrial Resources Management Plan (TRMP) SA 501.

In accordance with these directives, PSE submits this Plan to the Terrestrial Resources Implementation Group (TRIG) composed of representatives from the Settlement parties for a "30-day" review and seeks comments and suggestions. These comments and suggestions will be used in preparing a Final draft of the Plan. Puget Sound Energy will provide the Final draft to the TRIG for a second "30-day" review prior to submitting the final plan to the FERC.

Enclosed with this letter is the preliminary draft TRMP. Please review this plan and send your comments and/or recommendations to me. You may also submit your comments by email. **Please respond with your reply by May 1, 2009.**

Thank you for your efforts in supporting this process. If you have any questions, please call me at 425-462-3553 or email at Tony.Fuchs@pse.com.

Sincerely,

Tony Fuchs
Consulting Natural Resource Scientist
P.O. Box 97034 PSE-09S
Bellevue WA, 98009-9734
Or email at
Tony.Fuchs@pse.com

Enclosures: Terrestrial Resource Management Plan
Cc:

Terrestrial Resource Management Plan
Doc ID:

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04/01/09

Figure 2. Sample transmittal letter from PSE, April 1, 2009.

8.1.3 Summary of Reviewer Replies

The following reviewer sent comments to PSE (see subsection 8.1.4 for details).

- Greta Movassaghi, USDA Forest Service

8.1.4 Reviewer Comments and PSE Responses

Table 6. Comments following formal review of the TRMP, April 1 – May 1, 2009.

Comment	Puget Sound Energy Response
<p>Greta Movassaghi for Jon Vanderheyden, USDA Forest Service, received April 29, 2009</p>	
<p>Thank you for the opportunity to review the Draft Terrestrial Resource Management Plan for License Article 501. We have no specific comments.</p> <p>The plan appears to address the resource concerns of the Mt. Baker-Snoqualmie National Forest and we support its submission to the FERC. Please send copies of the final plans and the FERC approval letters, once received, to Greta Movassaghi at the address above.</p>	<p>Comment noted.</p>

8.1.5 Comment Correspondence

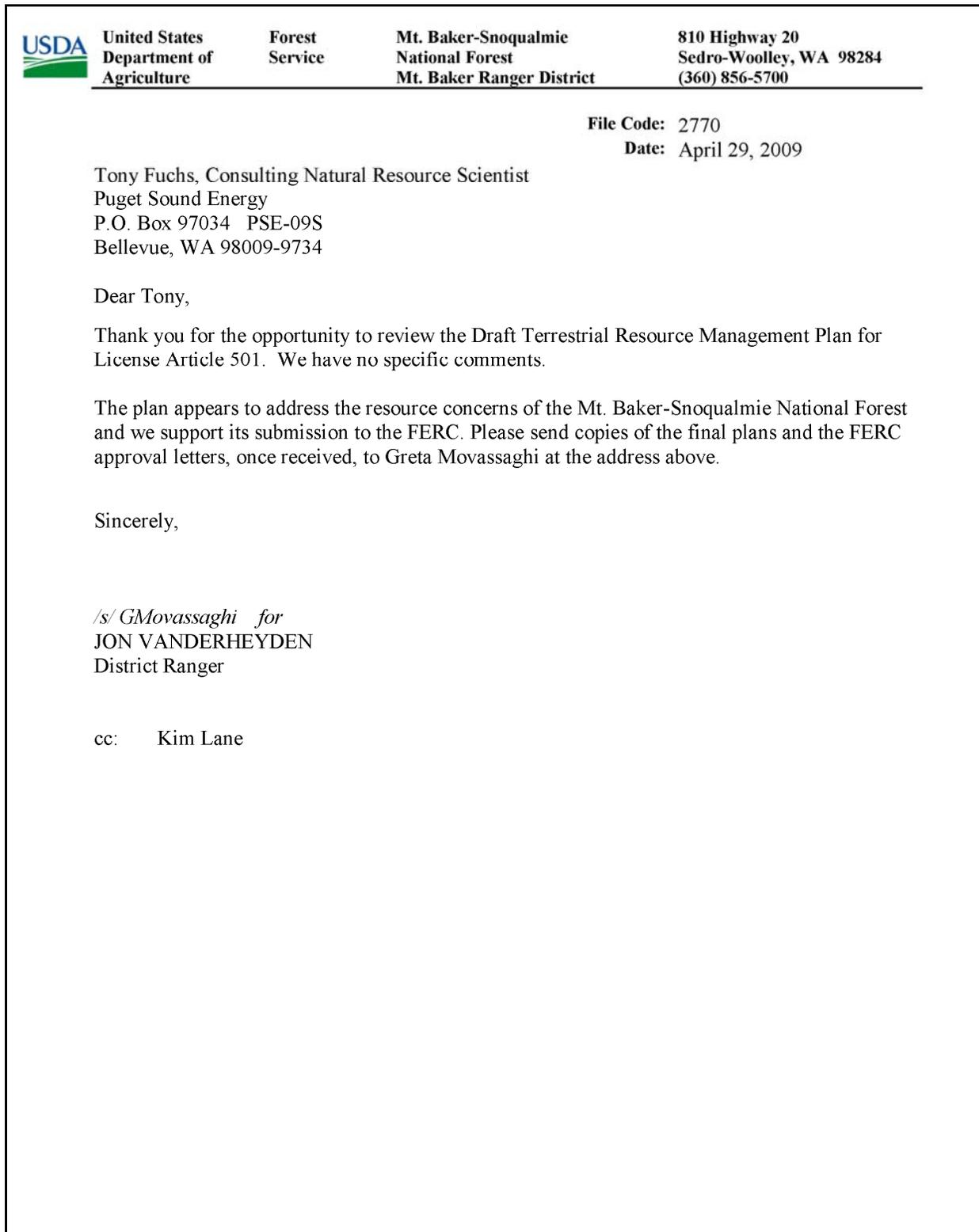


Figure 3. Reply from Greta Movassaghi, USDA Forest Service.

8.2 Second Review Period, July 21 – August 20, 2009

The list of parties that received the draft documents is provided in table 7. All comments and responses to comments are summarized in table 8. Copies of the original transmittal letters and comment letters are provided in as well.

8.2.1 Distribution List

Table 7. Terrestrial Resource Management Plan reviewers, second review period.

Name	Organization	Address
Brock Applegate	WA Dept of Fish & Wildlife	Post Office Box 1100 La Conner, WA 98257
Cathy Baker	The Nature Conservancy	1917 First Avenue Seattle, WA 98101
Len Barson	The Nature Conservancy	1917 First Avenue Seattle, WA 98101
Mignonne Bivin	National Park Service	7280 Ranger Station Road Marblemount, WA 98267
Bob Carey	The Nature Conservancy	410 N. 4th Street Mount Vernon, WA 98273
Chris Danilson	Sauk-Suiattle Indian Tribe	5318 Chief Brown Lane Darrington, WA 98273
Don Gay	USDA Forest Service	810 State Route 20 Sedro-Woolley, WA 98284
Patrick Goldsworthy	North Cascades Conservation Council	P.O. Box 95980 Seattle, WA 98145
Joann Gustafson	WA Dept of Natural Resources	919 North Township Sedro-Woolley, WA 98284
Mark Hunter	WA Dept of Fish & Wildlife	600 Capitol Way North Mail Stop 43143 Olympia, WA 98501
Rich Johnson	WA Dept of Fish & Wildlife	Post Office Box 1100 La Conner, WA 98257
Lou Ellyn Jones	US Fish & Wildlife Service	510 Desmond Dr. SE, Suite 102 Lacey, WA 98503
Fayette Krause	The Nature Conservancy	1917 First Avenue Seattle, WA 98101
Robert Kuntz	National Park Service	810 State Route 20 Sedro-Woolley, WA 98284
Chris Madsen	Northwest Indian Fisheries Commission	6730 Martin Way East Olympia, WA 98512
Laura Martin	USDA Forest Service	42404 SE North Bend Way North Bend, WA 98405
Greta Movassaghi	USDA Forest Service	810 State Route 20 Sedro-Woolley, WA 98284

Name	Organization	Address
Bob Nelson	Rocky Mountain Elk Foundation	45 Overmeyer Road Raymond, WA 98577
James Roberts	Sauk-Suiattle Indian Tribe	5318 Chief Brown Lane Darrington, WA 98241
Regina Rochefort	National Park Service	810 State Route 20 Sedro-Woolley, WA 98284
William Rogers	Skagit County Noxious Weed Control Board	302 South First Street Mount Vernon, WA 98233
Scott Schuyler	Upper Skagit Indian Tribe	25944 Community Plaza Sedro-Woolley, WA 98284
Jon-Paul Shannahan	Upper Skagit Indian Tribe	25944 Community Plaza Sedro-Woolley, WA 98284
Laurel Shiner	Whatcom County Noxious Weed Control Board	901 W. Smith Road Bellingham, WA 98226
Stan Walsh	Swinomish Indian Tribe	P.O. Box 368 La Conner, WA 98233
Brenda Werden	WA Dept of Natural Resources	919 North Township Sedro-Woolley, WA 98284
Todd Wilbur	Swinomish Indian Tribe	P.O. Box 368 La Conner, WA 98233

8.2.2 Transmittal Letter

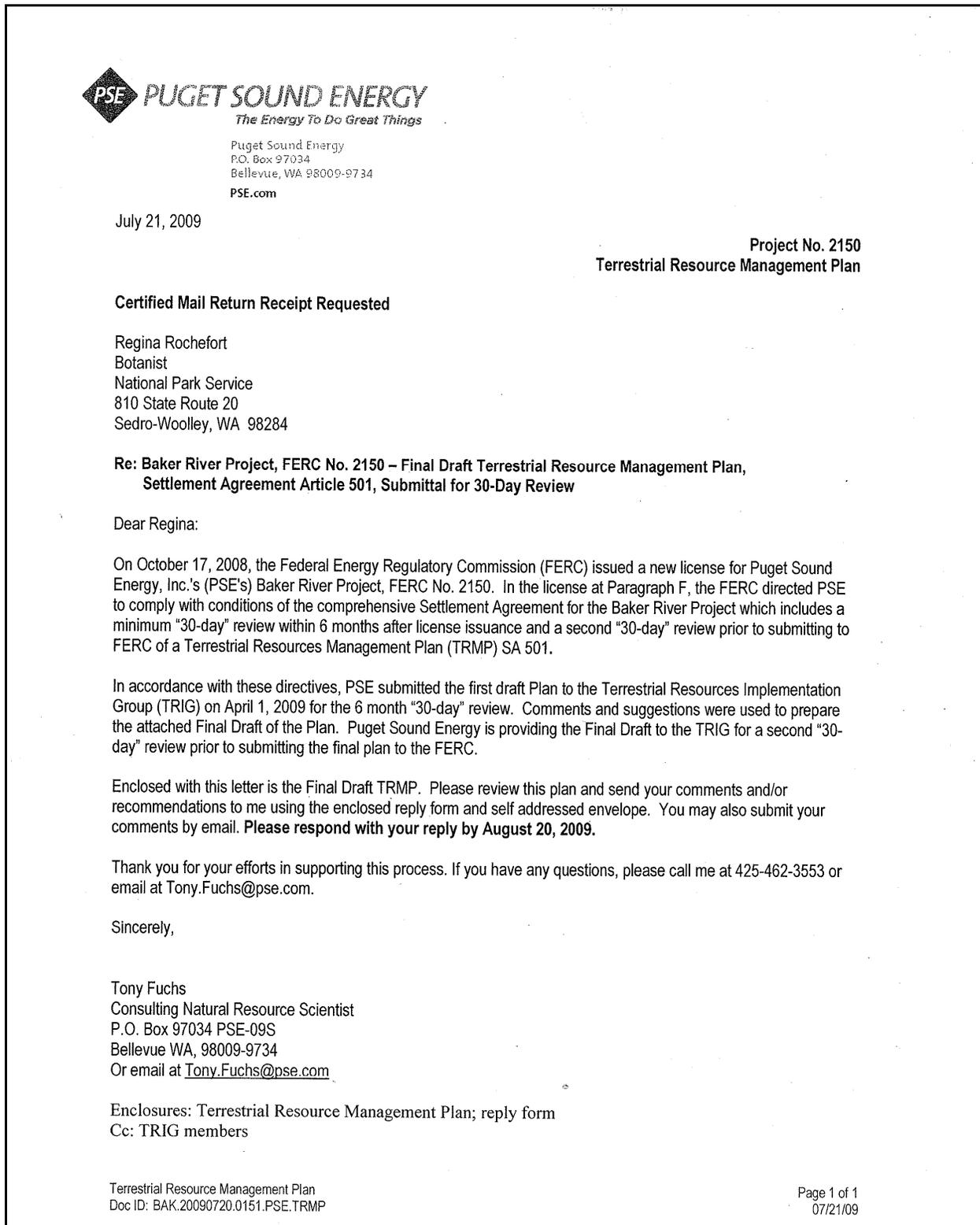


Figure 4. Sample transmittal letter from PSE, July 21, 2009.

8.2.3 Summary of Reviewer Replies

The following reviewers sent comments to PSE (see subsection 8.2.4 for details).

- Brock Applegate, WA Dept of Fish & Wildlife
- Mark Hunter, WA Dept of Fish & Wildlife
- Stan Walsh, Swinomish Indian Tribe

The following reviewers replied but had no comments.

- Mignonne Bivin, National Park Service
- Patrick Goldsworthy, North Cascades Conservation Council
- Greta Movassaghi, USDA Forest Service
- Bob Nelson, Rocky Mountain Elk Foundation

8.2.4 Reviewer Comments and PSE Responses

Table 8. Comments following formal review of the TRMP, July 15 – August 14, 2009.

Comment	Puget Sound Energy Response
Mark Hunter, Washington Department of Fish and Wildlife, received July 30, 2009	
I have briefly scanned to [sic] contents of the document. Comments are deferred to Brock Applegate of our La Conner Office.	Comment noted.
Stan Walsh, Swinomish Indian Tribe, received July 30, 2009	
Each tribe will comment individually.	Comment noted.
Brock Applegate, Washington Department of Fish and Wildlife, received August 14, 2009	
2.1.2 Terrestrial Resource Considerations in the Baker River Basin, fourth bullet. WDFW recommends the word, "native" in front of pond-breeding amphibians. Non-native bullfrogs breed in ponds and PSE should manage habitat in a way to discourage this species.	This change has been made as proposed by WDFW.
4.1.2 Criteria for Forest Habitat Acquisition, Vegetative Condition. WDFW recommends that PSE add the following as a consideration for vegetative conditions for forest habitat acquisition. The TRIG should consider when looking at land acquisition for Article 502, the Forest Habitat Plan: 1) Including a large component of cottonwood and maples in the parcel. 2) Selecting property not already protected by buffers created by Forest Practices Act or other laws or ordinances. 3) Buying a very large percentage of deciduous trees to offset conifer encroachment that will occur over the entire life of the license.	Text has been added to Section 4.1.2, subheading "Vegetative Condition" to address the first numbered bullet in this comment. A new subheading titled "Status" has been added to Section 4.1.2 to address the second numbered bullet in this comment. The third numbered bullet is already covered under the subheading of "Vegetative Condition" in Section 4.1.2.

Comment	Puget Sound Energy Response
<p>5.3 Schedule for Monitoring and Reporting. Please include the summary schedule for verifying implantation and evaluating effectiveness for Articles 502-504.</p>	<p>A summary of the schedule for effectiveness monitoring of Articles 502-504 has been added to the last row of Table 5-1 (now named Table 3 in Final plan).</p>
<p>Table 5-1. Articles 502-504. Please include the monitoring schedule for verifying implantation and evaluating effectiveness for Articles 502-504. SA 514 may evaluate the effectiveness of Articles 502-504 through Habitat Evaluation Procedures (HEP).</p>	<p>See response to previous comment. Also, the potential use of HEP to evaluate the effectiveness of Articles 502-504 is addressed in the last row of Table 5-1 (Table 3).</p>
<p>Table 5-1. SA 506. PSE has listed a monitoring to determine implementation. WDFW recommends the evaluation of effectiveness by considering the nest structure locations through an effectiveness analysis.</p>	<p>As required by SA 501, Table 5-1 (Table 3) only contains the schedule for monitoring osprey nest structures. The details of effectiveness monitoring are addressed in the Terrestrial PME Effectiveness Monitoring Plan prepared to comply with SA 514, "Use of Habitat Evaluation Procedures."</p>
<p>Table 5-1. SA 507. PSE has listed a monitoring to determine implementation. WDFW recommends the evaluation of effectiveness by considering nest structure locations and type of floating platform construction through an effectiveness analysis.</p>	<p>As required by SA 501, Table 5-1 (Table 3) only contains the schedule for monitoring loon floating nest platforms. The details of effectiveness monitoring are addressed in the Terrestrial PME Effectiveness Monitoring Plan prepared to comply with SA 514, "Use of Habitat Evaluation Procedures."</p>

8.2.5 Comment Correspondence

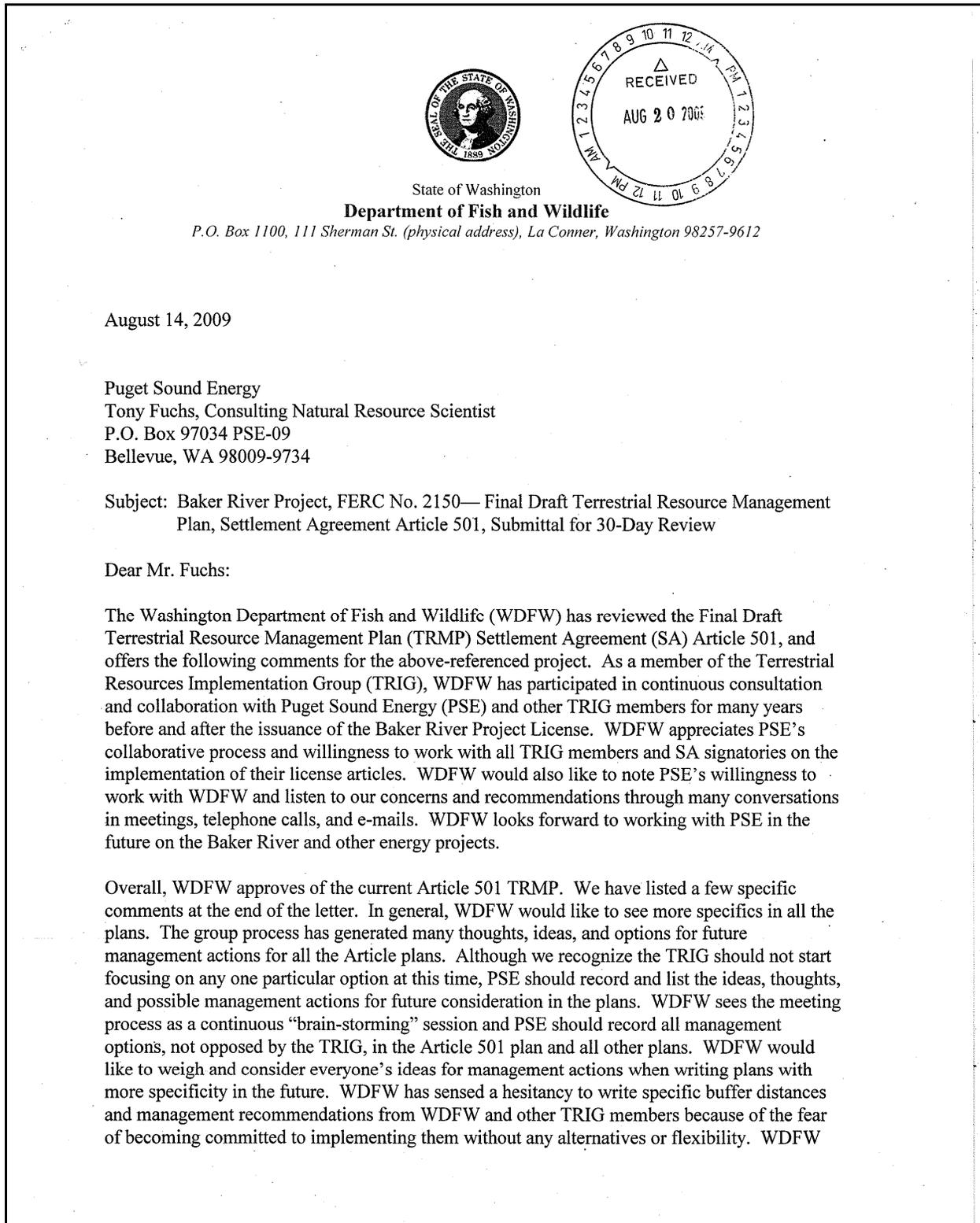


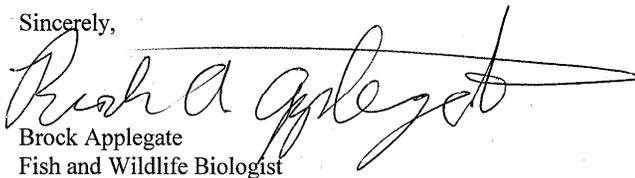
Figure 5. Reply from Brock Applegate, Washington Department of Fish and Wildlife.

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would like our recommendations recorded as options to consider in the current plan so that the TRIG may decide on the value of each recommendation when writing the specifics to each plan in the future.

WDFW welcomes the opportunity to work with PSE on future projects. We value our working relationship with PSE and encourages future dialog as necessary. If you have any questions or need more information or clarification to comments from the WDFW, please feel free to call me at (360) 466-4345 x254.

Sincerely,



Brock Applegate
Fish and Wildlife Biologist

Cc: David Brock, WDFW Mill Creek
Wendy Cole, WDFW La Conner
Mike Davison, WDFW La Conner
Bob Everitt, WDFW Mill Creek
Mark Hunter, WDFW Olympia
Lora Leschner, WDFW Mill Creek

Figure 5, continued.

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SPECIFIC COMMENTS CONCERNING TRMP, ARTICLE 501:

2.1.2 Terrestrial Resource Considerations in the Baker River Basin, fourth bullet. WDFW recommends the word, "native" in front of pond-breeding amphibians. Non-native bullfrogs breed in ponds and PSE should manage habitat in a way to discourage this species.

4.1.2 Criteria for Forest Habitat Acquisition, Vegetative Condition. WDFW recommends that PSE add the following as a consideration for vegetative conditions for forest habitat acquisition.

The TRIG should consider when looking at land acquisition for Article 502, the Forest Habitat Plan:

- 1) Including a large component of cottonwood and maples in the parcel.
- 2) Selecting property not already protected by buffers created by Forest Practices Act or other laws or ordinances.
- 3) Buying a very large percentage of deciduous trees to offset conifer encroachment that will occur over the entire life of the license.

5.3 Schedule for Monitoring and Reporting. Please include the summary schedule for verifying implantation and evaluating effectiveness for Articles 502-504.

Table 5-1. Articles 502-504. Please include the monitoring schedule for verifying implantation and evaluating effectiveness for Articles 502-504. SA 514 may evaluate the effectiveness of Articles 502-504 through Habitat Evaluation Procedures (HEP).

Table 5-1. SA 506. PSE has listed a monitoring to determine implementation. WDFW recommends the evaluation of effectiveness by considering the nest structure locations through an effectiveness analysis.

Table 5-1. SA 507. PSE has listed a monitoring to determine implementation. WDFW recommends the evaluation of effectiveness by considering nest structure locations and type of floating platform construction through an effectiveness analysis.

Figure 5, continued.

LIST OF APPENDICES

Settlement Agreement Article management plans will be appended to this plan upon FERC approval, as follows:

- Appendix A - SA 502 Forest Habitat Plan
- Appendix B - SA 503 Elk Foraging Habitat Plan
- Appendix C - SA 504 Wetland Habitat Plan
- Appendix D - SA 506 Osprey Nest Structure Management Plan
- Appendix E - SA 507 Loon Floating Nest Platform Plan
- Appendix F - SA 508 Noxious Weed Management Plan
- Appendix G - SA 509 Plants of Special Status Plan
- Appendix H - SA 510 *Carex Flava* Plan
- Appendix I - SA 511 Decaying and Legacy Wood Plan
- Appendix J - SA 512/513 Bald Eagle Plan
- Appendix K - SA 514 Effectiveness Monitoring Plan