Environmental Assessment

Issue Permit for Installation of Infrastructure on Public Lands and Operation of a Phone System in the Stehekin Valley

Lake Chelan National Recreation Area

May 2005

Public Availability

Comments on this Environmental Assessment must be postmarked (surface mail) or sent (e-mail or fax) no later than **June 30, 2005.**

If you wish to comment, you may submit your comments by any one of several methods.

Using PEPC: We encourage you to comment on-line at the NPS Planning Environment and Public Comment (PEPC) website (http://parkplanning.nps.gov/noca). At the PEPC web site, you should select the specific North Cascades National Park Service Complex project for which you wish to comment, in this case "Stehekin Telephone System Environmental Assessment". You will find the full text document, an on-line comment form and instructions for submitting on-line comments under the Documents and Links tab. Please use the on-line comment form to submit your ideas, questions, or comments.

By mail or hand delivery to: Superintendent
North Cascades National Park Service Complex
810 State Route 20
Sedro-Woolley, WA 98284

By fax to the Superintendent at: (360) 856-1934

Via the Internet to: NOCA_Superintendent@nps.gov

Please submit Internet comments as an ASCII file avoiding the use of special characters and any form of encryption. Please also include "Attn: Dan Allen" and your name and return address in your Internet message. If you do not receive a confirmation from the system that we have received your Internet message, contact Dan Allen directly at (360) 856-5700 ext 367 or e-mail dan_allen@nps.gov with the subject: Environmental Assessment.

Freedom of Information

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address from the rulemaking record, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold from the rule-making record a respondent's identity, as allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. However, we will not consider anonymous comments. We will make all submissions from organizations, or businesses, and from individuals identifying themselves as representatives of officials of organizations or businesses, available for public inspection in their entirety.

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CHAPTER I

PURPOSE AND NEED

The purpose of the proposed action is to issue a permit for use of National Park Service (NPS) facilities and lands within the Lake Chelan National Recreation Area (NRA) to construct necessary infrastructure and operate a public telephone system. This is needed to respond to the request of a private company (WeavTel) to develop a public telephone system in the Stehekin Valley. The infrastructure would be used to provide telecommunication services for the Stehekin Valley, in accordance with the Universal Service provisions of the Telecommunications Act of 1996. The proposed services include supplying private telephone and internet to Stehekin residents, businesses and visitors at rates comparable to other areas in Chelan County.

BACKGROUND

The Federal Communications Commission (FCC) implements Universal Service provisions of the Telecommunications Act of 1996. The primary goals of the Universal Service provisions are to:

- promote the availability of quality services at just, reasonable, and affordable rates
- increase access to advanced telecommunications services throughout the Nation
- advance the availability to all consumers, including low income, rural, insular, and high cost areas at rates that are reasonably comparable to those charged in urban areas

Federal and state laws direct the Washington Utilities and Transportation Commission (WUTC) to preserve and advance Universal Service within the state of Washington. WeavTel petitioned WUTC and was granted Eligible Telecommunications Carrier (ETC) status (WUTC Docket No.UT-013105). An ETC must meet the provisions of the Telecommunications Act to qualify for federal and state Universal Service funds. If the NPS grants a permit, the WUTC would appropriate federal and state Universal Service Funds to WeavTel following the installation of the phone system in the Stehekin Valley. The Universal Service Funds are not supported through annual federal appropriations but are privately funded by all telecommunications companies who provide interstate telecommunication services.

There have been several forms of telecommunication used in the Stehekin Valley over the years. Prior to 1962, the U.S. Forest Service built and operated a party line connected to Chelan via a wire line along the western side of the lake primarily for the purpose of relaying fire information. Stehekin residents could connect to the party line and use it within and outside the valley. The quality of communication was poor and the system was eventually abandoned.

Currently, the NPS operates a geosynchronous satellite telecommunication system, which relays telecommunications from Stehekin via satellite to the NPS office in Sedro Woolley, WA. This system is used to conduct NPS business, provide the Stehekin community with emergency services down-lake, and operate one public telephone in the valley. All phone users experience a "2-second delay" when talking. This phone is shared by residents and visitors to meet their phone service needs and is located at the landing area. It is sheltered from rain, but is not enclosed. Use of the public phone requires a prepaid or credit phone card. In addition, the NPS and several Stehekin Valley residents have low earth orbit satellite phones available for emergency purposes. These types of satellite telephone systems are not practical for residences and small businesses due to their high expense.

Other telecommunication options include a radio-phone system, which provides an insecure connection to down-lake telephones via a repeater system. Also radios with specific frequencies are used by a few local

businesses for communication within the valley. Most recently, private satellite dishes provide high-speed internet access to approximately 35 households. The North Cascades Stehekin Lodge also utilizes a high-speed internet system to verify credit cards used by guests.

CONSTRAINTS

Enabling Legislation

Public Law 90-544, establishing the Lake Chelan NRA (along with North Cascades National Park and Ross Lake NRA) stated that the recreation area was created:

> *In order to provide for the public outdoor recreation use and enjoyment of portions of the Stehekin River and Lake Chelan, together with the surrounding lands and for the conservation of the scenic, scientific, historic, and other values contributing to public enjoyment of such lands and waters* … [16 U.S.C. §90a-1]

Law and Policy

.Telecommunications Act of 1996 (Public Law. No. 104-104, 110 Stat. 56)

> Sec. 254. Universal Service. *The goals of Universal Service, as mandated by the 1996 Act, are to promote the availability of quality services at just, reasonable, and affordable rates; increase access to advanced telecommunications services throughout the Nation; advance the availability of such services to all consumers, including those in low income, rural, insular, and high cost areas at rates that are reasonably comparable to those charged in urban areas. In addition, the 1996 Act states that all providers of telecommunications services should contribute to Federal Universal Service in some equitable and nondiscriminatory manner; there should be specific, predictable, and sufficient Federal and State mechanisms to preserve and advance universal service; all schools, classrooms, health care providers, and libraries should, generally, have access to advanced telecommunications services; and finally, that the Federal-State Joint Board and the Commission should determine those other principles that, consistent with the 1996 Act, are necessary to protect the public interest*.

National Park Service Management Policies (2001)

NPS Management Policies regarding new construction states:

> *In those areas of parks managed for the preservation, protection, and interpretation of cultural resources and their settings, new structures, landscape features, and utilities will be constructed only if:*
> - *Existing structures and improvement do not meet essential park management needs; and*
> - *New construction is designed and sited to preserve the integrity and character of the area.* (5.3.5.4.6)

NPS Management Policies 2001 regarding utilities and utility lines states:

> *Utilities (i.e. energy, water, and wastewater systems) will be sited outside park boundaries whenever possible. In-park utilities will be as unobtrusive as possible, and have the least possible resource impact.* (9.1.5)

Where feasible, NPS utility lines will be placed underground, except where such placement would cause significant damage to natural or cultural resources (such as historic structures or cultural landscapes). When placed above ground, utilities lines and appurtenant structures will be located and designed so as to minimize their impact on park resources and values. Whenever possible and visually acceptable, all utilities will share a common corridor, and will be combined with transportation corridors. Cost effectiveness, reliability of service, and visual impact will be considered when deciding whether to install utility lines above ground or underground. (9.1.5.3.)

Director's Orders

Director's Order # 53: Special Park Uses, section 10.1 regarding rights-of-way authorities states:

Authority for a utility Right-of-Way (ROW) through parks is found in 16 USC 5 for radio, television and other forms of communication transmitting and receiving structures, facilities and antennas (including telecommunication antenna sites); and 16 USC 79 for electric power, telephone and telegraph lines, and a wide variety of water conduits (including sewer); or in a very few cases, park-specific legislation.

Director's Order # 53: Special Park Uses, section 10.3 regarding telecommunications states:

The NPS will comply with the Telecommunications Act of 1996 and any other policies, requirements, or instructions that are applicable to the Service. In complying, superintendents will:

- *Consider the safety of the visiting public when reviewing telecommunication site applications, including the potential benefit of having telephone access to emergency law enforcement and public safety services.*

General Management Plan

The 1995 General Management Plan (GMP) for Lake Chelan NRA provided a broad management goal, management objectives, and guidelines for utility development.

***Management Objective**. Preserve the rural setting through sustainable design for development, including historic and contemporary structures, and locate facilities in suitable and least environmentally sensitive areas possible.*

***Actions**. Unnecessary power lines would be removed, and all other lines would be buried where feasible, especially in areas with high visitor use.*

Stehekin and Company Creek Roads

The United States acquired the Stehekin Valley Road by Quit Claim Deed from Chelan County in 1970 and, at that time, took whatever title the County had acquired. Approximately 5 parcels of private property straddle, and overlay, the Stehekin Valley Road within the project area. The authority of the National Park Service to permit the occupation of its road right-of-way with a buried fiber-optic cable on these parcels, for the purpose of providing telephone service, is presently under legal review. If it is found that the National Park Service does not have the legal authority to permit such occupation on any or all of these parcels it will be the responsibility of WeavTel to secure legal easements to cross these parcels before a Special Use Permit is issued.

Although Congress has given the National Park Service the authority to spend federal funds to maintain the Company Creek Road (110 Stat. 1321), there are approximately 20 private parcels above the Chelan PUD powerhouse where the United States holds no road, or other, easement interest despite the presence of the road. WeavTel would clearly be required to secure legal easements to cross these parcels before a Special Use Permit is issued.

Resource Preservation

All federal actions taken by the NPS must be in accordance with environmental and historic preservation laws. The NPS will strive to meet its statutory and regulatory obligations to protect natural and cultural resources. Federal agencies are required to consider the effects on cultural resources of proposed undertakings in accordance with guidelines published in 36 Code of Federal Regulations (CFR) Part 800. In general, the NPS is guided by the Organic Act of 1916 which states that both natural and cultural resources will be conserved for the enjoyment of this and future generations. Other laws including the National Historic Preservation Act, the Archeological Resources Protection Act, the National Environmental Policy Act, the Clean Water Act, the Clean Air Act and the Endangered Species Act govern the extent of actions taken by the NPS. These laws promote natural and cultural resource protection and preservation.

CHAPTER II

MANAGEMENT ALTERNATIVES

The NPS guideline for "Conservation Planning, Environmental Impact Analysis and Decision Making" (NPS-12 Handbook) requires identification of the "environmentally preferred alternative". This is "… *the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural and natural resources*". The "preferred alternative" is the proposed action. It is the alternative that park management believes does the best job of satisfying the objectives as laid out in the Purpose and Need section. Impacts are listed for comparison in the Summary of Impacts (Appendix A).

Alternative A. No Action. (Environmentally Preferred Alternative).

A permit would not be issued to WeavTel to build and operate infrastructure using NPS facilities and lands within the Lake Chelan National Recreation Area (NRA) to provide phone service for the community in Stehekin. Homeowners, businesses, and visitors would continue to use services that are currently available.

Alternative B. Issue A Permit For An Underground Line And Other Use Of Federal Land. (Preferred Alternative)

Issue WeavTel a permit to construct and operate infrastructure including the placement of conduit and cable underground using NPS facilities and lands within the Lake Chelan National Recreation Area to provide the Stehekin Community with phone service (Figure 1). All work would be done or contracted by WeavTel. (Preferred Alternative)

As noted previously under "Constraints" the NPS would only issue a permit for use of lands on which there is clear Federal authority. The authority of the NPS to permit the occupation of its road right-of-way with a buried fiber-optic cable across private parcels, for the purpose of providing telephone service, is presently under legal review. If it is found that the NPS does not have the legal authority to permit such occupation across private parcels it will be the responsibility of WeavTel to secure legal easements to cross these parcels before a Special Use Permit is issued.

On the Company Creek Road there are approximately 20 private parcels above the Chelan PUD powerhouse where the United States holds no road, or other, easement interest despite the presence of the road. WeavTel would clearly be required to secure legal easements to cross these parcels before a Special Use Permit is issued.

Phone service rates to subscribers would be comparable to Chelan rates.

Figure 1. The proposed project area in the Stehekin Valley including location of underground lines and wireless areas.

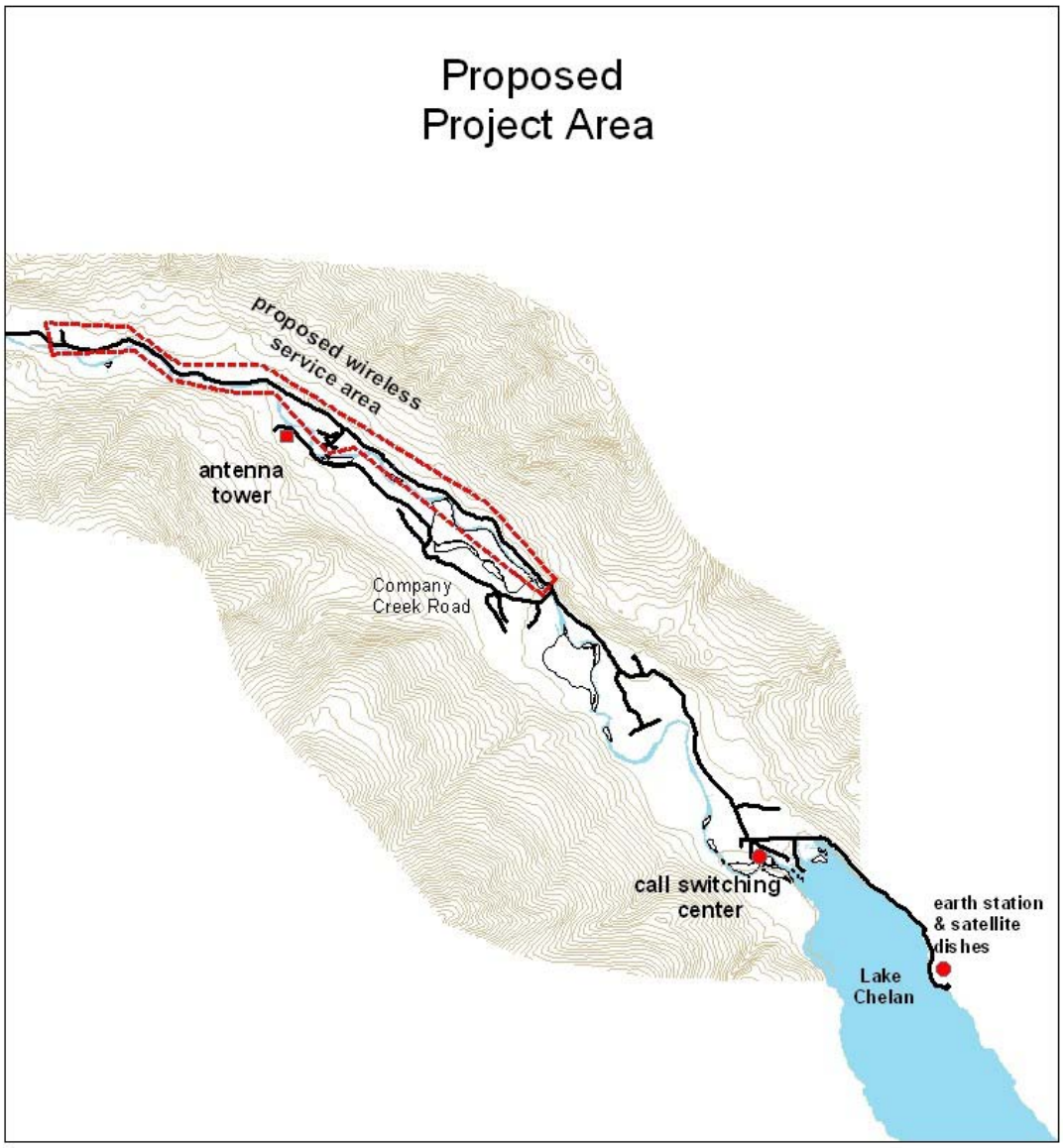
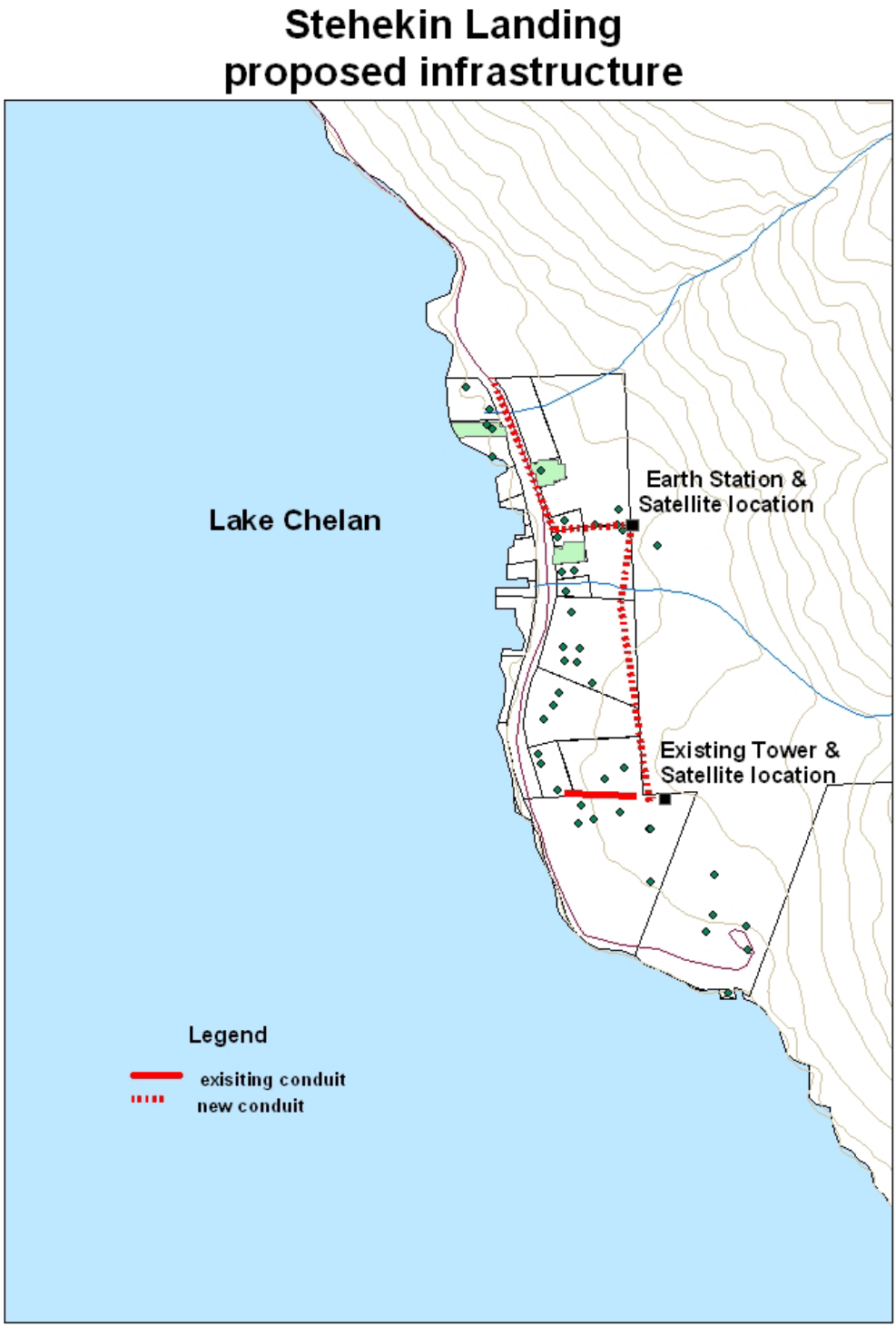


Figure 2. Location of proposed facilities in the Stehekin Landing area.



Infrastructure includes the following:

Landing Area (Figure 2):

Trenching for conduit to house the fiber optic cable:

From the Post Office to the North Cascades Stehekin Lodge (generator building): Hand-dug

From the Post Office to the Earth Station (wastewater treatment facility): Wheeled trencher

From the Earth Station to the Stehekin Valley Road: Wheeled trencher

Existing conduit would be used from the Golden West Visitor Center to the North Cascades Stehekin Lodge (generator building).

A 3 foot antenna would be attached to the existing NPS radio-tower behind the Golden West Visitor Center to provide wireless (wireline) service to homes down lake from the Stehekin Valley Road.

A 10 by12 foot building, to house satellite receiving equipment, called the "Earth Station" would be built within the wastewater treatment site. The architecture would match the existing NPS structure.

A 12 foot diameter by 13 foot tall satellite dish and 13 foot square cement pad would be located near the earth station.

A 16 foot diameter by 18.5 foot tall satellite dish and 14 foot square cement pad would be located near the Earth Station.

One hand access hole, a 30 inch square by 18 inch deep concrete enclosure with a concrete lid to access the cable, placed at a cable splice location along the fiber optic backbone.

Along the Lakeshore to the Call Switching Center (Bakery area):

Conduit would be buried under the road pavement (30 inches deep and 24 inches from the road edge) from the landing to Silver Bay road, a distance of approximately 1.5 miles. From Silver Bay Road to the call switching center, the conduit would be buried 24 inches from the edge of the pavement in the road shoulder. A wheel trencher would be used to bury the conduit which will house the fiber optic cable.

One multiple dwelling unit (MDU) will be located in the vicinity of Silver Bay Road. The MDU is a box approximately 31 inches square by 46 inches high on a 4 inch thick concrete pad. The unit serves as the interface between the fiber optic backbone and copper wire. The copper wire would also be buried along or adjacent to roads from the fiber optic backbone to individual homes and businesses.

One hand access hole will be located in this section.

A 1,500 square foot log structure called the call switching center would be constructed on private property near the bakery. WeavTel has already received a permit from Chelan County for construction on this property. This building serves as the business office for

the operation and houses electrical equipment. No public phone or internet services are proposed at this site.

A service pedestal, 4 inches by 4 inches by 24 inches, would be required for each customer. Installation would be on private property if possible, or within the Chelan PUD transmission line corridor.

From Call Switching Center to Harlequin Bridge:

Conduit would be buried 24 inches from the edge of the pavement in the road shoulder a distance of approximately 2.5 miles. A wheel trencher would be used to bury the conduit which will house the fiber optic cable.

One MDU would be placed in this section.

Two hand access holes would be located in this section.

A service pedestal would be required for each customer. Installation would be on private property if possible, or within the Chelan PUD transmission line corridor.

The fiber optic cable will cross the Stehekin River in conduit attached under the Harlequin Bridge.

Company Creek Road:

Conduit would be buried in the road shoulder for a distance of approximately 1.8 miles. A wheel trencher would be used to bury the conduit which will house the fiber optic cable.

A 25 foot tall antenna (similar to the one behind the Golden West Visitor Center) and 12 foot square cement foundation would be constructed on NPS land near the end of Company Creek Road to provide wireless (wireline) service to up-valley customers.

Three MDU's would be placed in this section of the project.

Two hand-holes would be located in this section.

A service pedestal would be required for each customer. Installation would be on private property if possible, or within the Chelan PUD transmission line corridor.

This alternative is preferred to Alternatives A and C because it meets agency requirements described in the *Law and Policy* section and minimizes impacts to the environment.

Alternative C. Issue A Permit For An Above Ground Line And Other Use Of Federal Land.

WeavTel would be issued a permit to construct and operate infrastructure on federal land including the installation of approximately 30 new telephone poles and attaching aerial fiber optic cable to existing PUD poles to provide telephone service to the Stehekin Valley. The new poles would be similar in height and diameter to the existing PUD power poles. The PUD electric transmission line follows the alignment of the Stehekin Valley Road to the Harlequin Bridge and the Company Creek to about road end. All work to install this system would be done or contracted by WeavTel and coordinated with PUD.

Phone service rates to subscribers would be comparable to Chelan rates.

Infrastructure includes the following:

Landing Area:

A 3 foot antenna would be attached to the existing NPS radio-tower near the Golden West Visitor Center to provide wireless (wireline) service to homes down lake from the Stehekin Valley Road.

A 10 by12 foot building, to house satellite receiving equipment, called the "Earth Station" would be built within the wastewater treatment site. The architecture would match the existing NPS structure.

A 12 foot diameter by 13 foot tall satellite dish and 13 foot square cement pad would be located near the Earth Station.

A 16 foot diameter by 18.5 foot tall satellite dish and 14 foot square cement pad would be located near the Earth Station.

Along the Lakeshore to the Call Switching Center (Bakery area):

Installation of approximately 30 additional telephone polls to bridge distances between some PUD power poles

One MDU will be located in the vicinity of Silver Bay Road. The copper wire would also be buried along or adjacent to roads from the fiber optic backbone to individual homes and businesses.

A 1,500 square foot log structure called the call switching center would be constructed on private property near the bakery. WeavTel has already received a permit from Chelan County for construction on this property. This building would serves as the business office for the operation and house electrical equipment. No public phone or internet services are proposed at this site.

Each customer would require installation of a service pedestal on their private property if possible, or within the Chelan PUD transmission line corridor.

From Call Switching Center to Harlequin Bridge:

One MDU would be placed in this section.

Each customer would require installation of a service pedestal on their private property if possible, or within the Chelan PUD transmission line corridor.

Company Creek Road:

A 25 foot tall antenna (similar to the one behind the Golden West Visitor Center) and 12 foot square cement foundation would be constructed on NPS land near the end of Company Creek Road to provide wireless (wireline) service to up-valley customers.

Three MDU's would be placed in this section of the project.

Each customer would require a service pedestal 4 inches by 4 inches by 24 inches, placed on their private property when possible, or within the Chelan PUD transmission line corridor.

Under this alternative all fiber optic cable would be installed above ground following existing power-lines on PUD poles throughout the service area. Since the aerial fiber is weaker than the power lines, approximately 30 additional poles would be installed to bridge distances between some poles. Most of the new poles would be installed along the lakeshore from the landing to the Silver Bay Road. Use of the existing power poles would require an agreement between WeavTel and PUD. PUD currently monitors the transmission line corridor and takes appropriate action to protect the line for infringing limbs and hazardous trees.

ALTERNATIVES CONSIDERED BUT REJECTED

- Construct and operate a wireless cellular system to provide the Stehekin Valley with telephone service. A wireless cellular system must tie into an established phone system (land based or satellite). Also, cellular systems are not typically covered under the Universal Service provisions and would not be eligible for reimbursement by Universal Service Funds. Thus, WeavTel would not install a system of this type. For these reasons this alternative was rejected.

CHAPTER III

DESCRIPTION OF THE ENVIRONMENT

The project area would include NPS land in the vicinity of the landing area, Golden West Visitor Center, and a combination of NPS and private land along the Stehekin Valley Road to Harlequin Bridge, across the Stehekin River to the end of Company Creek Road, and along minor roads in this general vicinity. Elevations within the project area range from approximately 1,120 feet at the landing area to approximately 1,280 feet near the end of Company Creek Road.

Geology and Soils

The Stehekin Valley is cut deeply into resistant Skagit Gneiss bedrock. Local relief measures over 6,000 feet from 1,200 feet on the valley floor to over 8,000 feet on the summit of McGregor Mountain. The valley has a U-shape typical of glaciated valleys, with a wide, flat floor, bounded by steep valley walls.

The valley floor is composed of a wide range of landforms and sediments deposited by glaciers, streams and gravity. Soils within the 100-year floodplain are extremely vulnerable to rapid erosion because they are coarse grained and non-cohesive. Much of the project area has been previously disturbed for development such as the wastewater treatment facility, PUD transmission line corridor, road and road shoulder. In theses areas, the soil is extremely compacted and may have been brought in as fill. The thin top layer is made up of organic soil created by decomposing vegetation.

River Processes and Hydrology

The Stehekin River is particularly prone to frequent flooding due to its geographic position and steep, rocky slopes. Severe spring and fall flooding events caused by snow melt and rain are common. Spring snowmelt floods occur in May and June affecting the lower valley and lasting up to a week. Fall floods typically affect the upper valley to a greater extent. They have higher discharge peaks and can be more destructive, but are of shorter duration lasting one day or less.

Wetlands

Wetlands are critically important areas for the preservation of natural habitats and processes. According to NPS and Corps of Engineers delineation standards, wetlands are identified by hydrophytic soil types, hydrophytic vegetation, and hydrology. There are wetlands, which meet the definitions of both agencies, adjacent to the road at the head of Lake Chelan, between the head of the lake and the bakery, and at the maintenance yard.

Floodplain

Floodplains are a very important component of a river's natural processes. They slow and disperse the energy of floodwaters, providing diverse habitat for wildlife and plants that thrive on flood disturbance. Large woody debris and fine river sediment collect in floodplains increasing the biodiversity in these areas. Project areas that may be vulnerable to flooding include the area from the head of Lake Chelan to the bakery, along Company Creek Road from Harlequin Bridge to the maintenance facility and road, and Company Creek Road from the Battalion Creek crossing to the end of the road.

Water Quality

The surface water in Lake Chelan NRA, including the Stehekin River, and Lake Chelan is Class AA (extraordinary), having excellent quality with few exceptions. Class AA waters are given maximum protection under state water quality regulations (Washington Administrative Code 173-201 A).

Air quality

The Lake Chelan NRA including the lower Stehekin Valley is designated as a Class II air-shed under the Clean Air Act. Although the air quality is generally very good, it is affected by pollution emissions, fires (wildfire, prescribed burns, wood fireplaces), and dust from gravel roads. Air quality is important for health, visitor enjoyment, scenic vistas, preservation of natural systems and cultural resources.

Vegetation

The project area transects a combination of NPS and private land in the lower valley. Most of the project area on public lands has been previously cleared for development of the road corridor, wastewater treatment facility and electric transmission line corridor. These areas contain little tree cover and support small populations of exotic, invasive plants. These sites have been monitored for exotic plant species annually by park staff. Invasive species found within the project area include diffuse knapweed (*Centaurea diffusa*), spotted knapweed (*Centaurea maculosa*), bull thistle (*Cirsium vulgare*), rush skeletonweed (*Chondrilla juncea*), and common mullein (*Verbascum thapus*).

The undisturbed areas contain mesic uplands comprised of an overstory of mature Douglas-fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa*). The understory is open and sparse. Snowberry (*Symphoricarpos albus*), oceanspray (*Holodiscus discolor*) and ceanothus (*Ceanothus sanquineus*) are common shrub species. Thimbleberry (*Rubus parviflora*), Oregon boxwood (*Pachistima myrsinites*), Oregon grape (*Mahonia aquifolium*) and kinnickinnick (*Arctostaphylos uva-ursi*) are also common species along with a variety of grasses. Portions of the project that lie within the floodplain contain an overstory of bigleaf maple (*Acer macrophyllum*), western red cedar (*Thuja plicata*) and black cottonwood (*Populus trichocarpa*).

Several rare plant surveys have been conducted throughout the Stehekin Valley. The threatened, sensitive, and watch list species that may occur in the lower valley include Palouse milk vetch, (*Astragalus arrectus*), Common moonwort (*Botrychium lunaria*), Common blue-cup (*Githopsis specularioide*) and Thompson's clover (*Trifolium thompsonii*).

Wildlife

Various species of wildlife live in the forest, floodplain, wetland, and riverine environments surrounding the project area. Approximately 40 species of mammals have been observed in the Stehekin Valley over the past 20 years (Kuntz and Glesne 1993, Duke Engineering and Services 2000). Kuntz and Glesne (1993) documented 96 species of birds using riparian and upland habitats. Birds included a mix of resident and migrant species. Kuntz and Glesne (1993) also documented 2 species of lizards, 5 species of snakes, and 5 species of amphibians. Fish species in the Stehekin River and its tributaries include introduced rainbow trout, native cutthroat trout, and introduced kokanee salmon. Records of wildlife observations are maintained in the Wildlife Observation Database at the Superintendent's office in Sedro-Woolley.

Threatened and Endangered Species

Species listed as threatened, endangered or proposed for listing by either the U.S. Fish and Wildlife Service or the Washington Department of Fish and Wildlife are considered in this assessment (Table 1). In addition, candidate and sensitive species are taken into account.

Table 1. Washington State and Federal endangered (E), threatened (T), candidate (C) and other sensitive species for which there is suitable habitat in the Stehekin Valley.

Species		Status	
Common Name	**Scientific Name**	**Federal**	**State**
Gray Wolf	*Canus lupus*	E	E
Grizzly Bear	*Ursus arctos*	T	E
Canada Lynx	*Lynx canadensis*	T	T
Pacific Fisher	*Martes pennanti pacifica*	C	E
California Wolverine	*Gulo gulo luteus*		C
Western Gray Squirrel	*Sciurus griseus griseus*		T
Townsend's Big-eared Bat	*Corynorhinus townsendii*		C
Bald Eagle	*Haliaeetus leucocephalus*	T	T
Northern Spotted Owl	*Strix occidentalis caurina*	T	E
Northern Goshawk	*Accipiter gentilis*		C
Golden Eagle	*Aquila chrysaetos*		C
Merlin	*Falco columbarius*		C
Flammulated Owl	*Otus flammeolus*		C
Vaux's Swift	*Chaetura vauxi*		C
Lewis' Woodpecker	*Melanerpes lewis*		C
Black-backed Woodpecker	*Picoides albolarvatus*		C
Pileated Woodpecker	*Dryocopus pileatus*		C
Bull Trout	*Salvelinus confluentus*	T	
Western Toad	*Bufo boreas*		C
Columbia Spotted Frog	*Rana luteiventris*	C	C

Gray Wolf (*Canis lupus*) and Grizzly Bear (*Ursus arctos*) have not been reported in the Stehekin Valley below High Bridge in the past 15 years although suitable habitat exists. There have been confirmed sightings of each species within 15 miles of the project site in the past 20 years. These sightings were most likely animals migrating through the area. Although there is suitable habitat in the area, noise, disturbance, and human presence in the Stehekin Valley would make the area less desirable.

Canada lynx (*Lynx canadensis*) feed primarily on snowshoe hares and populations of the 2 species are expected to overlap significantly. A vertebrate inventory conducted in 1990 and 1991 documented snowshoe hare presence in the Stehekin Valley. There have been at least 4 unconfirmed sightings of lynx in the lower valley (below High Bridge) between 1975 and 2001. However, the habitat affected by the project is not considered typical of that normally used by lynx. Lynx habitat is usually higher in elevation (above 3,000-4,000 feet) in lodgepole pine, subalpine fir, and or Engelmann spruce forests.

Pacific Fisher (*Martes pennanti*) Recent inventories (Kuntz and Glesne 1993, Duke Engineering and Services 2000) did not document the presence of fishers in the Stehekin Valley. Fishers are generally associated with late-successional coniferous and mixed coniferous-deciduous forests, though second growth forest with good cover may also be used. Core habitat zones on the east-slope of the Cascades include subalpine fir and grand fir/Douglas-fir forests. Fishers require snags and logs for natal and maternal dens and rest sites.

California Wolverine (*Gulo gulo*) occurs in low densities, mostly in subalpine and alpine habitat zones. However, it can occur in silver fir and other lower elevation forests. There are 2 records in Wildlife Observation Database of unconfirmed wolverine observations in the Stehekin Valley in January 1974 and June 1983.

Western Gray Squirrel (*Sciurus griseus*) is associated with the grand fir/Douglas-fir habitat zone in the Stehekin Valley. They feed on fungi, and the seeds of pine, fir, bigleaf maple, and vine maple. Current population status in the Stehekin Valley is unknown; however, individuals continue to be observed annually.

Townsend's Big-eared Bat (*Corynorhinus townsendii*) Townsend's big-eared bats hibernate in caves and use caves, lava tubes, and abandoned buildings for breeding and roosting sites. Nursery colonies are extremely sensitive to human activity, and sites are readily abandoned if disturbed. A parkwide baseline inventory of bats conducted in 1998-2001 did not document this species in the Stehekin River watershed (Kuntz and Glesne 1993).

Bald Eagle (*Haliaeetus leucocephalus*) In 2001, 2002, and 2003 a pair nested near Weaver Point at the head of Lake Chelan. Four eaglets were fledged over the 3 year period (2 fledged in 2003). The nest site is approximately 8 miles from the project site. Bald Eagles are occasionally seen perched in large trees at the head of Lake Chelan during the fall and winter. Eagles are occasionally seen in the upper Stehekin Valley and there is habitat along the Stehekin River corridor.

Northern Spotted Owl (*Strix occidentalis caurina*) Kuntz and Chrisphersen (1996) identified 3 nesting pairs and 2 apparently unpaired owls between Bridge Creek and Flick Creek near the southern boundary of the Lake Chelan NRA. The nearest nesting pair was documented 2 miles from the project area. The forest and riparian areas of the project area may be foraging habitat for spotted owls.

Northern Goshawk (*Accipter gentilis*) Kuntz and Glesne (1993) documented the occurrence of this species in upland mesic conifer and deciduous riparian forests within the Stehekin Valley. Goshawk nests were noted on the eastside of Lake Chelan. Recently fledged goshawks were seen above High Bridge. Evidence of old nests suggests these areas have been used for many years.

Golden Eagle *(Aquila chrysaetos*) A 1987 survey of potential golden eagle habitat identified 5 unoccupied nest sites, all outside the Stehekin River watershed (Bjorklund 1987).

Merlin (*Falco columbarius columbarius*) The Wildlife Observation Database contains 3 records of Merlins seen in the Stehekin Valley (June 1986, May 1993, September 1995). These records probably represent birds migrating through the valley.

Flammulated Owl (*Otus flammeolus*) Uncommon and local in eastern Washington, flammulated owls occur in mature forests consisting chiefly of ponderosa pine and Douglas-fir (Smith et al. 1997). Breeding habitat has been described as consisting of well-spaced Douglas-firs of varying ages, generally containing thick clumps of young trees with some ponderosa pine. Stand understory is very open and contains grasses and isolated shrubs. Smith et al. (1997) mapped suitable habitat in Washington. This map identifies low elevation areas within the Stehekin River drainage, including Flat Creek and Bridge Creek as core habitat. Despite efforts over the last 15 years to document vertebrate species within park boundaries, flammulated owls remain undocumented in the area (Kuntz and Glesne 1993). To date, no surveys specifically targeting flammulated owls have been conducted in the area.

Vaux's Swift (*Chaetura vauxi*) Park studies (Kuntz and Glesne 1993, Wildlife Observation Database) have documented this species as regularly occurring in the Stehekin Valley from May through September.

Lewis' Woodpecker (*Melanerpes lewis*) Lewis' Woodpecker is common in open forests and woody riparian corridors of eastern Washington in the ponderosa pine zone (Smith et al. 1997). While it has been documented nesting in both living and dead deciduous and coniferous trees, it shows a preference for ponderosa pine and black cottonwood. Smith et al. (1997) identified core habitat in Washington as including the Stehekin Valley. This woodpecker was observed in 1971 at the head of the Stehekin River.

Black-backed Woodpecker (*Picoides arcticus*) Black-backed woodpeckers are uncommon residents in moderate to high elevation, open-canopy east-side coniferous forests and are locally uncommon in burns at lower elevations (Smith et al. 1997). There are 3 records in the Wildlife Observation Database for the Stehekin watershed. All 3 records occurred between July 25 and August 13.

Pileated Woodpecker (*Dryocopus pileatus*) Pileated woodpeckers need habitat with large snags used for nesting and roosting. It is estimated that approximately 3 to 4 pairs are resident within the Stehekin Valley (Kuntz and Glesne 1993).

Bull Trout (*Salvelinus confluentus*) Historically, bull trout inhabited the Stehekin River and Lake Chelan. However, extensive surveys and monitoring have not shown bull trout to be present in the Stehekin River system for several decades. Bull trout may be extirpated from the Stehekin River and Lake Chelan, but their habitat remains. The NPS maintains bull trout habitat to protect any remaining populations and to preserve the option of species restoration.

Western Toad (*Bufo boreas*) Western toads are found from sea level to 7,400 feet. Ovipositon sites and aquatic habitat include lakes, springs, ponds, wetlands, stock ponds and slow-moving parts of streams. Terrestrial habitats are forests, grasslands and along streams. Western toads are most common near marshes and small lakes, but they may wander great distances through dry forests or shrubby thickets. Outside of the breeding season, western toads are nocturnal, spending the day buried in the soil, concealed under woody debris, or in the burrows of other animals. The western toad has been documented in the Stehekin Valley (Kuntz and Glesne 1993).

Columbia Spotted Frog (*Rana luteiventris*) Columbia spotted frog is nearly always found in or near a perennial water body (required for breeding) such as a spring, pond, lake or stream backwater. It is most often associated with nonwoody wetland plant communities (sedges, rushes and grasses). Breeding occurs in February or March at lower elevations of eastern and western Washington but does not occur until late May or early June at higher elevations. Kuntz and Glesne (1993) documented this species in the Stehekin Valley.

Archeological and Historic Resources

Historic resources in the Stehekin Valley include structures and districts on public lands which have been identified as significant for their association with early settlement or their representation of a distinct style or method of early construction. The Buckner Homestead Historic District, Golden West Lodge Historic District, Stehekin Ranger Station residence, and Miller cabin are historic resources within the project area that are listed on the National Register of Historic Places.

No archeological sites have been identified on public lands within the project area.

Access and Transportation

Roads within the project area include the Stehekin Valley Road, Company Creek Road, and minor spur roads that lead to residences, lodging, visitor attractions, and NPS administration and maintenance facilities. The Stehekin Valley Road is the principal roadway within the NRA, presently providing access up-valley to the North Cascades National Park boundary. In addition to private use, the road serves several shuttle buses offering transportation and tours for visitors primarily from May through October. The portion of the Stehekin Valley Road included in the project area is the 4.5 miles of paved road from the landing area to Harlequin Bridge. Beyond Harlequin Bridge, the road turns to a gravel surface.

The Company Creek Road begins on the west side of the Stehekin River and serves the NPS maintenance area, power station, NPS and private residences. It is a one-lane gravel road with occasional turnouts.

Recreation and Visitor Experience

People enjoy the Stehekin Valley for its scenic beauty and recreational opportunities. The sightseeing experience in Lake Chelan NRA includes tall peaks, glaciers, and alpine vegetation of the Cascades, seen from the boat, the Stehekin landing, the lakeshore, a few points in the valley, and from hiking trails that head upwards from the valley. Views from within the valley include steep valley walls, road side forests, and the Stehekin River. The landscape of the valley contains significant cultural elements: homesteads, lodging, historic structures, and NPS and community infrastructure. Many visitors are fascinated by the Stehekin community, and see it as an integral part of the valley environment.

Lake Chelan NRA visitors often seek a rustic less developed experience, removed from the pressures of modern life. This experience is facilitated by the natural setting and isolation of the area. Although remote, some modern conveniences are available such as electricity, public telephone, satellite internet, satellite TV, and emergency medical services (EMS) provided by NPS and Chelan County. Currently, visitor protection and EMS rely on radio, internet and satellite phone communication for efficiency and expediency.

Economics

Tourism is the primary source of economic activity in the Stehekin valley. Peak visitation occurs during the months of May through October. Local visitor service industries include lodging, transportation, and other recreation-based businesses. Local businesses use the postal service, public phone and internet to recruit customers and conduct business transactions. In some cases business is conducted from offices in Chelan,

Visual and Scenic Resources

The scenic resources within the project area include the Stehekin Valley Road, the Stehekin River, and the shoreline of Lake Chelan.

Stehekin Valley Community

Stehekin is one of the most remote communities in the contiguous United States. It is only accessible by boat, float plane, or trail. The residential community is composed of approximately 100 year-round residents occupying 37 households. The population increases 300%-400% during the summer with numerous summer residents occupying cabins throughout the valley. Most residents have chosen Stehekin as their home for its natural beauty, sense of community, and isolation.

Stehekin's image and history is of a place removed from the pressures of modern America. The frontier lifestyle of a self-sufficient, self-reliant people, evokes controversy about how it should be protected. Some view that the pioneer lifestyle of those who settled in Stehekin around the turn of the 20th century still persists, and should be protected from modern technology, although modern technology has progressively been used in Stehekin since its settlement for livelihood and personal convenienve.

A current concern held by some residents pertains to the effects of the increasing availability of modern conveniences, such as communication technology, on the rate and direction of development in the Stehekin Valley. Some are concerned that establishment of a public telephone system would affect the size of the Stehekin community and the type of homeowner it would attract, and consequently effect property value and taxes. Others fear that such developments would change the unique and isolated character of the Stehekin community.

CHAPTER IV

EVALUATION OF ALTERNATIVE IMPACTS

Methodology For Evaluating Impacts

The types of impacts evaluated include direct, indirect, and cumulative. Cumulative impacts are described by combining the anticipated impacts of each alternative with other past, present, and reasonably foreseeable future actions. Impacts are described in terms of their spatial (site specific, local and regional) and temporal (short-term versus long-term) context.

The discussion of direct impact is limited to the immediate impacts of management actions. The discussion of indirect and cumulative impacts focuses on how the various elements in each impact category would *respond* to management actions. For example, a *direct, adverse* impact to vegetation would be cutting down a tree to construct a trail. An *indirect* impact would be release of understory vegetation due to a gap in the canopy.

When possible, quantitative measures are included to provide an objective and measurable approach to assessing impacts. The following quantitative terminology will be used to describe all impacts in this document.

Type of Impact

Adverse:	Moves the system away from the desired condition .
Beneficial:	Moves the system toward the desired condition

Duration of Impact

Short-term:	During construction or up to one year.
Long-term:	Longer than one year.

Intensity of Impact

Negligible:	Imperceptible, not measurable, or undetectable.
Minor:	Slightly perceptible or measurable and limited in extent. Without further actions, impacts would reverse and the resource would return to the previous condition.
Moderate:	Readily apparent and measurable but limited in extent. Without further actions, impacts would eventually reverse and the resource would return to the previous condition. Individuals of a species would be harmed or killed, with slightly measurable impacts to the population or surrounding community.
Major:	Substantial and measurable, highly noticeable, and affecting a large area. Changes would not reverse without active management. Entire communities of species would be measurably affected.

The legislation establishing the NPS in 1916 (commonly known as the Organic Act) directed the Service to manage NPS units so as to leave them "*unimpaired* for the enjoyment of future generations (emphasis added)." Subsequent legislation and court rulings have reaffirmed this mandate, and the NPS is now required to evaluate whether impacts would constitute impairment. "The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the

responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts." [Management Policies 1.4.5]

Impact Topics Dismissed From Further Analysis

Impact topics were identified through scoping, or require consideration according to federal laws, policies, or executive orders. Some impact topics were dropped from further analysis because they are not relevant to this project. The following section includes a brief justification for why certain impact topics were dismissed from further analysis.

Environmental Justice

Executive Order 13898 directs all federal agencies to determine whether their proposed actions would have disproportionately high and/or adverse impacts on human health or environmental effects on minority or low-income populations. This topic was eliminated from further study because the project would take place entirely within the Complex. While Stehekin is a remote community with a small number of residents, it is not a low-income or minority population. Implementing any of the alternatives would have no detectable impact on any of the surrounding communities.

Prime and Unique Agricultural Lands

The Department of Agriculture defines these lands as having soils that are best suited for producing food, feed, forage, fiber, or oilseed crops. The North Cascades National Park Service Complex does not have any property that is categorized as prime or unique agricultural lands. This category was eliminated from further analysis.

IMPACTS OF ALTERNATIVES

Alternative A. No Action (Environmentally Preferred Alternative)

A permit would not be issued to WeavTel to build and operate infrastructure using NPS facilities and lands within the Lake Chelan NRA to provide valley-wide phone service for the community in Stehekin. Homeowners, businesses, and visitors would continue to use the services currently available.

There would be no impacts to the following environmental factors as a result of this alternative: Geology and Soils, River Processes and Hydrology, Floodplains, Wetlands, Water Quality, Air quality, Vegetation, Wildlife, Archeological and Historic Resources, Access and Transportation.

Recreation and Visitor Experience

The impact of this alternative on recreation and visitor experience would be the continued limitation of communication options to visitors while in Stehekin. For the visitor seeking an experience distanced from modern technology, this impact would be beneficial, long-term and minor. However, for the visitor preferring access to phone or internet service, this long term, minor impact would be adverse. Medical and emergency services would remain unchanged resulting in a negligible impact. Radios, satellite phones and the NPS phone system would continue to be used to provide EMS.

Economics

This alternative poses potential long term impacts on the Stehekin economy that would be both adverse and beneficial. Businesses would continue to rely on the public phone, existing internet service, and postal service for logistics and communication with customers. For businesses that would choose to subscribe to the phone service, this would result in an adverse impact. In addition, the lack of accessible phone and internet service could impact the number of visitors that choose to come to Stehekin. Since it would both deter and attract visitors, the impact would be beneficial and adverse. The intensity of these impacts to the overall Stehekin economy is unknown and to a great extent, depend upon personal perspective.

Visual and Scenic Resources

Visual and scenic resources under this alternative would continue to be impacted by the number of residential internet satellite dishes that are visible to the general public. This adverse impact is long-term and negligible to minor depending on the visibility and location of the dishes.

Stehekin Valley Community

This alternative poses long-term, minor to moderate, beneficial and adverse impacts on the Stehekin community. It would result in a beneficial impact by maintaining the unique character of Stehekin as a remote, independent community removed from many conveniences of the modern world. This alternative would preserve the tradition of visiting neighbors to relay messages and information rather than phoning which could be viewed as a beneficial, minor impact. Denying phone service, to local businesses and residents that would prefer to have it, would adversely impact some in the community. The intensity of this impact would depend on the number of businesses and residents affected.

Cumulative Impacts

Cumulative effects result from the "additive" impact of this alternative combined with other past, present and foreseeable future projects. There would be no measurable cumulative impacts on the previously discussed resources as a result of this alternative.

Conclusion

There would be no major impacts to resources as a result of this alternative. There would minor, long-term impacts to visitors and community members by denying convenient phone access while in Stehekin. This may deter some visitors at the same time attracting others and would adversely impact residents that would prefer to subscribe to the service. The economy would be affected by limiting local businesses to the existing services. This impact would be long-term. The intensity would depend on the number of businesses affected. Visual and scenic resources would be affected by the continued sight of satellite dishes used for internet service. This alternative would preserve the unique character of Stehekin as an isolated and remote community and would preserve the option of incorporating future forms of technologically advanced communication systems for the valley. These long-term impacts would be minor to moderate on the community of Stehekin.

Impairment

This impact analysis identifies a series of adverse impacts ranging from minor to moderate intensity. These impacts are not of sufficient magnitude to trigger concerns for impairment of park resources.

Alternative B. Issue A Permit For An Underground Line And Other Use Of Federal Land. (Preferred Alternative)

Issue WeavTel a permit to construct and operate infrastructure including the placement of conduit and cable underground using NPS facilities and lands within the Lake Chelan National Recreation Area to provide the Stehekin Community with phone service.

Geology and Soils

Short term, minor impacts to soils and geology would be caused by trenching to lay the conduit. This impact would be mitigated by replacing the removed soil and minimizing disturbance such as erosion and compaction of soils in areas adjacent to the trenching. Impacts to soils at the wastewater treatment facility would be long term, adverse and minor since the building and concrete pads would be located on previously disturbed ground. Locating the MDU's and hand-holes next to existing power poles would result in an adverse, long term impact. Because the soils in this area have been previously disturbed, the impact would be minor. The 13 foot by 13 foot concrete pad for the antenna near the end of Company Creek Road would be located near the road on undisturbed soil and would result in a long-term, minor, adverse impact.

River Processes and Hydrology

There would be no impacts on river processes or hydrology in the area as a result of this alternative.

Floodplain

Sections of the project area lie within the 100-year floodplain and high flood areas. Floods have the potential to adversely impact the infrastructure. Electrical structures within the 100-year floodplain and high flood influence areas would be equipped with automatic shutdown circuits to mitigate the potential, short term, adverse, minor impact to human and animal safety.

A flood event during construction may damage or remove machinery and electrical equipment resulting in a potential, short term, minor impact on the floodplain. Affects can be mitigated by working in floodplain areas during times of the year with low flood potential.

Wetlands

No fill will be placed in wetlands and there will be no direct impacts therefore a statement of findings is not required. There could be minor erosion into wetlands if there was significant rain during construction. This adverse impact would be short-term and minor and would be mitigated by using appropriate erosion control methods during construction and requiring that work adjacent to wetlands be done during the dry season.

Water Quality

Trenching of soils to bury conduit and subsequent road repair may pose short term, adverse, minor impacts to water quality due to the potential for sediment loading and fuel or other hazardous waste run-off from equipment during the construction phase. This impact would be mitigated by the use of appropriate hazardous material safety procedures and erosion control measures when working adjacent to water features.

Air quality

Emissions from the back-up power system at the call switching center would result in a short-term adverse impact to air quality in the vicinity. This negligible to minor impact would be mitigated by using high efficiency/low emission propane generator. During construction, air quality would be adversely impacted by machinery emissions and dust. The air quality impact would be adverse, minor and short term.

Vegetation

Existing conduit would be used to reach the Golden West Visitor Center. Impact to the native vegetation in this area would be negligible. At the trench site between the Post Office and North Cascades Stehekin Lodge, native vegetation would be adversely impacted. The extent of this impact will depend on the alignment of the trench. Impacts would be mitigated by hand digging the trench to minimize disturbance and replacing plant and soil material salvaged during trenching.

The antenna pad near the end of Company Creek Road would be located near the road. Trees larger than 6 inches in diameter would not be removed. Removal of understory vegetation for the concrete pad will result in a long term, adverse and minor impact. Mitigation measures include revegetating disturbed areas outside the concrete pad perimeter by replacing plant and soil material salvaged during construction and dispersing native seed collected on site.

Other infrastructure constructed on NPS land, would be on the road or in the road right-of-way or Chelan PUD transmission line corridor. The need to remove additional trees is not anticipated. Adverse impacts to native vegetation in these areas from construction equipment and road repair would be minor and short-term. PUD currently monitors the transmission line corridor and contracts for removal of infringing limbs and treatment of trees that potentially threaten the line. No additional treatment would be required from this alternative.

There is potential for exotic plant infestation due to disturbance along road corridors and within the wastewater treatment facility. Without management actions, adverse impacts from the invasion of exotic species could be moderate and long-term. Mitigation measures include NPS inspections to insure that construction machinery would be clean and free of dirt that may carry weed seeds, and for park staff to continue monitoring these sites for exotic plants and removing them if they are found.

This alternative would not affect any rare, sensitive or listed plant species. It is unlikely that watch list species would be present in the areas proposed for construction due to previous disturbance and high levels of human activity.

Wildlife

This alternative would not be expected to have long-term adverse affects on any federally or state listed species. The project area lies within residential and previously developed sections of the Stehekin Valley. Increased noise levels could adversely impact wildlife during the construction phase. These impacts would be short-term and minor to moderate. A short term, adverse, and minor impact could result from the use of a back-up generator during power outages. Noise levels would be reduced by housing the muffler-equipped generator in a block brick building (with wood fascia). The western gray squirrel, northern spotted owl, and western toad may be affected but are not likely to be adversely affected during the construction period. Other listed species would not be affected by this project.

Archeological and Historic Resources

Historic districts and the areas surrounding historic structures have been surveyed for archeological resources. If a permit is issued for underground lines in these areas a condition would be that the park archeologist be present when the routes are designated in order to avoid potentially adverse impacts. Placement of service pedestals would result in a minor, adverse, and long-term visual impact. The impact would be mitigated by placing service pedestals in locations concealed from view. Installation of cables within all historic structures and service pedestals within the historic districts would require Section 106 clearance and approval by the State Historic Preservation Officer.

Access and Transportation

During the construction phase, impacts to vehicle access and transportation in the lower valley would be short-term and adverse. Intensity would range from minor to moderate depending on the location and time of year. Mitigation measures include providing flagging personnel as needed to direct traffic, providing uninterrupted vehicle passage during high traffic periods (boat time), limiting traffic delays during all other times to less than 15 minutes, and posting the construction schedule for public information. Cold patch material would be barged in to repair roads after trenching.

Recreation and Visitor Experience

Increased noise levels would adversely impact visitor experience during the construction phase. This impact would be short-term and minor to moderate. Use of a back-up generator during power outages would result in short term, minor impact. This adverse impact would be reduced by housing the muffler-equipped generator in a block brick building (with wood fascia). Lighting at the call switching center would typically be activated only during regular business hours resulting in a negligible to minor, long-term impact.

The phone service could result in a long term, beneficial impact to visitor health and safety by enhancing emergency response within the valley. Potential visitors would benefit from the option to call local businesses for information about accommodations or recreation opportunities. The intensity of the long-term impact would depend on a variety of factors that include the number of visitor service businesses that subscribe to the phone service and the degree that the phone service meets visitor needs compared the existing internet services. While in Stehekin, visitors seeking convenience to or distance from phone and internet service would result in a long term, minor impact that would be both beneficial and adverse depending upon one's perspective.

Economics

Providing an opportunity for convenient verbal communication between customers and Stehekin businesses would result in a long-term beneficial impact to the business community of Stehekin. The degree this would impact the Stehekin economy depends on the number of businesses that subscribe to the proposed service. Accessible phone service may attract some visitors and deter others resulting in a negligible impact to the overall Stehekin economy. Other forms of business that can be conducted at a distance from private homes would now be more readily feasible.

Visual and Scenic Resources

Visibility of some of the above ground infrastructure would result in a long term, adverse, minor to moderate impact. Mitigation measures to reduce this impact include locating infrastructure in areas concealed from public view, or next to existing infrastructure, or modifying new structures to blend into

the surrounding environment. Lighting at the call switching center will typically be activated only during regular business hours. Adverse impacts to visitor experience would be negligible to minor and long term. Not all visual impacts would be reduced. The 25 foot antenna near the end of Company Creek would result in an adverse, long term, moderate impact.

Since WeavTel has proposed to buy back customers' internet satellite dishes, a potential benefit of the phone service would be the removal of existing internet satellite dishes that are visible to the public. This long term, beneficial impact would be negligible to minor and depend on the number of dishes removed from public view.

Stehekin Valley Community

Phone service in most rural communities is perceived as an amenity for convenience. Assessing the impact to the Stehekin community from this alternative is not easily quantified and can only be speculative in nature. Some valley residents are concerned that providing phone and internet service and providing convenient access of these services to visitors has the potential to alter Stehekin's image as a unique and isolated community. While it does have the potential to adversely impact the character of Stehekin in the eyes of some residents and visitors, the intensity and duration of this impact is unknown. Impacts to valley residents and businesses that subscribe to the phone service include convenience, privacy, and an end to the "2-second" delay in phone conversations. While beneficial and long term, the intensity of the impact depends on the number of residents and businesses that subscribe to the service.

Cumulative Impacts

Cumulative effects result from the "additive" impact of this alternative combined with other past, present and foreseeable future projects. Placing the fiber optic cable underground combined with potential future actions by Chelan County PUD to relocate overhead power lines underground would result in a beneficial impact to the visual and scenic resources of the lower valley.

Conclusion

The effects associated with this alternative do not include any major impacts to the resources examined. Soil disturbance and erosion due to construction activities would result in a minor long-term impact to soil. Flooding, during construction and after installation, may affect both the infrastructure and human and animal safety which would result in a potential, short-term minor impact. Wetlands adjacent to construction may be impacted by erosion. This potential impact would be short-term and minor. Water quality would be adversely affected by fuel or other hazardous waste run-off from construction equipment. This potential impact would be short-term and range in intensity from minor to moderate. Air quality would be impacted during construction activities. The effects would be localized, short-term and minor. Emissions from the back-up power source at the call switching center would result in negligible to minor, short-term impact on air quality. Removal of native vegetation due to construction would result in long and short-term, minor impacts. The potential for exotic plant infestations in disturbed sites would be a minor to moderate, long-term impact. Increased noise levels during construction would be localized and result in a short-term minor to moderate impact on wildlife and visitor experience.

Ground disturbance, placement of service pedestals, and installation of fiber optic cables within and around historic structures and districts would result in long-term, minor impacts to these resources. Traffic delays during construction would result in a short-term, minor impact to vehicle access and transportation in the valley. Convenient access to phone and internet service for visitors in Stehekin would result in a long-term, minor impact. Whether the overall impact on visitor experience, would be beneficial or adverse, is unknown and depends largely on personal perspective. Improved emergency

response and enhanced quality of phone communication (no "2-second delay") within the valley would result in a minor to moderate, beneficial long-term impact to both visitors and valley residents. Customers and potential customers would benefit from the ability to call local businesses resulting in a long-term benefit to the visitor experience as well as the Stehekin economy. The intensity of the impact would depend on the number of businesses that subscribe to the system. The visibility of above ground infrastructure would result in a long-term, minor impact to the visual and scenic resources of the valley. There may be a reduction in the number of satellite dishes currently visible resulting in a potential, negligible to minor, long-term impact. This alternative may alter the unique character of Stehekin. This potential impact would be long-term.

Impairment

This impact analysis identifies a series of adverse impacts ranging from negligible to moderate intensity. These impacts are not of sufficient magnitude to trigger concerns for impairment of park resources.

Alternative C. Issue A Permit For An Above Ground Line And Other Use Of Federal Land.

Issue WeavTel a permit to construct and operate infrastructure including the installation of approximately 30 new telephone poles and the attachment of aerial fiber optic cable to these and the existing PUD poles to provide phone service to the Stehekin Valley. These new poles would be similar in size to the existing PUD power poles.

Geology and Soils

Installing 30 additional telephone poles would result in a long term, adverse, minor impact to effected soils. The new poles would be necessary to bridge long distances between some of the existing power poles primarily along the lakeshore, from the landing to Silver Bay Road.

Impacts to soils at the wastewater treatment facility would be long term, adverse and minor since the building and concrete pads would be located on previously disturbed ground. Locating the MDU's and hand-holes next to existing power poles would result in an adverse, long-term impact. Because the soils in this area have been previously disturbed, the impact would be minor. The 13 foot by 13 foot concrete pad for the antenna near the end of Company Creek Road would be located near the road on undisturbed soil and would result in a long-term, minor, adverse impact.

River Processes and Hydrology

There would be no impacts on river processes or hydrology in the area as a result of this alternative.

Floodplain

Sections of the project area lie within the 100-year floodplain and high flood areas. Floods have the potential to adversely impact the infrastructure. Electrical structures within the 100-year floodplain and high flood influence areas would be equipped with automatic shutdown circuits to mitigate the potential, short term, adverse, minor impact to human and animal safety.

A flood event during construction may damage or remove machinery and electrical equipment resulting in a potential, short term, minor impact on the floodplain. Affects can be mitigated by working in floodplain areas during times of the year with low flood potential.

Wetlands

Wetlands adjacent to construction sites may be indirectly impacted by erosion resulting in an adverse, short-term and minor impact. Using appropriate erosion control methods during construction and requiring work adjacent to wetlands be limited to the dry season would mitigate this impact.

Water Quality

Construction activities may pose short term, adverse, minor impacts to water quality due to the potential for sediment loading and fuel or other hazardous waste run-off from equipment. This impact would be mitigated by the use of appropriate hazardous material safety procedures and erosion control measures when working adjacent to water features.

Air quality

Emissions from the back-up power system at the call switching center would result in a short-term adverse impact to air quality in the vicinity. This negligible to minor impact would be mitigated by using high efficiency/low emission propane generator. During construction, air quality would be adversely impacted by machinery emissions and dust. The air quality impact would be adverse, minor and short term.

Vegetation

The antenna pad near the end of Company Creek Road would be located near the road. Trees larger than 6 inches in diameter would not be removed. Removal of understory vegetation for the concrete pad would result in a long term, adverse and minor impact. Mitigation measures include revegetating disturbed areas outside the concrete pad perimeter by replacing plant and soil material salvaged during construction and dispersing native seed collected on site.

Other infrastructure constructed on NPS land, would be in the road right-of-way or Chelan PUD transmission line corridor. Adverse impacts to native vegetation in these areas from construction equipment would be minor and short-term. Mitigation measures include replacing plant and soil material salvaged during construction, and revegetating extensively disturbed areas with native seed collected on site.

There is potential for exotic plant infestation due to disturbance along road corridors and within the wastewater treatment facility. Without management actions, adverse impacts from the invasion of exotic species could be moderate and long-term. Mitigation measures include ensuring that construction machinery would be clean and free of dirt that may carry weed seeds, and for park staff to continue monitoring these sites for exotic plants.

This alternative would not affect any rare, sensitive or listed plant species. It is unlikely that watch list species would be present in the areas proposed for construction due to previous disturbance and high levels of human activity.

Wildlife

This alternative would not be expected to have long-term adverse affects on any federally or state listed species. The project area lies within residential and previously developed sections of the Stehekin Valley. Increased noise levels could adversely impact wildlife during the construction phase. These impacts would be short-term and minor to moderate. A short term, adverse, and minor impact could result from

the use of a back-up generator during power outages. Noise levels would be reduced by housing the muffler-equipped generator in a block brick building (with wood fascia). The western gray squirrel, northern spotted owl, and western toad may be affected but are not likely to be adversely affected during the construction period. Other listed species would not be affected by this project

Archeological and Historic Resources

Historic districts and the areas surrounding historic structures have been surveyed for archeological resources. If a permit is issued for underground lines in these areas a condition would be that the park archeologist be present when the routes are designated in order to avoid potentially adverse impacts. Placement of service pedestals would result in a minor, adverse, and long-term visual impact. The impact would be mitigated by placing service pedestals in locations concealed from view. Potentially adding new poles in a historic district could be a moderate and long-term adverse impact.

Installation of fiber optic cables within all historic structures, and any additional poles and pedestals located within the historic districts would require Section 106 clearance and approval by the State Historic Preservation Officer.

Access and Transportation

During the construction phase, impacts to vehicle access and transportation in the lower valley would be short-term and adverse. Intensity would range from minor to moderate depending on the location and time of year. Mitigation measures include providing flagging personnel as needed to direct traffic, providing uninterrupted vehicle passage during high traffic hours [boat time], limiting traffic delays during all other times to less than 15 minutes, and posting the construction schedule for public information.

Recreation and Visitor Experience

Increased noise levels would adversely impact visitor experience during the construction phase. This impact would be short-term and minor to moderate. Use of a back-up generator during power outages would result in short term, minor impact. This adverse impact would be reduced by housing the muffler-equipped generator in a block brick building (with wood fascia). Lighting at the call switching center would typically be activated during regular business hours resulting in a negligible to minor, long-term impact.

The phone service would result in a long term, beneficial impact to visitor health and safety by enhancing emergency response within the valley. Potential visitors would benefit from the option to call local businesses for information about accommodations or recreation opportunities. The intensity of the long-term impact would depend on a variety of factors that include the number of visitor service businesses that subscribe to the phone service and the degree that the phone service meets visitor needs compared the existing internet services. While in Stehekin, visitors seeking convenience to or distance from phone and internet service would result in a long term, minor impact that would be both beneficial and adverse.

Typically, above ground cables require more maintenance and repair due to damage caused by fallen trees. This reduced reliability of service would result in a short-term, minor adverse impact.

Economics

Providing an opportunity for convenient verbal communication between customers and Stehekin businesses would result in a long-term beneficial impact to the business community of Stehekin. The

degree this would impact the Stehekin economy depends on the number of businesses that subscribe to the proposed service. Accessible phone service may attract some visitors and deter others resulting in a negligible impact to the overall Stehekin economy.

Visual and Scenic Resources

Execution of this alternative would be in conflict with scenic resource and land use and development management objectives outlined in the GMP. As stated in the GMP, actions supporting the management objectives of scenic resources and land use and development include removal of unnecessary power lines and burial of all other lines when feasible, especially in areas with high visitor use, such as along the Stehekin Valley Road. Under this alternative these actions would not be met.

Visibility of some of the above ground infrastructure would result in a long term, adverse, minor to moderate impact. Mitigation measures to reduce this impact include locating infrastructure in areas concealed from public view, or next to existing infrastructure, or modifying new structures to blend into the surrounding environment. Lighting at the call switching center will typically be activated during regular business hours. Adverse impacts to visitor experience would be negligible to minor and long term.

Not all visual impacts would be reduced. The addition of 30 new telephone poles and installation of aerial fiber optic cables would compound the adverse impact of the existing power poles. This alternative would not be consistent with the objectives stated in the GMP which states "unnecessary power lines would be removed, and all other lines would be buried where feasible, especially in areas with high visitor use" such as along the Stehekin Valley Road. The new poles and attached fiber optic cable would result in a long term, moderate impact to the visual and scenic resources. The 25 foot antenna near the end of Company Creek would result in an adverse, long term, moderate impact.

Since WeavTel has proposed to buy back customers' internet satellite dishes, a potential benefit of the phone service would be the removal of existing internet satellite dishes that are visible to the public. This long term, beneficial impact would be negligible to minor and depend on the number of dishes removed from public view.

Stehekin Valley Community

Phone service in most rural communities is perceived as an amenity for convenience. Assessing the impact to the Stehekin community from this alternative is not easily quantified and can only be speculative in nature. Some valley residents are concerned that providing phone and internet service and providing convenient access of these services to visitors has the potential to alter Stehekin's image as a unique and isolated community. While it does have the potential to adversely impact the character of Stehekin in the eyes of some residents and visitors, the intensity and duration of this impact is unknown. Impacts to valley residents and businesses that subscribe to the phone service include convenience, privacy, and an end to the "2-second" delay in phone conversations. While beneficial and long term, the intensity of the impact depends on the number of residents and businesses that subscribe to the service.

Typically, above ground cables require more maintenance and repair due to damage caused by fallen trees. This reduced reliability of service would result in a short-term, minor adverse impact.

Cumulative Impacts

Cumulative effects result from the "additive" impact of this alternative combined with other past, present and foreseeable future projects. Placing fiber optic cable overhead could conflict with potential future

actions by Chelan PUD to relocate overhead power lines underground. The actions of this alternative would continue to adversely impact the visual and scenic resources of the lower valley.

If the need for a 911 emergency response is determined and a program developed between Chelan County and NPS, the infrastructure to support such a program would be in place under this alternative. This emergency service could be a benefit to visitors and residents in Stehekin. However, changes resulting from such a system (i.e. addresses) could adversely affect the character of Stehekin.

Conclusion

There would be no major impacts to resources as a result of this alternative. All of the resource impacts discussed in Alternative B would also occur as a result of this alternative. In addition, the installation of the 30 new telephone poles and aerial attachment of fiber optic cable would result in several more impacts. Potential placement of new poles within historic districts would result in a long-term moderate impact. Visitors, residents, and local businesses that subscribe to the service would be affected by a less reliable service as a result of maintenance and repair issues. This impact would be short-term and minor. The addition of 30 new telephone poles would result in a moderate, negative long-term impact on the visual and scenic resources in the lower valley.

Impairment

This impact analysis identifies a series of adverse impacts ranging from negligible to moderate intensity. These impacts are not of sufficient magnitude to trigger concerns for impairment of park resources.

CHAPTER V

CONSULTATION AND COORDINATION

History of Public Involvement

A Scoping letter was sent to the public on January 10, 2002. No time limit was set for submitting written comments. In addition to requesting written comments the letter announced 2 planned scoping meeting: February 6, 2002 in Stehekin and February 7, 2002, in Chelan. A total of 29 people attended the meetings; 22 in Stehekin and 7 in Chelan. In response to the scoping letter 22 written responses were received. The majority of comments received were in opposition to the proposal. The primary concern expressed was regarding how this would impact the Stehekin community, both socially and economically.

List of Preparers and Contributors

North Cascades National Park Service Complex:

Vicki Gempko, Natural Resource Manager
Pilar Delmolino, Biological Technician
Wendy Ross, Natural Resource Manager
Dan Allen, Resource Management Specialist

Details regarding the proposal were provided by WeavTel:

Rick Weaver
Vince Ward

REFERENCES

Duke Engineering & Services, Inc. 2000. Draft study report, riparian zone investigation, Lake Chelan Hydroelectric Project FERC No. 637. Prepared for Public Utility District No. 1 of Chelan County, Wenatchee, Washington, 60 pp.

Kuntz, R.C. II and R.G. Christophersen. 1996. A Survey of Northern Spotted Owls in North Cascades National Park Service Complex. NPS Technical Report NPS/CCSONOCA/NRTR-96/05. Sedro-Wooley, Washington.

Kuntz, R.C. II and R.S. Glesne. 1993. A terrestrial vertebrate inventory of the Stehekin Valley, Lake Chelan National Recreation Area. NPS Technical Report NPS/PNNOCA/NRTR-93/010, Sedro-Woolley, Washington.

Smith, M.R., P.W. Mattocks, Jr., and K. M. Cassidy. 1997. Breeding birds of Washington State. Volume 4 in Washington State Gap Analysis – Final Report (K.M. Cassidy, C.E. Grue, M.R. Smith, and K.M. Dvornich, eds.). Seattle Audubon Society Publications in Zoology No. 1, Seattle. 538 pp.