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TION DRAWN: B.HOCKETT	87kv INTERCONNECT CHECKED: DAK DONALD KEEF & ASSOCIATES, INC.	* PSE INTERCONNECT APPROVED: TZ CONSULTING ELECTRICAL ENGINEERS	ISSUED FOR BID: ISSUED FOR BID: ISSUED FOR BID: ISSUED FOR BID:	ADDED BPA SCALE: NONE ADDED DPA SCALE: NONE 2530, 253-1413	DATE: 11-26-02
REV DATE DESC	1 3-31-03 REVISED TD 115/230	2 4-11-03 REVISED TD 115/230	3 8-13-03 REVISED TO DATE	4 10-31-03 REVISED TD 230kV	
WILD HORSE WIND POWER PROJECT		SINGLE LINE DIAGRAM	WILD HORSE WIND POWER PROJECT		
DRAWING NO.	,	-	JOB NUMBER: 566	REV NUMBER: 4	SHEET 1 OF 1

CONCEPTUAL

<u>LEGEND</u>

TURBINE GENERATOR

TRANSFORMER

UNDERGROUND CABLE-3 CONDUCTORS WITH 1/3 NEUTRAL EACH

LIGHTNING ARRESTOR

KITTITAS COUNTY BOARD OF COUNTY COMMISSIONERS STATE OF WASHINGTON

ORDINANCE NO. 2002-19

AMENDING KCC 17.61 AND ADDING KCC 17.61A REGARDING WINDFARM DEVELOPMENTS

WHEREAS, Kittitas County Code 17.61 currently authorizes wind farms in certain zones in Kittitas County; and

WHEREAS, Questions were raised regarding the advisability of the existing regulatory structure that provides for the Board of Adjustment to make decisions regarding specific wind farm application rather than the elected Board of County Commissioners; and

WHEREAS, The Board of County Commissioners found it in the best interest of the public to enact a temporary moratorium on the acceptance, processing, and/or approval of wind farms developments and enacted a temporary moratorium on October 23, 2002 with the adoption of Ordinance 2002-13; and

WHEREAS, With the adoption of Ordinance 2002-13 the Kittitas County Board of County Commissioners directed that duly advertised public hearing would be held by the Board of County Commissioners on November 26, 2002 to further consider whether the moratorium should be reconfirmed, revised, or rescinded and to consider possible amendments to the Kittitas County Code relative to the siting of wind farms; and

WHEREAS, The Kittitas County Board of County Commissioners encouraged the Kittitas County Planning Commission to hold a public hearing prior to the commissioners November 26, 2002 public hearing to consider possible revisions to regulations related to wind farms and submit their recommendation to the Board of County Commissioners prior to the above referenced public hearing; and

WHEREAS, A SEPA notice of action was issued on October 25, 2002 and a Determination of Non-Significance was issue at that time for this nonproject legislative proposal amending Title 17 of the Kittitas County Code; and

WHEREAS, The SEPA notice solicited comments from jurisdictional governmental agencies and other interested parties; and

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Wind Farm Resource Overlay Zone Ordinance 2002

WHEREAS, The Kittitas County Planning Commission held public hearings regarding regulations relative to wind farms on November 18, November 20, and November 25, 2002 but did not forward a recommendation to the Board of County Commissioners for their November 26, 2002 public hearing; and

WHEREAS, On November 26, 2002 the Kittitas County Board of County Commissioners held a public hearing to consider whether the moratorium should be reconfirmed, revised, or rescinded and to consider possible revisions to regulations related to wind farms after having given the required public legal notice and all person present were given the opportunity to submit public comment to the record; and

WHEREAS, due notice has been given as required by law, and the necessary inquiry has been made into the public interest to be served by amending these ordinances; and

WHEREAS, The Board of County Commissioners finds it in the best interest of the public to have decisions regarding the possible siting of wind farms be made by the duly elected Board of County Commissioner rather than the volunteer appointed Board of Adjustment; and

WHEREAS, The Board of County Commissioners finds that the amendments adopted in this ordinance properly serves the goal of shifting the decision making process to the Board of County Commissioners and provides for a process that allows each proposal to be reviewed on a site specific basis.

NOW THEREFORE, BE IT HEREBY ORDAINED by the Board of County Commissioners of Kittitas County, Washington, that KCC Chapter 17.61 is amended to provide as follows:

Amend KCC 17.61.020(D) as follows:

Major Alternative Energy Facilities may be authorized by the Board of Adjustment as a conditional use in the Agricultural 20, Forest and Range, Commercial Agriculture, and Commercial Forest zones as follows: (1) Wind farms may be authorized pursuant to the provisions of KCC 17.61A; (2) all other major alternative energy facilities may be authorized by the Board of Adjustment as a conditional use.

BE IT FURTHER ORDAINED that a new Chapter 17.61A Wind Farm Resource Overlay Zone be and is hereby adopted as set forth in pages 4 and 5 attached hereto and incorporated herein by reference as if set forth in full.

BE IT FURTHER ORDAINED that the code revisions adopted and enacted in this ordinance are effective immediately upon adoption of this ordinance.

Wind Farm Resource Overlay Zone Ordinance 2002 2

DATED this 3rd day of December 2002, at Ellensburg, Washington.

BOARD OF COUNTY COMMISSIONERS KITTITAS COUNTY, WASHINGTON ATTEST: TYS Clerk of the Board VTY. W Approved as to form;

Deputy) Prosecuting Attorney

Vacant

Bill Hinkle, Chairman

Perry D. Huston, Vice-Chairman

Max Golladay, Commissioner

Wind Farm Resource Overlay Zone Ordinance 2002

Chapter 17.61A Wind Farm Resource Overlay Zone

Sections:

17.61A.010	Legislative Findings, Purpose and Intent
17.61A.020	Definitions
17.61A.030	Development Uses, Requirements, and Restrictions
17.61A.040	Approvals Required for Wind farms.

17.61A.010 Legislative Findings, Purpose and Intent.

The purpose and intent of this chapter is to establish a process for recognition and designation of properties located in areas of Kittitas County suitable for the location of wind farms, to protect the health, welfare, safety, and quality of life of the general public, and to ensure compatible land uses in the vicinity of the areas affected by wind farms.

17.61A.020 Definitions. The following definitions shall be used in conjunction with the administration of this chapter.

- A. Wind farm: "Wind farm" means a single wind turbine exceeding one hundred and twenty (120) feet in height above grade or more than one wind turbine of any size proposed and/or constructed by the same person or group of persons on the same or adjoining parcels.
- B. Wind Turbine: "Wind turbine" means any machine used to produce electricity by converting the kinetic energy of wind to electrical energy. Wind turbines consist of the turbine apparatus and any other buildings, support structures or other related improvements necessary for the generation of electric power.

17.61A.030 Development Uses, Requirements, and Restrictions. All listed permitted uses in the underlying zoning district of this overlay zone are permitted. All listed conditional uses in the underlying zoning district of this overlay zone are subject to conditional use permit process and review. Wind farms are a permitted use in a Wind Farm Resource Overlay Zoning District, subject to the additional approval requirements and restrictions set forth in Section 17.61A.040.

17.61A.040 Approvals Required for Wind Farm Resource Overlay Zone.

A. A wind farm may be authorized by the county only through approval of a Wind Farm Resource Development Permit in conjunction with approval by the Board of County Commissioners of a development agreement as authorized by KCC 15A.11, *Development Agreements*, and RCW 36.70B.170 - .210. Consistent with KCC 15A.11.020B. and RCW 36.70B.170, the development agreement approved by the Board of County Commissioners must set forth the development standards applicable to the development of a specific wind farm, which may include, but are not limited to: (i) densities, number, size, setbacks, and location of turbines, (ii) mitigation measures and such other development conditions as deemed appropriate by the Board of County Commissioners to be necessary including measures to protect the best interests of the surrounding property or neighborhood or the county as a whole, and (iii) other development standards including those identified in KCC 15A.11.020E. and RCW 36.70B.170(3).

B. Required Applications/Approvals. In addition to approval of a Wind farm Resource Development Permit and a development agreement as set forth in Section A above, a wind farm shall require

Wind Farm Resource Overlay Zone Ordinance 2002 4

the following approvals from the county: (1) a site-specific amendment of the Comprehensive Plan land use designation map to Wind Farm Resource overlay district (the sub-area planning process described in Chapter 1 of the county Comprehensive Plan and KCC 15B.03, *Amendments to Comprehensive Plan*, may be used if deemed appropriate by the applicant and county); (2) a site-specific rezone of the county zoning map to Wind Farm Resource Overlay Zoning District pursuant to KCC 17.98, *Amendments*.

C. The approvals by the Board of County Commissioners set forth in KCC 17.61A.040 A. and B. shall only be made if it determined that (1) the proposal is essential or desirable to the public convenience (2) the proposal is not detrimental or injurious to the public health, peace, or safety or to the character of the surrounding neighborhood and (3) the proposed use at the proposed location(s) will not be unreasonably detrimental to the economic welfare of the county and it will not create excessive public cost for facilities and service.

D. A Comprehensive Plan amendment or subarea plan for a Wind farm Resource overlay district must be processed by the county concurrent with the rezone application, Development Permit, and development agreement required for approval of a wind farm.

KITTITAS COUNTY BOARD OF COUNTY COMMISSIONERS STATE OF WASHINGTON

ORDINANCE NO. 2002- $\frac{20}{2}$

RESCINDING MORATORIUM ON WINDFARM DEVELOPMENT APPLICATIONS

WHEREAS, Kittitas County Code 17.61 authorized wind farms in certain zones in Kittitas County; and

WHEREAS, RCW 35.63, 36.70, 36.70A. and other applicable law authorized the enactment of temporary moratoriums so long as a public hearing is held within sixty days after the adoption of the moratorium and that the moratorium shall be effective for no longer than six months unless there is another public hearing on the matter; and

WHEREAS, On October 16, 2002 the Kittitas County Board of County Commissioners held a public hearing to consider a possible wind farm moratorium and development of criteria for wind farms; and

WHEREAS, On October 23, 2002 the Kittitas County Board of County Commissioners held a continued public hearing related to a possible wind farm moratorium and development of criteria for wind farms; and

WHEREAS, On October 23, 2002 the Board of County Commissioners of Kittitas County, Washington, found that an emergency existed and enacted and adopted Ordinance 2002-13 establishing a temporary moratorium on the wind farm conditional use process and a temporary moratorium on the acceptance, processing, and/or approval of wind farms; and

WHEREAS, On December 3, 2002 the Board of County Commissioners adopted Ordinance 2002y which amended Title 17 of the Kittitas County Code relative to wind farm development approval process; and

WHEREAS, With the adoption of the above referenced code amendments there is no further need for a continued moratorium for up to the six month period authorized by law; and

WHEREAS, the publication of legal notice of adoption of the revisions to Title 17 of Kittitas County Code will occur on Friday December 6, 2002.

NOW THEREFORE BE IT ORDAINED AND RESOLVED that the moratorium enacted in Ordinance 2002-13 on October 23, 2002 be and is hereby rescinded effective December 6, 2002 at 5:00 p.m.

BE IT FURTHER ORDAINED AND RESOLVED that after 5:00 p.m. on December 6, 2002,

1

Rescission of Wind Farm Moratorium Ord. 2002

applications for wind farm developments may be accepted and processed by Kittitas County consistent with the requirements of KCC 17.61A and the amendments to KCC 17.61 enacted on December 3, 2002.

DATED this 3rd day of December, 2002, at Ellensburg, Washington.

BOARD OF COUNTY COMMISSIONERS KITTITAS COUNTY, WASHINGTON

ATTEST Clerk of the Board

Approved as to form:

(Deputy) Prosecuting Attorney

Bill Hinkle, Chairman

Perry D. Huston, Vice-Chairman

Máx Golladay, Commissioner

Rescission of Wind Farm Moratorium Ord. 2002

(Ord. 96-19 (part), 1996; Ord. 88-4 § 11 (part), 1988: Res. 83-10, 1983).

17.60.070 Appeal. Repealed by Ord. 96-19. (Ord. 88-4 § 11 (part), 1988: Res. 83-10, 1983).

Chapter 17.61

UTILITIES

Sections:

17.61.010 Definitions.

- 17.61.020 Permitted and conditional uses.
- 17.61.030 Review criteria Special utilities and associated facilities.
- 17.61.040 Communication facilities Administrative review – General requirements.

17.61.010 Definitions. A. "Utility" or "utilities" means the supply, treatment and distribution, as appropriate, of gas, gas meter stations, municipal domestic and irrigation water, sewage, storm water, electricity, telephone, fiber-optic and cable television. Such utilities consist of both the service activity along with the physical facilities necessary for the utilities to be supplied, except for associated facilities and special utilities as defined herein.

B. "Special utility" or "special utilities" shall mean the following:

1. Natural gas, synthetic fuel gas, or liquefied petroleum gas pipelines operating at a pressure which results in a hoop stress of 20 percent or more of the specified minimum yield strength;

 Electrical transmission lines exceeding 115,000 volts;

3. Electrical substations;

4. Cellular, mobile or fiber-optic telecommunication facilities;

5. Geothermal power facilities;

6. Minor thermal power plant facilities;

7. Minor alternative energy facilities.

C. "Antenna" or "antennas" means any system of poles, panels, rods, dishes, reflecting discs or similar devices used for the transmission or reception of radio frequency signals.

D. "Associated facility" or "associated facilities" means a land use whose principal purpose involves the distribution, processing, storage, handling, or other related and supporting activities necessary for a special utility, not including administrative activities or offices.

E. "Communication facility" or "communication facilities" means any real property or portion thereof used for the reception, transmission and/or regeneration of electromagnetic and light signals, including but not limited to cellular, fiber-optic, microwave, mobile radio, radio, satellite, and television mediums. The term does not include poles or lattice-work towers supporting aboveground distribution or transmission lines for utility services such as electricity, telephone, or cable television. Communication facilities consist of all buildings, transmission structures, and other appurtenant improvements necessary for the support, shelter and operation of applicable communication equipment.

F. "Fuel cell" or "fuel cells" means a device which uses an electrochemical process to produce electrical energy using as its fuel source natural gas, methanol, propane, or like fuel.

G. "Geothermal power facility" or "geothermal facility" means a facility used to produce electricity by extracting and converting the natural thermal energy of the earth. The term does not include ground-source heat pumps or the direct use of geothermal energy for the heating of buildings located on or adjacent to the subject property.

H. "Hydroelectric plant" or "hydroelectric plants" means a facility used to produce electricity by converting the kinetic energy of flowing water to electric power. Hydroelectric facilities include but may not be limited to a dam, powerhouse apparatus (penstock, turbines and generators), step-up transformers, and any other buildings, support structures, or other related improvements necessary for the generation of electric power. The term does not include irrigation diversion dams, electrical distribution or transmission lines, or electrical substations otherwise regulated by this chapter. I. "Major alternative energy facility" means a hydroelectric plant, solar farm, or wind farm that is not a minor alternative energy facility.

J. "Major thermal power plant facility" or "major thermal power plant facilities" means an electrical generating facility that utilizes nuclear or fossil fuels with output exceeding 10 mva.

K."Minor alternative energy facility" or "minor alternative energy system" means a fuel cell or a facility for the production of electrical energy that:

1. a. Uses as its fuel either solar, wind, or hydropower;

b. Is located on the power beneficiary's premises;

c. Is intended primarily to offset part or all of the beneficiary's requirements for electricity; and

d. Is secondary to the beneficiary's use of the premises for other lawful purpose(s); or

2. Is intended to mitigate electrical system improvement requirements.

L. "Minor thermal power plant facility" or "minor thermal power plant facilities" means an electrical generating facility that utilizes nuclear or fossil fuels with an output of at least one mva but equal to or less than 10 mva.

M. "Normal maintenance" includes those usual acts to prevent a decline, lapse, or cessation from a lawfully established condition. "Normal repair" means to restore a development to a state comparable to its original condition within a reasonable period after decay or partial destruction.

N. "Utility corridor" or "utility corridors" means a lineal transportation route utilized by one or more special utilities.

O. "Solar farm" or "solar farms" means a facility or area of land principally used to convert solar radiation to electricity. The term does not include devices or combination of devices which rely upon direct sunlight as an energy source for a minor alternative energy system.

P. "Wind farm" means a single wind turbine exceeding 120 feet in height above grade or more than one wind turbine of any size proposed and/or constructed by the same person or group of persons on the same or adjoining tax parcels. The term does not include turbines mounted to existing structures principally used for other lawful purposes (such as buildings or electric utility poles) provided the nacelle does not extend more than 20 feet above the uppermost portion of the structure to which it is mounted or attached.

Q. "Wind turbine" or "wind turbines" means any of various machines used to produce electricity by converting the kinetic energy of wind to rotational, mechanical and electrical energy. Wind turbines consist of the turbine apparatus (rotor, nacelle and tower) and any other buildings, support structures, or other related improvements necessary for the generation of electric power. The term does not include electrical distribution or transmission lines, or electrical substations otherwise regulated by this chapter. (Ord. 2001-12 (part), 2001: Ord. 2000-06 (part), 2000; Ord. 99-14 (part), 1999: Ord. 98-17 (part), 1998).

17.61.020 Permitted and conditional uses. A. Utilities shall be a permitted use in all zoning districts.

B. Minor alternative energy facilities shall be a permitted use in all zoning districts, provided the following limitations shall apply to wind turbines located within urban growth areas:

1. Wind turbines shall not exceed a total height of 75 feet above grade; and

2. Rotors shall not exceed 30 feet in diameter.

C. Minor thermal power plant facilities may be authorized by the planning director as an administrative conditional use in all zoning districts, pursuant to the criteria and procedures of this chapter and KCC Title 15A.

D. Major alternative energy facilities may be authorized by the board of adjustment as a conditional use in the Agriculture-20, forest and range, commercial agriculture, and commercial forest zones.

E. Major thermal power plant facilities may be authorized by the board of adjustment as a conditional use in the Agriculture-20, forest and range, commercial agriculture, and commercial forest zones. F. Special utilities may be authorized by the board of adjustment as a conditional use in all zoning districts, except for minor thermal power plant facilities as provided in subsection C of this section, and communication facilities as provided in KCC 17.61.040. Normal maintenance and repair of existing developments shall be a permitted use for both nonconforming and lawfully established special utilities.

G. Associated facilities may be authorized by the board of adjustment as a conditional use in the general industrial zone (Chapter 17.52 KCC).

H. The board of adjustment shall review all conditional use requests and administrative appeals pursuant to the procedures contained in KCC Title 15A, Project Permit Application Process, and the criteria contained in Chapter 17.60 KCC, Conditional Uses, this chapter, and other applicable law.

I. Nothing in this chapter is intended to interfere with the storage and/or distribution of products associated with on-site natural resource activities, including but not limited to fossil fuels. (Ord. 2001-12 (part), 2001: Ord. 2000-06 (part), 2000; Ord. 99-14 (part), 1999: Ord. 98-17 (part), 1998).

17.61.030 Review criteria – Special utilities and associated facilities. A. The board of adjustment shall determine that adequate measures have been undertaken by the proponent of the special utility and/or associated facility to reduce the risk of accidents caused by hazardous materials.

B. The board of adjustment, as required by existing statutes, shall determine that the proposed special utility and/or associated facilities are essential or desirable to the public convenience and/or not detrimental or injurious to the public health or safety, or to the character of the surrounding neighborhood.

C. The board of adjustment shall determine that the proposed special utility and/or associated facilities will not be unreasonably detrimental to the economic welfare of the county and/or that it will not create excessive public cost for public services by finding that:

1. It will be adequately serviced by existing services such as highways, roads,

police and fire protection, emergency response, and drainage structures, refuse disposal, water and sewers, and schools; or

2. The applicant shall provide such services or facilities.

D. Special utilities and/or associated facilities as defined by this chapter shall use public rights-of-way or established utility corridors when reasonable. Although Kittitas County may map utility corridors, it is recognized and reaffirmed that the use of such corridors is subject to conditional use approval and just compensation to the landowner for the use of such corridor. While a utility corridor may be used for more than one utility or purpose, each utility or use should be negotiated with the landowner as a separate easement, right-of-way, or other agreement, or other arrangement between the landowner and all owners of interests in the property. Any county map which shows utility corridors shall designate such corridors as "private land closed to trespass and public use" where such corridors are on private land. Nothing in this paragraph is intended to conflict with the right of eminent domain.

E. The board of adjustment shall consider industry standards, available technology, and proposed design technology for special utilities and associated facilities in promulgating conditions of approval.

F. The construction and installation of utilities and special utilities may necessitate the importation of fill material which may result in the displacement of native material. The incidental generation of earthen spoils resulting from the construction and/or installment of a utility or special utility, and the removal of said material from the development site shall not require a separate zoning conditional use permit.

G. The operation of some utilities and special utilities identified within this chapter may necessitate unusual parcel configurations and/or parcel sizes. Such parcels:

1. Need not conform with applicable zoning requirements; provided, they comply with the procedures provided in KCC Title 16, Subdivisions, and so long as used for a utility or special utility; 2. Are not eligible for any other use or any rights allowed to nonconforming lots in the event the utility or special utility use ceases;

3. Shall continue to be aggregated to the area of the parent parcel for all other zoning and subdivision requirements applicable to the parent parcel. (Ord. 2001-12 (part), 2001: Ord. 2000-06 (part), 2000; Ord. 99-14 (part), 1999: Ord. 98-17 (part), 1998).

17.61.040 Communication facilities – Administrative review – General requirements. A. Communication facilities may be authorized by the planning director as an administrative conditional use in all zoning districts, pursuant to the criteria and procedures of this chapter and KCC Title 15A. An administrative conditional use permit is not required for the operation of amateur or noncommercial communication equipment as defined by FCC regulations under Part 95D and Part 97 CFR (i.e., citizen band, ham radio).

B. Construction of all improvements shall be completed within one year of the date of permit issuance except as provided for in subsections E and F of this section.

C. The lot line setback requirements of this title may be waived by the planning director, in order to improve the facilities' reception and/or transmission capabilities or to achieve greater levels of audible or visual screening than that which would be available by using the applicable zone's yard requirements.

D. Communication facilities shall be designed to blend with existing surroundings; provided, no conflicts exist with existing Federal Communications Commission and the Federal Aviation Administration regulations relating to aircraft safety. This should be achieved through the use of compatible colors and materials, and alternative site placement to allow the use of topography, existing vegetation or other structures to screen the proposed transmission support structure from adjacent lands.

E. The co-location of antennas on both existing and proposed transmission structures is encouraged. Communication antennas shall be permitted outright in all zoning districts provided the following: 1. An antenna shall not extend more than six feet horizontally from any structure to which it is attached.

2. An antenna shall not extend vertically more than 15 feet above the uppermost portion of the structure to which it is mounted or attached.

F. Modifications to, including the expansion of, existing approved communication facilities shall be outright permitted; provided, there is no increase in the height of the transmission tower. For purposes of this subsection, "transmission tower" means a pole or lattice-work structure specifically designed and intended to support antenna and related communication equipment. (Ord. 2001-12 (part), 2001: Ord. 2000-06 (part), 2000).

Chapter 17.62

PUBLIC FACILITIES PERMITS

Sections:

17.62.010 Definitions.
17.62.020 Purpose.
17.62.030 Procedures.
17.62.040 Decision criteria.
17.62.050 Minimum lot sizes.
17.62.060 Appeals.

17.62.010 Definitions. A. "Public facility" means the capital improvements and systems of transportation, law enforcement, fire protection, and recreational facilities (i.e., parks and playgrounds). Public facilities may be sited in any zoning, classification, subject to the review and approval requirements of this chapter.

B. "Public facility permit" means a written decision by the planning department authorizing a public facility use to locate at a specific location. (Ord. 2002-03 (part), 2002).

17.62.020 Purpose. The purpose of this chapter is to establish decision criteria and procedures for the permitting of public facilities and to provide coordinated review of the proposed project. Certain public facilities provide necessary services to other uses but are deemed unique due to factors such as siting criteria, size,

Title 17A

CRITICAL AREAS

Chapters:

- **17A.01** Statutory Authorization, Purpose and Objectives
- 17A.02 Definitions
- 17A.03 Administration
- 17A.04 Critical Areas Designation and Development Standards
- 17A.05 Frequently Flooded Areas
- 17A.06 Geologically Hazardous Areas
- 17A.07 Habitat
- 17A.08 Aquifer Recharge Areas
- **17A.55** *Repealed*

Chapter 17A.01

STATUTORY AUTHORIZATION, PURPOSE AND OBJECTIVES

Sections:

17A.01.010	Statutory authorization.
17A.01.015	Purpose and objectives.
17A.01.020	New critical areas.

17A.01.010 Statutory authorization. The Washington State Legislature requires local governments who plan under RCW 36.70A.040 to designate critical areas and adopt development regulations concerning critical areas. (RCW 36.70A.170 and 36.70A.060.) In adopting these regulations, the county has considered the guidelines established pursuant to RCW 36.70A.050. (Ord. 94-22 (part), 1994).

17A.01.015 Purpose and objectives. This critical areas chapter is intended to set forth the procedure by which critical areas are designated, and to protect critical areas, pursuant to RCW 36.70A.170 (designation) and RCW 36.70A.060 (development regulations). All regulations established herein may not prohibit uses permitted prior to their adoption and shall remain in effect until Kittitas County adopts permanent development regulations pursuant to RCW 36.70A.120. (RCW 36.70A.060(1)). (Ord. 94-22 (part), 1994).

17A.01.020 New critical areas. This critical areas chapter is based upon Washington State law and the various maps and regulations referenced herein as of the date of the adoption of the ordinance codified in this chapter. Subsequent amendment of state law, or identification by the state of new information concerning critical areas, or the listing by the state of new threatened, endangered, or sensitive species will not be deemed by the county to automatically amend this chapter. This chapter is based upon the law, information, public comment, and scientific study as of the date of its adoption. A change in any of these factors may lead to future amendment of this chapter, but only after complying with the normal requirements for amending county ordinances. It is the policy of Kittitas

County to insure that any amendments to this chapter will only occur after landowners and county residents have an opportunity for significant participation and consultation. (Ord. 94-22 (part), 1994).

Chapter 17A.02

DEFINITIONS

Sections:

17A.02.010	Agriculture.
17A.02.020	Areas with a critical
	recharging effect on aquifers
	used for potable water.
17A.02.030	Base flood.
17A.02.040	Big game winter range.
17A.02.050	Buffer.
17A.02.060	Critical areas.
17A.02.070	Development.
17A.02.080	Erosion hazard areas.
17A.02.090	Fish and wildlife habitat
	conservation areas.
17A.02.100	Flood fringe.
17A.02.110	Flood protection elevation.
17A.02.120	Floodplain.
17A.02.130	Floodway.
17A.02.140	Frequently flooded area.
17A.02.150	Geologically hazardous
	areas.
17A.02.160	Groundwater.
17A.02.170	Hazardous materials.
17A.02.180	Irrigation.
17A.02.190	Irrigation system.
17A.02.200	Landslide hazard areas.
17A.02.210	Mine hazard areas.
17A.02.220	Native vegetation and fauna.
17A.02.230	Priority species habitats.
17A.02.240	Priority animal species.
17A.02.250	Riparian habitat.
17A.02.260	Seismic hazard areas.
17A.02.270	Species of local importance.
17A.02.280	Volcanic hazard area.
17A.02.290	Water rights.
17A.02.300	Waters/water typing system.
17A.02.310	Wetlands.

17A.02.320 Wetland buffers.17A.02.330 Wetland replacement ratio.

17A.02.010 Agriculture. "Agriculture" is the grazing, feeding, and watering of livestock; plowing, seeding, cultivation, and harvesting for the production of crops and pasture; soil and water conservation practices; the creation and maintenance of farm or stock ponds, irrigation ditches, drainage ditches, underground drainage systems, fences and farm roads, the control of noxious weeds, and includes any associated structures, appurtenances, equipment, or activities. (Ord. 94-22 (part), 1994).

17A.02.020 Areas with a critical recharging effect on aquifers used for potable water. "Areas with a critical recharging effect on aquifers used for potable water" are areas where an aquifer that is a source of drinking water is vulnerable to contamination that would effect the potability of the water. (WAC 365-190-030(2)). (Ord. 94-22 (part), 1994).

17A.02.030 Base flood. "Base flood" means a flood having a one percent chance of being equaled or exceeded in any given year. (Ord. 94-22 (part), 1994).

17A.02.040 Big game winter range. "Big game winter range" means wintering areas used by deer, elk, and bighorn sheep. The wintering areas are owned or leased by the Washington Department of Fish and Wildlife. These lands also provide significant habitat for other species and constitute wildlife conservation areas. (Ord. 94-22 (part), 1994).

17A.02.050 Buffer. "Buffer" means an area which is an integral part of a critical area and which enhances its protection. (Ord. 94-22 (part), 1994).

17A.02.060 Critical areas. "Critical

areas" are: (1) wetlands; (2) areas with a critical recharging effect on aquifers used for potable water; (3) fish and wildlife habitat conservation areas; (4) frequently flooded areas; and (5) geologically hazardous areas. (Ord. 94-22 (part), 1994).

17A.02.070 Development. "Development" constitutes any activity specified in Section 17A.03.015. (Ord. 94-22 (part), 1994).

17A.02.080 Erosion hazard areas. "Erosion hazard areas" are those geologically hazardous areas containing soils which may experience or have experienced a severe to very severe surface erosion process. (Ord. 94-22 (part), 1994).

17A.02.090 Fish and wildlife habitat conservation areas. "Fish and wildlife habitat conservation areas" are:

(1) Those lands in Kittitas County owned or leased by the Washington State Department of Fish and Wildlife;

(2) Those lands donated to or purchased by Kittitas County for corridors pursuant to RCW 36.70A.160;

(3) Wetlands;

(4) Big game winter range;

(5) Riparian habitat;

(6) Habitats for species of local importance. (Ord. 94-22 (part), 1994).

17A.02.100 Flood fringe. The "flood fringe" is the area between the floodway and the boundary of the one-hundred-year floodplain. The flood fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water surface elevation of the one-hundred-year floodplain more than one foot at any point. (Ord. 94-22 (part), 1994).

17A.02.110 Flood protection elevation. The "flood protection elevation" is considered under the Kittitas County Flood Damage Prevention Ordinance #93-18 to be one foot above the base flood elevation. (Ord. 94-22 (part), 1994).

17A.02.120 Floodplain. The "floodplain" means those lands or areas which are subject to a one percent or greater chance of flooding in

any given year or within the one-hundred-year floodplain. (Ord. 94-22 (part), 1994).

17A.02.130 Floodway. The "floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot. (Ord. 94-22 (part), 1994).

17A.02.140 Frequently flooded area. "Frequently flooded areas" means the one-hundred-year floodplain, which are lands subject to a one percent or greater chance of flooding in any given year, as designated by the Federal Emergency Management Agency Federal Insurance Rate Map for Kittitas County. (Ord. 94-22 (part), 1994).

17A.02.150 Geologically hazardous areas. "Geologically hazardous areas" are areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events, are not suited to the siting of major commercial, residential, or industrial development consistent with public health or safety concerns without proper engineering consideration and design. The term commercial should not be construed to include natural resource activities. (Ord. 94-22 (part), 1994).

17A.02.160 Groundwater. "Groundwater" means all water that exists beneath the land surface or beneath the bed of any stream, lake or reservoir, or other body of surface water, whatever may be the geological formation or structure in which such water stands, flows, percolates or otherwise moves, as defined in RCW 90.44.035. (Ord. 94-22 (part), 1994).

17A.02.170 Hazardous materials. "Hazardous materials" is defined identically to the definition contained in state law at RCW 70.102.010. It means those substances or materials identified as such under regulations adopted pursuant to the Federal Hazardous Materials Transportation Act, the Toxic Substances Control Act, the Resource Recovery and Conservation Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Insecticide, Fungicide, and Rodenticide Act, the Occupational Safety and Health Act Hazardous Communications Standards, and the State Hazardous Waste Act. (Ord. 94-22 (part), 1994).

17A.02.180 Irrigation. "Irrigation" is the artificial application of water to land, from either surface or groundwater sources. (Ord. 94-22 (part), 1994).

17A.02.190 Irrigation system. "Irrigation system" means all related water and access rights, structures, and equipment, including but not limited to standpipes, weir boxes, pipelines, ditches, pump houses, power sources, culverts, spur lines, laterals, irrigation sprinklers, and any other artificial conveyance of water for agricultural purposes. Portions of streams utilized for return flows also constitute part of the irrigation system. (Ord. 94-22 (part), 1994).

17A.02.200 Landslide hazard areas. "Landslide hazard areas" are geologically hazardous areas subject to severe risk of landslide based on a combination of geologic, topographic, and hydrologic factors, including bedrock, soil, slope gradient, slope aspect, geologic structure, groundwater, or other factors. (Ord. 94-22 (part), 1994).

17A.02.210 Mine hazard areas. "Mine hazard areas" are geologically hazardous areas, directly underlain by, adjacent to, or affected by abandoned mine workings such as adits, tunnels, ducts or air shafts with the potential for creating large underground voids susceptible to collapse. Closed and abandoned mines shall be presumed not hazardous unless specifically identified by the U.S. Department of Mines or other relevant information. (Ord. 94-22 (part), 1994).

17A.02.220 Native vegetation and fauna. "Native vegetation and fauna" means plant and animal species which are indigenous to the area or location in question. (Ord. 94-22 (part), 1994).

17A.02.230 Priority species habitats. "Priority species habitats" are fish and wildlife habitat conservation areas that include a seasonal range or habitat element in which a priority species is located, and which, if altered, may reduce the likelihood that the species will maintain and reproduce over the long term. The Washington State Department of Wildlife has preliminarily identified priority habitats and species on its maps. However, the unique land ownership patterns and terrain of Kittitas County result in the majority of the priority species habitats being located on big game winter range, riparian habitat, and wetlands, all as defined herein. (Ord. 94-22 (part), 1994).

17A.02.240 Priority animal species. "Priority animal species" are designated by the state of Washington as endangered, threatened, or sensitive, pursuant to Chapter 232-12 WAC as of the date of the adoption of the ordinance codified in this chapter. Priority animal species have a primary association with priority animal species habitat as defined in Section 17A.02.230. (Ord. 94-22 (part), 1994).

17A.02.250 Riparian habitat. "Riparian habitat" is an area adjacent to rivers, streams or lakes that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. The state of Washington has adopted a classification system for identifying riparian habitat, WAC 222-16-030, Water Typing System, Forest Practices Rules. Riparian habitat for purposes of this chapter is deemed to be Type 1, 2, 3, and portions of Type 4 and 5 waters as provided herein, under the state classification system. (Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).

17A.02.260 Seismic hazard areas. "Seismic hazard areas" are geologically hazardous areas subject to risk of earthquake damage. (Ord. 94-22 (part), 1994).

17A.02.270 Species of local importance. "Species of local importance" are fish and wildlife species that are of local concern because of their population status or their sensitivity to habitat manipulation. (Ord. 94-22 (part), 1994).

17A.02.280 Volcanic hazard area. "Volcanic hazard areas" are geologically hazardous areas that are subject to inundation by pyroclastic flows, lava flows, inundation by debris flows, mudflows, lahars, or related flooding resulting from volcanic activity. (Ord. 94-22 (part), 1994).

17A.02.290 Water rights. "Water rights" are those rights defined in state law, including RCW 90.03.010 and 90.44.035, as well as those rights subject to adjudication and determined pursuant to the water basin adjudication generally described as State of Washington v. Acquavella.

In defining water rights for purposes of this critical areas ordinance, no water rights as determined under state law, including the Acquavella litigation, are available for fish or wildlife habitat, and may not be considered for purposes of application of this critical areas ordinance.

Water rights and waters covered by the stipulation entered in the Acquavella adjudication, as to all sub-basins in Kittitas County, dealing with water rights as confirmed for Nondiversionary stock and wildlife watering shall not be considered for purposes of application of this critical areas ordinance. The stipulation referred to is incorporated by reference, and set forth as follows for clarity.

1. Waters in natural watercourses in the subbasin shall be retained when naturally available, in an amount not to exceed 0.25 cubic foot per second (cfs), for stock water uses in such watercourses as they flow across or are adjacent to lands, which are now used as pasture or range for livestock. Retention of such water shall be deemed senior (or first) in priority, regardless of other rights confirmed in this cause. Regulation of these watercourses by the plaintiff shall be consistent with such retention requirements.

2. Water in natural watercourses in the subbasin shall be retained when naturally available, in an amount not to exceed 0.25 cubic foot per second (cfs), for wildlife watering uses in such watercourses as they flow across or are adjacent to lands, which are now used as pasture or range for wildlife. Retention of such water shall be deemed senior (or first) in priority.

3. Waters in naturally occurring ponds and springs (with no surface connection to a stream) in the subbasin shall be retained for stock water uses, when such ponds and springs are located on or adjacent to lands which are now used as pasture or range for livestock. Said uses embody entitlement to a level in the water bodies sufficient to provide water for animals drinking directly therefrom while ranging on riparian lands, and with the same priority as provided in paragraph 1. Regulation of the ponds and springs by the plaintiff shall be consistent with such retention requirements.

4. Waters in naturally occurring ponds and springs (with no surface connection to a stream) in the subbasin shall be retained for wildlife watering uses, when such ponds and springs are located on or adjacent to lands which are now used as pasture or range for wildlife. Said uses embody entitlement to a level in the water bodies sufficient to provide water for wildlife drinking directly therefrom while ranging on riparian lands, and with the same priority as provided in paragraph 2. Regulation of the ponds and springs by the plaintiff shall be consistent with such retention requirements.

5. Nothing in this stipulation mandates that any lands, associated with water rights or water retention as provided herein shall be reserved for wildlife purposes.

(Ord. 94-22 (part), 1994).

17A.02.300 Waters/water typing system. "Waters" includes all surface waters not otherwise owned pursuant to water rights established under state law, as defined in Section 17A.02.290. A "water typing system" is a classification system for certain streams, lakes and ponds. The state of Washington for its purposes has adopted a five-tier typing system in WAC 222-16-030. For purposes of this chapter, Kittitas County adopts five classification types. Types 1, 2, 3, 4 and 5 waters are adopted and are classified according to the following system for the purposes of this chapter:

"Type 1 waters" means all waters, within their ordinary high water mark (OHWM), as inventoried as "shorelines of the state" under Chapter 90.58 RCW, but not including those waters' associated wetlands as defined in Chapter 90.58 RCW.

"Type 2 waters" means segments of natural waters not classified as Type 1 and have a high fish, wildlife, or human use.

"Type 3 waters" means segments of natural waters which are not classified as Type 1 or 2 and have a moderate to slight fish, wildlife, or human use.

"Type 4 waters" are segments of natural waters within Kittitas County which are not classified as Type 1, 2 or 3 and have a channel width of two feet or more between the ordinary high water marks.*

"Type 5 waters" are segments of natural waters within Kittitas County which are not classified as Types 1, 2, 3 or 4 waters and have a channel width of two feet between the ordinary high water marks, including streams with or without well-defined channels.* *Type 4 and 5 waters are not truly waters, but are waterways which are intermittent in nature and may be dry beds at any time of the year.

(Ord. 96-14 (part), 1996; Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).

17A.02.310 Wetlands. "Wetland" or "wetlands" means areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, agricultural fields or areas of agricultural activities that exhibit wetland characteristics due to the introduction or influence of irrigation waters to those fields, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities. The introduction or influence of irrigation waters to agricultural fields or areas of agricultural activities which cause those areas to exhibit wetland characteristics, even though the areas were nonwetland sites prior to the introduction or influence of irrigation waters, is defined in this section. However, wetlands may include those artificial wetlands intentionally created from nonwetland areas created to mitigate conversion of wetlands, if permitted by the county.

This definition is taken from the statutory definition at RCW 36.70A.030(17). This statutory definition of wetlands specifically exempts a number of intentionally created wetlands, including but not limited to those related to irrigation systems. Due to the inherent design of most irrigation systems, such systems are reasonably and foreseeably expected to result in some leakage or seepage. Such seepage or leakage is a normal result of utilization of irrigation systems and is deemed for purposes of this chapter to be an artificial wetland intentionally created from a nonwetland site, and therefore such areas do not constitute wetlands.

Furthermore, the phrase "normal circumstances" in this definition shall be defined as set forth by the United States Army Corps of Engineers in its Regulatory Guidance Letter 90-7 dated September 26, 1990, which is incorporated herein by reference. The letter deals with prior converted farmland, which may have been cropped prior to December 23, 1985. (Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).

17A.02.320 Wetland buffers. "Wetland buffers" or "wetland buffer zones" are areas that surround and protect a wetland from adverse impact to the natural functions and values of the designated wetland. (Ord. 94-22 (part), 1994).

17A.02.330 Wetland replacement ratio. Wetland replacement ratio refers to the act of providing on-site compensation or mitigation for disturbed wetlands as a result of development. The replacement ratio is the amount of new wetland areas required for those disturbed wetlands. The term is used in Section 17A.04.050 in regards to restoration or creation of wetlands equivalent to or greater than those altered in order to compensate for wetland loss. (Ord. 94-22 (part), 1994).

Chapter 17A.03

ADMINISTRATION

Sections:

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	this chapter applies.
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	mitigation efforts.
17A.03.080	Noncompliance.
17A.03.085	Warning and disclaimer of
	liability.
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17A.03.010 Lands to which this chapter applies. This chapter applies to lands within unincorporated Kittitas County, including both Washington State-owned lands and privately owned lands. Application of this chapter to specific parcels shall be based upon the general guidance of the Kittitas County critical areas policy document, coupled with the more specific provisions of this critical areas development ordinance, pursuant to the requirements of Chapter 36.70A RCW. (Ord. 94-22 (part), 1994).

17A.03.015 Land use activities to which this chapter applies. (a) The following land use activities shall be subject to and coordinated with the requirements of this chapter:

(1) Any activity which is not exempt from a threshold determination under the State Environmental Policy Act, as subject to the threshold exemptions established by the county SEPA ordinance;

(2) Any activity which requires approval through a public hearing process under county ordinance;

- (3) Rezones;
- (4) Long plats;
- (5) Short plats;

(6) Shoreline substantial development permits;

(7) Shoreline conditional uses;

(8) Shoreline variances;

(9) Zoning conditional use permits;

(10) Replats;

(11) Conversion of forest land to non-forest land uses;

(12) Filling and draining of Class 1-4 wetlands, except as otherwise provided herein;

(13) New residential building permits on all lots twenty acres or less shall comply with buffer requirements and restrictions in Chapters 17A.05 and 17A.08;

(14) All building permits must comply with Section 17A.05.10, which requires compliance with the county's flood prevention ordinance;

(15) Building permits.

(b) Critical area protection which is imposed as a result of any of these listed activities will not be required until existing and ongoing activities cease to exist. Any construction related to the permit, including project related movement of dirt, will trigger protection of critical areas. (Ord. 96-14 (part), 1996; Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).

17A.03.020 Exempt land use activities. The following land use activities are exempt:

(1) Land use activities regulated administratively, except as provided in Section 17A.03.015(a) "land use activities to which this chapter applies", including but not limited to septic tank installation, public or private water conservation projects, and any land use activity which does not require either public hearing approval or is categorically exempt under the State Environmental Policy Act.

(2) Existing and ongoing agricultural and irrigation activities, including such activities on land or portions of land subject to the nonex-empt activities in Section 17A.03.015(a).

(3) Activities involving artificially created habitat, including but not limited to grass-lined swales, irrigation systems and drainage ditches, farm ponds, detention facilities such as ponds, and landscape features, including any adjacent riparian habitat created or resulting from these activities, except for wetlands or habitat areas created as mitigation.

(4) Forest practices conducted in accordance with the provisions of Chapter 76.09 RCW and forest practice regulations Title 222 WAC, and which are exempt from Kittitas County jurisdiction.

(5) Reconstruction as a result of destruction by a natural disaster or disintegration over time, maintenance, or remodeling of structures, provided that such reconstruction, maintenance, or remodeling does not involve an expansion of the structure's footprint when located within a critical area. Any such activity shall nevertheless comply with the county's flood damage prevention ordinance, No. 93-18.

(6) Construction, maintenance, repair, or replacement of Kittitas County permitted or franchised utility facilities.

(7) Educational activities, scientific research, and outdoor recreational activities, including hunting and fishing.

(8) Emergencies that threaten the public health, safety and welfare, including private or public property.

(9) Existing and ongoing natural resource activities.

(10) Fencing shall not be required for critical areas protection. (Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).

17A.03.025 Preliminary identification of critical areas - Maps and reference material. Critical areas may be depicted generally on the Federal Emergency Management Agency's (FEMA) FIRM and floodway maps; National Wetlands Inventory maps; The Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1987 revised edition); Washington State Tier Wetlands Rating System as it pertains to Category I – IV wetlands; Washington State Department of Natural Resources geologic hazard areas maps; Washington State Department of Natural Resources mine hazard area maps base; U.S. Bureau of Land Management mine hazard area maps; Washington State Department of Fish and Wildlife priority habitats and species maps; Washington State Department of Natural Resources water type maps; U.S.G.S landslide activity and slope maps; U.S. Soil Survey's National Soils Survey Interpretations Handbook; snow avalanche hazard area maps in the Snoqualmie Pass Sub-Area Comprehensive Plan; Uniform Building Code seismic risk zone maps.

The dates of all of the foregoing maps shall precede the date of adoption of the ordinance codified in this chapter. Revised maps as issued by various governmental authorities after the date of adopting this chapter shall not be utilized as a preliminary source of information until such time as utilization of such maps are authorized by amendments to this chapter. This chapter is designed to protect county critical areas based upon the best available information at this time, which information has been subject to considerable review and comment from the general public as well as from scientific and technical sources. Utilization of revised maps must be subject to that same critique prior to adoption by the county.

These maps are used as a general guide to the location and extent of critical areas. Any presumption created by these maps may be rebutted by a preponderance of the evidence. These maps are also intended to alert the development community, county residents, as well as current and prospective landowners of the possibility of site development constraints which may limit or alter development plans. This chapter does not apply if critical areas do not exist on a given parcel. (Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).

17A.03.030 Conflict between critical areas ordinance and critical areas policy document. The Kittitas county critical areas policy document, incorporated by reference, is to be used as a general guideline in administering this chapter. Any inconsistencies between this chapter and the policy document shall be resolved in favor of this chapter. This chapter was adopted after the policy document was developed, and benefitted from substantial additional technical and public comment. (Ord. 94-22 (part), 1994).

17A.03.035 Critical area checklist and required information. An applicant is required to submit a checklist of critical area information before commencement of all land use activities which are subject to this chapter. This information shall be used in processing all other site related development permits and approvals. Development may be required to be modified or may be conditioned to meet the requirements of this chapter. The checklist shall contain the following information:

(1) Legal description of the land, and assessor's parcel number.

(2) As defined herein, the location of the following, if applicable:

(A) Wetlands;

(B) Erosion hazard areas;

(C) Floodplains and floodways;

(D) Riparian habitat;

(E) Geologically hazardous areas;

(F) Landslide hazard areas;

(G) Mine hazard areas;

(H) Seismic hazard areas;

(I) Streams and rivers.

(3) Any voluntary methods or activities anticipated by the applicant pertaining to criti-

cal areas, including incentives being offered by local or state government.

(4) Duplicate plans drawn to scale showing the nature, location, dimensions and elevations of the area in question, including existing or proposed structures, estimated amounts of fill material, drainage facilities, significant natural features, and the location of the above items, if applicable. Survey quality documents will not normally be required.

(5) The requirement for delineating the location of possible critical areas will be waived if field investigation by county staff indicates the following:

(A) Sufficient information exists for staff to estimate the boundaries of any critical areas without a delineation by the applicant; or

(B) No structures and uses, except for exempt activities, are proposed to be located within any possible critical area.

(6) Subject to field investigation by county staff, or other reliable and relevant information, the information submitted by the applicant shall be presumed valid for all purposes under this chapter. (Ord. 94-22 (part), 1994).

17A.03.040 Processing of critical areas checklist and information. The Kittitas County planning department shall serve as the administrative agency for this chapter. All discretionary decisions hereunder shall be made by the planning director or his designee. The director may consult with other official sources, including the landowner, to determine the presence of critical areas. Utilization of outside data and information by either the director or the applicant is permitted by the Kittitas County critical areas policy document, and may be utilized to verify or dispute the designation or existence of critical areas on any property.

The critical areas checklist shall be processed concurrently with all other development permits requested concerning the site. After the application is complete, the director shall make a binding determination as to whether the parcel contains critical areas. The written determination shall include findings setting forth the basis for the determination. The written determination shall be made within fifteen business days of submittal of a complete checklist, together with receipt of the complete application as to any other related land use permit being requested for the parcel.

The director's decision may be appealed by the applicant to the Kittitas County board of commissioners, except that if the underlying permits require processing by any other decisionmaker, such as the Kittitas County planning commission, zoning adjustor, or board of adjustment, appeal shall lie to that body. That body shall either make a final decision, or a recommendation to the board of commissioners, consistent with the nature of the underlying permit, concerning the critical areas designation and related mitigation. The decision or recommendation shall be coordinated with the decisionmaker's final decision or recommendation on the underlying permit. If the board of county commissioners does not have jurisdiction to review the underlying permit, such as a conditional use permit granted by a board of adjustment and appealable directly from that board to superior court, the board of county commissioners shall nevertheless have jurisdiction of all appeals under this critical areas ordinance which de novo appeal shall be heard prior to the need to file an appeal on the underlying permit in superior court. (Ord. 94-22 (part), 1994).

17A.03.045 Coordination with the State Environmental Policy Act and other concurrent permitting. The director shall coordinate application of the critical areas ordinance with any required SEPA review and the processing of any other associated permits. Any required critical areas mitigation shall be separate from SEPA conditions imposed as part of a threshold determination. The objective is to provide a concurrent, coordinated, and consistent review of development activities within critical areas, without creating another regulatory review or appeal process. (Ord. 94-22 (part), 1994).

17A.03.050 Appeal deadlines. All appeals of the director's decision concerning critical area designation or other discretionary decision making under this chapter shall utilize the same timelines for appeals related to any underlying permits. In the event there is no underlying permit, or the appeal deadline is not clear from other county ordinances, appeals must be filed with the board of commissioners no more than twenty business days following the date of mailing the decision to the applicant. All appeals shall be de novo, and conducted by the board of commissioners at a public hearing no later than a month following the filing of the appeal, with issuance of a decision no more than ten business days from the public hearing, or as otherwise agreed by the appellant and the board. The board's decision shall be final, subject to appeal to superior court. (Ord. 94-22 (part), 1994).

17A.03.055 Inventory of available information. The Kittitas County planning department shall maintain an inventory of available information which shows the location, referenced in this chapter, of critical areas. This information shall be made available to the public. The planning department shall prepare materials which enable citizens to clearly understand the location of critical areas on and adjacent to their property, and what obligations, rights and opportunities they have regarding such lands. (Ord. 94-22 (part), 1994).

17A.03.060 Request for technical assistance. Kittitas County shall enlist, as much as practicable, technical assistance to help those wishing to develop land that contains, or potentially contains any of the various critical areas defined by the critical areas policy document. Such help shall be aimed at addressing mitigation of such adverse effects of said development that the county deems to be important in the context of this document. (Ord. 94-22 (part), 1994).

17A.03.065 Property rights. (a) All regulatory or administrative actions taken pursuant to this chapter shall not result in an unconstitutional taking of private property, and shall not expand or reduce the scope of private property

protections provided in the state and federal constitutions. This chapter shall not prohibit uses permitted prior to its adoption and shall remain in effect until the county adopts development regulations pursuant to RCW 36.70A.120. Classifying or designating critical areas does not imply a change in the land-owner's right to use his or her land under current law.

(b) In applying this chapter, the planning department shall refer to relevant legal authorities at all levels of government, including federal and state constitutions, federal and state statutes, federal and state administrative regulations, and judicial interpretations thereof. The application and administration of this chapter shall assure that proposed regulatory or administrative actions do not unconstitutionally infringe upon private property rights; and are not arbitrary or discriminatory.

(c) Periodic reports shall be made at least annually to the board of county commissioners by the planning director and prosecuting attorney concerning county compliance with constitutional and judicial requirements. The planning director shall immediately advise the board should any provisions of this chapter in his opinion be in violation of state or federal constitutional requirements, or recent court decisions, and whether the provision is required by the state of Washington or discretionary with the county. If the provision which generates concern is a requirement of the state, the board of county commissioners shall immediately advise the appropriate state department or agency. If the provision is discretionary with the county, the board of commissioners shall promptly schedule a public hearing to consider the ordinance provision or policy. (Ord. 94-22 (part), 1994).

17A.03.070 Conservation moneys. Kittitas County shall examine the feasibility of enhancement moneys for fish and wildlife habitat conservation areas and wetlands. These programs at a minimum should provide conservation moneys for habitat and wetland enhancement, the exemption and/or reduction of habitats and wetlands and their buffers from the usual rate of local property tax, and a penalty system for withdrawal. These programs shall include an element whereby the Kittitas County actively participates in the acquisition of state, federal, or private funds or materials for landowners. Lastly, the programs should have an element for landowners who may volunteer to provide fish and wildlife habitat conservation areas or wetlands if they are not required to do so, and receive benefits as outlined in this proposal. (Ord. 94-22 (part), 1994).

17A.03.075 Economically feasible mitigation efforts. Kittitas County shall encourage economically feasible mitigation efforts when protecting critical areas. (Ord. 94-22 (part), 1994).

17A.03.080 Noncompliance. Any person who engages in work at a project site within a critical area and (1) fails to comply with this chapter; or (2) fails to comply with any permit condition required pursuant to this chapter shall be subject to enforcement proceedings and sanctions as specified in the Kittitas County zoning or code enforcement ordinances. (Ord. 94-22 (part), 1994).

17A.03.085 Warning and disclaimer of liability. The degree of hazard protection required by this chapter is considered reasonable for mandatory regulatory purposes under Chapter 36.70A RCW. These provisions are based on scientific and engineering considerations, and extensive public comment. Catastrophic natural disasters can, and will, occur on rare occasions. This chapter does not imply that land outside the designated critical areas or activities permitted within such areas will be free from exposure or damage. This chapter shall not create liability on the part of Kittitas County, and officers or employees thereof, for any damages that result from reliance on this chapter or any administrative decision lawfully made hereunder. (Ord. 94-22 (part), 1994).

17A.03.090 Severability. If any section, subsection, sentence, clause, phrase, part or portion of this chapter is for any reason held to be invalid or unconstitutional by any court of competent jurisdiction, such decision shall not affect

the validity of the remaining portions of this chapter or the application of the provision to other persons or circumstances. (Ord. 94-22 (part), 1994).

Chapter 17A.04

CRITICAL AREAS DESIGNATION AND DEVELOPMENT STANDARDS

Sections:

17A.04.010	Wetlands.
17A.04.015	No net loss of wetland areas.
17A.04.020	Buffer width requirements.
17A.04.025	Wetland buffer ranges.
17A.04.030	Wetland buffer averaging.
17A.04.035	Natural condition of wetland
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17A.04.040	Allowed uses.
17A.04.045	Building setback lines from
	wetland buffers.
17A.04.050	Wetland replacement ratios.
17A.04.050	Wetland replacement ratios.

17A.04.010 Wetlands. Wetlands in Kittitas County are defined in Section 17A.02.310 and classified in four categories: Category I (extreme high value), Category II (high value), Category III (average value), Category IV (less than average value). Critical area wetlands in Kittitas County are defined as Category I, Category II, Category III and Category IV wetlands as determined by the planning manager.

Category IV wetlands may be determined by the director to constitute a critical area based upon application of the criteria in this chapter. (Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).

17A.04.015 No net loss of wetland areas. Kittitas County shall require, to the extent practical, and except for Category IV wetlands, a zero net loss of natural wetlands functions and values together with, if reasonably possible through voluntary agreements or government incentives, a gain of wetlands in the long term. (Ord. 94-22 (part), 1994).

17A.04.020 Buffer width requirements. Wetland buffer requirements apply to all nonexempt activities on regulated wetlands. All wetland buffers shall be measured from the wetland boundary.

Category	Size of Wetland	Required Buffer
I	any size	50 - 200 feet
Π	over 2,000 sq. ft.	25 - 100 feet
III	over 10,000 sq. ft.	20 - 80 feet
IV*	43,560 sq. ft.	Building setbacks will be
	(1 acre)	determined by the zoning
		lot line setbacks, but shall
		not exceed 25 feet

*Includes only nonirrigation induced or enhanced Category IV wetlands. Irrigation water does influence ground water table elevations in Kittitas County.

(Ord. 96-14 (part), 1996; Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).

17A.04.025 Wetland buffer ranges. The wetland buffer ranges have been established to reflect the impact of certain intense land uses on wetland function and values. The director shall base the buffer size on the following criteria and shall establish the least restrictive width of buffer necessary to account for all of the following considerations:

(1) The overall intensity of the proposed use;

(2) The presence of threatened, endangered, or sensitive species;

(3) The site's susceptibility to severe erosion;

(4) The use of a buffer enhancement plan by the applicant which uses native vegetation or other measures which will enhance the functions and values of the wetland or buffer. (Ord. 94-22 (part), 1994).

17A.04.030 Wetland buffer averaging. Wetland buffers may be modified by averaging buffer widths. Wetland buffer width averaging shall be allowed only where the applicant demonstrates that the following exists:

(1) That averaging is necessary to avoid an extraordinary hardship to the applicant caused by circumstances peculiar to the property;

(2) That the wetland contains variations in sensitivity due to existing physical characteristics;

(3) That the proposed use would be located adjacent to areas where buffer width is reduced, and that such land uses are low in impact;

(4) That width averaging will not adversely impact wetland function and values. (Ord. 94-22 (part), 1994).

17A.04.035 Natural condition of wetland buffer. Wetland buffer areas shall be retained in their natural condition or may be improved to enhance buffer functions and values. Where buffer disturbance has occurred during construction, revegetation with native vegetation may be required. The Kittitas County noxious weed ordinance shall be adhered to. (Ord. 94-22 (part), 1994).

17A.04.040 Allowed uses. In addition to exempt activities otherwise identified herein, the following activities are allowed to occur on wetland and wetland buffer areas: nonmotorized outdoor recreational activities including hunting and fishing; educational activities; existing and ongoing agricultural activities, silviculture and mining; and maintenance of existing facilities, structures, ditches, roads, bridges and other utility systems. Up to two acres of Class IV wetlands may be filled, drained or modified with no approval required from the planning manager. If more than two acres of Class IV wetlands are filled, drained or modified, approval of the planning manager is required. Such development activity shall provide mitigation in accordance with Section 17A.04.050 for that portion of the wetland fill or modification that exceeds two acres. Category IV wetlands may be used for secondary stormwater management facilities having no reasonable alternative on-site location, provided there

is no significant adverse impact to the functions and values of those wetlands. (Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).

17A.04.045 Building setback lines from wetland buffers. A building setback line equal to the side yard setback requirement of the applicable zoning district is required from the edge of any wetland buffer. Minor intrusions into the area of the building setback may be allowed if the director determines that such intrusions will not negatively impact the wetland. The setbacks shall be shown on all site plans submitted with the application. (Ord. 94-22 (part), 1994).

17A.04.050 Wetland replacement ratios. Wetland replacement ratios are expressed in gross area required for replacement. The actual replacement, enhancement or rehabilitation of wetlands shall be determined by the director and meet all applicable standards for such. Replacement areas shall be determined according to function, acreage, type, location, time factors, ability to be self sustaining and projected success. Wetland functions and values shall be calculated using the Kittitas County critical areas policy document and the professional judgment of the director.

Category of Wetlan	d Replacement Ratio
Ι	3:1
II	2:1
III	1.5:1
IV	1:1 for the portion of
	a wetland fill or
	modification
(Ord. 96-14 (part),	1996; Ord. 95-15 (part),
1995; Ord. 94-22 (par	rt), 1994).

Chapter 17A.05

FREQUENTLY FLOODED AREAS

Sections:

17A.05.010	County flood prevention
	ordinance.
17A.05.015	Delineated floodplain
	boundaries on preliminary
	plats.

17A.05.020 No net loss of floodplain storage.

17A.05.010 County flood prevention ordinance. The Kittitas County Flood Prevention Ordinance No. 93-18 is hereby adopted by reference as the development regulation for all uses defined in this chapter and in the Kittitas County critical areas policy document. (Ord. 94-22 (part), 1994).

17A.05.015 Delineated floodplain boundaries on preliminary plats. All preliminary plats must clearly delineate the one-hundredyear floodplain boundary, according to the FEMA Flood Insurance Rate Map. (Ord. 94-22 (part), 1994).

17A.05.020 No net loss of floodplain storage. (a) A no net loss of floodplain storage concept shall be incorporated in all new construction on existing lots and all future development on the following rivers, streams and lakes, which are designated as "shorelines of the state" under 90.58 RCW and listed under 173-18-230 WAC:

Stream	Legal Description
Big Creek	From the Wenatchee
	National Forest boundary
	downstream to mouth on
	Yakima River.
Cabin Creek	From the Wenatchee
	National Forest boundary
	downstream to mouth on
	Yakima River.
Cle Elum River	From the Wenatchee
	National Forest boundary
	crossing Cle Elum Lake
	downstream to mouth on
	Yakima River.
Columbia River	From Chelan County line on
	the Columbia River down-
	stream along the Douglas and
	Kittitas County line to
	Yakima County.

Kachess River	From	the	Wenatchee
	National	Forest of	lownstream
	through	Lake E	aston State
	Park and to mouth on Yakima		
	River.		
Little Creek	From	the	Wenatchee
	National	Forest	boundary
	downstre	am to	mouth on
	Yakima H	River.	
Log Creek	From co	onfluence	e of Log
	Creek an	nd unna	med creek
	downstre	am to	mouth of
	Cabin Cr	eek.	
Manastash Creek	From co	nfluence	of North
	and Sout	h Forks	Manastash
	Creek downstream to mouth		
	on Yakima River.		
Manastash	From	the	Wenatchee
	National Forest Creek south		
Swauk Creek	boundary downstream to mouth on Manastash Creek. From the Wenatchee National Forest boundary downstream to mouth on		
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Taneum Creek	Yakima River. From the Wenatchee National Forest boundary downstream to mouth on		
Teanaway River	Yakima River. From the confluence of the Middle Fork and the West Fork Teanaway River down-		
Teanaway River	stream to Yakima River. From the Wenatchee National Forest (Middle		
Teanaway River	Fork) boundary downstream to mouth on Teanaway River. From the Wenatchee National Forest (North Fork)		
Teanaway River	Teanaway River. From the Wenatchee National Forest (West Fork) boundary downstream to the		
Wilson Creek	Teanaway River. From mouth at Naneum Creek downstream to mouth		
Yakima River	on Yakima River. From the Wenatchee National Forest boundary downstream to the Yakima		
Little Nachess River	County line. From the confluence of the North Fork and Middle Fork of Little Nachess River downstream left bank to		
T 1	mouth of Nachess River.		

Lakes

Manastash Lake Easton Lake Lost Lake Cooper Lake Tucquala Lake

(b) Additional streams or lakes may be added to this section by the director, for the protection of critical areas based upon the following criteria:

(1) History of flood damage;

(2) Stream channel instability and susceptibility to erosion;

(3) Floodplain width.

Floodplain storage shall be maintained on each parcel subject to this chapter. Insignificant loss of floodplain storage associated with residential developments and associated buildings on these parcels should not exceed ten cubic yards. If parcel conditions are such that compliance with the section is unreasonable, the director may determine the extent to which a development must comply. (Ord. 94-22 (part), 1994).

Chapter 17A.06

GEOLOGICALLY HAZARDOUS AREAS

Sections:

17A.06.010	Kittitas County Uniform
	Building Code.
17A.06.015	Areas requiring specialized
	engineering.
17A.06.020	Natural resource based
	activities.
17A.06.025	Areas of snow avalanche
	hazards – Snoqualmie Pass.
17A.06.030	Siting of structures on mine
	hazard areas.
17A.06.035	Disposal of volcanic ash
	fallout.

17A.06.010 Kittitas County Uniform Building Code. The Kittitas County adopted version of the Uniform Building Code contains provisions for geologically hazardous areas and shall apply to all such areas. (Ord. 94-22 (part), 1994).

17A.06.015 Areas requiring specialized engineering. Areas identified as high risk erosion/landslide geologic hazard areas including cliff or talus slopes, may require specialized engineering to ascertain the property is suitable for development purposes. The director is authorized to require such engineering. (Ord. 94-22 (part), 1994).

17A.06.020 Natural resource based activities. Natural resource based activities shall not be unduly restricted or prohibited in areas of known geologic hazards. (Ord. 94-22 (part), 1994).

17A.06.025 Areas of snow avalanche hazards – Snoqualmie Pass. In conjunction with the Uniform Building Code, Kittitas County shall enforce the policies contained within the Snoqualmie Pass Sub-Area Comprehensive Plan for avalanche hazard areas. (Ord. 94-22 (part), 1994).

17A.06.030 Siting of structures on mine hazard areas. Siting of structures on known mine hazard areas should be avoided. (Ord. 94-22 (part), 1994).

17A.06.035 Disposal of volcanic ash fallout. Intentional disposal of volcanic ash fallout into any bodies of water shall not be allowed. (Ord. 94-22 (part), 1994).

Chapter 17A.07

HABITAT

Sections:

17A.07.010	Riparian habitat.
17A.07.015	Designation of big game
	winter range.
17A.07.020	Priority species habitat.
17A.07.025	Habitats for species of local
	importance.
17A.07.030	Species of local importance.

17A.07.010 Riparian habitat. (a) Riparian Habitat Critical Areas shall constitute Type 1, 2 and 3, including portions of Type 4 and 5 waters at the intersecting points with a Type 1, 2, or 3 waters. Type 4 waters will be designated a critical area for a distance of forty to five hundred

feet. Type 5 waters shall be designated a critical area where it is located within the buffers for Types 1, 2 or 3 waters, as determined by the planning manager.

(b) Performance Standards Buffers.

- Type 1 waters 40-200 feet from OHWM. Type 2 waters 40-100 feet from OHWM. Type 3 waters 20- 50 feet from OHWM. Type 4 waters 10- 20 feet from the intersection with a Type 1, 2 or 3 water for a distance of 40 to 500 feet. From the point at which the buffer ends (40 -500 feet upstream from the confluence), there shall be a 15-foot structural setback from the ordinary high water mark.
- Type 5 waters None required (buffering will be provided by the Type 1, 2 or 3 waters' buffers). Note: Building setbacks from a Type 5 water will be 15 feet, unless a buffer greater than or equal to the 15-foot setback is in place.

Additional buffers may be approved by ordinance for habitats for species of local importance.

(c) Criteria for Buffer Ranges. The riparian habitat buffer ranges above have been established to reflect the impact of certain intense land uses on riparian habitat functions and values. The director shall base a buffer size on the following criteria and shall establish the least restrictive width of buffer necessary to accommodate the following considerations:

(1) Overall intensity of the proposed use;

(2) The presence of a threatened, endangered or sensitive species or anadromous fish;

(3) The shoreline's historical and current susceptibility to severe erosion, channel instability, or aggrading; (4) The presence of multiple channels or islands;

(5) Use by the applicant of a buffer enhancement plan;

(6) The width of a stream or river and the surface area and depth of a lake.

(d) Criteria for Buffer Averaging. The director may average buffer widths on riparian habitat buffers. Buffer width averaging shall be allowed only where the applicant demonstrates the following exist:

(1) That averaging is necessary to avoid an extraordinary hardship to the applicant caused by circumstances peculiar to the property;

(2) That the riparian habitat contains variations in sensitivity due to existing physical characteristics;

(3) That the proposed use would be located adjacent to areas where buffer width is reduced, and that such land uses will not have a significant adverse impact to the habitat and its buffer;

(4) That buffer width averaging will not adversely impact riparian habitat functions and values.

(e) Natural Condition of Riparian Habitat Buffer. Riparian habitat buffer areas shall be retained in their natural condition or may be improved to enhance buffer functions and values. Where buffer disturbance has occurred during construction, revegetation with native vegetation may be required. The Kittitas County noxious weed ordinance shall be adhered to.

(f) Allowed Uses. Allowed uses are exempt activities and activities deemed by the administrator to be consistent with the purpose and function of the habitat buffer and which do not cause a significant adverse impact to the habitat and its buffer based on sensitivity of the habitat including but not limited to stock watering, utilization of water rights, trails, recreational uses, hunting, and fishing. (Ord. 96-14 (part), 1996; Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994). **17A.07.015 Designation of big game winter range.** Big game winter range constitutes all federal land and all land owned or leased by the Washington State Department of Fish and Wildlife. The existing range conservation and management program of the State Department of Fish and Wildlife is long established and relies upon voluntary agreements with landowners together with state purchase of appropriate lands.

Land use activities subject to this critical ordinance continue to be subject to input from the Department of Fish and Wildlife, including SEPA comment. County administrative practices will be revised to solicit comment from the Fish and Wildlife Department concerning short plats and replats, for which comment is currently not requested. The existing comment process and SEPA review will complement the existing efforts to protect winter range and wildlife habitat, without creating a duplicate level of regulatory review. (Ord. 94-22 (part), 1994).

17A.07.020 Priority species habitat. (a) Designation of habitat under this section will only occur if the threatened, endangered, or sensitive priority species is not located in a riparian habitat, floodplain, or wetland, which is dealt with elsewhere in this chapter. To the extent not otherwise protected under this chapter, the area designated shall be the mapped location of a threatened, endangered, or sensitive priority species.

(b) Performance Standards. Protective measures for the designated area shall be determined by reference to applicable state and federal law for the protection of threatened, endangered, or sensitive priority species. (Ord. 94-22 (part), 1994).

17A.07.025 Habitats for species of local importance. (a) These habitats may be identified from time to time, resulting in amendment of this chapter. Residents of the county may from time to time identify and nominate for consideration such habitats, and shall have the burden of presenting evidence concerning the criteria set forth below. The nomination shall be forwarded by the planning department for consideration to the Kittitas planning commission, which shall make a recommendation to the Kittitas County board of commissioners.

Nomination and consideration of habitats for species of local importance shall consider the following:

(1) A seasonal range or habitat element which if altered may reduce the likelihood that the species will maintain or reproduce over the long term;

(2) Areas of high relative density or species richness, breeding habitat, winter range, and movement corridors;

(3) Habitat with limited availability or high vulnerability to alteration;

(4) Whether these habitats are already identified and protected under the provisions of this or other county ordinances or state or federal law.

(b) At the time of amendment adoption designating habitat for species of local importance, the county shall also adopt performance standards based upon recommendations from county residents and appropriate government agencies. (Ord. 94-22 (part), 1994).

17A.07.030 Species of local importance. (a) These species may be identified from time to time, resulting in amendment of this chapter. Residents of the county may from time to time identify and nominate for consideration such species, and shall have the burden of presenting evidence concerning the criteria set forth below. The nomination shall be forwarded by the planning department for consideration to the Kittitas County planning commission, which shall make a recommendation to the Kittitas County board of commissioners.

The nomination and the decision shall consider:

(1) Concern due to population status; or

(2) Sensitivity to habitat manipulation.

(b) At the time of adoption of a species of local importance, the Kittitas County board shall also adopt performance standards based upon recommendations from county residents and appropriate government agencies. (Ord. 94-

Chapter 17A.08

AQUIFER RECHARGE AREAS

Sections:

22 (part), 1994).

17A.08.010 Designation of aquifer recharge areas.

- 17A.08.015 Hazardous materials.
- 17A.08.020 On-site sewage disposal
 - regulations.

17A.08.025 Wellhead protection areas.

17A.08.010 Designation of aquifer recharge areas. No critical aquifer recharge locations have been identified in Kittitas County. If highly vulnerable recharge areas are identified, studies will be initiated to determine if ground water contamination has occurred. Future classification of these areas will include consideration of the degree to which the aquifer is used as a potable water source, feasibility of protective measures to preclude further degradation, availability of treatment measures to maintain potability, and availability of alternative potable water sources.

Current county regulations are incorporated by reference and will adequately protect aquifer recharge areas until such time as additional information indicates the need for further studies. (Ord. 94-22 (part), 1994).

17A.08.015 Hazardous materials. Pro-

posals falling under the provisions of Section 17A.03.015 and which deal with hazardous materials which may contaminate ground or surface water shall comply with all applicable federal and state laws and regulations, and shall demonstrate said compliance to the planning director. To the extent such proposals are not otherwise regulated under state and federal law, the applicant shall submit a hazardous materials plan, developed in consultation with the Kittitas County environmental health department. At a minimum, the hazardous materials plan shall include:

(1) A description of operations and identify hazardous materials which may be used with the proposal;

(2) Description of how hazardous materials will be handled on site;

(3) Description of containment for hazardous material;

(4) A site map showing the location of the facility, property boundaries, locations of hazardous materials, and other features of the site;

(5) Secondary containment for wastewater, fuels, and other materials deemed by the Kittitas County environmental health and solid waste departments to pose a significant adverse impact on ground or surface water;

(6) The use of monitoring to ensure that the hazardous materials do not leak or contaminate ground or surface water;

(7) The use of settling ponds, restrictions on off-site discharge, biofiltration or other methods deemed by the Kittitas County planning department and/or Kittitas County environmental health and solid waste departments necessary to prevent a significant adverse impact on ground or surface water;

(8) Setbacks for materials considered by the Kittitas County planning department, Kittitas County environmental health and solid waste departments, or the Kittitas County fire marshal to pose a significant adverse impact on ground or surface water. (Ord. 94-22 (part), 1994).

17A.08.020 On-site sewage disposal regulations. The Kittitas County on-site sewage disposal regulations (December 1978) are hereby adopted by reference as the development regulations for all uses defined in this chapter. (Ord. 94-22 (part), 1994).

17A.08.025 Wellhead protection areas. All noncommunity wells must be placed a minimum of fifty feet from property lines. (Ord. 94-22 (part), 1994).

Chapter 17A.55

CAZ COMMERCIAL AGRICULTURAL ZONE AND CAZO COMMERCIAL AGRICULTURAL ZONE OVERLAY

(Repealed by Ord. 98-13)

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12.70.010 - 12.70.030

- 12.70.060 Basic requirements.
- 12.70.070 Drafting standards and contents.
- 12.70.080 Design criteria.
- 12.70.090 Review and approval of plan.
- 12.70.100 Bonds and liability insurance.
- 12.70.110 Standard storm water system maintenance.
- 12.70.120 County assumption of maintenance.
- 12.70.130 Appeal procedure.
- 12.70.140 Variances.
- 12.70.150 Retroactivity relating to county maintenance of subdivision facilities.

12.70.010 Purpose. (a) Kittitas County has found that future storm water drainage problems may be reduced or avoided if future developers, both private and public, provide for storm and surface water drainage of their respective properties. Storm water management standards and guidelines are set forth to protect life and property from loss and damage by flooding, to protect streams, creeks, and lakes from pollution and excessive flows.

(b) The following storm water management standards and guidelines are intended to reduce and prevent adverse storm water impacts. They represent the minimum design standards for the construction of storm water facilities and stream channel improvements within Kittitas County. Compliance with these standards does not relieve the designer, owner or developer of the responsibility to apply conservative and sound professional judgment to protect the health, safety and welfare of the general public. Special site conditions and environmental constraints and considerations may require a greater level of protection than would normally be required under these standards. (Ord. 95-2 (part), 1995).

12.70.020 Definitions. (a) "Biofiltration" means vegetative devices used to reduce water velocity to filter out suspended solids and related pollutants.

(b) "Detention facilities" means water control structures or devises that restrict flow and provide temporary storage. (c) "Hydraulics" means the physical science and technology of static and dynamic behavior of fluid such as water.

(d) "Hydrology" means the scientific study of the properties, distribution and effects of water with the atmosphere, earth surfaces and in soils and rocks.

(c) "Infiltration" means the passage of water through the soil surface and lower profile.

(f) "Impervious surfaces" means any surface which cannot be effectively penetrated by water such as asphalt, roof tops and compacted soils.

(g) "One-hundred-year discharge" means the volume of water measured in cubic feet per second (CFS) released from a stream or structure from a one-hundred-year storm event.

(h) "Retention facilities" means water control structures or devices that hold and store water.

(i) "Storm water" means rain that flows off the surface of the land without entering the soil.

(j) "Twenty-four-hour storm" means a rain storm measured in terms of a twenty-four-hour duration.

(k) "X' year storm" means a storm representing an intensity of magnitude that could recur as follows:

	Average Recurrence
Storm	During 100 Years
2-Year	50 times
10-Year	10 times
25-Year	4 times
50-Year	2 times
100-Year	1 time

(Ord. 95-2 (part), 1995).

12.70.030 When storm water plan or storm water review is required. All development proposals will be evaluated based on location, size, existing runoff conditions, topography and nearest downstream tributary. Storm water plans will be required for those development proposals which demonstrate a potential for significant storm water impacts. Specific review requirements will be addressed under administrative rules. (Ord. 95-2 (part), 1995).

12.70.040 - 12.70.060

12.70.040 When plans are not required. The following development actions are exempted from a storm water review except in extreme circumstances where significant impacts are anticipated.

(1) Residential building permits;

(2) Zoning variances.

Any appeal of the director's determination of the applicability of drainage plan requirements shall be to the board of Kittitas County commissioners as provided in KCC 12.70.130. (Ord. 95-2 (part), 1995).

12.70.050 General requirements. All persons proposing land development and/or approvals as outlined in KCC 12.70.030 shall provide a storm water plan for surface water flows entering, flowing within and leaving the subject property. The plan is to conform to the following standards and requirements:

(1) The Kittitas County director of public works may require plans for storm drainage and detention facilities to be prepared by a registered civil engineer currently licensed by the state of Washington and qualified by experience and education in the field of hydraulics, hydrology, or a closely related field. Storm water plans or revisions to any approved plan shall be reviewed and approved by the public works department prior to any construction.

(2) On-site storm water improvements must be sufficient to mitigate impacts due to flooding, erosion, sedimentation or pollution.

(3) All drainage system elements must provide for adequate maintenance and accessibility at all times. Storm water facilities shall be designed to eliminate interference from underground utilities and from conditions which exceed design loads for any pipe or other structural element.

(4) The designer of any storm water element shall consider system reliability in terms of layout, specifications of materials and methods of installation.

(5) The impact of a system failure should be analyzed both in terms of on-site and off-site effects. The impacts may be to adjacent properties or to elements of the public drainage system or other private systems.

(6) No drainage originating inside of a building or structure shall be connected to the storm water or surface water systems.

(7) Developer shall meet all other applicable laws for water quality prior to discharge to any wetland, stream, or lake.

(8) Developers are encouraged to be innovative and give high priority to fish, wildlife, plant materials and related total resource management systems. (Ord, 95-2 (part), 1995).

12.70.060 Basic requirements. (a) Discharge at Natural Location. All surface and storm water runoff from a proposed development that would construct new or modify existing drainage facilities should be discharged at the natural location and not be diverted onto or away from the adjacent downstream property. Diversions may be allowed if it corrects an existing problem.

(b) Tributary Area Analysis. Proposed developments should identify the upstream tributary drainage area and provide an analysis of the pre-existing drainage volume and quality and an analysis of the impact of the proposal on the drainage system.

(c) Proposed projects must control the peak rate runoff to not exceed the predevelopment peak rates for the site (existing condition). The methods of peak rate runoff control may include detention, retention and/or infiltration. On-site biofiltration in combination with infiltration systems is the preferred method for management of on-site storm water and shall be considered before transporting storm water off-site.

(d) For all proposed developments requiring a drainage conveyance system, the conveyance system must be analyzed, designed and constructed to handle existing off-site tributary flows and on-site storm water flows caused by development of the project.

(c) Developments involving clearing and grading and that propose new or to modify existing drainage facilities should include an erosion/sedimentation control plan providing

12.70.070 - 12.70.080

measures to prevent sediment-laden runoff from leaving the site during construction. Erosion/ sedimentation control may be achieved by structural control measures (sediment trap or pond), covers (mulch, sodding, plastic covering) and/or construction practices (filter fabric, quarry rock driveway pads).

(f) Maintenance and operation of all private storm water facilities is the responsibility of the property owner or a properly formed homeowners association and shall be done in compliance with Kittitas County maintenance standards.

(g) For the construction or modification of any storm water facility other than roadside ditches, the applicant shall be required to have a construction bond. The construction bond shall be posted prior to beginning construction. The bond shall be in an amount sufficient to cover the cost of work on or off the site. (Ord. 95-2 (part), 1995).

12.70.070 Drafting standards and contents. The storm water plan shall be prepared in conformance with KCC 12.10.080. (Ord. 95-2 (part), 1995).

12.70.080 Design criteria. (a) Runoff Control.

(1) Developments shall be designed and constructed to provide control of the quality and quantity of storm water runoff both during and after construction. Erosion and sedimentation control plans shall be submitted and approved by the public works department prior to the beginning of any construction. Peak discharge control and detention facilities shall be provided in accordance with the development standards. Biofiltration, oil/grease separation devices or other pollution control mechanisms are to be installed prior to occupancy and relapse of any performance securities held by the county.

(2) The on-site drainage system including conveyance, flow restriction, detention, pollution control, and emergency overflow elements must be properly designed and sized to handle runoff from the site and conveyance through the site. The design should be carefully analyzed for potential problems, flow impedi-

ments, construction or maintenance difficulties, and potential erosion or other property damage.

(3) Allowable Release Rates.

(A) The peak discharge rate from the road right-of-way or from the total subdivided property shall not exceed 0.2 cfs per acre for site of five acres or less.

(B) For sites with tributary basins greater than five acres or sites less than five acres in area which are deemed to have significant impacts due to runoff quantity shall be limited to the predevelopment peak runoff for a "two-year" storm. Peak runoff rate shall be computed using the Soil Conservation Service TR-55 method, modified Santa Barbara Urban Hydrograph Method or other approved models.

(C) Storm water detention facilities shall be provided to store all surface water runoff in excess of the allowable peak discharge in accord with provisions for "detention facilities" of these standards up to the "one-hundred-year" discharge or meet the design criteria in subsection (b)(7) of this section.

(4) Oil Separation Devices. Whenever paved parking is provided for more than twenty vehicles, or any paved parking or access roadway drains to an open waterway or stream, an oil/grease separation device shall be installed by the developer. The device shall be constructed and installed consistent with current state of the art requirements. It shall be located at a point where it can be easily maintained and where it will intercept floating contaminants flowing off road surfaces, parking lots, and other sources of pollutants. Selection and sizing of oil separation device type shall be subject to approval of the director of public works. The applicant should consider the use of vegetative or other natural filtration means. Effluent discharges from any oil removal treatment device to the storm sewer or surface water system shall be in compliance with State Department of Ecology regulations for discharge to storm drains or surface waters.

(A) Oil separators discharging to a storm water system or directly to a waterway require approval from the Department of Ecology.

(B) All storm water must enter the separator through an inlet pipe, unless the sepa-

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rator is an integral part of an approved catch basin.

(C) The property owner assumes full responsibility and liability for proper maintenance and operation of the oil separator, unless the separator is a part of a publicly-operated drainage system.

(D) Access to the separator shall be maintained for inspection at all times.

(E) Oil accumulation in the oil separator compartment shall not exceed three inches at any time.

(F) Following oil removal the separator shall be backfilled with clean water to prevent oil carry-over to clear well.

(G) Waste oil accumulations removed from the separator shall be disposed of in an acceptable manner and shall not be disposed or discharged to the ground water, storm drains, or streams.

(H) Design of an oil separator facility shall be based upon flows from an approved detention system over the area contributory to the oil separator and provision of one hour retention time in the oil separator at that flow. In addition the oil separator must be designed with a depth to width ratio of between 0.3 and 0.5.

(5) Erosion and Siltation Control. In addition to catch basins, measures such as suggested in KCC 12.70.060(e) should be provided as necessary during and after construction to prevent erosion and to prevent silt from being carried off-site and/or into receiving bodies of water.

(b) Detention Facilities.

(1) All storm water runoff originally from and/or drainage to any proposed development shall be controlled and/or conveyed in accordance with all county standards and policies and as described in these standards. When existing conditions make storm water detention impossible for a portion of a site, in lieu of providing detention for such an area, at the discretion of the director of public works, compensatory storage volume and reduction of allowable release rates may be provided on another portion of the site. In no case shall the runoff from the total site exceed the allowable release rate.

(2) The storm water detention requirement may be waived at the discretion of the director of public works when a direct discharge of "one-hundred-year" or greater capacity in conjunction with pollution control to a major receiving body such as Yakima, Teanaway and Columbia Rivers and Keechelus, Kachess and Cle Elum Lakes is provided. Said control or conveyance of storm water runoffs shall be shown on a drainage plan which shall be prepared by the developer's licensed engineer and shall be submitted for review and approval by the public works department.

(3) The storm water detention requirement may be waived at the discretion of the public works director if the volume of storage calculated for that development is less than two hundred fifty cubic feet and if the site has no environmental, hydraulic, or hydrologic constraints which must be mitigated by providing storage.

(4) Prior occupancy of any single phase of a phased development, storm drainage facilities should be completed and operational to provide runoff control, detention, and water quality treatment for the phase for which occupancy is requested.

(5) Storm water detention systems shall be designed to maximize reliability, ease of maintenance, and water quality of runoff and shall minimize hazards to persons or property (both on-site and off-site), nuisance values, and risk of failure.

(6) Sufficient detention storage capacity shall be provided to store the excess runoff from the developed site during a storm event having a probability of occurrence commonly known as the "one-hundred-year storm". A nonerosive overflow path shall be provided from each detention facility to protect adjacent property from damage.

(7) Detention basin performance shall be such that discharge from the development area meets the following criteria:

(A) Fifty percent of the predevelopment two-year peak release rate for the two-year developed design storm.

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(B) The predeveloped twenty-fiveyear peak release rate for the twenty-five-year development design storm.

(8) Sizing. In calculating the storage volume provided, "dead storage" in wet ponds shall be excluded, i.e., that volume of water which must be assumed to be present in the detention system at the commencement of the design storm. Any volume at a level below that of the outfall invert must be presumed to be dead storage, e.g. catchments.

(9) Permanent pond surface area should equal two percent of the catchment area for residential and three percent of the catchment for commercial. Volume should be equal to the volume generated from two-thirds of the two-year, twenty-four-hour storm.

(10) Controlled Overflow Requirements. All detention storage facilities should include a provision for control of overflows, and suitable data shall be provided to support the design. Under no circumstances should the overflow be overland to public right-of-way or over private property not included as part of the development without a recorded easement.

(11) Site, Soil and Infiltration Data Requirements for Calculating Effective Infiltration Rates to Reduce Storage Requirements.

(A) General Data Requirements.

(i) The proposed site should have favorable topography to preclude high runoff rates. Engineering calculations shall be included with any submittal to show that there will be no adverse impacts due to the reduced storage. Such adverse impacts may include but not be limited to, increased frequency of overflows.

(ii) A log of the soils and infiltration test data should be submitted to reveal site soil conditions and infiltration rates.

(iii) An adequate number of test holes should be located over the proposed site to substantiate representative conditions for the final layout of the development, and as a minimum condition, test holes shall be located in each area and at the elevation proposed for infiltration.

(iv) Ground water depth, location, flow and general characteristics shall be considered.

(v) Impervious strata shall be at a depth greater than two feet below the bottom of the proposed infiltration area.

(B) Soil Data Requirement. A soil log may be required to describe soil type and depth along with a site map showing the location of each test hole. Classification may be in general terms such as loose sand, sandy silt, clay hardpan, rock, etc. or classification may be in specific terms as described by the U.S. Department of Agriculture. The soil log should include the depth to ground water table. (Ord. 95-2 (part), 1995).

12.70.090 Review and approval of plan. (a) The storm water plan and supporting calculations will be reviewed by the public works department using the department's construction plan review procedures in coordination with all other county land development and/or permit review procedures. The county's review and approval of the storm water plan shall not relieve the applicant, owner and/or designer of liability for errors or omissions in the design of storm drainage facilities.

(b) All storm water plans prepared in connection with any of the permits and/or approvals listed in KCC 12.70.030 shall be submitted for review and approval to the public works department.

(c) Any applicant or property owner proposing an action that may require a storm drainage plan may request a preliminary review of the proposal by the director and a determination of the need for a drainage plan pursuant to KCC 12.70.030 and 12.70.040. (Ord. 95-2 (part), 1995).

12.70.100 Bonds and liability insurance. (a) The construction of storm drainage facilities requires financial guarantees in accordance with KCC 12.10.100.

(b) The owner or person constructing the storm water facility shall maintain a liability policy during the construction period with pol-

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icy limits of not less than one hundred thousand dollars per individual; three hundred thousand dollars per occurrence; fifty thousand dollars property damage, which shall name Kittitas County as an additional insured without cost to the county. Coverage shall be continued by the developer in the same amounts until such facilities are accepted by the county as provided in KCC 12.70.120. (Ord. 95-2 (part), 1995).

12.70.110 Standard storm water system maintenance. Maintenance of storm water facilities on private property shall be the responsibility of the owner(s), unless otherwise provided for under KCC 12.70.120. This responsibility and the provision for maintenance shall be clearly stated on subdivision and short plat plans, property conveyance documents, and/or drainage improvement plans. In the event the owner(s) does not provide property maintenance and the director of public works determines the storm water facility represents a public safety threat the director will give thirty-day notice to the owner(s) to correct the deficiencies. If the deficiencies are not corrected within thirty days the county may enter upon the property to perform the necessary maintenance at the owner(s) expense. This provision for access will be included as a provision of plat or plan approval. (Ord. 95-2 (part), 1995).

12.70.120 County assumption of maintenance. Upon petition of the owner(s), Kittitas County with approval of the Kittitas County board of commissioners, may assume the maintenance of retention/detention facilities if all of the following conditions are met:

(1) All of the requirements of KCC 12.70.070 "Drafting Standards and Contents" and KCC 12.70.080 "Design Criteria" have been fully complied with;

(2) The facilities have been inspected and approved by the public works director;

(3) All necessary easements entitling the county to properly maintain the facility have been conveyed to the county; and

(4) It is recommended by the public works director that the assumption of maintenance

would be in the best interests of the county. (Ord, 95-2 (part), 1995).

12.70.130 Appeal procedure. In the event of a determination by the director that storm water plans are required, the applicant shall have the right to have the determination reviewed by the Kittitas County board of commissioners or the owner may make corrective provisions to the project as necessary. Denial by the board shall leave the owner with the choice of correcting the project as suggested by the county or appeal through the judicial process. (Ord. 95-2 (part), 1995).

12.70.140 Variances. Variances from these storm water standards and guidelines may be requested by the applicant in accordance with KCC 12.10.090. (Ord. 95-2 (part), 1995).

12.70.150 Retroactivity relating to county maintenance of subdivision facilities. Any owner who has constructed retention/ detention facilities prior to the adoption of these storm water standards and guidelines may petition for the county to assume maintenance of the constructed facilities. If it is determined to be in the overall interest of the general public, the county, upon approval by the Kittitas County board of commissioners, may assume the maintenance of the constructed facilities provided all of the following conditions are met:

(1) The owner shall demonstrate, to the public works director's satisfaction, that approved plans and constructed facilities substantially comply with these storm water standards and guidelines;

(2) The owner shall provide as-built plans, prepared to county standards, for all constructed facilities; and

(3) The director shall inspect the storm water facilities and approve and acknowledge that all conditions for accepting maintenance responsibility have been met. (Ord. 95-2 (part), 1995).

13.04.010

Chapter 13.04

ON-SITE SEWAGE DISPOSAL SYSTEMS¹

Sections:

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13.04.160	Inspection.
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13.04.290 Appeal.

13.04.300 Health emergency. 13.04.310 Violation – Penalty.

13.04.010 Definitions. For the purposes of this chapter, the following terms shall be defined as follows:

(1) "Approved" means acceptable by the health officer.

(2) "Building sewer" means that portion of the on-site sewage disposal system from the septic tank back to within five feet of the premises foundation.

(3) "Comprehensive Environmental Health Fee Schedule (CEHFS)" means the comprehensive environmental health fee schedule passed by the county board of health June 3, 1974, amended March 15, 1976, and May 16, 1977, or hereafter amended.

(4) "Cover" means fill material that is used to cover a subsurface disposal area.

(5) "Department" means the county health department.

(6) "Fill" means soil materials that have been displaced from their original location.

(7) "Groundwater" means the subsurface water occupying the zone of saturation, commonly referred to as the water table.

(8) "Health officer" means the duly appointed health officer of the county health department or his/her authorized representative.

(9) "On-site sewage disposal system (OSDS)" means any system of trenches, piping, treatment devices, or other facilities that convey, store, treat, or dispose of sewage on the property where it originates or on adjacent or nearby property where the system is not connected to a public sewer system.

(10) "Person" means any individual, corporation, company, association, society, firm, partnership, joint stock company, or any branch of state or local government.

(11) "Premises" means the building and accompanying land of a lot, tract, or parcel.

(12) "Public sewer system" means a sewage system which is owned or operated by a city, town, municipal corporation, county, political subdivision of the state, or other approved ownership consisting of a collection system and necessary trunks, pumping facilities, and a means of final treatment and disposal and which

^{1.} For statutory provisions regarding sewerage, water and drainage systems in counties generally, see RCW Ch. 36.94. Prior history: Ord. 71-1.

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is under permit from the State Department of Ecology.

(13) "Secretary" means the secretary of the State Department of Social and Health Services or his/her authorized representative.

(14) "Septic tank" means a watertight receptacle which receives the discharge of sewage from a building sewer, and is designed and constructed so as to permit the separation of settleable and floating solids from the liquid, providing detention and digestion of the organic matter, prior to discharge of the liquid portion.

(15) "Sewage" means the water-carried human or household waste from residences, buildings, industrial and commercial establishments, or other places, together with such groundwater infiltration, and other waste as may be present.

(16) "Subdivision" means a division of land, as defined in RCW Chapter 58.17 or as hereafter amended.

(17) "Surface water" means any body of water whose top surface is exposed to the atmosphere, including a flowing body as well as a pond or lake. (Vol. 6, p. 697 § 2, 1979).

13.04.020 Applicability. (a) These regulations shall not apply to a new OSDS or repair of an existing OSDS for which a permit was issued prior to the effective date of these rules and regulations.

(b) These regulations shall not apply to facilities constructed or operated in accordance with a permit issued by the State Department of Ecology or where they may be in conflict with RCW Chapter 90.48. (Vol. 6, p. 697 § 3, 1979).

13.04.030 Permit – Requirements. (a) No person shall install a new OSDS, nor perform alterations, extensions, or relocations of an existing OSDS without a valid permit issued by the health officer. Permits for alterations or repairs shall be so identified. Application for a permit shall be made in writing to the health officer in a manner prescribed by and on forms supplied by the health officer. All permits expire one year from the date of issue. Expired permits may be renewed by the health officer if no changes in design, location, or other factors

are necessary to meet the requirements of these rules and regulations.

(b) Permits are not transferable from person to person or property to property.

(c) The permit application for a new OSDS shall be a two-step process with separate fees for each step. These steps are as follows:

(1) Step 1. A preapplication (site evaluation) to include the following:

(A) The name of the person requesting the review,

(B) The name of the intended occupant,

(C) The assessor's parcel number,

(D) The current address of the intended occupant,

(E) The general property location,

(F) The nature of premises to be

(G) A sketch showing the property configuration, dimensions, slope percentage, slope direction, and the location of all water sources, on-site sewage disposal systems, creeks, ditches, drainageways, and trees (including varieties) within three hundred feet of the premises, the location of all driveways, water lines, easements, and other structures within three hundred feet of the proposed OSDS.

(H) Payment of the preapplication fee as determined by the CEHFS;

(2) Step 2. A permit (to install) application to include the following:

(A) Name of the person to whom the permit is to be issued,

(B) Name of the intended occupant,

(C) Current address of the intended occupant,

(D) Assessor's parcel number,

(E) General property location,

(F) Number of intended permanent occupants.

(G) Maximum number of anticipated occupants including visitors,

(H) Number of bedrooms or waste generating fixtures (sinks, garbage disposals, water softeners, etc.) of the proposed structure,

(I) Type of system proposed (conventional, hybrid, or alternative),

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(J) Person to do installation,

(K) Depth to seasonal high groundwater including how this was determined,

(L) Corrections necessary to control surface or groundwater if needed,

(M) A statement if any and to what degree removing or grading of soil is to be done in the disposal area,

(N) Any percolation test data including the date of the tests and by whom the tests were donc,

(O) A soil log dug to a depth of seven feet within twenty-five feet of the proposed disposal area with a detailed description of the soils found, including texture, structure, color, depth of each horizon, mottling, depth of root penetration, and other information as may be deemed necessary by the health officer,

(P) A detailed design of the proposed OSDS including the following:

(i) Topography of the lot and the lot drainage characteristics

(ii) Configuration of the property and dimensions

(iii) Distances of the proposed OSDS to domestic water supplies, surface waters, banks, cuts, property boundaries, structure locations, trees (varieties), shrubs, public sewer systems, or other improvements

(iv) A communication from the county building department that the proposed land use meets applicable zoning and other codes, regulations, and ordinances

(v) Longitudinal and cross-sectional drawings or typical disposal areas including all dimensions requested by the health officer

(vi) Payment of the permit fee as determined by the CEHFS.

(d) A permit application for alteration or repair of an OSDS shall be accompanied by all information requested in subsection (c)(2) above. (Vol. 6, p. 697 § 10, 1979).

13.04.040 License – On-site sewage disposal system designer. (a) Any person designing an OSDS shall first obtain a license from the health officer. Said license shall be issued annually and expire one year from the date of issue. Said license shall also be revocable for failure to comply with the standards of this regulation.

(b) A license shall be issued by the health officer only after the applicant has:

(1) Satisfactorily completed an oral and/or written examination or has otherwise shown competency to perform the functions of on-site sewage disposal system designer;

(2) Demonstrated and secured financial responsibility in the amount of two thousand dollars by means of a surety bond in favor of the department or some other approved method. Such financial security shall extend at least one year beyond the expiration date of the license issued under this section;

(3) Paid the appropriate fee as established by the CEHFS. (Vol. 6, p. 697 § 22, 1979).

13.04.050 License – On-site sewage disposal system installer. (a) Any person engaged in installing or repairing an OSDS shall first obtain an installer's license from the health officer. Said license shall be issued annually and expire one year from the date of issue. Said license shall also be revocable for failure to comply with the standards of these rules and regulations.

(b) A license shall be issued by the health officer only after the applicant has:

(1) Satisfactorily completed an oral and/or written examination or has otherwise shown competency to perform the functions of an on-site sewage disposal system installer;

(2) Demonstrated and secured financial responsibility in the amount of two thousand dollars by means of a surety bond in favor of the department or some other approved method. Such financial security shall extend at least one year beyond the expiration date of the license issued under this section;

(3) Paid the appropriate fee as established by the CEHFS.

(c) The license issued under this section shall not be required of any person constructing or repairing an OSDS on his/her own property of residence or intended residence when the work is totally performed by the resident. Under this subsection, any person may only construct

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or install one new OSDS in any twelve-month period. (Vol. 6, p. 697 § 21, 1979).

13.04.060 Connection to public sewer system. (a) Connection of any premises where sewage originates shall be made to a public sewer system where there is an adequate public sewer system within two hundred feet of the premises, and such connection is permitted by the sewer utility. Such connection shall be made and use of the OSDS discontinued when repair or replacement of the OSDS is required or as directed by local ordinance. This requirement may be waived if the health officer determines that such connection is not feasible.

(b) If the distance between the premises to be served and an adequate public sewer is greater than two hundred feet, and where the anticipated sewage flow is greater than one thousand gallons per day, connection shall be made to the public sewer system if the health officer determines that a connection is feasible and such connection is permitted by the sewer utility. (Vol. 6, p. 697 § 7, 1979).

13.04.070 Minimum lot sizes. An OSDS shall be installed on lots, parcels, or tracts that have a sufficient amount of area with proper soils in which sewage can be retained and treated properly on-site: one-half acre, twentyone thousand seven hundred eighty square feet with an approved community water supply and an OSDS; one acre, forty-three thousand five hundred sixty square feet with a private water supply and an OSDS. Exceptions to the acreage limitations may be made by the health officer for recorded plats existing prior to the effective date of these regulations; provided, that adeguate area with proper soils are present in which sewage can be retained and treated properly onsite. Factors that must be considered when determining minimum lot size include but are not limited to the following:

(1) Soil depth and type;

(2) Area and lot drainage;

(3) Protection of surface and ground water;

(4) Setbacks from property lines, water supplies, etc.;

(5) Source of premises domestic water;

(6) Topography, geology, and ground cover;

(7) Climatic conditions;

(8) Availability of public sewers;

(9) Present and anticipated activity of land use;

(10) Area growth patterns;

(11) Individual and accumulated gross effects on water quality;

(12) Reserve area for additional or replacement subsurface disposal field;

(13) Anticipated sewage volume. (Vol. 6, p. 697 § 11, 1979).

13.04.080 Location. (a) An OSDS shall be located on the same lot as the premises being served, or if an easement is obtained and recorded, on other property if approved by the health officer.

(b) The minimum distance for the location of the various component parts of the OSDS is measured horizontally and shall comply with Table 1.

(c) The area to be used for the subsurface disposal field shall be selected and maintained so that it is free from encroachment by buildings or other structures. The area shall not be subject to vehicular traffic, nor compaction by large animals, and shall not be covered with a waterimpervious surface.

(d) The area to be used for the OSDS shall have soil which is not excessively permeable nor impermeable to allow proper retention and treatment by the soil.

(e) The OSDS shall not be located in an area where surface water will accumulate nor an area subject to flooding. Provisions shall be made to minimize flow or accumulation of surface water over the OSDS.

(f) No part of an OSDS shall be installed in a state flood control zone, before a flood control zone permit is obtained from the State Department of Ecology.

13.04.090 Determination of soil characteristics. (a) Preliminary tests for subdivisions shall be made in accordance with department standards, including but not limited to the following: Test Messenred Horizontally

13.04.090

TABLE 1

Distances in Feel, Measured Horneontally								
Component	Domestic Water Supply	Water Supply Pressure Line	Surface Water	Building Property Line	Open Ditches, Cuts, Hillside: (downhi side)	Trees (1) 5, 11	Trees (2)	Subsurface Interceptor Drain
Building Sewer Septic Tank	50 50	10 10	10 50	5	±+ **	50 50	10 10	10 10
Disposal Area	100	10	100	10	15 plus height c cut of b to a ma of 100	100 of oank ximum feet	10	50 down- slope) 10 upslope)

(1) Elm, locust, cottonwood, willow, and other trees with spreading choking roots.

(2) Conifers and other trees with nonspreading and nonchoking roots.

(Vol. 6, p. 697 § 13, 1979).

(1) A sketch of the parcel of land to be subdivided with its location indicated;

(2) Dimensions of each lot with proposed lot and block numbers;

(3) Elevations shown by contour lines at intervals of five feet or less. If individual sewage disposal systems are contemplated;

(4) Approximate location of all natural features such as rock outcroppings, wooded areas, marshes, area subject to flooding and the location, width, name and direction of flow of all watercourses including those which are seasonal or periodic;

(5) Existing and proposed uses of the property, including the use of all existing structures which will remain on the property after platting, including buildings, ditches, buried conduits, etc.;

(6) At least one soil log be dug to a depth of seven feet on each five acres. Additional tests may be required where the soil structure varies, if large disposal areas are required or if groundwater or impermeable soils are within five feet of ground surface; (7) A description of the soil from subdivision (6) above.

(b) At least one soil log to a depth of seven feet shall be performed at the site of each disposal area. This requirement may be waived by the health officer if adequate soil information is available. Additional tests may be required where the soil structure varies or if large disposal areas are required.

(c) Percolation tests may be required by the health officer where soil logs yield unconfirming results.

(d) All percolation tests and soil logs shall be verified by the health officer.

(e) If a sufficient amount of information is not available on groundwater conditions, the health officer may require that percolation tests and soil logs be conducted during the months of suspected high groundwater conditions.

(f) All soil tests shall be conducted using a uniform procedure developed by the secretary and the health officer. (Vol. 6, p. 697 § 12, 1979).

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13.04.100 - 13.04.130

13.04.100 Designer program. (a) Each OSDS intended to serve a single-family residence, duplex, or where anticipated daily flows are less than one thousand two hundred gallons per day, shall be designed and certified by a designer possessing a valid permit issued by the health officer under Section 13.04.040, or by the health officer.

(b) Each OSDS intended to serve facilities where anticipated sewage flows are one thousand two hundred gallons per day or greater shall be designed by a sanitary, civil, or professional engineer, or by the health officer. (Vol. 6, p. 697 § 15, 1979).

13.04.110 Design and construction – Generally. (a) The detailed design and construction of each OSDS shall conform to the "Manual of Septic Tank Practice," U.S. Public Health Service Publication No. 526, 1967, or any succeeding edition, except where modified by, or in conflict with, these rules and regulations.

(b) The OSDS shall be designed to receive all sewage from the premises served. Footing or roof rains shall not be connected to the OSDS.

(c) Backwashes from water softeners and other such treatment devices shall not enter an OSDS where the disposal component is an evapotranspiration bed. Utilization of units such as water softeners where backwashes occur shall require additional sizing of the septic tank and disposal area.

(d) The OSDS shall service a single premises and shall not have additional residences or premises connected to it unless approved by the health officer.

(e) No connections instead of or in addition to that for which the system was originally designed to accommodate may be made to an OSDS without written approval of the health officer.

(f) Where any portion of the OSDS, except the subsurface disposal area, is subject to compaction due to vehicular traffic or large animals, the method and materials used in the construction of the OSDS must be capable of withstanding these conditions without impairing the function of the OSDS. (Vol. 6, p. 697 § 14(1) - (6), 1979).

13.04.120 Design and construction – Building sewer. (a) Pipe used for construction of a building sewer beyond the building plumbing shall be a minimum of three inches inside diameter and of cast iron, vitrified clay, concrete, or plastic which complies with the current U.S. Department of Commerce Commercial Standards for the particular pipe involved or of asbestos cement or plastic approved by the department.

(b) Construction of the building sewer line shall be such as to secure watertight joints and it shall have a slope of not less than two percent.

(c) No "T's" or ninety-degree ells shall be permitted in a building sewer line. All fortyfive-degree ells must have accessible cleanouts.

(d) Three to six-inch lines shall have cleanouts installed at intervals of not more than fifty feet. Larger than six-inch diameter lines shall have cleanouts installed at intervals of not more than one hundred feet. (Vol. 6, p. 697 § 14(7), 1979).

13.04.130 Design and construction – Septic tanks. (a) Before septic tanks may be sold for installation within the county, plans must be submitted to and approved by the health officer. Such plans shall show all dimensions, reinforcing materials, structural details, and other pertinent data as may be required. Approval may not be construed or used in any manner to imply endorsement by the health officer. Plans must also be submitted and approved for individual built-in-place septic tanks.

(b) No septic tanks shall be installed or constructed except those approved.

(c) All septic tanks shall have a minimum of two compartments; however, two single compartment tanks may be used in series.

(d) Liquid capacity:

(1) All septic tanks must be designed according to waste load and in no case shall have a total capacity of less than one thousand gallons except with written approval of the health officer;

(2) The first compariment or tank shall be one-half to two-thirds of the total septic tank capacity. (e) The outlet of the septic tank shall be so positioned as to be three inches below the level of the inlet.

(f) On each septic tank or septic tank compartment, the inlet baffle or inlet "T" shall extend approximately six inches below the bottom of the level of the septic tank outlet and above the bottom of the septic tank outlet to at least the crown of the inlet sewer.

(g) In each septic tank or septic tank compartment, the outlet baffle or outlet "T" shall extend below the bottom of the level of the septic tank outlet a distance approximately equal to twenty-eight to forty percent of the liquid depth below the bottom of the outlet. These baffles or "T's" shall extend at least six inches above the bottom of the outlet level to provide storage for floating materials.

(h) Septic tanks shall have at least one inch between the under side of the top of the tank and top of the inlet and outlet pipe or baffles to allow the required ventilation of the tank and disposal field through the premises building vent stacks.

(i) Sewage holding tanks shall not be used as a permanent method of sewage disposal. The health officer may allow holding tanks on an interim use basis to handle emergency situations or to correct existing problem systems. The health officer also may allow holding tanks for controlled, part-time use situations such as recreational vehicle parks and trailer dump stations; provided, that an approved on-site sewage disposal system management program as provided in Section 13.04.180 is in effect.

(j) Septic tank installation:

(1) No septic tank shall be covered with an impervious surface unless the manhole and inspection holes are extended up through the impervious surface and the manhole cover is equipped with a locking-type cover,

(2) No septic tank manhole shall be located more than eighteen inches below the finished grade. If it is necessary to place the septic tank more than eighteen inches below the finished grade, manholes shall be built up to within eighteen inches of the finished grade. (Vol. 6, p. 697 § 14(8), 1979).

13.04.140 Design and construction – Effluent distribution. (a) No OSDS shall be

constructed or installed which does not provide at the head of each disposal field a distribution device which allows effluent to be distributed equally to all disposal lines.

(b) No distribution device shall be installed which is not constructed of durable, watertight materials.

(c) No distribution device shall be constructed or installed which does not provide equal flow of effluent to all outlets. The distribution device shall be set on stable soil or otherwise supported to prevent misalignment.

(d) No pump, siphon, or other effluent lifting or dosing device shall be installed which is not approved. (Vol. 6, p. 697 § 14(9), 1979).

13.04.150 Design and construction – Subsurface disposal field. (a) All effluent from a septic tank shall be disposed of by means of a subsurface disposal system except when special approval has been granted by the health officer for an alternate system as described in Sections 13.04.210 and 13.04.230.

(b) The installation and use of cesspools is prohibited.

(c) Seepage pits shall not be used except under special conditions approved by the health officer.

(d) The subsurface disposal system shall not be installed in fill. This restriction may be waived when the health officer determines that the type of fill, the method of placement, and the stabilization period has or will allow full compliance with these rules and regulations.

(e) Installation of an OSDS shall not be permitted in areas where the ground slope exceeds thirty percent. Installation on slopes in excess of fifteen percent, but not greater than thirty percent, may be allowed provided that subsoil profiles indicate no restrictive layers of soil and an appropriate design is provided.

(f) No subsurface disposal field shall be installed in which all trenches are not of the same approximate length.

(g) The maximum length of any individual line shall not exceed one hundred feet unless written approval is granted by the health officer.

(h) Minimum width of the bottom of all disposal trenches shall be twenty-four inches. Disposal trench width in excess of thirty-six

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13.04.160 - 13.04.170

inches may not be used in computing absorption area.

(i) The sides and bottom of all disposal trenches shall be scored to eliminate smearing and compaction of the trench-soil interface.

(j) The bottom of the disposal trenches shall be constructed on a grade of not more than two inches fall per one hundred lineal feet.

(k) The grade of the disposal lines shall be zero to six inches per one hundred lineal feet.

(1) Filter material shall be uncrushed, washed gravel, three-eighths inch to two and one-half inches in diameter.

(m) The maximum depth of cover over the disposal lines, including the minimum of two inches of filter material required in subsection (o) of this section, shall be twenty-four inches except by special permission of the health officer.

(n) Minimum depth of cover over the filter material shall be six inches.

(o) Minimum depth of filter material over the disposal lines shall be two inches.

(p) Minimum depth of filter material below disposal lines shall be six inches.

(q) The maximum depth of the bottom of the trench shall be thirty-six inches below ground surface.

(r) The minimum distances between disposal lines shall be six feet.

(s) The minimum diameter of gravity flow disposal line pipe shall be four inches.

(t) No disposal field shall be installed unless adequate measures are taken to insure that proper grades on all disposal lines are maintained while backfilling.

(u) All trenches, after having filter material placed over the disposal lines and before backfilling, shall have placed over the filter material, a layer of newspaper, straw, untreated building paper, or other approved materials which will allow moisture transmission, but not soil particle migration.

(v) Where PVC, polyethylene, plastic pipe is used, the ends of the pipe must be capped.

(w) There shall be a minimum of two trenches in all systems except where serial distribution is used. (Vol. 6, p. 697 § 14(10), 1979).

13.04.160 Inspection. (a) Any work done on an OSDS and any material used may be inspected by the health officer at any reasonable time, and if he/she finds that any work done or material used, is not in accordance with these rules and regulations, he/she may revoke the permit or notify the owner or installer to make such changes as he/she shall specify. If such changes are not made within a reasonable time, the health officer shall revoke the permit and it shall be unlawful to use such OSDS.

(b) The following conditions must exist before a final inspection is made:

(1) Installation and/or construction of the septic tank must be complete;

(2) Installation of the building sewer, distribution device, and disposal area must be completed except for backfilling.

(c) The OSDS shall be left open and uncovered until approved by the health officer.

(d) The health officer shall be notified of the date and, as near as possible, the time the OSDS will be ready for final inspection. The person installing or repairing the OSDS shall be responsible for notifying the health officer. Notification shall be made at least one working day prior to the date that the OSDS is ready for final inspection.

(e) The health officer must approve any modifications to an OSDS design prior to the changes being made.

(f) The health officer shall make a final inspection of all OSDS repairs.

(g) The health officer shall ordinarily make a final inspection of any new OSDS prior to its final covering. At the time the health officer is notified that the OSDS will be ready for inspection, he/she shall indicate whether such system will be inspected.

(h) Upon completion and approval of the OSDS, the health officer shall notify the building department that the OSDS has been approved. (Vol. 6, p. 697 § 16, 1979).

13.04.170 Maintenance. Each OSDS shall be maintained in such a manner as to insure compliance with these rules and regulations. (Vol. 6, p. 697 § 17, 1979). 13.04.180 Management. (a) When subdivisions, mobile home parks, multiple housing units, or other commercial or residential developments are designed to have gross densities that exceed three and one-half residential units or twelve people per acre or waste flows of one thousand two hundred gallons per acre per day, an OSDS shall not be permitted unless the perpetual maintenance and management of the OSDS are under the responsibility of an approved management system as identified in subsections (b) and (c) of this section.

(b) A proposed OSDS to be located within the boundary of any operating public sewer utility shall be approved by the sewer utility prior to the issuance of a permit. If the proposed system serves a density greater than that identified in subsection (a) of this section, the maintenance of the OSDS shall be the responsibility of the sewer utility or dry sewers shall be provided as approved by the State Department of Ecology and the sewer utility having jurisdiction in accordance with an approved sewage drainage basin plan.

(c) An OSDS serving housing densities and/or flows exceeding that identified in subsection (a) of this section and not located within the boundaries of an operating public sewer utility shall have an approved perpetual maintenance and management system as established under the guidelines developed by the secretary, the State Department of Ecology, and the local entity responsible for public utilities. (Vol. 6, p. 697 § 8, 1979).

13.04.190 Prohibited discharges. (a) Effluent from any OSDS shall not be discharged to surface water, groundwater, or upon the surface of the ground.

(b) A subsurface OSDS shall not be permitted in areas where a minimum separation of three feet between the bottom of the disposal trench and the maximum seasonal groundwater elevation or impermeable soil or rock layer cannot be maintained. The health officer shall require such greater vertical separation as needed to protect the public health.

(c) A subsurface OSDS shall not be permitted in areas of fractured rock or excessively permeable material where it is likely that action

of the soil profile will be ineffective in retaining and removing substances having an adverse effect on groundwater quality. (Vol. 6, p. 697 § 6, 1979).

13.04.200 Disposal of septic tank waste. (a) It is unlawful for any person to engage in the business of pumping or cleaning any septic tank, cesspool, sump, holding tank, or any other receptacle or device for collection of sewage or waste without first having received a license from the health officer.

(b) Applicants for a license under this section shall file a written application signed by the applicant on forms supplied by the health officer.

(c) Upon receipt of such application, the health officer shall make such investigation as he/she deems advisable as to the applicant's business responsibility, knowledge of public health laws, knowledge of the function of an OSDS, cesspools, other sewage collection systems, or the adequacy of the applicant's equipment. If any of these areas are found to be inadequate, the application shall be denied. If found to be satisfactory, a license shall be issued upon payment of a fee as established by the CEHFS.

(d) Every person issued a license under this section shall make a report once each month to the health officer on all services performed the preceding month. Such reports shall contain all information requested by and on forms supplied by the health officer.

(c) It is unlawful to dump or dispose of the contents removed from septic tanks, cesspools, sumps, holding tanks, or other sewage collection receptacles or devices except at locations approved by the health officer. (Vol. 6, p. 697 § 18, 1979).

13.04.210 Alternate devices and methods. Approval authority for the application, installation, or use of any alternate device or method is vested with the health officer; provided, that the device or method has first been given a technical evaluation and report by the secretary. (Vol. 6, p. 697 § 5, 1979).

13.04.220 - 13.04.270

13.04.220 Larger systems. Until such time as guidelines governing the review, approval procedure, and authority for larger systems are developed between the secretary, local health department, the department of ecology, and municipal sewer utilities, the following shall apply:

All cases where the maximum design flow of any OSDS is greater than three thousand five hundred gallons per day, prior to construction of the system, the construction plans shall be submitted to the secretary for approval of engineering and to assure the system will not create a health hazard. The health officer shall not issue a permit for a larger system until it has been approved by the secretary. (Vol. 6, p. 697 § 9, 1979).

13.04.230 Other types of disposal units. Units other than septic tanks or devices that can function as septic tanks with subsurface disposal systems, including but not limited to chemical toilets, composting toilets, vault privies, incinerator toilets, mechanical and aerobic treatment devices, and evapotranspiration systems, may be used but only with the prior approval of the health officer in accordance with the procedure established in Section 13.04.210. (Vol. 6, p. 697 § 4, 1979).

13.04.240 Sanitary privy. (a) Sanitary privies may be used in areas where no suitable domestic water supply is available subject to the following criteria:

(1) In areas of high precipitation (greater than twenty-five inches annual average) and/or shallow, poor percolating soils, the waste receptacle must be sealed from exfiltration and infiltration;

(2) In areas where good percolating soil exists and the seasonal high water table is deeper than four feet below the proposed bottom of the waste receptacle and less than an average annual precipitation of twenty-five inches occurs and lots or tracts are greater than five acres, the waste receptacle may be unsealed provided the distances found in Section 13.04.080, Table 1, are met;

(3) In areas subject to flooding, high groundwater (closer than four feet to ground

surface), or less than four feet of suitable soil exists, privies are not permitted.

(b) All sanitary privies shall be constructed and maintained to have the waste receptacle contents inaccessible to rodents, vermin and vectors.

(c) No privy may be constructed and/or located on any property without having first obtained a written permit from the health officer prior to such construction and/or location.

(d) Chemical toilets may be used around construction sites as a temporary means of sewage disposal. Chemical toilets may also be used in all situations where sanitary privies may be used in subsection (a) above. (Vol. 6, p. 697 § 19, 1979).

13.04.250 Health hazard described. An OSDS shall be considered a health hazard if it does not meet the standards of construction or location as provided in this chapter. The health officer shall have the authority to prohibit their use pending completion of necessary alterations to reasonably assure proper and safe operation. It is a violation of these rules and regulations for any person to continue to use or to permit any person to use any OSDS after having been directed by the health officer to suspend said use. It shall be considered prima facie evidence that an OSDS is being used upon showing that the premises served by such OSDS is occupied as a residence or business. (Vol. 6, p. 697 § 20, 1979).

13.04.260 Administration. The health officer shall administer these regulations under the authority and requirements of RCW Chapters 70.05, 43.20, and WAC 248-96-015. (Vol. 6, p. 697 § 1, 1979).

13.04.270 Waiver. Whenever a strict interpretation of these rules and regulations would result in extreme hardship, the health officer may waive such rule, regulation, or portion thereof; provided, that the waiver is consistent with the intent of these rules and regulations and that no public health hazard or nuisance will result and as long as the waiver is consistent with other state and local rules, regulations, laws, or ordinances. (Vol. 6, p. 697 § 23, 1979).

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13.04.280 - 13.08.010

13.04.280 Hearings. (a) Any person may request and shall be granted a hearing before the health officer who seeks a waiver of these rules and regulations as provided in Section 13.04.270.

(b) Any person may request and shall be granted a hearing before the health officer whose application for a permit or license under these rules and regulations has been denied.

(c) The health officer may require a hearing to suspend or revoke any permit or license under these rules and regulations. If, as a finding of the hearing, he/she finds incompetency, negligence, misrepresentation, or failure to comply with these rules and regulations, said permit or license may be revoked or suspended.

(d) A hearing shall not be scheduled less than ten days nor more than thirty days from the date:

(1) The health officer has notified the interested party that a hearing will be held as provided in this section; or

(2) The interested party has notified the health officer in writing of his/her request for a hearing as provided in this section.

(e) At least seven calendar days before the date of the hearing, the health officer shall notify the interested party of the scheduled date, time, and place of said scheduled hearing.

(f) At the hearing, the interested party shall be afforded an opportunity to present evidence and to discuss the issues fully. (Vol. 6, p. 697 § 24, 1979).

13.04.290 Appeal. (a) Any aggrieved person desiring that the board of health review a decision by the health officer must provide the health officer with a written notice of appeal within seven calendar days of the date said decision was rendered.

(b) An appeal shall be heard by the county board of health at a regularly scheduled meeting which convenes at least ten days after the notice of appeal is received by the health officer.

(c) At least seven days before the appeal is heard, the health officer shall notify the appealing party of the scheduled date, time, and place the appeal is to be heard. (Vol. 6, p. 697 § 25, 1979). 13.04.300 Health emergency. Nothing in these rules and regulations shall be construed to circumscribe the authority and power of the health officer to act in an emergency situation to control and prevent any health hazard which immediately threatens the public health of the inhabitants of the county and its municipalities which power and authority is governed by state law. (Vol. 6, p. 697 § 27, 1979).

13.04.310 Violation – Penalty. Any person violating or failing to comply with these rules and regulations shall be guilty of a misdemeanor and upon conviction thereof shall be fined in a sum of not less than fifty dollars nor more than three hundred dollars, and/or imprisonment in the county jail for not more than ninety days. Each day such violation occurs or is permitted to continue shall constitute a separate offense. (Vol. 6, p. 697 § 26, 1979).

Chapter 13.08

PRIVATE SEWAGE DISPOSAL SYSTEMS IN PLATS

Sections:

13.08.010	Plats – Filing fees	•
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13.08.020	Preliminary plat map and
	preliminary application
	submission.

- 13.08.030 Preliminary plat map Data required.
- 13.08.040 Soil logs Number and depth.
- 13.08.050 Use with community water supply Lot area.
- 13.08.060 Lots below minimum area Public system required.
- 13.08.070 Wells and septic tanks on same lot Lot size.
- 13.08.080 Low mean ground water level unacceptable.
- 13.08.090 Recording plat Conditions precedent.

13.08.010 Plats – Filing fees. Plats submitted to the health department with homes to be connected to septic tanks and drain fields require a filing fee of one dollar per lot. For plats with homes to be connected to sewers with one

Kittitas County Code

Chapter 14.04

BUILDING CODE

Sections:

- 14.04.010 Adopted.
- 14.04.030 Building relocation Applicant.
- 14.04.040 Mobile, manufactured, designated manufactured and modular homes.
- 14.04.050 Dry cabins.

14.04.060 Fees.

14.04.070 Permits.

14.04.010 Adopted.

The state of Washington has mandated that all jurisdictions within the state shall have in effect the following codes, as shown in this chapter, in accordance with WAC 15-16-010 and Chapter 19.27 RCW, and the following authorities are hereby adopted by reference as part of the Kittitas County Code:

(1) The 1997 Edition of the Uniform Building Code Volumes 1, 2, 3, and appendices with the following exceptions:

(a) Table 1-A, Fee Schedule (county fee schedule to be adopted by resolution);

(b) Section 106.2(1) Exempt from permit is amended to read as follows:

[1] One story detached accessory buildings used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 120 feet and is not closer than 6 feet to any other structure or located in a floodway.

(c) Appendix Chapter 10 (Building Security) [deleted];

(d) Appendix Chapter 13 (Energy Conservation) [deleted];

(e) Appendix Chapter 16 (Structural Forces) [deleted];

(f) Appendix Chapter 23 (Light-Frame vol. 1) [deleted];

(g) Appendix Chapter 33 (Excavation and Grading) [deleted]; and

(2) The 1997 Edition of the Uniform Mechanical Code published by the International Conference of Building Officials and the International Association of Plumbing and Mechanical Officials with exception of Section 1028 (Maintenance Inspection); and

(3) The 1997 Edition of the Uniform Fire Code Volumes 1, 2, including Appendices I-A, I-C, II-A, II-B, II-F, II-G, III-A, III-B, III-C, V-A, VI-A, VI-D, V-E, published by the International Conference of Building Officials and the Western Fire Chiefs Association. Section 2806 "Storage of Agricultural Products" shall be amended in its entirety to read as follows:

Agricultural products shall not be stored adjacent to buildings or combustible material unless a cleared horizontal distance of 50 feet is maintained between such storage and combustible material. Further, storage shall be limited to 5000 tons each. Any deviations from the 50 foot setback must be approved by the Building Official.

Wherever the word "jurisdiction" is used in the UFC, it refers to the Kittitas County department of building and fire safety and when reference is made to "chief," this shall be the fire marshal or an individual appointed by the director of the Kittitas County department of building and fire safety; and

(4) The 1997 Edition of the Uniform Plumbing Code, excluding Chapters 11, 12, and to include appendices of the UPC published by the International Association of Plumbing and Mechanical Officials; and

(5) The 1994 Edition of the Uniform Code for the Abatement of Dangerous Buildings; and

(6) The Washington state codes and their amendments for historic buildings, Chapter 51-19 WAC; and

(7) The 1997 Editions of the Washington State Energy Code, Chapter 51-11 WAC; Venting and Air Quality, Chapter 51-13 WAC; Uniform Building Code and Uniform Building Code Standards, Chapter 51-40 WAC; Washington State Uniform Mechanical Code, Chapter 51-42 WAC; Washington State Uniform Fire Code and Uniform Fire Code Standards, Chapters 51-44 and 51-45 WAC; Washington

14.04.030

State Uniform Plumbing Code and Uniform Plumbing Code Standards, Chapters 51-46 and 51-47 WAC, and to include all their amendments. (Ord. 98-23, 1998; Ord. 95-7, 1995; Ord. 93-4, 1993; Ord. 92-29, 1992; Res. 84-29, 1984).

14.04.030 Building relocation - Applicant.

(1) Applicant must furnish to Kittitas County a bond, cashier's check or certified check in a sum equal to \$2.00 per square foot of usable space regardless of the classification of the structure. This amount shall not be less than \$500.00 per structure. The applicant must also submit an application for placement of this structure following and adhering to the typical permit process and code requirements. Bond notes or checks will be held by Kittitas County until the following conditions are met:

(a) Appropriate inspections have been approved by the building department for setback requirements, foundation, structural, mechanical, plumbing, life safety, energy, ventilation and fire codes. Section 3404 of the adopted UBC states: "Buildings or structures moved into or within the jurisdiction shall comply with the provisions of this code".

(b) Electrical approval shall be made by the Washington State Department of Labor and Industries.

(c) Approval must be made by the public works department prior to the issuance of a certificate of occupancy or use of the structure.

(d) Approval from the environmental health department is required prior to the issuance of a certificate of occupancy or use of the structure.

(2) Structure must be completed as described in subsection (1) of this section within 180 days of move. If not completed, then the building official shall revoke the refund of the bond. This bond may then be utilized for the removal of said structure and any costs in excess of this deposit shall be charged to the owner of record. The applicant may petition for an additional 180 days but will not be granted without approval of the building official. If approved, any extension may occur only once. (3) The bond shall be held for 10 days from date of compliance pursuant to KCC 5.16.070.

(4) Refer to Chapter 5.16 KCC for definitions including other requirements for home and building relocation. (Ord. 98-23, 1998).

14.04.040 Mobile, manufactured, designated manufactured and modular homes.

(1) Mobile, manufactured, designated manufactured and modular homes shall comply with all plumbing, electrical, heating, and structural requirements imposed by the State of Washington Department of Labor and RCW compliance. with Industries in 43.22.340. All such homes shall bear the appropriate state inspection insignia as specified in RCW 43.22.350. A mobile home is a dwelling which was assembled prior to June 15, 1976, and must have a fire/life safety inspection approved by Labor and Industries prior to placement. Modular homes are "gold manufactured homes and are insignia" inspected to Uniform Building Code standards. Setbacks will be approved by the jurisdiction having authority.

(2) These state-inspected dwellings shall be placed on a foundation system that meets the requirements per the manufacturer's installation instructions; or if the manufacturer is not specific, then to the standards in Chapter 296-150M WAC. When inspections, including pads or runners (foundation), anchorage, ground cover, landings, environmental hookups and skirting with required vents have been made by KCBD, a certificate of occupancy may be issued. Special provisions will be considered for units located within a floodplain and must meet FEMA guidelines.

(3) Modular homes must be appropriately placed on a full permanent foundation in accordance with manufacturer's instructions or KCBD requirements. Mobile and manufactured homes may be placed on stands or blocked in accordance with the manufacturer's installation instructions and skirted with materials that are approved for below grade applications. Special manufacturer instructions for perimeter support may be necessary for heavier snowloads. Modular homes will be

Kittitas County Code

considered a single-family home. A designated manufactured home designed to bear on full perimeter concrete or masonry foundation walls and so installed shall be considered a single-family home. (Refer to definitions in Chapter 17.08 KCC). Any of these dwellings placed on a basement foundation may require engineering if so determined by the building official. All structural changes to any preassembled or manufactured dwellings require a permit from the Washington State Department of Labor and Industries. This would include deviations from factory installed heating systems.

(4) All manufactured, mobile or modular homes shall meet area specific snow loadings. Snow loading shall be determined in the same method utilized for stick framed homes by KCBD. Homes located in mobile home parks have the following options available:

(a) Place a unit that meets snow load requirements.

(b) The homeowner or mobile home park owner shall provide for a snow removal maintenance program for the unit. Such maintenance program shall reasonably ensure that such unit shall be safe and habitable under all snow load conditions. Such program shall be contained within an agreement approved by Kittitas County and shall hold Kittitas County harmless from any claims or damages caused by snow load failure of such unit. Such agreement shall be filed with the Kittitas County auditor.

(c) Construct a shelter or ramada that meets the snowload determination. This structure would require a permit from KCBD and shall be completed within 90 days of the issuance of a manufactured home placement permit.

For homes located outside of mobile home parks option (a) or (c) would only apply as option (b) is not feasible.

(5) Fees for placement shall be determined by adopted resolution. (Ord. 98-23, 1998; Ord. 80-2 § 3, 1980; Ord. 71-3 § 2, 1971).

14.04.050 Dry cabins.

(1) Dry cabins may be utilized as recreational dwelling units and may be located only in those remote areas where electrical power is not available. They may be utilized for no more than 90 days per year. The building official shall make the final determination regarding locations that qualify. These cabins shall have the following requirements and/or restrictions:

(a) A permit shall be required including critical areas approval before construction proceeds. Structural aspects will be enforced as with any other permitted building. Fire and life safety issues such as roof covering, solid fuel or gas appliance location and installation and smoke detectors shall apply as with any other habitable structure.

(b) The usable floor space shall be no less than 121 square feet and no more than 320 square feet. If the cabin has a loft area that could be utilized for sleeping purposes it must have an egress window as defined in the UBC. If heated with propane or oil, minimum insulation requirements will be imposed.

(c) Dry cabins shall be provided with either a privy or composting toilet for which a permit will also be required.

(2) Only under special circumstances and by decision of the department of building and fire safety, in its entirety, shall decisions conflicting with this policy be made.

(3) Fees shall be determined by adopted resolution.

(4) Dry cabins may be constructed of alternative materials as approved by the building official and would not exclude yurts or other canvas dwellings. Factory assembled structures are not included in this category. (Ord. 98-23, 1998).

14.04.060 Fees.

(1) Fees shall be set by resolution not inconsistent with the uniform codes as adopted in KCC 14.04.010. Where no resolution has been adopted, Table 1-A of the currently adopted Uniform Building Code including Table 1-1 of the Uniform Plumbing Code and Table 1-A of the Uniform Mechanical Code shall govern the fees. The building valuation

14.04.070

data utilized will be those values established in each April issue of Building Standards, including modifiers. The exception to the use of this valuation table will be [7, Dwellings]. Dwellings and other outbuilding values will be established by the building official and approved by the board after appropriate public hearings and considerations are made.

(2) A copy of the fee schedule shall be available to the public at the Kittitas County department of building and fire safety. This fee schedule shall be revisited at no less than three-year intervals.

(3) All fee schedules shall become effective on the date of adoption of resolution setting fees, unless otherwise provided in such resolution. (Ord. 98-23, 1998; Ord. 94-14, 1994; Res. 81-5, 1981; Res. 71-15, 1971; Res. 71-6, 1971; Ord. 71-3 § 5, 1971).

14.04.070 Permits.

Except as specified in KCC 14.04.010, no building or structure shall be erected, placed, constructed, enlarged, altered, repaired, moved, improved, removed, converted or demolished unless a separate permit for each building or structure has first been obtained from the Kittitas County department of building and fire safety. (Ord. 98-23, 1998; Ord. 94-14, 1994; Ord. 80-2 § 5, 1980; Ord. 71-3 § 6, 1971).

Chapter 14.08

FLOOD DAMAGE PREVENTION*

Sections:

Article I. Purpose and Definitions

14.08.010 Purpose.

- 14.08.015 Methods of reducing flood losses.
- 14.08.020 Definitions.

Article II. General Provisions

- 14.08.030 Lands to which this chapter applies.
- 14.08.040 Basis for establishing the areas of special flood hazard.
- 14.08.050 Compliance.
- 14.08.060 Abrogation and greater restrictions.
- 14.08.070 Interpretation.
- 14.08.080 Warning and disclaimer of liability.

Article III. Administration

- 14.08.090 Development permit required.
- 14.08.100 Designation of the administrator.
- 14.08.110 Application for development permit.
- 14.08.120 Use of other base flood data.
- 14.08.130 Information to be obtained and maintained.
- 14,08,140 Alteration of watercourses.
- 14.08.150 Interpretation of FIRM boundaries.

Article IV. Variance Procedure

- 14.08.160 Appeal board.
- 14.08.170 Conditions for variances.

Article V. Provisions for Flood Hazard Reduction

- 14.08.180 General standards.
- 14.08.190 Anchoring.
- 14.08.195 AH Zone drainage.
- 14.08.200 Construction materials and methods.

KITTITAS COUNTY COMPREHENSIVE PLAN



December 2003

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Notice to Reader

On July 26, 1996, the Board of County Commissioners adopted the Kittitas county comprehensive Plan. During the adoption proceedings, the Board of County Commissioners separated the Comprehensive Plan into two volumes.

• Volume I contains the adopted Kittitas County Comprehensive plan, including the mandatory elements provided in RCW 36.70A, the Growth Management Act.

In December 2001, the Comprehensive Plan was reformatted and the maps and tables have been re-located to Appendix B of Volume I, available at the Kittitas Co. Planning Department. The maps and tables are maintained by the Kittitas County Planning Department. The Capital Facilities and Transportation Plans will be maintained by the Auditor's and Public Works Departments,

• Volume II contains the Kittitas County Subareas Plans drafted in conjunction with the Kittitas County Comprehensive Plan, pursuant to RCW 36.70A, the Growth Management Act. In addition, this document includes the enabling ordinances for the Kittitas County Comprehensive Plan and reference materials. Volume II is for reference only and is not part of the adopted Kittitas County Comprehensive Plan.

EXECUTIVE STATEMENT

The comprehensive plan affects all unincorporated lands of Kittitas County or approximately 1,487,791 acres. The comprehensive plan is intended to conserve lands designated by protecting them from conflicting land uses, providing sufficient services and ensuring adequate facilities with goals, objectives and policies. This comprehensive plan would remain in effect until additional policies and regulations are developed and implemented. This plan will be updated on a yearly basis.

This document is the official amended Comprehensive Plan for Kittitas County. The Plan is not an ordinance, it contains no regulations or minimum standards. It is a declaration of policies related to future growth and development in the County:

The Plan contains:

• A Land Use Element which establishes official policy with regard to appropriate uses of land in the County and ensures that the County can accommodate the population growth projected to occur over the next 20 years;

• A Housing Element that addresses the need for affordable housing;

• A Utilities Element that describes planned utility expansions;

• A Transportation Element which will be used as a guide in future street and road construction programs to produce a safe and efficient arterial system. The Kittitas County Transportation Plan is maintained by the Kittitas County Department of Public Works.

• A Rural Element that ensures the protection of rural lands and provides for a variety of rural densities.

• A Capital Facilities Element which is maintained by the Kittitas County Auditor's Office.

The Comprehensive Plan is based on a framework of community goals and objectives adopted by the County as a formal expression of public policy. There is no assurance, however, that orderly development, or any of the other goals will be accomplished simply by the formal adoption of the Plan. The value of the Plan lies in the determination and commitment of the County in the future to implement the Plan through the adoption of ordinances and codes designed to achieve the stated objectives.

VISION STATEMENT

Kittitas County has a rich cultured mix that is a result of agriculture, education and resourcebased industries such as timber and mining. Many families in the lower Kittitas Valley carry on long family traditions in farming and cattle production, while the Upper County is changing from the once powerful mining and timber industries to recreational-based and service enterprises. Central Washington University provides direct and indirect employment for a large portion of the population. The Ellensburg area and student population and educational services are expected to grow substantially over the next few years. More and more residents are moving to Kittitas County to enjoy the quality of life here while having to commute out of county for work due to lack of employment in the area.

The Kittitas County Comprehensive Plan is an attempt to address issues and formulate guiding policies for future growth and development in Kittitas County. This plan is adopted by the county in compliance with the Washington State Growth Management Act, RCW 36.70A and under authority of the Planning Commission Act, RCW 35.63.

This comprehensive plan is based on a framework of community goals and objectives adopted by the county with the help of the various subarea groups and other citizens as a final expression of public policy

CHAPTER ONE: AMENDMENTS TO COUNTY PLAN, CODES AND STANDARDS

The Kittitas County Comprehensive Plan, elements thereof, and development regulations shall be subject to continuing evaluation and review by Kittitas County. Any change to development regulations shall be consistent with and implement the comprehensive plan as adopted pursuant to RCW 36.70A.

Kittitas County shall broadly disseminate to the public the following program for public participation in amendments to the county comprehensive plan and development regulations:

A. If, during project permit review, Kittitas County identifies deficiencies in county plans or regulations, the project permit review shall continue, and the identified deficiencies shall be docketed for possible future amendments. For purposes of this section, a deficiency in a comprehensive plan or development regulations refers to the absence of required or potentially desirable contents of a comprehensive plan or development regulations. It does not refer to whether a development regulation addresses a project's probable specific adverse impacts which the permitting agency could mitigate in the normal project review process.

B. Any interested person, including applicants, citizens, county commission and board members, and staff of other agencies may suggest plan or development regulation amendments. The suggested amendments shall be docketed with the Planning Department and considered by Kittitas County Planning Commission and Board of County Commissioners on at least an annual basis, consistent with the provision of RCW 36.70A.130 and the regulatory reform act ESHB 1724.

C. Proposed amendment or revisions of the comprehensive plan are considered by the Board of County Commissioners no more frequently than once a year except that amendments may be considered more frequently under the following circumstances:

- 1. The initial adoption of a subarea plan; and
- 2. The adoption or amendment of a Shoreline Master Program under the procedures set forth in RCW 90.58.

D. All proposals shall be considered by Kittitas County concurrently so that the cumulative effect of the various proposals can be ascertained. However, after appropriate public participation Kittitas County may adopt amendments or revisions to its comprehensive plan whenever an emergency exists or to resolve an appeal of a comprehensive plan filed with a growth management hearings board or with the court.

E. For purposes of this section, docketing refers to compiling and maintaining a list of suggested changes to the comprehensive plan or development regulations in the Planning Department in a manner that will ensure such suggested changes will be considered by Kittitas County and will be readily available for review by the public. Docketing for the calendar year shall be taken from January 1 to June 30 of each calendar year. Amendments docketed after June 30 shall be considered in the following calendar year.

F. Amendments to the comprehensive plan or development regulations docketed by June 30 shall be approved or denied by the Board of County Commissioners on or before December 31 of that same calendar year.

G. In order to facilitate public participation, Kittitas County shall maintain and provide for the following procedures when considering amendments to the comprehensive plan and development regulations:

- 1. **Broad dissemination of proposals and alternatives.** The docket shall be available for public review in the Planning Department during regular business hours. Alternatives to a proposal may be submitted by any party prior to the closing of the written testimony portion of the public hearing before the Planning Commission.
- 2. **Opportunity for written comments.** Written testimony shall be allowed from the date of docketing up to the date of closing of the written testimony portion of the public hearing.
- 3. **Public Meetings.** Study sessions and hearings shall be held only after effective notice has been distributed.
- 4. **Provisions for open discussion.** Hearings shall allow for sufficient time allotments in order that all parties that wish to give oral or written testimony may do so.
- 5. Communication programs and information services. A newsletter that summarizes amendments docketed and projected meeting and hearing dates should be provided by the Planning Department for distribution to all parties that have requested to receive it by mail. Copies of proposed amendments shall be available at cost of reproduction.
- 6. **Consideration of and response to public comments.** Planning Commission and the Board of County Commissioners members should review the testimony submitted in their findings.
- 7. Notice of decision. Publication in the paper of record of a notice that Kittitas County has adopted the comprehensive plan or development regulations or amendments thereto, and such publication shall state all petitions in relation to whether or not such actions are in compliance with the goals and requirements of this chapter, RCW 90.58 or RCW 43.21C and must be filed within 60 days after the publication date.

H. The County-Wide Planning Policies allocate 55% of the projected population to the unincorporated County. The Board of County Commissioners believe that the unincorporated county is not adequately represented in the Kittitas County Conference of Governments and therefore, any amendments to the Kittitas County Comprehensive Plan or Development Regulations, originating from the Kittitas County Conference of Governments, shall be reviewed by the Kittitas County Planning Commission for recommendation before consideration by the County Commissioners for adoption.
CHAPTER TWO: LAND USE

2.1 EXISTING CONDITIONS

2.1(A) Current Land Use

General Description

Kittitas County is located at the geographic center of Washington State, midway between the heavily populated Puget Sound region and the eastern farming areas centered around Moses Lake. More than half of the county is covered by coniferous forests, while approximately thirty percent (30%) is in pasture or unimproved grazing land. Less than two percent (2%) of the county is in urban development.

The county covers 2,315 square miles of highly varied terrain and climates. Beginning in the high Cascades the land slopes generally to the east and south to the Columbia River

2.1(B) Analysis Of Existing Land Use Patterns

Land use in Kittitas County ranges from residential uses to resource based activities. In the Snoqualmie Pass area, resource allocation, in the form of timber harvesting, is the predominate land use with sporadic areas used for recreational purposes. Resource allocation is still predominant in the mid-elevations, however, residential development becomes more persistent in these areas. In the lower elevations agricultural activities are the main land use, with residential development intermixed in the area. In addition, the Yakima Training Center, located in the southeastern portion of the county, makes up a large percentage of the ownership in the lower Kittitas Valley, approximately acres.

Existing Density

The Comprehensive Plan relies on the underlying zoning for assigning density. Under current zoning, densities range from one unit per 6,000 square feet to one unit per 80 acres. Specifically, the Suburban zone allows a density of one unit per acre, while the Rural-3, Agricultural-3, Agricultural-20, and Forest and Range Zones allow for a density range of one unit per 6,000 square feet to 20 acres. The lowest density in the county is in the Commercial Forest Zone where the assigned density is one unit per 80 acres.

Existing Zoning

The following breakdown is based on the Kittitas County Planning Department Geographic Information System (GIS) and demonstrates the existing zoning in Kittitas County by acreage. The inventory data is based on the following zoning classifications:

Zone	Acres
Agricultural-3	17,574
Residential-2	44
Rural-3	22,450
Suburban	3,314
Suburban-II	296
Commercial Forest-80	672,407
Forest and Range-20	292,235
Commercial Agriculture	357,728
Agriculture-20	112,343
Liberty Historic District	17
Limited Commercial	22
Highway Commercial	35
General Commercial	144
Light Industrial	148
General Industrial	912
Planned Unit Development	861
Residential	32
Master Planned Resort	5,914
Total	1,486,476 Acres

The Land use designations are shown on maps contained in GIS data and maintained by the Kittitas County Planning Department.

2.2 GENERAL GOALS AND POLICIES

The foundation of the Comprehensive Plan consists of the major goals and policies established by the County during the planning process. It is upon these goals and policies that virtually the entire plan is based.

The planning process is an on-going, open-ended process consisting of establishing, applying, monitoring and evaluating goals and policies. Different goals may at times conflict requiring the county to weigh one against the other...a part of the on-going process of goal evaluation.

Citizen participation has been a vital part of the planning process of formulating goals and objectives. The following general goals have been drawn from that process.

2.2(A) General Planning Goals, Objectives and Policies

GPO 2.1 The maintenance and enhancement of Kittitas County's natural resource industry base including but not limited to productive timber, agriculture, mineral and energy resources.

GPO 2.2 Diversified economic development providing broader employment opportunities.

GPO 2.3 The encouragement of urban growth and development to those areas where land capability, public roads and services can support such growth.

GPO 2.4 Encourage zoning and development regulations in the UGAs and UGNs that ensure the cost of new housing in these areas will not be substantially higher than equivalent housing outside these areas.

GPO 2.5 Kittitas County should encourage residential and economic growth that will minimize the costs of providing public utilities and services.

GPO 2.6 Kittitas County will maintain a flexible balance of land uses.

GPO 2.7 Kittitas County will cooperate with the private sector and local communities in actively improving conditions for economic growth and development.

GPO 2.8 The Kittitas County Conference of Governments reviews population forecast numbers from the Office of Financial Management (OFM). Any revision to the County-Wide Planning Policies based on new forecasts from OFM, would be generated through the KCCOG.

GPO 2.9 When adopting development regulations, Kittitas County shall notify property owners that zoning and land use may change, and it would be appropriate for land owners to submit requests for amendments to their individual property.

GPO 2.10 Kittitas County recognizes the importance of Natural Area Preserves and Natural Resource Conservation Areas administered by the Washington State Department of Natural Resources under RCW 79.70 and 79.71. The County will seek to be included in the identification and development of management plans for these sites located within the County.

GPO 2.11 Kittitas County does not have any plans to adopt provisions for impact fees at this time and as such, any reference to impact fees in this comprehensive plan not be included.

GPO 2.11A Much of Kittitas County receives little natural precipitation and is highly susceptible to fire hazard during much of the year. Meanwhile, more people are moving to previously uninhabited forest and rural areas. As this number increases, the need to provide adequate and efficient fire services to these areas also increases.

2.2(B) Private Property and Water Rights

Property Rights

Kittitas County recognizes private property rights and as such includes reference to Ordinance No. 96-09, an ordinance enabling a private property taking impact analysis within Kittitas County. In addition, Kittitas County recognizes the importance of agriculture and has addressed appropriate protection mechanizes through those policies contained in Kittitas County Code Section 17.74, <u>Right To Farm For The Protection Of Agricultural Activities</u>.

GPO 2.12 Kittitas County will administer this Chapter in accordance with the United States and State of Washington constitutional provisions for the protection of private property rights

and provision of due process. As set forth in WAC 365-195-720 [Procedural Criteria], the county in administering this ordinance, "should refer to all sources at all levels of government, including federal and state constitutions, federal and state statutes, and judicial interpretations thereof."

GPO 2.13 Should any provisions of this ordinance be in violation of constitutional requirements or of recent court decisions, the Planning Director will advise the Board of the provisions in violation, and whether the violation is a requirement of the State of Washington or a regulation or policy of the county. If the violation is a requirement of the state, the Washington State Attorney General's Office will be advised. If the violation is a county requirement, the Board of County Commissioners will schedule a public meeting to consider removing or amending such section or policy.

GPO 2.14 Kittitas County will place a high priority in the Kittitas County Comprehensive Plan the following state goal:

RCW 36.70A.020(6) Property Rights. Private property shall not be taken for public use without just compensation having been made. The property rights of landowners shall be protected from arbitrary and discriminatory actions.

Water Rights

Water rights are property rights held by individual citizens, irrigation entities, municipalities, public and private utilities and governments. Water rights are recognized by state law RCW 90.03.010 Surface Waters and RCW 90.44.035 Ground Waters. Surface waters within Kittitas County are being adjudicated in Yakima Superior Court in the action commonly known as Acquavella.

Kittitas County affirms existing water rights and uses and shall have no power of eminent domain or authority to impair by any county action, ordinance, or policy, including that of the Tri-County Water Resources Agency, (a) any lawful water right or use; (b) the capability of water suppliers or users to store, divert, convey, deliver, and apply the water to beneficial use in the exercise of those rights; (c) the continuation of existing land uses dependent on, or benefited by, those water rights and uses.

In defining water rights for purposes of these agricultural land uses, no water rights under State law, including the Acquavella litigation, are available for fish or wildlife habitat without voluntary agreement of the water and/or land owner affected. Water rights and waters covered by the stipulation entered in the Acquavella adjudication as to all parties in Kittitas County dealing with water rights as confirmed for Non-Diversionary Stock and Wildlife watering are incorporated by reference and set forth as follows for clarity:

GPO 2.15 Waters in natural watercourses in the sub- basin shall be retained when naturally available, in an amount not to exceed 0.25 cubic foot per second (cfs), for stock water uses in such watercourses as they flow across or are adjacent to lands, which are now used as pasture or range for livestock. Retention of such water shall be deemed senior (or first) in priority,

regardless of other rights confirmed in this cause. Regulation of these watercourses by the plaintiff shall be consistent with such retention requirements.

GPO 2.16 Water in natural watercourses in the sub- basin shall be retained when naturally available, in an amount not to exceed 0.25 cubic foot per second (cfs), for wildlife watering uses in such watercourses as they flow across or are adjacent to lands, which are now used as pasture or range for wildlife. Retention of such water shall be deemed senior (or first) in priority.

GPO 2.17 Waters in naturally occurring ponds and springs (with no surface connection to a stream) in the sub-basin shall be retained for stock water uses, when such ponds and springs are located on or adjacent to lands which are now used as pasture or range for livestock. Said uses embody entitlement to a level in the water bodies sufficient to provide water for animals drinking directly therefrom while ranging on riparian lands, and with the same priority as provided in paragraph 1. Regulation of the ponds and springs by the plaintiff shall be consistent with such retention requirements.

GPO 2.18 Waters in naturally occurring ponds and springs (with no surface connection to a stream) in the sub-basin shall be retained for wildlife watering uses, when such ponds and springs are located on or adjacent to lands which are now used as pasture or range for wildlife. Said uses embody entitlement to a level in the water bodies sufficient to provide water for wildlife drinking directly therefrom while ranging on riparian lands, and with the same priority as provided in paragraph 1. Regulation of the ponds and springs by the plaintiff shall be consistent with such retention requirements.

GPO 2.19 Nothing in this stipulation mandates that any lands, associated with water rights or water retention as provided herein shall be reserved for wildlife purposes.

2.2(C) Historical Lands

Historical lands include all those lands which have been designated as such on Federal, State or local historical registers as well as those sites which have a local cultural or historical significance.

Liberty Historic District

The following section from the Swauk-Teanaway Subarea Comprehensive Plan has been adopted regarding the Liberty Historic District:

Liberty Historic Land Use Issues and Concerns:

- 1) The Liberty Historic District is a nationally designated historic district in the county.
- 2) The surrounding forested lands around Liberty are important to the natural historic character of the townsite, including the four privately owned parcels.

- 3) The designation of the Liberty townsite as a special historical suburban classification would require the development of a community water system.
- 4) Liberty has a small finite number of buildable lots and adjacent parcels in the Forest and Range Zoning District have a 20-acre minimum unless platted through a clustered subdivision.

GPO 2.20 The Liberty Historic District contained two land-use classification recommendations under the Swauk Teanaway Sub-area Plan. The Liberty townsite should be classified as a special historical suburban area and the adjacent Forest Multiple-Use lands should have architectural standards placed on their use. A design review board should be created to assure consistency and fairness in future decisions about what is built within and adjacent to the Liberty Historic District.

GPO 2.21 Future development in the historic district should be primarily residential and be consistent with any existing or new design review standards.

GPO 2.22 Surrounding development on the adjacent forested properties which are abutting the historic district should also be consistent with any subsequent design review standards.

GPO 2.23 The Liberty townsite is a small high density residential area and many of the uses in the current Forest and Range Zoning District are not appropriate for Liberty.

2.3(D) Shoreline Land Use

Kittitas County is endowed with a variety and abundance of lakes, rivers, and streams. A county undergoing considerable change and development cannot long take for granted such valuable and limited resources. It shall be the objective of the county, therefore, to provide for the long range management of shorelines and adjacent wetlands by planning for and fostering all reasonable and appropriate uses, including residential, industrial, agricultural, private and public recreation, etc. This policy is designed to ensure the development and/or preservation of shorelines which will promote and enhance both private and public interest. It will also provide a policy framework whereby decisions are formulated before controversial issues or crises develop which often result in hasty, ill-advised solutions.

GPO 2.24 In compliance with RCW 90.58 Kittitas County should undertake an updated comprehensive study of its lakes and rivers, including an inventory of and classification of all shoreline lands, swamps, and marshes.

GPO 2.25 The County should, in compliance with the Shorelines Management Law prepare and adopt a comprehensive land use and conservation plan related to its shorelines, swamps, and marshes consistent with the requirements of RCW 36.70A and 90.58.

The following goals and policies are part of the <u>Shoreline Master Program for Kittitas County</u> <u>Washington</u> originally adopted in 1975.

Shoreline Management

GPO 2.26 Shoreline Use: Kittitas County is characterized by four major shoreline uses: (1) irrigated agriculture; (2) range; (3) forest and wild lands; (4) recreational use. A continuation of such uses should be encouraged.

Alternative uses may occur which are compatible with the specific Environments of the Act, provided that they are compatible to the physical characteristics of any particular site. These concepts are intended to promote a pattern of shoreline uses which will minimize conflict, preserve high quality environment, and leave open the greatest number of options for future generations of shoreline users.

GPO 2.27 Agriculture and Irrigation: Irrigated agriculture is a water dependent use and a key factor in the economy of Kittitas County, therefore, it is a goal of our County that other shoreline uses should not jeopardize production on agricultural lands. While other shoreline uses may be compatible with irrigation systems, it is a goal of our County that all shoreline uses shall be constructed and maintained in such a way as to not interfere with the diversion of delivery of water. Irrigation easements, head ditches, headgates, turnouts, and other necessary appurtenances shall be given priority.

GPO 2.28 Economic Development: It is a goal of our County that commercial development locate inland from designated flood plain and shoreline areas unless that development is particularly dependent upon a shoreline location and is consistent with the long range needs of the public.

GPO 2.29 Recreation: It is a goal of our County to encourage recreational opportunities which will not compromise water quality, will not have a detrimental effect on the fragile systems of our shorelines, nor infringe on the rights of the private property owner.

GPO 2.30 Conservation: It is a goal of our County to encourage sound management of renewable shoreline resources and that non-renewable shoreline resources be preserved to the greatest extent feasible.

GPO 2.31 Circulation: It is a goal of our County to encourage a transportation network capable of delivering people, goods, and services, which will result in minimum disruption of the natural system of our shorelines.

GPO 2.32 Public Access: Shoreline dependent recreational activities are of significant importance to the citizens of Kittitas County. A public access system should facilitate movement to public shoreline areas without compromising the natural features of the shoreline. Public access to public areas shall in no way limit or lessen any private landowner's right to prevent trespassing.

It is a goal, therefore, of our County to develop a network of well planned and maintained public access areas located on publicly owned shorelines, to purchase additional shoreline property when feasible and to encourage a provision of public access in all future public land shoreline

development. Intrusions created by such public access should not have detrimental effects on fragile natural features, endanger life, or infringe upon the rights of private property owners.

GPO 2.33 Historical/Cultural: It is a goal of our County to protect and restore areas and sites having historical, cultural, or educational importance without infringing upon the private property owners.

GPO 2.34 Public Awareness: The public should be made aware of the content of the Shoreline Management Act as it applies to Kittitas County. The rights and obligations of the public and private citizens should be clearly stated. This information should be clearly identified. Methods of informing the public should be those most appropriate to a given situation.

These are examples of items to be considered:

Standardized markers should be developed to inform public of access routes, parking, limitation of area, etc.

The public should be made aware of their responsibility in maintaining the quality of the environment, especially for such things as litter prevention, trail cutting, clearing brush, and off road vehicular traffic.

The public should be made aware of private property (where public lands end).

GPO 2.35 Restoration: It is the goal of Kittitas County to provide, where feasible and desirable, for restoration of blighted areas along the shorelines of Kittitas County to a natural and/or rehabilitated condition.

Shoreline Use Activity

These policies will reflect the intent of any one or all of the goal statements prescribed in Chapter Three depending on their applicability.

GPO 2.36 Agriculture: Kittitas County should (1) assure that lands suitable for agriculture are maintained in agricultural production; (2) should not allow the locations of confined animal feedlot operations, retention and storage ponds for feedlot wastes, or stock piles of manure solids close enough to shoreline areas to affect water quality; and (3) should encourage the maintenance of a buffer of permanent vegetation between tilled areas and associated water bodies which would retard surface runoff, reduce siltation, provide habitat for fish and wildlife and reduce erosion.

GPO 2.37 Aquaculture: Aquaculture enterprises should (1) not obstruct navigational access to upland areas, (2) shall not obstruct visual access of upland owners, and (3) should be located in areas where they do not impair the aesthetic quality of the shoreline of quality of the water involved.

Note that spawning areas and fish hatcheries which are managed by the Department of Game and Fisheries are required to obtain a hydraulic project approval permit for work done in any stream or lake bed.

GPO 2.38 Archaeological/Historic Sites: Where possible archaeological and historical sites should be permanently preserved for scientific study and public observation.

Kittitas County Planning Department should consult with professional archaeologists to identify areas containing potentially valuable archaeological data and to establish procedures for salvaging the data.

In areas known to contain archaeological data, local governments shall attach a special condition to a shoreline permit, providing for a site inspection and evaluation by an archaeologist to insure that possible archaeological data are properly salvaged.

Shoreline permits, in general, should contain special provisions which require developers to notify local governments if any possible archaeological data are uncovered during excavations.

The National Preservation Act of 1966 and Chapter 43.51, RCW provides for the protection, rehabilitation, restoration, and reconstruction of districts, sites, buildings, structures, and objects significant in American and Washington history, architecture, archaeology or culture. The State Legislature names the Director of the Washington State Park and Recreation Commission as the person responsible for this program.

GPO 2.39 Commercial Development: Consideration to approve a permit for commercial development located on a shoreline shall be given only to those commercial developments which are shoreline dependent or shoreline oriented.

Commercial development which is non-shoreline oriented should be located inland away from the ordinary high water mark where commercial uses exist and where the appropriate zoning exists.

Commercial developments should be constructed in a manner which would either improve or at most result in minimal damage to the normal qualities of the shoreline area.

GPO 2.40 Dredging: Dredging of materials for the single purpose of obtaining fill materials should be prohibited in any designated environment.

Dredging for the purpose of deepening a navigational channel should be permitted in any designated environment provided such dredging will not cause damage to existing ecological values and natural resources of both the area to be dredged and the area for deposit of the materials.

GPO 2.41 Flood Plains: It is the policy of this Section to minimize losses in flood plains by restricting or prohibiting uses which are dangerous to health, safety or property in times of flood or cause excessive increases in flood heights or velocities.

Uses vulnerable to floods, including facilities which serve such uses shall be protected against flood damage at the time of initial construction. General regulations for carrying out this policy

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given under the Shoreline Master Program Ordinance, Section 25, pages ORD-10-11, apply to the four Environments which include Natural, Conservancy, Rural and Urban.

GPO 2.42 Forest Management: Logging within shoreline areas should be conducted in such a manner to ensure the maintenance of buffer strips of ground vegetation, brush, and trees to prevent temperature increases adverse to fish population and erosion of stream banks.

Shoreline areas having scenic qualities, such as those providing a diversity of views, unique landscape contracts, or landscape panoramas should be encouraged as scenic views in timber harvesting areas. Timber harvesting practices, including road construction and debris removal, should be regulated so that the quality of the view and viewpoints in shoreline areas of the State are not degraded.

Seeding and replanting should be accomplished where necessary to provide stability on areas of steep slope which have been disturbed. Replanted vegetation should be of a similar or improved type and concentration as existing in the general vicinity of the logged area.

Special attention should be directed in logging and thinning operations to prevent an accumulation of slash and other debris in contiguous waterways.

Logging should be avoided on shorelines with slopes of such grade that large sediment run-off will be precipitated, unless adequate restoration and erosion control can be expeditiously accomplished.

Proper road and bridge design, location and construction and maintenance practices should be used to prevent development of roads and structures which would adversely affect shoreline resources.

GPO 2.43 Industry: Significant alteration of the shoreline environment is associated with industrial use, therefore, the location of industry on the shorelines of Kittitas County shall be limited to:

Enterprises which are clearly dependent upon access to the shoreline and associated waters (for successful operation); and

To sites which currently possess advantages to industry such as proximity to adequate transportation, raw materials, labor and the like,

In Kittitas County sites meeting the above objectives are associated with urban areas of Ellensburg, Cle Elum, South Cle Elum and the Milwaukee Railroad crossing of the Columbia River.

Industrial development which is not shoreline dependent should be located inland away from the ordinary high water mark where industrial uses exist and where sewer and the appropriate zoning exists.

Industrial sites should be encouraged to locate within areas adjacent to other industrial sites, without overcrowding the area involved.

Industrial developments should be constructed in a manner which would either improve or result in minimal damage to the normal qualities of the shoreline area.

GPO 2.44 Landfill: In evaluating fill projects and in designating areas appropriate for fill, such factors as total water surface reduction, navigation restriction, impediment to water flow and circulation, impediment to irrigation systems, reduction of water quality, and destruction should be considered.

Shoreline fills or cuts should be designated and located so that significant damage to existing ecological values, natural resources or alteration of local currents will not occur creating a hazard to adjacent life, property and natural resources systems.

Landfills should be allowed only for water-dependent uses, for public uses, and for the purpose of elevating a structure to meet flood proofing requirements as required by the flood control zone permit.

GPO 2.45 Marinas: Location and design of marinas should consider effects on fish and wildlife resources during construction and operation and at the same time be aesthetically compatible with adjacent areas.

Fuel handling and storage should be given special attention in design to minimize spillage and provide means for handling such spillage.

Marina construction and development should comply with the Washington State Department of Fisheries guidelines and local standards which apply.

All docking and marinas should be equipped with receptacles to receive and adequately dispose of sewage, waste, rubbish and litter from boats.

GPO 2.46 Mining: Land reclamation should be included as part of the mining project and should be initiated after completion of each phase of the mining activity.

When minerals are removed from shoreline areas, adequate protection against the sediment and silt production should be provided. If such removal is to occur in a lake, river or streambed, a Hydraulics Permit from the Department of Game and Fisheries is required.

If diversion of water for mining purposes is required, water rights shall be established prior to issuing the permit.

GPO 2.47 Outdoor Advertising: Outdoor advertising signs should be located on the upland side of transportation routes which parallel and are adjacent to shorelines.

Views and vistas should not be degraded and visual access to the water from such vistas should not be impaired by the placement of signs. Local sign ordinances should be strictly enforced.

GPO 2.48 Recreation: allow various recreational opportunities to meet the needs of the people.

Where uses designated for a specific recreational area are planned to satisfy a diversity of demands, these uses must be compatible with each other and not damaging to the area's environment.

Signs should be posted informing the public of areas available for their use.

The locations, design, construction and operation of recreational facilities should prevent undue adverse impacts on adjacent or nearby privately owned properties.

Parking facilities should be located in areas which will be the least damaging to the natural character of the area. Large parking lots should be located outside the immediate shoreline area.

Water supplies, sewage, drainage, alteration of shoreline vegetation and other changes associated with recreational development should be planned to preserve a high quality environment.

GPO 2.49 Residential: Residential subdivisions should be consigned (1) so as to adequately protect and/or to improve the area's aesthetic qualities and characteristics of the water and shoreline areas; and (2) at a level of density of site coverage and of occupancy compatible with the physical capabilities of the shoreline and water.

Planned Unit Developments which reserve substantial portions of land as open space or recreation area are preferred over conventional subdivisions.

Subdivider should be encouraged to provide pedestrian access to the shorelines within the development and to minimize the impact of vehicular use and parking on the normal aesthetic qualities of the shoreline area.

GPO 2.50 Roads, Railroads and Bridges: Future roads and railways should be located away from the shorelines wherever feasible. "Wherever feasible" is an important condition, since shorelines often offer the least troublesome and costly sites for road construction, but wherever a public road can be located outside the shoreline area, even at somewhat greater construction costs and problems, then the inland location should be used.

Extensive loops or spurs to old highways with high aesthetic quality should be kept in service as pleasure bypass routes.

When planning public roads, federal, State and local governments should, where appropriate, provide sanitary facilities, scenic viewpoints, and picnic areas on publicly owned shorelines.

Road management for logging shall be done in accordance with the regulations for "Roads" under the Shoreline Master Program, Ordinance, Section 25, Forest Management.

GPO 2.51 Shoreline Works and Structures: The approval of shoreline works and structures projects should be based on flood back-water evaluation and on the projects' impact on properties downstream.

The approval of shoreline works and structures projects should be based on the projects' impact on the river's environment.

GPO 2.52 Solid Waste Disposal: Solid waste materials should be handled, contained, or disposed of in a manner which avoids damage to the environment and will maintain the aesthetic values to the shoreline area.

GPO 2.53 Utilities; Utilities should be designed and installed in a manner which would result in minimal damage to the normal qualities of the shoreline area. Utilities should be planned to avoid destroying scenic views.

Upon completion, the applicant should restore the project area to a natural or near natural condition.

2.2(E) Critical Areas

As part of the growth management planning process, Kittitas County has adopted Critical Areas Policies. The following contain those policies. Ordinance 94-22 contains development regulations which were adopted to implement these policies.

Wetlands

Wetlands play a significant role in the reduction of water pollution, erosion, siltation, flooding, and provide significant wildlife, fisheries, and plant habitats; and their destruction or impairment may result in increased public and private costs or property losses.

GPO 2.54 Kittitas County should accept land owner claims that a defined wetlands is artificial unless the determining regulatory agency deemed otherwise based on the I-V tiered wetland rating system outlined in this policy document.

GPO 2.55 Kittitas County should accept the premise that the substantial irrigated agricultural activities enhance and maintain some wetlands environments within this area.

GPO 2.56 Kittitas County should encourage the development of a regulatory program for wetlands protection that is both sufficiently flexible to allow reasonable use and enjoyment of private property and generally consistent with the requirements of the Growth Management Act.

GPO 2.57 Kittitas County should encourage the implementation of wetlands protection strategies that will achieve, to the maximum extent practicable, a zero net loss of natural

wetlands acreage, functions, and values and, if reasonably possible, a gain of wetlands habitat in the long term.

GPO 2.58 Any wetlands protection measures imposed by Kittitas County should not interfere with stock water or irrigation water rights recognized in the Acquavella adjudication process.

GPO 2.59 Any wetlands protection measures imposed by Kittitas County should not interfere with a person's ability to engage in existing agricultural land use activity associated with his property. Agricultural land use activities include, but are not limited to, the grazing and watering of livestock; plowing, seeding, cultivation, harvesting for the production of crops; upland soil and water conservation practices; the maintenance of farm for stock ponds, irrigation ditches, drainage ditches, underground drainage systems and farm roads, and the control of noxious weeds.

GPO 2.60 Preliminary determinations by the Kittitas County Planning Department concerning the potential presence of wetlands that may be impacted by an activity requiring a permit or approval from the County department should be based on data contained in the U.S. Fish and Wildlife Service Inventory for Kittitas County. The Fish and Wildlife Service Inventory should be augmented over time with more specific information concerning wetlands location, class, and type generated through the administration of the wetlands protection program.

GPO 2.61 Water conservation and enhancement shall take precedence over inadvertent and/or unintentional wetland regulation and preservation.

GPO 2.62 Kittitas County should give positive tax incentives to private property owners who maintain, reclaim, or enhance class I, II, III, and IV wetlands.

GPO 2.63 Kittitas County should support or encourage the purchase and dedication of lands by public or private organizations for wetlands and apply sound management principles to said property.

GPO 2.64 The following activities shall be exempt from the provisions of a wetlands protection program: emergency uses necessary to prevent immediate threat to the public health, safety or property, maintenance of existing facilities, structures, ditches, roads, and utility systems; provided the footprint of the structure is not within a critical area and/or its buffer.

GPO 2.65 The Washington State Tier Wetlands rating system will be used for identification and classification.

GPO 2.66 Buffers, wetland replacement ratios, and a wetlands mitigation program - if implemented by ordinance in Kittitas County - should be consistent with all other policies contained in this document.

Aquifers

Groundwater is a significant source of drinking water for County residents; and once potable groundwater becomes contaminated, it is difficult if not impossible to clean and resulting costs can be prohibitive.

GPO 2.67 Critical Aquifer Recharge Areas should be mapped as soon as practical so as to warn the public of possible development restrictions. We feel this is of the highest priority for the public health and safety.

GPO 2.68 In areas of Critical Aquifer Recharging effect only limited densities, based on that which would not impair the functions of the Aquifer Recharge area, shall be allowed.

GPO 2.69 Kittitas County shall give high priority to the protection of known aquifers that have a Critical Recharging effect, as identified by technical data, on potable water aquifers for reasons of public health and safety.

GPO 2.70 Kittitas County shall consider providing technical design assistance for septic tank design permits when potable Aquifer Recharge risks are considered significant.

Frequently Flooded Areas

Frequently flooded areas provide storage for flood control by slow release of water; provide wildlife and fisheries habitat, recreation areas and agricultural lands; and these areas are subject to periodic inundation which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare. These flood losses are caused by the cumulative effects of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Structures that are inadequately flood proofed, elevated or otherwise protected also contribute to flood loss. Floodways are especially hazardous areas due to the velocity of floodwaters which carry debris, potential projectiles and erosion potential.

GPO 2.71 Maintain the current Kittitas County Shoreline Master Program.

GPO 2.72 Maintain Kittitas County's eligibility under the National Flood Insurance program. Eligibility is maintained by compliance with the Kittitas County Flood Damage Prevention Ordinance.

GPO 2.73 All submitted preliminary plats must clearly delineate the 100-year Floodplain boundary.

GPO 2.74 Increasing the reservoir capacity of the river system may be beneficial to flood control and the public welfare.

GPO 2.75 Utilize the concept of zero rise in identified high risk areas of the 100-year Floodplain.

Geologically Hazardous Areas

Geologically hazardous areas are in tenuous geologic balance and disturbance can result in the loss of slope and soil stability, allowing increased erosion, including mass wasting and landslides, increasing stormwater runoff; and maintaining this balance reduces the danger to public health and safety.

In most cases, the risk to development from geological hazards can be reduced or mitigated to acceptable levels by engineering design, or modified construction practices. In areas where these measures are not sufficient to reduce the risk from geological hazards, uses that include development are best avoided.

Erosion/Landslide Hazards

GPO 2.76 Design provisions should be adequately reflected in the Kittitas County Building Code.

GPO 2.77 Natural resource-based access and activities should not be unduly restricted or prohibited in areas of known geologic hazards.

GPO 2.78 Risk of erosion should be considered accordingly throughout Kittitas County, based on localized rainfall average.

GPO 2.79 Kittitas County recognizes the policies of the proposed Snoqualmie Pass Subarea Comprehensive Plan regarding Snow Avalanche Hazard Areas, including possible hazards outside of the Snoqualmie Pass subarea.

Seismic Hazard Areas

GPO 2.80 Because of existing Kittitas County Building Code, the risk from tertiary effects do not indicate an unusual hazard at this time.

Mine Hazards

GPO 2.81 Siting of structures on known individual mine hazard areas should be avoided.

GPO 2.82 In siting and design of structures, etc., in known mine hazards areas, the danger of the hazard should be considered.

GPO 2.83 Kittitas County Planning and Building Departments should each maintain a library of maps of known mine hazard areas.

Volcanic Hazards

GPO 2.84 The planning of volcanic hazards should be addressed through Kittitas County emergency management procedures: better planning of warning and emergency communications.

GPO 2.85 Manual disposal of ash fallout into bodies of water shall not be allowed; alternatives for the handling and disposal of ash fallout should be considered by Kittitas County in emergency management procedures.

Fish and Wildlife Habitat Conservation Areas

Habitat conservation areas contain: habitat for migrating waterfowl, game and food fish, and species which are threatened or endangered, and provide for greater species diversity; and these areas provide recreational resources, and more stable ecosystems and their disturbance could result in irreversible loss of important habitat and species diversity and therefore loss of economic resources. The intent is to maintain species in suitable habitats within their natural geographic distribution to prevent the creation of isolated sub- populations.

Habitat Conservation

GPO 2.86 Matching conservation moneys - When available, matching conservation moneys should be offered to all landowners on a first-come, first-serve basis for the purpose of maintaining and enhancing wildlife and its habitat in Kittitas County.

GPO 2.87 The Washington State Department of Fish and Wildlife should offer educational programs to the general public so that taxpayers and landowners may better understand the many benefits that wildlife provides.

GPO 2.88 Kittitas County expert technical help should be available to those wishing to develop land that contains, or potentially contains any of the various critical areas defined by these definitions.

GPO 2.89 Information & regulations should be understandable by citizens.

- a. An inventory of available information shall be prepared and maintained which shows the location of Fish and Wildlife Habitat and Conservation Areas and this information shall be made available to the landowners at the Planning Department.
- b. Planning staff shall prepare materials which enable citizens to clearly understand the location of critical areas on and adjacent to their property.

Habitat of Local Importance

GPO 2.90 It shall be the policy that the Kittitas County Board of Commissioners shall carefully consider each nomination separately and only within the public hearing process.

GPO 2.91 The County shall encourage economically feasible incentives for the protection and enhancement of designated Habitats of Local Importance.

2.2(F) Ground Water

Kittitas County recognizes the importance of ground water to the economic well-being of the area.

This section shall not impair or interfere with any lawful right to withdraw and/or use groundwater. (see Section 2.2(B) Water Rights).

Kittitas County currently participates in the Tri-County Water Resources Agency and as such understands the importance of a ground water recharge study of the Yakima River Basin as a whole.

GPO 2.91A Kittitas County shall ensure that citizens water rights are adequately addressed and protected to the fullest extent in any ground water study conducted by any governmental entity, including state and federal agencies.

GPO 2.91B Kittitas County should investigate funding for a groundwater recharge study in conjunction with the five incorporated cities within the County and the State consistent with ESHB 2514 and the efforts of the Tri-County Water Resource Agency.

GPO 2.91C Kittitas County believes that a basin-wide ground water study best represents ground water conditions and as such shall support such studies.

GPO 2.91D Kittitas County shall support property owners rights to use ground water for beneficial uses, as provided by state law, which allows for the withdrawal of up to 5,000 gallons per day without a water right.

2.2(G) Kittitas County Airport

Kittitas County has no zoning in place, except for an "Airport Zone", in which to protect its general aviation airport. Through its comprehensive plan and development regulations, in compliance with RCW 36.70.547, or as amended thereafter, the County shall discourage the siting of incompatible uses adjacent to its general aviation airport. The Planning Commission has recommended that the airport overlay zone be modified.

The Kittitas County Airport (Bowers Field) is the largest airport in the County and provides air transport from the Ellensburg area to other airports. It is located adjacent to Ellensburg which is experiencing added development. Zoning revisions will be necessary to provide the protection needed for the continued safe operations of the airport. A zoning proposal has been presented to the planning Commission and they have recommended approval to the Board of County Commissioners.

GPO 2.91E To update and adopt a revised Airport Layout Plan for the Kittitas County Airport (Bowers Field) in conformance with the Federal Aviation Administration which provides for new height restrictions that will allow for precision landing approach. The area contained in the FAR Part 77 should be designated as the Airport Overlay Zone.

GPO 2.91F To consider avigation easements in the Airport Overlay Zone.

GPO 2.91G To consider notifying all property owners within the Airport Overlay Zone of airport activities.

GPO 2.91H To adopt the following safety zones within the Airport Overlay Zone: Inner Safety Zone

Inner Turning Zone Outer Safety Zone Sideline Zone Traffic Pattern Zone

There has been an identified lack of available land zoned "industrial" in the County. An "industrial" use for the County owned property surrounding the aeronautical operations at the Kittitas County Airport would be compatible with airport operations. The Kittitas County Planning Commission has recommended that the county owned property south of Bowers Road be designated as "industrial".

GPO 2.911 The County should develop and adopt regulations for an airport industrial zone at the Kittitas County Airport.

GPO 2.91J All aviation related land uses should be considered acceptable in the area designated as "industrial" and provided that the FAA airport design criteria are met.

GPO 2.91K The County should promote economic development and employment opportunities for the Airport Industrial Zone.

GPO 2.91L The County should establish zoning standards which will insure that the industrial uses will not impact airborne aircraft because of height structures, smoke, glare, lights which shine upward, and radio transmissions, nor any water impoundments or sanitary landfills which would create hazards from waterfowl to airborne aircraft.

2.3 LAND USE PLAN

The Land Use Plan shown on the maps in this chapter provides an official guide for the orderly growth of residential, business and industrial areas in the County. The Plan shows the relationship of these and other land uses to each other, to major parks and to existing and proposed arterials. The Comprehensive Plan Map is generalized and not intended do be precise or permanent. It should not, above all, be interpreted as a zoning map.

The following land use designations are used to establish general locations for different types of activities throughout the County.

2.3(A) Urban Land Use

Urban Residential Land Use

This designation contains those lands within urban growth areas and urban growth nodes which appear to be most suitable and likely for future development and city utilities. The areas are, for the most part, highly suited to orderly street systems and land subdivision. Residential densities and housing types are the subject of this Plan and should be based on the expansion of the Ellensburg Comprehensive Plan or other cities' comprehensive plans and zoning ordinances.

GPO 2.92 The future urban residential areas may be both residential and agricultural. Ongoing agriculture should be supported in development regulations.

GPO 2.93 Innovations in housing development such as cluster developments, master planned developments, and planned unit developments should be encouraged.

Urban Growth Areas and Urban Growth Nodes

Though the areas included within the urban growth area boundaries are intended to urbanize and become annexed in the proceeding 20 years, these lands will continue to be under County jurisdiction. To ensure both consistency and coordination, the planning for these areas will be done in concert with the respective cities. In addition, interlocal agreements with the individual cities may be necessary to provide the necessary administrative guidance and services to these unincorporated areas.

Two major issues arise in the discussion of urban growth area boundaries. These include phased growth and transitional land uses. Most communities preparing plans for the urban growth area have elected to plan under a phased growth scenario. The overall concept of phased growth indicates that growth will occur in "phases." The first phase usually includes those areas that are already served by public water and/or sewer, and where the second phase of growth will occur in areas where services do not presently exist but are eventually. The inclusion of land within an urban growth area indicates that the land will be developed at an urban density within the next 20 years. Therefore, the existing Agricultural Land Use or Rural Residential Land Use within the urban growth areas will eventually transition from Agricultural Land Use to Urban Residential Land Use within the urban growth area will require land uses and densities which allow this change to occur in as efficient a manner as possible.

As portions of the urban growth areas develop, it is assumed that these areas will be annexed to the adjacent city. Intergovernmental agreements will need to be created in order to deal with the allocation of financial burdens that result from the transition of land from county to city jurisdiction. Similarly, agreements will need to be drafted to coordinate planning efforts for the unincorporated areas of the urban growth areas and with facility providers in the urban growth nodes. Kittitas County has offered the opportunity to prepare an interlocal agreement with the cities for the preparation of a draft urban growth area plans. This agreement and the work resulting from it are expected to be completed in the end of 1996. The following are additional issues that must be resolved by the cities and Kittitas County for the preparation and implementation of goals, objectives and policies contained in this comprehensive plan: *Joint interlocal agreements:

- 1) Unified or consistent subdivision code;
- 2) Municipal utility extension agreement for water, sewer and gas;
- 3) Intergovernmental service agreements for libraries, fire, EMS, parks and recreation;
- 4) Unified or consistent zoning code with provisions for urban zoning, transitional zoning, and other transitional uses;
- 5) Density and land use mapping;
- 6) Airport Facility-flight safety zones, density, land uses, expansion of the airport and services provided for the City of Ellensburg;
- 7) Extension and acquisition of Rights-of Way;
- 8) Unified or consistent road standards, stormwater standards and level of service; and,
- 9) Annexation agreements.

*This list is not intended to be all inclusive of issues to be addressed through interlocal agreements with the cities but specific issues which may affect the Kittitas County Comprehensive Plan.

The individual cities within Kittitas County are responsible for developing a final urban growth area boundary, future land use plans for the unincorporated portion of their respective urban growth areas, and facility or service needs to accommodate the 20-year population growth. These plans are to be submitted to Kittitas County for consideration and ultimately adoption as a portion of the Kittitas County Comprehensive Plan. RCW 36.70A.110(5) states, "Final urban growth areas shall be adopted at the time of comprehensive plan adoption under this chapter..." and RCW 36.70A.110(6) states, "Each county shall include designations of urban growth areas in its comprehensive plan."

For purposes of review of this comprehensive plan, the interim urban growth boundaries for the Cities of Ellensburg, Cle Elum, Roslyn and Kittitas and final urban growth area boundary for the Town of South Cle Elum, were forwarded for consideration by the Board of County Commissioners as final urban growth areas boundaries. After public hearings, public testimony and deliberations, the Board of County Commissioners, found the Town of South Cle Elum had adopted its Comprehensive Plans, including a UGA boundary at the current city limits. The Cities of Roslyn and Cle Elum developed their respective proposed urban growth area boundaries during the 1998 Annual Amendment process for inclusion in the Kittitas County Comprehensive Plan. After due deliberation, the Kittitas County Board of Commissioners have approved the UGA boundaries for the Cities of Roslyn of Cle Elum (see land use maps). The City of Ellensburg has provided sufficient information to the County to justify an urban growth area boundary as indicated on the land use map contained herein. The City of Ellensburg forwarded a completed Urban Growth Area Chapter to the County for inclusion in the Kittitas County Comprehensive Plan. The City of Kittitas has adopted a Comprehensive Plan, including a UGA boundary, which has been docketed with Kittitas County. After review by the Kittitas County Planning Commission and Board of County Commissioners, the proposed boundary has been approved (see land use map).

For purposes of administering the Urban Growth Area for the City of Ellensburg, in the event a road right-of-way forms the boundary of the UGA then the boundary shall be extended 660-feet for in areas designated for residential uses and ½-mile for areas designated for industrial uses. The extension of the UGA in these areas is made to allow for efficient extension of utilities within the road right-of-way.

Maps of the urban growth node boundaries, with the exception of Vantage, have been included in the Kittitas County Comprehensive Plan. (The Vantage area has been identified in the County-wide Planning Policies for an urban growth node designation, however no such boundary has been identified at this time. An urban growth node boundary for Vantage may be added in future amendments of the comprehensive plan.) Though no specific goals or policies have been developed for urban growth nodes, it is assumed that these areas would function in much the same way as an urban growth area, with the County or other private organizations providing the necessary facilities for the urbanization of the unincorporated urban growth node.

GPO 2.94 A consideration for all future development should be the adaptability of a proposal to urban water and sewer systems.

GPO 2.95 Within the UGAs and UGNs, in the absence of urban utilities, a system of subdivision and development should be encouraged which would produce a pattern capable of re-division to a higher density at such time when utilities are available.

GPO 2.96 Adopt urban growth node (UGN) and urban growth area (UGA) boundaries to accommodate residential and employment increases projected within the boundaries over the next 20 years.

GPO 2.97 The UGNs shall be consistent with the following general goals:

- a. Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development;
- b. Provide for the efficient provision of public services;
- c. Protect natural resource, environmentally sensitive areas;
- d. Promote a variety of residential densities; and,
- e. Include sufficient vacant and buildable land.

GPO 2.98 The UGNs and/or UGAs shall be consistent with the following criteria:

- a. Each UGN and/or UGA shall provide sufficient urban land to accommodate future population/employment projections through the designated planning period.
- b. Lands included within UGNs and/or UGAs shall either be already characterized by urban growth or adjacent to such lands.
- c. Existing urban land uses and densities should be included within UGNs and/or UGAs.
- d. UGNs and/or UGAs shall provide a balance of industrial, commercial, and residential lands.
- e. Each UGA shall have the anticipated financial capability to provide infrastructure/services needed in the areas over the planning period under adopted concurrency standards.

GPO 2.99 Per RCW 36.70A.06094) forest land and agricultural land located within urban growth areas shall not be designated by a county or a city as forest land or agricultural land of long-term commercial significance under RCW 36.70A.170 unless the city or county has enacted a program authorizing transfer or purchase of development rights. Therefore, because the county currently does not have a TDR program in place, the Board of County Commissioners find that in the event that a resource lands designation i.e. Commercial Forest or Commercial Agricultural lands) is found to lie within a UGN or UGA, those lands will not be included within the final boundary of that urban area.

Commercial Land Use

The present and long established land use pattern in Kittitas County is the basis for planning future business development. That pattern finds most business located in established communities and/or business districts.

GPO 2.100 Kittitas County will act to preserve the viability and integrity of existing business districts within the incorporated and unincorporated county.

GPO 2.101 Most comparison shopping (general merchandise, clothing, appliance, auto, sporting goods) should be located in or near existing business districts.

GPO 2.102 Neighborhood "convenience" business outside urban areas serving rural districts or demonstrated motorist needs should be encouraged in appropriate areas.

GPO 2.103 Home occupations which result in accumulations of vehicles, appliances, or other materials should be regulated, licensed and required to provide sight screening from adjacent properties and roadways.

GPO 2.104 Highways and roads should not be developed with new commercial sites without compelling reasons and supporting economic data. Expansion and full development of existing business districts is encouraged.

GPO 2.105 I-90 exits shall not be considered as new business sites unless an Interchange Zone Classification is developed.

GPO 2.106 Kittitas County recognizes home occupations and cottage industries as valuable additions to the economic health of the community. In addition, where distances from other employment warrants, limited-dispersed rural business activities (LD-RBAs) of low impact and with necessary infrastructure will be encouraged on a case by case basis as long as these sustain or are compatible with the rural character of their area in which they locate.

GPO 2.107 Limited-dispersal rural business activities (LD-RBAs), not necessarily resourcebased, including but not limited to information, legal, office and health services, arts and crafts, clothing, small manufacture and repair may be located as an overlay zone in all rural and resource lands in the county as long as they are compatible with the rural character of the area in which they locate. GPO 2.107A Designate sufficient available land for specialized commercial uses that are by their nature compatible with residential, agricultural, recreational, and other general land use types.

GPO 2.107B Promote large scale commercial development within the UGAs and UGNs by encouraging infrastructure improvements and new business recruitment.

GPO 2.107C Promote small scale commercial development outside of UGAs and UGNs when compatible with adjacent land uses.

GPO 2.107D Encourage an adequate inventory of developable property to accommodate the siting of new, and the expansion of existing, commercial uses.

GPO 2.107E Identify areas where mixed commercial and industrial uses can be sited if compatibility is evident.

Industrial Land Use

It is the objective of this plan and the policy of the County to improve conditions, insofar as possible, to attract industry.

GPO 2.108 Location of Industrial Land. There should be sufficient industrial land in the county located in areas convenient to utilities, fire protection and to major transportation facilities (air, rail, freeway). Industrial developments may be permitted beyond urban growth areas.

GPO 2.109 Compatibility. Industry located adjacent to residential areas or along scenic routes should be situated so as to minimize impacts on those areas and should provide screening and other measures to achieve compatibility.

GPO 2.109A Designate sufficient available land for specialized industrial uses that are by their nature compatible with residential, agricultural, recreational, and other general land use types.

GPO 2.109B Promote industrial development within the UGAs and UGNs by encouraging infrastructure improvements and new business recruitment.

GPO 2.109C Encourage an adequate inventory of developable property to accommodate the siting of new, and the expansion of existing industrial uses.

GPO 2.109D Identify areas where mixed commercial and industrial uses can be sited if compatibility is evident.

2.3(B) Public Lands

Yakima Training Center

This designation contains those lands within the boundaries of the Yakima Training Center, an area acquired by the Federal Government for military personnel training. The Yakima Training Center has been assigned a unique land use category due to the inaccessibility of the lands by the public and inability to access these lands for range purposes. Under the 1994 Comprehensive Plan, this area was designated as Range Land Use, however, as such use is not permitted by federal authorities (unlike U.S. Forest Service lands in Kittitas County), the Yakima Training Center has been removed from the Range Land Use designation. There are no goals or policies related to the management or development of these lands.

The Department of Defense maintains a Cultural Natural Resources Committee of public officials and private organizations representatives who suggest goals and policies for management of the Yakima Training Center. Kittitas County recognizes this committee ant he goal and policy statements that result from it. In the event any portion of the Yakima Training Center was to revert to another ownership, the County reserves the right to establish land use planning goals, policies an designations prior to such transfer being effective.

Other Public Lands

Approximately fifty-nine percent (59%) of Kittitas County is managed by State and Federal Agencies. In addition to those lands owned by the U.S. Department of Defense, there are also lands managed by the U.S. Forest Service, U.S. Bureau of Land Management, W.S. Department of Natural Resources, W.S. Department of Fish and Wildlife, etc.

GPO 2.109E Kittitas County shall notify all state and federal agencies or other governmental entities that the county has developed land use regulations. Any planning activities by any other agency or governmental entity within Kittitas County shall be preceded by notification to the Board of County Commissioners. Other plans shall, unless specifically prohibited by statute, conform to and be consistent with Kittitas County planning ordinances, procedures and policies.

GPO 2.109F It is the policy of Kittitas County to recognize the water rights of citizens and entities within its borders as determined in the Yakima basin general adjudication and not to impair or adversely affect the water rights of its citizens by any action of county government.

GPO 2.109G Kittitas County will consider creating a wildfire protection policy tied to land use zoning that will protect both the private landowner and public lands from wildfire. When the use of forested lands is changed, the party doing the changing is responsible for providing a fire resistant buffer around the property.

GPO 2.109H Kittitas County will to the extent possible create a policy to preserve the grandfathered rights of private landowners to build roads on public lands under statute RS 2477.

GPO 2.1091 Kittitas County will consider establishing a board to coordinate with the federal and state fish and wildlife agencies to provide local input into decisions about wildlife introduced into the area.

GPO 2.109J All agencies and jurisdictions shall recognize the area's traditions, customs, cultures and economy.

GPO 2.109K Kittitas County recognizes that local tax burden on private lands is increased when private land is changed to public ownership. Such changes should be discouraged.

2.3(C) Resource Lands

Commercial Agriculture Land Use

The purpose and intent of this designation is to comply with the requirements of the Growth Management Act [RCW 36.70A.060]. The county has considered the Minimum Guidelines [WAC 365-190] in the classification, designation and conservation of commercial agricultural lands in Kittitas County. It is the county's intent to meet these requirements by establishing a Commercial Agricultural designation. Based on the review criteria established by Kittitas County, land located in the Commercial Agricultural Zone [CAZ] has been formally designated as Agricultural Lands of Long-term Commercial Significance.

Agricultural lands of long-term commercial significance have been identified by considering the following criteria:

The current zoning and parcel sizes of the area. The availability of an adequate and dependable water supply. The soil types (prime, unique, local, and statewide) of the area. The criteria contained under WAC 365-190-050.

Upon review of these considerations, Kittitas County determined that there were two different categories of land appropriate for designation: irrigated crop lands and non-irrigated grazing lands. Irrigated croplands identified for designation were lands located within the Agricultural 20 zone, within an irrigation district, consisting primarily of prime or unique soils, and complied with the other criteria under the GMA. Non-irrigated grazing lands were lands that lacked adequate water for crop growing purposes, but have a capacity for and historic use for grazing, and are lands that are predominately a section of land in size with contiguous blocks of ownership of those lots.

Kittitas County was able to identify large, contiguous areas containing parcels which met the review criteria. Kittitas County then reviewed the areas, which were consistent with the review criteria, taking into consideration topography and natural designation boundaries. The lands designated as agricultural lands of long-term commercial significance depict the final review of all the factors considered for designation.

GPO 2.110 Oppose laws and regulations which restrict agriculture, and support laws and regulations which enhance agriculture.

GPO 2.111 Continue and expand support for right-to-farm ordinances.

GPO 2.112 Develop and distribute "Rural Landowners Rights and Responsibilities" handout and require signature of having read it for any permits issued to non-farmers in agricultural areas.

GPO 2.113 Support efforts to see that all lands receive their full allocation of water.

GPO 2.114 Look at solutions to the problems of needing to sell house lots without selling farm ground.

GPO 2.114A Agricultural activities within areas designated as Commercial Agriculture shall take precedent over recovery activities targeted for the recovery of threatened and endangered species.

GPO 2.114B Economically productive farming should be promoted and protected. Commercial agricultural lands includes those lands that have the high probability of an adequate and dependable water supply, are economically productive, and meet the definition of "Prime Farmland" as defined under 7 CFR Chapter VI Part 657.5.

For the purpose of this chapter, "Adequate and dependable water supply" means enough water as outlined in those engineering reports available on most commercial farmlands in the Kittitas Valley, from Adjudication records (i.e. Aquavella et al) that detail the water duty necessary for each parcel to remain viable as commercial agricultural lands.

For the purpose of this chapter, "Economically productive" means the ability to provide and continue to provide sufficient return on investment to allow present and future farmers to continue using the designated commercial agricultural land. This would include but not be limited to being economically realistic as ag lands with respect to land value, property taxes, market conditions, water costs and other economic factors.

GPO 2.115 Oppose special taxing districts associated with urban growth on agricultural land.

GPO 2.116 Support an information campaign to educate our non-farm populace on agricultural activities.

GPO 2.117 Encourage non-farmers in agricultural areas to meet farm performance standards.

GPO 2.118 Encourage development projects whose outcome will be the significant conservation of farmlands.

GPO 2.119 Oppose public trail systems in farming areas, and any other public use in currently active utility corridors in agricultural areas and enforce all trespass laws.

GPO 2.120 Set road standards in agricultural areas which discourage non-farm use and do not present problems to agricultural users.

GPO 2.121 Cooperate in sound voluntary farm conservation or preservation plans (i.e., be recipients and overseers for conservation easements and/or assist with transferable development rights programs).

GPO 2.122 Look into additional tax incentives to retain productive agricultural lands.

GPO 2.123 Value agricultural lands for tax purposes at their current agricultural land use.

GPO 2.124 Create a growth management agricultural advisory council comprised only of agriculture producers to review and make recommendations to the Board of County Commissioners on at least an annual basis over the coming 20 years on:

- a. the status of agriculture in Kittitas County, and
- b. county agriculture policies and regulations.

GPO 2.125 If any lands are reclassified out of the Commercial Agricultural designation, then the land reverts to the Agricultural designation.

Incentives for Commercial Agriculture Land Use

It is the policy of Kittitas County to encourage and support agricultural uses of lands within the Commercial Agricultural designation. The county will continue to explore additional incentives for conserving both rural and resource lands. These incentives may be developed through the Kittitas County Comprehensive Plan and subsequent implementation mechanisms.

GPO 2.126 Where appropriate, Kittitas County will exert its influence to help provide the delivery of water to all lands within the county whether the deliveries are through Bureau of Reclamation, Districts, or private facilities; other government agency action impairing water rights or delivery.

GPO 2.127 Irrigation delivery facilities shall be managed and maintained by adjacent landowners to facilitate the unimpeded delivery of waters to agricultural lands in Kittitas County. No existing contractual agreement pursuant to any water system shall be impaired by this ordinance.

GPO 2.128 To the extent possible the Board of County Commissioners shall promote processing facilities for the products produced upon those lands designated as Commercial Agricultural under this Chapter.

GPO 2.129 In determining the current use value of open space land, the County Assessor shall consider only the use to which such property and improvements is currently applied and shall not consider potential uses of such property. In determining the current use value of farm and agricultural land the County Assessor shall consider the earning or productive capacity of comparable lands from crops grown most typically in the area averaged over not less than five years.

Commercial Forest Land Use

Commercial forestland claims approximately half of the Kittitas county land area. A checkerboard pattern of land ownerships characterizes the County forests separating private and public sectors. Public ownership accounts for approximately sixty percent of forestland in Kittitas County. A great majority of private forestland is owned corporately by Boise Cascade and by Plum Creek.

Forestlands represent a vital portion of the County economic base providing employment and income in resource management, harvesting, fishing, hunting and recreation. The purpose of this section and classification is to focus on the importance of sustaining forest productivity and associated forest values including watershed, wildlife, mining and recreation.

Major concerns in Kittitas County forest lands are the rate of timber harvest, the long term consequences such harvesting has on a sustaining forest economy, and that amount of conversion to non-forestry land uses following the harvest. A related issue is the amount of clear cutting occurring on public and private lands and the potential environmental impacts on water quality and quantity, flooding and soil stability, as well as aesthetic considerations. In addition, the continued subdivision of commercial forestlands for residential and other purposes represents a potential threat to the natural resource land base and creates conflicts for forestry, wildlife and watershed management.

To address the concerns identified above, this designation is applied to those lands which have long-term significance for the commercial production of timber. The designation recognizes that some other land uses and activities which do not conflict with long-term forest management are necessary and/or appropriate on commercial forest lands. Commercial forest lands have been identified by: parcel size; current lands use; tax status as classified forest land, designated forest lands, or forest open space; the availability of public services and facilities; land uses and long-term commercial significance; history of land use permits issued nearby; feasibility of alternative uses; long-term commercial production; and soil productivity, geology, topography and other physical characteristics conductive to growing merchantable crops of timber within conventional rotation periods and under traditional and accepted forest practices.

The intent of this plan, therefore, is to declare top priority for sustained natural resource productivity and related activities. Land use activities which are not compatible with resource management should be discouraged within this land category.

The following policies will guide the county in land use decisions effecting the private sector.:

GPO 2.130 To conserve forest lands for productive economic use by identifying and designating forest lands where the principal and preferred land use is commercial resource management.

GPO 2.131 Commercial forestland should be identified and designated based on operational factors; growing capacity; site productivity and soil composition; surrounding land use; parcel size; and the absence of urban public services.

GPO 2.132 The primary land use activities in commercial forest areas are commercial forest management, forest recreation, agriculture, mineral extraction, sand and gravel operations and those uses that maintain and/or enhance the long-term management of designated commercial forest lands.

GPO 2.133 To discourage non-forestry development and direct such activities and land uses more suited to those purposes.

GPO 2.134 To encourage multiple use concepts of forest management of the greatest lasting benefit to present and future generations.

GPO 2.135 Resource activities performed in accordance with county, state and federal laws should not be subject to legal actions as public nuisances.

GPO 2.136 To support and encourage the maintenance of commercial forest lands in timber and current use property tax classifications consistent with RCW 84.28, 84.33 and 84.34.

GPO 2.137 To encourage the reasonable location, size and configuration of clear cuts so as to minimize their environmental impact and visual effect on adjacent lands and scenic routes, and on the County economic base.

GPO 2.138 To encourage landscape management practices in areas along streams, and recreation travel routes, and around lakes, including that part of the scenic foreground seen from these areas.

GPO 2.139 To encourage the concept of cooperative resource management among industrial timber landowners, environmental groups, state resource agencies and Indian tribes for managing the state's public and private timberlands and public resources.

GPO 2.140 Land use activities within or adjacent to commercial forest land should be sited and designed to minimize conflicts with forest management and other activities on commercial forest lands.

GPO 2.141 To explore the possibility of clustering residential developments on adjacent noncommercial forest lands. The open space in clustered development should buffer adjacent forest land from development.

GPO 2.142 Special development standards for access, lot size and configuration, fire protection, forest protection, water supply, and dwelling unit location should be adopted for development within or adjacent to commercial forest lands.

GPO 2.143 It is the policy of the county to encourage the continuation of commercial forest management by:

a. supporting land trades that result in consolidated forest ownerships provided that the best interests of the public are served; and,

b. working with forest managers to identify and develop other incentives for continued forestry (Ord. 93-42).

Commercial Mineral Resource Lands

The State Growth Management Act (Section 17) states that "...each county...shall designate where appropriate... mineral resource lands that are not already characterized by urban growth and that have long-term significance for extraction of minerals." The Act defines minerals as sand, gravel and valuable metallic substances. Section 6 of the Act states that each county shall adopt development regulations to assure the conservation of mineral resource lands.

Kittitas County approved Resolution No.95-37 in April 1995, a declaration regarding GMA interim classification and designation for natural resource mineral lands of long-term commercial significance. The resolution meets the requirements of the Growth Management Act. The resolution declares that Kittitas County recognizes mineral resources as a property right and the utilization of new and finished mineral products as an important factor in the social and economic stability of the County. In addition, the County recognizes that mineral resource lands provide economic and social foundations, historical, present and future for the growth and development of the County.

The resolution defines minerals to include "metallic and non-metallic minerals of commercial value such as sand, gravel, coal, oil, natural gas, gold, silver gem stones, clay, building stone, etc." Based on a public hearing process, the County has outlined nine designation criteria for the classification of Mineral Resource Lands of long- term commercial significance. These include the following:

- 1. Physical properties of the resource, including a quality and type;
- 2. Depth of resource;
- 3. Depth of overburden;
- 4. Accessibility and proximity to the point of use or market;
- 5. Physical and topographical characteristics of the mineral resource site;
- 6. Life of resource;
- 7. Availability of public roads;
- 8. General land use patterns in the area; and
- 9. Surrounding parcel sizes and surrounding uses.

Areas meeting the criteria for Mineral Lands of Long- Term Commercial Significance and classified as such, including future discoveries, are designated on the final Comprehensive Plan map and included in the final Comprehensive Plan. The map shows the location of Mineral Lands of Long-Term Significance and will be updated and amended as new mining sites, meeting the designation criteria, are approved.

GPO 2.143 When the County reviews proposed new land uses that have the potential to conflict with commercial mining activities, such as residential subdivisions, consideration of both surface and mineral rights ownership should be included in the review.

GPO 2.144 New conflicting uses, such as residential and commercial uses, may be required by the County to locate, site, and/or be screened away from designated commercial mining activities.

<u>Maps</u>

The Kittitas County Comprehensive Plan Land Use Maps are included in the Kittitas County GIS data and are maintained by the Kittitas County Planning Department in Appendix B.

2.3(E) Subarea Plans

The subarea comprehensive plans for Easton, Swauk- Teanaway, Thorp, Westside and Taneum can be found in Volume II of the Kittitas County Comprehensive Plan, 1996. These subarea comprehensive plans have no official standing in future land use decisions but may be used as evidence to support future comprehensive plan amendments. They constitute a major part of the county's public participation in building the comprehensive plan.

Snoqualmie Pass Comprehensive Plan

Snoqualmie Pass Subarea Comprehensive Plan has been adopted into the Kittitas County Comprehensive Plan and is located in Chapter 7 of this document.

2.4 MASTER PLANNED RESORTS

The Master Planned Resort ("MPR") designation means those lands that comprise a selfcontained and fully integrated planned unit development located in areas of significant natural amenities, with primary focus on destination resort facilities consisting of short-term visitor accommodations associated with a range of developed on-site indoor or outdoor recreational facilities. A MPR may include other residential uses within its boundaries, but only if the residential uses are integrated into and support the on-site recreational nature of the resort. A MPR may constitute urban growth outside of urban areas as limited by these policies.

Kittitas County has a wide range of natural features, including climate, vegetation, water, resources, scenic qualities, cultural, and geological features, which are desirable for a wide range of recreational users to enjoy. MPRs offer an opportunity to utilize these special features for enjoyment and recreational use. MPRs can bring significant economic diversification and benefits to communities, while at the same time enhancing environmental values. MPRs can address these unique opportunities while maximizing retention of environmental features, critical habitats, resource lands, and other critical features. MPRs can be located and planned in ways that do not detrimentally affect projected growth scenarios in urban growth areas and nodes. MPRs should be designed to stand alone, by not requiring adjacent areas to develop land uses to support the resort use. Recognizing these factors, policies guiding the location and development of MPRs must consider varied and unique criteria.

MPRs may be approved in the county in accordance with: (1) RCW 36.70A.360, *Master planned resorts*, as amended; (2) county Comprehensive Plan policies; and (3) county Development

Regulations. For general guidance purposes, the county MPR policies rely upon the June, 1994 "Master Planned Resorts Draft Comprehensive Plan Policy Guidance" prepared by the Washington State Department of Community, Trade and Economic Development Task Force.

2.4(A) MPR DESIGNATION PROCESS

GPO 2.183 MPRs should have a thorough review process prior to being located, and such review process should be phased, consistent, specific, and timely. Because a MPR typically involves large and complex site-specific projects with multiple phases over a long period of time, e.g., several decades, MPRs are appropriate for and should be reviewed using the provisions of RCW 36.70B.170-.210, *Development agreements*, and KCC 15A.11, *Development agreements*. Development Agreements should provide a tangible route of review, from initial land-based mapping to the final designed MPR product.

GPO 2.184 Amendment to the Comprehensive Plan land use designation map for a specific site is necessary for authorization of a MPR. Such amendment may occur concurrently with review of a MPR application. In addition, the specific elements of a MPR proposal can be addressed, including early public participation, protection of critical areas, treatment of adjacent lands, and fiscal and economic impacts.

GPO 2.185 The MPR planning and review process should proceed from the general to the specific, and should occur in phases. As part of the application for a rezone of the county zoning map to Master Planned Resort zoning district, a proposed MPR must demonstrate that it is in accord with applicable Comprehensive Plan policies. The design, review and permitting of specific MPR phases will typically be spread out over a long period of time, and reviewed at each phase through final development plan review.

2.4(B) MASTER PLANNED

GPO 2.186 A MPR must be planned and designed by looking at the entire site and adjacent lands and communities.

GPO 2.187 A MPR should be designed in context with its surrounding environment, natural and man-made. A MPR should not adversely affect surrounding lands in any significant way.

GPO 2.188 A variety of urban residential densities should be included in a MPR site design, providing efficient, compact residential land use. Residential uses may include single-family detached lots and multi-family and attached residential structures. Clustering of residential units in a manner that preserves open space is strongly encouraged. Overall MPR density shall not exceed an average of one unit per acre. Non-urban residential densities are appropriate within a MPR if they promote and are linked to the on-site recreational features and value of the resort.

GPO 2.189 A MPR application should include a clear and detailed mapped description of how the development phases of the MPR fit together. Estimated timelines for site development, building construction and all necessary public and private capital facilities, utilities, and services should be provided.

2.4(C) SELF-CONTAINED

GPO 2.190 Except in areas designated for urban growth, new urban or suburban land uses shall be precluded by the county in the vicinity of a MPR.

GPO 2.191 A MPR should be physically and, for the most part, visually separated from the nearest developed area.

GPO 2.192 A substantial physical buffer should be included in a MPR's internal site design, allowing adjacent lands to be separated from the MPR so that activities within the MPR create no significant increases in ambient noise, reductions in air quality, or visual alterations outside the MPR. To the extent possible, natural features such as water bodies, vegetation cover, slopes, or existing man-made features should be utilized as the MPR's buffer. The actual width of a MPR's buffer should be evaluated to determine the appropriate separation from adjacent lands. The term "substantial physical buffer" is intended to mean more than one-hundred feet between a MPR's perimeter and adjacent lands.

2.4(D) NATURAL SYSTEMS AND DESIGN

GPO 2.193 A MPR plan shall be consistent with all Development Regulations for critical areas.

GPO 2.194 A MPR should maintain and enhance the physical environment. Planning for a MPR should be based on natural systems, constraints, and opportunities. Design characteristics should consider the overall context of the MPR, maintaining a common character throughout the project which blends with natural features on-site. The objective of a MPR is to minimize alterations to natural systems, unless it can be demonstrated that any such alteration will enhance critical environmental features.

GPO 2.195 An application for a MPR should include site plans depicting the locations and describing the attributes of all on-site and surrounding natural features, critical plant and animal habitats, and potentially hazardous areas. The plan should propose opportunities to integrate the site's natural amenities with the proposed built amenities.

GPO 2.196 Historic and archeological features are to be preserved. Serious consideration should be given to whether such features could be appropriately integrated into a MPR's proposed features as valuable attributes.

GPO 2.197 A design theme for a MPR may be appropriate but is not required. However, multiple discordant themes should be avoided.

2.4(E) RECREATIONAL OPPORTUNITIES AND FACILITIES

GPO 2.198 Natural and man-made recreational facilities and opportunities shall be the central focus of a MPR.

GPO 2.199 Recreational facilities must be included with initial development phases of a MPR.

GPO 2.200 Recreational facilities and visitor accommodations should be phased along with other types of development within a MPR. Recreational facilities and visitor accommodations included in initial phases of a MPR can be built over time, provided their construction is guaranteed through covenants or other legal provisions that satisfy policy requirements without imposing unreasonable up-front costs to the developer.

GPO 2.201 Off-site recreational areas and facilities, such as designated national and state parks and recreation areas, lakes, and rivers, shall not be the major recreational focus of a MPR. A MPR must include significant recreational areas and facilities on-site so that the use of off-site recreational areas and facilities by resort visitors and associated impacts are minimized. Off-site impacts which may occur may be mitigated, for example, by making some recreational areas and facilities in a MPR available for public use, or through other means proposed by the developer.

2.4(F) VISITOR ACCOMMODATIONS AND HOUSING

GPO 2.202 A MPR must have a primary focus on short-term visitor accommodations, including vacation and second homes. Other residential uses may be permitted within a MPR if such uses are integrated into and support the on-site recreational nature of the resort.

GPO 2.203 Short-term visitor accommodations should constitute more than fifty percent (50%) of all resort accommodation units.

GPO 2.204 Short-term visitor accommodations, such as hotel rooms, should be included with the first and initial phases of a MPR development.

GPO 2.205 An adequate supply of affordable employee housing within a MPR, or within a reasonable distance of a MPR, should be demonstrated. If this supply cannot be demonstrated, steps should be taken to mitigate the lack of affordable housing supply, so that an unreasonable burden is not placed on the affordable housing markets of surrounding communities. A MPR's ability to hire local residents should be taken into account in determining whether an "adequate supply" of affordable housing is available.

2.4(G) RETAIL AND COMMERCIAL SERVICES

GPO 2.206 Retail and commercial services should be designed to serve only the users of the MPR, and should be limited in scope and location to serve only as ancillary uses within the MPR. With the exception of hotel, motel, and other short-term visitor accommodations, residential uses, conference centers and meeting rooms, eating and drinking establishments, and active recreational facilities, individual retail and commercial facilities developed within a MPR shall not have a gross floor area in excess of 4,000 square feet.

GPO 2.207 Retail and commercial services offered on-site by a MPR should not duplicate the full range of commercial services available in adjacent communities. Retail and commercial services offered on-site by a MPR should be designed to discourage use from outside the MPR by locating such services well within the MPR site rather than on its perimeter.

GPO 2.208 A full-range of commercial services should only be provided within the urban growth areas of the surrounding region.

2.4(H) CAPITAL FACILITIES, UTILITIES AND SERVICES

GPO 2.209 Adequate security, fire suppression and first aid facilities and services should be provided on-site, taking into account the emergency facilities and levels of service available from the county sheriff and local fire and emergency medical districts.

GPO 2.210 MPR community sewer, water and stormwater facilities (including associated treatment facilities) may be provided on-site and should be limited to meeting the needs of the MPR.

GPO 2.211 Public facilities, utilities, and services from existing service providers can be provided to the MPR so long as all costs associated with such extensions, capacity increases, and services are borne by the MPR. Such public facilities, utilities, and service providers may include the county, cities and towns within the county, water and sewer districts, and owners of water systems.

GPO 2.212 A MPR and existing service providers may enter into agreements for shared capital facilities and utilities, provided that such facilities and utilities serve only the MPR and existing service or urban growth areas.

GPO 2.213 MPR facilities, utilities, and services should be designed to accommodate only the projected needs of the resort users. Because a resort is fully occupied only occasionally, MPR facilities and utilities need not be designed to meet peak user occupancy demands, and should rely in part on storage and other appropriate mechanisms and technology to meet peak demands.

GPO 2.214 Construction of a MPR and all necessary on-site and off-site capital facilities and utilities infrastructure must be concurrent, but may be provided in phases to meet the needs of development phases as constructed and utilized.

GPO 2.215 Impacts to public services should be fully reviewed and fair and proportionate mitigation provided by the MPR.

GPO 2.216 All school district facility and service impacts should be mitigated by the MPR on a fair and proportionate basis. Review and mitigation of impacts on affected school districts may take into consideration the relatively low student population typically generated by a MPR.

GPO 2.217 County road standards should be followed for on-site and off-site roadways and access points; provided, however that some flexibility with respect to on-site road design
standards may be appropriate if the MPR's natural features and critical areas are to be maintained. Administrative variance procedures should be utilized for this purpose.

GPO 2.218 At all times, MPR road standards must meet the minimum safety standards adopted by the county Fire Marshal.

GPO 2.219 On-site roadway and access costs should be fully borne by the MPR, and off-site road impacts should be mitigated by the MPR in proportion to its demonstrated impacts, including secondary impacts.

GPO 2.220 Traffic impacts of the MPR, on-site and between the MPR and nearby areas of interest, may be mitigated by appropriate measures, e.g., transit/shuttle services, pedestrian and bicycle trails, etc.

GPO 2.221 All external road connection points with the MPR should be determined through review agreements with affected agencies and local governments in the region.

GPO 2.222 Temporary industrial uses which are not resource based may be allowed within an MPR, provided, however, that such uses shall be limited to MPR construction, maintenance, and operational purposes and subject to annual review and approval by the County. Notwithstanding the foregoing, an MPR may be allowed to continuously maintain, both during and following MPR construction, on-site industrial uses which are limited to meeting the ongoing maintenance and operational needs of the MPR.

2.5 MAJOR INDUSTRIAL DEVELOPMENT

"Major Industrial Developments" may be approved within Kittitas County as authorized by the general principles of RCW 36.70A.365. "Major Industrial Developments" means a master planned location for a specific manufacturing, industrial or commercial business that:

- a) requires a parcel of land so large that no suitable parcels are available within an urban growth area or urban growth node; or
- b) is a natural resource based industry requiring a location near agricultural land, forest land or mineral resource land upon which it is dependent. The major industrial development shall not be for the purpose of retail commercial development or multi-tenant office parks.

Major Industrial developments may be needed to provide family wage jobs locally, and in addition may help increase tax revenues and expand the County's economic base. Four possible sites have been identified for designation as major industrial developments once appropriate policies have been adopted through the Kittitas County Conference of Governments process and amendments to the County-wide Planning Policies: Thrall area, Bowers Field, Bull Frog Road area and Alpine Veneer site.

It is the intent of the above provisions that the Major Industrial Development policies is solely intended to identify a nonexclusive list of rural areas that possibily could be considered in the future for Major Industrial Development. This listing does not in any way designate those listed areas as industrial development sites, nor does it authorize industrial development sites within rural Kittitas County. Major Industrial Development sites will only be approved and designated in the future if and when appropriate policies have been developed through the Kittitas County Conference of Government process, amendments to the County-Wide Planning Policies have been made, and the Comprehensive Plan has been amended to reflect such amendments.

Note: Please see Industrial Land Use under Section 2.3(A) Urban Land Use for additional information on industrial lands.

CHAPTER THREE: HOUSING ELEMENT

Tables showing specific data on housing, shown in the 1996 Comprehensive Plan are available from the Kittitas County Planning Department.

3.1 **INTRODUCTION**

This Housing Element describes existing housing conditions and needs in Kittitas County, and projected housing needs for the period 1995-2015. This element, to the extent possible, includes information on the plans, goals and specific housing needs of the incorporated cities, towns, and subarea plans within Kittitas County. The purpose of this element is to identify Kittitas County's goals, policies and strategies for the preservation, improvement and development of housing, and the mechanisms that will lead to affordable housing choices for all economic segments of the population.

Element Organization

The Housing Element consists of three main sections. The first section, "Housing Conditions and Needs" includes statistics which support the County's housing goals and policies. It summarizes existing housing conditions and needs, and projected housing needs within the County. It focuses on inventory data which support the County's policy orientation on growth management. The second section, "Goals and Policies" presents a general set of comprehensive goals and policies to guide the implementation of the comprehensive plan. The final section, "Housing Strategies" consists of a set of strategies related to implementation of the Housing Element, and to address future issues that may arise.

3.2 HOUSING CONDITIONS AND NEEDS

In order to effectively plan for the housing needs of Kittitas County residents, and future residents, it is necessary to assess the existing housing conditions and needs in the County. This section of the Housing Element describes the number, type and other characteristics of housing units within Kittitas County. It also describes the population of Kittitas County as it relates to housing needs.

Much of the data contained in this section comes from the U. S. Bureau of Census 1980 census and 1990 census. Other information in this section comes from other published reports regarding Kittitas County housing needs and population, and from the housing studies completed by some of the subareas in the County.

Number, Type And Distribution Of Housing Units

According to the 1990 Census, Kittitas County has approximately 13,200 housing units. Most of the housing units, (53%), are located within incorporated cities. The largest city, Ellensburg has 38% of the County's housing units. Between 1980 and 1990, the number of housing units in the unincorporated areas of the County increased at a faster rate than growth occurred within the

cities. Table 3.1 shows the distribution of housing units by city and unincorporated area for 1980 and 1990, and the percent of change in the housing distribution over the ten year period.

A relatively high percentage of the housing units in Kittitas County are located in unincorporated areas which are not served by public water or sewer systems. The number and percent of housing units on private wells and septic tanks has increased since 1980. Most of the housing units in Kittitas County are owner occupied single family units. In 1990, approximately 57% of the County's housing units were owner occupied. Of these owner occupied units, 84% were single family units.

Since 1990, the number of housing units within the unincorporated areas of Kittitas County have increased by more than 1100 units, according to permits issued by the Kittitas County Building Department. Building permits have been issued for 804 residences and 381 mobile homes during this time period. These include seasonal and recreational units.

If growth in Kittitas County population continues to settle in the same pattern as it has since 1980, the majority of the new housing units will be single family homes in the unincorporated area on wells and/or septic tanks. Changes to the zoning designations and the provision of water and sewer in the unincorporated area could target growth to selected areas.

Tenure and Occupancy Rates

According to the 1990 census figures there were 13,215 housing units in Kittitas County. Of these housing units, 10,460 were occupied. The approximately 2,750 vacant units include seasonal, recreational and farmworker housing. In some areas of the County such as Easton, Snoqualmie and Swauk-Teanaway, seasonal and recreational units comprise a majority of the units.

Of the occupied units, 5,979 were occupied by the owner, and 4,481 were occupied by a renter. This represents a home ownership rate of 57%. This rate is less than it was in 1980 (59%), and well below the statewide average of 63%. Efforts targeted at assisting first-time homebuyers and offering housing in various price ranges may reverse this trend. Relatively few homes were vacant in 1990.

The 1990 Census identifies approximately 2,400 persons within Kittitas County as residing in group quarters.. The greatest number of persons residing in group quarters are the students at Central Washington University.

Approximately 10% of the population residing in group quarters live in nursing homes. Persons in nursing homes include individuals with disabilities, and those who are elderly. The portion of the County's population which is over the age of 80 years increased by 167 people between 1980 and 1990. This increase in elderly persons may result in the demand for more nursing care facilities.

Other persons living in group quarters include individuals with developmental disabilities. As these individuals age, it is likely that some of them will require assisted living or nursing care facilities. (Kittitas County Mental Health/Developmental Disability Board)

Value And Cost Of Housing

Sale prices of homes are an indicator of the value of homes available in the community. The average sale price for homes in the Lower Kittitas County area in 1991 was \$73,350. By 1995 this average had increased to approximately \$122,650, according to Central Washington Real Estate Services. Currently, the average price of single family homes available for sale is \$120,000 (figure based on an average of twenty-two (22) listed homes on one-half to two acre lots in the unincorporated area of Kittitas County, provided by a local real estate broker).

This increase in home purchase prices has made home ownership beyond the affordability of many potential homebuyers. Using the Washington Center for Real Estate Research's formula for calculating the number of first-time home buyers in Kittitas County who can afford to purchase the median priced resale home, 70.9% of these potential purchasers can afford the median priced home. In Kittitas County, the current "ceiling" for FHA loans is at \$89,300. There are few homes available for sale which qualify for the federal home purchase programs.

The relatively high cost of homes places an additional burden on the available rental units. Of the 4,581 renter households in Kittitas County in 1990, 44% paid more than 30% of their income for housing according to the U. S. Census. According to the U. S. Department of Housing and Urban Development, housing costs in excess of 30% of a household's income is an excessive cost burden. A 1992 survey of 159 renters in Ellensburg conducted by Phillips and Associates indicated a median rent of \$300. This represents an increase in median rent of 13% from the 1990 median rent of \$265. The Kittitas County Housing Authority waiting list during this same period had 150 families in need of housing assistance.

Kittitas County County-Wide Planning Policies project the population of Kittitas County to grow by 12,242 people over the next 25 years. The County-Wide Planning Policies have set population allocations for local jurisdictions. The total 20-year allocation for Kittitas County, including the UGNs, is at 5,418. According to the 1990 Census, there were an average of 2.33 people per household. This figure was for the entire county and represented all single family units. The following equation can be used to determine the number of future housing units that may be needed.

Projected Population Increase/ Average # of persons per household = Total # of dwelling units needed

Total # of dwelling units needed - Existing vacant units = # of additional units needed

5,418/2.33=2,325 2,321-0*=2,325

*The number of vacant units is assumed to be 0.

By using this equation with the 1990 Census average number of people per households and the County-Wide Planning Policies 20-year population allocation for the county, the total number of additional units needed between 1995 and 2015 is 2,325.

The allocation of these housing units by geographic area and type will be determined by a number of factors including land availability, property ownership, land use controls and market forces. For the purpose of this Housing Element existing settlement patterns, land use designations and known environmental constraints will be used to project needed numbers of housing units by area.

The projected number of housing units for the unincorporated county are divided into nodes and unincorporated areas. These projections are consistent with the County-Wide Planning Policies which indicate that 20% of the population growth should occur in the Urban Growth Nodes and 35% of the increase should occur in the remainder of the unincorporated area. The allocation of additional housing units to the unincorporated and Urban Growth Nodes is based on those area's current pro rate share of housing units.

*Note: Five urban growth nodes have been allocated a total of 20% of the unincorporated county population (County- wide Planning Policies). Vantage as one of these nodes is included in the total projection of housing units. However, no node boundary has been identified in this comprehensive plan. A node boundary for Vantage will be added in future amendments.

3.3 <u>CITY HOUSING ASSESSMENTS</u>

There are five incorporated cities in Kittitas County, including Ellensburg, Kittitas, Cle Elum, South Cle Elum, and Roslyn. The cities of Ellensburg and Kittitas have designated Interim Urban Growth Areas (UGAs) outside of the current city limits. Cle Elum, South Cle Elum, and Roslyn have designated their respective city limits as the UGAs.

Cle Elum Comprehensive Plan Summary

The City of Cle Elum has relatively little vacant land that is suitable for residential development within the city limits; however, there are 114 vacant units. Using the County-Wide Planning Policies population allocation for the City of Cle Elum, it was determined that 310 housing units would be needed for the expected population increase. If the existing 114 vacant units were used, then only 196 additional units would be needed. In 1989, a housing condition assessment was completed for the City of Cle Elum. The results placed the majority of the existing homes in the fair category (52%), 29% of the units were rated good, and 19% were rated as poor (see Cle Elum Comprehensive Plan for rating criteria).

South Cle Elum Comprehensive Plan Summary

A large percentage of the owner occupied homes (71%), coupled with an aging population base (35% over the age of 45) indicate a town in the process of becoming a community of retirees. Based on the South Cle Elum's population allocation, as identified in the County-wide Planning

Policies, 332 housing units will be needed to accommodate the population increase. The plan allows for a density range from two dwelling units per residential acre up to sixteen units per residential acre.

In order to preserve the rural character presently associated with the community, the town should consider promoting the infilling of vacant lots with affordable manufactured mobile homes, rather than multi-family residences. However, if there is a continued need for additional affordable housing, the town must endeavor to accommodate those families with below median incomes. This would result in the construction of multi-family structures. Given the current population growth patterns, the eventual infill of vacant land should not occur anytime during the planning period.

Roslyn Comprehensive Plan Summary

Roslyn's existing housing stock consists chiefly of single family homes. Single family homes account for 91% of the housing within the City, with mobile homes accounting for another 4%. Multi-family residences constitute the remaining 5% of the housing stock. Based on the projected population increase and existing housing stock, there does not appear to be any need for additional residential units. The current housing stock of 606 units should serve a population of 1280 persons (KCCOG 1994 estimates), which is 47% higher than Roslyn's 1990 Census count.

Kittitas Comprehensive Plan Summary

The City of Kittitas is one of two cities which has an UGA beyond the current jurisdictional boundaries. The draft date of this plan is May 24, 1995. Since 1990, both home sale and rental rates have increased substantially within the City of Kittitas. Homes that sold for \$5000 in 1990 can now be sold for \$75,000. An exterior structural survey of Kittitas homes was completed in 1994. This survey found that 3.4% of the homes were in excellent condition and 20.1% were rated in poor condition. The majority of the homes (75.5%) were rated in good or fair condition. The city currently does not have any licensed group, nursing, or foster care facilities, but has one public-assisted apartment housing development located within the city limits. This development includes 20 living units for the elderly and disabled and 16 units for families.

The most recent development activity was located north of the original townsite. Alpine Estates is a 100 lot, manufactured home subdivision. Another phase of Alpine Estates has been discussed, adding another 70 lots to the development. Two other residential subdivisions, consisting of approximately 20 new lots, have recently been reviewed and are under construction within the city.

The UGA for the City of Kittitas includes 214 acres, which will be designated as low-medium residential land use, once it becomes final. Public facilities will be included in the UGA to compensate for the higher densities.

Ellensburg Comprehensive Plan Summary

The City of Ellensburg is the second of two jurisdictions which includes a UGA boundary beyond the current jurisdictional boundary. Ellensburg has experienced a moderately steady growth over the last 50 years, resulting in a housing stock which varies in age and style throughout much of the City. In addition to conventional single family units, there are a number of mobile home parks in the City. Some are zoned as mobile home parks, and provide low and moderate income families, seniors, and students with housing. Several other mobile home parks were grandfathered uses in commercial zoning districts. The condition of the units within these mobile home parks varies greatly, with many units appearing to be substandard in condition.

Based on the 1990 Census, there were 5,015 housing units within the City, of which 1,741 (35%) were owner occupied and 3,044 (61%) renter occupied. This represents a ten-year increase in total units of 2.5% compared to a population increase over the same time period of 5.2%. Over the ten-year period, structures with two to four units showed the largest increase at 28%. Sixteen percent (16%) of the 3,044 rental units are subsidized, with 337 family and 162 senior units.

The housing supply within the UGA is also tight. The typical homes within the UGA are o large lots, priced beyond the resources of most new homebuyers. The supply consists of primarily owner occupied with very few multi-family structures.

3.4 GOALS, POLICIES, AND OBJECTIVES

Kittitas County has established the following goals and policies to guide future housing development. These goals and policies were developed in response to existing housing conditions and identified needs within the County, and support the County-Wide Planning Policies.

GPO 3.1 Provide a sufficient number of housing units for future populations in rural areas of Kittitas County.

GPO 3.2 Designate higher density residential land use zones within Urban Growth Areas and Urban Growth Nodes.

GPO 3.3 Encourage home ownership within the community.

GPO 3.4 Provide sufficient housing units while maintaining environmental quality.

GPO 3.5 Encourage residential development close to employment opportunities and needed services to reduce vehicular traffic and related air quality problems.

GPO 3.6 Provide for future populations while protecting individual property rights.

GPO 3.7 Promote community involvement in the preparation and implementation of plans and regulations related to residential development.

GPO 3.8 Provide housing options to allow residents with special housing needs to live as independently as possible throughout the County.

GPO 3.9 Provide housing which is supportive of economic opportunities.

GPO 3.10 Encourage mixed use, commercial and residential development, in areas which need to provide housing for employees.

GPO 3.11 Encourage the development of temporary housing for farm workers.

GPO 3.12 Encourage the development of innovative applications of technology in housing.

GPO 3.13 Provide for housing to be developed which is affordable to all economic groups.

GPO 3.14 Designate high density residential land use zones such as PUDs, cluster development, and MPRs outside of Urban Growth Areas and Urban Growth Nodes.

GPO 3.15 Provide for a range of housing types within Kittitas County.

GPO 3.16 Evaluate the impact of proposed policies and procedures on the cost of developing, preserving or maintaining of residential units prior to adoption.

GPO 3.17 Provide a sufficient number of housing units for future populations while maintaining the rural character of Kittitas County.

GPO 3.18 Provide sufficient housing units while maintaining environmental quality.

GPO 3.19 Provide housing options to allow residents with special housing needs to live as independently as possible throughout the County.

GPO 3.20 Provide housing which is supportive of economic opportunities.

3.5 <u>KITTITAS COUNTY HOUSING STRATEGIES</u>

The goals which have been developed to guide future housing development in Kittitas County can be achieved by adopting the previously stated policies and implementing the following strategies. These strategies include several recommended changes to the zoning code. These recommendations of change to the zoning code are consistent with the consideration of alternate land use designations currently being studied by Kittitas County. Specific references are not made to a particular zone at this time, since more than one land use designation system is being proposed. Instead the term "higher density zone" in the strategies refers to those residential designations which allow more than two units per acre. "Low density zones" in the strategies refer to residential designations which allow fewer than two units per acre. The strategies focus on the relationship of the zone to housing needs rather than recommending a particular land use designation alternative. The numbers used in this section relate to the Goal and Policy numbering system in the previous section of the Housing Element.

Strategy 3.1 Identify lands within areas which are served by centralized water and sewer systems, paved streets, and have other public services provided to them which are suitable for multi-family uses or only single family uses and designate these areas for higher density residential use, including planned unit developments and clustered housing.

Strategy 3.2 Review the siting of proposed development to assure that it will not be incompatible with future higher density land use designations.

Strategy 3.3 Invest in the maintenance and expansion of water, sewer, streets, parks and fire protection services to adequate service levels in areas designated for higher density residential uses.

Strategy 3.4 Eliminate barriers to infill residential development in Urban Growth Areas and Urban Growth Nodes and develop strategies.

Strategy 3.5 Provide for a range of housing types within Kittitas County.

Strategy 3.6 Include multi-family units in commercial zones.

Strategy 3.8 Use development regulations to assure quality in housing development and maintenance.

Strategy 3.9 Provide infrastructure to support higher density development in areas where it is designated.

Strategy 3.10 Enforce building and zoning codes in residential neighborhoods.

Strategy 3.11 Permit historic structures applications for federal and state funds to preserve them.

Strategy 3.12 Invest in the maintenance and expansion of centralized water and sewer systems in the Urban Growth Areas and Urban Growth Nodes.

Strategy 3.13 Allow home occupations as a conditional use in all residential zones.

Strategy 3.14 Allow child care facilities as a conditional use in all residential zones.

Strategy 3.15 Eliminate requirements which discourage use of innovative technology in residential development.

Strategy 3.16 Include resident participation in needs assessment processes, plan development, implementation and evaluation through public hearings, citizen committees, and timely notice of planning activities.

Strategy 3.17 Consider the potential costs to individual property owners and the potential to the whole population when developing goals, polices and procedures.

Strategy 3.18 Identify the residential zones in which group homes, foster homes, and other specialized care facilities are allowed in the zoning code, and define these terms.

Strategy 3.19 Allow a range of residential types in commercial zones.

Strategy 3.20 Eliminate barriers to using innovative technology in housing construction.

CHAPTER FOUR: TRANSPORTATION

4.1 INTRODUCTION

This chapter is organized into the following sections which correspond to major issue areas identified throughout the comprehensive planning process. Each section contains proposed goals, policies, and implementation measures for consideration and inclusion in the final comprehensive plan:

- Inventory of Existing Facilities and Services
- Land Use, Environment and Economic Development
- Level of Service and Concurrency
- Finance
- Intergovernmental Coordination and Public Participation

The complete Transportation Plan is maintained by the Kittitas County Department of Public Works. The Kittitas County Comprehensive Plan includes the Transportation Plan by reference. The Transportation Plan is adopted through a separate process than the annual comprehensive plan amendment process. Any changes made are adopted by reference to the Kittitas County Comprehensive Plan at adoption.

4.2 INVENTORY OF EXISTING FACILITIESAND SERVICES

Kittitas County's road system in the lower valley is roughly based on a one-mile grid system which is intended to follow section lines or reasonable fractions of a section subdivision (i.e. quarter sections, 1/16th lines, etc.). The upper reaches of the county are mountainous and roads lend themselves more to terrain and other physical conditions than to survey features.

There are five main categories of roads within Kittitas County: Federal, State, County, "public" and private.

<u>Federal</u>. Federal roads, such as US Forest Service roads, access federal lands and are administered by federal agencies.

<u>State</u>. Local roads which provide direct access to state lands are administered by the same state agencies which administer the properties (i.e. Dept. of Natural Resources).

State routes, such as freeways and state highways, provide connections between cities, counties and other state facilities. State routes are administered by Washington State Dept. of Transportation.

<u>County</u>. County roads that are officially adopted onto the Kittitas County Road system by the Board of County Commissioners are also known as "on-system" roads. The county is responsible for maintenance and improvements to these roads.

<u>Public</u>. Roads which are open for public use but are not maintained or improved by Kittitas County are also known as public "off system" roads. These are roads which have been dedicated to the "public" through a platting process or have been used by the public for over 10 years, but have not been accepted as part of the county road system by the Board of County Commissioners. These roads cannot be gated or obstructed. There is presently no inventory of these facilities.

<u>Private</u>. Private roads are usually created by developments. They are owned, controlled, and/or maintained by private property owners. There is presently no inventory of these facilities.

4.2(A) County Roads

Tables in the Transportation Appendix constitute a summary of the county road log inventory of existing conditions for all county on-system roads. They are grouped according to functional classification and include mileage for each road and then a total for each classification. The "Urban" and "Rural" classifications refer to the federal urban area around Ellensburg. Designation of final Urban Growth Areas (UGAs) and joint city-county development standards may alter the urban and rural classifications. Also included in the inventory is pavement width, type, and Average Daily Traffic (ADT) volumes and years. The "Source" column indicates whether or not the ADT figure was an actual count (3) or an estimate (4). The "Capacity" column is a calculated field using Highway Capacity Manual (HCM) methods based on pavement width and number of lanes. The "LOS" is also calculated based on the HCM.

4.2(B) Changes To Road Inventory

Some of the existing county roads may be vacated or annexed in any given year. Road vacations take the mileage off the inventory through a public transfer of the property. Annexations of properties into city limits can involve transferring ownership and maintenance responsibilities of adjacent roads to a city. Road vacations and annexations remove road mileage from the county road log inventory. Just as annexations and vacations remove roads from the inventory, construction of new county roads adds mileage to the inventory. New roads can be constructed either by County resources or as part of developments. Usually, new local access roads are constructed as part of developments and arterials and collectors are constructed by the County, but as development continues, there may be higher classifications of roadways being constructed by developers. Grid systems of arterials, collector roads and possible extensions should be identified in each UGA and future arterials and collectors should be located based on growth in the Non-UGA areas.

4.2 (C) Intercity Bus Service

Kittitas County is served by regularly scheduled departures and arrivals by Greyhound, Empire Bus Lines, Northwest Stage Lines, and Kittitas county Action Council, and their service appears o be adequate for the area.

4.2 (D) Rail Transport

The railroad track runs from Yakima to Cle Elum on the old Northern Pacific Line. Future changes being considered include the possibility of Burlington Northern reopening its Stampede Pass line from Auburn to Cle Elum. This would bring regular train traffic down the railroad line and through Kittitas County to either Pasco or Lind opening up an alternative mode of transport for heavy freight.

4.2 (E) Air Transport *Kittitas County Airport (Bowers Field)*

Located north of Ellensburg about one and a half miles, on Bowers Road, Bowers Field is classified as a General Utility - Stage I airport capable of serving most single- engine, and turboprop aircraft. The airport offers VOR and DME navigation aids and VASI on the primary runway. Currently there are no commercial air carriers for either freight or passenger service. There is one charter service, an agricultural spraying operation and the CWU training center which operate out of Bowers Field. Estimated operations in 1995 are 74,800 (operation = one take-off or landing).

There are several planned improvements including expansion of the adjacent industrial area, improvements to fuel facilities, water system and adding a washdown facility for agriculture spray aircraft.

Kittitas County Airport (Bowers Field) is the largest airport in the County and is a valuable transportation commodity. The airport is the access point to the major mode of transportation for the nation.

The Kittitas County Airport (Bowers Field) provides a vital transportation link, servicing all of Kittitas County with access to modern transportation options for emergency services, commercial operations, commuter transportation, and recreational flying. The airport advisory committee is dedicated to preserving this valuable asset by recommending the enactment of appropriate ordinances and policies to accomplish the following:

- Enhance the airport as a transportation hub and asset for economic development.
- Encourage compatible development at the airport to generate revenue streams to decrease subsidy of airport operations and facilities from tax revenue.
- Protect the airport and surrounding land users and owners from conflicting uses through careful and compatible land use planning. Such planning should include, but not be limited to, density reductions and land use and building restrictions designed to protect the take-off and landing and approach corridors, and areas adjacent to and under existing traffic patterns.

In order to promote land use compatibility on lands within and adjacent to and in the vicinity of the Kittitas County Airport (Bowers Field), certain safety zones are established. Such safety zones are shown on Kittitas County Airport (Bowers Field) Overlay District Map "B". Within each of the safety zones certain land use limitations, development standards, land uses and development recommendations are established. The established safety zones are defined in chapter 17.58.040B of the Kittitas County Code as adopted by Ordinance 2001-10.

DeVere Field

DeVere Field is a privately owned commercial airport built by Mr. DeVere approximately 35 years ago. It is located at 5210 Airport Road, about three miles east of Cle Elum. There are several single engine aircraft based at the airfield and several hangars on site. The airfield is closed during periods when snow covers the runway.

Cle Elum Municipal Airport

Cle Elum Municipal Airport is a single runway, predominately recreational airport. Its one runway is an approximately 40 ft. wide, paved strip with a paved main taxi-way. It can handle single engine light aircraft and some light twins. It is located east of the city of Cle Elum at 1990 Airport Road. The city of Cle Elum has adopted a Master Plan for the development of the Cle Elum Municipal Airport which, by reference, is included in this document. Planned improvements include widening and building taxiways, building new hangars, lengthening the runway, adding a fuel supply and providing residential housing on the north side of the runway.

Easton Airfield

Located northwest of the town of Easton on Sparks Road, the Easton airfield is owned and operated by the Washington State Department of Transportation. The airfield was originally built as a relief airstrip for U.S. Mail aircraft in the 1940's. Today, it is primarily used as a recreational airport but serves as an emergency landing strip in case of severe weather in the Cascade Mountains. The airstrip is a turf runway only in operation during the dry seasons. It is often closed during the entire winter due to deep snow.

4.2(F) Truck Transport

Kittitas County appears to be adequately served by truck transport businesses as there are a number of commercial and natural resource trucking companies based in the county. There appears to be no way to accurately determine travel levels generated by truck transport activity within Kittitas County.

4.2(G) Non-Motorized Transportation

Widened shoulders on Umptanum Road from Ellensburg city limits to Irene Rinehart Park provide a shared bike/walkway adjacent to the travel lanes used by motorized vehicles. Recently, the John Wayne Trail along the old Milwaukee rail road was transferred from Washington State Parks and the Department of Natural Resources (DIR) to the Washington State Department of Transportation (WSDOT). The future of this corridor is uncertain, but it presently provides a multiple user path through most of Kittitas County. The trail has been used primarily for recreation uses. An abandoned Burlington Northern right-of-way between Cle Elum and Roslyn is a recent addition to the trail system.

Attachment 12

4.2(E) Air Transportation

* * *

Cle Elum Municipal Airport

Cle Elum Municipal Airport is a single runway, predominately recreational airport. Its one runway is an approximately 40 ft wide, paved strip with a paved main taxi-way. It can handle single engine light aircraft and some light twins. It is located east of the city of Cle Elum at 1990 Airport Road. The city of Cle Elum has adopted a Master Plan for the development of the Cle Elum Municipal Airport, which by reference is included in this document. Planned improvements include widening, and building taxiways, building new hangars, lengthening the runway, adding a fuel supply and providing residential housing on the north side of the runway.

It is the goal of Kittitas County to work in cooperation with the city of Cle Elum to preserve this asset by developing appropriate ordinances and policies to accomplish the following:

- Enhance the airport as a transportation hub and asset for economic development.
- Encourage compatible development at the airport to generate revenue streams to decrease subsidy of airport operations and facilities from tax revenue.
- Protect the airport and surrounding land users and owners from conflicting uses through careful and compatible land use planning. Such planning should include, but not be limited to, density reductions and land use and building restrictions designed to protect the take-off and landing and approach corridors, and areas adjacent to and under existing traffic patterns.

* * *

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Parametrix, Inc. has prepared a draft Non-Motorized Transportation System Plan dated June 1996. It was funded entirely by a grant. The plan should be reviewed by the Planning Commission, before review and approval by the Board of County Commissioners. No county wide trail program will be adopted without being reviewed by the Planning Commission, reviewed by the public through a public hearing forum and adopted by the Board of County Commissioners.

4.2(H) Transportation System Maintenance

Preserving and maintaining the public's investment in transportation infrastructure is an important expenditure of public funds. Presently, maintenance activities account for approximately 30% of the County's road budget. Kittitas County has different priority levels for maintenance activities. The first priority is for emergencies. Immediate action is taken to repair damage and correct problems as soon as they are reported. The next maintenance priority level is for items that are scheduled on a yearly basis, including but not limited to: crack sealing, preleveling, sealcoating, and roadway striping. Many of the preventive maintenance activities for individual facilities are scheduled on a seven to nine year maintenance cycle.

Preventive pavement maintenance is defined as those treatments or applications that extend the service life of pavements in good structural conditions. The goal of a preventive pavement maintenance program is to keep the pavement conditions above a level that would require corrective maintenance or other major repairs. The charts in the Transportation Appendix illustrate the increased costs of delaying maintenance for different types of pavements.

4.3 LAND USE, ENVIRONMENT AND ECONOMIC DEVELOPMENT

Many of the decisions related to transportation have an effect on land uses, the environment and economic development. Different land uses have different transportation needs and impacts. Transportation improvement projects need to address the environmental impacts of the proposed actions. Similarly, many economic development strategies include the need for transportation facilities. These areas are all inter-related and their relationships need to be recognized.

4.3(A) Land Use

The final comprehensive plan will contain a land use element with a land use plan and policies which will need to be consistent with the transportation element. In the event that the land uses proposed cannot be supported by the existing transportation system and there are no identified means to fund the necessary improvements, there needs to be a mechanism in place to review both plans and either revise the land use plan or otherwise change the level of service standard or project priorities and funding in the transportation element. This needs to be an iterative process in which both plans are routinely reviewed for consistency and compatibility.

Presently, the transportation-related assumptions used in the alternative draft land use plans have been developed as part of the SEPA process.

4.3(B) Environment

Transportation decisions are not, and should not be, exempt from environmental review. Impacts to the natural and built environment need to be taken into consideration before any major transportation decisions are made. Most local transportation improvement projects are subject to state and federal environmental regulations as well as any local environmental laws that apply. County road projects (CRPs) routinely follow SEPA regulations unless they are specifically exempted under WAC 197-11-305, 800 through 880. Some large transportation improvement projects are also subject to NEPA -- the National Environmental Policy Act. Other environmental reviews are part of permitting for work over or adjacent to streams. Agencies with permitting and/or reviewing authority include the US Army Corps of Engineers, Washington State Department of Ecology, Washington State Department of Fish and Wildlife, as well as the Washington State Department of Transportation and local agencies.

4.3(C) Economic Development

Transportation facilities, or the lack of them, are an important consideration to a business or industry making location decisions. The decision whether or not to locate in a particular jurisdiction can rest solely in the balance of access to transportation facilities. Businesses look at their need to get customers and supplies to their location with ease. Industrial developments need access to transportation facilities for shipping and receiving. Many local jurisdictions have to balance their desires to attract new businesses and industries against the obligation to provide transportation services.

4.4 <u>LEVEL OF SERVICE / CONCURRENCY</u>

Kittitas County considered several methodologies for measuring level of service for arterial roadways including the Highway Capacity Manual (HCM), an "operation" and "condition" level of service methodology used by Douglas County, and a "minimum tolerable conditions" methodology.

The Highway Capacity Manual (HCM) method of measuring level of service is recognized as a national standard and is currently being utilized by other jurisdictions throughout the state including the Washington State Department of Transportation (WSDOT) and the City of Ellensburg.

4.5 EXISTING DEFICIENCIES

Although there has not been an official LOS methodology or threshold determination made, Table 4.10 is a listing of all the arterial/arterial intersections and their current LOS using the HCM methodology. Kittitas County does not presently have any capacity related deficiencies on these facilities.

4.5(A) Ten-Year Forecast

As the population grows within the county, the number of registered vehicles and drivers will also increase. Where those vehicles travel will depend, in large part, on where the drivers reside, shop and work. Determining the likely increases in traffic along transportation facilities will need to be based on the land uses which will be permitted and even encouraged in various parts of the county.

- 1. The ten year travel forecast will be determined using:
- 2. Calculate 10-year average annual growth factors for each functional classification using traffic count data for the previous 10-year period.
- 3. Apply the appropriate growth factor to the base year approach volumes depending on classification.
- 4. Use 15% of the approach volumes for peak hour.
- 5. Calculate 10-year LOS using the Highway Capacity Software for unsignalized intersections using the same movement distribution (left, through, right, turn) as base year.

Assumptions should include:

10-year travel growth will be similar to previous 10-year period.

Growth on arterials will correspond with functional classification growth rates.

No changes to intersection controls except those that are already planned, funded, and/or are likely to be completed within ten years.

4.5(B) Planned Improvements

Six-Year Transportation Improvement Program

The County's Six-Year Transportation Improvement Program (TIP) is reviewed and updated every year in order to be adopted by the end of June. Washington State Law requires counties to develop six-year transportation improvement programs as provided under RCW 36.81.121.

In addition to state laws, federal laws also dictate transportation improvements. The intermodel Surface Transportation Efficiency Act of 1991 (ISTEA) changed the was transportation agencies - Federal, State and local -- do business. It is our objective to meet as many of the needs of the traveling public - county residents, visitors, and service providers -- in order to provide a safe and efficient transportation system while recognizing the fiscal realities of funding for construction and maintenance of the transportation system.

The Six-Year TIP is updated every year by the Department of Public Works and changes are made to reflect funding secured or shifts in priorities. The Annual Construction Program,

adopted with the county's budget later in the year, is a still more accurate picture of the first year of the TIP.

New Roads and Planned Extensions

The Transportation Plan has a list of proposed new roads or extensions which have been identified through various planning processes to date.

4.6 FINANCING TRANSPORTATION IMPROVEMENTS

4.6(A) Revenue Sources

Tax Revenues

There are a variety of revenue and funding sources available for transportation improvements. Portions of the moneys collected from property taxes, motor vehicle fuel tax (gas tax), and motor vehicle excise tax (MVET) are redistributed back to local agencies based on formulas which factor in total population and numbers of miles of certain arterial classifications. Only a small portion of property taxes collected go directly into the local "road fund". Current road mileage rates for Kittitas County are \$1.8238 per \$1000 assessed valuation. This value reflects the 1996 levy shift of \$.1485/thousand to the County's general fund as well as the \$.0664/thousand to law enforcement.

Other local option taxes available but currently not being utilized by Kittitas County include a vehicle license fee and additional fuel tax. The local vehicle license fee provision (RCW 82.80.020) would need to be approved by the County legislative authority but would be subject to repeal by a referendum. The fee limit is \$15.00 per registered vehicle and could generate approximately \$150,000 annually. A local option gas tax (RCW 82.80.010) would need to be approved by both the County legislative authority and by a majority of registered voters in the County. The tax is limited to 10% of the state gas tax (\$0.023 per gallon), but could generate approximately \$200,000 annually.

Grants and Loans

The most common grant sources are federal and state. The federal grants are administered by various agencies within the US Dept. of Transportation (USDOT) such as Federal Highway Administration (FHWA) and Federal Transit Authority (FTA). Most state transportation grants are administered by the Washington State Department of Transportation (WSDOT), County Road Administration Board (CRAB), and the Transportation Improvement Board (TIB). Small grants and loans are also available from the Department of Community Trade and Economic Development (DCTED) through the Public Works Trust Fund (PWTF) and Community Economic Revitalization Board (CERB) primarily for economic development projects. Small safety-related "mini-grants" are also available from the Washington State Traffic Safety Commission (WSTSC).

Most grants require a portion of the grant to be matched with local or other "non-grant" funds. Common percentages are 10 - 20% matching funds. Local funds used to match grant funds maximize the local tax dollars. This benefit is two-fold. First, local tax dollars that have gone into large state or federal grant fund accounts are coming back to benefit Kittitas County. For instance, a \$200,000 project receives approval for an 80% grant (\$160,000). Local match requirements are only \$40,000. Local taxpayers have, of course, contributed to the grant through other taxing sources, but now they're seeing the benefits of their tax dollars coming back to Kittitas County. If the grant wasn't awarded here, it would have been awarded some place else and the dollars would not have gone to directly benefit Kittitas County taxpayers.

A second benefit that comes from maximizing the local "road fund" dollars by matching grant funds for large projects, is that there is more "road fund" left for other transportation improvement activities such as maintenance and small improvement projects that were either not eligible or not competitive for grants. Since most maintenance activities are not eligible for grants, this can be a tremendous boost to the maintenance budget which can only draw from the local "road fund".

Cautions to be heeded when pursuing grants and loans include the costs of administering the funds. There is no such thing as "free money" and, for some agencies, the cost of administering a grant is reason enough not to pursue it. Future restrictions associated with grants can also make them too restrictive or costly to pursue. There are many record-keeping, form-signing, reporting and auditing requirements associated with grants that have to be considered when applying for outside funding. There are ways to reduce these administrative costs by having trained, experienced staff handling the finances. Having a centralized "grant officer" who is familiar with the record-keeping of a variety of funding sources can be a tremendous savings both during the projects and during the audits following project completions.

4.7 **<u>PUBLIC PARTICIPATION</u>**

Discussions and decisions related to transportation are not made without active consultation with the public. Some forums are more successful than others at soliciting quality input from a broad crosssection of interests, so a variety of forums are available at many levels of the transportation planning process. The GMA provisions requiring consideration of Intergovernmental Coordination and Public Participation were accomplished, and there was review and deliberation for consistency in the adoption of the transportation section considering the Quad County Regional Transportation Planning Organization plan, the County-wide Planning Policies, and the work conducted by the Surface Transportation Planning group. In addition, the transportation section considered all the work of the subarea committees, testimony at the Transportation Improvement Program open houses and testimony at public hearings.

4.8 GOALS, POLICIES AND OBJECTIVES

Multi-Modal Transportation System, Arterial System, and System Maintenance

GPO 4.1 To develop and maintain a safe, efficient and environmentally sound multi-modal transportation system in accordance with local, state, and federal requirements.

GPO 4.2 Kittitas County shall promote a variety of transportation modes through the selection of transportation improvement projects and review of development proposals in the Urban Growth Areas, by considering alternative modes when reviewing development applications, incorporating multiple

modes into transportation improvement projects, and by establishing development standards to support the use of alternative transportation modes.

GPO 4.3 To create a transportation system that provides reasonable circulation for all users throughout the County.

GPO 4.4 Kittitas County shall provide a transportation system that enhances the safety of the community and which maximizes the use of the existing road system by maintaining a system of arterials, collectors and local access roads that forms an interconnected network for vehicular circulation.

GPO 4.5 To provide all-weather, all-season use of the arterial system for the movement of goods and services.

GPO 4.6 Kittitas County shall strive to maintain an arterial system that can accommodate legal weights year-round by developing a program for identifying and prioritizing maintenance and reconstruction projects for roads which are used primarily for freight and good movement.

GPO 4.7 To ensure an efficient regional system of arterials is functional, safe and consistent with regional priorities and comprehensive plans.

GPO 4.8 Kittitas County shall work with WSDOT, cities and neighboring counties to develop and maintain a system of arterials, collectors and local access roads that forms an interconnected network for the efficient movement of goods and people, by prioritizing arterials improvements and maintenance activities based on the function a facility serves, by providing for local vehicular access to arterials while minimizing conflicts with through traffic, and by participating in regional coordination efforts such as QuadCo RTPO.

GPO 4.9 To identify and encourage preservation of transportation corridors for future rights-ofway by identifying corridors to be preserved as part of the overall transportation plan, by requiring right-of-way dedication or easements as part of development approval, and by acquiring right-of-way for future needs through purchase from willing sellers.

GPO 4.10 Kittitas County will place the appropriate emphasis on maintenance activities in order to preserve the capital investment in the transportation system by dedicating maintenance funding through the annual budgeting process and by developing performance measures to demonstrate the cost savings associated with appropriately scheduled maintenance activities.

GPO 4.11 Encourage and initiate Road Improvement Districts and arterial road building projects with the capital facilities six-year plan to meet Concurrency requirements of anticipated growth.

GPO 4.12 Encourage a grid system in the UGAs and UGNs where practical.

GPO 4.13 Kittitas County shall adopt a LOS standard below which new development must mitigate its impacts.

GPO 4.14 To recognized non-motorized travel as a viable transportation mode by developing a county-wide non-motorized system plan and by improving and maintaining existing non-motorized facilities.

GPO 4.15 To review and modify the Parametrix draft dated June 1996 and to adopt a Non-Motorized Transportation System Plan that clearly reflects the direction for Kittitas County.

GPO 4.15A To work with other entities to identify viable options and projects for a connection of the John Wayne Pioneer Trail through, adjacent to, or around the City of Ellensburg.

GPO 4.15B Kittitas County discourages new public trail systems in farming areas.

GPO 4.15C To recognize air transport and airports as an important element.

Land use, Environment and Economic Development

GPO 4.16 To provide a transportation system that corresponds to and is consistent with patterns of land development in accordance with the adopted land use plans.

GPO 4.16A To adopt plans and regulations in compliance with RCW 36.70.547, or as amended thereafter, to protect airport operations.

GPO 4.17 Kittitas County shall ensure consistency between the land use and transportation plans through an iterative process for adjusting either or both plans by developing a process for reviewing plans for consistency and developing a policy for resolving inconsistencies or incompatibilities through an identification of needs and alternatives.

GPO 4.18 To ensure the transportation system can support new development and that development

GPO 4.19 Kittitas County shall evaluate the merits of a proposed land use action against the potential impacts on the transportation system by reviewing development proposals for potential impacts to the transportation system and requiring developments to identify and mitigate their transportation impacts through SEPA or other local regulatory actions.

GPO 4.20 To provide a transportation system that is safe, reliable and financially feasible while providing for the future needs of Kittitas County by evaluating system improvements with current and future needs in mind and by providing system improvements which reduce conflicts between passenger vehicles and agricultural equipment.

GPO 4.21 Kittitas County shall consider the environmental impacts of any proposed transportation decisions by proposing alternative transportation improvements which minimize environmental impacts, by complying with all application federal, state, and local environmental rules, and by integrating environmental review through the transportation decision making process.

GPO 4.22 To provide a transportation system which supports economic growth and vitality by developing policies related to capital improvements to support economic development.

GPO 4.23 Kittitas County shall develop and maintain a transportation system which provides access to and from centers identified in the comprehensive plans.

GPO 4.24 Kittitas County shall consider the traffic volumes, type of use, adjacent land uses, and maintenance costs before approving any new county-maintained gravel roads.

Level of Service (LOS) and Concurrency

GPO 4.25 To develop and implement LOS standards to evaluate the adequacy of transportation facilities which are measurable, understandable, and appropriate to the services and/or facilities being considered under local conditions.

GPO 4.26 Kittitas County shall utilize the Highway Capacity Manual (HCM) methodology to measure the effectiveness of the arterial system at arterial intersections by evaluating all arterial/arterial intersections (including state highways) to identify existing service levels and by developing a transportation model to evaluate the impacts of future land use alternatives on arterial/arterial intersections. Intersections which fall below level of service "C" in rural areas and "D" in urban areas shall be considered deficient.

GPO 4.27 To ensure that necessary transportation facilities and services to maintain adopted level of service standards are available when the impacts of development occur.

GPO 4.28 Kittitas County shall develop and implement a concurrency management system which identifies existing deficiencies, funded improvements, and system capacity balances.

GPO 4.29 To develop a LOS standard that corresponds to land development goals and policies as expressed in the overall Comprehensive Plan for Kittitas County.

GPO 4.30 To encourage land use development patters and support technologies which reduce the demand for increased capacity on roadways.

GPO 4.31 Kittitas County shall promote demand management strategies in areas which are experiencing increased congestion by encouraging transit, non- motorized transportation, telecommuting, flexible work hours and other demand management strategies where practical.

GPO 4.32 To develop a variety of performance measurements to evaluate the transportation system and prioritize improvements.

GPO 4.33 Kittitas County shall establish appropriate performance measurements which reflect the rural character of Kittitas County by developing and implementing a Pavement Management System (PMS) to measure pavement conditions and to prioritize maintenance or improvement projects, and by developing and implementing a Safety Management System (SMS) to identify potentially hazardous locations and to prioritize mitigation measures.

Financing Transportation Improvements

GPO 4.34 To maximize local funds by pursuing outside funding sources for transportation improvement projects.

GPO 4.35 Kittitas County shall pursue grant funding for appropriate transportation improvement projects by identifying possible funding sources for specific transportation improvement projects, by submitting grant applications to the appropriate reviewing agencies during the grant cycle, by developing grant proposals with realistic cost estimates and by following-up on grant applications denials to seek advice to become more competitive.

GPO 4.36 To consider all local revenue options for financing transportation improvements by evaluating the potential revenues against the political costs of imposing additional taxes and by seeking advice from other local agencies who have successfully implemented optional revenues.

GPO 4.37 To maximize benefits from expenditures of transportation funds

GPO 4.38 Kittitas County shall seek partnerships with other public or private agents when mutual benefits and significant cost savings are anticipated as a result of a coordinated transportation improvement project by coordinating transportation improvement projects with other jurisdictions, utilities and adjacent property owners to maximize benefits while minimizing costs.

GPO 4.39 To reduce administrative costs associated with transportation improvements

GPO 4.40 Kittitas County shall encourage efforts to reduce the costs associated with administration of transportation improvement projects by identifying opportunities to consolidate or coordinate administration responsibilities throughout a transportation improvement project as well as provide training on grant accounting and project administration.

GPO 4.41 To fund transportation improvement projects which meet the identified needs of the community

GPO 4.42 Kittitas County shall prioritize transportation improvement projects without identified funding sources based on community needs

GPO 4.43 To re-evaluate the land-use plan if transportation improvements cannot be reasonably funded

GPO 4.44 Kittitas County shall develop an ongoing process for evaluating transportation impacts of different land use proposals to ensure financial feasibility of the land use plan by developing a transportation model which can assign and distribute additional vehicle trips to the transportation system based on alternative land use assumptions and by evaluating alternative funding sources if transportation system improvements are anticipated as a result of proposed land uses.

Intergovernmental Coordination and Public Participation

GPO 4.45 To identify, review and resolve interjurisdictional transportation concerns within or affecting Kittitas County

GPO 4.46 Kittitas County shall coordinate transportation planning, construction and maintenance efforts with all affected agencies by developing joint transportation standards for UGAs with the adjoining city or town, by identifying stakeholders and including them in the decision-making process and jointly develop a process for resolving conflicts between jurisdictions.

GPO 4.47 To ensure coordination among federal, state, regional, and local transportation agencies related to laws, policies and plans in order to seek consistency and ensure compatibility with regional priorities.

GPO 4.48 Kittitas County shall actively participate on selected state, regional and local transportation committees by encouraging County representation on state, regional and local transportation committees, by actively participating in coordination efforts, and by reviewing County plans and policies for consistency with other plans and policies within the region.

GPO 4.49 Provide a variety of opportunities for quality public input on transportation decisions from a representative cross section of the community.

GPO 4.50 Kittitas County shall promote public information and communication with businesses, organizations, and individual citizens as part of the transportation planning and decision-making process by exploring innovative means to promote public dialog on transportation issue, and by encouraging meaningful public input throughout the decision-making process.

GPO 4.51 Kittitas County shall recognize the grandfathered rights of private landowners to use roads built on public lands under federal statute RS 2477.

GPO 4.52 To ensure concurrency of transportation planning and infrastructure in areas of high settlement patterns, Kittitas County will establish a formal bi-annual review process for levels of service (LOS) and land use settlement patterns.

CHAPTER FIVE: CAPITAL FACILITIES PLAN

5.1 <u>CONTENTS</u>

The CFP Element of the comprehensive plan is presented in four sections:

Introduction: Purpose of the CFP, statutory requirements, methodology.

Goals and Policies: Statements of requirements, level of service standards, guidelines, and criteria that are used to develop and implement the CFP.

Capital Improvements: List of proposed capital projects, including financing plan, future operating costs, and reconciliation of project capacity to level of service standards. This section is maintained by the Kittitas County Auditor's Office.

Implementation Programs: Summary of tools that will be used to implement the CFP. This section is also maintained by the Kittitas County Auditor's Office and adopted by reference.

The Capital Facilities Program is adopted through a separate process than the annual comprehensive plan amendment process. Any changes made are adopted by reference to the Kittitas County Comprehensive Plan at adoption.

5.2. INTRODUCTION

Definition And Purpose Of Capital Facilities Plan

The CFP is a 6-year plan for capital improvements that support Kittitas County's current and future population and economy. The capital improvements are fully funded (i.e., not a "wish list"). One of the principal criteria for identifying needed capital improvements are standards for levels of service (LOS). The CFP contains LOS standards for each public facility, and requires that new development be served by adequate facilities (i.e., the "concurrency" requirement). The CFP also contains broad goals and specific policies that guide and implement the provision of adequate public facilities.

The purpose of the CFP is to use sound fiscal policies to provide adequate public facilities consistent with the land use element and concurrent with, or prior to the impacts of development in order to achieve and maintain adopted standards for levels of service, and to exceed the adopted standards, when possible.

WHY PLAN FOR CAPITAL FACILITIES?

There are at least three reasons to plan for capital facilities: (1) growth management, (2) good management, and (3) eligibility for grants and loans.

Growth Management

A CFP is required by the GMA. The CFP is one of six required elements of Kittitas County's comprehensive plan:

- Land Use
- Housing
- Transportation
- Utilities
- Rural (counties only)
- Capital Facilities Plan

Capital facilities plans are required in the comprehensive plan in order to:

- Provide capital facilities for land development that is envisioned or authorized by the land use element of the comprehensive plan.
- Maintain the quality of life for existing and future development by establishing and maintaining standards for the level of service of capital facilities.
- Coordinate and provide consistency among the many plans for capital improvements, including:
 - Other elements of the comprehensive plan (i.e., transportation and utilities elements),
 - Master plans and other studies of the local government,
 - Plans for capital facilities of state and/or regional significance,
 - Plans of other adjacent local governments, and
 - Plans of special districts.
- Ensure the timely provision of adequate facilities as required in the GMA.
- Document all capital projects and their financing (including projects to be financed by impact fees and/or real estate excise taxes that are authorized by GMA).

The CFP is the element that makes the rest of the comprehensive plan "real". By establishing levels of service as the basis for providing capital facilities and for achieving concurrency, the CFP determines the quality of life in the community. The requirement to fully finance the CFP (or revise the land use plan) provides a reality check on the vision set forth in the comprehensive plan. The capacity of capital facilities that are provided in the CFP affects the size and configuration of the urban growth area.

Good Management

Planning for major capital facilities and their costs enables Kittitas County to:

- demonstrate the need for facilities and the need for revenues to pay for them;
- estimate future operation/maintenance costs of new facilities that will impact the annual budget;
- take advantage of sources of revenue (i.e., grants, impact fees, real estate excise taxes) that require a CFP in order to qualify for the revenue; and
- get better ratings on bond issues when the County borrows money for capital facilities (thus reducing interest rates and the cost of borrowing money).

Eligibility for Grants and Loans

DCTED's Public Works Trust Fund requires that local governments have some type of CFP in order to be eligible for grants and loans. Some other grants and loans have similar requirements (i.e., Interagency for Outdoor Recreation), or give preference to governments that have a CFP.

After the CFP is completed, and adopted as part of the comprehensive plan, the County must adopt development regulations to implement the plan. The development regulations must be completed within one year of the adoption of the comprehensive plan. The development regulations will provide detailed regulations and procedures for implementing the requirements of the plan.

Each year the CFP must be updated. The annual update will be completed before the County's budget is adopted in order to incorporate the capital improvements from the updated CFP in the County's annual budget.

NEW CAPITAL FACILITIES PLANS (CFP) vs. TRADITIONAL CAPITAL IMPROVEMENTS PROGRAMS (CIP)

Traditional capital improvements programs (which are often "wish lists") will not meet these requirements. Figure 5.1 compares traditional CIP's to the new CFP.

LEVEL OF SERVICE METHOD FOR ANALYZING CAPITAL FACILITIES

Explanation of Levels of Service

Levels of service are usually quantifiable measures of the amount of public facilities that are provided to the community. Levels of service may also measure the quality of some public facilities.

Typically, measures of levels of service are expressed as ratios of facility capacity to demand (i.e., actual or potential users). Figure 5.2 lists examples of levels of service measures for some capital facilities

Each of these levels of service measures needs one additional piece of information: The specific quantity that measures the current or proposed level of service. For example, the *standard* for parks might be 5 acres per 1,000 population, but the *current* level of service may be 2.68 acres per 1,000, which is less than the standard.

In order to make use of the level of service method, the County selects the way in which it will measure each facility (i.e., acres, gallons, etc.), and it identifies the amount of the current and proposed (i.e., standard) level of service for each measurement.

There are other ways to measure the level of service of many of these capital facilities. The examples in Figure 2 are provided in order to give greater depth to the following discussion of the use of levels of service as a method for determining the County's need for capital facilities.

Method for Using Levels of Service

The level of service method answers two questions in order to develop a financially feasible CFP. The GMA requires the CFP to be based on standards for service levels that are measurable and financially feasible for the six fiscal years following adoption of the plan. The County is required to adopt its plan to meet its capital needs for the fiscal years 1996 through 2001.

There are two questions that must be answered in order to meet the GMA requirements:

- 1. What is the quantity of public facilities that will be required by the end of the 6th year (i.e., 2001)?
- 2. Is it financially feasible to provide the quantity of facilities that are required by the end of the 6th year (i.e., 2001)?

The answer to each question can be calculated by using objective data and formulas. Each type of public facility is examined separately (i.e., roads are examined separately from parks). The costs of all the facilities are then added together in order to determine the overall financial feasibility of the CFP.

Question 1. What is the quantity of public facilities that will be required by the end of the 6th year (i.e., 2001)?

Formula 1.1: Demand X Standard = Requirement

Where Demand is the estimated 2000 population or other appropriate measure of need (i.e., dwelling units), and Standard is the amount of facility per unit of demand (i.e., acres of park per capita)

The answer to this formula is the total amount of public facilities that are needed, regardless of the amount of facilities that are already in place and being used by the public.

Formula 1.2: Requirement - Inventory = Surplus or Deficiency

Where Requirement is the result of Formula 1.1, and Inventory is the quantity of facilities available as of December 31, 1994 (the beginning of the six years covered by the plan).

This formula uses the inventory of existing public facilities, plus facilities that will be completed by December 31, 1994, to offset the total requirement of Formula 1.1. The answer to Formula 1.2 is the net surplus of public facilities, or the net deficit that must be eliminated by additional facilities before December 31, 2001.

Question 2. Is it financially feasible to provide the quantity of facilities that are required by the end of the 6th year (i.e., 2001)?

A "preliminary" answer to Question 2 is prepared to test the financial feasibility of tentative/proposed standards of service. The preliminary answers use "average costs" of facilities, rather than specific project costs. This approach avoids developing detailed projects and costs that would be unusable if the standard proved to be financially unfeasible. If the standards are feasible at the preliminary level,

detailed projects are prepared for the "final" answer to Question 2. If, however, the preliminary answer indicates that a standard of service is not financially feasible, six options are available to the County:

- Reduce the standard of service, which will reduce the cost, or increase revenues to pay for the proposed standard ofservice (higher rates for existing revenues, and/or new sources of revenue), or
- Reduce the average cost of the public facility (i.e., alternative technology or alternative ownership or financing), thus reducing the total cost, and possibly the quality, or
- Reduce the demand by reducing consumption (i.e., transportation demand management techniques, recycling solid waste, water conservation, etc.) which may cost more money initially, but may save money later, or
- Any combination of options.

The preliminary answer to Question 2 is prepared using the following formulas (P = preliminary):

Formula 2.1P: Deficiency X Average Cost Per Unit = Deficiency Cost

Where Deficiency is the Result of Formula 1.2, and Average Cost/Unit is the usual cost of one unit of facility (i.e., mile of road, acre of park)

The answer to Formula 2.1P is the approximate cost of eliminating all deficiencies of public facilities, based on the use of an "average" cost for each unit of public facility that is needed.

Formula 2.2P: Deficiency Cost - Revenue = Net Surplus or Deficiency

Where Deficiency Cost is the result of Formula 2.1P, and Revenue is the money currently available for public facilities.

The result of Formula 2.2P is the preliminary answer to the test of financial feasibility of the standards of service. A surplus of revenue in excess of cost means the standard of service is affordable with money remaining (the surplus), therefore the standard is financially feasible. A deficiency of revenue compared to cost means that not enough money is available to build the facilities, therefore the standard is not financially feasible. Any standard that is not financially feasible will need to be adjusted using the 6 strategies listed above.

One of the CFP support documents, "Capital Facilities Requirements" contains the scenarios for Kittitas County.

The "final" demonstration of financial feasibility uses detailed costs of specific capital projects in lieu of the "average" costs of facilities used in the preliminary answer, as follows (F = final):

Formula 2.1F: Capacity Projects + Non-capacity Projects = Project Cost

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Where Capacity Projects is the cost of all projects needed to eliminate the deficiency for existing and future development (Formula 1.2), including upgrades and/or expansion of existing facilities as well as new facilities, and Non- capacity Projects is the cost of remodeling, renovation or replacement needed to maintain the inventory of existing facilities.

Formula 2.2F: Project Cost - Revenue = Net Surplus or Deficiency

Where Project Cost is the result of Formula 2.1F, and Revenue is the money available for public facilities from current/proposed sources.

The "final" answer to Question 2 validates the financial feasibility of the standards for levels of service that are used for each public facility in the CFP and in the other elements of the comprehensive plan. The financially feasible standards for levels of service and the resulting capital improvement projects are used as the basis for policies and implementation programs in the final Capital Facilities Plan.

Setting the Standards for Levels of Service (LOS)

Because the need for capital facilities is largely determined by the LOS that are adopted, the key to influencing the CFP is to influence the selection of the level of service standards. Level of service standards are measures of the quality of life of the community. The standards should be based on the community's vision of its future and its values.

Traditional approaches to capital facilities planning rely on technical experts (i.e., staff and consultants) to determine the need for capital improvements. In the scenario-driven approach, these experts play an important advisory role, but they do not control the determination. Their role is to define and implement a process for the review of various scenarios, to analyze data and make suggestions based on technical considerations.

The final, legal authority to establish the LOS rests with the County Board because they enact the level of service standards that reflect the community's vision. Their decision should be influenced by recommendations of the: (1) Planning Commission; (2) providers of public facilities (i.e., County departments, special districts, private utilities, State of Washington, tribal governments, etc.); (3) formal advisory groups that make recommendations to the providers of public facilities i.e., community planning groups; (4) the general public through individual citizens and community civic, business, and issue-based organizations that make their views known, or are sought through sampling techniques.

An individual has many opportunities to influence the LOS. These opportunities include attending and participating in meetings, writing letters, responding to surveys or questionnaires, joining organizations that participate in the CFP process, being appointed/elected to an advisory group, making comments/ presentation/testimony at the meetings of any group or government agency that influences the LOS decision and giving input during the SEPA review process.

The scenario-driven approach to developing the level of service standards provides decision-makers and anyone else who wishes to participate with a clear statement of the outcomes of various levels of service for each type of public facility. This approach reduces the tendency for decisions to be controlled by expert staff or consultants, and opens up the decision-making process to the public and advisory groups, and places the decisions before the County Board.

Selection of a specific level of service to be the "adopted standard" is accomplished by a 10-step process:

- 1. The "current" (1994) actual level of service was calculated.
- 2. Departmental service providers were given national/regional standards or guidelines and examples of local LOS from other local governments.
- 3. Departmental service providers researched local standards from County studies, master plans, ordinances and development regulations.
- 4. Departmental service providers recommended a standard for the County's CFP.
- 5. Departmental service providers prepared specific capital improvements projects to support the 1996-2001 LOS.
- 6. The draft CFP is reviewed/discussed and recommended by the Planning Commission to the County Board.
- 7. The County Board formally adopts levels of services as part of the CFP.

The final standards for levels of service are adopted in GPO 5.12. The adopted standards (1) determine the need for capital improvements projects (see GPO 5.17 and the Capital Improvements section) and (2) are the benchmark for testing the adequacy of public facilities for each proposed development pursuant to the "concurrency" requirement (see GPO 5.45). The adopted standards can be amended, if necessary, once each year as part of the annual amendment of the comprehensive plan. Within 24 months of adoption of the comp plan, proposed capital facilities Level of Service will be established pursuant to the 7-step process outlined above.

5.2.1 Public Parks and Recreation

5.2.1(A) Introduction

Being centrally located with the state and easily accessed by two interstate highways, Kittitas County has become a recreational destination for many people. Both public and privately owned land and facilities are utilized throughout the year from snow skiing and hunting in the winter to fishing, hiking, and river floats in the summer.

As illustrated in the Land Use Element, approximately 59% of Kittitas County is owned by state and federal agencies. These lands, particularly the Wenatchee and Snoqualmie National Forest, L.T. Murray and Quilamene Wildlife Recreation Areas, and the Department of Natural Resources (DNR) trust lands, offer the public the greatest opportunity for outdoor recreation. In total, Kittitas County has designated 87,478 acres as Public Recreation on the Comprehensive Plan Land Use Map.

5.2.1(B) Existing Conditions

Spring/Summer Opportunities

The Yakima River, with its head-waters located in Kittitas County, provides an abundance of recreational opportunities to county residents and tourists. Ranked by many as one of the west's top natural fisheries, the Yakima River attracts many sports fisherman from around the state, as well as local citizens. In addition to the Yakima River, a number of lakes, streams, and creeks provide great fishing potential for county residents and tourists.

In addition to sports fishing opportunities, the Yakima River is utilized by many county residents for river floats. In response to the increasing public use the Bureau of Land Management has improved a number of recreational sites within the Yakima River Canyon. The Roza Dam Recreational Facility provides sanitary facilities, waste receptacles, picnic areas, and a boat launch for users of the Yakima River.

Kittitas County provides the only improved, non-fee boat launch facility to the Columbia River in Kittitas County. This facility is located within the Vantage townsite and also provides sanitary facilities, picnic areas, and waste receptacles. Although most heavily used from late spring to early fall, this launch is open year round.

The vast number of public lands in Kittitas County, offer county citizens with hiking, camping, biking, horseback riding, and off-road vehicle (ORV) activities throughout the year. The L.T. Murray Wildlife Recreation area is perhaps the most widely used for these purposes. In order to promote non-motorized transportation, Kittitas County has provided a bike lane on Umptanum Road to Irene Rinehart Park and a pedestrian path on Airport Road to Bowers Field.

Kittitas County is in the process of two (2) new parks projects. The Coal Mines Trail is a multijurisdiction regional trail which follows the old rail corridor between Cle Elum, Roslyn to Ronald. While the trail is managed by a six member Trail Commission, the trail is owned by the three jurisdictions through which it passes: Cle Elum, Roslyn and Kittitas County. The property was acquired in 1994, but development of the trail and trailheads has just started to be considered. Kittitas County has been given preliminary approval from the WA-CERT for a USDA Forest Service Rural Community Assistance Grant for \$30,000 to design the trailheads at Cle Elum, Roslyn and Ronald. IAC funding is being requested for construction of the Cle Elum trailhead. IAC will likely be a future source of funding for this project.

Washington State Parks and Recreation Commission operate and maintain a number of parks in Kittitas County, including, but not limited to, the Easton, Olmsted, and Ginko State Parks. Also, the John Wayne Trail is operate and maintained by the Washington State Parks and Recreation Commission. The John Wayne Trail provides citizens of Kittitas County with a non-motorized transportation route.

Fall/Winter Opportunities

Large portions of Kittitas County, provide excellent hunting opportunities for area residents as well as out of area hunters. The Washington State Department of Fish and Wildlife has designated many Game Management Units (GMUs), used in conjunction with the deer season, within Kittitas County. In total, there are eleven GMUs designated in Kittitas County offering assorted deer seasons from September through December. In addition, to three deer seasons, the Washington State Department of Fish and Wildlife have defined portions of both the Yakima and Colockum unit elk hunts within Kittitas County. Once again, the three elk seasons range from September to December each year.

Kittitas County is located within the pacific flyway for migratory waterfowl, providing local residents and out-of-area hunters with ample hunting opportunities. Upland bird hunting is also popular recreational activities in Kittitas County. Upland bird and waterfowl seasons range from September through January.

Other popular fall and winter recreational activities in Kittitas County are downhill and cross-country skiing. There are three private ski facilities located at Snoqualmie Pass, offering downhill and cross-country skiing and snow boarding areas for the public.

Sno-parks provide County residents and tourists with parking areas to access snow mobile, snow shoeing, and cross-country skiing areas. The Washington State Parks Department currently provides approximately fifteen (15) sno-parks within Kittitas County. Under a maintenance agreement with Washington State Parks Department, Kittitas County maintains five (5) of these approximately fifteen (15) sno-parks. This includes: Kachees Lake Road, Salmon La Sac Road, Teanaway Road, Reecer Creek Road, and Naneum Road.

5.2.1(C) Recreational Safety

According to the Kittitas County Sheriffs Department, the Cle Elum River drainage is the number one recreational destination in the Pacific Northwest and Kittitas County as a whole is the number one snow mobile destination during the winter months. In order to provide a public safety and law enforcement to remote areas of the County, the Sheriffs Department currently employees two (2) off-road vehicle (ORV) deputies. These deputies have two ORVs and two motorcycles available for their use.

In addition to the ORV vehicles, the Kittitas County Sheriffs Department has two motorized boats. One boat is driven by a jet drive and is used on the Yakima River for rescue operations. The other is a Boston Whaler, which is stored at the Wanapum State Park and is utilized during the summer months to patrol Wanapum Lake and offer emergency personnel access to areas inaccessible by cars or trucks.

5.2.1(D) Future Recreational Opportunities

As the population of Kittitas County grows, there may be an increased demand for improved recreational facilities and parks for County residents and tourists. In order to provide for the possible increased demands, Kittitas County is currently researching the possibility of constructing a park near Bowers Field in the northern portion of the City of Ellensburg's urban growth area. Several softball fields, a baseball field, soccer fields, and a basketball court are only a few of the possibilities for organized recreational use.

Other areas which may benefit from improved park facilities, are the urban growth nodes. During the course of the planning period, Kittitas County may conduct feasibility studies for the future parks within the urban growth nodes and other urban growth areas.

5.2.2 POTENTIAL IMPACTS

This section discusses various potential impacts which could arise as development occurs with the County. Specifically, this section will discuss public safety, private and municipal water service, parks and recreation, and public facilities. Although general potential impacts can be identified, specific development proposals will continue to be reviewed for additional and project specific impacts.

5.2.2(A) Public Safety

Police Protection

The Kittitas County Sheriffs Department provides countywide law enforcement. As development occurs and additional population moves into the County, increased demands for police protection may occur. Kittitas County may need to increase the number of sworn officers, patrol vehicles, corrections officers, jail space, etc. to mitigate against increased demands. As discussed in Chapter 2, Land Use, Kittitas County has designated four urban growth nodes (a fifth UGN, Vantage, is expected to be adopted in 1997) in which urban type development and densities may occur. This increased density in the remote rural areas of the county, could force the County into developing an upper-county "satellite" office of the Kittitas County Sheriffs Department. The Kittitas County 6-year Capital Facilities Plan currently does not have such a project listed. Therefore, the 6-year CFP may need to be amended if the need arises.

The City of Ellensburg, as the largest incorporated city in Kittitas County, also has the largest municipal police force. As discussed in Chapter 2, Land Use, the County has adopted a urban growth area for the City of Ellensburg. As areas of the UGA are annexed it may become increasingly difficult for the City and County police forces to distinguish who has jurisdiction over criminal matters. As is the case with potential impacts to the Kittitas County Sheriffs resources, the Ellensburg Police Department could face the same issues. However, the City of Ellensburg has adopted its Comprehensive Plan and those impacts should be identified as well as potential measures to mitigate those impacts.

The remaining incorporated communities (Cle Elum, South Cle Elum, and Roslyn) have had their respective city limits designated as their UGA boundaries. As growth occurs within these respective cities, impacts to their respective police forces may occur.

Fire Protection

There are currently eight (8) fire districts within the unincorporated Kittitas County. Kittitas County Fire District No. 2 serves the largest area and population of the unincorporated County. In addition, Fire District No. 2 also has a joint response agreement with the City of Ellensburg Fire Department. As development occurs and population increases within the unincorporated County, increased demands for fire protect and emergency services may occur.
Each of the incorporated communities have Fire Department's, with Ellensburg Fire Department having the greatest number of emergency service personnel. However, because of the current number of emergency service personnel in the smaller communities, the impacts may be greater than that to the City of Ellensburg.

The area of greatest potential impacts to the municiple and unincorporated emergency response should be the urban growth areas and urban growth nodes, in which the majority of the population increase should occur.

5.2.2(B) Parks and Recreation

As growth continues to occur both in the urban and rural areas of Kittitas County, there may be increased impacts on existing recreational areas and a demand for additional areas and opportunities. In order to address the potential demands and impacts, Kittitas County has taken the approach that incorporated communities should be responsible for organized recreational opportunities and park systems, while the County is responsible for the unorganized, passive recreational opportunities.

5.3 GOALS, POLICIES AND OBJECTIVES

Public Facility Needs

GPO 5.1 Define types of public facilities, establish standards for levels of service for each type of public facility, and determine what capital improvements are needed in order to achieve and maintain the standards for existing and future populations, and to repair or replace existing public facilities.

GPO 5.2 Definitions. The following definitions apply throughout this Capital Facilities Plan.

GPO 5.3 "Capital improvement" means land, improvements to land, structures (including design, permitting, and construction), initial furnishings and selected equipment. Capital improvements have an expected useful

GPO 5.4 "Category of public facilities" means a specific group of public facilities, as follows:

- A. Category A public road facilities are facilities owned or operated by Kittitas County and subject to the requirement for concurrency.
- B. Category B public facilities are facilities owned or operated by independent districts, or private organizations and subject to the requirement for concurrency.
- C. Category C public facilities are facilities owned or operated by Kittitas County but not subject to the requirement for concurrency.
- D. Category D public facilities are facilities owned or operated by independent districts, or private organizations and not subject to the requirement for concurrency.

GPO 5.5 "Development permit" means any document granting, or granting with conditions, an application for a land use designation or redesignation, zoning or rezoning, subdivision plat, short plat, site plan, building permit, special exception, variance, or any other official action of the County having the effect of authorizing the development of land.

- A. "Final development permit" means a building permit, site plan approval, final subdivision approval, short subdivision approval, variance, or any other development permit which results in an immediate and continuing impact upon public facilities.
- B. "Preliminary development permit" means a land use designation or redesignation, zoning or rezoning, or subdivision preliminary plat.
- GPO 5.6 "Public facility" means the capital improvements and systems of each of the following:
 - A. Airport
 - B. County administrative offices
 - C. County fairgrounds
 - D. Emergency medical services
 - E. Juvenile Detention
 - F. Library services
 - G. Maintenance shop and storage facilities
 - H. Parking general purpose
 - I. Parks and recreation
 - J. Probation services
 - K. Regional justice center
 - L. Roads
 - M. Sanitary sewer
 - N. Schools
 - O. Solid waste
 - P. Surface water management
 - Q. Transit
 - R. Water

GPO 5.7 Application of Standards. The County shall establish standards for levels of service for Categories A, B, C and D of public facilities. The levels of service shall be cooperatively defined by all segments of the public and private sector involved in providing a particular service. The County shall apply the standards as follows:

GPO 5.8 Category A. The standards for levels of service of each type of public facility in Category A shall apply to development permits issued by the County after May 1, 1996 (as described GPO 5.12), the County's annual budget beginning with the 1997 fiscal year, the County's Capital Improvements Program beginning with the 1997 fiscal year, and other elements of this Comprehensive Plan.

GPO 5.9 Category B. The standards for levels of service of each type of public facility in Category B shall apply to development permits issued by the County after May 1, 1996 (as described

in GPO 5.48), and other elements of this Comprehensive Plan. Category B public facilities are provided by entities other than Kittitas County, therefore the standards for levels of service shall not apply to the County's annual budget or the County's Capital Improvements Program, however the standards for levels of service shall apply to the annual budgets and Capital Improvements Programs of the entities which provide the public facilities.

GPO 5.10 Category C. The standards for levels of service of each type of public facility in Category C shall not apply to the concurrency management system as set forth in GPO 5.48, however the standards for levels of service shall apply to the County's annual budget beginning with the 1996 fiscal year, the County's Capital Improvements Program beginning with the 1996 fiscal year, and other elements of this Comprehensive Plan.

GPO 5.11 Category D. The standards for levels of service of each type of public facility in Category D shall not apply to the concurrency management system as set forth in GPO 5.48 Category D public facilities are provided by entities other than Kittitas County, therefore the standards for levels of service shall not apply to the County's annual budget or the County's Capital Improvements Program, however the standards for levels of service shall apply to the annual budgets and Capital Improvements Programs of the entities which provide the public facilities.

GPO 5.12 Standards for Levels of Service. The standards for levels of service of public facilities shall be as follows ("per person" or "per 1,000 population" means population of the jurisdiction that provides the public facility, unless otherwise indicated). The County may create separate standards for levels of service in the urban and rural areas of the County.

Facility Standard for Level of Service					
GPO 5.13		Catego	ory A Pi	ublic Facilities	
Roads (Local)		See Tr	ansport	ation Element Policy	
GPO 5.14		Catego	ory B Pı	ublic Facilities	
Roads (State)		See Tr	ansport	ation Element Policy	
GPO 5.15		Catego	ory C Pi	ublic Facilities	
County Administra	tive Offices:	Office	Space	1,095 sq. ft. per 1,000 Population	
County Fairgrounds	5:				
Acres		0.29 p	er 1,000) Fair Attendees	
Administrative Offi	ices	132 sq	. ft. per	1,000 Population	
Exhibit Hall		483 sq	483 sq. ft. per 1,000 Fair Attendees		
Maintenance Shop		900 sq. ft. per Shop Employee			
Parking Spaces		4.5 per	: 1,000	Fair Attendees	
Public Restrooms		0.08 p	er 1,000) Fair Attendees	
Juvenile Detention:		Beds	1.53 p	er 1,000 Population	
Maintenance Shop	and Storage Facilities:				
Building		788 sq	. ft. per	1,000 Population	

	Parking - General Purpose:	
	Parking Spaces	1.17 Employees per Parking Space
ж.		
	Parks and Recreation:	
	Pagional Darka	3.06 acres per 1.000 Population
	Troile	0.44 miles per 1,000 Population
	Tans	0.44 miles per 1,000 ropulation
and	Probation Services:	
	Office Space	47 sq. ft. per 1,000 Population
فسر .	Regional Justice Center:	
	Courtrooms	0.12 per 1,000 Population
	Jail	5.4 Beds per 1,000 Population
است	Office Space	385 sq. ft. per 1,000 Population
	Solid Waste:	
	Disposal	4.0 Pounds per Capita per Day
	•	
	Transit	See Transportation Element Policy
.		
12	GPO 5.16 Category D Public Facilities	
	Airport:	
,	Kittitas County Airport	Airport Capacity Equals 100%
	Telefillas County Amport	Aircraft Operations Demand
	Emergency Medical Services	
(199)	Easton FD No. 3	
	Ellenshurg Area ED No. 2	
	Hagnital District No. 1 (Lower County)	<u></u>
a u	Hospital District No. 1 (Lower County)	
	Lalza Kashasa ED Na 8	
	Lake Kacness FD No. 8	
	Lower County FD No. 1	
	Ronald/Lake Cle Elum FD No. 6	
	Snoqualmie Pass FD No. 51	
· Lagad	Thorp FD No. 1	
	Upper County FD No. 2	
	Upper County Area FD No. 7	
- and	Vantage FD No. 4	
	Sanitary Sewer:	
1200	City of Cle Elum	100 Gallons per Capita per Day
	Town of South Cle Elum	100 Gallons per Capita per Day *
	City of Ellensburg	100 Gallons per Capita per Day *
1988	City of Kittitas	100 Gallons per Capita per Day *
	Water District No. 2	105 Gallons per Capita per Day

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Snoqualmie Pass Sewer and Water District 100 Gallons per Capita per Day * Water District No. 6

100 Gallons per Capita per Day *

* Washington State DOE sewer design standard for residential development (in lieu of information from provider)

School District Facilities: Cle Elum/Roslyn Easton Kittitas Thorp Ellensburg Damman	
Water:	
City of Cle Elum	100 Gallons per Capita per Day
Town of South Cle Elum	100 Gallons per Capita per Day
City of Ellensburg	800 Gallons per Day per ERU*
City of Kittitas	135 Gallons per Capita per Day
Snoqualmie Pass Sewer and Water District	800 Gallons per Day per ERU *
Water District No. 2	800 Gallons per Day per ERU *
Water District No. 3	320 Gallons per Capita per Day

Water District No. 4 800 Gallons per Day per ERU * Water District No. 5 800 Gallons per Day per ERU * Water District No. 6 800 Gallons per Day per ERU *

Washington State DOE minimum LOS for water supply (in lieu of information from provider)

GPO 5.17 Determining Public Facility Needs. The County shall determine the quantity of capital improvements that is needed as follows:

GPO 5.18 The quantity of capital improvements needed to eliminate existing deficiencies and to meet the needs of future growth shall be determined for each public facility by the following calculation: $Q = (S \times D) - I$.

Where Q is the quantity of capital improvements needed,

S is the standard for level of service,

D is the demand, such as the population, and

I is the inventory of existing facilities.

The calculation shall be used for existing demand in order to determine existing deficiencies. The calculation shall be used for projected demand in order to determine needs of future growth. The estimates of projected demand shall account for demand that is likely to occur from previously issued development permits as well as future growth.

GPO 5.19 There are two circumstances in which the standards for levels of service are not the exclusive determinant of need for a capital improvement:

- A. Repair, remodeling, renovation, and replacement of obsolete or worn out facilities shall be determined by the County Commission upon the recommendation of the appropriate Department Head.
- B. Capital improvements that provide levels of service in excess of the standards adopted in this Comprehensive Plan may be constructed or acquired at any time as long as the following conditions are met:
 - 1. the capital improvement does not make financially infeasible any other capital improvement that is needed to achieve or maintain the standards for levels of service adopted in this Comprehensive Plan, and
 - 2. the capital improvement does not contradict, limit or substantially change the goals and policies of any element of this Comprehensive Plan, and
 - 3. one of the following conditions is met:

the excess capacity is an integral part of a capital improvement that is needed to achieve or maintain standards for levels of service (i.e., the minimum capacity of a capital project is larger than the capacity required to provide the level of service), or

the excess capacity provides economies of scale making it less expensive than a comparable amount of capacity if acquired at a later date, or

the asset acquired is land that is environmentally sensitive, or designated by the County as necessary for conservation, or recreation, or

the excess capacity is part of a capital project financed by general obligation bonds approved by referendum.

GPO 5.20 Priorities. The relative priorities among capital improvements projects are as follows:

GPO 5.21 Priorities Among Types of Public Facilities. Legal restrictions on the use of many revenue sources limit the extent to which types of facilities compete for priority with other types of facilities because they do not compete for the same revenues. All capital improvements that are necessary for achieving and maintaining a standard for levels of service adopted in this Comprehensive Plan are included in the financially feasible schedule of capital improvements contained in this Capital Facilities Plan. The relative priorities among types of public facilities (i.e., roads, sanitary sewer, etc.) were established by adjusting the standards for levels of service and the available revenues until the resulting public facilities needs became financially feasible. This process is repeated with each update of the Capital Facilities Plan, thus allowing for changes in priorities among types of public facilities.

GPO 5.22 Priorities of Capital Improvements Within a Type of Public Facility. Capital improvements within a type of public facility are to be evaluated on the following criteria and considered in the order of priority listed below. The County shall establish the final priority of all capital facility improvements using the following criteria as general guidelines. Any revenue source that cannot be used for a high priority facility shall be used beginning with the highest priority for which the revenue can legally be expended.

- A. Reconstruction, rehabilitation, remodeling, renovation, or replacement of obsolete or worn out facilities that contribute to achieving or maintaining standards for levels of service adopted in this Comprehensive Plan.
- B. New or expanded facilities that reduce or eliminate deficiencies in levels of service for existing demand. Expenditures in this priority category include equipment, furnishings, and other improvements necessary for the completion of a public facility (i.e., recreational facilities and park sites).
- C. New public facilities, and improvements to existing public facilities, that eliminate public hazards if such hazards were not otherwise eliminated by facility improvements prioritized according to Policies a or b, above.
- D. New or expanded facilities that provide the adopted levels of service for new development and redevelopment during the next six fiscal years, as updated by the annual review of this Capital Facilities Plan. The County may acquire land or right-of-way in advance of the need to develop a facility for new development. The location of facilities constructed pursuant to this Policy shall conform to the Land Use Element, and specific project locations shall serve projected growth areas within the allowable land use categories. In the event that the planned capacity of public facilities is insufficient to serve all applicants for development permits, the capital improvements shall be scheduled to serve the following priority order:
 - 1. previously approved permits for redevelopment,
 - 2. previously approved permits for new development,
 - 3. new permits for redevelopment, and
 - 4. new permits for new development.
- E. Improvements to existing facilities, and new facilities that significantly reduce the operating cost of providing a service or facility, or otherwise mitigate impacts of public facilities on future operating budgets.
- F. New facilities that exceed the adopted levels of service for new growth during the next six fiscal years by either
 - 1. providing excess public facility capacity that is needed by future growth beyond the next six fiscal years, or
 - 2. providing higher quality public facilities than are contemplated in the County's normal design criteria for such facilities.

G. Facilities not described in Policies A through F, above, but which the County is obligated to complete, provided that such obligation is evidenced by a written agreement the County executed prior to the adoption of this Comprehensive Plan.

GPO 5.23 All facilities scheduled for construction or improvement in accordance with this Policy shall be evaluated to identify any plans of State or local governments or districts that affect, or will be affected by, the proposed County capital improvement.

GPO 5.24 Project evaluation may also involve additional criteria that are unique to each type of public facility, as described in other elements of this Comprehensive Plan.

GPO 5.25 Kittitas County shall consider recreation needs and the services which the County is able to provide by developing a county-wide recreation plan in coordination with other agencies and jurisdictions within Kittitas County. Recreation opportunities and facilities include, but are not limited to parks, trails, river access, public lands access, campgrounds and picnic facilities.

Financial Feasibility

GPO 5.26 Provide needed public facilities that are within the ability of the County to fund the facilities, or within the County's authority to require others to provide the facilities.

GPO 5.27 Financial Responsibility. Existing and future development shall both pay for the costs of needed capital improvements.

- GPO 5.28 Existing development.
 - A. Existing development shall pay for the capital improvements that reduce or eliminate existing deficiencies, some or all of the replacement of obsolete or worn out facilities, and may pay a portion of the cost of capital improvements needed by future development.
 - B. Existing development's payments may take the form of user fees, charges for services, special assessments and taxes.

GPO 5.29 Future development:

- A. Future development may be required to pay its fair share of the capital improvements needed to address the impact of such development, and may pay a portion of the cost of the replacement of obsolete or worn out facilities. Upon completion of construction, "future" development becomes "existing" development, and shall contribute to paying the costs of the replacement of obsolete or worn out facilities as described in GPO 5.28 (A), above.
- B. Future development's payments may take the form of, but are not limited to, voluntary contributions for the benefit of any public facility, impact fees, mitigation payments, capacity fees, dedications of land, provision of public facilities, and future payments of user fees, charges for services, special assessments and taxes. Future development shall not pay fees for the portion of any public facility that reduces or eliminates existing deficiencies.

GPO 5.30 Existing and future development may both have part of their costs paid by grants, entitlements or public facilities from other levels of government and independent districts.

GPO 5.31 Financing Policies. Capital improvements shall be financed, and debt shall be managed as follows:

GPO 5.32 Capital improvements financed by County enterprise funds (i.e., solid waste) shall be financed by:

- A. debt to be repaid by user fees and charges and/or connection or capacity fees for enterprise services, or
- B. current assets (i.e., reserves, equity or surpluses, and current revenue, including grants, loans, donations and interlocal agreements), or
- C. a combination of debt and current assets.

GPO 5.33 Capital improvements financed by non- enterprise funds shall be financed from either current assets: (i.e., current revenue, fund equity and reserves), or debt, or a combination thereof. Financing decisions shall include consideration for which funding source (current assets, debt, or both) will be a) most cost effective, b) consistent with prudent asset and liability management, c) appropriate to the useful life of the project(s) to be financed, and d) the most efficient use of the County's ability to borrow funds.

GPO 5.34 Debt financing shall not be used to provide more capacity than is needed within the schedule of capital improvements for non-enterprise public facilities unless one of the conditions of GPO 5.19(B)(3) is met.

GPO 5.35 Operating and Maintenance Costs. The County shall not provide a public facility, nor shall it accept the provision of a public facility by others, if the County or other provider is unable to pay for the subsequent annual operating and maintenance costs of the facility.

GPO 5.36 Revenues Requiring Referendum. In the event that sources of revenue listed under "Projected Costs and Revenues" require voter approval in a local referendum that has not been held, and a referendum is not held, or is held and is not successful, this Comprehensive Plan shall be revised at the next annual amendment to adjust for the lack of such revenues, in any of the following ways:

GPO 5.37 Reduce the level of service for one or more public facilities;

GPO 5.38 Increase the use of other sources of revenue;

GPO 5.39 Decrease the cost, and therefore the quality of some types of public facilities while retaining the quantity of the facilities that is inherent in the standard for level of service;

GPO 5.40 Decrease the demand for and subsequent use of capital facilities;

GPO 5.41 A combination of the above alternatives.

GPO 5.42 Uncommitted Revenue. All development permits issued by the County which require capital improvements that will be financed by sources of revenue which have not been approved or implemented (such as future debt requiring referenda) shall be conditioned on the approval or implementation of the indicated revenue sources, or the substitution of a comparable amount of revenue from existing sources.

GPO 5.43 Shared Funding. The County and Cities should jointly sponsor the formation of Local Improvement Districts, Road Improvement Districts, and other benefit areas for the construction or reconstruction of infrastructure to a common standard which are located in the City and the Urban Growth Areas.

Provide Needed Improvements And Concurrency Management

GPO 5.44 Provide adequate public facilities by constructing needed capital improvements which (1) repair or replace obsolete or worn out facilities, (2) eliminate existing deficiencies, and (3) meet the needs of future development and redevelopment caused by previously issued and new development permits. The County's ability to provide needed improvements will be demonstrated by maintaining a financially feasible schedule of capital improvements in this Capital Facilities Plan.

GPO 5.45 Schedule of Capital Improvements. The County shall provide, or arrange for others to provide, the capital improvements listed in the schedule of capital improvements in this Capital Facilities Plan. The schedule of capital improvements may be modified as follows:

GPO 5.46 The schedule of capital improvements shall be updated annually beginning in conjunction with the annual budget process.

GPO 5.47 Pursuant to the Growth Management Act, the schedule of capital improvements may be amended one time during any calendar year.

GPO 5.48 The schedule of capital improvements may be adjusted by ordinance not deemed to be an amendment to the Comprehensive Plan for corrections, updates, and modifications concerning costs; revenue sources; acceptance of facilities pursuant to dedications which are consistent with the plan; or the date of construction (so long as it is completed within the 6-year period) of any facility enumerated in the schedule of capital improvements.

GPO 5.49 Budget Appropriation of Capital Improvement Projects. The County shall include in the capital appropriations of its annual budget all the capital improvements projects listed in the schedule of capital improvements for expenditure during the appropriate fiscal year, except that the County may omit from its annual budget any capital improvements for which a binding agreement has been executed with another party to provide the same project in the same fiscal year. The County may also include in the capital appropriations of its annual budget additional public facility projects that conform to GPO 5.19(B) and GPO 5.22(F). GPO 5.50 Adequate Public Facility Concurrency. The County Commission finds that the impacts of development on public facilities within the County occur at the same time as occupancy of development authorized by a final development permit. The County shall issue development permits only after a determination that there is sufficient capacity of Category A and Category B public facilities to meet the standards for levels of service for existing development and the impacts of the proposed development concurrent with the proposed development. For the purpose of this policy and the County's land development regulations, "concurrent with" shall be defined as follows:

GPO 5.51 The availability of public facility capacity to support development concurrent with the impacts of such development shall be determined in accordance with the following:

For roads:

- 1. The necessary facilities and services are in place at the time a development permit is issued; or
- 2. The necessary facilities are under construction at the time a development permit is issued, and the necessary facilities will be in place when the impacts of the development occur; or
- 3. Development permits are issued subject to the condition that the necessary facilities and services will be in place when the impacts of the development occur; or
- 4. The County has in place commitments to complete the necessary public facilities within six years.

GPO 5.52 No final development permit shall be issued by the County after May 1, 1996, unless there shall be sufficient capacity of Category A and Category B public facilities available to meet the standards for levels of service for existing development and for the proposed development.

GPO 5.53 No preliminary development permit shall be issued by the County after May 1, 1996, unless the applicant complies with one of the following Policies:

- A. The applicant may voluntarily request a determination of the capacity of Category A and Category B public facilities as part of the review and approval of the preliminary development permit, including the requirements of GPO 5.54, or
- B. The applicant may elect to request approval of a preliminary development permit without a determination of capacity of Category A and Category B public facilities provided that any such order is issued subject to requirements in the applicable land development regulation or to specific conditions contained in the preliminary development permit that:
 - 1. Final development permits for the subject property are subject to a determination of capacity of Category A and Category B public facilities, as required by GPO 50.0 and 52.0, and
 - 2. No rights to obtain final development permits, nor any other rights to develop the subject property have been granted or implied by the County's approval of the preliminary development permit without determining the capacity of public facilities.

GPO 5.54 Development permits issued pursuant to GPO 5.52 and GPO 5.53(A) shall be subject to the following requirements:

- A The determination that facility capacity is available shall apply only to specific uses, densities and intensities based on information provided by the applicant and included in the development permit.
- B. The determination that facility capacity is available shall be valid for the same period of time as the underlying development permit, including any extensions of the underlying development permit.
- C. The standards for levels of service of Category A and Category B public facilities shall be applied to the issuance of development permits on the following geographical basis:

Roads: applicable roads and areas impacted by the proposed development.

Coordinate Capital Improvements With Land Development

GPO 5.55 Manage the land development process to insure that all development receives public facility levels of service equal to the standards adopted in GPO 5.12 by implementing the schedule of capital improvements contained in this Capital Facilities Plan, and by using the fiscal resources provided for in Goal 2 and its supporting policies.

- GPO 5.56 Consistency All Category A public facility capital improvements shall be consistent with the adopted land use map and the goals and policies of other elements of this Comprehensive Plan. The location of, and level of service provided by projects in the schedule of capital improvements shall maintain adopted standards for levels of service for existing and future development in a manner and location consistent with the Land Use Element of this Comprehensive Plan.
- GPO 5.57 Integration and Implementation. The County shall develop, adopt and use implementation programs which integrate its land use planning and decisions with its planning and decisions for public facility capital improvements.

Siting Of Essential Public Facilities

- GPO 5.58 Develop criteria and cooperative and structured processes through the Kittitas County Conference of Governments for siting regional and community facilities.
- GPO 5.59 Designation of Land. The County may identify lands useful for public purposes and incorporate such designations in the comprehensive plan
 - GPO 5.60 Regional Facilities. The County and each municipality in the County may establish a countywide process for siting essential public facilities of region-wide significance. This process may include:
 - GPO 5.61 An inventory of needed facilities;
- GPO 5.62 A method of fair share allocation of facilities;

GPO 5.63 Economic and other incentives to jurisdictions receiving such facilities;

GPO 5.64 A method of determining which jurisdiction is responsible for each facility;

GPO 5.65 A public involvement strategy; and

GPO 5.66 Assurance that the environmental and public health and safety are protected.

GPO 5.67 County, Regional, State and Federal Facilities. Essential public facilities which are identified by the County, by regional agreement, or by State or Federal government may be subject to the following process. When essential public facilities are proposed the County and each municipality in the County may:

GPO 5.67A County, Regional, State, and Federal Facilities. Essential public facilities which are identified by the County, by regional agreement, or by State or Federal government may be subject to local approval.

GPO 5.67B As the Office of Financial Management has not submitted a listing of essential public facilities as required by 36.70A, Growth Management, no provisions have been made for the siting of such facilities.

GPO 5.68 Ensure public involvement through the use of timely press releases, newspaper notices, public information meetings, and public hearings.

GPO 5.69 Consistency with Comprehensive Plan. The County may develop and adopt regulations that ensure that the facility siting is consistent with the adopted County comprehensive plan, including;

GPO 5.70	The future land use map;
GPO 5.71	The Capital Facilities Plan Element and budget;
GPO 5.72	The Utilities Element;
GPO 5.73	The Transportation Element;
GPO 5.74	The Housing Element;
GPO 5.75	The Rural Element;
GPO 5.76	The Economic Development Element;
GPO 5.77 siting;	The comprehensive plans of adjacent jurisdictions that may be affected by the facility
GPO 5.78	Regional general welfare considerations.

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GPO 5.79 Siting of Public Facilities Outside of UGAs. Essential public facilities sited outside of urban growth areas must be self supporting and not require the extension, construction, or maintenance of urban services and facilities.

GPO 5.80 Coordination. The County's policies and regulations on facility siting may be coordinated with and advance other planning goals including, but not necessarily limited to, the following:

GPO 5.81 Promotion of economic development and employment opportunities

GPO 5.82 Protection of the environment

- GPO 5.83 Positive fiscal impact and on-going benefit to the host jurisdiction
- GPO 5.84 Serving population groups needing affordable housing
- GPO 5.85 Receipt of financial or other incentives from the State and/or other local governments
- GPO 5.86 Fair distribution of such public facilities throughout the County
- GPO 5.87 Requiring State and Federal projects to be consistent with this policy.
 - Urban Growth Areas And Urban Growth Nodes

GPO 5.88 Provide adequate public facilities to urban growth areas and urban growth nodes.

GPO 5.89 Urban Growth Areas and Urban Growth Nodes. The County and each municipality in the County shall designate urban growth areas or urban growth nodes and encourage adequate public facilities and services concurrent with development.

GPO 5.90 Levels of Service. Levels of service for public facilities in the unincorporated portion of the urban growth areas or urban growth nodes shall be the same as the County's adopted standards.

GPO 5.91 Facility and Service Providers. The primary provider of public facilities and services in the unincorporated portion of the Urban Growth Area or urban growth nodes shall be:

Facility	Provider
GPO 5.92 Airport:	Kittitas County
GPO 5.93 County administrative offices	Kittitas County
GPO 5.94 County fairgrounds	Kittitas County
GPO 5.95 Emergency medical services	Easton FD No. 3, Ellensburg Area FD No. 2, Lake Kachess FD No. 8, Lower County FD No. 1, Ronald/Lake Cle Elum FD, No. 6, Snoqualmie

Pass FD No. 51, Thorp FD No 1, Upper County FD No. 2, Upper County Area FD No. 7, Vantage FD No. Hospital District No. 1, Hospital District No. 2

GPO 5.96 Juvenile Detention

GPO 5.97 Library services

GPO 5.98 Maintenance shop & storage facilities

GPO 5.99Parking - general purpose

GPO 5.100 Parks (Regional, Trails)

GPO 5.101 Probation services

GPO 5.102Regional justice center

GPO 5.103Roads (Local)

GPO 5.104Roads (State)

GPO 5.105Sanitary sewer

GPO 5.106 Schools

GPO 5.107 Solid waste disposal

GPO 5.108 Surface water management

GPO 5.109 Water

Kittitas County

Cities of Kittitas, Cle Elum, Ellensburg, Roslyn/Kittitas County via agreements

Kittitas County

Kittitas County

Kittitas County, Cle Elum, Ellensburg, City of Kittitas, Roslyn, South Cle Elum

Kittitas County

Kittitas County

Kittitas County

Washington State

Cle Elum, Ellensburg, City of Kittitas, Kittitas County Water District No. 2, Snoqualmie Pass Sewer and Water District, Vantage Water District No. 6

School Districts (Cle Elum/ Roslyn, Easton, Kittitas, Thorp, Ellensburg, Damman)

Kittitas County

Kittitas County, Cle Elum, Ellensburg, City of Kittitas, Roslyn, South Cle Elum

Cle Elum, Ellensburg, City of Kittitas, Elk Meadows Water District No. 5, Water District No. 2: Ronald, Water District No. 3: Easton, Snoqualmie Pass Sewer and Water District, Thorp Sub-area Water System No. 4, Vantage Water System No. 6

GPO 5.110 Public Facilities Outside of Urban Growth Areas or Urban Growth Nodes. New municipal urban public facilities (central sewage collection and treatment, public water systems, urban street infrastructure and stormwater collection facilities) will not be extended beyond urban growth area and urban growth node boundaries for residential development. Water service - public or private - may be provided beyond urban growth area or urban growth node boundaries. This policy does not apply to storm water drainage.

GPO 5.110A Capital Facilities and Utilities may be sited, constructed, and operated by outside public service providers (or sited, constructed, and/or operated jointly with a Master Planned Resort (MPR) or Fully Contained Community to the extent elsewhere permitted), on property located outside of an urban growth area or an urban growth node if such facilities and utilities are located within the boundaries of such resort or community which is approved pursuant to County Comprehensive Plan policies and development regulations.

GPO 5.110B Electric and natural gas transmission and distribution facilities may be sited within and through areas of Kittitas County both inside and outside of municipal boundaries, UGAs, UGNs, Master Planned Resorts, and Fully Contained Communities, including to and through rural areas of Kittitas County.

GPO 5.111 Financing Providers of public facilities are responsible for paying for their facilities. Providers may use sources of revenue that require users of facilities to pay for a portion of the cost of the facilities. As provided by law, some providers may require new development to pay impact fees or mitigation payments for a portion of the cost of public facilities.

GPO 5.112 Planning Coordination. The County will enter into interlocal/joint planning agreements. contracts, memorandums of understanding or joint ordinances with municipalities and other providers of public facilities to coordinate planning for and development of the Urban Growth Area.

GPO 5.113 Fiscal Coordination. The County and each municipality in the County will address fiscal issues including tax revenue sharing, the provision of regional services and annexations through the development of interlocal agreements.

GPO 5.114 Primary initiative for capital facilities such as water, sewer, and arterial roadways within UGAs shall be the responsibility of the cities. Required facilities to accommodate growth shall be included in the city's capital facilities plan. The primary financing mechanism shall be local improvement districts as authorized in RCW 35.44. Assessment district boundaries may exceed the city limits. The county will cooperate and jointly plan for these assessment districts as they are proposed. The county may elect to sponsor local improvement districts within unincorporated portions of the county and the UGNs to meet concurrency standards in the comprehensive plan.

Parks and Recreation

GPO 5.115 Kittitas County should provide new or enhance existing rural recreational areas whenever feasible.

GPO 5.116 Kittitas County may create a comprehensive recreation plan which: Incorporates new parks / recreational areas into growth planning; Establishes additional passive recreation sites and opportunities; and Formulates recreational guidelines.

GPO 5.117 Kittitas County should promote private/public and private/nonprofit partnerships to finance capital improvements to public parks / recreational areas.

GPO 5.118 Kittitas County should study the economic feasibility of inter-jurisdictional parks / recreation projects.

GPO 5.119 Kittitas County will engage in discussions with the incorporated communities within the County through the Regional Services Sub-Committee of the Kittitas County Council of Governments to address the economic impacts on those communities resulting from the provision of organized, active recreation facilities to the unincorporated citizens of the County.

Swiftwater Corridor Vision Plan

A corridor vision plan was prepared by the consulting firm of Otak and a citizens advisory committee, dated July 1997 (as amended). The corridor extends between Ellensburg, at the southeast end, and Salmon La Sac, at the northwest end, over a total distance of 42 miles. The vision plan is a corridor management plan prepared for the purposes of identifying unique and special features within the corridor and assessing eligibility for different types of funding, both private and public, for improvements, capital construction, operation, maintenance and enhancements, as well as economic development and tourism programs. The vision plan is a planning document to be used as a tool that provides recommendations for specific strategies to improve, enhance, and sustain the corridor's unique intrinsic qualities and the many enjoyable experiences it offers.

GPO 5.120 To recognize the Swiftwater Corridor Vision Plan as a planning tool that provides recommendations for specific strategies to improve, enhance, and sustain the corridor's unique intrinsic qualities and the many enjoyable experiences it offers. Selected projects within the vision plan shall not place additional management policies or regulations on private property or adjacent landowners beyond those that already exist under federal, state, regional, and local plans and regulations.

5.4 <u>CAPITAL IMPROVEMENTS</u>

5.4(A) Introduction

Section 5.4 of the CFP presents capital improvements projects, and the financing plan to pay for those projects. It also contains the inventory of existing facilities, a map of existing and planned facilities, the level of service standard, and concurrency requirements.

Each type of public facility is presented in a separate subsection which follows a standard format.

Narrative Summary

Overview of the data, with sections devoted to Current Facilities, Level of Service, Capital Facilities Projects and Financing, and Concurrency.

Inventory of Current Facilities

A list of existing capital facilities, including the name, capacity (for reference to levels of service), and location. The location of existing capital facilities is on computer file and will be included in the map form.

Level of Service Capacity Analysis

A table analyzing facility capacity requirements is presented for each type of public facility. The statistical table at the top calculates the amount of facility capacity that is required to achieve and maintain the standard for level of service. The capital improvements projects that provide the needed capacity are listed below the requirements table, and their capacities are reconciled to the total requirement in the table.

Capital Projects and Financing Plan

A list of capital improvements that will eliminate existing deficiencies, make available adequate facilities for future growth and repair or replace obsolete or worn out facilities through December 31, 2001. Each list of capital improvements begins with a financing plan, then itemizes the individual projects.

Financing Plan

Specific sources and amounts of revenue are shown, which will be used to pay for the proposed capital projects. The forecasts of existing revenue and expenditures are provided to (1) determine the County's overall financial position, and (2) identify <u>existing</u> Kittitas County revenue that can be used for future capital facility projects. "Revenue Sources for Capital Facilities" forecast new sources of revenue that the County could generate for capital facilities projects.

Future Capital Facilities Projects

Kittitas County has experienced a decline in space within the County Courthouse. In response to the decline in space, the Kittitas County Board of Commissioners began a review process for determining the current and future space needs for the county courthouse, which included the possibility of a Law and Justice Center In June 2000, the Kittitas County Law and Justice Committee received the final feasibility analysis for the construction of a new Law and Justice Center.

Once the necessary review process has been completed, the Kittitas County Board of Commissioners will determine the best avenue to resolve the current and future space needs for the offices and departments.

Capital Projects

Each capital improvement project is named, and briefly described. Project locations are specified in the name or description of the project. The cost for each of the next six fiscal years is shown in thousands of dollars (\$1,000). All cost data is in current dollars; no inflation factor has been applied because the costs will be revised as part of the annual review and update of the Capital Facilities Plan.

All capital improvement projects were prepared by the department that provides the public facility.

Location of Current Capital Facilities (Map)

A map showing the location of existing capital facilities is located in the Kittitas County Planning Department.

5.4(B) Selecting Revenue Sources For The Financing Plan

One of the most important requirements of the Capital Facilities Plan is that it must be financially feasible; GMA requires a balanced capital budget. The following are excerpts from GMA pertaining to financing of capital improvements.

GMA requires "a six-year plan that will finance...capital facilities within projected funding capacities and clearly identifies sources of public money for such purposes."

For roads, GMA allows development when "a financial *commitment* is in place to complete the improvements...within six years" (emphasis added).

The County must be able to afford the standards of service that it adopts, or "if probable funding falls short of meeting existing needs" the County must reassess any element to achieve consistency.

In keeping with these requirements, the County's CFP GPO 5.6 (see Goals and Policies, above) requires "revenues from sources that are available to the County pursuant to current statutes, and which have not been rejected by referendum, if a referendum is required to enact a source of revenue."

The forecasts of existing revenue and expenditures are provided to (1) determine the County's overall financial position, and (2) identify <u>existing</u> Kittitas County revenue that can be used for future capital facility projects. "Revenue Sources for Capital Facilities" forecasts <u>new</u> sources of revenue that Kittitas County could generate for capital facilities projects.

The process of identifying specific revenues for the financing plan is as follows:

- 1. Calculate total costs for each type of public facility.
- 2. Match existing restricted revenue sources to the type of facility to which they are restricted.
- 3. Subtract existing restricted revenues from costs to identify unfunded "deficit." (1-2=3).

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4. Apply new restricted revenues to the type of facility to which they are restricted.

5. Subtract new restricted revenues from costs to identify remaining unfunded "deficits" (3-4=5).

6. Allocate new unrestricted revenue to unfunded deficits. The allocation in this draft uses two new unrestricted revenues as a total "package": the second $1/4\phi$ real estate excise tax, and new bond issues (either councilmanic, or voted, or a combination). Decision makers can choose which of the two (REET or bonds) to assign to specific capital projects for the final CFP.

Contractor Performance System

The County will develop a system of monitoring the actual performance of contractors who design and/or construct public facilities for the County. The monitoring system shall track such items as actual vs. planned time schedule, and actual vs. bid cost. The performance of contractors shall be considered when the County awards contracts for public facilities.

Maps

The maps showing the Capital Facilities of Kittitas County are available at the Kittitas County Planning Department in Appendix B.

CHAPTER SIX: UTILITIES

6.1 **INTRODUCTION**

The Kittitas County Comprehensive Plan utilities element shall, at minimum, consist of the general location, proposed location, and capacity of all existing and proposed utilities, including but limited to, electrical lines, telecommunication lines and natural gas lines.

6.1(A) Glossary Of Terms

Utilities-means the supply, treatment and distribution, as appropriate, of domestic and irrigation water, sewage, storm water, natural gas, electricity, telephone, cable television, microwave transmissions and streets. Such utilities consist of both the service activity along with the physical facilities necessary for the utilities to be supplies. Utilities are supplied by a combination of general purpose local governments as well as private and community based organizations.

Municipal Services-are those services in keeping with and/or required in incorporated cities and urban growth nodes such as, but not limited to, centralized sewage collection and treatment, public water systems, urban street infrastructure, power and storm water systems, emergency services, libraries, schools, and government.

Regulatory Authority: The primary regulatory agency for most utilities in Washington State is the Washington Utilities and Transportation Commission (WUTC), a state agency. The WUTC ensures that safe and reliable service is provided to customers at reasonable rates. The Commission regulates the rates and charges, services, facilities, and practices of most of Washington's investor- owned gas, electric and telecommunication utilities. As defined by the WUTC, some utilities are considered a critical service, namely electricity and standard telephone, and must be provided "upon demand". In order to fulfill public service obligations, these utility providers must plan to extend or add to their facilities when needed. On the other hand, natural gas is not considered a necessity, but rather a utility of convenience. All utilities regulated by the WUTC are prohibited from passing the cost of new construction onto the existing rate base.

Federal agencies also play a role in regulating some of these utilities. For example, the Federal Communications Commission (FCC) regulates telecommunications. In addition, the Federal Energy Regulatory Commission (FERC), an independent commission with the U.S. Department of Energy, sets rates and charges for the transportation and sale of natural gas, and for the transportation of oil by pipeline, for the transmission and sale of electricity, and the licensing of hydroelectric power projects.

Local government, too, has a role in regulation for certain utilities, such as franchise agreements. However, the effort behind meeting Growth Management Act requirements is not primarily regulatory, rather it is to promote coordination and cooperation between jurisdictions and utility providers.

Virtually all land uses require one or more of the utilities discussed in this Chapter. Local land use decisions drive the need for new or expanded utility facilities. In other words, utilities follow growth.

Expansion of the utility systems is a function of the demand for reliable service that people, their land uses, and activities place on the systems.

6.1(B) Participation

In Kittitas County, utilities are currently provided by the following companies and government agencies:

Electricity:

Puget Sound Power & Light Company Kittitas County Public Utility District No. 1 City of Ellensburg, Dept. of Energy Services

Natural Gas:

City of Ellensburg, Dept. of Energy Services

Standard Telephone:

AT & T US West Communications Ellensburg Telephone Inland Telephone

Cellular Telephone:

AT&T Wireless US Cellular OneComm

Cable:

TCI Continental Cablevision R & R Cable Northwest Cable Snoqualmie Cable

Irrigation Purveyors

The Bonneville Power Administration (BPA), a power marketing agency of the U. S. Federal Government, owns and operates the principal high voltage transmission lines serving the region. In addition, Northwest Pipeline Corporation ("Northwest") owns and operates an extensive interstate pipeline system which provides natural gas to the lower valley. Both BPA transmission lines and Northwest pipelines run through Kittitas County.

6.2 EXISTING FACILITIES

In order to meet the GMA requirement that existing utility facilities be identified, the following list is provided.

6.2(A) Electricity

Utility Provider: Puget Sound Power & Light Company

For more details of these existing Puget Sound Power & Light Company facilities, please see the <u>Kittitas County GMA Draft Electrical Facilities Plan</u> prepared by Puget Sound Power & Light Company, which is the source for the following planned improvements. Inclusion of this reference to the plan indicates general schematic, not site specific approval of future facilities and acknowledges planning being done by Puget Sound Power & Light Company to provide service for anticipated growth.

Generation

The power consumed by the customers in Kittitas County is normally generated from existing large dams on the Columbia River, such as the Wanapum Dam, which is owned by Grant County PUD

Transmission Substations

The Cascade Substation located between Cle Elum and Roslyn is currently the main source for the transmission system serving the Kittitas County area.

Transmission Lines

In addition to BPA's numerous transmission lines in the Kittitas area, the Rocky Reach-White River 230kV Line, owned by Puget Sound Power & Light Company, crosses the County. This line serves the dual role of delivering Rocky Reach Dam power to Puget Sound area customers and supplying power to the Cascade Transmission Substation. The IP Line is a 115kV line that Puget Sound Power & Light Company purchased from the Milwaukee Railroad in 1976. It extends from Taunton (near Othello) to Snoqualmie Falls in Kittitas County, serving Puget Sound Power & Light Company customers in Kittitas County, the Snoqualmie Pass area in King County and some Kittitas Co. PUD customers.

Rocky Reach - White River 230kV Line Intermountain Power ("IP") 115kV Line

The rebuilding of the of the IP 115 kV transmission line will be completed and the line converted to 230 kV operation.

Distribution Substations

Eight distribution substations are located in Kittitas County. The distribution substations transform the voltage to 12 or 34kV, which are Puget Sound Power & Light Company's standard distribution voltages:

Hyak Easton Cascade Distribution North Cle Elum Cle Elum Woldale Thorp Kittitas

Future substations and their serving transmission lines may be required to serve load growth as it occurs.

Utility Provider: Kittitas County PUD No.1

The Kittitas County PUD No.1 provides electrical service to approximately 2,600 residents in the unincorporated Kittitas County. For more details on the Kittitas County PUD No.1, please see the <u>2-Year Work Program</u> or the <u>Kittitas County PUD No.1 Long Range Work Plan</u>. The current capacity system wide is approximately 70%.

Generation

Currently Kittitas County PUD No.1 receives energy purchased from the Puget Sound Light and Power Company, Bonneville Power Administration, the Priest Rapids Dam, the Wanapum Dam (Grant County PUD) and a generating facility located at Rosa Dam (operated by the U.S. Army Corp of Engineers).

Transmission Substations

One transmission substation located in Ellensburg runs to the Parke Creek Road distribution system (34kV to 12,470/7,200 volts)

Transmission Lines

Distribution Substations

Five distribution substations are located in Kittitas County:

Jenkins (115kV to 12,470/7,200 volts) Teanaway Junction (34kV to 12,470/7,200 volts) Auvil Fruit (distribute 12,470/7,200 volts) Vantage Area (distribute 12,470/7,200 volts) Taneum (34kV to 12,470/7,200 volts)

Utility Provider: City of Ellensburg, Dept. of Energy Services

The City of Ellensburg provides electrical service to approximately 6,300 customers within the corporate limits of the City of Ellensburg as well as limited services to a few customers surrounding the City of Ellensburg. For more details on the City's existing system, please see the City of Ellensburg Draft Environmental Impact Statement pages 201-211, draft date March 1995. Currently the City of Ellensburg is a full requirement customer of the Bonneville Power Administration (BPA).

The systems consists of 66 miles of overhead line, 33 miles of underground cable and two substations.

Generation

The power consumed by the customers in the City of Ellensburg is generated from a mix of facilities including dams on the Columbia River system and sites such as Hanford Nuclear Reservation.

Transmission Lines None

Transmission Substations None

Distribution Substations

The City of Ellensburg maintains two distribution substations located on Dollarway Road and on Vantage Highway in Kittitas County. The distribution substations transform the voltage to a level acceptable by household and business systems. At the two substations, the City of Ellensburg has a capacity of 60 megawatts with the 220, draft date March 1995. Natural gas is supplied to Ellensburg by Northwest Pipeline from a tap station three miles east of Ellensburg on the Kittitas Highway. From there the natural gas enters a 6-inch, 250 psi line which terminates in the City at the Seattle Street Regulator Station where the pressure is reduced to 42 psi and distributed throughout the City system.

6.2(B) Natural Gas

Utility Provider: City of Ellensburg, Dept. of Energy Services

Currently, the City of Ellensburg provides natural gas service to approximately 2,450 customers within the corporate limits of the City as well as to customers near the high pressure supply line paralleling the Kittitas Highway in unincorporated Kittitas County. For more details on the City's existing system, please see the City of Ellensburg Draft Environmental Impact Statement pages 212-220, draft date March 1995. Natural gas is supplied to Ellensburg by Northwest Pipeline from a tap station three miles east of Ellensburg on the Kittitas Highway. From there the natural gas enters a 6-inch, 250-psi line which terminates in the City at the Seattle Street Regulator Station where the pressure is reduced to 42 psi and distributed throughout the City system.

Utility Provider: Puget Sound Energy, INC

Puget Sound Energy, Inc. is an authorized purveyor of natural gas in Kittitas County pursuant to Washington Utilities and Transportation Commission Order No. UG-971136. Puget Sound Energy, Inc. has a natural gas distribution system in place (and/or under construction) extending from the City of Kittitas to Thorp. This system is located within a public right-of-way pursuant to franchise and is, therefore, within an established utility and transportation corridor.

In approximately 1999-2000, Puget Sound Energy, Inc. may extend its natural gas distribution system west as far as Sun Country. The need for this extension is dependent upon the demand for natural gas. If Puget Sound Energy, Inc. extends its system, the natural gas distribution route will follow a route combining public rights-of-way and cross-country upon private easements. The actual location of the facilities to be constructed will be established to conform to easements to be acquired from landowners. The extension of the system may also include contemporaneous or phased installation of various distribution connections to the main distribution line.

6.2(C) Standard Telephone

Utility Provider: AT & T

AT &T owns and maintains a transcontinental fiber optical cable which runs through Kittitas County. There are no local connections.

Utility Provider: US West Communications

There are two US West Communications central switching offices serving Kittitas County. One is located in the City of Cle Elum and another in Easton. In addition to the switching stations are main cable routes, branch feeder routes and local loops that provide dial tone, and some private (residential and commercial) lines serving upper Kittitas County and Yakima County.

Utility Provider: Ellensburg Telephone Company

The Ellensburg Telephone Company is multi-service organization which supplies local telephone service as well as pager service and alarm services for the Kittitas County and provides telephone services to approximately 1,149 square miles. Ellensburg Telephone Company has one switching station located at company headquarters in Ellensburg. In addition, there are three remote controlled switching stations located in Thorp, Kittitas and Vantage operated through microwave or fiber optics. Ellensburg Telephone Company also operates on a FM or frequency modulated system over wire and digital transmission.

Utility Provider: Inland Telephone Company

Inland Telephone, is a privately owned utility, that serves Roslyn, Ronald, and Lake Cle Elum areas. Inland Telephone provides telephone, cable, fiber optic, and security systems management. Inland Telephone serves 1,250 telephone customers in the area from a central office located in Roslyn. Services are provided via overland and limited buried cable (South end of the City of Roslyn). Current telephone service capacity is at 85%. Cellular phone service is presently provided to 20 customers in the Roslyn, Ronald, Lake Cle Elum areas. This service was introduced in 1994 and expected to expand rapidly. No facilities are required to provide this service.

6.2(D) Cellular Telephone

Utility Provider: AT&T Wireless

AT&T provides digital long distance radio service through a transmitting antennae with a repeater station. In addition, there are currently seven AT&T Wireless antennas serving Kittitas County at the following locations:

Snoqualmie Pass Stampede Pass Peoh Point Ellensburg Manastash Ridge Whiskey Dick Ridge Vantage Area

Utility Provider: US Cellular

There are currently five US Cellular antennas serving Kittitas County at the following locations:

Stampede Pass Look Out Mountain Ellensburg Whiskey Dick Mountain Umptanum Ridge

Together these antennas provide cellular telephone service for the county. The cellular phone system consists of a series of low-powered antennas in a honeycomb pattern of "cells" that invisibly blanket the service area. Each cell site has an effective signal radius of only a few miles depending on terrain and capacity demand. As a caller drives from one cell to another, the call is automatically "handed off" to another cell be a central computer. This central computer also connects the cellular phone transmission with the local telephone company system which completes the call.

6.2(E) Cable

Utility Provider: TCI

The cities of Cle Elum, South Cle Elum and the surrounding areas are served by the TCI Cable Company. Using strictly aerial cable, TCI serves approximately 75 customers through 4.4 miles of line. The current capacity of this cable system is at 67%.

Utility Provider: Continental Cablevision

The lower Kittitas County is served by Continental Cablevision. This company currently holds non- exclusive franchises in the City of Ellensburg, the City of Kittitas, Central Washington University, and portions of Kittitas County, providing cable TV service to approximately 7,400 customers. Existing facilities include the head-end receive site located on No. 6 Road consisting of UHF antennas, satellite receive only antennas, microwave antennas and a building housing signal processing equipment. From the head end the coaxial trunk and distribution system

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originates, which includes 37 miles of aerial line, 29 miles of underground line in the unincorporated Kittitas County; 39 miles of aerial line, 25 miles of underground line in the City of Ellensburg; and 3.5 miles of aerial line, .5 miles of underground line in the City of Kittitas; for a total of 133 miles of line. Continental Cablevision currently has pole attachment agreements with Puget Sound Light and Power Company, Kittitas County PUD, the City of Ellensburg, Ellensburg Telephone Company and Bonneville Power Administration. Existing frequency bandwidth carried on the system is 300 Mega Hertz which includes 35 video channels, and 9 FM stereo channels.

Utility Provider: R & R Cable

R & R Cable Company serves the Roslyn, Lake Cle Elum and Ronald area of Kittitas County. The present customer base is approximately 850 customers. Current cable system capacity is at 65%. Though a separate company, R & R Cable is housed with Inland Telephone.

Utility Provider: Northwest Cable

Northwest Cable is a company providing cable service to the Thorp and Eaton areas of Kittitas County. The have two translators and one distribution site.

Utility Provider: Snoqualmie Pass Cable

Snoqualmie Pass Cable is a company providing cable service to the Snoqualmie Pass area.

6.3 **PROPOSED FACILITIES**

The GMA requires that the utility element include proposed utility facilities. There is great variability in the level of detail provided for future utility facilities. This is because some utilities have done extensive future planning while others have done much less.

6.3(A) Electricity

Utility Provider: Puget Sound Power & Light Company

For more details of these existing Puget Sound Power & Light Company facilities, please see the <u>Kittitas County GMA Draft Electrical Facilities Plan</u> prepared by Puget Sound Power & Light Company, which is the source for the following planned improvements. Inclusion of this reference to the plan indicates general schematic, not site specific approval of future facilities and acknowledges planning being done by Puget Sound Power & Light Company to provide service for anticipated growth.

Future Transmission Improvements

It is anticipated that the Rocky Reach - White River line will be re-built to 500kV some time in the future.

Future Distribution Substations

The long range plan is for all of Puget Sound Power & Light Company's distribution system in Kittitas County to be 34kV, except in the Hyak area.

Utility Provider: Kittitas County Public Utility District No. 1

For more details of these existing Kittitas County PUD No.1, please see the <u>Kittitas County PUD</u> <u>No.1 Long-Range Work Plan</u>, which is the source for the following planned improvements. Inclusion of this reference to the plan indicates general schematic, not site-specific approval of future facilities and acknowledges planning being done by Kittitas County PUD No.1 to provide service for anticipated growth. Kittitas County PUD No.1 is acquiring approximately 135 new accounts per year.

Future Generation Facilities

Additional generation sources, possible from Grant County PUD may be added.

Future Transmission Improvements

None

Future Distribution Substations

A new distribution substation may be placed at the intersection of Hungary Junction Road and Kerr Road.

Utility Provider: City of Ellensburg, Dept. of Energy Services

For more details of the City of Ellensburg future facilities, please see the <u>City of Ellensburg</u> <u>Draft Electrical 6-Year Facilities Plan</u> to be competed in September of 1995.

Future Transmission Improvements

None.

Future Distribution Substations

The long range plan for the City of Ellensburg is the addition of one distribution substation, location unknown. There is sufficient supply for the 2014 planning phase with an additional 400 potential customers (mostly residential) in the Urban Growth Area. The current estimated existing load in the UGA is less than 5 megawatts.

6.3(B) Natural Gas

Utility Provider: City of Ellensburg, Dept. of Energy Services

For more details of the City of Ellensburg future facilities, please see the <u>City of Ellensburg</u> <u>Draft Natural Gas 6-Year Facilities Plan</u> to be competed in September of 1995. A second tap station on the Northwest Gas Pipeline is scheduled to be added to the City's system at the north end of Ellensburg in the 20 year future. In addition, the City of Ellensburg will go to a loop system with the second tap in order to provide a more efficient service. The new tap is scheduled to take in no more than 250 lb. on a maximum 6 inch line which will distribute at 42 lb. to households and business. The UGA will be served Gas through a system of 6-year and 20year system improvements such as extensions to Airport Road and a proposed Industrial Park up Helena Street.

6.3(C) Standard Telephone

Utility Provider: US West Communications

US West Communications is planning to build a new broad band telecommunications network capable of providing video, data and voice communications service. The network will carry these multimedia signals over a mix of optical fiber, coaxial cable and copper wire. It will be equipped with sophisticated electronic equipment that will make it easier to diagnose and fix problems.

Utility Provider: AT&T

AT&T Company may introduce a second optical fiber line in the future, again the line would be transcontinental.

Utility Provider: Ellensburg Telephone Company

The Ellensburg Telephone Company is planning to expand into the Personal Communications Device (PCD) service. PCD is a telephone service which is more efficient than cellular service, with greater range and may interact with your home telephone service. Ellensburg Telephone Company will also be boosting signal for subscribers by placing OPM (Outside Plant Modules) and DSC/DLC (Digital Subscriber Carrier/Digital Line Carrier) which enables efficient service and more carriers over pairs of lines New lines will be added to the system as needed, overhead lines will be buried and there will not be any new facilities constructed.

Utility Provider: Inland Telephone Company

The Inland Telephone Company plans to install a fiber optic cable in 1996 for telephone service as well as a new switching station, both located in Roslyn. Extensions of the telephone service can easily be accomplished to serve future growth on a demand basis.

6.3 (D) Cellular Telephone

Unlike other utilities, the cellular telephone industry does not plan facilities far into the future and analyzes market demand to determine expansions into new service areas.

Utility Provider: US Cellular

US Cellular wireless telephone service is now a subsidiary of AT&T facility, thought still named US Cellular. They are planning to expand to several new sites in the next 2-3 years. Long range facility plans are difficult to determine for utility providers, as these services are driven by demand and changes in technology. The proposed sites include:

Mt. Baldy Highway 97 North and several infill sites along Interstate-90

In addition, US Cellular will be moving from mountain top facilities to valley sites due to changes in technology.

Utility Provider: OneComm

The OneComm corporation provides does not currently provide wireless telephone services in Kittitas County, but has recently acquired permits from the County for the construction of four sites, these include:

Thorp Cle Elum Little Creek Stampede Pass

6.3(E) Cable

Utility Provider: TCI

TCI Cable Company plans to serve the surrounding Cle Elum area as needed. There are no formal facility expansion plans.

Utility Provider: Continental Cablevision

Future extensions of Continental Cablevision services will be expanded with area growth. Continental Cablevision anticipates the addition of a new head end by 1998, and a system upgrade or rebuild to a minimum frequency bandwidth of 450 Mega Hertz. Future services anticipated by Continental Cablevision include interactive video, high speed data transmission and other services necessary to meet changing customer needs.

Utility Provider: R & R Cable

R & R Cable Company will be adding cable and channels to their service in the foreseeable future. With a 5-7% increase in customers subscribers each year, cable service is expected to expand both in Roslyn and the surrounding area with extensions of cable between Lake Cle Elum and Roslyn in the future.

6.3(F) Water And Sewer Systems

City of Cle Elum Town of South Cle Elum City of Ellensburg City of Kittitas City Roslyn Snoqualmie Pass Utility District

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Water District No.2 Water District No.3 Water District No.4 Water District No.5 Water District No.6 Evergreen Valley Water System

As water and sewer systems are a capital facility under RCW 36.70A. and a utility under the County-wide Planning Policies, these facilities have been listed in both Chapter 5, Capital Facilities and Chapter 6, Utilities. For purposes of this comprehensive plan, general facility information regarding water and sewer systems is located in Chapter 5, Capital Facilities Plan. Water and sewer facilities are subject to the policies in the Chapter 5 for the capital improvements while lines are subject to the policies in Chapter 6.

6.3(G) Irrigation Purveyors

Utility provider: Kittitas Reclamation District

Kittitas Reclamation District (KRD) provides irrigation water to 59,122 acres of Bureau of Reclamation classified irrigable lands. The District lands begin at the Easton Diversion Dam. In general, District lands are contiguous to, and above older private canal system developments. KRD contractual obligation is to deliver water to the highest feasible point in each 160-acre unit. There are currently six ditch ride areas within the KRD: Ride 1, Taneum Creek to Manastash; Ride 2, Swauk Creek to Wilson Creek; Ride 3, Wilson Creek to Caribou Creek; Ride 4, Caribou Creek to Badger Pocket; Ride 5, Badger Pocket; Ride 6, Easton to Swauk Creek. KRD has 330 miles of main canals and laterals. Assessments are set annually by the Board of Directors to cover original construction debt, operation and maintenance expenses. Water allotment per assessed acre is set annual by the Board based upon Total Water Supply Available to the District as determined by the Bureau of Reclamation. KRD's contractual water season is from April 20 to October 15.

Utility provider: Cascade Irrigation District

Cascade Irrigation District (CID) provides irrigation water to approximately 12,500 acres of prime farmland. The land, approximately one mile wide, served by CID begins at Clark Flats along the Yakima River just west of Thorp and runs between Kittitas Reclamation District and the Ellensburg Water Company. The CID operates approximately 33 miles of open irrigation canal and four miles of buried pipeline with three separate pumping stations located on the Yakima River.

Utility Provider: Ellensburg Water Company

The Ellensburg Water Company owns and operates the Town canal, an irrigation canal which serves approximately 10,160 acres of cropland and suburban properties in the Kittitas Valley. The Ellensburg Water Company was organized in 1885 for the purpose of construction and operating a canal to serve lands on the east side of the Kittitas Valley. The Town canal is approximately 23 miles long and extends from its Yakima River diversion about eight miles west of the City of Ellensburg eastward and southward ending about one mile east of the confluence

Kittitas County Comprehensive Plan December 2001 of Wilson Creek and Cherry Creek. The Town canal receives inflow from several creeks and drains along its conveyance route. Service area lands also utilize creek and return flow sources. The canal serves 450 shareholders.

Utility providers: Westside Irrigation Taneum Ditch Company Bull Ditch Other private, cooperative water suppliers

6.4 <u>GOALS, POLICIES, AND OBJECTIVES</u>

GPO 6.1 The county should promote the joint use of transportation rights-of-way and other utility corridors consistent with the underlying private property rights and easement limitations.

GPO 6.2 Appropriately place utility facilities within public rights-of-way.

GPO 6.3 The Kittitas County's plan for utility facilities will be formulated, interpreted and applied in a manner consistent with and complimentary to the serving utility's public service obligations.

GPO 6.4 The county should maintain current information on the existing and proposed facilities of utilities.

GPO 6.5 On an annual basis, provide all private utility companies copies of the Kittitas County revised 6-Year Capital Facilities Plan, particularly the schedule of proposed road and public utility construction projects so that the companies may coordinate construction, maintenance, and other needs in an efficient manner.

GPO 6.6 Expansion and improvement of utility systems should be recognized primarily as the responsibility of the utility providing the corresponding service.

GPO 6.7 Decisions made by Kittitas County regarding utility facilities will be made in a manner consistent with and complementary to regional demands and resources.

GPO 6.8 Additions to and improvements of utilities facilities will be allowed to occur at a time and in a manner sufficient to serve growth.

GPO 6.9 Process permits and approvals for all utility facilities in a fair and timely manner, and in accordance with development regulations that ensure predictability and project concurrency.

GPO 6.10 Community input should be solicited prior to county approval of utility facilities which may significantly impact the surrounding community.

GPO 6.11 Planning by Kittitas County for utility facilities development will be coordinated with planning by other jurisdictions for utility facility development.

GPO 6.12 The County should coordinate with the cities and towns throughout the county on utility planning.

GPO 6.13 The County should coordinate with utility providers.

GPO 6.14 The County shall coordinate the formulation and periodic update of the utility element and relevant implementing development regulations with adjacent jurisdictions.

GPO 6.16 The County shall coordinate, and seek to cooperate with, other jurisdictions in the implementations of multi-jurisdictional utility facility additional and improvements. Such coordination and cooperation should include efforts to coordinate the procedures for making specific land use decisions to achieve consistency in timing inter-jurisdictional coordination in the planning and provisions of utilities.

GPO 6.17 Provide timely and effective notice to utilities of the construction, maintenance or repair of streets, roads, highways or other facilities, and coordinate such work with the serving utilities to ensure that utility needs are appropriately considered.

GPO 6.18 Decisions made regarding utility facilities should be consistent with and complementary to regional demand and resources and should reinforce an interconnected regional distribution network.

GPO 6.19 Within the urban growth areas, development of less than one acre in size would not be required under County ordinances to provide water systems to the properties for irrigation system water.

GPO 6.20 Trespass on utility easements shall be discouraged, and any other easement rights shall be acquired under normal lawful procedures.

GPO 6.21 Avoid, where possible, routing major electric transmission lines above 55 kV through urban areas.

GPO 6.22 To review the placement and appropriateness of utilities

GPO 6.23 Kittitas County reserves the right to review all applications for utilities placed within or through the County for consistency with local policies, laws, custom and culture

GPO 6.24 To reduce the risk of accidents caused by hazardous liquid pipelines, natural gas lines, sewer lines and other potential hazardous materials which are conveyed both above and below ground.

GPO 6.25 Kittitas County will address hazardous liquid pipelines, natural gas lines, sewer lines and other potentially hazardous materials through the County's development regulations. The development regulations shall include the specific addition or restriction of these and associated uses as well as the possible adoption of performance standards for siting,

maintenance, and monitoring. These performance standards should include best management practices.

GPO 6.26 Kittitas County recognizes reclamation irrigation districts within Kittitas County as utilities. Kittitas County also recognizes smaller private and cooperative irrigation water providers, including but not limited to:

Westside Irrigation Company Taneum Ditch Company Bull Ditch Company

GPO 6.27 Kittitas County recognizes that some county easements and rights-of-way provide current and historic water conveyance. Kittitas County also recognizes the damage done to roadways by some of these conveyances. Kittitas County will allow current conveyances where properly maintained and operated but will assume no liability or responsibility for delivery of irrigation water, including maintenance of ditches, unless conducive to good roadside management practices. New irrigation conveyances may be installed within the county easement or right-of-way, but must be separated from the county roadside ditch.

GPO 6.28 It is the position of Kittitas County that it is inappropriate for utilities to over or underbuild other utilities. A specific example of such requirements may be found in RCW 35A.14.900 and other state law.

GPO 6.29 Kittitas County encourages the extension of utilities to major industrial developments, as referenced in Chapter Two, Section 2.5 Major Industrial Developments.

GPO 6.30 Utilities may be extended to sere a Master Planned Resort or Fully Contained Community which is approved pursuant to County Comprehensive Plan policies and development regulations, so long as all costs associated with utility and service extension and capacity increases directly attributable to the MPR or Fully Contained Community are fully borne by the resort or community. To the extent state law (including without limitations a tariff filed with the Washington Utilities and Transportation Commission (WUTC) requires contrary cost allocations, such state law shall control.

GPO 6.31 Capital Facilities and Utilities may be sited, constructed, and operted by outside public service providers (or sited, constructed, and/or operated jointly with a Master Planned Resort (MPR) or Fully Contained Community to the extent elsewhere permitted), on property located outside of an urban growth area or an urban growth node if such facilities and utilities are located within the boundaries of such resort or community which is approved pursuant to County Comprehensive Plan policies and development regulations.

GPO 6.32 Electric and natural gas transmission and distribution facilities may be sited within and through areas of Kittitas County both inside and outside of municipal boundaries, UGA's, UGN's, Master Planned Resorts, and Fully Contained Communities, including to and through rural areas of Kittitas County. GPO 6.33 Encourage joint electric utility construction standards for all electrical infrastructure constructed in the UGA. In the interim, Puget Sound Energy and the Kittitas County Public Utility District will allow the City of Ellensburg to review any new construction in the UGA.

<u>GPO 6.34</u> Wind Farms may only be located in areas designated as Wind Farm Resource overlay districts in the Comprehensive Plan. Such Wind Farm Resource overlay districts need not be designated as Major Industrial Developments under Chapter 2.5 of the Comprehensive Plan.
CHAPTER 7: SNOQUALMIE PASS SUB-AREA COMPREHENSIVE PLAN - MASTER PLAN

I. INTRODUCTION

A. <u>OVERVIEW</u>

Snoqualmie Pass is a predominate winter recreation destination in Washington State. The combination of a scenic alpine setting and community initiative present opportunities to improve and expand the quality recreational and social offerings in the Pass area.

These opportunities are enabled by existing sanitary sewer and water systems and excellent access via Interstate 90. This infrastructure is unique to Snoqualmie Pass relative to other mountain recreational areas in Washington State. These utility services, combined with numerous private property holdings in the Pass area, have lead to new growth potential and the inherent quality-of-life and environmental challenges which invariably accompany such growth. These challenges are the primary motivation for the on-going community-based planning at the Pass.

The Snoqualmie Pass community is a diverse group of part-time and full-time residents: people who work at the Pass and live elsewhere, or who live at the Pass and work elsewhere; and some who make both their home and their livelihood at the Pass.

The Snoqualmie Pass area is a magnificent recreational area, including ski areas, the Pacific Crest/John Wayne Trail and Ironhorse State Park Trail, many lakes, and scenic alpine wilderness. These features are remarkable not only for their beauty and recreational opportunity, but also for the ease of public access via I-90, a National Scenic Byway.

The natural splendor of the mountain setting, the economic and recreational opportunities, the existing extensive infrastructure, and the diverse mix of public and private stakeholders are features which are not found together in any other community in the State of Washington. The challenges of planning for this community are truly unique.

In order to assure the preservation of the scenic beauty, environment and the long success of Snoqualmie Pass as a quality resort and year-round community, the plans of private individuals, large landowners, and public agencies need to be coordinated through an overall plan for the community.

B. <u>COMMUNITY PLANNING HISTORY</u>

In March of 1990 a "town hall" meeting was held at the Pass with officials of Kittitas County at which residents and property owners expressed concerns on issues ranging from road standards and maintenance to police and fire protection. At the urging of the Kittitas County Commissioners, and with the assistance of the County planning staff, the Snoqualmie Pass Planning Advisory Council (now known as the Snoqualmie Pass Advisory Council, or SNOPAC) was formed and conducted its first official meeting in April, 1990. A substantial

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portion of the planning area lies within King County, and appropriate officials from both counties monitored and supported SNOPAC's efforts.

Members of SNOPAC devoted over 4,000 hours meeting the challenge of creating the first Comprehensive Plan for Snoqualmie Pass. This plan, the Snoqualmie Pass Comprehensive Plan, was completed in 1993 and subsequently adopted by Kittitas and King Counties as Sub-Area Plan (in July, 1996) and Rural Town (1997), respectively, within their comprehensive plans.

Other significant planning activities undertaken since the adoption of that first comprehensive plan include:

1) The US Forest Service preparation and adoption of the Snoqualmie Pass Adaptive Management Area Plan which establishes standards and guidelines for all activities occurring on Forest Service lands within the Adaptive Management Area (AMA).

2) Mountains to Sound Greenway Trust's successful achievement of a National Scenic Byway designation (in 1998) to help conserve the scenic forested corridor along 1-90 from Seattle to Cle Elum.

3) Ski Lifts, Inc. (Booth Creek Ski Holdings, Inc.) acquisition of all public ski operations at the Pass, and the subsequent development of an overall Master Plan for the ski areas.

C. THE CURRENT PLANNING PROCESS

This updated Comprehensive Plan is the community's second phase of planning. It is the result of thousands of hours of volunteer work invested by the community (through countless SNOPAC committee meetings, community open houses, general meetings, and consultant reports and meetings) to review the growth and activities at the Pass over the past ten years, identify current and future growth-related issues, and adapt the first comprehensive plan to meet the challenges and needs of future growth.

Originally made up primarily of local residents and recreational home owners, business operators and development interests, SNOPAC has expanded to include representatives of local, state and federal agencies, private commercial forest landowners, and mountain recreation and conservation organizations. SNOPAC embodies the public planning process encouraged by Washington's Growth Management Act.

As an unincorporated area at the edges of two different counties, the Pass community is rather distant from the seat of their local government. However, the community has come together, through SNOPAC, to complete this update to the Snoqualmie Pass Comprehensive Plan.

D. THE PLANNING AREA

The study area encompasses approximately 26 square miles on both sides of Snoqualmie Pass in the Cascade Mountains. Approximately 65% of the study area is within Kittitas County, with the

remainder in King County. Nearly sixteen square miles is publicly owned by the United States Forest Service lying within both the Mt. Baker/Snoqualmie National Forest and the Wenatchee National Forest. An additional five square miles is owned by the Plum Creek Timber Company. The remaining five square miles is under other private ownerships ranging in parcel size from small single family lots to over 500 acres.

Much of the study area is mountainous and not subject to the usual development pressures which typically foster community planning efforts. However, the scenic grandeur and recreational opportunities afforded by these lands are integral to the total environment and character of the Snoqualmie Pass community and therefore were included within the planning area boundaries.

Mountainous topography is the primary determinant which provides focus on the areas where development potential exists and where detailed planning is necessary. The valley which constitutes the pass through which Interstate 90 traverses the Cascades, together with Alpental and Gold Creek valleys, comprise the area where residential and commercial development has historically occurred and which holds the most potential for future growth.

To aid in understanding the particular amenities and constraints on various portions of the planning area, it has been divided for ease of reference into five subareas. Although particular elements of the comprehensive plan are presented in this subarea format, they should be viewed as integral parts of the entire Snoqualmie Pass Comprehensive Plan.

E. SUMMARY

Snoqualmie Pass is a year-round alpine community encompassing Snoqualmie Pass summit and the residential, commercial, recreational and open space areas both east and west of the summit, including Alpental, Gold Creek Valley, Denny Creek and Hyak. The area is a unified community of integrated uses and services which should provide for the recreational, cultural and service needs of its owners, residents and numerous recreational visitors.

The community seeks to preserve the natural features and recreational amenities which contribute to its alpine environment and enhance the fabric and character of the community while planning for growth and development.

The community strongly desires to maintain and improve existing planning guidelines within the identified community boundary, and to develop standards for growth and development in its alpine environment, which will ensure a community which is aesthetically and environmentally compatible with its mountain setting while meeting the needs of its residents, businesses and visitors.

Although unincorporated, the stakeholders at Snoqualmie Pass are shaping the future of their community through stewardship of the goals and recommendations set forth in their planning efforts. The community continues to make the effort to participate with, negotiate with, and remind those public agencies, private companies, or individuals who have the jurisdiction, authority or responsibility, to implement those actions that will achieve the goals of the community's plan.

II. SUBAREA DESCRIPTIONS

A. SUBAREA "A"

Location and General Description

The four square mile Alpental subarea is the northern most portion of the study area and lies entirely within King County. The valley is relatively narrow and encompasses the upper most portions of the South Fork of the Snoqualmie River. Small parts of the eastern and western portions of the subarea are within the Alpine Lakes Wilderness boundary. The southern boundary of Subarea A is formed by Interstate 90 and Snoqualmie Summit.

Natural Features

The Alpental valley is narrow with steep side slopes rising to some of the higher and most scenic mountain peaks in the Pass area, including Snoqualmie Mountain at 6,278 feet, Denny Mountain at 5,519, and the landmark Guye Peak at 5,168. The South Fork of the Snoqualmie River traverses the valley floor and is joined near the valley entrance by Commonwealth Creek, which flows from the north. Due to steep slope gradients and unstable geologic conditions, some areas along the east and west valley walls are subject to rock slides. In winter, many of the same upper slopes are also vulnerable to avalanches.

Existing Land Use and Ownership

Approximately 75% of the subarea is National Forest System Land within the Mt. Baker - Snoqualmie National Forest. Approximately 750 acres of this land is granted a Special Use Permit for use as the Alpental downhill ski area. The base of the ski area, including two day lodges and other support services, is on private land.

Most of the private land occurs at or near the valley floor in the southeast quadrant of the subarea. An exception is a large, steep linear parcel of undeveloped private land east of the base of the ski area which runs perpendicular to the slope up to Cave Ridge, which is subject to slides and avalanches.

Other land uses on private properties include condominiums, single family subdivisions and two private ski/outdoor clubs. Other private parcels west of Alpental Road and east of the subdivisions are undeveloped and are of limited development potential because of steep slopes and slide potential.

Access and Utilities

The Alpental valley is accessible from the west at Exit 52 (West Summit) of Interstate 90. Alpental Road is a two lane roadway which follows the valley floor for approximately one mile to the base of the ski area, providing access to the Alpental subdivisions and condominiums. Individual lots are accessed by private, two lane roads within each subdivision.

Sewer service is provided to the Alpental area by the Snoqualmie Pass Sewer and Water District. Water service is provided by a private purveyor. However the system is integrated with the District's system. Telephone, cable television and electricity are provided by private utilities. *Development Constraints*

Steep slopes, geologic conditions, Commonwealth Creek and the South Fork of the Snoqualmie River combine to present severe environmental constraints on development of much of the remaining undeveloped land.

B. SUBAREA "B"

Location and General Description

After leaving the Alpental valley, the South Fork of the Snoqualmie River turns southwest and flows down the valley which forms the western approach to Snoqualmie Pass. This valley and the adjacent slopes comprise Subarea B, Denny Creek.

Like Alpental, the Denny Creek subarea lies totally within King County. The valley is dominated by Interstate 90, the separated east-bound and west-bound lanes of which virtually form the boundaries of the valley.

The valley is topographically isolated from the rest of the Snoqualmie Pass planning area, but is nonetheless connected by history, I-90, and recreational opportunities.

Natural Features

The South Fork is the dominate natural feature of the subarea. The river is joined by Denny Creek, flowing from the west, Rockdale Creek which flows from the east and Olallie Creek which enters the river near the southern subarea boundary. Franklin Falls, on the South Fork, is an attractive and popular natural feature.

The valley is heavily treed with a variety of evergreen species and associated understory vegetation. The vegetative cover effectively obscures the visual presence of the freeway for most of the valley.

Existing Land Use and Ownership

With approximately 3 square miles of land area, Denny Creek is the smallest of the five sub-units in the study area. About two thirds of the land is National Forest System Land, and the right-of-way for Interstate 90 also represents a large, lineal land ownership. The Forest Service operates and maintains the Denny Creek Campground which contains 64 tent and trailer camp sites. There are private cabins on Forest System Land across the river from the campground.

Private land holdings range in size from less than one acre to about 80 acres. Several houses and cabins provide both permanent and seasonal residences.

Access and Utilities

Access to Denny Creek is available from the south from Exit 47 of Interstate 90. This road provides primary access to the Denny Creek Campground and is a two-lane paved roadway from Exit 47 to the campground. Beyond the campground, the road narrows and the surface becomes variable. This portion of the roadway is on the route of the first permanent roadway over the pass which was dedicated in 1915. Along this route are remnants of the old cross-pass wagon road dating from the 1880's. This winding road connects to the north near Alpental Road and Exit 52.

Sewer and water services are not provided to the Denny Creek area. Individual septic systems and wells serve the area. Telephone and electricity are provided to most dwellings.

Development Constraints

The small amount of private lands which exist in this subarea would not justify the expense of extending sewer and water service to the area. The absence of these utilities present a development constraint which will preclude the development of small lot subdivisions. The primary zoning of this area (Forest Production) also limits development potential.

C. SUBAREA "C"

Location and General Description

Subarea C is the center of the planning area, both geographically and economically. The Summit is the most recognized part of the sub-area, and its highly visible ski slopes and tourist services are visited by over 500,000 people each year.

The subarea is separated topographically into two parts by a ridge that runs in a northsouth direction. The west side of the ridge, which is essentially undeveloped, descends toward the east bound lanes of Interstate 90 as they climb toward the summit. East of the ridge, ski slopes descend to the base at Highway 906, the frontage road which parallels Interstate 90. East of the freeway, at this point, is the residential area of Yellowstone Road.

The ridge line is also the approximate location of the boundary line between King and Kittitas counties. Most of the developed residential portions of the summit area lie within Kittitas County. Commercial development is about evenly divided between the two counties.

Natural Features

The above described ridge is the dominant physical feature in the subarea. There are a number of small lakes on the west side of the ridge and the western slope supports evergreen forest cover, while the eastern slope has been cleared and groomed for downhill ski use. Hyak Creek flows down the eastern slope and forms the southern boundary of the planning area.

The Summit area provides views of many of the high mountain peaks to the north and east.

Existing Land Use and Ownership

Roughly 50% of this subarea is Forest Service Land, 20% is owned by Plum Creek Timber Company and the remaining 30% by other private owners. Private ownership ranges in size from individual lots to several hundred acres. A large percentage of the Forest Service land is used for downhill ski facilities and supporting services.

Downhill skiing is the predominant land use. Summit West and Summit Central ski areas combine to provide an area of groomed slopes which is nearly two miles wide. More than thirty ski schools operate from the base of the ski slopes. The Mountaineers have about 80 acres between Summit West and Central with a lodge and ski slope.

The area at the base of Summit West has for decades been the primary activity center at the pass, for both skiers and travelers crossing the Pass. Restaurants, a motel, a gas station and convenience stores operate year round. Other services are offered at the day lodges near the base of the ski slopes during ski season.

The volunteer fire department and the sewer and water district offices are located at the summit, as are a church, public rest rooms and a small Forest Service visitors information center.

Four subdivisions have been platted west of the freeway in this subarea. Conifer Estates, which lies between Highway 906 and Interstate 90, Snoqualmie Summit Village, Ski Acres Estates and Village at the Summit. The Nordic ski/mountain biking day lodge is located at on a

Ski Acres Estates lot and Edelweiss Chalet condominiums is adjacent to the northwest end of the Ski Acres Estate plat.

East of Interstate 90 in the Yellowstone Road area there are 23 platted lots and 56 other parcels which have been subdivided for residential use. There are presently 21 dwellings in this area plus 12 cabins located on Forest Service Land under special use permits.

Access and Utilities

Eastbound traffic on Interstate 90 can access the summit at Exit 52 or Exit 53. Westbound traffic can exit at Exit 53 or access the area via SR906 from Exit 54. (Prior to the opening of Interstate 90, SR906 was part of U.S. Highway 10, or the Sunset Highway, which was the primary route over the pass from the 1930's through the 1960's.) SR906 remains the arterial connector which links all areas of the pass and is accessible from all three Interstate 90 interchanges. At the summit, between Exits 52 and 53, the roadway is two lanes with extremely wide shoulders on each side. Near Exit 53, the shoulders become narrow with some open roadside drainage.

The area is provided sewer and water by the Snoqualmie Pass Sewer and Water District. Electricity, telephone and cable television are provided by private purveyors.

Development Constraints

Hyak Creek and two other unnamed creeks which flow from the ski slopes, together with Coal Creek which flows through the Yellowstone Road area, present development constraints. Wetlands and other sensitive areas associated with the streams must also be identified and protected as development occurs.

D. SUBAREA "D"

Location and General Description

Subarea D is the most eastern portion of the planning area. Gold Creek Valley begins at the head of Keechelus Lake and stretches to the northeast, over seven miles, to Chikamin Ridge. The upper reaches of the valley (outside of this subarea) are within the Alpine Lakes Wilderness. The eastern boundary of the subarea coincides with the Wilderness boundary.

Nearly three lineal miles of the valley are included in the subarea, which encompasses about 6.5 square miles. The valley floor is wide and flat at its entrance and tapers gradually to the study area boundary, beyond which the valley becomes narrow and rugged. Steep slopes rim both sides of the valley.

Interstate 90 crosses perpendicular to the valley and separates the valley from Keechelus Lake and the Summit area.

Natural Features

The valley offers some of the most spectacular scenery in the Pass area including Rampart Ridge, Chikamin Peak and Kendall Peak.

Gold Creek flows year around into Keechelus Lake. In the flatter portions of the valley floor, the creek bed becomes broad and, in dry summer months, part of the creek flows under ground. The lower reaches of the creek are a designated flood plain in the Kittitas County Comprehensive Plan.

There are extensive wetlands near the valley entrance. Some are associated with Gold Creek and others with Mardee Lake and Coal Creek.

Existing Land Use and Ownership

Three square miles within this subarea is Forest Service Land. Nearly two square miles are held by Plum Creek Timber Company, including the northwest corner and south of the subarea which are steep slopes outside the valley floor. The remaining properties are privately owned primarily in five individual holdings. Most of the privately owned land is within the floor of the valley.

The valley is only sparsely developed, even though most of the private properties have been granted preliminary or final approval for either residential or commercial developments.

The U.S. Forest Service has improved the area around Gold Creek Pond, providing trails, landscaping, picnic areas, parking and rest rooms. This should increase the use of this valuable recreational area by tourists and local residents alike.

Access and Utilities

The Gold Creek Valley has access from SR906 and Interstate 90 at Exit 54. The underpass at this interchange allows access between the valley and other areas of the Pass. A paved frontage road parallels the freeway and intersects with a gravel Forest Service road which leads up the valley to Gold Creek Pond and private cabins. This road is the primary access to the largest area of private land ownership on the east side of Gold Creek. This same road leads to the trail head for hikes up the valley to Alaska Lake and Joe Lake.

A second Forest Service road leads directly from the freeway interchange in a northeast direction and traverses private property to provide access to Forest Service properties and privately owned timber lands. A gate prohibits unauthorized vehicles onto Forest Service and timber lands.

Presently, sewers have not been extended into the valley. The existing cabins are served with individual septic systems and most share a community water system. Power, telephone and other utilities are available (not) available in the valley at the present time.

Development Constraints

Gold Creek Valley can be served with sewer and water systems by the Snoqualmie Pass Sewer and Water District. Therefore, utility services should present no constraints to development.

The steep slopes on the east side of the valley are unbuildable and development will be limited to the valley floor. Gold Creek should be protected as a sensitive environmental area and respected as a potential source of flooding.

Extensive wetland areas around Mardee Lake present constraints to development, as do steep slopes and rock outcropping on a ridge area east of Mardee Lake.

Coal Creek and Hyak Creek are other environmentally sensitive areas which will require protection and special attention.

E. <u>SUBAREA "E"</u>

Location and General Description

The Hyak subarea is the largest of the subareas, covering over ten square miles and spanning the southern end of the study area from east to west. The northern end of Keechelus Lake and Interstate 90 form the eastern boundaries.

Natural Features

Mount Catherine at 5,052 feet is the center piece for the Hyak area. The Cold Creek valley leads to Twin Lakes and a spectacular view of Silver Peak at 5,605. Other small lakes are tucked in the area north of Mount Catherine.

Keechelus Lake, although a controlled reservoir, provides the visual image and, most of the year, the recreational attributes of a large natural lake. This may be affected for a time by dam stability concerns and repair efforts.

Existing Land Use and Ownership

Over five square miles (fifty percent) of the planning area is Forest Service land and over two square miles is owned by Plum Creek Timber Company. Keechelus Lake, which covers over one square mile of the subarea, is managed by the Federal Bureau of Land Management.

The remaining land is owned by numerous private owners and public agencies, with varying uses. Hyak Estates is located east of the Summit East ski area, and the Suncrest and Sundance Condominiums are located at the base of the ski area. There is also an approved Hyak PUD for a 25 lot development. The Snoqualmie Pass Sewer and Water District's sewage treatment plant is located near Hyak Division 4, and the District's effluent spray field is located on Forest Service and owned land farther to the south. The Washington State Department of Transportation operates a highway maintenance facility near the head of Keechelus Lake, which includes maintenance shops, garages and areas to stockpile sand and gravel.

The Iron Horse State Park (and John Wayne Trail) is located on the abandoned Milwaukee Railroad right-of-way. The State Parks Department also owns some small parcels of adjacent land.

The Summit East Ski Area is located on a combination of Forest Service and private land. The base of the ski area, including its support buildings and services, is on private land.

Access and Utilities

The Hyak area has access from Interstate 90 at Exit 54 and SR906. SR906 provides a direct route to other areas near the summit.

Sewer and water, together with all private utilities, are readily available in the privately developed portions of the area north of the sewage treatment plant. Sewer and water utilities do not extend south from the treatment plant.

Development Constraints

There are few development constraints in the privately owned area near Exit 54, where most development in this sub-area is likely to occur. Privately owned land to the southwest which is now part of the ski slopes, would face constraints of topography and the availability of sewer and water. Privately owned lands in the southernmost end of the planning area contain some steep slopes. The cost of extending utilities to this area may be prohibitive, so soil suitability for on-site water and septic systems may limit development potential.

III. LAND USE

A. <u>OVERVIEW</u>

This updated comprehensive plan addresses many issues related to land use in the Planning Area, including setting goals and objectives for different land uses and integrating the land use policies and objectives of various entities and groups including Kittitas County, King County, the Forest Service, the Pass community, the ski area, and private landowners.

At the start of the current process, existing plans, documentation and information related to land use at the Pass were reviewed for continued relevance and applicability to present and expected future land use situations to be guided by an updated Comprehensive Plan. The items reviewed included:

1) The existing *Snoqualmie Pass Sub-Area Comprehensive Plan-Master Plan* (the plan being updated). As part of this review, the Comprehensive Plans for Kittitas County and King County were reviewed as well.

2) The *Snoqualmie Pass Adaptive Management Area (SPAMA) Plan*, which is one of a network of AMAs established in 1994 by the Northwest Forest Plan (NWFP). As Forest Service and private lands are intermingled in a checkerboard pattern in the Planning area, land use will have an impact on adjoining property. The SPAMA recognizes that population has and will grow, and the increasing amount and variety of outdoor recreational activities on both public and private lands.

This growth, as well as logging activities, have impacted habitat in the I-90 corridor. Consequently, the AMA was prepared as a comprehensive plan for providing late-successional forest habitat on the 'checkerboard lands'. One of the central themes in the AMA plan was the recognition of the Pass area as a "critical connective link in the north-south movement of organisms in the Cascades," including the concept that large gains in connectivity could be made only by land exchanges to provide unfragmented blocks of land. In its adoption of the AMA, the Forest Service noted that the adopted standards and guidelines allow for adaptability; as new information from research and monitoring of other projects becomes available, adjustments will be made to the adopted guidelines.

3) The *Mountains to Sound Greenway Trust project*. The Greenway is a coalition of people representing land owners and managers, foresters, business representatives, recreation groups, environmentalists, and government agencies. All major land owners and managers along I-90 are represented. Through the efforts of the Greenway Trust, Interstate 90 was designated a National Scenic Byway in 1998.

This coalition of diverse interests has formed a network of critical alliances that, year by year, is implementing its plan to protect more of the scenic and recreational landscape along I-90. Since 1991, over 50,000 acres of forest, open space and historic lands have been purchased or exchanged into public ownership for Greenway purposes, including permanent forestry, parks and wildlife habitat.

Kittitas County Comprehensive Plan December 2001 Although the Mountains to Sound effort has not yet directly affected planning for lands within the planning area, their efforts to ensure a scenic corridor, in which the Pass is a significant feature, is one important element in the success of the Pass as a residential and resort community. Likewise, maintenance and enhancement of the scenic quality of the Pass will continue to be an essential part of the success of the Greenway project.

4) The *Summit at Snoqualmie Master Plan*. Under Booth Creek Holdings, the ski area has completed a comprehensive Master Plan, which will substantially improve the overall quality of outdoor skiing experience offered to its customer base.

The components of the Master Plan involve the replacement of existing older chair lifts with new modem lift technology, the improved integration of the Summit West, Summit Central, and Summit East resorts by the cutting of new trails and improved base area transit service, and substantial upgrades of base area facilities, skier support services, restaurants and specialty retail shops. Parking and circulation among the base areas of the mountains will be improved.

The Summit Ski Areas produced a combined 503,000 skier visits during the 1998/99 season, or roughly 30 percent of all visits recorded at Washington ski areas. An additional 50,000 visits were generated for the Nordic and tubing areas. This total of alpine visitation ranks the Summit as the largest ski area in the State of Washington, second only to Mt. Bachelor in the Washington/Oregon/Idaho region. It ranks within the upper five percent of ski areas of the United States.

It has been estimated by the ski areas that, by the 2004/05 ski season, annual skier visits will grow to 548,000, and Nordic and tubing visits will expand to 75,000 visits, with substantial increases in non-ski "other" winter visits, as well. Design peak-capacity of the four areas will increase from approximately 10,000 skiers at one time (SAOT) currently to 15,070 SAOT after the planned improvements are completed.

These improvements will continue to increase the number of recreational users coming to the Pass area for the foreseeable future.

5) **Regional Growth Trends** The Snoqualmie Pass area, with its proximity to the rapidly growing Seattle-Tacoma metropolitan area with an estimated King County 1998 population of approximately 1.67 million, is situated in the "path of progress", and will provide both second home and year-round housing opportunities over the next ten to fifteen years. Development pressure has increased significantly along the I-90 corridor in east King County, with Issaquah and North Bend growing significantly throughout the 1990s.

Development pressures have already begun to unfold in rural Kittitas County as a result of spillover demand from Seattle. The 1998 population of Kittitas County was estimated at approximately 31,400 and is growing at the high end of the State's projected growth rate. It is currently estimated that up to 2,000 persons are commuting from Kittitas County to King County and this number will expand considerably over the next fifteen years time frame. The increasing ability of the work force to telecommute, especially within the high tech sectors prevalent in the Seattle-Tacoma region, will further enable the resident labor force to find high quality environments in which to live somewhat remote from their places of employment.

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The capacity of East King County, including Issaquah and North Bend, to absorb the anticipated growth over the decade will be limited. The Snoqualmie Pass area, and communities to the east, represent the next logical steps along the I-90 corridor, and are already being impacted by development pressures emanating from the Greater Seattle-Tacoma metropolitan area. It is, in part, these regional growth pressures that are motivating the Snoqualmie Pass community to protect the scenic and environmental quality of the Pass by planning for this growth.

6) Summer Recreational Growth

While the Pass area has an established base of winter recreation and tourism, the summer season has not matured to its potential. Although the area is quite scenic, and offers a diversity of hiking, biking and passive recreational functions and activities for current owners and visitors, there is a shortage of other developed recreational facilities, such as golf, tennis, play fields, and equestrian facilities . As efforts are made to promote and utilize this resource, additional; demands will be made on Pass infrastructure and facilities.

7) **Community Expectations.** Surveys conducted among the current property owners and residents, as part of the planning effort, document the desire to improve the total year-round recreational environment within the area. The residents also desire other facilities that may be used year around, including a community center (which may include meeting and performing arts space), as well as a new visitor center.

B. <u>REVIEW OF LAND USE DEMAND & CAPACITY</u>

One of the objectives of the planning process was to inventory the residential and commercial development capacity and demand of the Pass area. First, existing developed rental units and commercial square footage within the planning area were determined. In addition, existing platted but unbuilt lots were defined and located. A third category called potential development was then identified. This final designation identified land use opportunities on privately owned, un-platted and vacant properties which might be available for future development over the two planning periods. The sum of the three identified categories represented the potential development capacity of the Pass.

An analysis was then conducted of the likely demand for primary year-round residential development, second home residential development, and support commercial land uses demanded by the combination of permanent residents, day and overnight visitors to the area, and regional drive-through traffic. Projections were developed for the periods 1998-2005 and 2006-2015.

Residential Development Capacity and Demand

Overall, this analysis found that there are currently 600 existing housing units in the Snoqualmie Pass area, split nearly equally between single-family homes (299) and multi-family units (301). The analysis found that there is additional potential for 1,451 units on platted but unbuilt lots,

plus an additional potential for 1,700 units on unplatted lots. Altogether, considering existing units, platted lots, and unplatted lots, there is the potential for 3,751 housing units at Snoqualmie Pass. This potential includes an estimated 1,132 single family housing units (30 percent of the total) and 2,619 multi-family units (70 percent of the total). The existing level of development of 600 units represents only sixteen percent of the total residential build-out capacity at the Pass.

The demand analysis identified separate projections for year-round and second home dwelling units. It also projected residential unit type demand into separate single family and multi-family categories. Seventy-five percent of the year-round residential demand was allocated to single family, and 45 percent of the vacation or second home market was allocated to single family. The remaining 25 percent of year-round and 55 percent of second home development were allocated to multi-family residential types.

The analysis determined that the Pass area will retain its primarily second home character over the next 15 years; however, principal year-round population is projected to grow as well. Currently 99 of the 600 housing units existing in Snoqualmie Pass are believed to be used as primary residences. The majority of primary residences (58 percent) are situated in the Hyak community, with most of the others located in Alpental or the Summit Central/East areas.

It is projected that demand for an additional 40 to 90 "year-round" dwelling units will be in place by the year 2005 and another 67-217 year-round dwellings will be desired by the year 2015. A rather conservative growth assumption was used, for planning purposes, of 55 permanent home units, or an average of 8 new dwellings per year through 2005, and an additional 112 permanent home residences, or an average of 11 per year, through the 2006-2015 period. In total, 167 new primary home residences are projected through the 1998 - 2015 planning period.

The demand for second homes was projected (using various factors such as population growth within two hours of the Pass, the estimated growth rate of mountain second homes, and the rate of expected buyers at the Pass) at an average of between 39-89 second homes per year between 1998 and 2005 and 50 to 120 per year between 2006 and 2015. Again using a conservative growth assumption, it is projected that over the 1998-2005 planning period, 380 new second homes will be constructed within the area. This entails an annual average of approximately 54 new second homes per year. During the 2006-2015 period, as the environment continues to improve related to ski area and summer facility upgrades, it is projected that an additional 710 second homes will be constructed, an annual average of 71 new second home dwellings.

Under those assumptions, over the approximately 15 year time frame for the planning period, a combined primary and second home total of 1,257 new units, or an annual average of 74 dwellings per year will be constructed within the Snoqualmie Pass area.

In comparison, over the past few years, (1995-97) an average of 13 dwellings were constructed within the Snoqualmie Pass area. The conservative estimate of demand represents a significant increase in building rate and maturation of the community over the next planning period. It should be noted that demand over time may vary considerably as various unanticipated economic and social factors occur. (A potential range in demand for residential dwellings was projected, from a low of 882 new residential units to a high of 2,132 new residential units within the planning area.)

Under any of these projections, the Pass has sufficient residential land capacity to meet the estimated demand.

Commercial Development Capacity and Demand

A similar analysis was conducted for commercial land area. Currently, there exists 30,000 square feet of commercial development on 8.22 acres of land in the Snoqualmie Pass area. The potential exists for 112.64 additional acres of commercial development in the area, including land for hotels, which could accommodate over one million square feet of commercial space (assuming four square feet of land are required for each square foot of building). Most of the existing commercial acreage is concentrated in the Summit West area, while much of the potential additional acreage is located in the Summit Central and Gold Creek areas.

An analysis of demand for retail commercial square footage within the Snoqualmie Planning Area was also undertaken, consisting of estimating demand related to "spending factors" of the projected permanent residents, second homeowners, overnight lodging guests, day visitors to the area, and regional pass-through traffic. Standards for per capita spending by each of these groups of consumers were developed and applied to various commercial categories, including: high turnover restaurants, quality restaurants, supermarkets, convenience retail, specialty retail, gas stations, and hotels and motels.

The composite annual spending patterns for commercial uses were then tabulated with benchmarks for the year 2005 and 2015. Total projected annual spending within Snoqualmie Pass for retail/commercial categories, based upon the overall growth scenarios, totaled approximately \$36.5 million in 2005 and \$51.3 million in 2015. Based upon an assumed standard of \$300 per square foot of sales, this translated into an overall demand for approximately 122,000 square feet of retail commercial in 2005 and 171,000 square feet in 2015.

With approximately 30,000 square feet of existing retail commercial uses, a conservative estimate was made of new retail commercial square feet, within the geographic area, of 94,000 square feet between 1998-2005, and a total of 124,000 additional square feet required within Snoqualmie Pass by the year 2015, for a total of approximately 154,000 commercial square feet by the year 2015. A demand for an additional 375 hotel units and related conference and meeting facilities was also projected during the same time frame.

Based on these projections, the Pass has sufficient land capacity to meet the estimated commercial demand through 2015.

Other Uses and Notes

It is possible that the area could also serve a variety of firms requiring office, manufacturing, and/or warehouse space. The Kittitas County economic development organization often noted a lack of quality sites for this type of development. However, In spite of the pressure for such development in the region, the Pass would not be a preferred location, particularly for manufacturing or warehouse development. Weather and road conditions could be disruptive to receipt and shipment of goods, which would be a disincentive for businesses seeking sites and facilities.

There will be some demand for two other types of uses:

Office uses serving local needs (for example, real estate, insurance, medical/dental) Office uses which transact their businesses electronically.

The first type of use will not generate enough demand to warrant its own facilities, and will be part of a larger commercial center. The second use will typically be a home business or telecommuter.

(Note: The projections for both residential and commercial demand were arbitrarily proportioned among the individual sub-areas to insure that no constraints or problems would result. No items requiring attention were noted.)

C. SUMMARY OF COMMUNITY INPUT

The residents and property owners in the community, through several open houses, more than 20 meetings, and a community survey, clearly identified several key issues requiring attention in the Comprehensive Plan, including; the improvement of traffic, parking and circulation; the establishment of voluntary design standards; the preservation of open space and habitat within the alpine environment; and creation of a community center for the Pass. These items will present a challenge to new development as the community strives to maintain and enhance the livability and natural, scenic beauty of the Pass area.

The community addressed the issues related to transportation as part of the overall comprehensive plan review process. The current truck parking situation on SR906 causes considerable visual and noise pollution and is a serious safety hazard. It is clear that the Interstate 90 corridor, which dominates portions of the Snoqualmie Pass area, brings a complex set of beneficial and detrimental impacts related to regional accessibility along with associated design, noise, and air pollution. These issues must be considered in order for the overall residential and resort environment to be substantially enhanced. The Comprehensive Plan recommends a number of additional road system improvements to SR 906 and the interchanges to upgrade the internal transportation network.

A set of voluntary design guidelines has been developed for development in the Pass area. The design guidelines were developed by members of the Pass community in recognition of the dramatic beauty, recreational assets and environmental sensitivity of this mountainous area and the critical relationship between protection of these natural qualities and the ongoing economic and scenic health of the Pass area. The Guidelines describe a range of physical characteristics for new development that will make positive contributions to visual quality and to the quality of life at the Pass.

These advisory Guidelines are meant to aid all those involved in the planning, design, and approval processes for development at the Pass. They are a tool to inform property owners and their environmental and design consultants and engineers of the design characteristics that are both functional and aesthetic. These voluntary guidelines provide both general and specific information that, together, create a shared basis for understanding and enhancing development proposals. The guidelines contain information applicable to single family residences, plats, multi-unit residential and commercial developments. By recognizing the existence of these guidelines, the County is merely acknowledging that the guidelines have been developed and is not adopting them as a regulatory document.

The planning effort has identified key open spaces and scenic vistas with the intention of preservation of those invaluable resources through the observance of these vistas in the Development Review process. The alpine environment, of which Snoqualmie Pass is a part, is a critical component to maintain the quality of life which is so desirable to the residents and second homeowners of the area.

A community center was identified as the top priority community facility by respondents to the Pass. Further, respondents identified Summit West as the preferred location for the Community Center. Through cooperative planning and management among the Forest Service, WSDOT and the community, a facility could be developed in this area that would serve visitors and residents alike. Such a facility might include a meeting room, visitors information area, public restrooms, a museum of Pass history and artifacts, and other services for Cascade Trail hikers and I-90 travelers.

Other issues were identified as well, which are set forth in the Comprehensive Plan in various areas, including land use, design, open space, recreation, transportation, and utilities.

D. OVERALL GOALS

After the review above and extensive community input, the following overall goals were identified:

1. Create a shared vision of the future of the Pass area through a community-based updated Comprehensive Plan.

2. Create a vibrant year-round community in the Pass area capable of supporting, and suitable for, both residents and recreational visitors to the area alike.

3. Establish a unifying theme or motif for development in the Pass area, whether through consistent signage or common area elements, encouraged design features, or similar approaches.

4. Increase the economic and housing viability of the Pass area by giving the economic impact of any activity or decision high priority.

5. Protect the ability to expand recreational opportunities, both winter and summer, to accommodate visitor growth.

6. Plan adequate infrastructure improvements, both transportation and utilities, to accommodate present and future needs.

7. Preserve and protect environmentally sensitive areas and scenic vistas.

E. LAND USE GOALS AND OBJECTIVES

Kittitas County Comprehensive Plan December 2001 As part of the community review process, the land use goals and objectives of the original comprehensive plan were revised into the following:

III.1 Goal: Achieve the maximum degree of compatibility between adjacent land uses.

Objectives:

- 1. Residential, commercial and community buildings should be designed in an alpine or Cascadian theme consistent with existing development and the design guidelines .
- 2. Wherever practical, buffering should be employed for the aesthetic enhancement between land uses, including parking and roads.
- 3. Appropriate building height limits should be established in the Pass area, by building type.

Residential Land Use

III.2 Goal: Encourage a mix of residence types of alpine or Cascadian design, located in combinations and groupings which enhance the residential and resort atmosphere of the Pass.

Objectives:

- 1. Clustering of structures should be encouraged, with screening between clusters and open areas (view corridors), wherever possible. Residential land plans which take advantage of the mountain setting should be encouraged.
- 2. Access roadways should be kept to a minimum (both in number and dimension) consistent with safety and efficient maintenance. Roadways should follow terrain contours with a minimum number of straight segments.
- 3. All residential areas should be connected, where practical, by a public trail system suitable for all-season use.
- 4. Appropriate non-residential uses should be accommodated in residential areas.
- 5. All residential uses should provide adequate off-street parking.
- 6. All utilities in new residential developments should be underground.

Community Uses

III.3 Goal: Encourage the development of community uses in appropriate areas. Uses could include security/emergency services, clinics and medical/dental offices, places of worship, a community center, a recreation center, visitor information center, recycling center, post office, library, nature center/museum.

Objective: Similar and complimentary uses should be placed in close proximity to each other in a location which is convenient to the community and visiting public.

Commercial Uses

III.4 Goal: Provide for commercial development in appropriate locations to serve the needs of the community, visitors and traveling public and to enhance the economic vitality of the Pass. Objectives:

- 1. Commercial development should be clustered along Highway 906 near Exits 52, 53 and 54, rather than in a linear strip along the highway.
- 2. Neighborhood commercial centers should be conveniently located to meet local shopping needs.
- 3. Commercial activities should be located in proximity to principal resort and transportation facilities, such as near the bases of ski slopes and freeway interchanges.
- 4. All roadside parking should be limited to short-term service and delivery vehicles. Customer parking for commercial uses should be located either under-structure or in designated lots with practical visual screening. Joint use of off-street parking areas should be encouraged. Pedestrian/skier access between uses should not be obstructed by vehicular parking.
- 5. Signage and advertising should follow a consistent design theme with an alpine or Cascadian nature matching the Pass architecture.
- 6. A mixture of uses, including residential and community services, should be encouraged in conjunction with commercial development.
- 7. Unscreened outside storage should be restricted in commercial areas.
- 8. Off-site or off-premises commercial advertising should not be permitted in the Pass area, except for the use of motorist information signs provided by WSDOT.

Light Industrial Uses

III. 5 Goal: Provide for light industrial users, including utility companies and public agencies, in appropriate locations.

- 1. Light industrial uses should be located principally near Exit 54, extending southwest to the DOT yard.
- 2. All applications for industrial facilities and/or business permits should be individually reviewed for conformance with the Comprehensive Plan, and approvals should be limited to non-polluting, non-congesting operations consistent with the character of the Pass area.

- 3. Perimeters of all industrial operations should be buffered or screened from other elements of the community and of a design consistent with the theme at the Pass.
- 4. Unscreened outside storage should be prohibited.

Recreational Uses

III.6 Goal: Encourage the development of all-season, multi-option recreational facilities on public and private land.

Objectives:

- 1. Winter recreation areas should be maintained in an attractive manner during off seasons.
- 2. Trail networks should be a primary means of Pass area transportation where practical, connecting to surrounding trail systems, where appropriate.
- 3. Recreation areas should be coordinated and controlled to enhance safety and proper use.
- 4. Clear, uniform signage should be developed giving orientation and designating type of usage for all recreational areas and trails.
- 5. Adequate tables, benches, rest room facilities and trash containers should be available throughout all areas and during all open seasons.
- 6. Visitor parking should be aesthetically located and buffered as much as is practical, and the capacity of the parking area should be correlated with the capacity of the related recreational facility.

Educational/Cultural Uses

III.7 Goal: Foster the development of multi-use facilities which can adapt with changing seasons, to serve a variety of educational/cultural needs.

Objectives:

- 1. Building space should be created or allocated for a community center, a nature center, library and museum.
- 2. A variety of conference centers, retreat facilities and other buildings used for public purposes should be encouraged in the Pass area.

Government Uses

III.8 Goal: Facilitate cooperation and participation of Federal, State and local agencies in planning and implementation.

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Objectives:

- 1. In cooperation with other interested parties, agreements should be sought with the USFS to ensure that logging on federal land in the greater Snoqualmie Pass area will be limited to selective thinning that will not impact the principal view corridors.
- 2. All stakeholders in the Pass area encourage USFS to approve expansion of ski area facilities and groomed terrain around Mt. Catherine, and other winter and year-round recreational improvements.
- 3. The Department of Transportation should be encouraged to install landscaping around their Hyak facility and to maintain the facility in a clean and attractive manner.
- 4. Participation and cooperation should be sought with the Army Corps of Engineers, U.S. Forest Service, Bureau of Land Management, State Department of Wildlife and Department of Natural Resources for the visual improvement (stump removal) and recreational enhancement of the western portion of Lake Keechelus.

Natural Resource Uses

III.9 Goal: Recognize the economic importance of the area's natural resources and promote the optimal use of these resources by public and private interests.

Objectives:

- 1. Along with other interested parties, agreements should be sought with the USFS and private logging interests to ensure that timber harvesting in the greater Snoqualmie Pass area will be conducted so as to minimize adverse visual impact and environmental damage to surrounding land.
- 2. Recognize the natural beauty of the Pass as its most important natural resource, and promote continued expansion of recreational opportunities available due to the unique natural attributes of the Pass area, to insure continued recreational opportunity for all interested users.

Parking Uses

III.10 Goal: Provide sufficient parking for all Pass activities in the most practical manner that is the least aesthetically detrimental to the scenic mountain setting.

- 1. All parking should be off-street and screened from view to the extent practical.
- 2. Joint use of off-street parking should be encouraged wherever possible, with cross-over easements between uses where appropriate.

- 3. Parking areas should be well lighted and adequately accessed by trail or sidewalk.
- 4. Parking should be provided to accommodate all modes of transportation such as cars, trucks, buses, recreational vehicles, snowmobiles, horse trailers etc. Separate parking areas should be provided for uses generating special safety or aesthetic problems, such as semi-trucks.
- 5. Snow removal and disposal should be an integral part of parking lot design.

LAND USE Recommended Actions

- 1. SNOPAC, in conjunction with the Comprehensive Plan review, has drafted general design guidelines which present desired architectural features considered to be consistent with alpine or Cascadian design. These design guidelines are accompanied by visual aids to make clear what the community desires. The design guidelines address advertising signs and other external aspects of development design which may have aesthetic impact on the community. The Community Design Committee should be available to review proposed projects with proponents before project design is commenced to offer suggestions to best incorporate the design into the community.
- 2. The Community Design & Aesthetics Committee ("CDA"), together with the Economic Development & Land Use Committee ("EDLU"), should develop additional site design guidelines which promote the clustering of structures to protect natural land features and sensitive areas.
- 1. The EDLU Committee should continue to refine the land use inventory to determine a realistic growth scenario which will aid in infrastructure planning.
- 2. SNOPAC should take the lead in adapting the affordable housing policies of Kittitas and King Counties to the unique housing needs of the Pass area.
- 3. The EDLU Committee should monitor the planning, management and operation of Forest Service Land and Keechelus Lake in an effort to enhance and expand their recreational opportunities and visual quality.

F. COMMUNITY DESIGN AND AESTHETICS GOALS AND OBJECTIVES

III.11 Goal: To encourage the use of site planning, landscaping and architectural principles which enhance the mountain character of the community and harmonize with the alpine environment.

Objectives:

1. Encourage "village centers" with high density areas of closely clustered buildings, with narrow walking streets (where practical) and common walls between businesses, at the Summit, Summit Central, Exit 54, and Alpental.

- 2. Each village center should feature a recreational activity such as tennis, ice skating, curling, swimming pool that is open to the public and located near the center of the village.
- 3. Lines of sight in village centers should be broken to give a sense of small scale and invite pedestrian wandering and exploration.
- 4. High density housing close to, or in, each village center should be encouraged.
- 5. Village centers should be connected with footpaths where practical.

III.12 Goal: Keep vehicular traffic and automotive impact at a minimum in village centers.

Objectives:

- 1. Emphasize foot traffic and foot access where practical. Sidewalks and footpaths should serve as a main mode of transport within each village center.
- 2. Buildings at the street side of a village should be required to front on the sidewalk and as close to the road as practical.
- 3. Streets near village centers should be relatively narrow (but wide enough to accommodate winter snow plowing requirements) to slow traffic and have sidewalks or paths for pedestrians.
- 4. Parking should be: behind village centers and businesses, and screened from sight (especially along I-90), where practical.

III.13 Goal: Buildings within village centers should be compatible with the character of the mountain environment and meet the year-round needs of the community.

- 1. Natural materials should be encouraged on the exterior of all buildings.
- 2. A Northwest-Cascadian Style of architecture should be encouraged. Design guidelines should be developed and publicized to ensure consistent architectural design and signage throughout the Pass.
- 3. Year-round foot access on covered or cleared paths and sidewalks should be encouraged.
- 4. Two to four story buildings in Village centers should be encouraged.
- 5. Employee and other housing on upper floors of commercial buildings should be encouraged.
- 6. Plans for dealing with snow accumulation should be encouraged at the first meeting with project proponents,

- 7. Roofs should be designed to either retain snow or sluff snow off in such a way that it is not a hazard to the public.
- III.14 Goal: Encourage development of building codes for the community that are compatible with the mountain environment. These codes should include the height and exterior materials of buildings as well as site design and snow management for each structure.

Objectives:

- 1. Standards should be set encouraging high density housing at each village center, with density reducing with distance from the village centers.
- 2. Designs and signage should be carefully reviewed in order to avoid a garish, overly competitive visual environment.
- 3. Standards and programs for the enhancement of the alpine setting should be developed, including standards for revegetation and programs for landscaping along entry corridors and in other prominent public areas.

III.15 Goal: Promote the development of uses which will provide goods and services to both residents and visitors.

Objectives:

- 1. The variety of available goods and services should be broadened to reduce the requirement to travel off the Pass for normal daily needs.
- 2. Special services and facilities should be provided which are oriented to the recreational visitor, so as to enhance the available recreational opportunities.

III.16 Goal: Provide public services and facilities which will enhance the livability of the Pass for residents.

Objectives:

- 1. Social and cultural opportunities such as a community center, library, museum, etc. should be planned for and provided.
- 2. Health and public safety facilities and services such as an2 immediate care clinic, improved emergency response, garbage pick up and recycling etc. should be planned for and provided.

Description Of Village or Activity Centers

Alpental

The non-residential area of Alpental should be primarily oriented toward serving skiers. Overnight lodging, consistent with a destination resort area, may be added and accessory uses such as restaurants, lounges, equipment and clothing shops might be expected. Commercial activity would be concentrated at or near the base of the ski slopes.

Snoqualmie Summit

The Summit will continue to develop as the recreational and community center point of the Pass. New development should be primarily focused toward providing commercial and community services for the year round recreational visitor, other tourists and community residents. Both Forest Service activities and private development should cater to visitor needs by providing information, services and products. Recreation related services should be coordinated to complement each other and provide a complete range of activities, i.e. skiing/hiking, shopping, dining, lodging. Community needs should be identified and provided to project proponents, land owners and governmental agencies.

Summit Central

Summit Central should be similar in use to Alpental in that it will be oriented toward providing recreational facilities and services. A mixed use facility could be developed which could be sited to be accessible to the general traveler and the resident population; facilities might include conference facilities within a hotel/motel complex.

Exit 54

Because of its visibility and land base, the commercial area at Exit 54 could provide services directed toward the traveler on I-90 (its location makes this area less conducive to ski related services). Over time, as Gold Creek Valley, Hyak and other residential areas develop, or as the Summit is built-out, Exit 54 may become a convenient place for such uses as a community center, post office, and/or general store or supermarket.

General

All activity centers should inform visitors about the entire range of Pass areas and activities. Directional signs and maps should be used at each. Activity centers should be connected, where practical, by trails.

Design Guideline Outline

Site Planning

Environmental Conditions (solar access, wind, vegetation) Grades (cuts and fills) Drainage Utilities Circulation (vehicle and pedestrian) Storage (firewood, snow, trash) Parking Public spaces

Building Location

Site Characteristics (soils, slope, drainage, wetlands) Setbacks (street, rear and side boundaries) Spacing (view corridors, compactness) Orientation (views, solar access) Alignment

Architecture

Scale (to site, to adjacent buildings) Proportion (height to width) Roof Shape Other Structural Features (gables, dormers, porches, chimneys, columns, porte-cocheres) Materials (texture, pattern, color) Other Design Features (windows, doors, shutters, trim, ornamentation)

Landscaping

Screening (fences, hedges, trees) Paving (walkways, stairs, patios) Retaining walls (height, materials) View Blockage Plant Materials (indigenous, weather tolerant) Lighting Outdoor Furniture Signing Community Design and Aesthetics Recommended Actions

COMMUNITY DESIGN AND AESTHETICS Recommended Actions

- 1. The CDA Committee should continue the effort to further develop design guidelines for the village or activity centers, including securing funding for such work when possible. The design effort should involve the community and all other interested parties.
- 2. The CDA Committee, in conjunction with the EDLU Committee, should continue to develop general design guidelines which present desired architectural features considered to be consistent with alpine or Cascadian design. Written design guidelines should be accompanied by visual aids to make clear what the community desires. The design guidelines should address advertising signs and other external aspects of development design which may have aesthetic impact on the community.
- 3. The CDA Committee should take the lead in developing the schedule and procedural format of design review for projects in the Pass area. It is recommended that at least one design professional be included on the committee. The design professional should not be required to be a member, although familiarity with Pass issues and goals is desirable.
- 4. The CDA Committee, together with the EDLU Committee, should provide continued involvement with the Mountains to Sound Greenway Trust to maximize the benefit of mutual effort and involvement.

- 5. The above Committees should promote the design and development of landscaped entry ways and corridors into and through the Pass, seeking the cooperation and funding support of the Washington State and Federal Departments of Transportation, the U.S. Forest Service and the Mountains to Sound Greenway Trust.
- 6. In conjunction with the EDLU Committee, the Community Design and Aesthetics Committee should work with local business operators, the U.S. Forest Service, WSDOT and the counties to develop an attractive and coordinated directional and informational sign program for the Pass.
- 7. The CDA and EDLU Committees should work with Mountains to Sound Greenway Trust to reduce or eliminate commercial signage that is oriented towards Interstate 90. For this to be possible, WSDOT needs to encourage and enable the use of sufficient standard highway signs to help identify businesses in the Pass area.
- 8. The committees should work with Mountains to Sound Greenway Trust to develop recommended sign regulations for adoption by King and Kittitas Counties and WSDOT that recognizes the scenic quality of the Interstate 90 corridor through the Pass and the designation of Interstate 90 as a National Scenic Byway.
- 9. The committees should work with Booth Creek Holdings and other business owners to develop a consistent signage plan and design that would be unique to Snoqualmie Pass and would help to create an identity for the Pass area.
- 10. The committees should work with King and Kittitas Counties and WSDOT to develop a lighting plan that establishes standards for street lighting design and location. The lighting plan should strive to provide adequate lighting for public safety, without contributing to light pollution from excessive lighting.

G. LAND USE PLANS

There are two levels of land use plans presented in this comprehensive plan.

The first is an overall concept plan for the entire planning area. This plan is the more general of the two. General land use activities are identified for the purpose of showing the interrelationship of these activities to each other and to other plan elements such as transportation, utilities and open space corridors. This level of concept plan presents the overall picture.

The second level of concept plan is presented for each of the five subareas of the Pass. Land use designations are more specific in terms of location and use type. Particular planning goals or special conditions may be indicated for land use designations at this concept level.

As an example, the overall concept plan may indicate an activity center in a general location. The subarea concept plan further details the type of activity which is desired in that activity center, such as highway oriented commercial, lodging and tourism activities, and so forth.

The subarea concept plans, although more specific, are nonetheless, still guidelines. Boundaries are general by necessity, and are not meant to imply that all the land within a specific land use boundary is suited for the designated use. For example, portions of land within a residential designation may be environmentally sensitive and will be more appropriately allocated as open

space. Detailed site planning and use restrictions are implemented through Planned Unit Developments, subdivisions, or other forms of design review and approval.

As part of this comprehensive planning process, the community was surveyed to determine their opinion on the most appropriate location for various property uses. The results of that survey are incorporated in the discussion of various sub-area land uses.

1) Relationship to County Comprehensive Plans

King and Kittitas Counties differ somewhat in the land use terminology used in their respective comprehensive plans. Likewise, the land use designations in the concept plans differ in that the terminology used is selected to show the specific intent of the Snoqualmie Pass Comprehensive Plan. Although the terminology may vary in each of the plans, the underlying goals of each similar use category are consistent.

2) Relationship to Snoqualmie Pass Adaptive Management Area (AMA) Plan

Forest Service lands are intermingled with private lands in the Snoqualmie Pass area and are an integral part of the present and future scenic and recreational attributes of the Pass community. The Snoqualmie Pass Comprehensive Plan does not (and can not) preempt the adopted Forest Service plans, but rather, only recommends particular land use designations and future actions which will strengthen the Snoqualmie Pass community and reinforce the multiple use aspects of Forest Service land to maximize long-term net public benefit.

3) Land Use Categories

Residential

The residential designation is intended to accommodate a mix and variety of residential uses and densities including single platted lots, clustered lots with attached or detached structures and multiple unit structures. In appropriate locations, remote lodges, bed & breakfast facilities and recreational cabins should be accommodated. Appropriate non-residential uses, such as learning and recreation centers should also be permitted in residential areas.

Commercial

Commercial areas should provide retail uses, lodging, restaurants and other visitor services, as well as personal and professional services for the Pass community. It is intended that particular types of commercial uses be located in the most appropriate locations to best serve the visiting public and the local community. Residential and community uses should be accommodated in mixed use commercial developments.

Commercial Lodging

This designation provides areas where a variety of overnight or weekly type of lodging may be provided in inns, bed & breakfast homes, hotels, motels or rental cabins. These areas may be appropriate locations for multiple unit structures to provide housing for Pass employees. Uses which are compatible with and supportive of commercial lodging and recreation, such as meeting rooms, restaurants, indoor recreation and retail shops, should be accommodated as part of a commercial lodging development.

Light Industrial

Utilities and public works uses are to be accommodated in small light industrial areas near Exit 54. Planned commercial uses should also be permitted on private land in light industrial areas subject to Planned Unit Development review.

Community/Public

Public and community support uses such as emergency and medical services, community/recreation center, post office, visitors information center, playfields/parks and places of worship are encouraged uses in community/public areas. Historic and cultural uses including a library, museum or historic interpretive display should be accommodated as well.

Active Recreation

Active recreation areas are those where considerable preparation and maintenance are required to provide recreational facilities and where machinery and equipment are used for operation and maintenance. These include alpine ski areas, snow play activity areas, golf courses and sports fields. A variety of associated support uses may be included, such as lodges, clubhouses, restaurants and lounges, equipment sales and repair, instructional facilities, locker rooms, maintenance and storage buildings and administrative offices. Residential development which does not preclude active recreational uses is allowed.

Forest Recreation

The forest recreation designation is applied to areas which are intended for long-term timber production, but which are desirable for passive or remote recreation activities such as hiking, Nordic skiing or mountain biking. Access to and use of these areas may be restricted as necessary for the protection of the forestry resource or to protect the public during times of forest operations. Many of these areas are integral to the recreation network of the Pass and their long term availability, through use agreements, is encouraged. Residential/commercial lodging uses are permitted, provided the development is compatible with the primary use of long term timber production.

Open Space

Undisturbed areas and environmentally sensitive areas, such as large wetlands and floodplains, are included in the open space designation. Much of the land in this category is Forest Service Land. Designation as open space is not intended to preclude access, but to encourage conservation while providing controlled or managed access for passive recreational activities like hiking, camping, Nordic skiing and fishing, consistent with the SPAMA Plan. Open space areas are critical to the natural beauty of the Pass area and provision of open space should be a consideration on public and private land in all land use designations.

Subarea A Land Use Plan

A majority of Subarea A is designated as Open Space because of ownership and development constraints.

The area at the base of the Alpental Ski Area is designated as Commercial Lodging. At the present time, the base of the ski area contains two day lodges and other support facilities for skiers. The plan envisions the development of overnight lodging facilities, recreation condominiums, restaurants and retail shops which could enhance the recreational asset provided

by the ski slopes. Due to limited land area available, development should be compactly designed so as to provide integrated pedestrian access to all facilities. The Snoqualmie River should be emphasized as an aesthetic asset in development planning.

The boundaries of the Residential area coincide with the King County Comprehensive Plan for East King County. The undeveloped portions of the Residential designation are somewhat constrained by topography and/or access. New residential development should be designed in a manner that clusters buildings on suitable building sites and leaves the remainder of the land area in open space.

A portion of the area designated as Open Space west of Alpental Road is privately owned. The Open Space designation is due to extreme topographic conditions. However, small areas may be available for carefully planned residential clusters. This area is designated as Forest Production in the King County Comprehensive Plan. As such, permitted residential density is one unit per 80 acres of land area.

Any construction west of Alpental Road and along the South Fork of the Snoqualmie River will need to comply with applicable state and/or county set-back and vegetative buffer requirements.

Subarea B Land Use Plan

Like Subarea A, Open Space is the predominate land use designation in Subarea B. The area is entirely within King County and is designated as Forest Production. Existing land use and ownership in a small portion of the subarea, however, does not meet the descriptive criteria for Forest Production districts. Rural homesites, such as those which are present, are more compatible with the recreational and environmental assets of this valley than would be the harvesting of the forest resource. The Snoqualmie Pass Comprehensive Plan therefore recommends that the privately owned lands which lie between the westbound and eastbound lanes of Interstate 90 be designated as Residential with a maximum density of one unit per five acres of land area.

Other privately owned land in the most southern part of the subarea is designated as Open Space. Lack of access, topography, and visibility from Interstate 90 are the criteria for this designation.

Most of this area is below the visual level of I-90. Pursuant to applicable state and/or local requirements, vegetative buffers will be required along the South Fork of the Snoqualmie River. A density of one unit per five acres, with clustering, should be considered where feasible.

Subarea C Land Use Plan

Subarea C is the community and recreational hub of the Pass and the Comprehensive Plan reinforces this role and capitalizes on the existing recreational assets.

The overall plan identifies two activity centers (or nodes) at Summit West and Summit West, where hotels, conference facilities, restaurants and other commercial activities are envisioned. The plan recommends that these areas be designed as much as possible in a "village" style which promotes pedestrian accessibility and discourages sprawling, automobile oriented development.

Because Highway 906 presents a lineal orientation, it is recommended that developments be planned to provide perpendicular movement, connecting the base of the ski areas to the commercial activities and lodging across the highway.

Along Highway 906, at the base of the ski slopes, areas designated for Commercial Lodging could provide accommodations for recreational visitors year around. Additional Commercial Lodging is proposed east of the freeway near Exit 53.

As the recreational hub of the Pass, the summit is also the logical first stop for visitors to the area. The plan recommends that the U.S. Forest Service expand their present activities and hours of operation in a new, larger visitor center which could include, in addition to recreation information, such things as a display on Pass history, information regarding available lodging, picnic areas, and a message center for hikers on the John Wayne/Pacific Crest Trail.

In addition, the Forest Service should provide enhanced public facilities for travelers in the Pass area, together with adequate safe parking. This could be incorporated in the new visitor center or in a stand-alone facility.

The plan designates two alternative locations for the visitor center. The first is between Interstate 90 and Highway 906 near Exit 52. This site has the advantage of being in the center of summit activities, where visitors could easily walk to other facilities nearby. However, available land may be too small to accommodate a well designed center and the required parking. The second suggested site is east of Interstate 90, near Exit 52. This site's advantages include a forest setting and ample available land; however, the site is much less convenient and access would be more difficult .

Subarea C also includes some established residential areas on both sides of Interstate 90. Conifer Estates, located between the two activity nodes at the Summit and Ski Acres, which would appear to be an ideal location for commercial lodging uses. However, the number of long-standing private residences in the development warrants the continuation of residential use. The Yellowstone Road area, though near the summit, is somewhat removed from the activities along Highway 906 and is a good location for private residences. New residential development in this area should be planned in clusters in order to preserve natural vegetation and protect streams and wetland areas.

Subarea D Land Use Plan

The Gold Creek Valley will likely experience the greatest change of all areas of the Pass. Currently, the valley is relatively undeveloped. However, preliminary plans have been developed for all of the private land holdings in the area. These plans include single family and multiple family residential, restaurants, hotels and motels, conference facilities and recreation.

During the planning process, the idea of "community" became a common thread among the various committees. As future growth in the number of permanent residents was envisioned, the need for common community services, including commercial and personal services, became evident. The Summit is presently the hub of Pass activity; however, it may not have enough land

for all future uses the community wants to see there. The north side of Exit 54 is viewed as another possible location for some of this development, due to its freeway access.

The commercially designated property is crossed by Coal Creek in a northwest to southeast direction. A Forest Service road crosses the property perpendicular to the creek. Mardee Lake and its associated wetlands are located in the northeast corner of the property.

The plan shows that the property could be developed in four commercial pods using the creek and the road as dividing lines. The two pods south of Coal Creek should be developed with highway commercial uses such as service stations, restaurants and motels. The development should be designed to take advantage of the site's visibility while respecting and protecting the alpine character and scenic beauty of the Pass.

The two pods north of the creek could contain a broad mix of uses, including uses commonly found in a community shopping district such as food markets, drug and hardware stores and other retail. The development should be designed in a manner which would use the existing road route as a "main street" rather than a through road. Pedestrian access and mobility should be an important design element. Views of the valley should provide a focus for site plan orientation.

Commercial development in this area should not compromise the ecological integrity of Coal Creek. Special attention shall be given to maintaining the vegetation within areas along the riparian zone and preventing run-off of or enhancing contaminated storm water from adjacent parcels. A riparian buffer (with an average width of at least fifty feet, unless a larger one is required by Kittitas County) shall be used for commercial development in this location. Particular care shall be taken to ensure that the architectural design and signage of commercial structures in these areas be compatible with the scenic, visual integrity of the I-90 National Scenic Byway corridor.

East of the commercial area is a steep ridge of rock outcrop and old growth forest. The plan designates this area for limited commercial lodging use and recommends that site planning cluster buildings in small pockets on the parcel where soil and slope are suitable for construction. Development shall be sited to screen the structures from view of I-90, with no disturbance of steep slope and ecologically sensitive areas. Old-growth timber shall be preserved except where necessary for construction, and included within site plans and lots as much as possible. The remainder of the site should be preserved as open space.

Care shall be taken to minimize removal of old growth timber and to screen the lodging elements from view of I-90. In no case shall construction result in increased slope instability or erosion in the area, or disturb ecologically sensitive areas, such as Mardee Lake and its associated wetlands.

North of the proposed commercial area, the U.S. Forest Service manages Section 10, which the plan designates as Active Recreation. This land has been partially logged, and the topography of the southern half of the site is suitable for development as a golf course. While a golf course would provide a much needed recreational facility for non-winter seasons and would provide Nordic skiing in the winter, these uses are not currently contemplated by the Forest Service in the SPAMA. The community will continue to monitor updates to the plan and provide input on any proposed changes to the use of this area.

Lying to the east of Section 10 is a Section of privately owned land which is designated Residential. The area is bisected on the diagonal by Gold Creek. Development plans for the majority of the property should reserve a substantial open space greenbelt on both sides of the creek. Development should be clustered on the site to take advantage of views and conserve natural vegetation.

The residential development should be planned with the highest degree of sensitivity to the aesthetic values of the area and the preservation and enhancement of wildlife habitat.

Subarea E Land Use Plan

Development in Subarea E is clustered near Exit 54. Uses range from single family residences to public utilities. The WSDOT highway facility and the Snoqualmie Pass Sewer and Water District's sewage treatment plant are designated Light Industrial, as is a partially vacant area west of the WSDOT property. This is the only Light Industrial classification on the Pass and it is intended to recognize the existing uses and provide a small area for other light manufacturing activities.

Approximately 17 acres between the sewage treatment plant and Keechelus Lake is proposed in the plan as commercial lodging. The site's location and characteristics may make it well suited for a Recreational Vehicle park, a facility which the Pass is currently lacking.

The majority of the Hyak subarea is used for recreation, including alpine and Nordic skiing, mountain biking, hiking and water sports. The Summit East Ski Area plans to expand considerably the area available for alpine skiing by constructing an additional chair lift to higher elevations.

IV. OPEN SPACE AND CRITICAL AREAS

Scenic Vistas and View Corridors

The grandeur of the North Cascade Mountains is equal to that of any other range in North America. And Snoqualmie Pass, because of intersecting valleys at the summit, provides a unique combination of vistas, from a looming "up-close" view of Guye Peak, to the distant view, up Gold Creek Valley, of Chikamin Peak. There can be no doubt that mountain scenery, and the visual and physical open space it provides, is an important asset to the Snoqualmie Pass community that needs protection and enhancement.

There are several ways to approach scenic vistas and view corridors, including:

1) Address the issue at ground level; that is, protect the sight-line of the viewer at a specific location (i.e., a view point or residence);

2) Protect the "content" of the view; that is, control activities that occur in the view corridor or vista so that the quality of the view is not reduced. Obvious activities include logging and utility right-of-way swaths; more subtle intrusions would include reflective satellite dishes or roofing material, or bright night lighting; or

3) Encourage that full advantage is taken of the view in a given facility's design. This should occur in site design, building and village design, and in the location of parks and scenic view points.

Developing regulations for the first approach would be difficult in any circumstance because it often involves protecting the assets of one property to the detriment of another. The protection of individual views from home sites is most effectively accomplished during site design, when lots and building envelopes can be staggered or stepped in a way that optimizes the view for everyone, rather than maximizing it for the few. View corridors and scenic vistas should always be considered in the design review process.

Because of a combination of rugged terrain and Federal ownership, the very disturbing activity of ridge-top development will not occur, as it has in area of less rugged terrain in eastern Washington. The SPAMA plan will benefit the Pass over the long-run, if it can prevent further logging activity, which is the most destructive activity in terms of scenic vistas and views. Nonetheless, the design review process could help ensure that site design is sensitive to: impacts to neighboring properties and optimization of individual view potential, which will benefit the project owners, neighbors and the public.

The third approach should be obvious, but occasionally site designers looking down and do not consider the specific and unique attributes of a site. This attention to detail is important in both site design and building design.

The sample of scenic views and vistas which is included in this section identifies only views from publicly accessible property. There are undoubtedly other vistas from private homes and properties that are equally spectacular.

Scenic views and view corridors should be a primary consideration. Individual projects should consider the impacts their actions have on others in regards to views.

Goals And Objectives

IV.1 Goal: Develop a Pass image which creates strong sense of community, scenic beauty, and recreational opportunity.

Objective: Planning policies should provide a land use framework which maintains the highest level of integrity of the alpine environment, while meeting the needs of the residents and visitors, which live, work and recreate at the Pass.

IV.2 Goal: Identify uses complementary with Open Space/Critical Areas goals and objectives.

IV.3 Goal: Develop an implementation strategy for preserving and incorporating open space and critical areas into the community plan.

Objectives:

1. Vegetative buffers should be required between different uses and along trails and roadways.

- 2. Green belt areas should be designated between clustered uses.
- 3. Well designed entry ways to new developments should be encouraged.
- 4. Plans should be developed which will preserve or enhance native flora, fauna and sensitive areas.
- 5. Implementation approaches should include:
- a. Development of an inventory of indigenous plants to be used in new landscaping.
- b. Encourage project covenants, conditions & restrictions to include open space/critical areas guidelines.
- c. Work to create an incentive system for preserving open spaces and critical areas.

IV.4 Goal: Policies and regulations should be developed which recognize the special requirements of critical areas, as defined by Kittitas and King Counties, in the mountain environment of the Pass. Critical areas include:

- a. Wetlands;
- b. Areas with a critical recharging effect on aquifers used for potable water;
- c. Fish and wildlife habitat conservation areas;
- d. Streams, rivers and lakes;
- e. Frequently flooded areas; and
- f. Geologically hazardous areas.

IV.5 Goal: There should be no net loss of wetland habitat.

IV.6 Goal: Have appropriate agencies identify the functional characteristics of wetlands which may be impacted by development or human intrusion.

- 1. Identify the existing or potential use of the wetland as a surface-water or groundwater supply and the extent to which the area serves as a recharge area or purifier of surface water or groundwater.
- 2. Identify the wetlands function as part of the natural drainage system for the watershed and its importance in preventing flooding, leaching, erosion or otherwise affecting water quality.
- 3. Assess the importance of the wetland habitat as a natural wildlife feeding or breeding area and if there is a rare or unusual concentration of botanical species.
- 4. Assess the existing, potential or allowed use of the wetland areas for recreational purposes and their importance as open space.

IV.7 Goal: Wetlands shall be managed in accordance with the latest Federal and Washington State regulations and guidelines.

IV.8 Goal: Natural wetlands of irreplaceable high quality as habitat and open space should be preserved and protected.

IV.9 Goal: Mitigation strategies should be developed and required of all development to assure no net loss of wetlands and no loss of high quality natural wetlands.

Objective: Wetland management, protection or mitigation should be implemented according to applicable laws.

IV.10 Goal: Ensure the purity of Pass drinking water by identifying critical aquifer recharge areas and instituting policies which prevent surface and groundwater degradation.

IV.11 Goal: Protect fish and wildlife habitat areas, including habitat corridors, migration routes, ponds, streams, and breeding and nesting areas.

Objectives:

- 1. Manage land development and recreational activities to protect habitat from human intrusion, including noise, particularly during critical periods of breeding, nesting and migration.
- 2. Enhance and improve wildlife habitat and habitat corridors which may be disturbed or disrupted by development.

IV.12 Goal: Preserve the natural function of the floodplain and floodway, recognizing that the historic flooding characteristics of mountain streams and rivers varies due to upstream landslides, debris buildup, steep upstream gradients and impermeable soils.

Objective: Avoid construction in the floodplain or floodway of structures which could interfere with the flow of flood water or result in the destruction of private property or danger to human safety.

IV.13 Goal: The quality and integrity of existing riparian corridors should be preserved.

- 1. Identify and classify riparian corridors based upon their existing or potential habitat quality and diversity, importance to the drainage system of the watershed and recreational potential.
- 2. Establish riparian management zones including buffer and setback requirements, and vegetation preservation requirements within the setbacks and buffers.
- 3. Encourage non-structural bank stabilization techniques emphasizing bio-engineering.

IV.14 Goal: Restrict development in geologically hazardous areas including areas which are subject to erosion, landslide, avalanche or subsidence.

Objectives:

- 1. Modification of natural terrain and removal of natural vegetation should be minimized. Large flat building pads should be avoided in favor of terraced or piered structures.
- 2. Consideration should be given to the geological stability of the soil and slope well above and below a proposed building site, including the vulnerability of the site to avalanches or debris deposition in periods of rapid water runoff.
- 3. Disturbed terrain should be restored and revegetated as soon as feasible. Restoration should conform to the natural surface relief. Straight steep planes in cuts should be avoided. Natural drainage channels and swales should be restored.
- 4. Road and trail construction should follow topography as much as feasible to reduce the need for excavation and fills. Cuts and fills should be stabilized and regraded to resemble natural terrain, or terraced, rather than restrained with straight walls or bulkheads.
- 5. Site specific geotechnical information should be required for construction on slopes greater than 3:1.

IV.15 Goal: Identify the "viewshed;" that is, scenic areas which are visible from places of frequent human activity.

IV.16 Goal: Important scenic views and viewlines should be identified, preserved and, where appropriate, enhanced.

- 1. The enhancement of the island area in Keechelus Lake should be strongly encouraged, to enhance the wildlife habitat and visual quality of the lake.
- 2. Where appropriate, a program of thinning or removal of vegetation in view corridors should be considered.
- 3. Careful site planning should consider the impact of the placement and height of new structures on views from adjacent developed properties and public roads and trails.
- 4. The removal of vegetation for view enhancement should be balanced with the aesthetic and environmental importance of maintaining natural vegetation and open spaces.
- 5. Development of hillsides should be designed to respect and conform to the natural terrain so as to not be visually intrusive.
6. Where feasible, forestry practices which seek to replicate natural processes, enhance wildlife habitat, conserve biodiversity and blend with the surrounding landscape should be employed in viewshed areas.

IV.17 Goal: Categorize and map type and extent of vegetative ground cover within the viewshed.

IV.18 Goal: Identify and map current uses within the viewshed.

Objective: Incorporate by reference the U.S. Forest Service Plans; public and private forest management plans; public and private recreation plans; Alpine Lakes Protection Society management plan.

IV.19 Goal: Identify current and future management and use activities within the viewshed, including, but not limited to year round recreational uses; forest management; habitat preservation; commercial and residential development, and; viewshed enhancement.

IV.20Goal: Identify areas of viewshed challenges where the attainment of other goals and objectives within the planning area may impact viewshed quality.

Objective: Resolve challenges by encouraging practices which maintain and/or enhance the visual quality of the viewshed. Such practices should include, but not be limited to, the following:

- a. Retention of existing vegetation and natural features.
- b. Vegetative buffers around active uses such as recreation, commercial and residential development, and forest harvesting.
- c. Forest management practices which protect and/or improve the viewshed quality while recognizing intended long term commercial forest practices.
- d. Public and private recreational activities which protect and/or improve the viewshed quality while recognizing the intended public benefit of the recreational use.
- e. Restoration of impacted lands within the viewshed to provide year round aesthetic quality.
- e. Any timber harvesting within the viewshed should be thoughtfully planned and include innovative strategies to achieve the above listed goals.

IV.21 Goal: Identify potential land exchanges which will ensure the long term protection of viewshed quality.

IV.22 Goal: Prevent, in the long-term and short-term, the degradation of air quality in the Pass area.

Objectives:

1. Codes, covenants and restrictions in new developments should require the installation of wood stoves and fireplaces which minimize the introduction of pollutants into the air.

- 2. Educational material should be developed and distributed which explains the impact of temperature inversion on air quality and the typical weather conditions in which inversions occur.
- 3. Voluntary restraint from wood burning should be strongly encouraged, particularly in valley floors where the impact of temperature inversions are most severe.
- 4. In designing and implementing strategies to encourage the sensible use and control of all air pollution sources at the Pass, the assistance of staff from regional air quality control authorities should be sought.

IV.23 Goal: Prevent or reduce the intrusion of sources of high noise levels into the Pass area.

Objectives:

- 1. Options for altering the jet flight pattern for high speed, low altitude military maneuvers in Gold Creek Valley should be researched.
- 2. The use of non-muffled compression brakes on Interstate 90 should be prohibited. (???)

OPEN SPACE AND CRITICAL AREAS Recommended Actions

- 1. The EDLU Committee should work with Kittitas and King Counties to insure clearing and grading regulations restrict such activities prior to site plan approval.
- 2. The Committee should enlist the assistance of appropriate agencies and knowledgeable individuals to further identify highly sensitive environmental areas including high quality wetlands and riparian corridors, old growth forests, sensitive wildlife habitats and wildlife corridors. The Committee should review the Counties' critical areas maps and regulations to ensure that these sensitive areas are adequately identified and protected, considering the special requirements of the mountain environment.
- 3. Working with the CDA Committee and the Mountains to Sound Greenway Trust, the EDLU Committee should identify the significant view-shed areas of the Pass and recommend actions to protect or enhance their visual quality.
- 4. The EDLU Committee should work with the Forest Service, Mountains to Sound, the Mountaineers and others to identify funding sources for the planning and implementation of a system of open space trail corridors which will provide functional transportation alternatives, recreational opportunities, visual enhancement, and preservation of sensitive and unique areas.
- 5. The Committee should provide recommendations, assistance and support for potential land exchanges which will protect open space and sensitive areas on the Pass.

6. The Committee should seek assistance to prepare an informational brochure for distribution to all Pass residents which explains the typical weather conditions under which temperature inversions occur and encourages voluntary restraint or limitation of wood burning during these conditions. The Committee should seek the assistance of staff from regional air quality control authorities to develop and implement this and other strategies to encourage the sensible use and control of air pollution sources at the Pass.

V. RECREATION

The Snoqualmie Pass area contains many outstanding recreational opportunities, including both active and passive activities. Recreation opportunities include:

- downhill skiing and snowboarding (four areas)
- cross-country skiing (including 56 kilometers of trails within the ski areas)
- sledding, tubing and snowshoe activities
- mountain biking
- hiking (many trails, including Iron Horse State Park, John Wayne/ Pacific Crest Trails, and many well-known day trip and overnight hikes)
- fishing
- boating
- bird and wildlife watching
- sightseeing

The amount of available recreation is unmatched anywhere else in the State, and is remarkable not only for its diversity, but also for its close proximity to a major metropolitan area and ease of access via I-90.

Goals And Objectives

V.1 Goal: Encourage the development of all-season, multi-option recreational facilities on public and private land. Facilitate the cooperation and coordination of planning and development activities of public agencies and private land owners.

V.2 Goal: Encourage the development of a Visitor Information Center to inform and educate the public about the areas recreational opportunities.

V.3 Goal: Develop an integrated public/private trail system which provides recreational opportunities and connects recreational areas with other uses.

Objectives:

1. Connect village or activity centers to surrounding residential and recreational areas with trails developed in green belts and open space areas.

- 2. Incorporate educational, cultural, historical and environmental self-guided tours.
- 3. Provide sufficient trail width and/or other means for multiple uses (e.g., biking, walking, jogging, and cross country skiing).
- 4. Prohibit the use of off-road motorized vehicles on multi use trails. Limit the use of snowmobiles to appropriate areas.
- 5. Prohibit the use of firearms in areas where other forms of recreation are accommodated or encouraged.
- 6. Expand the existing mountain biking trail system.
- 7. Provide a separate equestrian trail system.
- 8. Site trails away from wildlife corridors and archaeologically important areas.

V.4 Goal: Encourage careful, consistent, multi-season development of ski areas comprising The Pass complex.

Facilitate the expansion and upgrading of existing facilities - including, but not limited to, properties conveniently attainable from the existing facilities - thereby providing improved recreational opportunities in a manner consistent with the applicable Master Plan in effect for The Pass ski area.

Objectives:

- 1. Develop base facilities into all-season, multi-use complexes.
- 2. Encourage upgrade of existing facilities to properly accommodate present and future demand.
- 3. Provide additional recreational opportunities to local and statewide recreational users.
- 4. Encourage aesthetically and environmentally sound development of chairlift placement, alpine and Nordic trails, runs and summer use to be compatible with view-sheds and other recreational uses.
- 5. Encourage development of extensive summer use trail networks to harmoniously accommodate hikers/sightseers, mountain biking and equestrian use.
- 6. Encourage adaption of the ski areas for multi-use by those with disabilities.
- 7. Provide alternative, non-fee based winter use which is in harmony with other winter recreation uses such as back country access through USFS permitted areas.

V.5 Goal: Provide open space for properly managed festivals, cultural events, theater, athletic events and formal public parks. Such open space and events should be appropriately scaled to

be harmonious with the mountain environment and its other recreation attributes. The following issues should be addressed:

- a. Traffic impact;
- b. Sound impact;
- c. Effective event and off-site security;
- d. Sufficient event parking and spill-over parking in controlled areas;
- e. Litter control and clean-up;
- f. Overnight camping only in legal camping areas;
- g. Sufficient community support services (e.g. medical, fire);
- h. Sufficient sanitation capacity;
- i. Adequate provisions for safe pedestrian routes; and,
- j. Should not impair or reduce the natural setting.

V.6 Goal: Encourage the development of a "village center" within which cultural and community uses and activities can be clustered.

V.7 Goal: Analyze the potential of Keechelus Lake as a boating, fishing, swimming/beach area. The feasibility of removing the stumps from the lake should be investigated. Encourage Federal, State and local agencies to develop a management plan which optimizes the recreational opportunities of the lake.

V.8 Goal: Create an identity which promotes the recognition of the Pass as a unified, multiple use recreation and resort area.

Objectives:

1. Marketing efforts should be combined so as to reach the broadest possible audience.

- 2. An incentive program should encourage resort owners and operators to provide joint recreational access to all Pass visitors.
- 3. Physical access should be improved between recreational facilities and areas, including joint easements, crossover trails, access for disabled persons, etc.

V.9 Goal: Work with public and private historical/cultural groups to identify events and locales of significance in the evolution of the Pass area, and recognize the importance of history and culture as a recreational asset.

VI. TRANSPORTATION AND CIRCULATION

Some of the most important issues to the Pass community entail transportation issues. Two of the most important are:

1) Restriction of Trucks/Truck Parking on SR 906

Trucks and truck parking on SR 906 were identified as the most pressing transportation issues by respondents to the community survey. There is a very strong sentiment among Pass residents that trucks should be prohibited completely from SR 906 between Exit 52 and Exit 54 and that no alternative sites for truck parking should be provided. Safety for pedestrians and local traffic, as well as the aesthetic detriment, were among the reasons that the community wants truck parking removed from the highway. Even though the community perceives SR 906 as a year-round recreational highway, WSDOT does not feel it should restrict "commercial combinations" from SR 906 in the same manner as they currently do in the summer on SR821 (Canyon Road) in Yakima County, as truckers are coming to destinations on SR906, not just passing through as they do on SR821.

Truck drivers stop at the summit for a variety of reasons: the need to sleep or rest; restroom stops; stops for meals. Some drivers prefer the Pass in the summer because it is cooler than down in the lower areas. Fewer drivers stop in the winter, because of the possibility of getting stuck at the Pass. However, trucks do stop in the winter, and some get boxed in by private vehicles.

If trucks cannot be prohibited from SR906, providing an alternative location, or an actual rest area, for trucks is a must. Truck parking on the shoulders of SR906, as currently exists, is intolerable to the community because of past accidents and recurring near misses, as well as the very disrupting effect on the scenic mountain environment. WSDOT should continue to work with the community to identify means to reduce or eliminate truck parking on SR906. If, notwithstanding the community's wishes, trucks cannot be prohibited from SR 906, cooperative planning efforts among WSDOT, the Forest Service and the community towards selecting an alternative truck parking site and developing an implementation plan would be a significant step towards the elimination of the serious problem of truck parking on SR-906.

2) Pass Closures and Pass Access

Interstate 90 was closed 66 times between the summer of 1996 and the summer of 1997 alone. Forty five of these closures where due to an avalanche or avalanche control. While recent closure numbers have been down, some of the closure durations were very significant.

I-90 road closures are determined and regulated by (WSDOT) in coordination with the Washington State Patrol (WSP). WSDOT and WSP will close I-90 when there is a serious safety concern for the motorist. Typically, closures occur all the way from North Bend to Cle Elum, but each situation is evaluated to determine the level of closure required.

Closure of the road has an economic and social impact on the Pass community, and is particularly frustrating to skiers and residents alike when eastbound traffic is prohibited from reaching the summit when the safety hazards occur east of Exit 54.

While WSDOT and the State Patrol may allow access during closures, there is no adopted plan or policy that accommodates Pass residents and businesses. While such a plan would not eliminate all future inconvenience, it would provide some certainty of access for Pass residents.

In the meantime, Pass residents have established a good working relationship with a member of WSP, who helps residents get home, when it is safe, during I-90 closures. The residents meet in North Bend, and then are led by caravan to the pass by uniformed officers. This was a new arrangement in the winter of 1998/1999. However, one officer cannot be on duty at all hours. WSDOT should work with the community, through SNOPAC, and WSP to prepare a Closure/Access plan which includes a system whereby residents can be identified easily and allowed access to at least Exit 52 (eastbound) when safe.

Transportation Study

A transportation study was prepared as part of this planning effort and is available as a separate document. The study includes background information and descriptions of existing conditions, and includes trip generation based on the allocation of land uses for the years 2005 and 2015 as briefly described in the Land Use section. This section presents a summary of the transportation findings for future conditions, recommendations for improvements that may be

necessary to mitigate growth impacts, and improvements that could presently be made to mitigate existing problems.

The computer traffic model used in analyzing conditions at the Pass distributes and assigns traffic to area intersections and roadways. The modeling program is supplied the trip generation information, through-traffic volumes on area roadways (in this case, I-90), information on relative land use locations, and "network" information - capacity, where the roads are, and how many lanes per road. The model programmer also provides information on average observed speeds, congestion points, stop sign or signal locations, and other data needed to run the traffic model.

For this project, the program also included information to restrict traffic flow due to adverse weather conditions. This is done by reducing the capacity (ability of cars to flow) on each road segment, through each intersection, and on the freeway ramps. The main purpose in this modeling exercise was to determine two sets of information: (1) How much traffic would be on each road segment for different scenarios and different years; and (2) How would the additional traffic affect speeds on road segments.

The model identified important information on several matters:

- 1. Queuing problems may occur on Exit 54, westbound, in 2015 (depending on the level of development in this sub-area)
- 2. Queuing problems may occur on Exit 53 as well, in 2015.
- 3. Speeds may be very low (below 10 mph) on SR-906 northbound between Summit Central and Exit 53.
- 4. Speeds on 1-90 over the summit may drop to 50 mph by 2015.
- 5. Congestion will worsen on SR-906 between Exits 52 and 53. The expected volume in the peak hours would be greater than the capacity of a two-lane road.
- 6. Building a frontage road on the east side of 1-90 would not result in significant time savings for residents.

The model was run for both 2005 and 2015. Conditions were modeled for higher and lower housing development (please see the Land Use section of the Plan). The differences in operating conditions under these scenarios was not significant from those conditions under the "Planning Projections". These model results, coupled with our observations of pedestrian and parking activities, result in the following proposals to improve traffic flow at Snoqualmie Pass now and in the future. Most of these proposals are based on better management, rather than built improvements.

Improving Traffic Operations - Physical Improvements

As traffic levels increase, congestion will rise and travel speeds will fall. The Pass area already suffers from traffic congestion on busy winter weekends. The following sections outline improvements that should ease traffic congestion now, and help alleviate problems in the future.

1) Realigned SR-906 at Summit Central

Booth Creek Holdings has included a realigned SR-906 in their Master Plan for The Summit at Snoqualmie. SR-906 would be moved so it lay outside the Summit Central parking area. This is intended to remove the current conflict between skiers and pedestrians. Now, all skiers have to cross SR-906 to reach the lifts (except those parking along the southwest side of SR-906). The proposed realignment would bend around to the north of the parking. A few sharp bends would be created in SR-906. This could create some safety and operational issues. Drivers would have to negotiate sharper curves under snow and ice conditions. Plowing may become more difficult. The high snow banks created by the plows, combined with the curves, may create sight distance problems.

The road, as proposed, creates an "oxbow", which would not meet WSDOT Design Guidelines. In order for the change to proceed, one of the following must happen: (a) Another entity could take over jurisdiction of the road, such as Kittitas County; the road would then have to meet design standards for the County; or (b)The proposed realignment could be designed in such a way that it meets WSDOT standards; however, this may not be possible; or (c) a variance would have to be granted by WSDOT. A combination of measures (b) and (c) would most likely allow the improvement to be built. The road should be designed to smooth out the curves and bring the road as close as possible to WSDOT standards. If WSDOT still has concerns, then the ski area should apply for a variance.

It is understood that the ski area intends to fund the engineering, design and construction of the improvement. Sufficient time for review and approval by WSDOT should be included in the schedule for the project. WSDOT approvals can take from 6 to 18 months. The road design should include a 40 mph design speed, and maintain adequate snow storage.

2) Alternative Alignment of SR-906 at Summit West

It might be possible to realign SR-906 in the area of Summit West to the northeast, so it lies closer to 1-90. Land swaps or right-of-way acquisition might be involved. Doing so would provide and opportunity to develop a "village" master plan that would integrate parking, access and direct pedestrian connections between the ski base and the commercial areas.

This idea has several advantages: Reducing vehicular/pedestrian conflicts by removing most road crossing activity; creating additional areas for parking; making shared ski/commercial use of commercial parking areas feasible; and reducing traffic conflicts on SR-906 for Summit West parking.

Several issues would need to be investigated, including: Right-of-way, slope and road grade issues, impacts to existing commercial development, visual impacts on the I-90 scenic corridor and funding.

If other measures do not solve the traffic and parking problems on SR-906, this alternative could be re-considered; however, a brief initial review indicates that the cost of such a project makes it unfeasible. Accordingly, it will not be considered further or relied upon to solve existing problems at the Pass.

3) Improvements at Exit 53 underpass/SR-906 Intersection

By 2015, traffic in this area will become congested during peak ski arrival and departure times. Speeds could drop to just a few miles per hour. This will be frustrating for drivers, and would create a negative perception in their minds about their recreational experience.

Manual traffic control could help with this problem. If drivers leaving the area can flow freely onto 1-90, congestion would be reduced. Those arriving in the morning should be able to flow freely onto SR-906.Manual traffic controls should be tested in the field before becoming policy. Allowing greater movement for off-ramp traffic could create delay problem on SR-906 as it approaches the intersection. Cost and liability issues relating to manual traffic controls should also be investigated.

Another option would be to increase the number of approach lanes at this intersection. For instance, the underpass road could be widened to one left turn lane, and one shared

left-turn/right-turn lane. This would necessitate widening SR-906 south of Exit 53 for some distance. This may be possible within the existing pavement width. During snow conditions, pavement markings would not be seen, and so either overhead signage or manual traffic control would be needed to keep traffic flowing.

4) Improvements at Exits 53 and 54

As discussed under the model paragraph, there may be some operational problems at these two exits. The primary issue is traffic queuing on the off-ramps and spilling back onto the freeway. This also creates safety problems on 1-90. There are several possible measures for alleviating this problem. Each has issues associated with it.

A. Install traffic signals at the westbound off-ramps of Exits 53 and 54. The signal might increase delay and queues for ramp traffic. The signals also might not work well under snow/ice conditions (the signal detectors don't work well when covered in snow). The community may not feel comfortable installing signals, since they seem out of place in the rural/resort setting of the Pass. Finally, signals cost upwards of \$150,000 to install, and must be maintained. One positive note: signals do tend to make it clear to drivers who has the right-of-way.

B. Restripe the off-ramps to two lanes. As the ramps near their termini near the underpasses, the paved width is such that two lanes of traffic could be accommodated. The ramp could be restriped to one left turn lane, and one shared left/right lane. This would mean restriping the underpass road as well. This is probably feasible with the existing roadway width, although some additional paving may be required. If paving is required, then funding must be found. Some truck drivers park on the ramps and under the overpass. No parking would have to be enforced if two lanes are installed.

C. Variable message signing on the freeway could warn westbound drivers of congested conditions at Exit 54, and direct them to Exit 53. This requires staff and incurs operation and maintenance costs. If Exit 53 is congested, drivers would need information in advance of Exit 54 so they could choose that exit instead. If both ramps are congested, then the VMS could only warn drivers of congested conditions. Since there are no westbound ramps at Exit 52, drivers would only have the choice of slowing for congestion, or bypassing the Summit area. Variable message signs would have to be monitored and updated as conditions change.

D. Improvements to the intersection of SR-906 and Exit 53 could help, since southbound delays there may be spilling back and causing delay on the off-ramps. Please see discussion below.

E. Manual traffic control at the off-ramps during peak times. Certified flaggers directing traffic to continue through might alleviate some delay.

F. Improved signage may reduce delays. It may not be clear to drivers which way to turn to reach their destination. Signage along the ramp, and then near and at the terminus, would help drivers find their way. Signage would need to be designed and located so as to be visible under winter conditions.

Signals are not recommended at this time. They probably would not be effective. Instituting the remaining measures would probably be most effective in reducing delay and congestion on the off-ramps. The variable message signing would have to be coordinated with the existing driver information system, and approved by WSDOT. Manual traffic control should be used initially on those days when activity will be high. With time, it may become evident that control is needed on a regular basis (e.g., every Saturday during the ski season). Better signage would be coordinated with and approved by WSDOT.

Since the majority of peak hour traffic is associate with ski activity, the Summit at Snoqualmie should bear a proportional share of the costs of these measures.

5) New Eastside Frontage Road

There has been some discussion in the past of building a new frontage road to the east of 1-90, to connect Exits 52, 53 and 54. Even in the most optimistic Land Use Allocation previously described does not result in traffic volumes that would warrant construction of a new roadway. If the road connected just Exits 52 and 53, it would be about one mile in length. A rough cost estimate would be about \$2 million, assuming no significant structures (bridges) would be required. The section between Exits 53 and 54 would be even more expensive because it is a longer. Funding for such a roadway would be problematic, with little demonstrated demand and competition for funds with roads that would carry higher volumes of traffic.

6) Traffic and Parking Management

Many of the congestion problems at the Pass can be ameliorated with better traffic and parking management. The following section discuss measures to improve traffic flow, increase parking efficiency, remove conflicts between pedestrians and cars, and provide better shuttle service for both skiers and residents. Many of these measures should be provided by the ski area in response to heightened skier traffic and parking.

A) Summit West

One of the primary problems on SR-906 is the conflict between pedestrians and cars. Currently, there are few pedestrian facilities. Pedestrians walk in and cross SR-906 at Summit West and Summit Central.

The problems at Summit West are related to two activities:

1.People frequenting the restaurant/mini-mart, then crossing to the ski area.

2. Vehicles (especially trucks several vehicles deep) parking along SR-906.

People cross SR-906 at will. There is no organized crossing point. This behavior constantly exposes pedestrians to safety problems. Drivers trying to traverse the area have to stop again and again for pedestrians. At night, the problem gets worse because pedestrians are less visible. For these reasons, some type of pedestrian walkway with marked driveways and pedestrian crossing(s) needs to be created. (Please see below for more discussion about enforcing parking restrictions).

Simply removing the on-street parking at Summit West would exacerbate the parking shortage problem for skiers. More skiers would be trying to find fewer spaces, which could create even greater congestion around parking lots. Several remedies have been analyzed to alleviate this problem, but a workable solution remains to be found.

When the ski area expands, additional parking will be provided. If sufficient parking is provided in lots, then the pedestrian/car conflict should be diminished. However, if skier visits increase beyond ski area parking capacity, or when more commercial development occurs on the north side of SR-906, pedestrian activity will increase and people will want to cross SR-906. To mitigate this problem, a pedestrian overpass or underpass could be created. Such structures are very costly, therefore it might be advisable to manage pedestrian crossings rather than build an overpass or underpass. The pedestrian control option, which would need to be finalized, is recommended at this time. The community and WSDOT can investigate federal funding for an overpass/underpass through the Puget Sound Regional Council and/or other sources. It may take several years to secure such funding, if it is ever available.

B) Summit Central

The problems at Summit Central are related to skiers having to cross the road to reach the lifts. As discussed above, the ski area may reroute SR-906 so that pedestrians do not need to cross the road to reach the lifts. In the meantime, several measures would help with pedestrian/vehicle conflicts:

1.Creating and enforcing a new 300' no-parking zone on SR-906 at the crossing. Cars parked on the road at Summit Central complicate the problem because pedestrians are harder to see as they come from behind parked cars and buses.

2.Active traffic and pedestrian control at the main crossing location, some of which is slated to be installed any time. On prior winter visits to Summit Central, traffic monitors have been observed standing in the middle of SR-906 at the crossing, but doing nothing in the way of assisting drivers or pedestrians. Drivers slow or stop because they don't know what to do. Pedestrians stand on the sides waiting for direction. It is imperative that persons of authority, such as certified flaggers, control this crossing point.

3.Keeping the snow wall in place (at a reasonable height) so that pedestrians are encouraged to cross only at the crosswalk.

If SR-906 is rerouted around Summit Central, on-street parking in this area of SR906 should become less of a problem.

C) Silver Fir Base Area

There are also skiers crossing the road at this area. However, the volume of both people and cars is low at this point, so conflicts should be manageable.

Regardless of measures to minimize pedestrian crossing points, the ski area should provide separate pedestrian facilities so they can stay off of SR-906 and Alpental Road. It isn't safe to have pedestrians on the road, especially when they are wearing ski boots, carrying equipment and trying to keep children under control. A separate path can be created for pedestrians paralleling the road. This may require purchase of special snow removal equipment. Pedestrian facilities will also be a necessary element of new commercial development.

Providing more frequent shuttle service could also reduce pedestrian use of SR-906 and Alpental Road.

7) Signage

A) SR-906 Overhead Signage

It is difficult to discern what and where lanes exist on SR-906. If the road is intended to be used for more than two lanes, then confusion will increase when snow and ice cover lane markings. Strategic placement of one or two overhead signs with lane usage information would help reduce driver confusion on SR-906. These signs would indicate that the center lane is for turning traffic; and the lanes for access to and from parking lots and through traffic.

B) Moveable Signs

On-street signage is also needed. The ski area does use some signage now. However, it is largely ineffective because it generally cannot be seen. The signs are very small and are often either buried in snow or half covered with dirt thrown up by the plows. These are moveable signs, and they should be removed every night and replaced every morning. The signs also need to be checked throughout the day to see:

- 1. If they are still visible
- 2. If they are still meaningful
- 3. Whether more signage is needed.

There is now a critical lack of signage directing drivers to parking areas. The use of moveable signs (e.g., on sawhorses) would help sort out some of the confusion for drivers on SR-906 and Alpental Road. Drivers should be directed to one *parking area at a time* at Summit West and Alpental. Signs help do this; once another area opens for parking, the signs are moved accordingly. Sufficient signage to close parking areas that are full would also help. The signs needs to be large enough and placed in such a manner that a driver can see the sign and keep going to the next lot without hesitating at the closed parking area. (Note: Although the "No

Parking" spray painted in orange at Summit Central may be somewhat effective, we do not recommend this measure. It is primarily done to keep areas open for shuttle buses and charter bus parking. It is unattractive and may have environmental implications. It is only useful until the snow plows cover up the information.)

WSDOT requires that moveable signs be located outside the SR-906 right-of-way, and cannot be used to direct traffic to Interstate 90.

Moveable signs, whether permanent or temporary, should be professionally designed and manufactured and be consistent in design. "Hand-made" signs should be strongly discouraged.

C) SR-906 at I-90

The signs directing drivers to 1-90 at Exit 53 are very small and become buried in the snow. Larger, tall signage or moveable signage would be better. Better signage would help reduce driver confusion about access to 1-90 at this location. This signage should be provided by WSDOT.

8) Snow Removal and Sanding/Plowing

Snow plowing is a major issue at Snoqualmie Pass. WSDOT plows SR-906. To minimize conflict with parked cars and pedestrians, plowing is generally done between midnight and 8 am. Snow is stored along the roadway. In a cooperative arrangement with Booth Creek Holdings, the plowing provides for selected pedestrian crossings, parking along the highway and no-parking locations.

Strictly from the standpoint of pedestrians and visibility to commercial areas in the vicinity of Summit West and Summit Central, it would be desirable to haul the snow rather than leave it along the roadway; however, snow hauling presents serious issues including: (a) Cost: Considerable heavy equipment and labor could be required, including loaders and dump trucks; (b) Location: There is currently no designated location for storing the hauled snow; and (c) environmental considerations for snow storage locations. While these issues are serious, they may not be insurmountable. A snow management plan that developed priorities and policies for when, where and how often snow removal would occur, could result in a strategy that utilized existing equipment and labor at times when snow plowing was not otherwise necessary. WSDOT, the ski area, and commercial business would have to agree on such a plan, including cost sharing arrangements, before it would be feasible.

The ski area operators plow the Alpental access road. Apparently, in times past the time of plowing sometimes coincides with peak times of arriving traffic. As a matter of policy, this plowing should be done before peak traffic arrives.

9) Parking

A) Future Parking Demand

Total future peak parking demand is estimated at 5,814 vehicles. This parking demand relates to a typically busy Saturday. Parking demand on the very busiest days (e.g., Saturdays of holiday weekends) may be higher.

The Summit at Snoqualmie Master Plan currently shows 39.9 acres of parking. This translates to about 4,948 parking spaces. This will not be enough parking to meet demand. As discussed above, on-street parking may not be available in the future. The parking spaces must also be allocated to demand. Currently, the Alpental area has the biggest parking problem. When the lots fill, drivers park along Alpental Road. This creates problems for plowing, cuts off emergency access and makes traffic flow very difficult.

If the parking areas are not more efficiently managed than today, the parking areas will not be able to park even the 4,948 cars. Therefore, several measures are needed to mitigate parking problems.

(1) Parking Management

(i) Provide enough parking in lots to accommodate peak demand. We recommend that room for 6,000 cars be provided to meet typically high demand. The ski area is currently amending their master plan to add parking.

(ii) Provide parking at the demand location. This requires some thought by the ski area so that parking at each portal matches demand. Until permanent parking can be created, the ski area should investigate temporary parking locations to be utilized closer to the demand locations.

(iii) Provide for off-site, overflow parking. This might take place at one of the Sno-Parks at either Hyak or Exit 38. These lots tend to be lightly used. Overflow parking would require additional shuttle service.

(iv) Provide better overall shuttle service. Skiers should not have to wait more than 5 - 10 minutes for the shuttle. Longer waits encourage people to get in their cars and drive to another portal, which creates both parking and traffic problems.

(v) Emphasize parking management to provide excellent parking utilization.

a) Parking lots should only be parked one at a time. In other words, all other lots are closed off until one lot fills. Then all traffic is directed to the next lot, and down the line.

b) Provide enough parking staff to do the job right. For the large lots, the minimum would be 7 - 8 staff. Having enough people on hand allows those staff to get people efficiently into parking spaces, maximizes the number of cars possible in a lot, and makes the experience better for skiers.

c)Traffic management into the parking areas is critical to success. SR-906 traffic should be directed by certified flaggers. To be effective, the flaggers must be aggressive in directing traffic.

d)During busy times, have parking and traffic management staff on hand to manage egress activities. Waiting in a parking lot to exit is no fun, and creates a bad visitor experience. It also breeds frustration in drivers, who may then exhibit poor driving behavior on exiting the lot.

(vi). The Summit and those who develop the commercial area should work together to maximize parking efficiency. It is likely that most people visiting the commercial areas during the winter will also be skiing. The total parking demand for all activities should be determined, so that all lots can be used effectively to ensure sufficient parking for the Pass.

(vii) Expand on programs that bring skiers to the area on buses.

(viii) Reward high occupancy vehicles. Those arriving four or more to a vehicle might receive one free ski pass, reduced passes for the day, or preferential parking areas. Scrip for these can be given by the parking lot monitors, who will be able to tell how many people are arriving per car.

(ix) Organize parking activities in the Summit West lot. This lot is so large that people tend to park haphazardly. If enough staff are present, with tools such as signage and traffic cones, it will help better direct drivers to spaces.

(x) Create and implement an actual parking management plan, which spells out in detail who needs to be where, when. This plan could have levels for dealing with slow days, busy days and peak days. This plan should be created in advance of the season, tested, and revised as needed.

10) Enforcing No-Parking on SR-906

From the end of the commercial area to south of the intersection of SR906/Exit 53 underpass, there are "No Parking" signs posted. There are other limited locations where the road is posted for no parking, primarily in the areas around shuffle bus stops. On limited access roadways, such as 1-90, no parking is allowed. This restriction extends to the on- and off-ramps.

Washington State Patrol continues to heavily enforce the no parking restrictions on I-90 and other limited access roads. The Patrol feels that truck drivers are parking on ramps to avoid competing for spaces at formal truck stops (which tend to fill up early), and to try and get a competitive advantage (get on the road faster). Truck violations such as ramp parking are typically enforced by Commercial Vehicle Officers of the Washington State Patrol. These officers differ from Troopers in that they concentrate their efforts on commercial vehicles, and carry special equipment for dealing with truck enforcement. Any State Patrol officer can enforce the Commercial Vehicle code.

It is legal to safely park on some State facilities in unincorporated areas, including SR906 (though some of this road has been previously marked as "no parking from midnight to 8am). However, if drivers park at night on these facilities, they must leave at least their parking lights on for safety. This applies to passenger vehicles and trucks. (Information from Officer Brown, Commercial Vehicle Enforcement Officer, WSP.)

It should be noted that police power enables Troopers to curtail any activity they feel presents a safety problem. This could extend to something like vegetation growing in sight triangles, trucks blocking traffic flow, or parking in areas that may not be posted no parking but where the parking is creating a problem.

From the stand point of public safety and aesthetics, it may be in the best interest of the community and visitors to make all parking along the road illegal. Removing parking from the highway would result in a significant net loss of parking during the ski season. However, prohibiting "commercial combinations" from using SR906 would significantly improve public safety and aesthetics. (The problems with this approach were discussed in more detail earlier.)

The community will need to continue working with the Washington State Patrol and Washington State Department of Transportation in resolving parking issues on area roadways. Parking restrictions must be enforced, which may mean additional manpower by the Washington State Patrol during peak parking demand days during the winter and summer. In the long run, the best way to resolve on-street parking problems may be a combination of providing sufficient off-street parking, revising SR906 so there is no room for parking, and realigning SR906 at Summit Central so there is no advantage in parking along the road. All of these measures are discussed in other sections of the plan.

11) Drop-Off Areas

As the drop-off areas are generally within the parking lots, they are included here. The current drop-off areas are not big enough for the level of activity. As the Summit at Snoqualmie works to increase its skiing levels, better drop-off areas will become more important. Given its proximity to the Central Puget Sound, many parents drop off kids in the morning and go home, returning in the afternoon.

The Alpental ski school drop off area is a significant problem. The lot is often full of parked cars to the point that cars cannot circulate through to drop off and pick up. Small children dart out from behind parked cars into moving traffic. The lot should be redesigned so the front area is only used for drop-off and pick up. The area needs strict enforcement (people park in it now). The drop-off area should be expanded. All ski school lots should be quite large to accommodate both drop off and parking demand.

Parking monitors not only need to efficiently direct traffic to parking areas, they also need to efficiently direct drop-off activity. Having separate entering lanes for drop-off vehicles would help. Signage will also help sort out traffic.

Managing traffic in the afternoon will also help with pick up activities. Now, cars leave the lots in all lanes, so entering traffic must wait on SR-906 to enter the lots. Traffic and parking staff must keep one entering lane open to accommodate pick up activities.

12) Emergency Access

At times, Alpental Road becomes almost impassable due to cars parked on the road. The road is not wide enough for parking and two way traffic. This creates problems for emergency access. Parking along Alpental Road should be strictly forbidden, and it must be enforced. Violators should be towed. However, the ski area must also provide enough parking and good shuttle service so that skiers aren't forced to park on the road.

Occasionally in the past, Alpental Road would not be plowed or sanded until after the lifts open. Cars go off the road and block access, including emergency access. The road should be plowed and sanded at least an hour before the lifts open, and kept in good condition throughout the day.

13) Shuttle Bus

More frequent service would make the shuttle bus more attractive to skiers. It would also become useful to residents, who might not have to use their car for all activities. A 5 to 10 minute headway for shuttle service is desirable. At 10 minute headways, the average wait time is 5 minutes. Any longer than this is uncomfortable for passengers, especially in the cold and snow. This may require additional vehicles. The Summit at Snoqualmie could work with Metro or other providers to use fleet buses on the weekend, when other demand is at the lowest. Metro has both full sized coaches and small, 18-passenger coaches. Analysis of the number of vehicles needed to meet policy headways should be undertaken.

Shuttle services should be expanded to run to overflow lots on busy days. Since this won't happen every weekend, a plan to rent shuttle services might work for serving these lots (e.g., contracting with Metro, Super Shuttle or another provider).

The shuttle drop-off areas should be expanded so the shuttles can get out of the traffic flow. Shuttle stops should be carefully considered near Summit West, both to minimize walking distance to the bus and so stops can be placed where the road has available plowed width.

14) Future Improvements to I-90

For years, Washington State Department of Transportation has been trying to find a way to widen 1-90 east of Exit 54. The passage of I-695 and the current road alignment (between steep slopes and the lake) make widening problematic.

The State <u>Highway System Plan, 1999</u> - 2018 (Washington State Department of Transportation, January, 1998) lists two projects for I-90 in the Financially Constrained Mobility Strategies. This would have ordinarily indicate that, by using the historical revenue trends before I-695 and projecting them out, these projects have a chance of being funded in the next 20 years. However, unless another initiative passes making more road funding available, the current situation is that many other higher rated (from a need standpoint) projects are unfunded, leaving these projects in limbo: (A) Milepost 55.49 to 67.29, Gold Creek to Easton Hill: Corridor design and environmental design. Estimated cost range: \$2 - \$2.6 million; and (B) Milepost 59.79 to 63.53, Resort Creek to Cabin Creek Road: Widen to six lanes. Estimated cost range: \$38.8 - \$54.4 million.

In another section of the Highway System Plan are listed those projects that were excluded. These projects did not have funding, or could not be feasibly funded, given expected revenue for the next 20 years, which is even less now than before. The excluded projects for 1-90 include widening of 1-90 east of milepost 67.46 (Easton Hill), and this project: (C) Milepost 55.16 to 59.79, Hyak to Resort Creek: Widen to 6 lanes, snowshed widening not included in cost estimate. Cost estimate: \$103 - 133.9 million. At over \$11 million per lane mile, it is not surprising that this project did not make the Financially Constrained Mobility list. However.

extension of the snow shed may occur. This project falls under another category of the Plan: Economic Initiative Strategies. The cost estimate to extend and widen the shed is \$20 - \$26 million.

About \$960 million of the total \$1.09 billion worth of Economic Initiative Strategy projects were in the Financially Constrained Plan. This contrasts with the Mobility Strategies, where only about \$7 billion of the total \$29 billion in improvements could receive funding. Therefore, before I-695 there was a chance the snow shed project would go forward, but little hope for the widening of 1-90 along the lake. Expanding and widening the snow shed may reduce the number of Pass closures. This action, combined with improvements in communication between residents and WSP, may reduce Pass access problems during the winter.

WSDOT should be encouraged to develop a project that becomes part of the State Highway System Plan, probably under the Safety Improvements or Economic Initiative category. This project would provide formal status for resolving the access issue not just for residents, but also for those wishing to access the ski area or cross over the Pass.

The only certain thing regarding highway funding is its continued uncertainty. Watch pending referendums and initiatives in this and coming years to keep current on the status of highway funding in the State of Washington.

VI.1 Goals And Objectives

Goal: Provide for transportation methods which are safe and serve the residential, recreation, cultural, economic and emergency needs of the area while reducing internal automobile travel and encouraging pedestrian, bicycle and ski circulation within the community.

Objectives:

- 1. Adequate circulation for residents should be provided, even during times of heavy visitor traffic.
- 2. All transportation corridors, from walkways to roadways should take into account the safety aspects of falling and accumulating snow.
- 3. Parking along SR 906 should be controlled and coordinated to increase pedestrian safety. Additional off-street parking alternatives should be identified and implemented.
- 4. The availability of remote or new parking areas should be analyzed, including:
 - a. Shuttle from Bandera;
 - b. Denny Creek campground; and,
 - c. Asahel Curtis picnic area with chairlift/gondola to area of Surveyors lake/ radio tower, connecting to top of Silver Fir.
 - d. Additional ski area parking lots.
- 5. Large commercial through trucks should have their own planned parking, preferably separate from other users (for safety) and visually screened (to preserve the scenic beauty of the Pass).

- 6. A study of current traffic patterns and future growth should be conducted for the corridor between Hyak and Alpental. The study should identify existing problems and examine possible solutions, including the potential of each alternative to:
 - a. Cut down on SR 906 congestion;
 - b. Provide access to future commercial and community facilities at Exit 54;
 - c. Allow shuttle service following the loop; and,
 - d. Enhance opportunities for recreating the historic Sunset Highway and parkway driving within the I-90 corridor.

If the study should indicate the need for a frontage road on the east side of I-90, any such road should be designed and constructed with adequate vegetative buffering to minimize the visual impact on I-90, and with drainage capacity to reduce the road's effects on surface and ground water.

- 1. Methods to discourage tourist traffic on residential streets should be developed implemented.
- 2. Street lights should be installed where needed for public safety. Street lights along the frontage of SR 906 should be considered.
- 3. The compatibility (or incompatibility) of the various modes of transportation, including horses, off-road vehicles, mountain bikes, cross country skiers, hikers, walkers, joggers and snowmobiles should be analyzed and appropriate designations and restrictions developed.
- 4. Emergency response services should be accommodated Pass-wide, with particular emphasis in high traffic activity areas.
- 5. Future development should provide roads at county standards, as the same may be amended for the mountain environment. Sidewalks and curbs should only be required in compact, pedestrian oriented "village centers" where no snow plowing will take place.
- 6. New development should, where practical, provide trails that traverse their property which are open to the public, subject to resolution of liability and compensation issues. Trails for cross country skiers and bicycles, should integrate into the overall trail system. Portions of the trail system should be readily accessible to disabled persons and the elderly. Incentive credits should be considered for developers to include planned portions of an integrated public trail system and other amenities (such as exercise stations or view points). USFS trails should be connected with other public trails in accordance with an approved trail plan.
- 7. Permanent display maps should be installed at strategic trail/path/road junctions. A large, permanent overall map should be located at each activity center.
- 8. Heated sidewalks or other means of snow removal or clearing should be considered at commercial centers.
- 9. Pedestrian sky bridges or underpasses should be considered over high use roads such as SR 906.

- 10. Crossover trails between ski areas which would encourage people to ski or bike between ski areas, should be developed or upgraded.
- 11. Loading zones and ramps for deliveries in commercial centers should be required.
- 12. Transportation planning should address the needs of potential future uses, such as: a. Community center;
 - b. Golf courses or other new recreational facilities; and

c. Competitions or events such as mountain biking, skiing, snow boards, triathlons, and shows.

- 13. Commercial/residential/recreational centers which are developed should be connected by transportation corridors.
- 14. The redesign of SR 906 at the Summit to create a pedestrian oriented commercial/recreational village should be considered.
- 15. Whenever possible, auto-oriented business should be separated from pedestrian oriented shopping and recreation areas.
- 16. Both public and commercial cross country skiing are a part of the recreational activities at the Pass and should be encouraged. A system of out-back lodges and a longer loop trail should be encouraged to increase the desirability of cross country skiing.
- 17. Scenic hiking trails from the base area through old growth timber, and to local attractions and view points should be maintained. A system of trails utilizing the ski lifts should be considered.
- 18. Horseback riding and mountain pack trips should be encouraged on suitable trails. Llama trips should also be considered. Trails suitable for this use should be identified and mapped.
- 19. The mountain bike trail system should be expanded and made compatible with walking trails.
- 20. Biking, walking and skiing should be encouraged as attractive transportation alternatives. Car/pedestrian conflicts should be reduced.
- 21. Adequate capacity roads, paths and streets with convenient and carefully planned circulation should be developed and maintained.
- 22. Residential streets should be protected from the effects of through traffic. Nonresident parking on residential streets should be discouraged or prohibited.
- 23. Parking should be provided in accordance with type of trip and vehicle. Walking to secondary destinations should be encouraged.
- 24. Road markings and directional signage should be improved to reduce confusion.

- 25. Access to building lots should be consolidated to the extent practical using common drives and walkways.
- 26. Transportation facilities required to support new development should be in place by the time that development occurs.

VI.2 Goal: Recognize the inherent access and other requirements of large public and private land owners in the plan area.

Objectives:

1. USFS polices and regulations for vehicular activities should be recognized in planning for the Pass.

2. The utilization of USFS roads/easements in the transportation system should be avoided.

VI.3 Goal: Insure that the hierarchy of transportation in the Pass area is thoroughly compatible with existing and expected HOV/mass transit/rapid transit connecting it to its markets.

Objectives:

- 1. Access to possible future high speed east/west transit should not be precluded.
- 2. The transportation needs of the Pass should be expressed and represented in all related planning efforts by other agencies and groups.
- 3. The Department of Transportation plans for their rights-of-way should be researched. Surplus right-of-way should be identified.

VI.4 Goal: Reduce the number of single-occupancy vehicle trips to and within the Pass area.

Objectives:

- 1. Incentives to encourage ride sharing should be developed. Ski instructors, ski patrol, employees and season pass holders should be targeted as prime candidates for car-pooling. A ride-sharing information network should be developed. Employee parking should be limited to remote locations using shuttle service.
- 2. Provision of transit and/or shuttle service to the Pass should be explored and encouraged.
- 3. Shuttle bus stops should be provided at commercial centers, residential areas, and ski areas. The shuttle should loop through all activity centers.

VI.5 Goal: Create a transportation structure which is adaptable to changing conditions, be they seasonal, economic, climatological or demographic.

Objectives:

- 1. Future development, both commercial and residential, should address snow removal with respect to vehicle traffic.
 - a. Roads should have adjacent snow storage readily available.
 - b. Main roads should be built at a standard which is compatible with the mountain environment.

2. Contact should be maintained by the EDLU committee and SNOPAC with all strategic policy bodies in King and Kittitas County to advocate for the Pass.

VI.6 Goal: Provide for transportation methods which blend with and/or enhance the natural mountain environment, inflicting minimum environmental damage to it and contiguous areas.

Objectives:

- 1. New roads, trails, paths and any improvement to same, should not degrade existing natural environments, water courses, or migratory paths unless no practical alternatives exist. The adverse effects of new crossings should be mitigated.
- 2. All transportation decisions should seek to protect the environment from adverse impact. All activities that involve hazardous waste recycling or treatment, solid waste landfills, petroleum pipelines or open storage of toxic substances should be prohibited.
- 3. All roads, trails, parking lots and development of any sort resulting in the clearing of natural ground cover, should have an adequate drainage system designed to handle the projected runoff in an adequate manner per applicable code. Drainage system design should limit downstream effects including scour, bank erosion, siltation, channel capacity and impact on wildlife habitat.
- 4. Pollutants such as oil, antifreeze and silt should be separated from stormwater runoff.
- 5. Future transportation additions should not restrict wildlife migration, and modifications should be used to repair existing problems where possible.
- 6. Enhancement of visual quality of roads and trails should include:
 - a. Drainages which replicate natural conditions;
 - b. Retention of natural vegetation and installation of landscaping; and,
 - c. Regular maintenance to prevent buildup of sand during the winter.
- 7. The Pacific Crest Trail and the John Wayne Trail should be provided with appropriate scenic buffers, parking areas and trail connections to activity centers.
- 8. The suitability of the road system east of the Pass, and particularly at the east end of Keechelus Lake for off-road vehicles should be assessed.

TRANSPORTATION Recommended Actions

1. The Transportation Committee should work with the Washington State Patrol and the WSDOT to identify alternative areas where large trucks can park away from the shoulders and right-of-way of SR 906. The areas adjacent to the Exit 53 interchange should be specifically studied for this use.

- 2. The Committee should work with WSDOT to identify areas of surplus rights-of-way which might be used for visitor or employee parking.
- 3. The Committee should assist and support efforts of Pass business operators to encourage transit operators to provide, or expand, bus service to the Pass.
- 4. The Committee should bring ideas and suggestions for improving road standards for the mountain environment in terms of special considerations for slope, soil, impermeable surfacing and natural drainage characteristics to the appropriate County and State agencies.
- 5. The Committee should encourage Kittitas County and the Regional Transportation Planning Organization (RTPO) to seek funds to finance a detailed traffic study to determine future highway improvements needed to eliminate current safety problems and accommodate land uses shown in the Comprehensive Plan.
- 6. The Committee should encourage Kittitas and King Counties to apply for available state or federal funds to complete path and trail planning and construction and to fund beautification efforts.

VII. CAPITAL FACILITIES AND UTILITIES

The Snoqualmie Pass sewer system is operated in accordance with a Facilities Plan and a State Waste Discharge Permit issued by the Department of Ecology. The Waste Discharge Permit must be renewed every five years. At the time of renewal, a study is conducted to determine the status of the operation of the sewage treatment plant. If the plant is found to be operating at 85% capacity, or greater, DOE requires that additional studies be conducted to do a Plan to Maintain Adequate Capacity which results in a new or amended Facilities Plan.

Goals And Objectives

VII.1 Goal: Insure that public services, utilities and facilities are adequate to provide a high level of service and reliability for present and future land uses.

Objectives:

- 1. A program should be developed and monitored which assures that new development will pay its proportionate share in the construction of new facilities and the maintenance of existing facilities.
- 2. Activities of service providers should be coordinated to assure that all services are installed during a single construction phase to decrease disruption and risk of erosion.
- 3. Public and private facilities and services should be provided at levels necessary to support anticipated growth and development per the Comprehensive Plan. The facilities and services needed to support this growth and development include: sewage disposal, solid waste disposal, water, surface water management, police and fire protection, parks and open space and other public utilities.

- 4. The costs of adequate facilities and services should be kept as low as possible, costeffective relative to the benefit received, and distributed equitably. Extension of services and construction of facilities to support planned growth should:
 - a. Be paid for by those who benefit;
 - b. Prevent substantially reduced service levels for existing residents; and,
 - c. Be timed to prevent problems before they require expensive remedial action, while avoiding the costs of premature excess capacity in facilities and services.
- 5. Public spending priorities for facilities and services should be as follows:
 - a. First, to maintain or upgrade existing facilities and services where necessary to serve existing development at applicable service level standards; and,
 - b. Second, to upgrade facilities and services to support planned growth at applicable service level standards.
- 6. Individual developments should provide all on-site improvements needed to meet adopted service standards for roads, sewage disposal, water supply, surface water management, fire flow, open space and other public utilities.
- 7. When the off-site capacity of public sewer systems and public water systems is inadequate to meet adopted service standards, individual developments should be deferred until these services are assured of being brought up to standard by either the public entity involved or the developer, or some combination of funding sources. If the deficient services cannot be brought up to standard, the development should be delayed or denied.
- 8. Kittitas and King Counties, in cooperation with other service providers, regulatory agencies and private sector experts, should set service level standards as the basis for defining adequacy of facilities and services needed to support growth. The Snoqualmie Pass Sewer and Water District should ensure that adequate treatment capacity is available, in an appropriate time frame, to support planned growth.
- 9. Physical standards for public facilities should:
 - a. Assure public health and safety;
 - b. Reflect adopted service level standards of regulatory agencies;
 - c. Be reasonable in cost and cost-effective relative to the benefit received;
 - d. Have the minimum possible effect on the cost of development relative to the benefit received;
 - e. Allocate public service costs equitably; and,
 - f. Protect the environment.
- 10. Public facility and service standards should be defined based on the following:
 - a. Applicable Federal, State and County laws;
 - b. Nationally accepted standards;
 - c. Cost effectiveness;
 - d. Availability and stability of funding; and,
 - e. Community desires.
- 11. Public utilities and facilities should be located, designed, and operated to be compatible with neighboring uses.

12. Utility structures such as telephone exchange buildings, telecommunications towers, transformers stations, sewage treatment plants, and solid waste facilities should adjoin nonresidential uses wherever possible. Mitigation measures to minimize scenic impacts should be required.

Utilities

- 1. Utility special district comprehensive plans and proposals should support and be consistent with land use plans.
- 2. Utilities should be designed, located and constructed to minimize adverse environmental impacts and to protect valuable environmental features.
- 3. Where utilities are inadequate to serve existing development necessary improvements should be provided. Utility capital improvement programs should give priority to improving present systems with significant inadequacies.
- 4. Whenever possible, utilities should make joint use of utility or road rights-of-way. Underground utilities should be grouped together and easily accessible for maintenance, repair and additions.
- 5. Underground installation of power and telephone wires should be required, where feasible, particularly in newly developing areas.
- 6. If underground installation is not feasible due to an engineering or geologic problem, above-ground utility installations should be designed and located to minimize unsightly views and environmental impacts. Power and telephone poles should be as far from right-of-way center lines as possible.
- 7. Utilities should be located within rights-of-way.

Water Service

1. The District should be encouraged to include conservation measures in their plans as appropriate, as well as development of new sources; to support planned land uses with reliable service at minimum cost; and to assure maximum net benefit in allocating water for fisheries, navigation, hydroelectric power and recreation, as well as domestic and commercial uses.

Sewage Treatment and Disposal

- 1. Public sewers should be the only method for wastewater treatment for new development.
- 2. New on-site systems should only be allowed in limited areas for small scale development where public sewers are not feasible.

- 3. On-site wastewater treatment should be designed and located to protect water quality in lakes, streams, wells and aquifers, in compliance with District standards.
- 4. Operation and maintenance standards should be established for all areas served by on-site systems. Special programs, including inspections and regular pumping of tanks, should be established in all areas with a high risk of system failure.
- 5. On-site systems that create health or pollution problems should be repaired or replaced. Provision of public sewers to these areas should be considered an option.
- 6. On-site wastewater systems should be monitored for evidence of existing or potential failures and the data should be used to correct problems and prevent future problems.
- 7. Solid waste should be handled and disposed in ways that minimize land, air and water pollution, and protect public health.

Surface Water Management

- 1. Surface water management should integrate with and protect natural drainage systems wherever possible.
- 2. A watershed approach to surface water management should be implemented which provides for multiple uses including recreation, fish and wildlife enhancement, flood protection, erosion control and open space.
- 3. Stormwater facilities should be funded through an adequate and equitable set of user charges on contributing and benefiting properties. Stormwater facilities required of new development should be designed and built for low-cost, long-term maintenance.
- 4. Design of stormwater management systems should recognize the impacts of rapid snow melt on intensity and volume of runoff.
- 5. Consistent with other considerations, such as snow removal, maintenance and aesthetics, the amount of hard surfaced areas for parking and roads should be minimized to the extent possible.
- 6. Clearing and grading activities should be regulated to minimize the removal of surface vegetation which alters natural drainage characteristics, increases runoff and potential for erosion.

Energy and Telecommunications

1. Energy, utility and telecommunications distribution and transmission facilities (for example, substations, pump stations, major power lines and pipelines, transmission/reception towers) should be underground whenever feasible and should not be located in residential areas unless other alternatives are not feasible.

- 2. Siting decisions for energy and telecommunications facilities should be based on applicable regulations and the following factors:
 - a. Minimal health risk to residents of neighboring properties, whether from noise, fumes, radiation or other hazards;
 - b. Minimal visual impact, achieved with buffering through distance and/or landscaping;
 - c. For power lines and transmission/reception towers, no adverse impact on aviation traffic patterns;
 - d. Convenient access (may not be needed if the facility is automated);
 - e. Encourage use of cold weather engineering practices to cope with power outages; and,
 - f. Ensure that new developments are designed with facilities to withstand a minimum 48hour power outage.

Streets

- 1. Street design should reflect the density of development and the anticipated traffic load, in terms of volume and vehicle type.
- 2. Aesthetically pleasing road design should be encouraged.
- 3. Street names and addresses should be adopted which reflect regional sense of place.
- 4. Streets should be designed with wide shoulders and shallow side swales or ditches to accommodate snow removal, snow melt, and storm water runoff.
- 5. For traffic safety during ice and snow conditions, sharp curves and right angle turns should be avoided where possible.
- 6. Road signs and other objects should be set back a sufficient distance so as not to be an obstacle for snow plows or a danger for motorists in icy conditions. Road signs should be installed at a sufficient height so as to be visible above roadside snowbanks.
- 7. Road design standards should be flexible to permit designs which can accommodate the mountainous environment and which balance safety, maintainability and environmental impact.

CAPITAL FACILITIES AND UTILITIES Recommended Actions

- 1. The EDLU Committee should assist the Snoqualmie Pass Sewer and Water District to ensure that District planning is consistent with the Comprehensive Plan and that services become available in all unserved areas where they are desired, such as Exit 54 and Gold Creek Valley, consistent with the Comprehensive Plan and commensurate with system capacity. The Committee should support applications by the District for needed expansion to ensure that adequate sewage treatment, water storage capacity, and water rights are available in a timely manner.
- 2. The Committee should work with appropriate agencies with expertise to insure a stormwater management program which protects property from damage from run-off while at the same time preserving natural drainage systems is developed and implemented.

- 3. The Committee, in consultation with County agencies, the Sewer and Water District and the Fire District, should consider an impact fee program to ensure that new development contributes its fair share to finance the construction and maintenance of required capital facilities.
- 4. The Committee should work with Puget Power to ensure a reliable source of electrical power for the Pass.

5. The Committee should encourage the use of fiber optic telecommunication facilities at the Pass

CHAPTER EIGHT: RURAL LANDS

8.1 INTRODUCTION

The State of Washington's land use regulation, called the Growth Management Act, suggests that rural lands be a separate element in a county's comprehensive plan. While Kittitas County considers it more logical to include the rural lands element with the other land use categories of urban, resource, critical areas, etc., there has been a request that it be discussed in a chapter of its own. This Chapter 8 is to honor that request.

Recent clarification at the state level about rural lands has outdated some prior planning and where there is a conflict between this chapter and past GMA products, the older documents will conform to this chapter as adopted December 1997.

Rural lands planning and implementation in Kittitas County is a complex process due to the variety of topographic, biologic, economic, and climatic zones it includes. The vast amount of land currently designated as rural lands (over 33% of the county's land mass) as compared to more urbanized counties (King 15%) or those where resource lands predominate, makes rural lands planning in Kittitas County more difficult. Rural lands in Kittitas County are now, and have historically been, a mix of resource lands, rural neighborhoods, and varied developments scattered throughout the county. Liberty, diversity, and flexibility are and have been characteristic of these rural uses and as such make it difficult to fix them into the rigid molds and divisions that orderly planning documents envision. This diversity and independence was demonstrated in many of the rural areas of the county where extensive subarea planning (1993-1996) resulted in many hours of public participation, but very little uniformity or consensus.

Kittitas County has a thirty-year history of land use planning. The present patterns of development and conservation are a result of the combination of efforts in planning and market driven forces. Sometimes plans have not been met (such as Central's plan for 15,000 students in the 1960's which led to the destruction of city neighborhoods via "urban renewal" condemnations). Sometimes plans have been changed (agricultural lands from 1 acre minimum lot sizes to 3 and 20 acre minimum lot sizes and forest lands from 1 acre minimum lot sizes to 20 and 80 acre minimum lot sizes) or ignored (the states's siting of Interstate-90 through the best farm ground instead of using a route north of the City of Ellensburg with its rocky ground and sunny exposures). However successful this planning was or wasn't, throughout the last three or four decades, considerable time and expense has been devoted in Kittitas County government planning. That tradition continues under the state land use regulations called the Growth Management Act and its present requirements.

How has history and that planning effort effected our rural lands? What are rural lands? The state defines them by default as lands which are not urban, UGA, or resource lands. In this county, historically there have been large tracts broken into small divisions, but also small tracts gathered together into larger holdings or farms. Diverse activities have taken place there. Small industries, farms, ranches, mines, saw mills, tree growing, animal keeping holdings of all kinds, guest ranches, dance halls, roadside cafes, gas stations, hotels, agricultural processing plants,

feedlots, airports, day care centers, schools, churches, game farms, and conservancies have all located on what the state would call rural lands in Kittitas County.

Continuation of this diversity on rural lands is imbedded in the WAC recommendations and also in Governor Locke's message as he vetoed parts of ESHB No. 6094 on May 19, 1997. He vetoed Section 8 saying, "Section 7 of this bill provides all the direction needed by counties to plan for the rural element, including guidelines for rural development. Governor Locke went on to say, "Section 7 provides that the rural element shall permit rural development ... for a variety of rural densities, uses, essential public facilities ... rural governmental services ... businesses to serve the local population ... infill existing development, small-scale recreational or tourist uses and cottage industries and small-scale businesses."

"The GMA does not set out one plan for rural areas that all counties must follow," two other statewide groups acknowledged in a joint publication (January 1997) by the League of Women Voters of Washington and the Department of Community, Trade, and Economic Development. They point out that "local jurisdictions have the flexibility to develop a plan that will meet local needs."

As in all of Kittitas County zoning, rural lands planning must take into account that public ownership is a huge factor. Small private ownerships total approximately 24 to 28% of the land in Kittitas County. Because of this, planing decisions that do not include control of publicly managed land will have little effect here. Also, because most of the public ownership is of lands often thought to be of rural character (i.e. agriculture, timber, farmland, range, and public outdoor recreation) local officials will not be able to determine and protect rural character without the ability to mandate cooperation from the public "owners". The benefit or burden of vast acreage of public lands needs to be considered when assessing how much public benefit rural lands might be expected to provide (i.e. trails, scenic areas, open space, habitat, etc.). Requiring public benefits from private lands in Kittitas County not only involves finding a method of compensation, but may be needlessly duplicating uses already available on public lands.

What is this rural character we all think we know, but find so difficult to describe? Synonyms include Arcadian, bucolic, rustic, pastoral, and sylvan; and definitions say "country" as in "not city". Common planning definitions suggest that the natural environment dominates the built environment in rural areas. GMA documents allude to the necessity for jobs and residences located within rural areas rather than resource lands. Tourists might expect certain scenic landscapes as they speed past. In fact, some cities or localities have developed a rural "theme park" mentality to cater to tourists. Traditional Kittitas County rural families think of rural areas as a place without conveniences where you earn your living. Others might conceive of these areas as bedroom communities and may even want to curtail economic activities by the rural people already living there.

The assumption is that some people move to the rural areas to "escape" the cities, but they intend to have all of the conveniences of the city and often want to continue their city jobs and salaries. If fewer people in the rural areas is a goal of GMA or Kittitas County, the central problem of making cities and urban growth areas (UGAs) more desirable living places must be addressed. As the Land Use Study Commission pointed out in the 1996 annual report, "... it is not possible

to dictate that people must live in the urban area. People may chose to live in the rural area for many reasons such as lifestyle, schools, housing cost, traffic, safety, and amenities. Unless the urban growth areas are desirable places to live, it will be difficult to achieve the anti-sprawl goals of GMA."

Further studies into why people want to leave cities (not just Kittitas County, but also the cities west of here) and what can be done to make them more liveable are appropriate to finding a solution. In a conference held at Central Washington University in 1996, Mayor Kemmis, of Missoula Montana, said that unfortunately most of the things that make the most liveable urban areas desirable, have now been prohibited by municipal planning and zoning (i.e. narrow streets, a residential/retail mix, closer spacing). Perhaps county government in Kittitas County can take the lead in examining and correcting the factors within our municipalities that lead to rural "flight." If there is a preference on the part of a substantial segment of the county population to live in the rural lands rather than in or near the towns and cities of the county, a basic part of the county's rural lands planning might focus on attempting to help change those conditions within the municipalities.

Are large numbers of people in the rural areas really a problem? How much population transfer from urban to rural areas can take place while still calling rural areas "rural?" Kittitas County has struggled with this question without finding an answer. Population allocation is a guessing game in Kittitas County where so many of the people have out of county residences such as college students, "snow-birds", Seattle area commuters, and vacation home-owners. Seasonally occupied homes have different impacts on services than do those occupied by permanent residents. These impacts need to be studied.

There exists a generalization that 5 acre minimum lot sizes might preserve "rural character." The County Planning Department has GIS data showing over 603,716 acres eligible for consideration as rural land. If so, Kittitas County will retain rural character for a long time based on the five acre density criteria. State planners are concerned about "urban sprawl" with less than five acre minimum lots sizes. However, over the past fifteen to twenty years Kittitas County has experienced "rural sprawl" through the adoption of 20 acre minimum lot sizes, which has caused the conversion of farm land into weed patches. Small lot zoning with conservation easements for agriculture, timber, or open space may be preferable to the wasteful "sprawl" developments of large lot zoning and could be more conducive to retaining rural character. Where do our rural neighborhoods fit into the lot size debate? In Kittitas County there are rural settlements of all sizes and descriptions, some resembling small towns and others simple "crossroads cluster." While attaining higher densities, these areas remain rural in character.

Density alone may not describe rural character but the "appearance" of density might. More and more "appearance" rather than actual substance or function seems to be the goal of planning. Perhaps our rural lands do not have to be rural, they just have to "appear to be rural" to satisfy those aggressively demanding that government mandate "ruralness." However, the government's ability to require citizens to appear to be rural, or urban, or tidy, or artists, or professors, or bureaucrats, or farmers, is limited in a free society. Land use regulation probably would work best in a totalitarian society, but we do not yet allow our government to dictate

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where each person will live and what work and lifestyle they will adopt. Cities cannot even require their own employees to live within the city limits and indeed, many do not.

Can our free society require its rural citizens to appear to be peasants, or to actually be indentured to their own property in an agrarian role? Can we require that everyone living in a rural area be rustic? Can we force people to leave unless they adopt or reject certain behaviors? Will "growth management" become such a totalitarian process that it will dictate economic pursuits and lifestyles? To an extent it does. Can it tell people where to live and what they must do for a living? We have begun to accept size of residence requirements but have not yet adopted a county-wide uniform house color. Is that next? Can we require that all rural residents adopt and portray a rural or agrarian lifestyle even if unsustainable? Will we establish rural reservations and urban ghettos in the name of planning? The extent to which this may be done is being described in the Chapter.

With the complexity and diversity of the various subjects and issues outlined in this introduction, coupled with the flexibility needed, this chapter, to the extent possible, contains the goals, policies, and objectives addressing the rural land needs of Kittitas County.

8.2 IDENTIFICATION OF RURAL LANDS

Lands mapped in the 1996 Comprehensive Plan map as rural residential, non-designated agricultural, forest multiple use, rural multiple use, and public recreation lands are hereby combined and identified as Rural Lands for the purposes of meeting the requirements of RCW 36.70A.070 and for the purposes of this chapter.

These areas are already listed as rural lands in the three alternatives developed as part of the EIS in the SEPA process at the adoption of the 1996 Comprehensive Plan. Their acreage totals as per GIS data are in parenthesis: Rural Residential Land Use (67,298 acres), Non-resource Designated Agricultural Land Use (60,643 acres), Forest Multiple Use Lands (74,615 acres), Rural Multiple Use Lands (340,279), and Public Recreation Land Use (unknown).

General Uses

The Rural Lands exhibit a vibrant and viable landscape where a diversify of land uses and housing densities are compatible with rural character. Many sizes and shapes can be found in the Rural lands, its topography and access variations allow for small to large acreage, economic activities, residential subdivisions, farming, logging, and mining. This rich mix of uses allows the variety of lifestyle choice which make up the fabric of rural community life. Some choose a private, more independent lifestyle, or space for small farm activities and children's 4-H projects. Others choose the more compact arrangement found in clustering, with its accompanying open space and close neighbors. The most common uses in rural lands are agriculture and logging, which have been basic industries historically and remain important in terms of employment, income and tax base. Kittitas County will strive to encourage and support these resource-based activities in whatever areas and zones they occur.

Description Of Rural Lands

Kittitas County lies within the Upper Yakima River watershed near the geographic center of Washington State. Lands range from coniferous forest lands of the mountains and foothills in the north and west to arid rangeland to the south and east. Mountains and high hills ring an extensive irrigated area known as the Kittitas Valley where most of the County's residents live. The county seat, and Central Washington University reside on the valley floor in the city of Ellensburg. Other incorporated areas throughout Kittitas County include: Cle Elum, South Cle Elum, Roslyn, and Kittitas. These areas have adopted designated Urban Growth Areas (UGA's). Additionally, an urban lands status designated the "Urban Growth Node" has been assigned to Snoqualmie Pass, Easton, Ronald, Thorp, and Vantage. Other un-incorporated communities presumably designated as rural areas include: Liberty, Thrall, Lauderdale, Sunlight Waters, Fairview, Denmark, Badger Pocket, Elk Heights, Teanaway, Reecer Creek, and Sky Meadows, as well as others.

A large portion of Kittitas County contains forested lands. Of these lands, 660,387 acres have been designated as forest lands of long-term commercial significance. Further, 18,415 acres of the valley floor's agricultural land has been designated as agricultural land of long-term commercial significance. Mining resource lands of long-term commercial significance have also been adopted. With the exclusion of stated incorporated areas, UGA's and UGN's, all remaining areas will be generally considered to be Rural Lands.

8.3 <u>CURRENT LAND USE PATTERNS - A REVIEW OF EXISTING ZONING</u>

Present rural land uses in Kittitas County are a mixture of diverse development patterns stemming from trends established decades ago. These patterns include those resulting from the county's zoning code (Title 17, Kittitas County Code). In 1968, an agricultural zone was adopted with a minimum lot size of one acre. Since this time, down-zoning and additions to the code have resulted in minimum lot sizes in agricultural areas of 3 to 20 acres in size. In 1974, the Forest and Range Zone was created which also had a one acre minimum lot size. Minimum lot sizes later increased in this zone to 20 acres and led to the creation of the Rural-3 zone, with a 3-acre minimum lot size. Further, a Commercial Forest zoning designation has recently been adopted which set an 80 acre minimum lot size for lands with this designation. Tables 2.1 and 2.2, contained in Chapter 2 of this document, list the permitted uses in these zones and those uses available through the conditional use permit process.

The aforementioned range of rural densities and uses has created and contributed to a successful landscape which contributes to an attractive rural lifestyle. The exception to this landscape can be seen in areas where individuals have had to acquire larger lots than desired in order to obtain a building site. This has created the effect of "rural sprawl." This current mix of rural uses and densities has not increased the cost to taxpayers for road and utility improvements, police and fire protection, or the education of school populations beyond the means of the local people to finance such infrastructure. The mix of rural uses and densities have allowed rural growth to be accommodated in a variety of areas where it is appropriate. This has been compatible with both resource activities and urbanization.

<u>Kittitas County has also adopted a Joint-Study agreement with the City of Roslyn so that the</u> <u>County and the City of Roslyn can review the mixture of development patterns, which contribute</u> <u>to an attractive rural lifestyle.</u>

8.4 <u>GOVERNMENT SERVICES IN RURAL LANDS</u>

Government services which should be available in rural areas are those which are necessary to protect the public health and safety, such as police protection, public roads, domestic water systems and provisions for public health. Municipal, or urban services such as centralized sewage collection and treatment, urban street infrastructure, and storm water systems will not generally be provided by government entities in rural areas. Cities may provide water service beyond a designated urban growth area if the service area is required by agreement through a Coordinated Water Supply Plan. For areas of more intensive rural development established under RCW 36.70A.070(5)(d), public services and facilities necessary to service these areas would be permitted.

Rural residents should expect that public services will not be supplied at the same level that city governments provide. Emergency response times for sheriff, fire departments, medical care, snow removal, etc. will be greater as the distance from urban areas increases. Those choosing to live in rural rather than urban areas must understand and accept these differences in urban and rural services.

GPO 8.1 Municipal, or public urban services should not be extended outside of urban growth areas in Rural Lands. However, municipal services may be provided to a Master Planned Resort or Fully Contained Community which is approved pursuant to County Comprehensive Plan policies and development regulations so long as all costs directly attributable to the extension of such services to the resort or community, including capacity increases, are fully borne by the resort or community.

GPO 8.2 Capital Facilities and Utilities may be sited, constructed, and operated by outside public service providers (or sited, constructed, and/or operated jointly with a Master Planned Resort (MPR) or Fully Contained Community to the extent elsewhere permitted), on property located outside of an urban growth area or an urban growth node if such facilities and utilities are located within the boundaries of such resort or community which is approved pursuant to County Comprehensive Plan policies and development regulations.

GPO 8.2A Capital Facilities and Utilities may be sited, constructed, and operated by outside public service providers (or sited, constructed, and/or operated jointly with a Master Planned Resort (MPR) or Fully Contained Community to the extent elsewhere permitted), on property located outside of an urban growth area or an urban growth node if such facilities and utilities are located within the boundaries of such resort or community which is approved pursuant to County Comprehensive Plan policies and development regulations.

GPO 8.2B Electric and natural gas transmission and distribution facilities may be sited within and through areas of Kittitas County both inside and outside of municipal boundaries,

UGAs, UGNs, Master Planned Resorts, and Fully Contained Communities, including to and through rural areas of Kittitas County.

GPO 8.3 Sprawl will be discouraged if public services and public facilities established under RCW 36.70A.070(5)(d) are limited to just those necessary to serve the developed area boundaries and are not allowed to expand into adjacent Rural Land.

GPO 8.4 Essential public facilities whose nature requires that they be sited outside cities, urban growth areas or nodes must be self-supporting and not require the extension, construction, or maintenance of municipal services and facilities. Criteria shall be established that address the provision of services when siting an essential public facility. Essential public facilities should not be located outside cities, urban growth areas or nodes unless the nature of their operations needs or dictates that they be sited in the rural area of the county.

8.5 GOALS, POLICIES AND OBJECTIVES FOR LAND USES ON RURAL LANDS

The following goals, policies and objectives for Rural Lands are established in an attempt to prevent sprawl, direct growth toward the Urban Growth Areas and Nodes, provide for a variety of densities and uses, respect private property rights, provide for residences, recreation, and economic development opportunities, support farming, forestry and mining activities, show concern for shorelines, critical areas, habitat, scenic areas, and open space while keeping with good governance and the wishes of the people of Kittitas County and to comply with the GMA and other planning mandates.

8.5(A) GENERAL GOALS, POLICIES AND OBJECTIVES

The following GPO's apply to all Rural Lands or uses on those lands:

GPO 8.5 Kittitas County recognizes and agree with the need for continued diversity in densities and uses on Rural Lands.

GPO 8.6 An expanded public lands element may be added to the comprehensive plan before 1999 which contains strategies for county involvement in decisions and action on public lands within the Rural Lands designated area.

GPO 8.7 Private owners should not be expected to provide public benefits without just compensation. If the citizens desires open space, or habitat, or scenic vistas that would require a sacrifice by the landowner or homeowner, all citizens should be prepared to shoulder their share in the sacrifice.

GPO 8.8 Voluntary, cooperation-seeking, incentive-based strategies will be sought in directing specific uses or prohibitions of uses on Rural Lands.

GPO 8.9 Projects or developments which result in the significant conservation of rural lands or rural character will be encouraged.

GPO 8.10 Factors within municipalities that encourage movement onto Rural Lands should be identified and referred to the municipality.

GPO 8.11 Existing and traditional uses should be protected and supported while allowing as much as possible for diversity, progress, experimentation, development and choice in keeping with the retention of Rural Lands.

GPO 8.12 Descriptions of rural character included in the Comprehensive Plan shall not be used as a criteria in the evaluation of an individual project application.

GPO 8.13 Methods other than large lot zoning to reduce densities and prevent sprawl should be investigated.

GPO 8.14 The County should develop and distribute <u>a</u> "Rural Landowners Rights and Responsibilities" pamphlet and require signature of having read it before any development permits are issued.

8.5(B) <u>RURAL USES ADJACENT TO DESIGNATED RESOURCE LANDS</u>

As required under the Growth Management planning process, Kittitas County has adopted Kittitas County Codes 17.31 - Commercial Agriculture and 17.57 - Commercial Forest which designate natural resource lands of long-term commercial significance. In addition, Kittitas County adopted Resolution 94-152, adopting the classification and designation for mineral lands of long-term commercial significance. The following policies are intended to minimize potential conflicts between activities on state designated lands and rural lands activities.

GPO 8.15 All conveyance instruments including plats, short plats as well as other development activities of a residential nature on or within 1,000 feet of land designated as resource lands, shall contain a notice which states: "The subject property is within or adjacent to existing resource areas on which a variety of activities may occur that are not compatible with residential development for certain periods of limited duration. Resource activities performed in accordance with county, state, and federal laws are not subject to legal action as public nuisances. Kittitas County has adopted Right to Farm provisions contained in Section 17.74 of the Kittitas County Code."

GPO 8.16 Growth in the Rural Lands should be managed in a manner that minimizes impacts on adjacent natural resource lands.

GPO 8.17 Support for right-to-farm ordinances should be continued and expanded .

GPO 8.18 Irrigation delivery facilities should be managed and maintained to facilitate the unimpeded delivery of water to agricultural lands.

GPO 8.19 Clustering of residential development adjacent to commercial forest and agricultural land should be encouraged. The open space in the clustered development may buffer adjacent natural resource land from development.

GPO 8.20 Development standards for access, lot size, and configuration, fire protection, forest protection, water supply and dwelling unit location should be adopted for development within or adjacent to forest lands.

GPO 8.21 During the review of proposed new land uses that have the potential to conflict with commercial mining activities, such as residential subdivision, consideration of both surface and mineral rights ownership should be included in the review.

GPO 8.22 New conflicting uses such as residential and commercial may be required by the County to locate, site and / or be screened away from designated commercial mining activities.

8.5(C) NON-DESIGNATED RESOURCE USES - FORESTRY, FARMING, MINING

Natural Resource activities contribute to the County's overall economic base, as such, commercial agriculture, forestry and mining in Rural Lands should be encouraged and enhance. The County's commitment to support the continuation, whenever possible, of agriculture, timber and mineral uses on lands not designated for long-term commercial significance should be achieved through the following policies.

GPO 8.23 Kittitas County will continue to explore incentives for farming and ranching to continue as significant land uses.

GPO 8.24 Resource activities performed in accordance with county, state and federal laws should not be subject to legal actions as public nuisances.

GPO 8.25 Support for right-to-farm ordinances should be continued and expanded .

GPO 8.26 Laws and regulations which unnecessarily restrict farming, logging and mining should be opposed, and laws and regulations which enhance them should be supported.

GPO 8.27 Kittitas County should cooperate in sound voluntary farm conservation or preservation plans.

GPO 8.28 Non-farmers in agricultural areas should be encouraged to meet commonly accepted farm standards.

GPO 8.29 County restrictions on free-running dogs shall be developed and enforced.

GPO 8.30 Look at solutions to the problems of needing to sell house lots without selling farm ground.

GPO 8.31 Portions of Kittitas County are covered by the Open Range Law. If rural residents in Open Range Areas do not want cattle, sheep or other livestock on their property, it is the rural resident's responsibility to fence the livestock out.

GPO 8.32 Where appropriate, Kittitas County should exert its influence to help provide the delivery of water to all lands within the county whether the deliveries are through the Bureau of Reclamation, Irrigation Districts, or private facilities; discourage other governmental agency action impairing water rights or delivery.

GPO 8.33 Efforts to see that all lands receive their full allocation of water should be supported.

GPO 8.34 Special taxing districts associated with urban growth should be opposed on rural lands.

GPO 8.35 Additional tax incentives to retain productive agricultural lands should be sought and supported.

GPO 8.36 Kittitas County should support and encourage the maintenance of forest lands in timber and current use property tax classifications consistent with RCW 84.28, 84.33, and 84.34.

GPO 8.37 Valuation agricultural lands for tax purposes at their current agricultural land use value should be encouraged.

8.5(D) OTHER BUSINESS USES

The economy of our rural community has traditionally been based on natural resource activities and Kittitas County encourages and supports their continuation in Rural Lands. Policies on the continuation of these resource uses are found in Section 8.5 (C) of the Comprehensive Plan. Rural Areas are not just rustic places, they are vital, thriving communities with working landscapes and working peoples. Economically viable farming and logging may occur with or beyond the state designated areas (LLTCS) but more and more it is necessary to supplement income from outside sources in order to support natural resource operations. Other businesses and economic growth can be realized without sacrificing our rural character.

The value of agricultural and forest products can be increased by having them processed locally, instead of shipping the products and thus economic benefits elsewhere. Direct marketing of local products, such as through farmers' markets, roadside stands, and "U-pick" operations also increases value.

Our many scenic and recreation areas provide economic opportunities through tourism and recreation. These recreational and tourist uses, including the commercial facilities which serve them, are important sources of income and employment.

Some commercial and industrial uses are appropriate in rural areas and are permitted through the Growth Management Act. Home-based occupations are growing in popularity and provide workers with flexible hours, an alternative to commuting, and an answer to child care concerns. Computers and advancements in communication open new opportunities for home-based businesses.
GPO 8.38 Cottage and home occupations should be encouraged. Cottage industries are considered a small industry in or near the operator's home with a few employees, but with a low impact on neighbors and services.

GPO 8.39 Kittitas County recognizes home occupations and cottage industries as valuable additions to the economic health of the community. In addition, where distances from other employment warrants, limited-dispersed rural business activities (LD-RBA's) of low impact and with necessary infrastructure will be encouraged on a case by case basis as long as these sustain or are compatible with the rural character of the area in which they operate.

GPO 8.40 Limited-dispersed rural business activities (LD-RBA's), not necessarily resourcebased, including but not limited to: information, legal, office and health services, arts and crafts, clothing, small manufacture and repair, may be located as an overlay zone in all rural areas.

GPO 8.41 Provisions should be made for roadside stands, farmers' markets, "U-pick," and customer share cropping operations.

GPO 8.42 The development of resource based industries and processing should be encouraged.

GPO 8.43 To increase commercial, industrial, recreational and tourist opportunities, the County should consider the establishment of areas of more intensive rural development, according to RCW 36.70A.070(5)(d).

GPO 8.44 Kittitas County recognizes the need for neighborhood convenience businesses and motorist services.

GPO 8.45 The County should consider major industrial development in the rural areas according to RCW 36.70A.365.

8.5(E) <u>RESIDENTIAL USES</u>

Rural Lands of Kittitas County are the home sites for thousands of families and provide a very special quality of life for these people. These people vary from being resource producers living and working on their own lands to out-of-state or out-of-area individuals with recreation and vacation homes. These people also could consist of retired people or young families commuting to out-of-area jobs. Residences may be isolated, or in rural neighborhoods, or part of housing developments located on small lots or large land-holdings. These residential lots may be located in dense forest or desert sage, along rivers and lakes or along main thoroughfares to towns and cities. The best description of residential uses on Rural Lands is diverse and varied.

GPO 8.46 Residential development on rural lands must be in areas that can support adequate private water and sewer systems.

GPO 8.47 Insofar as residences are situated where farming, mining, and forestry exits, particular precaution should be taken to minimize the conflict between new residential

developments and farm operations. Farming, forestry and mining cannot be expected to curtail normal operation in the interest of residential development.

GPO 8.48 The possibilities and benefits of cluster residential developments located in rural lands should be retained.

GPO 8.49 Lot size should be determined by provision for water and sewer.

GPO 8.50 In the case of Planned Unit Developments (PUD's), only residential PUD's should be permitted outside of UGA's or UGN's.

GPO 8.51 Innovations in housing developments such as but not limited to: cluster developments, planned unit developments, mobile home courts, and density bonuses should be encouraged whenever possible.

GPO 8.52 Existing lots of record are vested with the right to construct a single-family dwelling, subject to all applicable requirements in effect at the time of building permit application.

GPO 8.53 Where new residential development may be incompatible with resource production activities, any buffering necessary should be carried out by the new development unless an alternative is mutually agreed upon by adjacent landowners.

8.5(F) <u>RECREATION USES</u>

While parks, open space and community recreational areas play an important role in any community, substantial amounts of recreation lands in this county are already owned by the public. These provide more than ample opportunities for water recreation, hunting, fishing, camping, hiking, trail riding, winter recreation and wildlife viewing. Public parks and recreation areas are more fully addressed in Section 5.3 of the Comprehensive Plan. In addition to publicly-owned areas, many private businesses cater to the public in providing skiing, golfing, camping and trail riding on private lands.

The County and the various cities have different roles regarding public recreation. Rural residents, with their larger acreage home sites, do not depend upon the neighborhood parks popular in cities to the same extent as the urban population. This is reflected in the cities providing organized recreation facilities and small parks.

The County has varied recreational related responsibilities. The availability of such a wide variety of recreation areas in the County, over such a large expanse, impacts County roads and public safety agencies. Kittitas County is a recreation destination for may out-of-county tourists, and while this benefits local businesses, it also increases the County's recreation related expenditures. Maintaining recreational lands access and safety and County's exiting recreation facilities should be the County's recreation focus.

<u>Attachment 13</u>

8.5(F) Recreation Uses

. . . expenditures. Maintaining recreational lands access and safety and County's existing recreation facilities should be the County's recreation focus.

[BEGIN NEW SECTION:]

The Kittitas County Board of County Commissioners created a Recreation Advisory Committee to create a Recreation Plan consisting of the following elements:

- 1) Economic analysis quantifying the influence of recreation/tourism activities on the local economy.
- 2) Mapping database identifying formal, informal, and proposed recreational infrastructures in Kittitas County.
- Plan identifying proposed infrastructure retention, enhancement, and acquisition projects in Kittitas County to include timelines and proposed funding sources.

The 2003 version of the Recreation Plan is adopted by reference into this comprehensive plan subject to the following limitations:

* The Recreation Plan is adopted as a reference document to be used by Kittitas County as an aid in land use discussions and by members of the public wishing to propose recreation projects, pursue grants for projects, or propose agreements with landholders.

* The Recreation Plan may be used as a reference in the development of potential subdivision or zoning codes amendments related to proposed use of density bonuses or mitigation of identified project impacts.

* The Recreation Plan may be used as a part of the Kittitas County Capital Facilities plan for purposes of utilizing REET proceeds for acquisition or expansion of recreational infrastructure.

* Non-compliance or inconsistency with the Recreation Plan shall not be considered non-compliance or an inconsistency with the comprehensive plan or the GMA; nor may any non-compliance or inconsistency with the Recreation Plan be a basis for appeal of any land use decision made by Kittitas County

* The Recreation Plan shall not be used as evidence of use of property in an action for prescriptive easement or adverse possession.

The Recreation Advisory Committee shall review the plan annually for presentation to the BOCC in an announced public hearing prior to June 1 of each year. The updated plan shall be included in the docket of proposed comprehensive plan amendments.

[END NEW SECTION]

GPO 8.54 Existing county-owned land should be the preferred location for . . .

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GPO 8.54 Existing county-owned land should be the preferred location for any new recreation facilities.

GPO 8.55 Kittitas County should direct the greater part of its recreation budget to maintaining access to exiting areas and continuing to emphasize public safety.

GPO 8.56 Private development of recreational opportunities should be encouraged through a predictable, uncomplicated permit process.

GPO 8.57 Open space is a benefit which must be provided and financed by the public at large, not at the expense of individual landowners or property taxpayers.

GPO 8.58 Greater identification and education is needed for public recreational lands, particularly in regards to private property, access, parking and community notification.

GPO 8.59 The County should seek financial support from state and federal agencies to assist in providing for recreational area access and safety.

GPO 8.60 Rural home sites and private lands are not for public use and landowners' privacy and property must be respected.

GPO 8.61 All trespass laws should be strictly enforced.

8.5(G) SHORELINES, CRITICAL AREAS, HABITAT, AND SCENIC AREAS

Kittitas County offers a diverse natural environment. Critical areas such as wetlands, which play an important role in local and regional hydrologic cycles, and unique fish and wildlife habitat, are important to County residents. In a manner consistent with private property rights, critical areas located in Rural Lands are protected by Kittitas County Code 17A - Critical Areas, and the Kittitas County Shoreline Master Program, as well as the Flood Damage Prevention Ordinance -KCC 17.08. Policies to address ground water are located in Section 2.2(F) and water rights are discussed in Section 2.2(B) of this plan.

Habitat and scenic areas are a benefit to the County. However, as pointed out by the Land Use Study Commission in its 1996 Annual Report, "If voters are not willing to bear the cost of additional open space and habitat protection, it is unclear how effective the GMA will be in increasing the amount of open space, recreational, and habitat opportunities." Kittitas County residents must make the difficult decision on how much they are willing to pay in taxes to obtain these benefits.

GPO 8.62 Habitat and scenic areas are public benefits which must be provided and financed by the public at large, not at the expense of individual landowners and homeowners.

GPO 8.63 Any policies or actions concerning critical areas shall not be in conflict with Section 2.2(B), Private Property and Water Rights.

GPO 8.64 Kittitas County may accept by bequest lands for habitat and scenic areas.

GPO 8.65 If Kittitas County chooses to acquire additional lands for habitat and scenic areas, a method of financing which does not rely on the property tax should be found.

GPO 8.66 The County should recognize the abundance of habitat, scenic areas and views on publicly-owned lands when assessing the need for additional such lands.

CHAPTER NINE: MOUNTAINSTAR MASTER PLANNED RESORT SUBAREA PLAN

9.1 Subarea Defined

(a) The MountainStar Master Planned Resort Subarea shall include the real property shown on the MountainStar Master Planned Resort Subarea Map attached hereto as Exhibit A, and more particularly described in the legal description attached hereto as Exhibit B.

(b) Adjacent lands are not included within the MountainStar Master Planned Resort Subarea. Lands outside the MountainStar Master Planned Resort Subarea boundary have been planned and are regulated by the County's Comprehensive Plan and development regulations.

9.2 Subarea Policies

The County hereby adopts the Master Planned Resort Policies in Chapter 2.4 of the Comprehensive Plan as the planning policies to guide the development of the MountainStar Master Planned Resort Subarea.

9.3 Land Uses

Land uses within the MountainStar Master Planned Resort Subarea shall be as shown on the Conceptual Master Plan attached hereto as Exhibit C, as may be amended upon approval of the County. Land uses within the MountainStar Master Planned Resort Subarea shall be consistent with (a) any development regulations adopted by the County to implement the MountainStar Master Planned Resort Subarea, (b) the terms and conditions of any MPR Development Permit approved by the County for MountainStar, (c) the terms and conditions of any Development Agreement entered into by the County pursuant to RCW 36.70B.170 through .200, and Ch. 15A.11 KCC, Development Agreements, and (d) RCW 36.70A.360.

9.4 <u>Services and Facilities</u>

Adequate provision for services and facilities to the MountainStar Master Planned Resort Subarea as set forth in the Conceptual Master Plan for MountainStar shall be ensured by the terms and conditions of any MPR Development Permit approved by the County to implement the MountainStar Master Planned Resort Subarea, and by the terms and conditions of any development agreement entered into by the County pursuant to RCW 36.70B.170 through .200, and Ch. 15A.11 KCC, *Development Agreements*.

9.5 Development Regulations

Development regulations applicable to the MountainStar Master Planned Resort Subarea shall be those established through the Subarea Implementation as set forth in Section 9.6.

9.6 Subarea Implementation

Development of the MountainStar Master Planned Resort Subarea shall be governed by (a) the Subarea Policies set forth in Section 9.2, (b) any development regulations adopted by the County

to implement the MountainStar Master Planned Resort Subarea, (c) the terms and conditions of any MPR Development Permit approved by the County for MountainStar, and (d) the terms and conditions of any development agreement entered into by the County pursuant to RCW 36.70B.170 through .200, and Ch. 15A.11 KCC, *Development Agreements*.

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APPENDIX A- GLOSSARY OF TERMS

Adequate Capital Facilities- facilities which have the capacity to serve development without decreasing levels of service below locally established minimums.

Agricultural Land- land primarily devoted to the commercial production of horticultural, viticulture, floriculture, dairy, apiary, vegetable, or animal products or of berries, grain, hay, straw, turf, seed, Christmas tress not subject to the excise tax imposed by RCW 84.33.100 through 84.33.140, or livestock and land that has long-term commercial significance for agricultural production.

Arterial- means a road which serves as part of the principle network for through traffic flow; the highest classification of county roads. They usually carry the highest traffic volumes and longest trips.

Available Capital Facilities- facilities or services are in place or that financial commitment is in place to provide the facilities or services within a specified time. In the case of transportation, the specified time is six years from the time of development.

Benefit Area- Benefit area means an area designated as the sole recipient for any particular infrastructure improvement. Benefit areas are used to amortize the total cost of the improvement by the number of properties or structures included in the benefit area.

Capacity- the measure of the ability to provide a level of service on a public facility.

Capital Budget- the portion of each local government's budget which reflects capital improvements for a fiscal year.

Capital Facilities- Capital Facilities are those physical structures or assets which provide a public service such as, but not limited to, fire stations, water towers, police stations, libraries, highways, sewage treatment plants, communication and recreation facilities. Each entity will establish criteria to define financial limits for capital facilities within its boundaries.

Capital Improvement- physical assets constructed or purchased to provide, improve or replace a public facility and which are large scale and high in cost. The cost of a capital improvement is generally non-recurring and may require multi-year financing.

Collector- a roadway providing service which is of relative moderate traffic volume, moderate trip length, and moderate operating speed. Collector roads collect and distribute traffic between local roads or arterials.

Commercial Uses- activities within land areas which are predominantly connected with the sale, rental and distribution of products, or performance of services.

Comprehensive Plan- a generalized coordinated land use policy statement of the governing body of a county or city that is adopted pursuant to this chapter.

Concurrency- Concurrency means that road improvements are made at the time of new development or planned in a predictable and coordinated manner to coincide with new development.

Consistency- that no feature of the plan or regulation is incompatible with any other feature of a plan or regulation. Consistency is indicative of a capacity for orderly integration or operation with other elements in a system.

Coordination- consultation and cooperation among jurisdictions.

Contiguous Development- development of areas immediately adjacent to one another.

Critical Areas- include the following areas and ecosystems: (a) wetlands; (b) areas with critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas. Please see title 17.A. of the Kittitas County Code.

Density- a measure of the intensity of development, generally expressed in terms of dwelling units per acre; it can also be expressed in terms of population density (i.e. people per acre) and is useful for establishing a balance between potential local service use and service capacities.

Development Regulations- means any controls placed on development or land use activities by a county or city, including, but not limited to, zoning ordinances, official controls, planned unit development ordinances, subdivision ordinances, and binding site plans ordinances.

Development Standards- means any required minimal functional standards which describe or define how development is to occur. Development standards are intended to serve as an established level of expectation by which development is required to perform.

Domestic Water System- any system providing a supply of potable water for the intended use of a development which is deemed adequate pursuant to RCW 19.27.097

Essential Public Facilities- include those facilities that are typically difficult to site, such as airports, state education facilities, and state or regional transportation facilities, state and local correctional facilities, solid waste handling and disposal facilities, and in-patient facilities including substance abuse facilities, mental health facilities, group homes, hospitals and other health facilities.

Fair Share Distribution- means all jurisdictions shall serve in the responsibility of providing. locations for regional and essential public facilities.

Financial Commitment- that sources of public or private funds or combinations thereof have been identified which will be sufficient to finance capital facilities necessary to support development and that there is assurance that such funds will be timely put to that end. Forest Land- land primarily useful for growing trees, including Christmas tress subject to the excise tax imposed under RCW 84.33.100 through 84.22.140, for commercial purposes, and that has long-term commercial significance for growing trees commercially.

Goal- the long term end toward which programs or activities are ultimately directed.

Growth Management- a method to guide development in order to minimize adverse environmental and fiscal impacts and maximize the health, safety, and welfare benefits to residents to the community.

Household- a household includes all the persons who occupy a group of rooms or a single room which constitutes a housing unit.

Impact Fee- a fee levied by a local government on new development so that the development pays its proportionate share of the cost of new or expanded facilities required to service that development.

Industrial Uses- the activities predominately connected with the manufacturing, assembly, processing, or storage of products.

Infrastructure- those man-made structures which serve the common needs of the population, such as: sewage disposal systems, potable water wells serving a system, solid waste disposal sites or retention areas, stormwater systems, utilities, bridges, sidewalks and roadways.

Intensity- a measure of land use activity based on density, use, mass, size and impact.

Interlocal Agreements- shall mean any binding agreements, contracts or other stipulations between two or more governing entities which implement the provisions of the County-wide Planning Policies.

Land Development Regulations- any control placed on development or land use activities by a county or city, including, but not limited to, zoning ordinances, subdivision ordinances, building codes, fire codes, sanitation regulations, sign regulation, shorelines, floodplains, critical areas, road standards, stormwater regulations or any other regulations controlling the development of land.

Level of Service (LOS)- is an indicator of the extent or degree of service provided by, or proposed to be provided by a public facility, such as, but not limited to, fire protection, water supply, sewage treatment, library services, highways, and communications and recreational services. For Kittitas County LOS is a measurement which indicates the performance of a particular facility. LOS can be measured in terms of facility capacity, service delivery time, periodic restrictions and many other measurements depending on the type of facility. LOS of transportation facilities are commonly measured in terms of intersection delay, travel speed, or roadway capacity. Other measures are discussed in the Transportation element. Local Road- a roadway providing service which is relatively low traffic volume, short average trip length or minimal through traffic movements.

Local Improvement District- means the legislative establishment of a special taxing district to pay for specific capital improvements.

Long-term Commercial Significance- includes the growing capacity, productivity, and soil composition of the land for long-term commercial production, in consideration with the land's proximity to population areas, and the possibility of more intense uses of the land.

Manufactured Housing- a manufactured building or major portion of a building designed for long-term residential use. It is designed and constructed for transportation to a site for installation and occupancy when connected to required utilities.

Master Planned Resort - a self-contained and fully integrated planned unit development, in a setting of significant natural amenities, with primary focus on destination resort facilities consisting of short-term visitor accommodations associated with a range of developed on-site indoor and outdoor recreational facilities.

Minerals- include gravel, sand and valuable metallic substances.

Mobile Home- a single portable manufactured housing unit, that is:

- a. designed to be used for living, sleeping, sanitation, cooking, and eating purposes by one family only and containing independent kitchen, sanitary, and sleeping facilities;
- b. designed so that each housing unit can be transported on its own chassis;
- c. placed on a temporary or semi-permanent foundation;
- d. is at least eight hundred and ninety-six square feet in size not including the tongue; and
- e. meets the minimum standards adopted by RCW 43.22, Sections 340 and 440 and does not meet the minimum standards of the Uniform Building Code.

Multi-Family Housing- as used in this plan, multi-family housing is all housing which is designed to accommodate two or more households.

Municipal Services- are those services in keeping with and/or required in incorporated cities and urban growth nodes such as, but not limited to, centralized sewage collection and treatment, public water systems, urban street infrastructure, power and stormwater systems, emergency services, libraries, schools, and government.

Natural Resource Lands- agricultural, forest, and mineral resource lands which have long-term commercial significance.

New Fully Contained Community- is a development proposed for location outside of the initially designated growth areas which is characterized by urban densities, uses, and services.

Objective- a specific, measurable, intermediate end that is achievable and marks progress toward a goal.

Open Space-is land without industrial, commercial, or residential development.

Orderly- to create in an organized or arranged manner or pattern, not marked by disorder and produced in methodical fashion.

Owner- any person or entity, including a cooperative or public housing authority (PHA), having the legal rights to sell, lease, or sublease any form of real property.

Planned Unit Development- a planned unit development is the result of a site specific zone change, based on a binding site plan. The planned unit development zoning district is intended to encourage flexibility in design and development that will result in a more efficient and desirable use of land.

Planning Period- means the 20-year period following the adoption of a comprehensive plan or such longer period as may have been selected as the initial planning horizon by the planning jurisdiction.

Policy- A broad based statement of intent that gives management direction or guidance in the decision making process. The policy statement is used to select a primary course of action.

Public Facilities- include streets, roads, highways, sidewalks, street and road lighting systems, traffic signals, domestic water systems, storm and sanitary sewer systems, park and recreational facilities, and schools. These physical structures are owned or operated by a government entity which provides or supports a public service.

Public Services- include fire protection and suppression, law enforcement, public health, education, environmental protection, and other services.

Regional Transportation Plan- the transportation plan for the regionally designated transportation system which is produced by the Regional Transportation Planning Organization.

Regional Transportation Planning Organization (RTPO)- the voluntary organization conforming to RCW 47.80.020, consisting of local governments within a region containing one or more communities which have common transportation interests.

Resident Population- inhabitants counted in the same manner utilized by the US Bureau of the Census, in the category of total population. Resident population does not include seasonal population or in some cases students as qualified in the Census.

Resource Lands- those lands as designated by the county.

Right-of-way- land in which the state, a county, or municipality owns the fee simple title or has an easement dedicated or required for a transportation or utility use.

Road Fund- that portion of the state gas tax and local property tax which is dedicated to road construction and maintenance.

Road Standards- refers to Title 12 of the Kittitas County Code which describes the specifications for roads, bridges and accesses, roadside features, storm water management, and utility installations within the county road rights-of-way.

Rural Lands- those lands outside of cities, urban growth areas, urban growth nodes, and resource lands.

Sanitary Sewer Systems- all facilities, including on-site disposal facilities, used in the collection, transmission, storage, treatment or discharge of any waterborne waste, whether domestic in origin or a combination of domestic, commercial or industrial waste.

Self-Contained Communities- are those mixed land use planned unit developments proposed for location outside of the urban growth areas and which are fully self-contained with utilities, roads, and other municipal services.

Shall- a directive or requirement.

Should- an expectation.

Single-Family Housing- as used in this plan, a single-family unit is a detached housing unit designed for occupancy by not more than one household. This definition does not include mobile homes, which are treated as a separate category.

Solid Waste Handling Facility- any facility for the transfer or ultimate disposal of solid waste, including land fills and municipal incinerators.

Subdivision- the division or redivision of land into lots, tracts, or sites for the purpose of sale, lease or transfer of ownership.

Suburban Lands- are those lands within urban growth areas or urban growth nodes which provide all public and private services available inside an urban area but exhibit lower density. Suburban lands are also planned to accommodate future urban development.

Transferable Development Rights- are the conveyance of development rights to another parcel of land where restrictions placed on development of the original parcel prevent its previously allowed development. Usually associated with a program which involves sending and receiving zones.

Transportation Facilities- capital facilities related to air, water, or land transportation.

Urban Growth- refers to growth that makes intensive use of land for the location of buildings, structures, and impermeable surfaces to such a degree as to be incompatible with the primary use of such land for the production of food, other agricultural products, or fiber, or the extraction of

mineral resources. When allowed to spread over wide areas, urban growth typically requires urban governmental services. "Characterized by urban growth" refers to land having urban growth located on it, or to land located in relationship to an area with urban growth on it as to be appropriate for urban growth.

Urban Growth Areas- UGAs are those areas designated by an incorporated city and approved by the county, in which urban growth is encouraged. Urban growth areas are suitable and desirable for urban densities as determined by the sponsoring city's ability to provide urban services.

Urban Growth Nodes- are those existing unincorporated areas which are established town sites or communities having at a minimum: a community water system; established residential, commercial and industrial densities; and other vestiges of urban development, with defined boundaries established by the County.

Urban Lands- are located inside urban growth areas, urban growth nodes, or cities and are generally characterized by densities of more than three units per acre and municipal services provided.

Urban Service Area- are those areas mutually determined by a city and the county which receive or are subject to special, municipal services. Urban service areas may include those within and beyond designated urban growth areas. Cities and the county may enter into special agreements to provide such services and compensation within the designated urban service area.

Urban Governmental Services- includes those governmental services historically and typically delivered by cities, and include storm and sanitary sewer systems, community and public water systems, fire and police protection services, public transit services, and other public services associated with urban areas and normally not associated with non-urban areas.

Utilities- Utilities means the supply, treatment and distribution, as appropriate, of domestic and irrigation water, sewage, stormwater, natural gas, electricity, telephone, cable television, microwave transmissions and streets. Such utilities consist of both the service activity along with the physical facilities necessary for the utilities to be supplied. Utilities are supplied by a combination of general purpose local governments as well as private and community based organizations.

Visioning- a process of citizen involvement to determine values and ideals for the future of a community and to transform those values and ideals into manageable and feasible community goals.

Water System- any system providing a supply of potable water for the intended use of development which is deemed adequate pursuant to RCW 19.27.097.

WSDOT- Washington State Department of Transportation. Kittitas County is located in the South Central Region whose office is in Union Gap.

Zoning- the demarcation of an area by ordinance (text and map) into zones, and the establishment of regulations to govern the uses within those zones and the location, size, height, and coverage of structures within each zone.

Please See:

Volume II Subarea Comprehensive Plans for:

Easton, Thorp, Swauk-Teanaway, Taneum and Westside

RCW 17.10.007 Purpose -- Construction -- 1975 1st ex.s. c 13.

The purpose of this chapter is to limit economic loss and adverse effects to Washington's agricultural, natural, and human resources due to the presence and spread of noxious weeds on all terrestrial and aquatic areas in the state.

The intent of the legislature is that this chapter be liberally construed, and that the jurisdiction, powers, and duties granted to the county noxious weed control boards by this chapter are limited only by specific provisions of this chapter or other state and federal law.

[1997 c 353 § 1; 1975 1st ex.s. c 13 § 17. Formerly RCW <u>17.10.905</u>.]

RCW 17.10.010 Definitions.

The definitions in this section apply throughout this chapter unless the context clearly requires otherwise:

(1) "Noxious weed" means a plant that when established is highly destructive, competitive, or difficult to control by cultural or chemical practices.

(2) "State noxious weed list" means a list of noxious weeds adopted by the state noxious weed control board. The list is divided into three classes:

(a) Class A consists of those noxious weeds not native to the state that are of limited distribution or are unrecorded in the state and that pose a serious threat to the state;

(b) Class B consists of those noxious weeds not native to the state that are of limited distribution or are unrecorded in a region of the state and that pose a serious threat to that region;

(c) Class C consists of any other noxious weeds.

(3) "Person" means any individual, partnership, corporation, firm, the state or any department, agency, or subdivision thereof, or any other entity.

(4) "Owner" means the person in actual control of property, or his or her agent, whether the control is based on legal or equitable title or on any other interest entitling the holder to possession and, for purposes of liability, pursuant to RCW <u>17.10.170</u> or <u>17.10.210</u>, means the possessor of legal or equitable title or the possessor of an easement: PROVIDED, That when the possessor of an easement has the right to control or limit the growth of vegetation within the boundaries of an easement, only the possessor of the easement is deemed, for the purpose of this chapter, an "owner" of the property within the boundaries of the easement.

(5) As pertains to the duty of an owner, the words "control", "contain", "eradicate", and the term "prevent the spread of noxious weeds" means conforming to the standards of noxious weed control or prevention in this chapter or as adopted by rule in chapter 16-750 WAC by the state noxious weed control board and an activated county noxious weed control board.

(6) "Agent" means any occupant or any other person acting for the owner and working or in charge of the land.

(7) "Agricultural purposes" are those that are intended to provide for the growth and harvest of food and fiber.

(8) "Director" means the director of the department of agriculture or the director's appointed representative.

(9) "Weed district" means a weed district as defined in chapters 17.04 and 17.06 RCW.

(10) "Aquatic noxious weed" means an aquatic plant species that is listed on the state weed list under RCW 17.10.080.

(11) "Screenings" means a mixture of mill or elevator run mixture or a combination of varying amounts of materials obtained in the process of cleaning either grain or seeds, or both, such as light or broken grain or seed, weed seeds, hulls, chaff, joints, straw, elevator dust, floor sweepings, sand, and dirt.

[1997 c 353 § 2; 1995 c 255 § 6; 1987 c 438 § 1; 1975 1st ex.s. c 13 § 1; 1969 ex.s. c 113 § 1.]

NOTES:

Severability -- Effective date -- 1995 c 255: See RCW 17.26.900 and 17.26.901.

RCW 17.10.020 County noxious weed control boards -- Created -- Jurisdiction -- Inactive status.

(1) In each county of the state there is created a noxious weed control board, bearing the name of the county within which it is located. The jurisdictional boundaries of each board are the boundaries of the county within which it is located.

(2) Each noxious weed control board is inactive until activated pursuant to the provisions of RCW 17.10.040.

[1997 c 353 § 3; 1969 ex.s. c 113 § 2.]

RCW 17.10.030 State noxious weed control board -- Members -- Terms -- Elections -- Meetings --Reimbursement for travel expenses.

There is created a state noxious weed control board comprised of nine voting members and three nonvoting members. Four of the voting members shall be elected by the members of the various activated county noxious weed control boards, and shall be residents of a county in which a county noxious weed control board has been activated and a member of said board, and those qualifications shall continue through their term of office. Two of these members shall be elected from the west side of the state, the crest of the Cascades being the dividing line, and two from the east side of the state. The director of agriculture is a voting member of the board. One voting member shall be elected by the directors of the various active weed districts formed under chapter 17.04 or 17.06 RCW. The Washington state association of counties appoints one voting member who shall be a member of a county legislative authority. The director shall appoint two voting members to represent the public interest, one from the west side and one from the east side of the state. The director shall also appoint three nonvoting members representing scientific disciplines relating to weed control. The term of office for all members of the board is three years from the date of election or appointment.

The board, by rule, shall establish a position number for each elected position of the board and shall designate which county noxious weed control board members are eligible to vote for each elected position. The elected members serve staggered terms. Elections for the elected members of the board shall be held thirty days prior to the expiration date of their respective terms. Nominations and elections shall be by mail and conducted by the board.

The board shall conduct its first meeting within thirty days after all its members have been elected. The board shall elect from its members a chair and other officers as may be necessary. A majority of the voting members of the board constitutes a quorum for the transaction of business and is necessary for any action taken by the board. The members of the board serve without salary, but shall be reimbursed for travel expenses incurred in the performance of their duties under this chapter in accordance with RCW 43.03.050 and 43.03.060.

[1997 c 353 § 4; 1987 c 438 § 2; 1975-'76 2nd ex.s. c 34 § 23; 1969 ex.s. c 113 § 3.]

NOTES:

Effective date -- Severability -- 1975-'76 2nd ex.s. c 34: See notes following RCW 2.08.115.

RCW 17.10.040 Activation of inactive county noxious weed control board.

An inactive county noxious weed control board may be activated by any one of the following methods:

(1) Either within sixty days after a petition is filed by one hundred registered voters within the county or, on its own motion, the county legislative authority shall hold a hearing to determine whether there is a need, due to a damaging infestation of noxious weeds, to activate the county noxious weed control board. If such a need is found to exist, then the county legislative authority shall, in the manner provided by RCW <u>17.10.050</u>, appoint five persons to the county's noxious weed control board.

(2) If the county's noxious weed control board is not activated within one year following a hearing by the county legislative authority to determine the need for activation, then upon the filing with the state noxious weed control board of a petition comprised either of the signatures of at least two hundred registered voters within the county, or of the signatures of a majority of an adjacent county's noxious weed control board shall, within six months of the date of the filing, hold a hearing in the county to determine the need for activation. If a need for activation is found to exist, then the state board shall order the county legislative authority to activate the county's noxious weed control board and to appoint members to the board in the manner provided by RCW <u>17.10.050</u>.

(3) The director, upon request of the state noxious weed control board, shall order a county legislative authority to activate the noxious weed control board immediately if an infestation of a class A noxious weed or class B noxious weed designated for control on the state noxious weed list is confirmed in that county. The county legislative authority may, as an alternative to activating the noxious weed board, combat the class A noxious weed or class B noxious weed or class B noxious weed with county resources and personnel operating with the authorities and responsibilities imposed by this chapter on a county noxious weed control board. No county may continue without a noxious weed control board for a second consecutive year if the class A noxious weed or class B noxious weed not been eradicated.

[1997 c 353 § 5; 1987 c 438 § 3; 1975 1st ex.s. c 13 § 2; 1969 ex.s. c 113 § 4.]

RCW 17.10.050 Activated county noxious weed control board -- Members -- Election -- Terms --Meetings -- Quorum -- Expenses -- Officers -- Vacancy.

(1) Each activated county noxious weed control board consists of five voting members appointed by the county legislative authority. In appointing the voting members, the county legislative authority shall divide the county into five geographical areas that best represent the county's interests, and appoint a voting member from each geographical area. At least four of the voting members shall be engaged in the primary production of agricultural products. There is one nonvoting member on the board who is the chair of the county extension office or an extension agent appointed by the chair of the county extension office. Each voting member of the board serves a term of four years, except that the county legislative authority shall, when a board is first activated under this chapter, designate two voting members to serve terms of two years. The board members shall not receive a salary but shall be compensated for actual and necessary expenses incurred in the performance of their official duties.

(2) The voting members of the board serve until their replacements are appointed. New members of the board shall be appointed at least thirty days prior to the expiration of any board member's term of office.

Notice of expiration of a term of office shall be published at least twice in a weekly or daily newspaper of general circulation in the section [geographical area] with last publication occurring at least ten days prior to the nomination. All persons interested in appointment to the board and residing in the geographical area with a pending nomination shall make a written application that includes the signatures of at least ten registered voters residing in the geographical area supporting the nomination to the county noxious weed control board. After nominations close, the county noxious weed control board shall, after a hearing, send the applications to the county legislative authority recommending the names of the most qualified candidates, and post the names of those nominees in the county. The county legislative authority, within ten days of receiving the list of nominees, shall appoint one of those nominees to the county noxious weed control board to represent that geographical area during that term of office.

(3) Within thirty days after all the members have been appointed, the board shall conduct its first meeting. A majority of the voting members of the board constitutes a quorum for the transaction of business and is necessary for any action taken by the board. The board shall elect from its members a chair and other officers as may be necessary.

(4) In case of a vacancy occurring in any voting position on a county noxious weed control board, the county legislative authority of the county in which the board is located shall appoint a qualified person to fill the vacancy for the unexpired term.

[1997 c 353 § 6; 1987 c 438 § 4; 1980 c 95 § 1; 1977 ex.s. c 26 § 6; 1975 1st ex.s. c 13 § 3; 1974 ex.s. c 143 § 1; 1969 ex.s. c 113 § 5.]

RCW 17.10.060 Activated county noxious weed control board -- Weed coordinator -- Authority --Rules and regulations.

(1) Each activated county noxious weed control board shall employ or otherwise provide a weed coordinator whose duties are fixed by the board but which shall include inspecting land to determine the presence of noxious weeds, offering technical assistance and education, and developing a program to achieve compliance with the weed law. The weed coordinator may be employed full time, part time, or seasonally by the county noxious weed control board. County weed board employment practices shall comply with county personnel policies. Within sixty days from initial employment the weed coordinator shall obtain a pest control consultant license, a pesticide operator license, and the necessary endorsements on the licenses as required by law. Each board may purchase, rent, or lease equipment, facilities, or products and may hire additional persons as it deems necessary for the administration of the county's noxious weed control program.

(2) Each activated county noxious weed control board has the power to adopt rules and regulations, subject to notice and hearing as provided in chapters 42.30 and 42.32 RCW, as are necessary for an effective county weed control or eradication program.

(3) Each activated county noxious weed control board shall meet with a quorum at least quarterly.

[1997 c 353 § 7; 1987 c 438 § 5; 1969 ex.s. c 113 § 6.]

RCW 17.10.070 State noxious weed control board -- Powers -- Report.

(1) In addition to the powers conferred on the state noxious weed control board under other provisions of this chapter, it has the power to:

(a) Employ a state noxious weed control board executive secretary, and additional persons as it deems necessary, to disseminate information relating to noxious weeds to county noxious weed control boards and weed districts, to coordinate the educational and weed control efforts of the various county and regional noxious weed control boards and weed districts, and to assist the board in carrying out its responsibilities;

(b) Adopt, amend, or repeal rules, pursuant to the administrative procedure act, chapter 34.05 RCW, as may be necessary to carry out the duties and authorities assigned to the board by this chapter.

(2) The state noxious weed control board shall provide a written report before January 1st of each odd-numbered year to the county noxious weed control boards and the weed districts showing the expenditure of state funds on noxious weed control; specifically how the funds were spent; the status of the state, county, and district programs; and recommendations for the continued best use of state funds for noxious weed control. The report shall include recommendations as to the long-term needs regarding weed control.

[1998 c 245 § 3; 1997 c 353 § 8; 1987 c 438 § 6; 1975 1st ex.s. c 13 § 4; 1969 ex.s. c 113 § 7.]

RCW 17.10.074 Director -- Powers.

(1) In addition to the powers conferred on the director under other provisions of this chapter, the director, with the advice of the state noxious weed control board, has power to:

(a) Require the county legislative authority or the noxious weed control board of any county or any weed district to report to it concerning the presence, absence, or estimated amount of noxious weeds and measures, if any, taken or planned for the control thereof;

(b) Employ staff as may be necessary in the administration of this chapter;

(c) Adopt, amend, or repeal rules, pursuant to the administrative procedure act, chapter 34.05 RCW, as may be necessary to carry out this chapter;

(d) Do such things as may be necessary and incidental to the administration of its functions pursuant to this chapter including but not limited to surveying for and detecting noxious weed infestations;

(e) Upon receipt of a complaint signed by a majority of the members of an adjacent county noxious weed control board or weed district, or by one hundred registered voters that are land owners within the county, require the county legislative authority or noxious weed control board of the county or weed district that is the subject of the complaint to respond to the complaint within forty-five days with a plan for the control of the noxious weeds cited in the complaint;

(f) If the complaint in (e) of this subsection involves a class A or class B noxious weed, order the county legislative authority, noxious weed control board, or weed district to take immediate action to eradicate or control the noxious weed infestation. If the county or the weed district does not take action to control the noxious weed infestation in accordance with the order, the director may control it or cause it to be controlled. The county or weed district is liable for payment of the expense of the control work including necessary costs and expenses for attorneys' fees incurred by the director in securing payment from the county or weed district. The director may bring a civil action in a court of competent jurisdiction to collect the expenses of the control work, costs, and attorneys' fees;

(g) In counties without an activated noxious weed control board, enter upon any property as provided for in RCW <u>17.10.160</u>, issue or cause to be issued notices and citations and take the necessary action to control noxious weeds as provided in RCW <u>17.10.170</u>, hold hearings on any charge or cost of control action taken as provided for in RCW <u>17.10.180</u>, issue a notice of civil infraction as provided for in RCW <u>17.10.230</u> and <u>17.10.310</u> through [and] <u>17.10.350</u>, and place a lien on any property pursuant to RCW <u>17.10.280</u>, <u>17.10.290</u>, and <u>17.10.300</u> with the same authorities and responsibilities imposed by these sections on county noxious weed control boards;

(h) Adopt a list of noxious weed seeds and toxic weeds which shall be controlled in designated articles, products, or feed stuffs as provided for in RCW 17.10.235.

(2) The moneys appropriated for noxious weed control to the department shall be used for administration of the state noxious weed control board, the administration of the director's powers under this chapter, the purchase of materials for controlling, containing, or eradicating noxious weeds, the purchase or collection of biological control agents for controlling noxious weeds, and the contracting for services to carry out the purposes of this chapter. In a county with an activated noxious weed control board, the director shall make every effort to contract with that board for the needed services.

(3) If the director determines the need to reallocate funds previously designated for county use, the director shall convene a meeting of the state noxious weed control board to seek its advice concerning any reallocation.

[1997 c 353 § 9; 1987 c 438 § 7.]

RCW 17.10.080 State noxious weed list -- Hearing -- Adoption -- Dissemination.

(1) The state noxious weed control board shall each year or more often, following a hearing, adopt a state noxious weed list.

(2) Any person may request during a comment period established by the state weed board the inclusion, deletion, or designation change of any plant to the state noxious weed list.

(3) The state noxious weed control board shall send a copy of the list to each activated county noxious weed control board, to each weed district, and to the county legislative authority of each county with an inactive noxious weed control board.

(4) The record of rule making must include the written findings of the board for the inclusion of each plant on the list. The findings shall be made available upon request to any interested person.

[1997 c 353 § 10; 1989 c 175 § 57; 1987 c 438 § 8; 1975 1st ex.s. c 13 § 5; 1969 ex.s. c 113 § 8.]

NOTES:

Effective date -- 1989 c 175: See note following RCW 34.05.010.

RCW 17.10.090 State noxious weed list -- Selection of weeds for control by county board.

Each county noxious weed control board shall, within ninety days of the adoption of the state noxious weed list from the state noxious weed control board and following a hearing, select those weeds from the class C list and those weeds from the class B list not designated for control in the noxious weed control region in which the county lies that it finds necessary to be controlled in the county. The weeds thus selected and all class A weeds and those class B weeds that have been designated for control in the noxious weed

control region in which the county lies shall be classified within that county as noxious weeds, and those weeds comprise the county noxious weed list.

[1997 c 353 § 11; 1987 c 438 § 9; 1969 ex.s. c 113 § 9.]

RCW 17.10.100 Order to county board to include weed from state board's list in county's noxious weed list.

Where any of the following occur, the state noxious weed control board may, following a hearing, order any county noxious weed control board or weed district to include a noxious weed from the state board's list in the county's noxious weed list:

(1) Where the state noxious weed control board receives a petition from at least one hundred registered voters within the county requesting that the weed be listed.

(2) Where the state noxious weed control board receives a request for inclusion from an adjacent county's noxious weed control board or weed district, which the adjacent board or district has included that weed in its county list, and the adjacent board or weed district alleges that its noxious weed control program is being hampered by the failure to include the weed on the county's noxious weed list.

[1997 c 353 § 12; 1987 c 438 § 10; 1969 ex.s. c 113 § 10.]

RCW 17.10.110 Regional noxious weed control board -- Creation.

A regional noxious weed control board comprising the area of two or more counties may be created as follows:

Either the county legislative authority, or the noxious weed control board, or both, of two or more counties may, upon a determination that the purpose of this chapter will be served by the creation of a regional noxious weed control board, adopt a resolution providing for a limited merger of the functions of their respective counties noxious weed control boards. The resolution becomes effective only when a similar resolution is adopted by the other county or counties comprising the proposed regional board.

[1997 c 353 § 13; 1987 c 438 § 11; 1975 1st ex.s. c 13 § 6; 1969 ex.s. c 113 § 11.]

RCW 17.10.120 Regional noxious weed control board -- Members -- Meetings -- Quorum -- Officers -- Effect on county boards. In any case where a regional noxious weed control board is created, the county noxious weed control boards comprising the regional board shall still remain in existence and shall retain all powers and duties provided for the boards under this chapter.

The regional noxious weed control board is comprised of the voting members and the nonvoting members of the component counties noxious weed control boards or county legislative authorities who shall, respectively, be the voting and nonvoting members of the regional board: PROVIDED, That each county shall have an equal number of voting members. The board may appoint other nonvoting members as deemed necessary. A majority of the voting members of the board constitutes a quorum for the transaction of business and is necessary for any action taken by the board. The board shall elect a chair from its members and other officers as may be necessary. Members of the regional board serve without salary but shall be compensated for actual and necessary expenses incurred in the performance of their official duties.

[1997 c 353 § 14; 1987 c 438 § 12; 1969 ex.s. c 113 § 12.]

RCW 17.10.130 Regional noxious weed control board -- Powers and duties.

The powers and duties of a regional noxious weed control board are as follows:

(1) The regional board shall, within ninety days of the adoption of the state noxious weed list from the state noxious weed control board and following a hearing, select those weeds from the state list that it finds necessary to be controlled on a regional basis. The weeds thus selected shall also be contained in the county noxious weed list of each county in the region.

(2) The regional board shall take action as may be necessary to coordinate the noxious weed control programs of the region and adopt a regional plan for the control of noxious weeds.

[1997 c 353 § 15; 1987 c 438 § 13; 1969 ex.s. c 113 § 13.]

RCW 17.10.134 Liability of county and regional noxious weed control boards.

Obligations or liabilities incurred by any county or regional noxious weed control board or any claims against a county or regional noxious weed control board are governed by chapter 4.96 RCW or RCW 4.08.120: PROVIDED, That individual members or employees of a county noxious weed control board are personally immune from civil liability for damages arising from actions performed within the scope of their official duties or employment.

[1997 c 353 § 16; 1987 c 438 § 14.]

RCW 17.10.140 Owner's duty to control spread of noxious weeds.

(1) Except as is provided under subsection (2) of this section, every owner shall perform or cause to be performed those acts as may be necessary to:

(a) Eradicate all class A noxious weeds;

(b) Control and prevent the spread of all class B noxious weeds designated for control in that region within and from the owner's property; and

(c) Control and prevent the spread of all class B and class C noxious weeds listed on the county weed list as locally mandated control priorities within and from the owner's property.

(2) Forest lands classified under RCW 17.10.240(2), or meeting the definition of forest lands contained in RCW 17.10.240, are subject to the requirements of subsection (1)(a) and (b) of this section at all times. Forest lands are subject to the requirements of subsection (1)(c) of this section only within a one thousand foot buffer strip of adjacent land uses. In addition, forest lands are subject to subsection (1)(c) of this section for a single five-year period following the harvesting of trees for lumber.

[1997 c 353 § 17; 1969 ex.s. c 113 § 14.]

RCW 17.10.145 State agencies' duty to control spread of noxious weeds.

All state agencies shall control noxious weeds on lands they own, lease, or otherwise control through integrated pest management practices. Agencies shall develop plans in cooperation with county noxious weed control boards to control noxious weeds in accordance with standards in this chapter. All state agencies' lands must comply with this chapter, regardless of noxious weed control efforts on adjacent lands.

[1997 c 353 § 18; 1995 c 374 § 75.]

NOTES:

Effective date -- 1995 c 374 §§ 69, 70, and 72-79: See note following RCW 16.24.130.

RCW 17.10.154 Owners' agreements with county noxious weed control boards -- Terms --Enforcement. It is recognized that the prevention, control, and eradication of noxious weeds presents a problem for immediate as well as for future action. It is further recognized that immediate prevention, control, and eradication is practicable on some lands and that prevention, control, and eradication on other lands should be extended over a period of time. Therefore, it is the intent of this chapter that county noxious weed control boards may use their discretion and, by agreement with the owners of land, may propose and accept plans for prevention, control, and eradication that may be extended over a period of years. The county noxious weed control board may make an agreement with the owner of any parcel of land by contract between the landowner and the respective county noxious weed control board may make any terms that will best serve the interests of the owners of the parcel of land and the common welfare that comply with this chapter. Agreements made under this section must include at least a one thousand foot buffer for all adjacent agricultural land uses. Noxious weed control in this buffer must comply with RCW 17.10.140(1).

[1997 c 353 § 19; 1987 c 438 § 16.]

RCW 17.10.160 Right of entry -- Warrant for noxious weed search -- Civil liability -- Penalty for preventing entry.

Any authorized agent or employee of the county noxious weed control board or of the state noxious weed control board or of the department of agriculture where not otherwise proscribed by law may enter upon any property for the purpose of administering this chapter and any power exercisable pursuant thereto, including the taking of specimens of weeds, general inspection, and the performance of eradication or control work. Prior to carrying out the purpose for which the entry is made, the official making such entry or someone in his or her behalf, shall make a reasonable attempt to notify the owner of the property as to the purpose and need for the entry.

(1) When there is probable cause to believe that there is property within this state not otherwise exempt from process or execution upon which noxious weeds are standing or growing and the owner refuses permission to inspect the property, a judge of the superior court or district court in the county in which the property is located may, upon the request of the county noxious weed control board or its agent, issue a warrant directed to the board or agent authorizing the taking of specimens of weeds or other materials, general inspection, and the performance of eradication or control work.

(2) Application for issuance and execution and return of the warrant authorized by this section shall be in accordance with the applicable rules of the superior court or the district courts.

(3) Nothing in this section requires the application for and issuance of any warrant not otherwise required by law: PROVIDED, That civil liability for negligence shall lie in any case in which entry and any of the activities connected therewith are not undertaken with

reasonable care.

(4) Any person who improperly prevents or threatens to prevent entry upon land as authorized in this section or any person who interferes with the carrying out of this chapter shall be upon conviction guilty of a misdemeanor.

[1997 c 353 § 20; 1987 c 438 § 17; 1969 ex.s. c 113 § 16.]

RCW 17.10.170 Finding presence of noxious weeds -- Notice for failure of owner to control --Control by county board -- Liability of owner -- Lien -- Alternative.

(1) Whenever the county noxious weed control board finds that noxious weeds are present on any parcel of land, and that the owner is not taking prompt and sufficient action to control the noxious weeds, pursuant to the provisions of RCW 17.10.140, it shall notify the owner that a violation of this chapter exists. The notice shall be in writing and sent by certified mail, and shall identify the noxious weeds found to be present, order prompt control action, and specify the time, of at least ten days from issuance of the notice, within which the prescribed action must be taken. Upon deposit of the certified letter of notice, the noxious weed control authority shall make an affidavit of mailing that is prima facie evidence that proper notice was given. If seed or other propagule dispersion is imminent, immediate control action may be taken forty-eight hours following the time that notification is reasonably expected to have been received by the owner or agent by certified mail or personal service, instead of ten days. If a landowner received a notice of violation from the county noxious weed control board in a prior growing season, removal or destruction of all above ground plant parts may be required at the most effective point in the growing season, as determined by the county weed board, which may be before or after propagule dispersion.

(2) The county noxious weed control board or its authorized agents may issue a notice of civil infraction as provided for in RCW <u>17.10.230</u>, <u>17.10.310</u>, and <u>17.10.350</u> to owners who do not take action to control noxious weeds in accordance with the notice.

(3) If the owner does not take action to control the noxious weeds in accordance with the notice, the county board may control them, or cause their being controlled, at the expense of the owner. The amount of the expense constitutes a lien against the property and may be enforced by proceedings on the lien except as provided for by RCW 79.44.060. The owner is liable for payment of the expense, and nothing in this chapter shall be construed to prevent collection of any judgment on account thereof by any means available pursuant to law, in substitution for enforcement of the lien. Necessary costs and expenses including reasonable attorneys' fees incurred by the county noxious weed control board in carrying out this section may be recovered at the same time as a part of the action filed under this section. Funds received in payment for the expense of control board to be expended as required to carry out the purposes of this chapter.

(4) The county auditor shall record in his or her office any lien created under this chapter, and any lien shall bear interest at the rate of twelve percent per annum from the date on which the county noxious weed control board approves the amount expended in controlling the weeds.

(5) As an alternative to the enforcement of any lien created under subsection (3) of this section, the county legislative authority may by resolution or ordinance require that each lien created be collected by the treasurer in the same manner as a delinquent real property tax, if within thirty days from the date the owner is sent notice of the lien, including the amount thereof, the lien remains unpaid and an appeal has not been made pursuant to RCW <u>17.10.180</u>. Liens treated as delinquent taxes bear interest at the rate of twelve percent per annum and the interest accrues as of the date notice of the lien is sent to the owner: PROVIDED, That any collections for the lien shall not be considered as tax.

[1997 c 353 § 21; 1987 c 438 § 18; 1979 c 118 § 1; 1975 1st ex.s. c 13 § 8; 1974 ex.s. c 143 § 3; 1969 ex.s. c 113 § 17.]

RCW 17.10.180 Hearing on liability for expense of control -- Notice -- Review.

Any owner, upon request pursuant to the rules and regulation of the county noxious weed control board, is entitled to a hearing before the board on any charge or cost for which the owner is alleged to be liable pursuant to RCW <u>17.10.170</u> or <u>17.10.210</u>. The board shall send notice by certified mail within thirty days, to each owner at the owner's last known address, as to any charge or cost and as to his or her right of a hearing. The hearing shall be scheduled within forty-five days of notification. Any determination or final action by the board is subject to judicial review by a proceeding in the superior court in the county in which the property is located, and the court has original jurisdiction to determine any suit brought by the owner to recover damages allegedly suffered on account of control work negligently performed: PROVIDED, That no stay or injunction shall lie to delay any control work subsequent to notice given pursuant to RCW <u>17.10.160</u> or pursuant to an order under RCW <u>17.10.210</u>.

[1997 c 353 § 22; 1987 c 438 § 19; 1969 ex.s. c 113 § 18.]

RCW 17.10.190 Notice and information as to noxious weed control.

Each activated county noxious weed control board must publish annually, and at other times as may be appropriate, in at least one newspaper of general circulation within its area, a general notice. The notice shall direct attention to the need for noxious weed control and give other information concerning noxious weed control requirements as may be appropriate, or indicate where such information may be secured. In addition to the general notice required, the county noxious weed control board may use any appropriate

media for the dissemination of information to the public as may be calculated to bring the need for noxious weed control to the attention of owners. The board may consult with individual owners concerning their problems of noxious weed control and may provide them with information and advice, including giving specific instructions and methods when and how certain named weeds are to be controlled. The methods may include some combination of physical, mechanical, cultural, chemical, and/or biological methods, including livestock. Publication of a notice as required by this section is not a condition precedent to the enforcement of this chapter.

[1997 c 353 § 23; 1987 c 438 § 20; 1975 1st ex.s. c 13 § 9; 1969 ex.s. c 113 § 19.]

RCW 17.10.201 Noxious weed control on federal and tribal lands--State and county cooperation.

(1) The state noxious weed control board shall:

(a) Work with the various federal and tribal land management agencies to coordinate state and federal noxious weed control;

(b) Encourage the various federal and tribal land management agencies to devote more time and resources to noxious weed control; and

(c) Assist the various federal and tribal land management agencies by seeking adequate funding for noxious weed control.

(2) County noxious weed control boards and weed districts shall work with the various federal and tribal land management agencies in each county in order to:

(a) Identify new noxious weed infestations;

(b) Outline and plan necessary noxious weed control actions;

(c) Develop coordinated noxious weed control programs; and

(d) Notify local federal and tribal agency land managers of noxious weed infestations.

(3) The department of agriculture, county noxious weed control boards, and weed districts are authorized to enter federal lands, with the approval of the appropriate federal agency, to survey for and control noxious weeds where control measures of a type and extent required under this chapter have not been taken.

(4) The department of agriculture, county noxious weed control boards, and weed districts may bill the federal land management agency that manages the land for all costs of the noxious weed control performed on federal land. If not paid by the federal agency that manages the land, the cost of the noxious weed control on federal land may be paid from any funds available to the county noxious weed control board or weed district that

performed the noxious weed control. Alternatively, the costs of noxious weed control on federal land may be paid from any funds specifically appropriated to the department of agriculture for that purpose.

(5) The department of agriculture, county noxious weed control boards, and weed districts are authorized to enter into any reasonable agreement with the appropriate authorities for the control of noxious weeds on federal or tribal lands.

(6) The department of agriculture, county noxious weed control boards, and weed districts shall consult with state agencies managing federal land concerning noxious weed infestation and control programs.

[1997 c 353 § 34.]

RCW 17.10.205 Control of noxious weeds in open areas.

Open areas subject to the spread of noxious weeds, including but not limited to subdivisions, school grounds, playgrounds, parks, and rights of way shall be subject to regulation by activated county noxious weed control boards in the same manner and to the same extent as is provided for all terrestrial and aquatic lands of the state.

[1997 c 353 § 24; 1975 1st ex.s. c 13 § 16.]

RCW 17.10.210 Quarantine of land -- Order -- Expense.

(1) Whenever the director, the county noxious weed control board, or a weed district finds that a parcel of land is so seriously infested with class A or class B noxious weeds that control measures cannot be undertaken thereon without quarantining the land and restricting or denying access thereto or use thereof, the director, the county noxious weed control board, or weed district, with the approval of the director of the department of agriculture, may issue an order for the quarantine and restriction or denial of access or use. Upon issuance of the order, the director, the county noxious weed control board, or the weed district shall commence necessary control measures and may institute legal action for the collection of costs for control work, which may include attorneys' fees and the costs of other appropriate actions.

(2) An order of quarantine shall be served, by any method sufficient for the service of civil process, on all persons known to qualify as owners of the land within the meaning of this chapter.

(3) The director shall, with the advice of the state noxious weed control board, determine how the expense of control work undertaken pursuant to this section, and the cost of any quarantine in connection therewith, is apportioned.

RCW 17.10.230 Violations -- Penalty.

Any owner knowing of the existence of any noxious weeds on the owner's land who fails to control such weeds in accordance with this chapter and rules and regulations in force pursuant thereto; or any person who enters upon any land in violation of an order in force pursuant to RCW <u>17.10.210</u>; or any person who interferes with the carrying out of the provisions of this chapter has committed a civil infraction.

[1987 c 438 § 23; 1979 c 118 § 2; 1969 ex.s. c 113 § 23.]

RCW 17.10.235 Selling product, article, or feed containing noxious weed seeds or toxic weeds --Penalty -- Rules -- Inspections -- Fees.

(1) The director of agriculture shall adopt, with the advice of the state noxious weed control board, rules designating noxious weed seeds which shall be controlled in products, screenings, or articles to prevent the spread of noxious weeds. The rules shall identify the products, screenings, and articles in which the seeds must be controlled and the maximum amount of the seed to be permitted in the product, screenings, or article to avoid a hazard of spreading the noxious weed by seed from the product, screenings, or article. The director shall also adopt, with the advice of the state board, rules designating toxic weeds which shall be controlled in feed stuffs and screenings to prevent injury to the animal that consumes the feed. The rules shall identify the feed stuffs and screenings in which the toxic weeds must be controlled and the maximum amount of the toxic weed to be permitted in the feed. Rules developed under this section shall identify ways that products, screenings, articles, or feed stuffs containing noxious weed seeds or toxic weeds can be made available for beneficial uses.

(2) Any person who knowingly or negligently sells or otherwise distributes a product, article, screenings, or feed stuff designated by rule containing noxious weed seeds or toxic weeds designated for control by rule and in an amount greater than the amount established by the director for the seed or weed by rule is guilty of a misdemeanor.

(3) The department of agriculture shall, upon request of the buyer, inspect products, screenings, articles, or feed stuffs designated by rule and charge fees, in accordance with chapter 22.09 RCW, to determine the presence of designated noxious weed seeds or toxic weeds.

[1997 c 353 § 26; 1987 c 438 § 30; 1979 c 118 § 4.]

RCW 17.10.240 Special assessments, appropriations for noxious weed control -- Assessment rates.

(1) The activated county noxious weed control board of each county shall annually submit a budget to the county legislative authority for the operating cost of the county's weed program for the ensuing fiscal year: PROVIDED, That if the board finds the budget approved by the legislative authority is insufficient for an effective county noxious weed control program it shall petition the county legislative authority to hold a hearing as provided in RCW <u>17.10.890</u>. Control of weeds is a benefit to the lands within any such section. Funding for the budget is derived from any or all of the following:

(a) The county legislative authority may, in lieu of a tax, levy an assessment against the land for this purpose. Prior to the levying of an assessment the county noxious weed control board shall hold a public hearing at which it will gather information to serve as a basis for classification and then classify the lands into suitable classifications, including but not limited to dry lands, range lands, irrigated lands, nonuse lands, forest lands, or federal lands. The board shall develop and forward to the county legislative authority, as a proposed level of assessment for each class, an amount as seems just. The assessment rate shall be either uniform per acre in its respective class or a flat rate per parcel rate plus a uniform rate per acre: PROVIDED, That if no benefits are found to accrue to a class of land, a zero assessment may be levied. The county legislative authority, upon receipt of the proposed levels of assessment from the board, after a hearing, shall accept or modify by resolution, or refer back to the board for its reconsideration all or any portion of the proposed levels of assessment. The amount of the assessment constitutes a lien against the property. The county legislative authority may by resolution or ordinance require that notice of the lien be sent to each owner of property for which the assessment has not been paid by the date it was due and that each lien created be collected by the treasurer in the same manner as delinquent real property tax, if within thirty days from the date the owner is sent notice of the lien, including the amount thereof, the lien remains unpaid and an appeal has not been made pursuant to RCW 17.10.180. Liens treated as delinquent taxes bear interest at the rate of twelve percent per annum and the interest accrues as of the date notice of the lien is sent to the owner: PROVIDED FURTHER, That any collections for the lien shall not be considered as tax: or

(b) The county legislative authority may appropriate money from the county general fund necessary for the administration of the county noxious weed control program. In addition the county legislative authority may make emergency appropriations as it deems necessary for the implementation of this chapter.

(2) Forest lands used solely for the planting, growing, or harvesting of trees and which are typified, except during a single period of five years following clear-cut logging, by canopies so dense as to prohibit growth of an understory may be subject to an annual noxious weed assessment levied by a county legislative authority that does not exceed one-tenth of the weighted average per acre noxious weed assessment levied on all other lands in unincorporated areas within the county that are subject to the weed assessment.

This assessment shall be computed in accordance with the formula in subsection (3) of this section.

(3) The calculation of the "weighted average per acre noxious weed assessment" is a ratio expressed as follows:

(a) The numerator is the total amount of funds estimated to be collected from the per acre assessment on all lands except (i) forest lands as identified in subsection (2) of this section, (ii) lands exempt from the noxious weed assessment, and (iii) lands located in an incorporated area.

(b) The denominator is the total acreage from which funds in (a) of this subsection are collected. For lands of less than one acre in size, the denominator calculation may be based on the following assumptions: (i) Unimproved lands are calculated as being one-half acre in size on the average, and (ii) improved lands are calculated as being one-third acre in size on the average. The county legislative authority may choose to calculate the denominator for lands of less than one acre in size using other assumptions about average parcel size based on local information.

(4) For those counties that levy a per parcel assessment to help fund noxious weed control programs, the per parcel assessment on forest lands as defined in subsection (2) of this section shall not exceed one-tenth of the per parcel assessment on nonforest lands.

[1997 c 353 § 27; 1995 c 374 § 77; 1987 c 438 § 31; 1975 1st ex.s. c 13 § 10; 1969 ex.s. c 113 § 24.]

NOTES:

Effective date -- 1995 c 374 §§ 69, 70, and 72-79: See note following RCW 16.24.130.

RCW 17.10.250 Applications for noxious weed control funds.

The legislative authority of any county with an activated noxious weed control board or the board of any weed district may apply to the director for noxious weed control funds when informed by the director that funds are available. Any applicant must employ adequate administrative personnel to supervise an effective weed control program as determined by the director with advice from the state noxious weed control board. The director with advice from the state noxious weed control board shall adopt rules on the distribution and use of noxious weed control account funds.

[1997 c 353 § 28; 1987 c 438 § 32; 1975 1st ex.s. c 13 § 11; 1969 ex.s. c 113 § 25.]

RCW 17.10.260

Administrative powers to be exercised in conformity with administrative procedure act -- Use of weed control substances subject to other acts.

The administrative powers granted under this chapter to the director of the department of agriculture and to the state noxious weed control board shall be exercised in conformity with the provisions of the administrative procedure act, chapter 34.05 RCW, as now or hereafter amended. The use of any substance to control noxious weeds shall be subject to the provisions of the water pollution control act, chapter 90.48 RCW, as now or hereafter amended, the Washington pesticide control act, chapter 15.58 RCW, and the Washington pesticide application act, chapter 17.21 RCW.

[1987 c 438 § 33; 1969 ex.s. c 113 § 28.]

RCW 17.10.270 Noxious weed control boards -- Authority to obtain insurance or surety bonds.

Each noxious weed control board may obtain such insurance or surety bonds, or both with such limits as they may deem reasonable for the purpose of protecting their officials and employees against liability for personal or bodily injuries and property damage arising from their acts or omissions while performing or in good faith purporting to perform their official duties.

[1987 c 438 § 34; 1974 ex.s. c 143 § 5.]

RCW 17.10.280 Lien for labor, material, equipment used in controlling noxious weeds.

Every activated county noxious weed control board performing labor, furnishing material, or renting, leasing or otherwise supplying equipment, to be used in the control of noxious weeds, or in causing control of noxious weeds, upon any property pursuant to the provisions of chapter 17.10 RCW has a lien upon such property for the labor performed, material furnished, or equipment supplied whether performed, furnished, or supplied with the consent of the owner, or his agent, of such property, or without the consent of said owner or agent.

[1987 c 438 § 35; 1975 1st ex.s. c 13 § 13.]

RCW 17.10.290

Lien for labor, material, equipment used in controlling noxious weeds -- Notice of lien.

Every county noxious weed control board furnishing labor, materials, or supplies or renting, leasing, or otherwise supplying equipment to be used in the control of noxious weeds upon any property pursuant to RCW <u>17.10.160</u> and <u>17.10.170</u> or pursuant to an
order under RCW <u>17.10.210</u> as now or hereafter amended, shall give to the owner or reputed owner or his agent a notice in writing, within ninety days from the date of the cessation of the performance of such labor, the furnishing of such materials, or the supplying of such equipment, which notice shall cover the labor, material, supplies, or equipment furnished or leased, as well as all subsequent labor, materials, supplies, or equipment furnished or leased, stating in substance and effect that such county noxious weed control board is furnishing or has furnished labor, materials and supplies or equipment for use thereon, with the name of the county noxious weed control board ordering the same, and that a lien may be claimed for all materials and supplies or equipment furnished by such county noxious weed control board for use thereon, which notice shall be given by mailing the same by registered or certified mail in an envelope addressed to the owner at his place of residence or reputed residence.

[1987 c 438 § 36; 1975 1st ex.s. c 13 § 14.]

RCW 17.10.300 Lien for labor, material, equipment used in controlling noxious weeds -- Claim --Filing -- Contents.

No lien created by RCW 17.10.280 exists, and no action to enforce the same shall be maintained, unless within ninety days from the date of cessation of the performance of the labor, furnishing of materials, or the supplying of equipment, a claim for the lien is filed for record as provided in this section, in the office of the county auditor of the county in which the property, or some part of the property to be affected by the claim for a lien, is situated. The claim shall state, as nearly as may be, the time of the commencement and cessation of performing the labor, furnishing the material, or supplying the equipment, the name of the county noxious weed control board that performed the labor or caused the labor to be performed, furnished the material, or supplied the equipment, a description of the property to be charged with the lien sufficient for identification, the name of the owner, or reputed owner if known, or his or her agent, and if the owner is not known, that fact shall be mentioned, the amount for which the lien is claimed, and shall be signed by the county noxious weed control board, and be verified by the oath of the county noxious weed control board, to the effect that the affiant believes that claim to be just; and the claim of lien may be amended in case of action brought to foreclose the same, by order of the court, as pleadings may be, insofar as the interest of third parties shall not be affected by such an amendment.

[1997 c 353 § 29; 1975 1st ex.s. c 13 § 15.]

RCW 17.10.310 Notice of infraction -- Issuance.

The county noxious weed control board may issue a notice of civil infraction if after investigation it has reasonable cause to believe an infraction has been committed. A civil

infraction may be issued pursuant to RCW 7.80.005, 7.80.070 through 7.80.110, 7.80.120 (3) and (4), and 7.80.130 through 7.80.900.

[1997 c 353 § 30; 1987 c 438 § 24.]

RCW 17.10.350 Infraction -- Penalty. *(Effective until July 1, 2004.)*

Any person found to have committed a civil infraction under this chapter shall be assessed a monetary penalty not to exceed one thousand dollars. The state noxious weed control board shall adopt a schedule of monetary penalties for each violation of this chapter classified as a civil infraction and submit the schedule to the appropriate court. If a monetary penalty is imposed by the court, the penalty is immediately due and payable. The court may, at its discretion, grant an extension of time, not to exceed thirty days, in which the penalty must be paid. Failure to pay any monetary penalties imposed under this chapter is punishable as a misdemeanor.

[1997 c 353 § 31; 1987 c 438 § 28.]

RCW 17.10.350 Infraction -- Penalty. *(Effective July 1, 2004.)*

(1) Any person found to have committed a civil infraction under this chapter shall be assessed a monetary penalty not to exceed one thousand dollars. The state noxious weed control board shall adopt a schedule of monetary penalties for each violation of this chapter classified as a civil infraction and submit the schedule to the appropriate court. If a monetary penalty is imposed by the court, the penalty is immediately due and payable. The court may, at its discretion, grant an extension of time, not to exceed thirty days, in which the penalty must be paid.

(2) Failure to pay any monetary penalties imposed under this chapter is punishable as a misdemeanor.

[2003 c 53 § 117; 1997 c 353 § 31; 1987 c 438 § 28.]

NOTES:

Intent -- Effective date -- 2003 c 53: See notes following RCW 2.48.180.

RCW 17.10.890 Deactivation of county noxious weed control board -- Hearing.

The following procedures shall be followed to deactivate a county noxious weed control board:

(1) The county legislative authority holds a hearing to determine whether there continues to be a need for an activated county noxious weed control board if:

(a) A petition is filed by one hundred registered voters within the county;

(b) A petition is filed by a county noxious weed control board as provided in RCW 17.10.240; or

(c) The county legislative authority passes a motion to hold such a hearing.

(2) Except as provided in subsection (4) of this section, the hearing shall be held within sixty days of final action taken under subsection (1) of this section.

(3) If, after a hearing, the county legislative authority determines that no need exists for a county noxious weed control board, due to the absence of class A or class B noxious weeds designated for control in the region, the county legislative authority shall deactivate the board.

(4) The county legislative authority shall not convene a hearing as provided for in subsection (1) of this section more frequently than once a year.

[1997 c 353 § 32; 1987 c 438 § 37.]

RCW 17.10.900 Weed districts -- Continuation -- Dissolution--Transfer of assessment funds.

Any weed district formed under chapter 17.04 or 17.06 RCW prior to the enactment of this chapter, continues to operate under the provisions of the chapter under which it was formed: PROVIDED, That if ten percent of the landowners subject to any such weed district, and the county noxious weed control board upon its own motion, petition the county legislative authority for a dissolution of the weed district, the county legislative authority shall provide for an election to be conducted in the same manner as required for the election of directors under the provisions of chapter 17.04 RCW, to determine by majority vote of those casting votes, if the weed district will continue to operate under the chapter it was formed. The land area of any dissolved weed district becomes subject to the provisions of this chapter. Any district assessment funds may be transferred after the dissolution election under contract to the county noxious weed control board to fund the noxious weed control program.

[1997 c 353 § 33; 1987 c 438 § 38; 1975 1st ex.s. c 13 § 12; 1969 ex.s. c 113 § 26.]

RCW 17.10.910 Severability -- 1969 ex.s. c 113. If any provision of this act, or its application to any person or circumstance is held invalid, the remainder of this act, or the application of the provision to other persons or circumstances is not affected.

[1969 ex.s. c 113 § 27.]

Chapter 19.27 RCW STATE BUILDING CODE

NOTES:

Building permits: RCW 36.21.070 and 36.21.080.

Counties adoption of building, plumbing, electrical codes, etc: RCW 36.32.120(7). building codes: Chapter 36.43 RCW.

Energy-related building standards: Chapter 19.27A RCW.

Underground storage tanks: RCW 90.76.020.

RCW 19.27.010 Short title.

This chapter shall be known as the State Building Code Act.

[1974 ex.s. c 96 § 1.]

RCW 19.27.015 Definitions.

As used in this chapter:

(1) "City" means a city or town;

(2) "Multifamily residential building" means common wall residential buildings that consist of four or fewer units, that do not exceed two stories in height, that are less than five thousand square feet in area, and that have a one-hour fire-resistive occupancy separation between units; and

(3) "Temporary growing structure" means a structure that has the sides and roof covered with polyethylene, polyvinyl, or similar flexible synthetic material and is used to provide plants with either frost protection or increased heat retention.

[1996 c 157 § 1; 1985 c 360 § 1.]

NOTES:

Effective date -- 1996 c 157: "This act is necessary for the immediate preservation of the public peace, health, or safety, or support of the state government and its existing

public institutions, and shall take effect immediately [March 25, 1996]." [1996 c 157 § 3.]

RCW 19.27.020 Purposes -- Objectives -- Standards.

The purpose of this chapter is to promote the health, safety and welfare of the occupants or users of buildings and structures and the general public by the provision of building codes throughout the state. Accordingly, this chapter is designed to effectuate the following purposes, objectives, and standards:

(1) To require minimum performance standards and requirements for construction and construction materials, consistent with accepted standards of engineering, fire and life safety.

(2) To require standards and requirements in terms of performance and nationally accepted standards.

(3) To permit the use of modern technical methods, devices and improvements.

(4) To eliminate restrictive, obsolete, conflicting, duplicating and unnecessary regulations and requirements which could unnecessarily increase construction costs or retard the use of new materials and methods of installation or provide unwarranted preferential treatment to types or classes of materials or products or methods of construction.

(5) To provide for standards and specifications for making buildings and facilities accessible to and usable by physically disabled persons.

(6) To consolidate within each authorized enforcement jurisdiction, the administration and enforcement of building codes.

[1985 c 360 § 6; 1974 ex.s. c 96 § 2.]

RCW 19.27.031 State building code -- Adoption -- Conflicts -- Opinions.

Except as otherwise provided in this chapter, there shall be in effect in all counties and cities the state building code which shall consist of the following codes which are hereby adopted by reference:

(1)(a) The International Building Code, published by the International Code Council[,] Inc.;

(b) The International Residential Code, published by the International Code Council,

Inc.;

(2) The International Mechanical Code, published by the International Code Council[,] Inc., except that the standards for liquified petroleum gas installations shall be NFPA 58 (Storage and Handling of Liquified Petroleum Gases) and ANSI Z223.1/NFPA 54 (National Fuel Gas Code);

(3) The International Fire Code, published by the International Code Council[,] Inc., including those standards of the National Fire Protection Association specifically referenced in the International Fire Code: PROVIDED, That, notwithstanding any wording in this code, participants in religious ceremonies shall not be precluded from carrying hand-held candles;

(4) Except as provided in RCW <u>19.27.170</u>, the Uniform Plumbing Code and Uniform Plumbing Code Standards, published by the International Association of Plumbing and Mechanical Officials: PROVIDED, That any provisions of such code affecting sewers or fuel gas piping are not adopted; and

(5) The rules adopted by the council establishing standards for making buildings and facilities accessible to and usable by the physically disabled or elderly persons as provided in RCW 70.92.100 through 70.92.160.

In case of conflict among the codes enumerated in subsections (1), (2), (3), and (4) of this section, the first named code shall govern over those following.

The codes enumerated in this section shall be adopted by the council as provided in RCW 19.27.074. The council shall solicit input from first responders to ensure that fire fighter safety issues are addressed during the code adoption process.

The council may issue opinions relating to the codes at the request of a local official charged with the duty to enforce the enumerated codes.

[2003 c 291 § 2; 1995 c 343 § 1. Prior: 1989 c 348 § 9; 1989 c 266 § 1; 1985 c 360 § 5.]

NOTES:

Intent -- Finding -- 2003 c 291: "(1) The intent of the adoption of the International Building Code by the legislature is to remain consistent with state laws regulating construction, including electrical, plumbing, and energy codes established in chapters 19.27, 19.27A, and 19.28 RCW. The International Building Code references the International Residential Code for provisions related to the construction of single and multiple-family dwellings. No portion of the International Residential Code shall supersede or take precedent over provisions in chapter 19.28 RCW, regulating the electrical code; nor provisions in RCW <u>19.27.031(4)</u>, regulating the plumbing code; nor provisions in chapter 19.27A RCW, regulating the energy code.

(2) It is in the state's interest and consistent with the state building code act to have in

effect provisions regulating the construction of single and multiple-family residences. It is the legislative intent that the state building code council adopt the International Residential Code through rule making granted in RCW <u>19.27.074</u>, consistent with state law regulating construction for electrical, plumbing, and energy codes, and other state and federal laws regulating single and multiple-family construction.

(3) In accordance with RCW <u>19.27.020</u>, the state building code council shall promote fire and life safety in buildings consistent with accepted standards. In adopting the codes for the state of Washington, the state building code council shall consider provisions related to fire fighter safety published by nationally recognized organizations. The state building code council shall review all nationally recognized codes as set forth in RCW <u>19.27.074</u>.

(4) The legislature finds that building codes are an integral component of affordable housing. In accordance with this finding, the state building code council shall consider and review building code provisions related to improving affordable housing." [2003 c 291 § 1.]

Severability -- 1989 c 348: See note following RCW 90.54.020.

Rights not impaired -- 1989 c 348: See RCW 90.54.920.

RCW 19.27.035 Process for review.

The building code council shall, within one year of July 23, 1989, adopt a process for the review of proposed statewide amendments to the codes enumerated in RCW <u>19.27.031</u>, and proposed or enacted local amendments to the codes enumerated in RCW <u>19.27.031</u> as amended and adopted by the state building code council.

[1989 c 266 § 6.]

RCW 19.27.040 Cities and counties authorized to amend state building code -- Limitations.

The governing body of each county or city is authorized to amend the state building code as it applies within the jurisdiction of the county or city. The minimum performance standards of the codes and the objectives enumerated in RCW <u>19.27.020</u> shall not be diminished by any county or city amendments.

Nothing in this chapter shall authorize any modifications of the requirements of chapter 70.92 RCW.

[1990 c 2 § 11; 1985 c 360 § 8; 1977 ex.s. c 14 § 12; 1974 ex.s. c 96 § 4.]

NOTES:

Effective dates -- 1990 c 2: "Sections 1 through 4, 6, 7, 9, and 10 of this act are necessary for the immediate preservation of the public peace, health, or safety, or support of the state government and its existing public institutions, and shall take effect March 1, 1990. Sections 11 and 12 of this act shall take effect January 1, 1991. Section 8 of this act shall take effect July 1, 1991." [1990 c 2 § 14.]

Findings -- Severability -- 1990 c 2: See notes following RCW 19.27A.015.

RCW 19.27.042 Cities and counties -- Emergency exemptions for housing for indigent persons.

(1) Effective January 1, 1992, the legislative authorities of cities and counties may adopt an ordinance or resolution to exempt from state building code requirements buildings whose character of use or occupancy has been changed in order to provide housing for indigent persons. The ordinance or resolution allowing the exemption shall include the following conditions:

(a) The exemption is limited to existing buildings located in this state;

(b) Any code deficiencies to be exempted pose no threat to human life, health, or safety;

(c) The building or buildings exempted under this section are owned or administered by a public agency or nonprofit corporation; and

(d) The exemption is authorized for no more than five years on any given building. An exemption for a building may be renewed if the requirements of this section are met for each renewal.

(2) By January 1, 1992, the state building code council shall adopt by rule, guidelines for cities and counties exempting buildings under subsection (1) of this section.

[1991 c 139 § 1.]

RCW 19.27.050 Enforcement.

The state building code required by this chapter shall be enforced by the counties and cities. Any county or city not having a building department shall contract with another county, city, or inspection agency approved by the county or city for enforcement of the state building code within its jurisdictional boundaries.

[1985 c 360 § 9; 1974 ex.s. c 96 § 5.]

RCW 19.27.060 Local building regulations superseded -- Exceptions.

(1) The governing bodies of counties and cities may amend the codes enumerated in RCW <u>19.27.031</u> as amended and adopted by the state building code council as they apply within their respective jurisdictions, but the amendments shall not result in a code that is less than the minimum performance standards and objectives contained in the state building code.

(a) No amendment to a code enumerated in RCW $\underline{19.27.031}$ as amended and adopted by the state building code council that affects single family or multifamily residential buildings shall be effective unless the amendment is approved by the building code council under RCW $\underline{19.27.074}(1)(b)$.

(b) Any county or city amendment to a code enumerated in RCW <u>19.27.031</u> which is approved under RCW <u>19.27.074(1)(b)</u> shall continue to be effective after any action is taken under RCW <u>19.27.074(1)(a)</u> without necessity of reapproval under RCW <u>19.27.074(1)(b)</u> unless the amendment is declared null and void by the council at the time any action is taken under RCW <u>19.27.074(1)(a)</u> because such action in any way altered the impact of the amendment.

(2) Except as permitted or provided otherwise under this section, the state building code shall be applicable to all buildings and structures including those owned by the state or by any governmental subdivision or unit of local government.

(3) The governing body of each county or city may limit the application of any portion of the state building code to exclude specified classes or types of buildings or structures according to use other than single family or multifamily residential buildings. However, in no event shall fruits or vegetables of the tree or vine stored in buildings or warehouses constitute combustible stock for the purposes of application of the uniform fire code. A governing body of a county or city may inspect facilities used for temporary storage and processing of agricultural commodities.

(4) The provisions of this chapter shall not apply to any building four or more stories high with a B occupancy as defined by the uniform building code, 1982 edition, and with a city fire insurance rating of 1, 2, or 3 as defined by a recognized fire rating bureau or organization.

(5) No provision of the uniform fire code concerning roadways shall be part of the state building code: PROVIDED, That this subsection shall not limit the authority of a county or city to adopt street, road, or access standards.

(6) The provisions of the state building code may be preempted by any city or county to the extent that the code provisions relating to the installation or use of sprinklers in jail cells conflict with the secure and humane operation of jails.

(7)(a) Effective one year after July 23, 1989, the governing bodies of counties and cities may adopt an ordinance or resolution to exempt from permit requirements certain construction or alteration of either group R, division 3, or group M, division 1 occupancies, or both, as defined in the uniform building code, 1988 edition, for which the total cost of fair market value of the construction or alteration does not exceed fifteen hundred dollars. The permit exemption shall not otherwise exempt the construction or alteration from the substantive standards of the codes enumerated in RCW 19.27.031, as amended and maintained by the state building code council under RCW 19.27.070.

(b) Prior to July 23, 1989, the state building code council shall adopt by rule, guidelines exempting from permit requirements certain construction and alteration activities under (a) of this subsection.

[2002 c 135 § 1. Prior: 1989 c 266 § 2; 1989 c 246 § 1; 1987 c 462 § 12; 1986 c 118 § 15; 1985 c 360 § 10; 1981 2nd ex.s. c 12 § 5; 1980 c 64 § 1; 1975 1st ex.s. c 282 § 2; 1974 ex.s. c 96 § 6.]

NOTES:

Effective dates -- 1987 c 462: See note following RCW 13.04.116.

RCW 19.27.065 Exemption -- Temporary growing structures used for commercial production of horticultural plants.

The provisions of this chapter do not apply to temporary growing structures used solely for the commercial production of horticultural plants including ornamental plants, flowers, vegetables, and fruits. A temporary growing structure is not considered a building for purposes of this chapter.

[1996 c 157 § 2.]

NOTES:

Effective date -- 1996 c 157: See note following RCW 19.27.015.

RCW 19.27.067 Temporary worker housing -- Exemption -- Standards.

(1) Temporary worker housing shall be constructed, altered, or repaired as provided in chapter 70.114A RCW and chapter 37, Laws of 1998. The construction, alteration, or repair of temporary worker housing is not subject to the codes adopted under RCW <u>19.27.031</u>, except as provided by rule adopted under chapter 70.114A RCW or chapter 37, Laws of 1998.

(2) For the purpose of this section, "temporary worker housing" has the same meaning as provided in RCW 70.114A.020.

(3) This section is applicable to temporary worker housing as of the date of the final adoption of the temporary worker building code by the department of health under RCW 70.114A.081.

[1998 c 37 § 1.]

RCW 19.27.070 State building code council -- Established -- Membership -- Travel expenses --Administrative, clerical assistance.

There is hereby established a state building code council to be appointed by the governor.

(1) The state building code council shall consist of fifteen members, two of whom shall be county elected legislative body members or elected executives and two of whom shall be city elected legislative body members or mayors. One of the members shall be a local government building code enforcement official and one of the members shall be a local government fire service official. Of the remaining nine members, one member shall represent general construction, specializing in commercial and industrial building construction; one member shall represent general construction, specializing in residential and multifamily building construction; one member shall represent the architectural design profession; one member shall represent the structural engineering profession; one member shall represent the mechanical engineering profession; one member shall represent the construction building trades; one member shall represent manufacturers, installers, or suppliers of building materials and components; one member shall be a person with a physical disability and shall represent the disability community; and one member shall represent the general public. At least six of these fifteen members shall reside east of the crest of the Cascade mountains. The council shall include: Two members of the house of representatives appointed by the speaker of the house, one from each caucus; two members of the senate appointed by the president of the senate, one from each caucus; and an employee of the electrical division of the department of labor and industries, as ex officio, nonvoting members with all other privileges and rights of membership. Terms of office shall be for three years. The council shall elect a member to serve as chair of the council for one-year terms of office. Any member who is appointed by virtue of being an elected official or holding public employment shall be removed from the council if he or she ceases being such an elected official or holding such public employment. Before making any appointments to the building code council, the governor shall seek nominations from recognized organizations which represent the entities or interests listed in this subsection. Members serving on the council on July 28, 1985, may complete their terms of office. Any vacancy shall be filled by alternating appointments from governmental and nongovernmental entities or interests until the council is constituted as required by this subsection.

(2) Members shall not be compensated but shall receive reimbursement for travel

expenses in accordance with RCW 43.03.050 and 43.03.060.

(3) The department of community, trade, and economic development shall provide administrative and clerical assistance to the building code council.

[1995 c 399 § 8; 1989 c 246 § 2; 1987 c 505 § 7; 1985 c 360 § 11; 1984 c 287 § 55; 1975-'76 2nd ex.s. c 34 § 59; 1974 ex.s. c 96 § 7.]

NOTES:

Legislative findings -- Severability -- Effective date -- 1984 c 287: See notes following RCW 43.03.220.

Effective date -- Severability -- 1975-'76 2nd ex.s. c 34: See notes following RCW 2.08.115.

RCW 19.27.074 State building code council -- Duties -- Public meetings -- Timing of code changes.

(1) The state building code council shall:

(a) Adopt and maintain the codes to which reference is made in RCW $\underline{19.27.031}$ in a status which is consistent with the state's interest as set forth in RCW $\underline{19.27.020}$. In maintaining these codes, the council shall regularly review updated versions of the codes referred to in RCW $\underline{19.27.031}$ and other pertinent information and shall amend the codes as deemed appropriate by the council;

(b) Approve or deny all county or city amendments to any code referred to in RCW <u>19.27.031</u> to the degree the amendments apply to single family or multifamily residential buildings;

(c) As required by the legislature, develop and adopt any codes relating to buildings; and

(d) Propose a budget for the operation of the state building code council to be submitted to the office of financial management pursuant to RCW 43.88.090.

(2) The state building code council may:

(a) Appoint technical advisory committees which may include members of the council;

(b) Employ permanent and temporary staff and contract for services; and

(c) Conduct research into matters relating to any code or codes referred to in RCW <u>19.27.031</u> or any related matter.

All meetings of the state building code council shall be open to the public under the open public meetings act, chapter 42.30 RCW. All actions of the state building code council which adopt or amend any code of statewide applicability shall be pursuant to the administrative procedure act, chapter 34.05 RCW.

All council decisions relating to the codes enumerated in RCW $\underline{19.27.031}$ shall require approval by at least a majority of the members of the council.

All decisions to adopt or amend codes of statewide application shall be made prior to December 1 of any year and shall not take effect before the end of the regular legislative session in the next year.

[1989 c 266 § 3; 1985 c 360 § 2.]

RCW 19.27.080 Chapters of RCW not affected.

Nothing in this chapter affects the provisions of chapters 19.27A, 19.28, 43.22, 70.77, 70.79, 70.87, 48.48, 18.20, 18.46, 18.51, 28A.305, 70.41, 70.62, 70.75, 70.108, 71.12, 74.15, 70.94, 76.04, 90.76 RCW, or RCW 28A.195.010, or grants rights to duplicate the authorities provided under chapters 70.94 or 76.04 RCW.

[2003 c 291 § 3; 1990 c 33 § 555; 1989 c 346 § 19; 1975 1st ex.s. c 282 § 1; 1974 ex.s. c 96 § 8.]

NOTES:

Intent -- Finding -- 2003 c 291: See note following RCW <u>19.27.031</u>.

Purpose -- Statutory references -- Severability -- 1990 c 33: See RCW 28A.900.100 through 28A.900.102.

Captions -- Severability -- Effective date -- 1989 c 346: See RCW 90.76.900 through 90.76.902.

RCW 19.27.085 Building code council account -- Building permit fee.

(1) There is hereby created the building code council account in the state treasury. Moneys deposited into the account shall be used by the building code council, after appropriation, to perform the purposes of the council.

(2) All moneys collected under subsection (3) of this section shall be deposited into the building code council account. Every four years the state treasurer shall report to the legislature on the balances in the account so that the legislature may adjust the charges imposed under subsection (3) of this section.

(3) There is imposed a fee of four dollars and fifty cents on each building permit issued by a county or a city, plus an additional surcharge of two dollars for each residential unit, but not including the first unit, on each building containing more than one residential unit. Quarterly each county and city shall remit moneys collected under this section to the state treasury; however, no remittance is required until a minimum of fifty dollars has accumulated pursuant to this subsection.

[1989 c 256 § 1; 1985 c 360 § 4.]

RCW 19.27.090 Local jurisdictions reserved.

Local land use and zoning requirements, building setbacks, side and rear-yard requirements, site development, property line requirements, requirements adopted by counties or cities pursuant to chapter 58.17 RCW, snow load requirements, wind load requirements, and local fire zones are specifically reserved to local jurisdictions notwithstanding any other provision of this chapter.

[1989 c 266 § 5; 1974 ex.s. c 96 § 9.]

RCW 19.27.095 Building permit application -- Consideration -- Requirements.

(1) A valid and fully complete building permit application for a structure, that is permitted under the zoning or other land use control ordinances in effect on the date of the application shall be considered under the building permit ordinance in effect at the time of application, and the zoning or other land use control ordinances in effect on the date of application.

(2) The requirements for a fully completed application shall be defined by local ordinance but for any construction project costing more than five thousand dollars the application shall include, at a minimum:

(a) The legal description, or the tax parcel number assigned pursuant to RCW 84.40.160, and the street address if available, and may include any other identification of the construction site by the prime contractor;

(b) The property owner's name, address, and phone number;

(c) The prime contractor's business name, address, phone number, current state contractor registration number; and

(d) Either:

(i) The name, address, and phone number of the office of the lender administering the interim construction financing, if any; or

(ii) The name and address of the firm that has issued a payment bond, if any, on behalf of the prime contractor for the protection of the owner, if the bond is for an amount not less than fifty percent of the total amount of the construction project.

(3) The information required on the building permit application by subsection (2)(a) through (d) of this section shall be set forth on the building permit document which is issued to the owner, and on the inspection record card which shall be posted at the construction site.

(4) The information required by subsection (2) of this section and information supplied by the applicant after the permit is issued under subsection (5) of this section shall be kept on record in the office where building permits are issued and made available to any person on request. If a copy is requested, a reasonable charge may be made.

(5) If any of the information required by subsection (2)(d) of this section is not available at the time the application is submitted, the applicant shall so state and the application shall be processed forthwith and the permit issued as if the information had been supplied, and the lack of the information shall not cause the application to be deemed incomplete for the purposes of vesting under subsection (1) of this section. However, the applicant shall provide the remaining information as soon as the applicant can reasonably obtain such information.

(6) The limitations imposed by this section shall not restrict conditions imposed under chapter 43.21C RCW.

[1991 c 281 § 27; 1987 c 104 § 1.]

NOTES:

Liberal construction -- Effective date, application -- 1991 c 281: See RCW 60.04.900 and 60.04.902.

RCW 19.27.097 Building permit application -- Evidence of adequate water supply -- Applicability --Exemption.

(1) Each applicant for a building permit of a building necessitating potable water shall provide evidence of an adequate water supply for the intended use of the building. Evidence may be in the form of a water right permit from the department of ecology, a letter from an approved water purveyor stating the ability to provide water, or another form sufficient to verify the existence of an adequate water supply. In addition to other authorities, the county or city may impose conditions on building permits requiring

connection to an existing public water system where the existing system is willing and able to provide safe and reliable potable water to the applicant with reasonable economy and efficiency. An application for a water right shall not be sufficient proof of an adequate water supply.

(2) Within counties not required or not choosing to plan pursuant to RCW 36.70A.040, the county and the state may mutually determine those areas in the county in which the requirements of subsection (1) of this section shall not apply. The departments of health and ecology shall coordinate on the implementation of this section. Should the county and the state fail to mutually determine those areas to be designated pursuant to this subsection, the county may petition the department of community, trade, and economic development to mediate or, if necessary, make the determination.

(3) Buildings that do not need potable water facilities are exempt from the provisions of this section. The department of ecology, after consultation with local governments, may adopt rules to implement this section, which may recognize differences between high-growth and low-growth counties.

[1995 c 399 § 9; 1991 sp.s. c 32 § 28; 1990 1st ex.s. c 17 § 63.]

NOTES:

Section headings not law -- 1991 sp.s. c 32: See RCW 36.70A.902.

Severability -- Part, section headings not law -- 1990 1st ex.s. c 17: See RCW 36.70A.900 and 36.70A.901.

RCW 19.27.100

Cities, towns, counties may impose fees different from state building code.

Nothing in this chapter shall prohibit a city, town, or county of the state from imposing fees different from those set forth in the state building code.

[1975 1st ex.s. c 8 § 1.]

RCW 19.27.110 International fire code -- Administration and enforcement by counties, other political subdivisions and municipal corporations -- Fees.

Each county government shall administer and enforce the International Fire Code in the unincorporated areas of the county: PROVIDED, That any political subdivision or municipal corporation providing fire protection pursuant to RCW 14.08.120 shall, at its sole option, be responsible for administration and enforcement of the International Fire Code on its facility. Any fire protection district or political subdivision may, pursuant to chapter 39.34 RCW, the interlocal cooperation act, assume all or a portion of the

administering responsibility and coordinate and cooperate with the county government in the enforcement of the International Fire Code.

It is not the intent of RCW <u>19.27.110</u> and <u>19.27.111</u> to preclude or limit the authority of any city, town, county, fire protection district, state agency, or political subdivision from engaging in those fire prevention activities with which they are charged.

It is not the intent of the legislature by adopting the state building code or RCW <u>19.27.110</u> and <u>19.27.111</u> to grant counties any more power to suppress or extinguish fires than counties currently possess under the Constitution or other statutes.

Each county is authorized to impose fees sufficient to pay the cost of inspections, administration, and enforcement pursuant to RCW $\underline{19.27.110}$ and $\underline{19.27.111}$.

[2003 c 291 § 4; 1975-'76 2nd ex.s. c 37 § 1.]

NOTES:

Intent -- Finding -- 2003 c 291: See note following RCW <u>19.27.031</u>.

RCW 19.27.111 RCW <u>19.27.080</u> not affected.

Nothing in RCW <u>19.27.110</u> shall affect the provisions of RCW <u>19.27.080</u>.

[1975-'76 2nd ex.s. c 37 § 2.]

RCW 19.27.113 Fire extinguishers for certain school buildings.

The building code council shall adopt rules by December 1, 1991, requiring that all buildings classed as E-1 occupancies, as defined in the state building code, except portable school classrooms, constructed after July 28, 1991, be provided with an automatic fire-extinguishing system. Rules adopted by the council shall consider applicable nationally recognized fire and building code standards and local conditions.

By December 15, 1991, the council shall transmit to the superintendent of public instruction, the state board of education, and the fire protection policy board copies of the rules as adopted. The superintendent of public instruction, the state board of education, and the fire protection policy board shall respond to the council by February 15, 1992, with any recommended changes to the rule. If changes are recommended the council shall immediately consider those changes to the rules through its rule-making procedures. The rules shall be effective on July 1, 1992.

[1991 c 170 § 1.]

NOTES:

Schools -- Standards for fire prevention and safety: RCW 48.48.045. RCW 19.27.120 Buildings or structures having special historical or architectural significance --Exception.

(1) Repairs, alterations, and additions necessary for the preservation, restoration, rehabilitation, strengthening, or continued use of a building or structure may be made without conformance to all of the requirements of the codes adopted under RCW <u>19.27.031</u>, when authorized by the appropriate building official under the rules adopted under subsection (2) of this section, provided:

(a) The building or structure: (i) Has been designated by official action of a legislative body as having special historical or architectural significance, or (ii) is an unreinforced masonry building or structure on the state or the national register of historic places, or is potentially eligible for placement on such registers; and

(b) The restored building or structure will be less hazardous, based on life and fire risk, than the existing building.

(2) The state building code council shall adopt rules, where appropriate, to provide alternative methods to those otherwise required under this chapter for repairs, alterations, and additions necessary for preservation, restoration, rehabilitation, strengthening, or continued use of buildings and structures identified under subsection (1) of this section.

[1985 c 360 § 13; 1975-'76 2nd ex.s. c 11 § 1.]

RCW 19.27.140 Copy of permit to county assessor.

A copy of any permit obtained under the state building code for construction or alteration work of a total cost or fair market value in excess of five hundred dollars, shall be transmitted by the issuing authority to the county assessor of the county where the property on which the construction or alteration work is located. The building permit shall contain the county assessor's parcel number.

[1989 c 246 § 5.]

RCW 19.27.150 Report to department of community, trade, and economic development.

Every month a copy of the United States department of commerce, bureau of the census' "report of building or zoning permits issued and local public construction" or equivalent

report shall be transmitted by the governing bodies of counties and cities to the department of community, trade, and economic development.

[1995 c 399 § 10; 1989 c 246 § 6.]

RCW 19.27.160 Counties with populations of from five thousand to less than ten thousand --Ordinance reenactment.

Any county with a population of from five thousand to less than ten thousand that had in effect on July 1, 1985, an ordinance or resolution authorizing and regulating the construction of owner-built residences may reenact such an ordinance or resolution if the ordinance or resolution is reenacted before September 30, 1989. After reenactment, the county shall transmit a copy of the ordinance or resolution to the state building code council.

[1991 c 363 § 16; 1989 c 246 § 7.]

NOTES:

Purpose -- Captions not law -- 1991 c 363: See notes following RCW 2.32.180.

RCW 19.27.170

Water conservation performance standards -- Testing and identifying fixtures that meet standards -- Marking and labeling fixtures.

(1) The state building code council shall adopt rules under chapter 34.05 RCW that implement and incorporate the water conservation performance standards in subsections (4) and (5) of this section. These standards shall apply to all new construction and all remodeling involving replacement of plumbing fixtures in all residential, hotel, motel, school, industrial, commercial use, or other occupancies determined by the council to use significant quantities of water.

(2) The legislature recognizes that a phasing-in approach to these new standards is appropriate. Therefore, standards in subsection (4) of this section shall take effect on July 1, 1990. The standards in subsection (5) of this section shall take effect July 1, 1993.

(3) No individual, public or private corporation, firm, political subdivision, government agency, or other legal entity may, for purposes of use in this state, distribute, sell, offer for sale, import, install, or approve for installation any plumbing fixtures unless the fixtures meet the standards as provided for in this section.

(4) Standards for water use efficiency effective July 1, 1990.

(a) Standards for waterclosets. The guideline for maximum water use allowed in gallons per flush (gpf) for any of the following waterclosets is the following:

Tank-type toilets	3.5 gpf.
Flushometer-valve toilets	3.5 gpf.
Flushometer-tank toilets	3.5 gpf.
Electromechanical hydraulic toilets	3.5 gpf.

(b) Standard for urinals. The guideline for maximum water use allowed for any urinal is 3.0 gallons per flush.

(c) Standard for showerheads. The guideline for maximum water use allowed for any showerhead is 3.0 gallons per minute.

(d) Standard for faucets. The guideline for maximum water use allowed in gallons per minute (gpm) for any of the following faucets and replacement aerators is the following:

Bathroom faucets	3.0 gpm.
Lavatory faucets	3.0 gpm.
Kitchen faucets	3.0 gpm.
Replacement aerators	3.0 gpm.

(e) Except where designed and installed for use by the physically handicapped, lavatory faucets located in restrooms intended for use by the general public must be equipped with a metering valve designed to close by spring or water pressure when left unattended (self-closing).

(f) No urinal or watercloset that operates on a continuous flow or continuous flush basis shall be permitted.

(5) Standards for water use efficiency effective July 1, 1993.

(a) Standards for waterclosets. The guideline for maximum water use allowed in gallons per flush (gpf) for any of the following waterclosets is the following:

Tank-type toilets	1.6 gpf.
Flushometer-tank toilets	1.6 gpf.
Electromechanical hydraulic toilets	1.6 gpf.

(b) Standards for urinals. The guideline for maximum water use allowed for any urinal is 1.0 gallons per flush.

(c) Standards for showerheads. The guideline for maximum water use allowed for any showerhead is 2.5 gallons per minute.

(d) Standards for faucets. The guideline for maximum water use allowed in gallons per minute for any of the following faucets and replacement aerators is the following:

Bathroom faucets	2.5 gpm.
Lavatory faucets	2.5 gpm.
Kitchen faucets	2.5 gpm.
Replacement aerators	2.5 gpm.

(e) Except where designed and installed for use by the physically handicapped, lavatory faucets located in restrooms intended for use by the general public must be equipped with a metering valve designed to close by water pressure when unattended (self-closing).

(f) No urinal or watercloset that operates on a continuous flow or continuous basis shall be permitted.

(6) The building code council shall establish methods and procedures for testing and identifying fixtures that meet the standards established in subsection (5) of this section. The council shall use the testing standards designated as American national standards, written under American national standards institute procedures or other widely recognized national testing standards. The council shall either review test results from independent testing laboratories that are submitted by manufacturers of plumbing fixtures or accept data submitted to and evaluated by the international association of plumbing and mechanical officials. The council shall publish and widely distribute a current list of fixtures that meet the standards established in subsection (5) of this section.

(7) The building code council shall adopt rules for marking and labeling fixtures meeting the standards established in subsection (5) of this section.

(8) This section shall not apply to fixtures installed before July 28, 1991, that are removed and relocated to another room or area of the same building after July 28, 1991, nor shall it apply to fixtures, as determined by the council, that in order to perform a specialized function, cannot meet the standards specified in this section.

(9) The water conservation performance standards shall supersede all local government codes. After July 1, 1990, cities, towns, and counties shall not amend the code revisions and standards established under subsection (4) or (5) of this section.

[1991 c 347 § 16; 1989 c 348 § 8.]

NOTES:

Purposes -- 1991 c 347: See note following RCW 90.42.005.

Severability -- 1991 c 347: See RCW 90.42.900.

Severability -- 1989 c 348: See note following RCW 90.54.020.

Rights not impaired -- 1989 c 348: See RCW 90.54.920.

RCW 19.27.175 Recycled materials -- Study code and adopt changes.

The state building code council, in consultation with the department of ecology and local governments, shall conduct a study of the state building code, and adopt changes as necessary to encourage greater use of recycled building materials from construction and building demolition debris, mixed waste paper, waste paint, waste plastics, and other waste materials.

[1991 c 297 § 15.]

NOTES:

Captions not law -- 1991 c 297: See RCW 43.19A.900.

RCW 19.27.180

Residential buildings moved into a city or county -- Applicability of building codes and electrical installation requirements.

(1) Residential buildings or structures moved into or within a county or city are not required to comply with all of the requirements of the codes enumerated in chapters 19.27 and 19.27A RCW, as amended and maintained by the state building code council and chapter 19.28 RCW, if the original occupancy classification of the building or structure is not changed as a result of the move.

(2) This section shall not apply to residential structures or buildings that are substantially remodeled or rehabilitated, nor to any work performed on a new or existing foundation.

(3) For the purposes of determining whether a moved building or structure has been substantially remodeled or rebuilt, any cost relating to preparation, construction, or renovation of the foundation shall not be considered.

[1992 c 79 § 1; 1989 c 313 § 2.]

NOTES:

Finding -- 1989 c 313: "The legislature finds that moved buildings or structures can provide affordable housing for many persons of lower income; that many of the moved structures or buildings were legally built to the construction standards of their day; and that requiring the moved building or structure to meet all new construction codes may

limit their use as an affordable housing option for persons of lower income.

The legislature further finds that application of the new construction code standards to moved structures and buildings present unique difficulties and that it is the intent of the legislature that any moved structure or building that meets the codes at the time it was constructed does not need to comply with any updated state building code unless the structure is substantially remodeled or rebuilt." [1989 c 313 § 1.]

RCW 19.27.190 Indoor air quality -- Interim and final requirements for maintenance.

(1)(a) Not later than January 1, 1991, the state building code council, in consultation with the department of community, trade, and economic development, shall establish interim requirements for the maintenance of indoor air quality in newly constructed residential buildings. In establishing the interim requirements, the council shall take into consideration differences in heating fuels and heating system types. These requirements shall be in effect July 1, 1991, through June 30, 1993.

(b) The interim requirements for new electrically space heated residential buildings shall include ventilation standards which provide for mechanical ventilation in areas of the residence where water vapor or cooking odors are produced. The ventilation shall be exhausted to the outside of the structure. The ventilation standards shall further provide for the capacity to supply outside air to each bedroom and the main living area through dedicated supply air inlet locations in walls, or in an equivalent manner. At least one exhaust fan in the home shall be controlled by a dehumidistat or clock timer to ensure that sufficient whole house ventilation is regularly provided as needed.

(c)(i) For new single family residences with electric space heating systems, zero lot line homes, each unit in a duplex, and each attached housing unit in a planned unit development, the ventilation standards shall include fifty cubic feet per minute of effective installed ventilation capacity in each bathroom and one hundred cubic feet per minute of effective installed ventilation capacity in each kitchen.

(ii) For other new residential units with electric space heating systems the ventilation standards may be satisfied by the installation of two exhaust fans with a combined effective installed ventilation capacity of two hundred cubic feet per minute.

(iii) Effective installed ventilation capacity means the capability to deliver the specified ventilation rates for the actual design of the ventilation system. Natural ventilation and infiltration shall not be considered acceptable substitutes for mechanical ventilation.

(d) For new residential buildings that are space heated with other than electric space heating systems, the interim standards shall be designed to result in indoor air quality equivalent to that achieved with the interim ventilation standards for electric space heated

homes.

(e) The interim requirements for all newly constructed residential buildings shall include standards for indoor air quality pollutant source control, including the following requirements: All structural panel components of the residence shall comply with appropriate standards for the emission of formaldehyde; the back-drafting of combustion by-products from combustion appliances shall be minimized through the use of dampers, vents, outside combustion air sources, or other appropriate technologies; and, in areas of the state where monitored data indicate action is necessary to inhibit indoor radon gas concentrations from exceeding appropriate health standards, entry of radon gas into homes shall be minimized through appropriate foundation construction measures.

(2) No later than January 1, 1993, the state building code council, in consultation with the department of community, trade, and economic development, shall establish final requirements for the maintenance of indoor air quality in newly constructed residences to be in effect beginning July 1, 1993. For new electrically space heated residential buildings, these requirements shall maintain indoor air quality equivalent to that provided by the mechanical ventilation and indoor air pollutant source control requirements included in the February 7, 1989, Bonneville power administration record of decision for the environmental impact statement on new energy efficient homes programs (DOE/EIS-0127F) built with electric space heating. In residential units other than single family, zero lot line, duplexes, and attached housing units in planned unit developments, ventilation requirements may be satisfied by the installation of two exhaust fans with a combined effective installed ventilation capacity of two hundred cubic feet per minute. For new residential buildings that are space heated with other than electric space heating systems, the standards shall be designed to result in indoor air quality equivalent to that achieved with the ventilation and source control standards for electric space heated homes. In establishing the final requirements, the council shall take into consideration differences in heating fuels and heating system types.

[1996 c 186 § 501; 1990 c 2 § 7.]

NOTES:

Findings -- Intent -- Part headings not law -- Effective date -- 1996 c 186: See notes following RCW 43.330.904.

Effective dates -- 1990 c 2: See note following RCW 19.27.040.

Findings -- Severability -- 1990 c 2: See notes following RCW 19.27A.015.

RCW 19.27.490 Fish habitat enhancement project. A fish habitat enhancement project meeting the criteria of RCW 77.55.290(1) is not subject to grading permits, inspections, or fees and shall be reviewed according to the provisions of RCW 77.55.290.

[2003 c 39 § 11; 1998 c 249 § 14.]

NOTES:

Findings -- Purpose -- Report -- Effective date -- 1998 c 249: See notes following RCW 77.55.290.

Chapter 17.10 RCW NOXIOUS WEEDS -- CONTROL BOARDS

RCW SECTIONS

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RCW 17.10.007 Purpose -- Construction -- 1975 1st ex.s. c 13.

The purpose of this chapter is to limit economic loss and adverse effects to Washington's agricultural, natural, and human resources due to the presence and spread of noxious weeds on all terrestrial and aquatic areas in the state.

The intent of the legislature is that this chapter be liberally construed, and that the jurisdiction, powers, and duties granted to the county noxious weed control boards by this chapter are limited only by specific provisions of this chapter or other state and federal law.

[1997 c 353 § 1; 1975 1st ex.s. c 13 § 17. Formerly RCW 17.10.905.]

RCW 17.10.010 Definitions.

The definitions in this section apply throughout this chapter unless the context clearly requires otherwise:

(1) "Noxious weed" means a plant that when established is highly destructive, competitive, or difficult to control by cultural or chemical practices.

(2) "State noxious weed list" means a list of noxious weeds adopted by the state noxious weed control board. The list is divided into three classes:

(a) Class A consists of those noxious weeds not native to the state that are of limited distribution or are unrecorded in the state and that pose a serious threat to the state;

(b) Class B consists of those noxious weeds not native to the state that are of limited distribution or are unrecorded in a region of the state and that pose a serious threat to that region;

(c) Class C consists of any other noxious weeds.

(3) "Person" means any individual, partnership, corporation, firm, the state or any department, agency, or subdivision thereof, or any other entity.

(4) "Owner" means the person in actual control of property, or his or her agent, whether the control is based on legal or equitable title or on any other interest entitling the holder to possession and, for purposes of liability, pursuant to RCW <u>17.10.170</u> or <u>17.10.210</u>, means the possessor of legal or equitable title or the possessor of an easement: PROVIDED, That when the possessor of an easement has the right to control or limit the growth of vegetation within the boundaries of an easement, only the possessor of the easement is deemed, for the purpose of this chapter, an "owner" of the property within the boundaries of the easement.

(5) As pertains to the duty of an owner, the words "control", "contain", "eradicate", and the term "prevent the spread of noxious weeds" means conforming to the standards of noxious weed control or prevention in this chapter or as adopted by rule in chapter 16-750 WAC by the state noxious weed control board and an activated county noxious weed control board.

(6) "Agent" means any occupant or any other person acting for the owner and working or in charge of the land.

(7) "Agricultural purposes" are those that are intended to provide for the growth and harvest of food and fiber.

(8) "Director" means the director of the department of agriculture or the director's appointed representative.

(9) "Weed district" means a weed district as defined in chapters 17.04 and 17.06 RCW.

(10) "Aquatic noxious weed" means an aquatic plant species that is listed on the state weed list under RCW 17.10.080.

(11) "Screenings" means a mixture of mill or elevator run mixture or a combination of varying amounts of materials obtained in the process of cleaning either grain or seeds, or both, such as light or broken grain or seed, weed seeds, hulls, chaff, joints, straw, elevator dust, floor sweepings, sand, and dirt.

[1997 c 353 § 2; 1995 c 255 § 6; 1987 c 438 § 1; 1975 1st ex.s. c 13 § 1; 1969 ex.s. c 113 § 1.]

NOTES:

Severability -- Effective date -- 1995 c 255: See RCW 17.26.900 and 17.26.901.

RCW 17.10.020

County noxious weed control boards -- Created -- Jurisdiction -- Inactive status.

(1) In each county of the state there is created a noxious weed control board, bearing the name of the county within which it is located. The jurisdictional boundaries of each board are the boundaries of the county within which it is located.

(2) Each noxious weed control board is inactive until activated pursuant to the provisions of RCW <u>17.10.040</u>.

[1997 c 353 § 3; 1969 ex.s. c 113 § 2.]

RCW 17.10.030 State noxious weed control board -- Members -- Terms -- Elections -- Meetings --Reimbursement for travel expenses.

There is created a state noxious weed control board comprised of nine voting members and three nonvoting members. Four of the voting members shall be elected by the members of the various activated county noxious weed control boards, and shall be residents of a county in which a county noxious weed control board has been activated and a member of said board, and those qualifications shall continue through their term of office. Two of these members shall be elected from the west side of the state, the crest of the Cascades being the dividing line, and two from the east side of the state. The director of agriculture is a voting member of the board. One voting member shall be elected by the directors of the various active weed districts formed under chapter 17.04 or 17.06 RCW. The Washington state association of counties appoints one voting member who shall be a member of a county legislative authority. The director shall appoint two voting members to represent the public interest, one from the west side and one from the east side of the state. The director shall also appoint three nonvoting members representing scientific disciplines relating to weed control. The term of office for all members of the board is three years from the date of election or appointment.

The board, by rule, shall establish a position number for each elected position of the board and shall designate which county noxious weed control board members are eligible to vote for each elected position. The elected members serve staggered terms. Elections for the elected members of the board shall be held thirty days prior to the expiration date of their respective terms. Nominations and elections shall be by mail and conducted by the board.

The board shall conduct its first meeting within thirty days after all its members have been elected. The board shall elect from its members a chair and other officers as may be necessary. A majority of the voting members of the board constitutes a quorum for the transaction of business and is necessary for any action taken by the board. The members of the board serve without salary, but shall be reimbursed for travel expenses incurred in the performance of their duties under this chapter in accordance with RCW 43.03.050 and 43.03.060.

[1997 c 353 § 4; 1987 c 438 § 2; 1975-'76 2nd ex.s. c 34 § 23; 1969 ex.s. c 113 § 3.]

NOTES:

Effective date -- Severability -- 1975-'76 2nd ex.s. c 34: See notes following RCW 2.08.115.

RCW 17.10.040 Activation of inactive county noxious weed control board.

An inactive county noxious weed control board may be activated by any one of the following methods:

(1) Either within sixty days after a petition is filed by one hundred registered voters within the county or, on its own motion, the county legislative authority shall hold a hearing to determine whether there is a need, due to a damaging infestation of noxious weeds, to activate the county noxious weed control board. If such a need is found to exist, then the county legislative authority shall, in the manner provided by RCW <u>17.10.050</u>, appoint five persons to the county's noxious weed control board.

(2) If the county's noxious weed control board is not activated within one year following a hearing by the county legislative authority to determine the need for activation, then upon the filing with the state noxious weed control board of a petition comprised either of the signatures of at least two hundred registered voters within the county, or of the signatures of a majority of an adjacent county's noxious weed control board shall, within six months of the date of the filing, hold a hearing in the county to determine the need for activation. If a need for activate the county's noxious weed control board and to appoint members to the board in the manner provided by RCW <u>17.10.050</u>.

(3) The director, upon request of the state noxious weed control board, shall order a county legislative authority to activate the noxious weed control board immediately if an infestation of a class A noxious weed or class B noxious weed designated for control on the state noxious weed list is confirmed in that county. The county legislative authority may, as an alternative to activating the noxious weed board, combat the class A noxious weed or class B noxious weed or class B noxious weed with county resources and personnel operating with the authorities and responsibilities imposed by this chapter on a county noxious weed control board. No county may continue without a noxious weed or class B noxious weed has not been eradicated.

[1997 c 353 § 5; 1987 c 438 § 3; 1975 1st ex.s. c 13 § 2; 1969 ex.s. c 113 § 4.]

RCW 17.10.050 Activated county noxious weed control board -- Members -- Election -- Terms --Meetings -- Quorum -- Expenses -- Officers -- Vacancy. (1) Each activated county noxious weed control board consists of five voting members appointed by the county legislative authority. In appointing the voting members, the county legislative authority shall divide the county into five geographical areas that best represent the county's interests, and appoint a voting member from each geographical area. At least four of the voting members shall be engaged in the primary production of agricultural products. There is one nonvoting member on the board who is the chair of the county extension office or an extension agent appointed by the chair of the county extension office. Each voting member of the board serves a term of four years, except that the county legislative authority shall, when a board is first activated under this chapter, designate two voting members to serve terms of two years. The board members shall not receive a salary but shall be compensated for actual and necessary expenses incurred in the performance of their official duties.

(2) The voting members of the board serve until their replacements are appointed. New members of the board shall be appointed at least thirty days prior to the expiration of any board member's term of office.

Notice of expiration of a term of office shall be published at least twice in a weekly or daily newspaper of general circulation in the section [geographical area] with last publication occurring at least ten days prior to the nomination. All persons interested in appointment to the board and residing in the geographical area with a pending nomination shall make a written application that includes the signatures of at least ten registered voters residing in the geographical area supporting the nomination to the county noxious weed control board. After nominations close, the county noxious weed control board shall, after a hearing, send the applications to the county legislative authority recommending the names of the most qualified candidates, and post the names of those nominees in the county. The county legislative authority, within ten days of receiving the list of nominees, shall appoint one of those nominees to the county noxious weed control board to represent that geographical area during that term of office.

(3) Within thirty days after all the members have been appointed, the board shall conduct its first meeting. A majority of the voting members of the board constitutes a quorum for the transaction of business and is necessary for any action taken by the board. The board shall elect from its members a chair and other officers as may be necessary.

(4) In case of a vacancy occurring in any voting position on a county noxious weed control board, the county legislative authority of the county in which the board is located shall appoint a qualified person to fill the vacancy for the unexpired term.

[1997 c 353 § 6; 1987 c 438 § 4; 1980 c 95 § 1; 1977 ex.s. c 26 § 6; 1975 1st ex.s. c 13 § 3; 1974 ex.s. c 143 § 1; 1969 ex.s. c 113 § 5.]

RCW 17.10.060 Activated county noxious weed control board -- Weed coordinator -- Authority --Rules and regulations. (1) Each activated county noxious weed control board shall employ or otherwise provide a weed coordinator whose duties are fixed by the board but which shall include inspecting land to determine the presence of noxious weeds, offering technical assistance and education, and developing a program to achieve compliance with the weed law. The weed coordinator may be employed full time, part time, or seasonally by the county noxious weed control board. County weed board employment practices shall comply with county personnel policies. Within sixty days from initial employment the weed coordinator shall obtain a pest control consultant license, a pesticide operator license, and the necessary endorsements on the licenses as required by law. Each board may purchase, rent, or lease equipment, facilities, or products and may hire additional persons as it deems necessary for the administration of the county's noxious weed control program.

(2) Each activated county noxious weed control board has the power to adopt rules and regulations, subject to notice and hearing as provided in chapters 42.30 and 42.32 RCW, as are necessary for an effective county weed control or eradication program.

(3) Each activated county noxious weed control board shall meet with a quorum at least quarterly.

[1997 c 353 § 7; 1987 c 438 § 5; 1969 ex.s. c 113 § 6.]

RCW 17.10.070 State noxious weed control board -- Powers -- Report.

(1) In addition to the powers conferred on the state noxious weed control board under other provisions of this chapter, it has the power to:

(a) Employ a state noxious weed control board executive secretary, and additional persons as it deems necessary, to disseminate information relating to noxious weeds to county noxious weed control boards and weed districts, to coordinate the educational and weed control efforts of the various county and regional noxious weed control boards and weed districts, and to assist the board in carrying out its responsibilities;

(b) Adopt, amend, or repeal rules, pursuant to the administrative procedure act, chapter 34.05 RCW, as may be necessary to carry out the duties and authorities assigned to the board by this chapter.

(2) The state noxious weed control board shall provide a written report before January 1st of each odd-numbered year to the county noxious weed control boards and the weed districts showing the expenditure of state funds on noxious weed control; specifically how the funds were spent; the status of the state, county, and district programs; and recommendations for the continued best use of state funds for noxious weed control. The report shall include recommendations as to the long-term needs regarding weed control.

[1998 c 245 § 3; 1997 c 353 § 8; 1987 c 438 § 6; 1975 1st ex.s. c 13 § 4; 1969 ex.s. c 113 § 7.]

RCW 17.10.074 Director -- Powers.

(1) In addition to the powers conferred on the director under other provisions of this chapter, the director, with the advice of the state noxious weed control board, has power to:

(a) Require the county legislative authority or the noxious weed control board of any county or any weed district to report to it concerning the presence, absence, or estimated amount of noxious weeds and measures, if any, taken or planned for the control thereof;

(b) Employ staff as may be necessary in the administration of this chapter;

(c) Adopt, amend, or repeal rules, pursuant to the administrative procedure act, chapter 34.05 RCW, as may be necessary to carry out this chapter;

(d) Do such things as may be necessary and incidental to the administration of its functions pursuant to this chapter including but not limited to surveying for and detecting noxious weed infestations;

(e) Upon receipt of a complaint signed by a majority of the members of an adjacent county noxious weed control board or weed district, or by one hundred registered voters that are land owners within the county, require the county legislative authority or noxious weed control board of the county or weed district that is the subject of the complaint to respond to the complaint within forty-five days with a plan for the control of the noxious weeds cited in the complaint;

(f) If the complaint in (e) of this subsection involves a class A or class B noxious weed, order the county legislative authority, noxious weed control board, or weed district to take immediate action to eradicate or control the noxious weed infestation. If the county or the weed district does not take action to control the noxious weed infestation in accordance with the order, the director may control it or cause it to be controlled. The county or weed district is liable for payment of the expense of the control work including necessary costs and expenses for attorneys' fees incurred by the director in securing payment from the county or weed district. The director may bring a civil action in a court of competent jurisdiction to collect the expenses of the control work, costs, and attorneys' fees;

(g) In counties without an activated noxious weed control board, enter upon any property as provided for in RCW <u>17.10.160</u>, issue or cause to be issued notices and citations and take the necessary action to control noxious weeds as provided in RCW <u>17.10.170</u>, hold hearings on any charge or cost of control action taken as provided for in RCW <u>17.10.180</u>, issue a notice of civil infraction as provided for in RCW <u>17.10.230</u> and <u>17.10.310</u> through [and] <u>17.10.300</u> with the same authorities and responsibilities

imposed by these sections on county noxious weed control boards;

(h) Adopt a list of noxious weed seeds and toxic weeds which shall be controlled in designated articles, products, or feed stuffs as provided for in RCW <u>17.10.235</u>.

(2) The moneys appropriated for noxious weed control to the department shall be used for administration of the state noxious weed control board, the administration of the director's powers under this chapter, the purchase of materials for controlling, containing, or eradicating noxious weeds, the purchase or collection of biological control agents for controlling noxious weeds, and the contracting for services to carry out the purposes of this chapter. In a county with an activated noxious weed control board, the director shall make every effort to contract with that board for the needed services.

(3) If the director determines the need to reallocate funds previously designated for county use, the director shall convene a meeting of the state noxious weed control board to seek its advice concerning any reallocation.

[1997 c 353 § 9; 1987 c 438 § 7.]

RCW 17.10.080 State noxious weed list -- Hearing -- Adoption -- Dissemination.

(1) The state noxious weed control board shall each year or more often, following a hearing, adopt a state noxious weed list.

(2) Any person may request during a comment period established by the state weed board the inclusion, deletion, or designation change of any plant to the state noxious weed list.

(3) The state noxious weed control board shall send a copy of the list to each activated county noxious weed control board, to each weed district, and to the county legislative authority of each county with an inactive noxious weed control board.

(4) The record of rule making must include the written findings of the board for the inclusion of each plant on the list. The findings shall be made available upon request to any interested person.

[1997 c 353 § 10; 1989 c 175 § 57; 1987 c 438 § 8; 1975 1st ex.s. c 13 § 5; 1969 ex.s. c 113 § 8.]

NOTES:

Effective date -- 1989 c 175: See note following RCW 34.05.010.

RCW 17.10.090 State noxious weed list -- Selection of weeds for control by county board.

Each county noxious weed control board shall, within ninety days of the adoption of the state noxious weed list from the state noxious weed control board and following a hearing, select those weeds from the class C list and those weeds from the class B list not designated for control in the noxious weed control region in which the county lies that it finds necessary to be controlled in the county. The weeds thus selected and all class A weeds and those class B weeds that have been designated for control in the noxious weed control region in the noxious weed control region in the noxious weeds and those class B weeds that have been designated for control in the noxious weed control region in which the county lies shall be classified within that county as noxious weeds, and those weeds comprise the county noxious weed list.

[1997 c 353 § 11; 1987 c 438 § 9; 1969 ex.s. c 113 § 9.]

RCW 17.10.100 Order to county board to include weed from state board's list in county's noxious weed list.

Where any of the following occur, the state noxious weed control board may, following a hearing, order any county noxious weed control board or weed district to include a noxious weed from the state board's list in the county's noxious weed list:

(1) Where the state noxious weed control board receives a petition from at least one hundred registered voters within the county requesting that the weed be listed.

(2) Where the state noxious weed control board receives a request for inclusion from an adjacent county's noxious weed control board or weed district, which the adjacent board or district has included that weed in its county list, and the adjacent board or weed district alleges that its noxious weed control program is being hampered by the failure to include the weed on the county's noxious weed list.

[1997 c 353 § 12; 1987 c 438 § 10; 1969 ex.s. c 113 § 10.]

RCW 17.10.110 Regional noxious weed control board -- Creation.

A regional noxious weed control board comprising the area of two or more counties may be created as follows:

Either the county legislative authority, or the noxious weed control board, or both, of two or more counties may, upon a determination that the purpose of this chapter will be served by the creation of a regional noxious weed control board, adopt a resolution providing for a limited merger of the functions of their respective counties noxious weed control boards. The resolution becomes effective only when a similar resolution is adopted by the other county or counties comprising the proposed regional board.

[1997 c 353 § 13; 1987 c 438 § 11; 1975 1st ex.s. c 13 § 6; 1969 ex.s. c 113 § 11.]
RCW 17.10.120 Regional noxious weed control board -- Members -- Meetings -- Quorum -- Officers -- Effect on county boards.

In any case where a regional noxious weed control board is created, the county noxious weed control boards comprising the regional board shall still remain in existence and shall retain all powers and duties provided for the boards under this chapter.

The regional noxious weed control board is comprised of the voting members and the nonvoting members of the component counties noxious weed control boards or county legislative authorities who shall, respectively, be the voting and nonvoting members of the regional board: PROVIDED, That each county shall have an equal number of voting members. The board may appoint other nonvoting members as deemed necessary. A majority of the voting members of the board constitutes a quorum for the transaction of business and is necessary for any action taken by the board. The board shall elect a chair from its members and other officers as may be necessary. Members of the regional board serve without salary but shall be compensated for actual and necessary expenses incurred in the performance of their official duties.

[1997 c 353 § 14; 1987 c 438 § 12; 1969 ex.s. c 113 § 12.]

RCW 17.10.130 Regional noxious weed control board -- Powers and duties.

The powers and duties of a regional noxious weed control board are as follows:

(1) The regional board shall, within ninety days of the adoption of the state noxious weed list from the state noxious weed control board and following a hearing, select those weeds from the state list that it finds necessary to be controlled on a regional basis. The weeds thus selected shall also be contained in the county noxious weed list of each county in the region.

(2) The regional board shall take action as may be necessary to coordinate the noxious weed control programs of the region and adopt a regional plan for the control of noxious weeds.

[1997 c 353 § 15; 1987 c 438 § 13; 1969 ex.s. c 113 § 13.]

RCW 17.10.134 Liability of county and regional noxious weed control boards.

Obligations or liabilities incurred by any county or regional noxious weed control board or any claims against a county or regional noxious weed control board are governed by chapter 4.96 RCW or RCW 4.08.120: PROVIDED, That individual members or

employees of a county noxious weed control board are personally immune from civil liability for damages arising from actions performed within the scope of their official duties or employment.

[1997 c 353 § 16; 1987 c 438 § 14.]

RCW 17.10.140 Owner's duty to control spread of noxious weeds.

(1) Except as is provided under subsection (2) of this section, every owner shall perform or cause to be performed those acts as may be necessary to:

(a) Eradicate all class A noxious weeds;

(b) Control and prevent the spread of all class B noxious weeds designated for control in that region within and from the owner's property; and

(c) Control and prevent the spread of all class B and class C noxious weeds listed on the county weed list as locally mandated control priorities within and from the owner's property.

(2) Forest lands classified under RCW $\underline{17.10.240}(2)$, or meeting the definition of forest lands contained in RCW $\underline{17.10.240}$, are subject to the requirements of subsection (1)(a) and (b) of this section at all times. Forest lands are subject to the requirements of subsection (1)(c) of this section only within a one thousand foot buffer strip of adjacent land uses. In addition, forest lands are subject to subsection (1)(c) of this section for a single five-year period following the harvesting of trees for lumber.

[1997 c 353 § 17; 1969 ex.s. c 113 § 14.]

RCW 17.10.145 State agencies' duty to control spread of noxious weeds.

All state agencies shall control noxious weeds on lands they own, lease, or otherwise control through integrated pest management practices. Agencies shall develop plans in cooperation with county noxious weed control boards to control noxious weeds in accordance with standards in this chapter. All state agencies' lands must comply with this chapter, regardless of noxious weed control efforts on adjacent lands.

[1997 c 353 § 18; 1995 c 374 § 75.]

NOTES:

Effective date -- 1995 c 374 §§ 69, 70, and 72-79: See note following RCW 16.24.130.

RCW 17.10.154 Owners' agreements with county noxious weed control boards -- Terms --Enforcement.

It is recognized that the prevention, control, and eradication of noxious weeds presents a problem for immediate as well as for future action. It is further recognized that immediate prevention, control, and eradication is practicable on some lands and that prevention, control, and eradication on other lands should be extended over a period of time. Therefore, it is the intent of this chapter that county noxious weed control boards may use their discretion and, by agreement with the owners of land, may propose and accept plans for prevention, control, and eradication that may be extended over a period of years. The county noxious weed control board may make an agreement with the owner of any parcel of land by contract between the landowner and the respective county noxious weed control board shall enforce the terms of any agreement. The county noxious weed control board may make any terms that will best serve the interests of the owners of the parcel of land and the common welfare that comply with this chapter. Agreements made under this section must include at least a one thousand foot buffer for all adjacent agricultural land uses. Noxious weed control in this buffer must comply with RCW <u>17.10.140(1)</u>.

[1997 c 353 § 19; 1987 c 438 § 16.]

RCW 17.10.160 Right of entry -- Warrant for noxious weed search -- Civil liability -- Penalty for preventing entry.

Any authorized agent or employee of the county noxious weed control board or of the state noxious weed control board or of the department of agriculture where not otherwise proscribed by law may enter upon any property for the purpose of administering this chapter and any power exercisable pursuant thereto, including the taking of specimens of weeds, general inspection, and the performance of eradication or control work. Prior to carrying out the purpose for which the entry is made, the official making such entry or someone in his or her behalf, shall make a reasonable attempt to notify the owner of the property as to the purpose and need for the entry.

(1) When there is probable cause to believe that there is property within this state not otherwise exempt from process or execution upon which noxious weeds are standing or growing and the owner refuses permission to inspect the property, a judge of the superior court or district court in the county in which the property is located may, upon the request of the county noxious weed control board or its agent, issue a warrant directed to the board or agent authorizing the taking of specimens of weeds or other materials, general inspection, and the performance of eradication or control work.

(2) Application for issuance and execution and return of the warrant authorized by this section shall be in accordance with the applicable rules of the superior court or the district

courts.

(3) Nothing in this section requires the application for and issuance of any warrant not otherwise required by law: PROVIDED, That civil liability for negligence shall lie in any case in which entry and any of the activities connected therewith are not undertaken with reasonable care.

(4) Any person who improperly prevents or threatens to prevent entry upon land as authorized in this section or any person who interferes with the carrying out of this chapter shall be upon conviction guilty of a misdemeanor.

[1997 c 353 § 20; 1987 c 438 § 17; 1969 ex.s. c 113 § 16.]

RCW 17.10.170 Finding presence of noxious weeds -- Notice for failure of owner to control --Control by county board -- Liability of owner -- Lien -- Alternative.

(1) Whenever the county noxious weed control board finds that noxious weeds are present on any parcel of land, and that the owner is not taking prompt and sufficient action to control the noxious weeds, pursuant to the provisions of RCW 17.10.140, it shall notify the owner that a violation of this chapter exists. The notice shall be in writing and sent by certified mail, and shall identify the noxious weeds found to be present, order prompt control action, and specify the time, of at least ten days from issuance of the notice, within which the prescribed action must be taken. Upon deposit of the certified letter of notice, the noxious weed control authority shall make an affidavit of mailing that is prima facie evidence that proper notice was given. If seed or other propagule dispersion is imminent, immediate control action may be taken forty-eight hours following the time that notification is reasonably expected to have been received by the owner or agent by certified mail or personal service, instead of ten days. If a landowner received a notice of violation from the county noxious weed control board in a prior growing season, removal or destruction of all above ground plant parts may be required at the most effective point in the growing season, as determined by the county weed board, which may be before or after propagule dispersion.

(2) The county noxious weed control board or its authorized agents may issue a notice of civil infraction as provided for in RCW <u>17.10.230</u>, <u>17.10.310</u>, and <u>17.10.350</u> to owners who do not take action to control noxious weeds in accordance with the notice.

(3) If the owner does not take action to control the noxious weeds in accordance with the notice, the county board may control them, or cause their being controlled, at the expense of the owner. The amount of the expense constitutes a lien against the property and may be enforced by proceedings on the lien except as provided for by RCW 79.44.060. The owner is liable for payment of the expense, and nothing in this chapter shall be construed to prevent collection of any judgment on account thereof by any means available pursuant to law, in substitution for enforcement of the lien. Necessary costs and expenses including reasonable attorneys' fees incurred by the county noxious weed

control board in carrying out this section may be recovered at the same time as a part of the action filed under this section. Funds received in payment for the expense of controlling noxious weeds shall be transferred to the county noxious weed control board to be expended as required to carry out the purposes of this chapter.

(4) The county auditor shall record in his or her office any lien created under this chapter, and any lien shall bear interest at the rate of twelve percent per annum from the date on which the county noxious weed control board approves the amount expended in controlling the weeds.

(5) As an alternative to the enforcement of any lien created under subsection (3) of this section, the county legislative authority may by resolution or ordinance require that each lien created be collected by the treasurer in the same manner as a delinquent real property tax, if within thirty days from the date the owner is sent notice of the lien, including the amount thereof, the lien remains unpaid and an appeal has not been made pursuant to RCW <u>17.10.180</u>. Liens treated as delinquent taxes bear interest at the rate of twelve percent per annum and the interest accrues as of the date notice of the lien is sent to the owner: PROVIDED, That any collections for the lien shall not be considered as tax.

[1997 c 353 § 21; 1987 c 438 § 18; 1979 c 118 § 1; 1975 1st ex.s. c 13 § 8; 1974 ex.s. c 143 § 3; 1969 ex.s. c 113 § 17.]

RCW 17.10.180 Hearing on liability for expense of control -- Notice -- Review.

Any owner, upon request pursuant to the rules and regulation of the county noxious weed control board, is entitled to a hearing before the board on any charge or cost for which the owner is alleged to be liable pursuant to RCW <u>17.10.170</u> or <u>17.10.210</u>. The board shall send notice by certified mail within thirty days, to each owner at the owner's last known address, as to any charge or cost and as to his or her right of a hearing. The hearing shall be scheduled within forty-five days of notification. Any determination or final action by the board is subject to judicial review by a proceeding in the superior court in the county in which the property is located, and the court has original jurisdiction to determine any suit brought by the owner to recover damages allegedly suffered on account of control work negligently performed: PROVIDED, That no stay or injunction shall lie to delay any control work subsequent to notice given pursuant to RCW <u>17.10.160</u> or pursuant to an order under RCW <u>17.10.210</u>.

[1997 c 353 § 22; 1987 c 438 § 19; 1969 ex.s. c 113 § 18.]

RCW 17.10.190 Notice and information as to noxious weed control.

Each activated county noxious weed control board must publish annually, and at other times as may be appropriate, in at least one newspaper of general circulation within its area, a general notice. The notice shall direct attention to the need for noxious weed control and give other information concerning noxious weed control requirements as may be appropriate, or indicate where such information may be secured. In addition to the general notice required, the county noxious weed control board may use any appropriate media for the dissemination of information to the public as may be calculated to bring the need for noxious weed control to the attention of owners. The board may consult with individual owners concerning their problems of noxious weed control and may provide them with information and advice, including giving specific instructions and methods when and how certain named weeds are to be controlled. The methods may include some combination of physical, mechanical, cultural, chemical, and/or biological methods, including livestock. Publication of a notice as required by this section is not a condition precedent to the enforcement of this chapter.

[1997 c 353 § 23; 1987 c 438 § 20; 1975 1st ex.s. c 13 § 9; 1969 ex.s. c 113 § 19.]

RCW 17.10.201 Noxious weed control on federal and tribal lands--State and county cooperation.

(1) The state noxious weed control board shall:

(a) Work with the various federal and tribal land management agencies to coordinate state and federal noxious weed control;

(b) Encourage the various federal and tribal land management agencies to devote more time and resources to noxious weed control; and

(c) Assist the various federal and tribal land management agencies by seeking adequate funding for noxious weed control.

(2) County noxious weed control boards and weed districts shall work with the various federal and tribal land management agencies in each county in order to:

(a) Identify new noxious weed infestations;

(b) Outline and plan necessary noxious weed control actions;

(c) Develop coordinated noxious weed control programs; and

(d) Notify local federal and tribal agency land managers of noxious weed infestations.

(3) The department of agriculture, county noxious weed control boards, and weed districts are authorized to enter federal lands, with the approval of the appropriate federal agency, to survey for and control noxious weeds where control measures of a type and extent required under this chapter have not been taken.

(4) The department of agriculture, county noxious weed control boards, and weed districts may bill the federal land management agency that manages the land for all costs of the noxious weed control performed on federal land. If not paid by the federal agency that manages the land, the cost of the noxious weed control on federal land may be paid from any funds available to the county noxious weed control board or weed district that performed the noxious weed control. Alternatively, the costs of noxious weed control on federal land may be paid from any funds specifically appropriated to the department of agriculture for that purpose.

(5) The department of agriculture, county noxious weed control boards, and weed districts are authorized to enter into any reasonable agreement with the appropriate authorities for the control of noxious weeds on federal or tribal lands.

(6) The department of agriculture, county noxious weed control boards, and weed districts shall consult with state agencies managing federal land concerning noxious weed infestation and control programs.

[1997 c 353 § 34.]

RCW 17.10.205 Control of noxious weeds in open areas.

Open areas subject to the spread of noxious weeds, including but not limited to subdivisions, school grounds, playgrounds, parks, and rights of way shall be subject to regulation by activated county noxious weed control boards in the same manner and to the same extent as is provided for all terrestrial and aquatic lands of the state.

[1997 c 353 § 24; 1975 1st ex.s. c 13 § 16.]

RCW 17.10.210 Quarantine of land -- Order -- Expense.

(1) Whenever the director, the county noxious weed control board, or a weed district finds that a parcel of land is so seriously infested with class A or class B noxious weeds that control measures cannot be undertaken thereon without quarantining the land and restricting or denying access thereto or use thereof, the director, the county noxious weed control board, or weed district, with the approval of the director of the department of agriculture, may issue an order for the quarantine and restriction or denial of access or use. Upon issuance of the order, the director, the county noxious weed control board, or the weed district shall commence necessary control measures and may institute legal action for the collection of costs for control work, which may include attorneys' fees and the costs of other appropriate actions.

(2) An order of quarantine shall be served, by any method sufficient for the service of

civil process, on all persons known to qualify as owners of the land within the meaning of this chapter.

(3) The director shall, with the advice of the state noxious weed control board, determine how the expense of control work undertaken pursuant to this section, and the cost of any quarantine in connection therewith, is apportioned.

[1997 c 353 § 25; 1987 c 438 § 22; 1969 ex.s. c 113 § 21.]

RCW 17.10.230 Violations -- Penalty.

Any owner knowing of the existence of any noxious weeds on the owner's land who fails to control such weeds in accordance with this chapter and rules and regulations in force pursuant thereto; or any person who enters upon any land in violation of an order in force pursuant to RCW <u>17.10.210</u>; or any person who interferes with the carrying out of the provisions of this chapter has committed a civil infraction.

[1987 c 438 § 23; 1979 c 118 § 2; 1969 ex.s. c 113 § 23.]

RCW 17.10.235 Selling product, article, or feed containing noxious weed seeds or toxic weeds --Penalty -- Rules -- Inspections -- Fees.

(1) The director of agriculture shall adopt, with the advice of the state noxious weed control board, rules designating noxious weed seeds which shall be controlled in products, screenings, or articles to prevent the spread of noxious weeds. The rules shall identify the products, screenings, and articles in which the seeds must be controlled and the maximum amount of the seed to be permitted in the product, screenings, or article to avoid a hazard of spreading the noxious weed by seed from the product, screenings, or article. The director shall also adopt, with the advice of the state board, rules designating toxic weeds which shall be controlled in feed stuffs and screenings to prevent injury to the animal that consumes the feed. The rules shall identify the feed stuffs and screenings in which the toxic weeds must be controlled and the maximum amount of the toxic weed stuffs containing noxious weed seeds or toxic weeds can be made available for beneficial uses.

(2) Any person who knowingly or negligently sells or otherwise distributes a product, article, screenings, or feed stuff designated by rule containing noxious weed seeds or toxic weeds designated for control by rule and in an amount greater than the amount established by the director for the seed or weed by rule is guilty of a misdemeanor.

(3) The department of agriculture shall, upon request of the buyer, inspect products, screenings, articles, or feed stuffs designated by rule and charge fees, in accordance with

chapter 22.09 RCW, to determine the presence of designated noxious weed seeds or toxic weeds.

[1997 c 353 § 26; 1987 c 438 § 30; 1979 c 118 § 4.]

RCW 17.10.240 Special assessments, appropriations for noxious weed control -- Assessment rates.

(1) The activated county noxious weed control board of each county shall annually submit a budget to the county legislative authority for the operating cost of the county's weed program for the ensuing fiscal year: PROVIDED, That if the board finds the budget approved by the legislative authority is insufficient for an effective county noxious weed control program it shall petition the county legislative authority to hold a hearing as provided in RCW <u>17.10.890</u>. Control of weeds is a benefit to the lands within any such section. Funding for the budget is derived from any or all of the following:

(a) The county legislative authority may, in lieu of a tax, levy an assessment against the land for this purpose. Prior to the levying of an assessment the county noxious weed control board shall hold a public hearing at which it will gather information to serve as a basis for classification and then classify the lands into suitable classifications, including but not limited to dry lands, range lands, irrigated lands, nonuse lands, forest lands, or federal lands. The board shall develop and forward to the county legislative authority, as a proposed level of assessment for each class, an amount as seems just. The assessment rate shall be either uniform per acre in its respective class or a flat rate per parcel rate plus a uniform rate per acre: PROVIDED, That if no benefits are found to accrue to a class of land, a zero assessment may be levied. The county legislative authority, upon receipt of the proposed levels of assessment from the board, after a hearing, shall accept or modify by resolution, or refer back to the board for its reconsideration all or any portion of the proposed levels of assessment. The amount of the assessment constitutes a lien against the property. The county legislative authority may by resolution or ordinance require that notice of the lien be sent to each owner of property for which the assessment has not been paid by the date it was due and that each lien created be collected by the treasurer in the same manner as delinquent real property tax, if within thirty days from the date the owner is sent notice of the lien, including the amount thereof, the lien remains unpaid and an appeal has not been made pursuant to RCW 17.10.180. Liens treated as delinquent taxes bear interest at the rate of twelve percent per annum and the interest accrues as of the date notice of the lien is sent to the owner: PROVIDED FURTHER, That any collections for the lien shall not be considered as tax; or

(b) The county legislative authority may appropriate money from the county general fund necessary for the administration of the county noxious weed control program. In addition the county legislative authority may make emergency appropriations as it deems necessary for the implementation of this chapter.

(2) Forest lands used solely for the planting, growing, or harvesting of trees and which are typified, except during a single period of five years following clear-cut logging, by

canopies so dense as to prohibit growth of an understory may be subject to an annual noxious weed assessment levied by a county legislative authority that does not exceed one-tenth of the weighted average per acre noxious weed assessment levied on all other lands in unincorporated areas within the county that are subject to the weed assessment. This assessment shall be computed in accordance with the formula in subsection (3) of this section.

(3) The calculation of the "weighted average per acre noxious weed assessment" is a ratio expressed as follows:

(a) The numerator is the total amount of funds estimated to be collected from the per acre assessment on all lands except (i) forest lands as identified in subsection (2) of this section, (ii) lands exempt from the noxious weed assessment, and (iii) lands located in an incorporated area.

(b) The denominator is the total acreage from which funds in (a) of this subsection are collected. For lands of less than one acre in size, the denominator calculation may be based on the following assumptions: (i) Unimproved lands are calculated as being one-half acre in size on the average, and (ii) improved lands are calculated as being one-third acre in size on the average. The county legislative authority may choose to calculate the denominator for lands of less than one acre in size using other assumptions about average parcel size based on local information.

(4) For those counties that levy a per parcel assessment to help fund noxious weed control programs, the per parcel assessment on forest lands as defined in subsection (2) of this section shall not exceed one-tenth of the per parcel assessment on nonforest lands.

[1997 c 353 § 27; 1995 c 374 § 77; 1987 c 438 § 31; 1975 1st ex.s. c 13 § 10; 1969 ex.s. c 113 § 24.]

NOTES:

Effective date -- 1995 c 374 §§ 69, 70, and 72-79: See note following RCW 16.24.130.

RCW 17.10.250 Applications for noxious weed control funds.

The legislative authority of any county with an activated noxious weed control board or the board of any weed district may apply to the director for noxious weed control funds when informed by the director that funds are available. Any applicant must employ adequate administrative personnel to supervise an effective weed control program as determined by the director with advice from the state noxious weed control board. The director with advice from the state noxious weed control board the distribution and use of noxious weed control account funds.

[1997 c 353 § 28; 1987 c 438 § 32; 1975 1st ex.s. c 13 § 11; 1969 ex.s. c 113 § 25.]

RCW 17.10.260 Administrative powers to be exercised in conformity with administrative procedure act -- Use of weed control substances subject to other acts.

The administrative powers granted under this chapter to the director of the department of agriculture and to the state noxious weed control board shall be exercised in conformity with the provisions of the administrative procedure act, chapter 34.05 RCW, as now or hereafter amended. The use of any substance to control noxious weeds shall be subject to the provisions of the water pollution control act, chapter 90.48 RCW, as now or hereafter amended, the Washington pesticide control act, chapter 15.58 RCW, and the Washington pesticide application act, chapter 17.21 RCW.

[1987 c 438 § 33; 1969 ex.s. c 113 § 28.]

RCW 17.10.270 Noxious weed control boards -- Authority to obtain insurance or surety bonds.

Each noxious weed control board may obtain such insurance or surety bonds, or both with such limits as they may deem reasonable for the purpose of protecting their officials and employees against liability for personal or bodily injuries and property damage arising from their acts or omissions while performing or in good faith purporting to perform their official duties.

[1987 c 438 § 34; 1974 ex.s. c 143 § 5.]

RCW 17.10.280 Lien for labor, material, equipment used in controlling noxious weeds.

Every activated county noxious weed control board performing labor, furnishing material, or renting, leasing or otherwise supplying equipment, to be used in the control of noxious weeds, or in causing control of noxious weeds, upon any property pursuant to the provisions of chapter 17.10 RCW has a lien upon such property for the labor performed, material furnished, or equipment supplied whether performed, furnished, or supplied with the consent of the owner, or his agent, of such property, or without the consent of said owner or agent.

[1987 c 438 § 35; 1975 1st ex.s. c 13 § 13.]

RCW 17.10.290 Lien for labor, material, equipment used in controlling noxious weeds -- Notice of lien.

Every county noxious weed control board furnishing labor, materials, or supplies or renting, leasing, or otherwise supplying equipment to be used in the control of noxious weeds upon any property pursuant to RCW <u>17.10.160</u> and <u>17.10.170</u> or pursuant to an order under RCW <u>17.10.210</u> as now or hereafter amended, shall give to the owner or reputed owner or his agent a notice in writing, within ninety days from the date of the cessation of the performance of such labor, the furnishing of such materials, or the supplying of such equipment, which notice shall cover the labor, material, supplies, or equipment furnished or leased, as well as all subsequent labor, materials, supplies, or equipment for use thereon, with the name of the county noxious weed control board ordering the same, and that a lien may be claimed for all materials and supplies or equipment furnished by such county noxious weed control board for use thereon, which notice shall be given by mailing the same by registered or certified mail in an envelope addressed to the owner at his place of residence or reputed residence.

[1987 c 438 § 36; 1975 1st ex.s. c 13 § 14.]

RCW 17.10.300 Lien for labor, material, equipment used in controlling noxious weeds -- Claim --Filing -- Contents.

No lien created by RCW 17.10.280 exists, and no action to enforce the same shall be maintained, unless within ninety days from the date of cessation of the performance of the labor, furnishing of materials, or the supplying of equipment, a claim for the lien is filed for record as provided in this section, in the office of the county auditor of the county in which the property, or some part of the property to be affected by the claim for a lien, is situated. The claim shall state, as nearly as may be, the time of the commencement and cessation of performing the labor, furnishing the material, or supplying the equipment, the name of the county noxious weed control board that performed the labor or caused the labor to be performed, furnished the material, or supplied the equipment, a description of the property to be charged with the lien sufficient for identification, the name of the owner, or reputed owner if known, or his or her agent, and if the owner is not known, that fact shall be mentioned, the amount for which the lien is claimed, and shall be signed by the county noxious weed control board, and be verified by the oath of the county noxious weed control board, to the effect that the affiant believes that claim to be just; and the claim of lien may be amended in case of action brought to foreclose the same, by order of the court, as pleadings may be, insofar as the interest of third parties shall not be affected by such an amendment.

[1997 c 353 § 29; 1975 1st ex.s. c 13 § 15.]

RCW 17.10.310 Notice of infraction -- Issuance. The county noxious weed control board may issue a notice of civil infraction if after investigation it has reasonable cause to believe an infraction has been committed. A civil infraction may be issued pursuant to RCW 7.80.005, 7.80.070 through 7.80.110, 7.80.120 (3) and (4), and 7.80.130 through 7.80.900.

[1997 c 353 § 30; 1987 c 438 § 24.]

RCW 17.10.350 Infraction -- Penalty. (*Effective until July 1, 2004.*)

Any person found to have committed a civil infraction under this chapter shall be assessed a monetary penalty not to exceed one thousand dollars. The state noxious weed control board shall adopt a schedule of monetary penalties for each violation of this chapter classified as a civil infraction and submit the schedule to the appropriate court. If a monetary penalty is imposed by the court, the penalty is immediately due and payable. The court may, at its discretion, grant an extension of time, not to exceed thirty days, in which the penalty must be paid. Failure to pay any monetary penalties imposed under this chapter is punishable as a misdemeanor.

[1997 c 353 § 31; 1987 c 438 § 28.]

RCW 17.10.350 Infraction -- Penalty. *(Effective July 1, 2004.)*

(1) Any person found to have committed a civil infraction under this chapter shall be assessed a monetary penalty not to exceed one thousand dollars. The state noxious weed control board shall adopt a schedule of monetary penalties for each violation of this chapter classified as a civil infraction and submit the schedule to the appropriate court. If a monetary penalty is imposed by the court, the penalty is immediately due and payable. The court may, at its discretion, grant an extension of time, not to exceed thirty days, in which the penalty must be paid.

(2) Failure to pay any monetary penalties imposed under this chapter is punishable as a misdemeanor.

[2003 c 53 § 117; 1997 c 353 § 31; 1987 c 438 § 28.]

NOTES:

Intent -- Effective date -- 2003 c 53: See notes following RCW 2.48.180.

RCW 17.10.890 Deactivation of county noxious weed control board -- Hearing.

The following procedures shall be followed to deactivate a county noxious weed control board:

(1) The county legislative authority holds a hearing to determine whether there continues to be a need for an activated county noxious weed control board if:

(a) A petition is filed by one hundred registered voters within the county;

(b) A petition is filed by a county noxious weed control board as provided in RCW 17.10.240; or

(c) The county legislative authority passes a motion to hold such a hearing.

(2) Except as provided in subsection (4) of this section, the hearing shall be held within sixty days of final action taken under subsection (1) of this section.

(3) If, after a hearing, the county legislative authority determines that no need exists for a county noxious weed control board, due to the absence of class A or class B noxious weeds designated for control in the region, the county legislative authority shall deactivate the board.

(4) The county legislative authority shall not convene a hearing as provided for in subsection (1) of this section more frequently than once a year.

[1997 c 353 § 32; 1987 c 438 § 37.]

RCW 17.10.900 Weed districts -- Continuation -- Dissolution--Transfer of assessment funds.

Any weed district formed under chapter 17.04 or 17.06 RCW prior to the enactment of this chapter, continues to operate under the provisions of the chapter under which it was formed: PROVIDED, That if ten percent of the landowners subject to any such weed district, and the county noxious weed control board upon its own motion, petition the county legislative authority for a dissolution of the weed district, the county legislative authority shall provide for an election to be conducted in the same manner as required for the election of directors under the provisions of chapter 17.04 RCW, to determine by majority vote of those casting votes, if the weed district will continue to operate under the chapter it was formed. The land area of any dissolved weed district becomes subject to the provisions of this chapter. Any district assessment funds may be transferred after the dissolution election under contract to the county noxious weed control board to fund the noxious weed control program.

[1997 c 353 § 33; 1987 c 438 § 38; 1975 1st ex.s. c 13 § 12; 1969 ex.s. c 113 § 26.]

RCW 17.10.910 Severability -- 1969 ex.s. c 113.

If any provision of this act, or its application to any person or circumstance is held invalid, the remainder of this act, or the application of the provision to other persons or circumstances is not affected.

[1969 ex.s. c 113 § 27.]

Data Report

Geotechnical Data Report Wild Horse Wind Power Project

Prepared for

Zilkha Renewable Energy

Revised January 2004



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Test Pit Locations Map

Introduction

Purpose and Scope

This geotechnical exploration was conducted to evaluate general subsurface conditions in the proposed project area, to support an Energy Facility Site Evaluation Council (EFSEC) permit application for the project. This phase of permit exploration is preliminary, and is intended to gain general geotechnical and geological information. Additional exploration and evaluation is necessary to provide geotechnical design recommendations. The scope of the geotechnical exploration included the following:

- Review geologic and available subsurface information
- Perform a site reconnaissance to identify geology, potential geologic hazards, and proposed test pit locations
- Conduct an exploration of subsurface conditions consisting of fifteen test pit excavations
- Conduct laboratory testing of selected soil samples
- Prepare this data report that summarizes the findings

Project Description

The proposed Wild Horse Wind Power Project is located within northeast Kittitas County in south central Washington. The Project is located east of the Cascade Range, approximately 8 miles west of the Columbia River. The project area lies less than 5 miles north of State Highway 10 (Vantage Highway) and Interstate 90, approximately 15 miles east of Ellensburg, Washington (see the Test Pit Locations map presented in the Attachment).

The proposed Wild Horse Wind Power Project includes the construction of 18 strings of wind turbines (labeled A through R) along ridges that generally run northwest to southeast from the Wenatchee Mountains to the north of the project. Each string contains between 3 and 39 wind turbines, and ranges in length from 0.2 to 3.9 miles. Turbines within a string are identified by their sequential number in a string, such as A_1 , A_2 , and so forth. Individual wind turbines are electrically connected to an underground utility line, and all strings are linked to the proposed project substation through either underground or overhead electric lines. The proposed strings that are part of the project are shown on the map provided at the end of this report (Attachment).

In general, the wind turbines proposed for this project are 3-bladed rotors with a radius of 100 to 150 feet. The rotors and machine house (nacelle) sit atop a tower that is 200 to 250 feet high. Towers are commonly 10 to 15 feet in diameter. Wind turbines are typically supported by spread footings with foundation anchoring, or by deeper cylindrical mono-piles that can be up to 17 feet in diameter. The wind turbines proposed for this project have a rated

generation capacity between 1 and 3 megawatts. At the time of this report revision, a total of 136 turbines are proposed for the project, for a total generating capacity of approximately 201 megawatts.

The project site covers just over 13 square miles (approximately 8,500 acres), although the actual footprint of the area occupied by all of the proposed towers is less than 200 acres. The project site contains ephemeral and perennial creeks that primarily flow eastward into the Columbia River. Exceptions are Dorse Spring and a spring in the south part of the project that flow south and west, that drain into the Yakima River. Most of these drainages originate at springs that exist approximately between elevations 3300 and 3400 feet above mean sea level. Slopes within the Project area generally range from less than 5 degrees on the flat plateau area of the northeast portion of the site, up to 40 degrees on Whiskey Dick Mountain and along sideslopes and drainages. Occasional rock outcrops with vertical exposures are also present on the project site. The greatest vertical height of any exposure has been observed to be approximately 25 feet. Elevations in the project area and adjacent lands generally range from 2300 to 3900 feet.

The majority of the project area is open range, with nearly full coverage by small vegetation. Native bunchgrass, wildflowers, and low shrubs, such as bitterbrush and sagebrush dominate the vegetation. In one localized area of the project, mature conifers border the creek below Pine Spring. More pines and junipers border Whiskey Dick Creek. Most of the ridgetops proposed for development consist of rocky grassland.

Limitations

This report has been prepared for the exclusive use of Zilkha Renewable Energy for specific application to the Wild Horse Wind Power Project. This report has been prepared in accordance with generally accepted geotechnical engineering practice. No other warranty, expressed or implied, is made.

The information contained in this report is based on data obtained from review of geologic literature, observations made at the project site, and test pits excavated at the site. Test pit logs depict subsurface conditions only at the specific locations and times indicated, and only to the depths penetrated. Subsurface conditions and water levels at other locations may differ from conditions at these locations.

CH2M HILL is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data without the express written authorization of CH2M HILL.

Technical Data

Field Exploration

The field exploration was completed on May 7 and 8, 2003. Fifteen test pits were excavated at various locations along the string lines during the exploration (TPG-1 through TPF-15). Additional geologic reconnaissance was completed on November 22, 2003 in response to additions and revisions to the project size and turbine locations.

Test pits were excavated by Fulleton-Pacific Construction, Inc., of Ellensburg, Washington, using a 2002 Cat 420D rubber-tired backhoe, and a 24-inch bucket. Subsurface conditions were observed and logged by a CH2M HILL geotechnical engineer and engineering geologist. Field copies of test pit logs are presented in Appendix A. Soil samples were examined in the field and visually classified in general accordance with ASTM D2488 – Description and Identification of Soils (Visual-Manual Procedure). An engineering geologist classified properties of rock (including type, color, mineralogy, hardness, degree of weathering, fracturing). The field classifications are shown on the test pit logs in Appendix A. Test pits were located after completion in the field with a hand-held Global Positioning System (GPS), to an accuracy of approximately 20 feet. Elevations were also determined using a GPS. All locations and elevations are based on the North American Datum (NAD 1983). Latitude and longitude are given for each test pit in Table 1, along with the depth of each excavation and position with respect to the nearest wind turbine.

Test Pit	Latitude	Longitude	Elevation (ft)	Nearest String Position	Depth (ft)
TPG-1*	47.010	-120.210	3300	E ₂	3.0
TPB-2	47.01718	-120.22416	3648	B ₄	2.6
TPA-3	47.02444	-120.23671	3832	A ₂	7.0
TPC-4	47.04965	-120.22296	3481	N ₂	3.8
TPE-5	47.02710	-120.21622	3450	H ₂	2.5
TPI-6	47.02416	-120.19748	3306	I ₄	3.0
TPD-7	47.03644	-120.21842	3478	J ₄	1.3
TPD-8	47.03979	-120.22094	3492	J ₁	4.5
TPH-9	47.03893	-120.20934	3508	K ₆	0.5
TPJ-10	47.03778	-120.19463	3333	L ₅	9.0

TABLE 1 Test Pit Summary

Test Pit	Latitude	Longitude	Elevation (ft)	Nearest String Position	Depth (ft)
TPJ-11	47.01948	-120.18074	3149	L ₂₀	2.0
TPM-12	47.03359	-120.17977	3280	M ₂	4.5
TPK-13	47.04469	-120.18797	3268	Q ₆	2.0
TPL-14	47.04815	-120.17585	3092	R ₃	2.4
TPF-15	47.01379	-120.20472	3504	E ₁	2.3

TABLE 1
Test Pit Summary

Note: All locations and elevations are based on NAD 83.

*Position and elevation of TPG-1 was approximated using the USGS 7-1/2 minute quad map.

The average test pit depth is just over 3 feet, due to backhoe refusal in hard rock. The same excavation effort for the backhoe was used in determining the final depths of all test pits.

Laboratory Testing

Samples collected during the preliminary field exploration were delivered to a laboratory for testing of index parameters and for verifying field classifications. Laboratory testing was conducted by Strata, Inc., of Boise, Idaho. Testing included the following:

- ASTM D2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock
- ASTM D4318: Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D422: Particle-Size Analysis of Soils

The laboratory test results are summarized in Table 2. Complete geotechnical laboratory test results are provided in Appendix B.

	<u> </u>		Soil Type Moistu		Atterberg Limits (%)			% Passing	
Test Pit	Sample Type	Sample Depth Interval (ft)	ASTM D 2488	(%)	LL	PL	PI	No. 200 Sieve	
TPG-1	Bag	1.0	CL	23.6					
	Bulk	1.0-3.0	GP-GC					7.3	
TPB-2	Bag	0.5	SC	19.0					
	Bulk	0.5-2.5	GP-GC					9.5	
TPA-3	Bag	1.5	CL	34.2					
	Bag	4.5	CLAYSTONE	38.3					
	Bulk	1.0-5.0	GP-GC					41	
TPC-4	Bulk	1.0-3.0	SP-SM					7.3	
TPI-6	Bag	0.5-3.0	GP-GM					13.7	
TPD-7	Bulk	0.5-1.3	CL	16.0					
TPD-8	Bag	2.0	CL	17.0	31	19	12	36	
	Bulk	1.5-3.5	GC					13.5	
TPJ-10	Bag	6.5	СН	59.1	67	27	40		
	Bulk	2.0-7.0	GC					5.9	

TABLE 2

Laboratory Test Result Summary

LL = Liquid Limit.

PL = Plastic Limit.

PI = Plasticity Index.

GP = Poorly graded gravel with sand. GP-GM = Poorly graded gravel with silt and sand.

GP-GC = Poorly graded gravel with clay and sand. GM = Silty gravel.

GC = Clayey gravel.

SP-SM = Poorly graded sand with silt and gravel.

SM = Silty sand.

SC = Clayey sand.

CL = Lean clay.

CH = Fat clay.

ML = Silt, silt with sand/gravel, and sandy/gravelly silt.

Interpretation

Geologic Conditions

The Project area is located on the Columbia Plateau, which is located at the eastern base of the Cascade Range, and at the western edge of the Columbia Intermontane Physiographic Province (Freeman and others, 1945). This lowland province is surrounded on all sides by mountain ranges and highlands, and covers a vast area of eastern Washington and parts of northern Oregon. The province is characterized by moderate topography incised by a network of streams and rivers that drain towards the Columbia River.

The Columbia Plateau is underlain by a series of layered basalt flows extruded from vents (located mainly in southeastern Washington and northeastern Oregon) during the Miocene epoch (between 6 and 18 million years before present [B.P.] – Reidel et al., 1994). Collectively, these basalt flows are known as the Columbia River Basalt Group. Individual basalt flows range in thickness from a few feet to as much as 300 feet. The Project site is located in the Yakima Fold Belt subprovince, an area that includes most of the western half of the Columbia Plateau north of the Blue Mountains. The bedrock underlying the Project site consists of Miocene-age basalt flows, and includes the upper Grande Ronde Basalt and the Frenchman Springs Member of the Wanapum Basalt, with interbedded Ellensburg Formation.

The structural geology of the site includes primarily folded and dipping basalt beds. The Whiskey Dick Anticline trends east-southeast through Whiskey Dick Mountain. The south-trending Naneum Ridge Anticline runs along the western edge of the Project vicinity and intersects the Whiskey Dick Anticline atop Whiskey Dick mountain. These anticlines define topographic high areas. An east-dipping monocline is mapped just east of the Project area. The basalt beds in the eastern side of the project dip up to 6 degrees eastward, towards the Columbia River.

More detailed descriptions of the individual geologic units and geologic hazards at the project site are given below.

Grande Ronde Basalt. This material consists of multiple basalt flows that are sometimes interbedded with the Ellensburg formation. This formation is a subgroup of the Columbia River Basalt Group, and has been described to have a thickness up to 300 meters, although the thickness in the project vicinity is not known. Based on observations of outcrops and test pits excavated during the site visit, the Grande Ronde Basalt appears to be dark gray, fine-grained, and very hard but fractured into angular to subround cobble within a few feet of the ground surface. The fractured portion is infilled by silty and sandy matrix. In most of the test pits excavated in this basalt, the upper few feet is fractured and rippable but fracture density decreases and rock mass quality increases downward rapidly. Most test pits were terminated within 3 feet of ground surface due to backhoe refusal.

Vantage Member of the Ellensburg Formation. A localized outcrop of the Vantage Member of the Ellensburg Formation is mapped in the southeast portion of the Project area. This unit consists of interbedded, weakly-cemented, volcaniclastic sandstone, siltstone, and minor dark mudstone. This member occurs between the Grande Ronde and Wanapum basalts, and has an average thickness of 16 to 33 feet, and pinches out to the west towards the Naneum Ridge anticline. This unit appears to influence local groundwater flow beneath the site. Based on observations and documentation of springs in the Project site, it appears that the springs are located along a relatively horizontal low-permeability zone that likely correlates with the Vantage Member.

Frenchman Springs Member of the Wanapum Basalt. This formation is mapped in the project area north of Whiskey Dick Mountain and overlies the Grande Ronde Basalt. Based on observations of outcrops and test pits excavated during the site visit, the Frenchman Springs member is similar in characteristics to the Grande Ronde Basalt, and can be described as dark gray, fine-grained, and very hard but fractured. The fractured portion is infilled by silty and sandy matrix. In most of the test pits excavated in this basalt, the upper few feet is fractured and rippable but fracture density decreases and rock mass quality increases downward. Most test pits were terminated within 2 to 3 feet in depth and were unable to be excavated further by the backhoe.

Unconsolidated Deposits. Unconsolidated deposits are thin or absent in the Project vicinity. Based on observations made during the site visit, the surficial materials consisted primarily of a thin veneer of brown, silty clay topsoil that was likely wind-deposited. The thickness of this material varied across the site from a few inches to three feet, based on test pit observations. In several areas bedrock and talus were observed at the ground surface.

Mass Wasting Deposits (Landslides). Based on field reconnaissance, several landslides are located in the project vicinity, including one large landslide in the south part of the project. This landslide is also shown on the geologic map, located on the south side of Whiskey Dick Mountain (Tabor et. al, 1982). The approximate boundary of this landslide is shown on the Test Pit Locations map attached to the end of this report. This slide was observed during the site visit and is noted as a possible area of concern for the adjacent strings. This is a large landslide, estimated to be approximately 1/3 mi² in area and almost a mile long. The elevation ranges from approximately 3700 feet to 3000 feet over the length of the slide, with a corresponding average ground slope of approximately 2 horizontal to 1 vertical. The surface of this landslide is irregular and hummocky, and springs appeared to be emanating from some areas of the slide. Native vegetation was observed at the surface throughout the slide area, suggesting that activity on the slide was either historical, or is of a rate slow enough to enable the establishment of native vegetation. This slide is mapped between the C and D strings. The boundary of the slide is approximately 230 feet east of the C string, and approximately 550 feet west of the D string.

Several other possible landslides are mapped southwest of the project boundary, and in the southeast area of the project, near the end of the G string, according to the Washington Division of Geology and Earth Resources digital geologic maps (WDGER, 2001). These slides are much smaller in size. Two are located south of the C and E strings; two others lie on either side of the ridge on which the G string is located. Horizontal distances from these

potential landslide areas to the nearest turbine are approximately 1,200 to 1,800 feet (see Test Pit Locations map, attached). These areas are mapped as landslide deposits (Tabor et al., 1982; WDGER, 2001), but can also be mass-wasting features resulting from other mechanisms of erosion.

Cliffs. In the southeast area of the project near turbine G_4 , basalt outcrops form a series of small cliffs directly east of turbine G4. These cliffs have vertical heights ranging from approximately 15 to 25 feet. As of the date of this report, the nearest cliff to turbine G_4 is mapped approximately 340 feet to the east of the turbine. Observation of the exposed wall of these cliffs indicate the basalt has fairly tight jointing, although small talus fields exist down hill from the cliffs.

Seismicity

Seismic sources include the Cascadia Subduction Zone (CSZ), intraslab, and crustal (local fault) sources (Geomatrix 1995). Each of these events has different causes, and therefore, produces earthquakes with different characteristics (that is, peak ground accelerations, response spectra, and duration of strong shaking). The two source mechanisms associated with the CSZ are currently thought to be capable of producing moment magnitudes of approximately 9.0 and 7.5, respectively (Geomatrix 1995).

Seismic deaggregation mapping was also considered for selection of the most probable earthquake magnitude for the Wild Horse site. This resource provides an estimate of earthquake magnitude at discrete locations, considering the percent contribution of all potential sources for an area (subduction, intraslab, and crustal), as developed by the United States Geological Survey (USGS) Seismic Hazard Mapping Project. Based on input of latitude and longitude for the Wild Horse project site, the highest statistical contribution is for a seismic event with a magnitude of approximately 6.0, for a 475-year mean return period (USGS, 2003).

For new construction, the site should be designed for the maximum considered earthquake, or MCE, according to the International Building Code (IBC, 2000). This earthquake event corresponds to an event having a 2 percent probability of exceedance in 50 years (or 2500-year return period). The MCE has a PGA of approximately 0.18 g at the bedrock surface. This value of PGA on rock is an average representation of the acceleration most likely to occur at the site for all seismic events (crustal, intraplate, or subduction). The corresponding short-period (0.2 second) spectral acceleration is approximately 0.46 g. Additional exploration at the site is necessary before a site class determination can be made for selecting amplification factors for site-specific conditions.

No faults are mapped within the Project Area, but a few faults are mapped within approximately 4 miles southwest of the Project area. Many of these faults are inferred and shown as dotted lines buried by alluvial fan materials. It appears that these faults are inferred based on scattered outcrops of bedrock in the alluvial fans. If the faults had moved after the deposition of the alluvial fans the alluvial fans would be truncated and that would be an indication that these faults had been active in the late Quaternary. More exploration would be required to determine the age and activity of faults in the project vicinity.

Subsurface Conditions

The predominant subsurface conditions for the project consist of dry to moist silty clay topsoil overlying basalt bedrock. At some locations (TPC-4 and TPJ-10), a multicolored cemented clay and sand with glassy clasts was also encountered near the surface. This material was intruded by pockets of basalt rock, and by basalt tubes that were bisected by the test pits. At TPA-3, a layer of blocky, brown, weak claystone was encountered near the bottom of the test pit. This material was weathered into fine gravel-sized particles.

Moist silt to clay was predominant at the surface across the site, supporting vegetative roots in the upper 6 to 12 inches typically. Natural moisture content in near-surface fine-grained samples ranged from 16 to 34 percent, although the portion of silts and clays in the material excavated in any test pit was typically less than 15 percent. The near-surface material was dry in some locations with moisture increasing with depth. In some locations (TPA-3, TPD-8), the thickness of topsoil was greater, and more moist and clayey with depth.

Considering the proportion of fine-grained material and the proportion of rock in the test pits, and assuming a moisture content in the rock and coarse-grained materials of 7 percent, an estimate can be made of the overall moisture content of bulk excavated material. This estimated moisture content for bulk samples is in the range of 8 to 18 percent. The majority of the material collected consisted of gravel and cobble-sized particles, with a typical maximum diameter of 4 inches. Some boulders were also encountered across the site, with a typical size of 12 to 18 inches diameter.

Short-term (typically less than an hour) stability of excavation walls in the test pits ranged from good to excellent, depending on the size of cobbles and the natural moisture in the soil. However, most test pits were relatively shallow, and so deep excavation sidewalls were not observed for sloughing.

Cemented Clay and Sand. In test pits TPC-4 and TPJ-10, a highly-cemented clay and sand layer was encountered below the topsoil, up to a depth of 8.5 feet below ground surface. Below 5.5 feet in TPJ-10, this material was highly plastic and more moist, and did not exhibit the degree of cementation found closer to the surface. This material is believed to be part of the Vantage Member of the Ellensburg formation (Tabor et al., 1982), and appears to have weathered in-place to a more plastic state. This material contained varying percentages of fine sand and gravels. This material was difficult to excavate in the cemented zone, although excavation stability was excellent.

Weak Claystone. Test pit TPA-3 encountered a layer of brown, blocky, weak claystone overlying basalt, between the depths of 3.5 and 5.5 feet. This material was broken up into gravel-sized pieces, and was similar in texture to a soapstone. The natural moisture content of this material was 38 percent. Excavation in this material was fairly easy.

Basalt Rock. Basalt rock encountered at the site consisted of two flows – the Grande Ronde Basalt, and the Frenchman Springs Member of the Wanapum Basalt. Both of these formations are part of the Columbia River Basalt Group. All test pits were terminated in this material, at depths between 0.5 and 9.0 feet. The rock was typically weathered and more fractured in the upper 2 to 3 feet, becoming harder with depth and very difficult to excavate further with the equipment used.

Groundwater Conditions

Groundwater was not observed in any of the test pits excavated at the project area. However, some zones of soil in the test pits were observed to have free water in the voids, which was likely water from surface infiltration.

There are numerous springs mapped and unmapped in the area, and a few ponds that are anticipated to be seasonal only. The springs are consistently at elevations between approximately 3300 and 3400 feet across the site, and are believed to coincide with the low-permeability Vantage Member of the Ellensburg formation. In May, springs were observed to produce flows ranging from 1 to 5 gallons per minute (gpm). During the field visit in November, most springs were dry. One spring was observed to be producing approximately 1 gpm, or approximately 20 percent of its springtime flow.

In some of the swales and small drainages near known springs, groundwater is anticipated to be present very near the surface. Groundwater is not anticipated to be typically present on the ridges where most of the proposed wind turbine strings are located. However, localized pockets of saturated subsurface soils and perched groundwater may be encountered on ridges in places where surface water infiltrates the subsurface and collects above rock or fine-grained material. Fine-grained and cemented soils have lower porosity and permeability, and were typically found in the upper 1 to 4 feet of test pits excavated at the project area.

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Attachment
Test Pit Locations Map



Appendix A Test Pit Logs

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CH2MHILL PROJECT NUMBER TEST PIT_NUMBER TPE-5 179679. BI.DI SHEET 7 OF / **TEST PIT LOG** PROJECT Wild Horse Wind LOCATION E String LOGGER J. Butler PE E, Pt. CONTRACTOR Folleton - Paeific (Rich ELEVATION Approx, 3450 Riz EXCAVATION EQUIPMENT ______ 420D Backhoe ____ DATE EXCAVATED ______ 7 2,003 WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 5-10 (4, Width 214 _ Max Depth _2.5 9 SAMPLE SURFACE (FT) SOIL DESCRIPTION COMMENTS NUMBER AND TYPE SOIL NAME, USCS GROUP SYMBOL, COLOR. MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, DIFFULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS, INSTRUMENTATION NTERVAL MINERALOGY ÔŤ Sitty topsoil (51LT, ML) roots and some cobbles Contact @ 0.7 Pt. BASALT, broken and Lookes like riprop Mexc. spoils pile fractured, very hard, broken into 0.2' to 1.0' boulders Photo RI/PO 2 Back hoe refusal T. D. = 2.5 H 3 4 5

CH2MHILL PROJECT NUMBER TEST PIT NUMBER 179679,81.01 TPI-6 SHEET **TEST PIT LOG** PROJECT Wind Horse Wind LOCATION I String エィ _ LOGGER J. Butler PF= 1 fł. CONTRACTOR Fulleton - Pacific ELEVATION Approx, 3506 EXCAVATION EQUIPMENT Cat 4200 Backhoe DATE EXCAVATED May 7, 2003 WATER LEVEL AND DATE Not encon leved APPROX. DIMENSIONS: Length 6-8 9. Width 2 Ft Max Depth 3.0 🕀 SEPTH BELOW BURFACE (FT) SAMPLE SOIL DESCRIPTION COMMENTS NUMBER AND TYPE SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, NTERVAL DIFFULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, MINERALOGY GRADATIONAL CONTACTS, TESTS, INSTRUMENTATION SIGNIN MUIST, root zone 0.5 Contactoro.6 Pl. BASALT, spheroidally Fractured (cores+ shells), very hard (RS), 0.1 to 0.8 diameter rounded clasts Backhoe refusal 3 3.0 T.D. = 3.0 A. 4

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ELEVAT		pprose.	34784		OR <u>Fuller</u>	bori	- Pacific	Rich	Riley)		·
EXCAV/ WATER	ATION EQU	JIPMENT	<u>evendered</u>	<u>ひ </u>	<u>ackhae</u>	D		May	8,200	_ج د	- 01
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οĒ.							<u> </u>	COMME	NTS		
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							TEST PIT LOG			
PROJE(ELEVAT EXCAV/		12 12 1	se Wind 3492 Cat 420		D Str R Fullet Ichne	برور <u>مر</u>	D, -PBCIFIC (Ra DATE EXCAVATED M	OGGER J. 7 Le 12/124) By 8, 20	<u>30tk</u>	<u>r, PE</u>
WATER			-encontere		MENSIONS: Le	ngth _	<u>_8-10</u> A.Widih2	2.17. Max D	epih <u>4 - 7</u>	<u>5 fl.</u>
§£	SAI		SC		N		·	COMMENTS		
OEPTH BE	INTERVAL	NUMBER AND TYPE	SOIL NAME, U MOISTURE CO OR CONSISTE MINERALOGY	SCS GROUP SYN NTENT, RELATI NCY, SOIL STRU	MBOL, COLOR VE DENSITY JCTURE,		DIFFULTY IN EXCAVAT CONDITION, COLLAPS DE8RIS ENCOUNTERE GRADATIONAL CONTA	ION, RUNNING G E OF WALLS, SA D, WATER SEEP CTS, TESTS, INS	RAVEL ND HEAVE AGE, TRUMENT	ATION
	Ezy	IN YTOS	SILT (CLAY brown to fi to fi BASAL broken weather sphere	ML) to (CL) N/ , moist rm -T, Sithy n, angula red with sidd Mcl	(7. SAND , SOFF		Backhoe re T.D. = 4.5	Fusal R7.		
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						TEST PIT LOG		
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ŠF.	SAN	MPLE	sc	DIL DESCRIPTION		C	OMMENTS	
DEPTH BELO	INTERVAL	NUMBER AND TYPE	SOIL NAME, U MOISTURE CO OR CONSISTE MINERALOGY	SCS GROUP SYMBOL, DATENT, RELATIVE DEI NCY, SOIL STRUCTUR	COLOR, NSITY E,	DIFFULTY IN EXCAVATION CONDITION, COLLAPSE DEBRIS ENCOUNTEREI GRADATIONAL CONTAC	ON, RUNNING GRAV E OF WALLS, SAND I D, WATER SEEPAGE CTS, TESTS, INSTRU	IEL IEAVE, MENTATION
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ELEVAT EXCAV	TION \underline{A}	PROX.	5553+ (At 47	らの の	DR <u>rulleta</u>	<u> </u>	Yapitic (Rizh	<u> </u>		_ .
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ŽF	SAN	APLE	so				COM	IMENTS		
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WATER	LEVELAND		f-found		DIMENSIONS: I	.ength _		2 ff Max	Depth <u>47</u>	59
ðE	SAN		sc		TION			COMMENTS		
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WATER	TION EQU	DATE \mathcal{N}	of found	APPROX DIME	NSIONS: Length		<u>1000</u> 2 9	* 8, 22 7 Marco	203	<u> </u>
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		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	SOIL NAME, U	SCS GROUP SYME						
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PROJE	от <u>Wi</u>	6 Hors	e Wind		String	43	LOGGER J/	Sutles PE
ELEVAT	10N	parox	. 3092	CONTRACTOR	Fulleton	-Pacific	<u> </u>	
	TION EQU	IPMENT	- 20 - 420 7 Bown	D Gackhe	€ D.		May 8, 22	03
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l dE		<u></u>						
DEPTH B DURFACE	INTERVA	NUMBER AND TYP	MOISTURE CO OR CONSISTE MINERALOGY	SCS GHOUP SYMBOL INTENT, RELATIVE DI INCY, SOIL STRUCTU	, Color, Ensity Re,	DIFFULTY IN EXCAN CONDITION, COLLA DEBRIS ENCOUNTE GRADATIONAL CON	ATION, RUNNING ( PSE OF WALLS, SA RED, WATER SEEI TACTS, TESTS, IN	SRAVEL ND HEAVE, PAGE, STRUMENTATION
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CH2MHILL PROJECT NUMBER TEST PIT NUMBER 179679,131.01 TPF-15 SHEET OF / **TEST PIT LOG** PROJECT Wind HORSE Wind LOCATION F String  $F_{2}$ LOGGER J. Butler, PE 3504 R. CONTRACTOR _ Fulleton - Pacific ELEVATION ADDOX. (Rick Riley EXCAVATION EQUIPMENT 420 D Backhoe _ DATE EXCAVATED May 8 200 ~ WATER LEVEL AND DATE Not Bron APPROX. DIMENSIONS: Length _______ Width ______ Pt Max Depth 2,3 RI DEPTH BELOW BURFACE (FT) SAMPLE SOIL DESCRIPTION COMMENTS NUMBER AND TYPE SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY DIFFULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, NTERVAL GRADATIONAL CONTACTS, TESTS, INSTRUMENTATION Silty topcoil, brown, roots BASALT @ 2.3 A. very hand (RS) and Fractured, angular clasts up to 0.8 Pl-diameter, silt/sond -Hard digging matrix Backhoe refusal PA -7.D. = 2.33 4 5

Appendix B Laboratory Test Results



STRATE A T B

Summary of Test Results

Zilkha Wild Horse Ch2MHill Project: Report to:

Report Date: 5/23/2003 File Name: CH2MHill-BM02418

						assification	8 Visual Cla	STM D248	* Indicates A
			5.9		Х	Gravel w/Sand & Silt	B3L1013	2-7	
공	40	67		59.1		Red Brn. Clay w/Sand	B3L1012	6.5	TPJ-10
			13.5			Brn. Clayey Sand w/Grav.&Cob.	B3L1011	1.5-3.5	
С	12	31		17.0%			B3L1010	2	TPD-8
				16.0%		Brn. Sandy Silt*	B3L1009	0.5-1.3	TPD-7
			13.7			Silty Sand w/Basalt gravel	B3L1008	0.5-3	TPI-6
			7.3			Sand w/Silt & Trace Gravel	B3L1007	1-3	TPC-4
			41		×	Clayey Gravel w/Sand & Cobbles	B3L1006	1-5	
				38.3%		Dk. Brn. Weathered Rock*	B3L1005	4.5	
				34.2%		Brn. Clay*	B3L1004	ן. ני	TPA-3
			9.5			Gravel w/sand ,Clay,&Cobbles	B3L1003	0.5-2.5	
				19.0%			B3L1002	0.5	TPB-2
			7.3		×	Gravel w/Silt & Cobbles	B3L1001	1-3	
				23.6%		Dk. Brn. Clay w/rootlet*	B3L1000	Ļ	TPG-1
Class.	₫	١	No. 200,%	Moisture, %	Provided	(classification)	Number	Feet	
Fines	g Limits	Atterber	Passing	In situ	Gradation	Description and remarks	Lab	Depth -	Test Pit -

Reviewed by:







Attachment
Test Pit Locations Map



CH2MHILL	PROJECT NUMBER 179679. BI-01	TEST PIT NUMBER
		TEST PIT LOG
PROJECT WIG HOUSE V ELEVATION <u>APPON</u> . 35 EXCAVATION EQUIPMENT <u>Cat</u> WATER LEVEL AND DATE Not enco	VIND LOCATION & Storm, 00 FL. CONTRACTOR Fulleton 420 D backhoe c	G2-G3 LOGGER J.Butler, PE - Pacific (Rick Riley) DATE EXCAVATED May 7, 2003 8-10 PL WIGH 2 PL MODEL 2 CL
≩ <u>⊂</u> SAMPLE	SOIL DESCRIPTION	
SURFACE (F) SURFACE (F) SURFAC	NAME, USCS GROUP SYMBOL, COLOR, FURE CONTENT, RELATIVE DENSITY DNSISTENCY, SOIL STRUCTURE, RALOGY	DIFFULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS, INSTRUMENTATION
	Dots to 1.1 A.	WX = weathered -
$\begin{bmatrix} 1 \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\$	7. CONTACT )X BASALT, fractured aut have rock (R4-R5); ark grey, pillow basalt; kan bet (K	Difficult excavation with this equipment; operator thinks could
	ngular gravel /cobbles_	90 a little for ther w/_ trigger equipment _ Photo RI/PI
		T.D. = 3.0  H.
Ч <u>-</u> - -	 	-
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СН	2MHI	ILL		PROJECT NUMBER					
				(79679.13	31-01	TPB-2	SHEE	et /	OF /
		· .				TEST PIT LO	G		_
PROJEC ELEVAT EXCAVA WATER	CT <u>V</u> i TION <u>Ap</u> ATION EQU	<u>IC Hor</u> PREX. JIPMENT _ D DATE <u>N</u>	se Wind 3648 A. Cat 420 A lot encounterco	LOCATION BS CONTRACTOR <u>9</u> D <u>Backhoe</u> DAPPROX. DIMENSIO	String 	B ₆ - <u>Pacific</u> ( DATE EXCAVATED - <u>8-10 A</u> Width	LOGGER J Rick Ri May 7, 2 2 fl. Ma	- <u>Butle</u> r ley) DD 3 ax Depth_Z	PE 54
SF.	SA	MPLE	sc	DIL DESCRIPTION			COMMENTS	<u> </u>	
DEPTH BEL	INTERVAL	NUMBER AND TYPE	SOIL NAME, U MOISTURE CO OR CONSISTE MINERALOGY	SCS GROUP SYMBOL, DNTENT, RELATIVE DE NCY, SOIL STRUCTUR	COLOR, NSITY E,	DIFFULTY IN EXCA CONDITION, COLL DEBRIS ENCOUNT GRADATIONAL CO	VATION, RUNNIN APSE OF WALLS, ERED, WATER SE NTACTS, TESTS,	G GRAVEL SAND HEAV EPAGE, INSTRUMEN	E, TATION
			Silty LE	AN CLAY W/ =	MND (CL)				
	1		0.5 A. C	DNTACT	~				_
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			crystall	me, breaks	into -				
/			Platy	pieces; san	id/silf_				—
		X	1 m tia	chines	-				-
-		1			_	Photo RI	/P2		~
		A			-	7 1010 111			-
2-					_	Very solid	rock a	> 2.5 f	4. —
	<u>.</u>				_	Balchoe	refusal		_
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CH2MHILL PROJECT NUMBER TEST PIT NUMBER 179679.981.01 TPA-3 SHEET 1 OF / TEST PIT LOG PROJECT Wild Horse Wind LOCATION A String LOGGER J. Butler PE A, ELEVATION APPTOX. 3832 P. CONTRACTOR Fulleton - Pacific (Rick Riley) EXCAVATION EQUIPMENT COT 420 D TEachbe DATE EXCAVATED May 7, 2003 WATER LEVEL AND DATE Not encounter ed APPROX. DIMENSIONS: Length 10-12 A. Width 2 A. Max Depth 7 A. BEPTH BELOW SAMPLE SOIL DESCRIPTION COMMENTS NUMBER AND TYPE SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, DIFFULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS, INSTRUMENTATION NTERVAL MINERALOGY LEAN CLAY, brown, moist to wet, w/ sand + gravel (< 15%), and pockets of wx 1.0 15ag basalt; roots to 0.84 2 2.5 A. Becoming dry to moist 3.5 Rf. CONTACT CLAYSTONE, dark brown, 4 Soapy texture (soapstone), breaks into blocky, angular - Photo RI/PS Bag pieces 50 5,5 Fl. GUNTACT BASALT, Jork gray, Fractured + rippable,  $\varphi$ hard (RS) Backhoe Refusal T.D. = 7.0 ft. 8 h

CH2MHILL	PROJECT NUMBER	TEST PIT NUMBER
	111011.01.01	
PROJECT Wild Hows ELEVATION Approx. EXCAVATION EQUIPMENT C WATER LEVEL AND DATE Not	e Wind LOCATION C String 3481 Fl. CONTRACTOR Fulleton 2017 420 D Back hoe 1 Concountered APPROX DIMENSIONS: Length	C2 LOGGER J. Butler, FE - Pacific (Rick Riley) DATE EXCAVATED May 7,2003 8-10 ff Width 2 Pt. Max Denth 3.8 ft
	SOIL DESCRIPTION	
DEPTH BELC SURFACE (F INTERVAL NUMBER AND TYPE	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DIFFULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS, INSTRUMENTATION
100 IIII 100 IIII 100 IIIII 100 IIIII 100 IIIIII 100 IIIIII 100 IIIIII 100 IIIIII 100 IIIIIII 100 IIIIIII 100 IIIIIIIIIII 100 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	MINERALOGY Silty LIEAN CLAY (CL) brown, slightly inoist Contact D.9 Rl. Cemented Sand/Guavel, w1 glassy clasts, niedium brown to yellow-brown, hardness RI-R2; contans basalt "tubes", 10-12" M cliameter, at various cepths intersecting the trench direction Rofuzal on basalt at- 3.8 Rl., Vory hard 	Photo RI/PG Backhoe refusal 7.D. = 3.8 PA.
	-	- 

PROJECT NUMBER 	TEST PIT NUMBER	SHEET	1	 OF /

**TEST PIT LOG** 

PROJECT Wild Horse Wind LOCATION E String, E2 LOGGER J. Butler PE ELEVATION Approx. 3450 Pt. CONTRACTOR Fulleton - Paeific (Rick Riky) EXCAVATION EQUIPMENT Cat 4200 Backhoe DATE EXCAVATED May 7, 2003

WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 5-10 (4, Width 24, Max Depth 2.5 (7)

	§£	SAI		SOIL DESCRIPTION	COMMENTS
	DEPTH BEL SURFACE (F	INTERVAL	NUMBER AND TYPE	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DIFFULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS, INSTRUMENTATION
				Silly topsoil (SILT, ML), roots and some cobbles	
	- - -			Contact @ 0.7 Pt BASALT, broken and - Bractured, very haved, -	Looke like riprap in exc spoils pile -
	-			broken into 0.2' to - 1.0' boulders -	Photo RI/Po -
	2 _			-	-
					15ach hoe refusal - T. D. = 2,5 Pt
	3- -			 	-   
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-6					_

CH	2 <b>M</b> HI	LL			MBER 95(D)				
					<i></i>		<u>©</u> ₃⊧ _OG		
PROJEC ELEVAT EXCAVA WATER	ION AP	J Hors Prox. ? IIPMENT DATE M	e WMd 3506 fd. Crat 420 of encomlere	LOCATION _ CONTRACTO	I String R <u>Fulleton</u> hoe MENSIONS: Lengt	- Pacific DATE EXCAVATED	LOGGER	7, BJ 2003 Max Depth	ler, PE
<b>A</b> E	SAM	MPLE	s		<u>-</u>		COMMENT	'S	
DEPTH BELO	INTERVAL	NUMBER AND TYPE	SOIL NAME, U MOISTURE CO OR CONSISTE MINERALOGY	SCS GROUP SYI DNTENT, RELATI	MBOL, COLOR, VE DENSITY JCTURE,	DIFFULTY IN EX CONDITION, CO DEBRIS ENCOU GRADATIONAL	KCAVATION, RUNN DLLAPSE OF WALI JNTERED, WATER CONTACTS, TEST	IING GRAVI LS, SAND H SEEPAGE S, INSTRU	EL IEAVE, MENTATION
		0.5	Slightly Contact	( 54 ND () 1 moist, 20.6 A.	ML), brown root zone	-			-
-			ISASA Frac she	LT, sphe tured (co 116), ven	roidally rest - hard	-			-
		メス	(RS) diar class	), 0.1'- neter re ts	b 0.8'	-			
2-		12		-	-				-
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				17967	19. BI. OI	,	TPD-	4 7	SHEET	
PROJE	ст _ <i>Wi</i>	ld Hor	se Wind		DSt	ing	)		$\overline{J}, \underline{R}$	tler, PE
ELEVAT	TION	<u>PProx.</u>	<u> </u>	CONTRACT つ の の の	OR <u>Fulle</u>	tori	- Pacific	CKich	Kiley)	
WATER	LEVELAN		1 enconteses	APPROX. D	IMENSIONS: Le	D ngth _	$\underline{-5-6}$ $\underline{-6}$ Width	2 (H	Max Dept	h 1.3 ft.
<b>S</b> F	SAI	MPLE	so	DIL DESCRIPTIC	 )N	-		COMME	NTS	
DEPTH BEL	INTERVAL	NUMBER AND TYPE	SOIL NAME, U MOISTURE CO OR CONSISTE MINERALOGY	ISCS GROUP SY DNTENT, RELAT ENCY, SOIL STF	/MBOL, COLOR FIVE DENSITY RUCTURE,		DIFFULTY IN EXCA CONDITION, COLLI DEBRIS ENCOUNT GRADATIONAL COL	VATION, RU APSE OF W ERED, WAT NTACTS, TE	INNING GRA ALLS, SAND ER SEEPAG STS, INSTR	VEL HEAVE, E, UMENTATION
Ð			Saudy	LEAN C	LAYCL				<u>-</u> -	
			slight	y moist	ARTER	~-				
		2-5-	30%	sand,	with					
			Cold	es + b	oulders	-				-
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CH	2 <b>M</b> HI	LL		PROJECT NUM	BER P_BL_DI		IMBER - 8			
						TEST PIT	LOG		<u> </u>	
PROJEC	ст_ <i>W;</i>	12 1400	se Wind	, D,	LO	GGER J. 73	utle	r PE		
ELEVAT		PPTOX.	3492 Cat 47		Fulleton	-Pocific	(Rizh	c Riley)	-7	
WATER		DATE Not	-encountere	2 APPROX. DIM	ENSIONS: Length	DATE EXCAVATE 	D <u>700</u> Vidth <u>2</u>	9 0 , 200 9 . Max Dep	<u>&gt;</u> th <u>-</u> 4	5 F.
EDW	SAN	MPLE	sc	DIL DESCRIPTION			CC	OMMENTS		
DEPTH BEL	INTERVAL	NUMBER AND TYPE	SOIL NAME, U MOISTURE CO OR CONSISTE MINERALOGY	SCS GROUP SYM DNTENT, RELATIV NCY, SOIL STRU	BOL, COLOR, E DENSITY CTURE,	DIFFULTY IN CONDITION, ( DEBRIS ENCO GRADATIONA	EXCAVATIO COLLAPSE OUNTERED, AL CONTACT	N, RUNNING GR. OF WALLS, SANI , WATER SEEPAG IS, TESTS, INSTE	AVEL D HEAVE BE, RUMENT	ATION
			SILT (	(ML) to l	EAN _		<u></u>			
			CLAY	(CL) ~/	SAND, _					_
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					_	Backho	e refu	isal		_
						T.D. =	4.5 (	7.		
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CH	2 <b>M</b> HI	LL		PROJECT NUM	BER 9. 131-01	TEST PIT NUMBER	SHEET	1	OF /
						TEST PIT LOG			
PROJEC ELEVAT EXCAVA WATER	CTA NONA NTION EQU	Hors	e Wind 3508 Cat 42 t enconter	LOCATION FLOONTRACTOF D D Ba J APPROX. DIM	H String Fulleton dehoe D ENSIONS: Length	1- Pacific ATE EXCAVATED A	LOGGER J.B. Reh R. Loy 8, 200 2 A. Max De	utler Zay) Z	2E 25 R
<b>A</b> F	SAN	MPLE	sc	DIL DESCRIPTION			COMMENTS		
QEPTH BELO	INTERVAL	NUMBER AND TYPE	SOIL NAME, U MOISTURE CO OR CONSISTE MINERALOGY	SCS GROUP SYM ONTENT, RELATIV NCY, SOIL STRUC	BOL, COLOR, E DENSITY CTURE,	DIFFULTY IN EXCAVA CONDITION, COLLAP DEBRIS ENCOUNTER GRADATIONAL CONT	TION, RUNNING GF SE OF WALLS, SAN RED, WATER SEEPA ACTS, TESTS, INST	AVEL D HEA\ GE, RUMEN	/E, ITATION
			Minmal and Contact.	sitty solvegetatio D 0.5	7, roots, -/ ISASALT	Backhor ret	rizal		
					- -  -	Attempted	7 test of	- 10	-
					-	The vici Basalt ou	nizy at 7 iterops ne	PH arbi	-9 -
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PROJE ELEVAT EXCAV WATER		18 14 Prox. JIPMENT D DATE /\+	orse Win 33334 Cot 42 anoundes	L LOCATION CONTRACTO D D APPROX. DI	J String DR Fulleton Jackhoe MENSIONS: Length	DATE EXCAVATED	LOGGE [ <i>R.z.</i> / 1h Z. f7	R J-B R2	 )	, PE
∂F	SA	MPLE	sc	DESCRIPTIC	N	<u> </u>	COMM	ENTS		
DEPTH BEL	INTERVAL	NUMBER AND TYPE	SOIL NAME, U MOISTURE CO OR CONSISTE MINERALOGY	SCS GROUP SY DITENT, RELAT	MBOL, COLOR, IVE DENSITY UCTURE,	DIFFULTY IN EXC CONDITION, CO DEBRIS ENCOU GRADATIONAL C	CAVATION, RI LLAPSE OF V NTERED, WA CONTACTS, T	UNNING GRA VALLS, SAND TER SEEPAG ESTS, INSTF	₩EL ) HEAVE, }E, }UMENT/	, ATION
-	1		SILTY Motzł	sand (sm , root z	), dry to	-				
			Contact	Q 1.5 P	· · · · · · · · · · · · · · · · · · ·	-				-
2		2-0	Clayey v/ 9 moth fines clast	GRAVEL lassy cli led brow ; angula ;	- (GC), _ asts, m, plastic r basalt.					
6 -	15 ag	IZULK	Transitio Contact Gravel Orang	nal @ 5.5.F ly CLAY e-brown	7. (cl-CH), , small _					
		7-0	Contact BASAL	E @ F.S F. hard,	Plastic - - - RA clasts -	Backhoe	refusa	(		-  
(0-					-	T.D. = 9.0	) FK		<u></u>	-
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PROJECT NUMBER 179679.B1-01 TPJ-1	R / SHEET	(	OF )
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**TEST PIT LOG** 

PROJECT Wild Horse Wind LOCATION J String, Jzo LOGGER J. Butler, PE ELEVATION Approx. 3149 Ft. CONTRACTOR Fulleton - Pacific EXCAVATION EQUIPMENT Cat 420 D Backhoe DATE EXCAVATED May 8, 2003 WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 6-8 Ft. Width 2 Ht. Max Depth 2.0 Ft.

Å₽	SAMPLE	SOIL DESCRIPTION	COMMENTS	
DEPTH BEL	INTERVAL	NUMBER AND TYPE	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DIFFULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS, INSTRUMENTATION
			Sandy SILT (ML), brown, dry to moist, with roots BASALT @ 0.5 Pt Weathered, hard but - fractured, pieces up - to I foot diameter -	-spoils look like rip rap
2-			- 	Backhoe refusal T.D. = 2.0 fl.
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-6-1			- - -	

PROJECT NUMBER 179679. BI. DI TPM-12 SHEET OF

**TEST PIT LOG** 

PROJEC	T Wile	! Hors	e Wind	LOCATION M Str	ing, M2	LOGGER J. Butler, PE					
ELEVAT	ELEVATION STPPTOX, 32,80 A. CONTRACTOR Fulleton - Pacific (Rich Gley)										
EXCAVA WATER	TION EQUÍ		Found	D Backhoe APPROX. DIMENSIONS: L	DATE EXCAVATED _ _ength <u> </u>	May 8, 2003 2 ft Max Depth 4.5 ft.					
MGF	SAM	MPLE SOIL DESCRIPTION				COMMENTS					
	L AL		SOIL NAME, US	CS GROUP SYMBOL, COLO	R, DIFFULTY IN EXC	AVATION, RUNNING GRAVEL					

DEPTH BE SURFACE	INTERVAL	NUMBER AND TYPE	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DIFFULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS, INSTRUMENTATION
			Silly / Clayey SAND (SM/SC), brown, Moist, roots _	
-			-	-
			Contact @ 1.1 A BASALT highly -	
-			Fractured , nith - Vitrophyse (RI-R2), -	-
2-			Sark grey basatt, - fractures to angular -	-
			silty/sandy gravel, 0.1 to 0.5 clasts	- -
3-			approx. 30% matrix'_	
-			-	-
- - -			-	- -
- r -				
- - -				7.D. = 4.5  fl,
5-				
			-	-
61				

CH2	<b>2M</b> HI	LL		PROJECT NUN	IBER	TEST PIT NUMB	ĒR			
				( / 96 .	19,151.01	TPR.	-15	SHEET	/ OF /	}
						TEST PIT LC	)G		<u>.</u>	
	ст_ <u>\√}</u> лом́А	12 Hor	se Wind 3218f		KStrin	K6	LOGG		Butler, P	E
EXCAVA	TION EQU	IPMENT	Cat 47	10 contractor	ekhoe [		May	8,21	7) 703	_
			of found		ENSIONS: Length	<u>6-8 f</u> 2.Width		Max D	epth 20 (	<u>7</u>
ELOW							COM	MENTS		
DEPTH B SURFACE	INTERVA	NUMBEF AND TYP	OR CONSISTE MINERALOGY	SUS GROUP SYN DNTENT, RELATIN NCY, SOIL STRU	BOL, COLOR, /E DENSITY CTURE,	DIFFULTY IN EXC CONDITION, COLI DEBRIS ENCOUN GRADATIONAL CO	AVATION, F LAPSE OF TERED, W ONTACTS,	RUNNING G WALLS, SA ATER SEEF TESTS, INS	RAVEL ND HEAVE, AGE, TRUMENTATION	4
			silt to dry to	psoil, t	roots -					_
-			BASALT	@ D.5	e had-					~
-			fractor	a, RS;	angular -					_
( _			612515	· up to	0,5 ft				-	
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CH2MHILL				PROJECT NUMBER	>(	TEST PIT NUMBER	SHEET		OF /
				TEST PIT LOG					
PROJEC	хт <u></u> і́	6 Hors	e Wind	LOCATION _ L Str	ing,	43	DGGER J.T.	Sutles	PE
ELEVAT		PARA	· 3092 ( 777 420	P.CONTRACTOR Fulle	ton	-Pacific	211 0 0 0		
WATER LEVEL AND DATE Not Round				APPROX. DIMENSIONS: Le	DA ength	TE EXCAVATED <u> </u>	2 <u>FL.</u> Max D	<u>0 5</u> epth <u>2</u> .	4 Rt.
MOF-	SAMPLE SC			DIL DESCRIPTION		C	OMMENTS		
DEPTH BEL	INTERVAL	NUMBER AND TYPE	SOIL NAME, U MOISTURE CO OR CONSISTE MINERALOGY	SCS GROUP SYMBOL, COLOF DNTENT, RELATIVE DENSITY ENCY, SOIL STRUCTURE,	٩,	DIFFULTY IN EXCAVATION CONDITION, COLLAPSE DEBRIS ENCOUNTEREI GRADATIONAL CONTAC	DN, RUNNING G OF WALLS, SA D, WATER SEEP TS, TESTS, INS	RAVEL ND HEAVE AGE, TRUMENT	E. FATION
			Silly top	soil, brown, roc	ots				
			Contact.	0,4 M.					-
			BASAL	.T, broken, ver	Y -				_
, -			hard	, subangular cla	st <u>s</u>				_
[/-]			upto	l'diameter;	_				
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-						Backhoe re	tus al		
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PROJECT NUMBER	TEST PIT NUMBER		
179679.131.01	TPF-15	SHEET	/ OF /

**TEST PIT LOG** 

PROJECT Wild House Wind LOCATION F String F7 LOGGER J. Butler, PE ELEVATION Approx. 3504 A. CONTRACTOR Fulleton - Pacific (Rick Raley) EXCAVATION EQUIPMENT Cat 420 D Jockhor DATE EXCAVATED May 8, 2003 WATER LEVEL AND DATE Not Round APPROX. DIMENSIONS: Length 6-8 A. Width 2 A Max Depth 23 AL

SAMPLE SOIL DESCRIPTION DEPTH BELOW COMMENTS NUMBER AND TYPE SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, DIFFULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS, INSTRUMENTATION NTERVAL MINERALOGY Sitty topcoil, brown, routs BASALT @ 2.3 A. very hand (RS) and fractured, angular clasts up to 0.8 Pl- Hard digging matrix 2 Backhoe retural P.1 7.D. = 2.33 4



Summary of Test Results

Project: Zilkha Wild Horse Report to: Ch2MHill Report Date: 5/23/2003 File Name: CH2MHill-BM02418

Test Pit -	Depth -	Lab	Description and remarks	Gradation	In situ	Passing	Atterber	g Limits	Fines
	Feet	Number	(classification)	Provided	Moisture, %	No. 200,%	LL	PI	Class.
TPG-1	1	B3L1000	Dk. Brn. Clay w/rootlet*		23.6%				
	1-3	B3L1001	Gravel w/Silt & Cobbles	Х		7.3			
TPB-2	0.5	B3L1002			19.0%				
	0.5-2.5	B3L1003	Gravel w/sand ,Clay,&Cobbles			9.5			
TPA-3	1.5	B3L1004	Brn. Clay*		34.2%				
	4.5	B3L1005	Dk. Brn. Weathered Rock*		38.3%				
	1-5	B3L1006	Clayey Gravel w/Sand & Cobbles	Х		41			
TPC-4	1-3	B3L1007	Sand w/Silt & Trace Gravel			7.3			
TPI-6	0.5-3	B3L1008	Silty Sand w/Basalt gravel			13.7			
TPD-7	0.5-1.3	B3L1009	Brn. Sandy Silt*		16.0%				
TPD-8	2	B3L1010			17.0%		31	12	CL
	1.5-3.5	B3L1011	Brn. Clayey Sand w/Grav.&Cob.			13.5			
TPJ-10	6.5	B3L1012	Red Brn. Clay w/Sand		59.1		67	40	СН
	2 - 7	B3L1013	Gravel w/Sand & Silt	Х		5.9			

* Indicates ASTM D2488 Visual Classification.

Reviewed by: ed Claurge












					Miles
0	2.5	5	10	15	20

#### PRELIMINARY

NOT FOR CONSTRUCTION

## 

#### EXHIBIT 6-B GEOLOGIC STRUCTURES AND FAULTS MAP (25 Mile Radius)

#### DWG: FAULTS & GEO 25 MILES

DATE: NOVEMBER 20, 2003

GEO25.mxd



Business Name: Wind Ridge Power Partners, LLC c/o Zilkha Renewable Energy Phone: 503-222-9400					
Mailing Address: 210 SW Morrison, Suite 310		City, State, ZIP: Portland, OR 97204			
Contact Person for Air Permit: Andrew Young		Phone: <u>503-222-9400 x102</u>			
T (D (		Fax : <u>503-222-9404</u>			
Type of Process (p	blease check all that apply				
Asphalt Plant	W/Baghouse Asphalt Plant W/Scrubber K Rock C	rusher Other			
	Quantity of Material to be Produced: (indic	cate units)			
	<u>Approx 300,000</u> $\boxtimes$ yds ³ or $\Box$ to	15			
Equipment ID: H	ow does your company refer to this plant? Wild Horse O	nsite Rock Crusher			
For <u>Asphalt Plants</u> :	Baghouse or Scrubber Serial #:	Manufacture Date:			
	Rotary Dryer or Drum Serial #:	-			
	Date of Last Source Test:	_			
For Rock Crushers:	Primary Cone Crusher Serial # or Equivalent Equipmen	nt ID: To be determined			
	Other Equipment ID:				
For <u>Others</u> :	Equipment ID:				
Pit or Quarry Info	ormation: Have you operated at this site before? No I	f yes, when?			
Pit or Quarry Name:	Quarry A, Quarry B, Quarry C County: Kittitas				
Legal Description:					
Quarry A: NW1/4 of	f the E1/2 of the S1/2 of Section 29, Township 18N, Ran	ge 21E W.M. in Kittitas County, WA.			
Quarry B: N1/2 of th	e NW1/4 of Section 28, Township 18N, Range 21E W.M	1. in Kittitas County, WA.			
Quarry C: E1/2 of the	e NE1/4 of Section 33, Township 18N, Range 21E W.M	. in Kittitas County, WA.			
Driving Directions: <u>1</u> Vantage Highway. S	Travel east from the town of Kittitas on Vantage Highwa Site access is across the road from the entrance to the Kitt	y to site access road on north side of titas County Landfill (Ryegrass Site).			
<b>Operations Inform</b>	nation				
Dates of Operation:	From (Preliminary) Sept. 2, 2004 To	(Preliminary) Aug. 31, 2005			
Work Schedule for th	Work Schedule for this project: (days/week) 6 days/week (shifts/day) 1 shift/day (hrs/shift) 10 hrs/shift				
Water Source for this project: (Preliminary) City of Kittitas water tower or standby well					
Water Quality Sand	& Gravel Permit Number: Not Applicable				
REQUIRED – Co	mpliance with SEPA (State Environmental Policy Ac	t) - check one of the options below			
A DNS or EIS has been issued by another agency for this project. (ATTACH COPY) EFSEC EIS					
A completed SEPA checklist for this project is attached, if no DNS or EIS exists for this project.					
SIGNATURE:		DATE:			



## AIR QUALITY PROGRAM Temporary Air Quality Permit Application Rock Crushing and Asphalt Production

In Chelan, Douglas, Kittitas, Klickitat and Okanogan Counties:

FAX TO: (509) 575-2809 OR MAIL TO: DEPARTMENT OF ECOLOGY, CENTRAL REGIONAL OFFICE 15 WEST YAKIMA AVENUE., SUITE 200 YAKIMA, WA 98902-3401 In Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Walla Walla and Whitman Counties: FAX TO: (509) 329-3529 OR MAIL TO: DEPARTMENT OF ECOLOGY, EASTERN REGIONAL OFFICE 4601 N. MONROE STEET SPOKANE, WA 99205-1295

#### APPLICABLE AIR QUALITY REGULATIONS

Washington Administrative Code (WAC) 173-400-035 For portable sources which locate temporarily at particular sites, the owner(s) or operator(s) shall be allowed to operate at the temporary location providing that the owner(s) or operator(s) notifies ecology or the authority of intent to operate at the new location at least 30 days prior to starting the operation, and supplies sufficient information to enable ecology or the authority to determine that the operation will comply with the emission standards for a new source, and will not cause a violation of applicable ambient air quality standards and, if in a nonattainment area, will not interfere with scheduled attainment of ambient standards. The permission to operate shall be for a limited period of time (one year or less) and ecology or the authority may set specific condition for operation during that period. A temporary source shall by required to comply with all applicable emission standards.

WAC 173-400-040(1) Visible Emissions, states that no person shall cause or permit the emission for more than three minutes, in any one hour, of an air contaminant from any emissions unit which at the emission point, or within a reasonable distance of the emission point, exceeds twenty percent opacity.

WAC 173-400-040(2) Fallout, states that no person shall cause or permit the emission of particulate matter from any source to be deposited beyond the property under direct control of the owner or operator of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited.

WAC 173-400-040(3a) Fugitive emissions, states that the owner or operator of any emissions unit engaging in materials handling, construction, demolition or any other operation which is a source of fugitive emissions shall take reasonable precautions to prevent the release of air contaminants from the operation.

WAC 173-400-040(5) Emissions detrimental to persons or property, states that no person shall cause or permit the emission of any air contaminant from any source if it is detrimental to the health, safety or welfare of any person, or causes damage to property or business.

WAC 173-400-040(8a) Fugitive dust sources, states that the owner or operator of a source of fugitive dust shall take reasonable precautions to prevent fugitive dust from becoming airborne and shall maintain and operate the source to minimize emissions.

#### PERMITTING PROCESS

- NOTE: Failure to obtain a permit before beginning operations will subject the operator to enforcement action, and may result in civil penalty.
- 1. Applicant must apply for a Temporary Air Quality Permit and satisfy the State Environmental Policy Act (SEPA) by submitting either a completed Environmental Checklist or proof that SEPA has previously been satisfied for the specific activity being proposed at the site where the portable source will operate. Proof of SEPA compliance shall include a copy of the original threshold determination, usually a Determination of Non-significance (DNS) or Mitigated DNS (MDNS).
- 2. If SEPA has not previously been satisfied, Ecology will issue a SEPA threshold determination (usually a DNS or MDNS) with a 14-day public comment period, upon receipt of a completed Environmental Checklist. Ecology will send the applicant a public notice that the applicant must publish in a newspaper with general circulation in the area of the proposed project. After publication, the applicant must send the original Affidavit of Publication to Ecology. Ecology cannot issue the permit until the affidavit is received and the comment period has expired.
- 3. If appropriate, a permit will be issued approximately 14 days after the notice is published unless public comment necessitates further review and/or mitigating measures to be initiated, which can include a public hearing.

SOURCES OF INFORMATION ABOUT AIR POLLUTION IN EASTERN WASHINGTON				
Department of Ecology, Eastern Regional Office (Adams, Asotin, Columbia, Franklin, Garfield, Grant, Ferry, Lincoln, Pend Oreille, Stevens, Walla Walla, Whitman Counties) N. 4601 Monroe Street Spokane, WA 99205-1295 Phone (509) 329-3400 Fax (509) 329-3529	Department of Ecology, Central Regional Office (Chelan, Douglas, Kititas, Klickitat, Okanogan Counties) 15 W. Yakima Ave., Suite 200 Yakima, WA 98902-3452 Phone (509) 454-7660 Fax (509) 575-2809			
Benton Clean Air Authority 114 Columbia Point Dr., Suite C Richland, WA 99352-4387 Phone (509) 943-3396 Fax (509) 943-0505	Spokane County Air Pollution Control Authority W. 1101 College Ave., Suite 403 Spokane, WA 99201 Phone (509) 456-4727 Fax (509) 459-6828			
Yakima Regional Clean Air Authority 6 S. Second St., Room 1016 Yakima, WA 98901 Phone (509) 574-1410 Fax (509) 574-1411				



# Application for General Permit to Discharge Stormwater Associated with

Change of Information

Construction Activity (Notice of Intent)

Permit # SO3 - _____

(Please print in ink or type)			Please Read NOI Instructions Before Filling Out This Form				
I.	Contact Person			П.	Owner/Represe	<b>ntative o</b> will be mail	<b>f Site</b> ed here)
Con	act Name		Phone No.	Owner's	Name		Phone No.
And	rew H. Young		503-222-9400 x2	Wind Ri	dge Power Partners, Ll	LC &	503-222-9400
Com	ipany			Company	/ Name		
Zilkl	na Renewable Energy			Zilkha R	enewable Energy		
Mail	ng Address			Mailing A	ddress		
210	SW Morrison St, Suite 310			1001 Mo	Kinney St, Suite 1740		
City		State	Zip + 4	City		State	Zip + 4
Port	land	OR	97204-3151	Houston	I	ТΧ	77002
III.	Site Location/Add	ress		IV.	Billing Address		
Site Wilc	Name I Horse Wind Power Project S	Site		Contact N Andrew	Name H. Young		Phone No. 503-222-9400
Stre Nor	et Address (or Location Description th of Vantage Highway, north	on) of Ryegra	ass Landfill.	Company Zilkha R	v Name enewable Energy		
City Kitti	(or nearest city) tas		Zip + 4 98934	Mailing A 210 SW	ddress Morrison St., Suite 310	0	
Cou	nty			City		State	Zip + 4
RITT	IBS	e for eito (a	attach senarate sheet if ne			UR	97204-3151
1100	See attached legal descript	tion		(CC3561 y)			
v	Receiving Water In	oformat	ion (check all that and	alv)			
Α.	Does your construction site discl	harge storr	mwater to:	, , , , , , , , , , , , , , , , , , ,			
	1 Storm drain system - Ow	ner of stor	m drain system (name) N	/Α			
	2. I Indirectly or directly to surface waters (I River I Lake I Creek I Estuary I Ocean I Wetland)						
	3. Directly to ground waters	s of Washir	ngton state. 🔲 Dry Well		Drainfield 🛛 🖂 Othe	er (drainage	to porous soils)
В.	Name(s) of receiving water(s) Name(s)	one – N/A					
	Initial discharge is to an unname	d receiving	g water?	🗌 Yes	🖂 No		
C.	. Location of discharges (Use any of the following to most accurately identify location of discharge. Attach a supplemental sheet if more than one discharge point and/or numerous receiving waters.):						
1.	Map enclosed (Mark discharge point on map and provide distance from receiving water.) (see Exhibit 1B – Project Site Layout for locations of roadways and other Project facilities)						
2.	. Township <u>17N</u> Range <u>21E</u> Sections 2, 3 NE1/4 &NE1/4 of NW1/4, 4 E1/2, 8 S1/2 of SE1/4, 9, 17, 18 N1/2 Township <u>17N</u> Range <u>20E</u> Sections 13,14 S1/2 of S ½, 23 N1/2 of NE 1/49 Township <u>18N</u> Range <u>21E</u> Sections 7 S1/2, 9 S1/2, 19 N1/2, 20, 21, 22, 27, 28, 29, 32, 33, 34, 35 Township <u>18N</u> Range 20 <u>E</u> Sections 22, 23, 24						
	(Specify degrees, minutes, and seconds.)						
3.	Latitude <u>N 47.02584</u> Longit	ude <u>W 12</u>	20.20625 (NAD 27) (A	Approx. Ce	nter of Project Site Area)		

D.

VI.	I. Construction Activity Information					
1.	1. Total size of site <u>165</u> acres (perm. footprint) Total area to be disturbed	d <u>566</u> Acres (401 ac. temp.disturbed) How many phases? <u>1</u>				
2.	2. Will any portion of the project be sold to private developers?	🖾 No				
3.	3. Projected startup date <u>4/2005</u> Proposed completion date	te <u>11/2005</u>				
4.	<ol> <li>Will there be dewatering activity? I Yes X No If yes, give brief de disposed of: <u>No dewatering activity expected.</u></li> </ol>	description of location of such activity and how water will be				
5.	<ul> <li>5. Check all construction (soil disturbing activities) that apply. Attach a sup</li> <li>Clearing</li> <li>Utilities</li> <li>Landscaping</li> <li>Grading</li> <li>Stormwater Facilities</li> <li>Trails</li> <li>Demolition</li> <li>Roads/Streets</li> <li>Parks</li> <li>Importing Soil</li> <li>Retaining Walls</li> <li>Industrial Buildings</li> <li>Exporting Soil</li> <li>Piping Systems</li> <li>Type <u>O&amp;M Barn Bldg</u></li> <li>Stockpiling</li> <li>Filling Wetland</li> <li>Site <u>T 18 N, R 21 E, S</u></li> </ul>	Jpplemental sheet if necessary.         Homes       (How many?)         Single-family       Image: Condominium conditional conditiona				
VII.	II. Stormwater Pollution Prevention Plan (SWPPP)					
A. Be B. Sto If N Correction	Best Management Practices (BMPs) (Check all that apply.) Attach supplem         Silt Fencing       Wheel Wash Area       Riprap Char         Vegetated Strips       Nets and Blankets       Interceptor T         Straw Bales       Swale       Culverts         Mulching       Diverted Flows       Pipes         Hydroseed       Dikes       Berms         Plastic Covering       Check Dams       Terracing         Stormwater Pollution Prevention Plan (SWPPP)       Has a SWPPP been developed that includes a narrative and drawings?       If NO, will a plan be developed prior to the start of construction?       If you answered "NO" to the above question, notify Ecology in writing when a confirmation letter has been received by Ecology. The SWPPP is to be impleted to the start of construction in the start of construction is to be impleted by Ecology.	Immental list if needed to include other BMPs.         annel Lining       Slope Reduction         Trenches/Ditches       Chemical Treatment (Polyacrylamides)         Kiln Dust       Dust Control         Other       Other         Yes       No         a final Plan has been developed. A permit will not be issued until a plemented when construction activity commences on your project.				
VIII.	III. State Environmental Policy Act (SEPA)					
If the SE	the SEPA process has not been completed at the time of NOI submittal, a follow- ior to Ecology granting permit coverage	w-up letter must be sent to Ecology with the following information				
Has a S	as a SEPA review been completed?	No Exempt				
Type of	ype of SEPA document DNS	Final EIS MDNS				
Agency	Agency issuing DNS, Final EIS, or Exemption: Energy Facility Site Evaluation Council; Date currently under review					
Are you	Are you aware of an appeal of the adequancy of the SEPA document?					
(If yes, please attach explanatory letter.)						
	SEPA requirements must be complied with prior to permit issuance.					

#### IX. Public Notice

The public notice must be published at least <u>once</u> each week for 2 consecutive weeks, in a <u>single</u> newspaper which has general circulation in the county in which the construction is to take place. See the NOI instructions for the public notice language requirements. Permit coverage will not be granted sooner than <u>31 days</u> after the date of the second public notice. *Note: This NOI must be submitted to Ecology on or before the date of the first public notice.* 

#### PUBLIC NOTICE

Wind Ridge Power Partners, LLC, care of Zilkha Renewable Energy, LLC of 210 SW Morrison St., Suite 310, Portland, OR 97204-3151 is seeking coverage under the Washington Department of Ecology's NPDES General Permit for Stormwater Discharges Associated with Construction Activities.

The proposed 8,600 acre project, known as the Wild Horse Wind Power Project is located north of Vantage highway east of Kittitas, WA. Approximately 401 acres will be temporarily disturbed for construction of up to 158 Wind Turbine Generators (WTGs), substation(s), gravel roads, gravel crane pads, Operations & Maintenance building, laydown areas, underground cable and overhead power lines for the project. The total permanent footprint of the Project will be approximately 165 acres.

Stormwater will originate from the roadways and graveled areas around on the project site. Stormwater shedding will be controlled through the implementation of a storm water pollution prevention plan (SWPPP) both on the project construction grading plan and construction specifications. The SWPPP shall incorporate measures as listed above in section VII.

Any person desiring to present their views to the Department of Ecology concerning this application, may notify Ecology in writing within 30 days from the last date of publication of this notice. Comments may be submitted to: Dept. of Ecology, Stormwater Unit, PO Box 47696, Olympia, WA 98504-7696

Describe the surget determined	المصحاف (بالمام المام مصرمص)	the first and second	nublic methods will empore	
Provide the exact dates (	mm/dd/vv) mar	the first and second	DUDIIC NOTICES WILL ADDEA	r in the newspaper
The state and state	(initial and g g f that		public notices min appea	i in allo nonopapor.

Date of the first notice ____ / ____ ;

Date of second notice ____ / ___ -- Dates yet to be determined

Name of the newspaper which will run the public notices Ellensburg Daily Record

Ecology is no longer requiring the submittal of the affidavit of publication.

Complete the above public notice information or provide a copy of the notice to be published.

X. Regulatory Status	
A. NPDES Permit (e.g., industrial stormwater)	C. Air Notice of Construction, Permit, or Order
Permit No	Agency
B. State Waste Discharge Permit	D. State/USEPA Hazardous Waste ID No.
Permit No	

#### XI. Certification of Permittee(s)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Andrew H. Young	NW Development Director, Zilkha Renewable Energy, LLC
Owner/Representative's Printed Name	Title
Owner/Representative's Signature	Date

Sign and return this document to the following address; for questions call (360) 407-6437: Washington Department of Ecology, Water Quality Program, Stormwater Unit, PO Box 47696, Olympia, WA 98504-7696

The Department of Ecology is an equal opportunity agency and does not discriminate on the basis of race, creed, color, disability, age, religion, national origin, sex, marital status, disabled veteran's status, Vietnam Era veteran's status, or sexual orientation.

(Rev. 3/01)

Subject:	Shadow-Flicker Modeling Wild Horse, WA.
Customer:	Zilkha Renewable Energy 210 SW Morrison Street, Suite 310 Portland, OR 97204
<b>PO#:</b>	Chris Taylor, Nov. 2003
Project type:	Modeling
Prepared by:	Arne Nielsen, Wind Engineers
Distribution:	Chris Taylor, Zilkha Renewable Energy
<b>Revision:</b>	1
Date:	Nov. 20, 2003

#### 1. Introduction

Wind Engineers (WEI) was requested by Zilkha Renewable Energy (Zilkha) to evaluate the predicted shadow flicker impacts at the proposed Wild Horse Wind Power Project near Kittitas, WA. The proposed wind project consists of 136 wind turbines at 65 m hub height. The shadow flicker impacts at the potential receptors have been evaluated. Because the distance between wind turbines and residences is larger than 1,000 meters there are no significant impacts at any of the residences. An example of the potential shadow-flicker area is shown below using the WindPro software, a widely-accepted modeling software package developed specifically for the design and evaluation of wind power projects. The typical 'butterfly' shape is here slightly distorted by the terrain effects. WEI personnel did not visit the site for this assessment.

This Project Briefing provides a brief explanation of shadow flicker, the modeling approach employed and other relevant explanations.

#### 2. Shadow Flicker Background

Shadow flicker caused by wind turbines is defined as alternating changes in light intensity caused by the moving blade casting shadows on the ground and stationary objects, such as a window at a dwelling. No flicker shadow will be cast when the sun is obscured by clouds/fog or when the turbine is not rotating. Shadow flicker is <u>not</u> the sun seen through a rotating wind turbine rotor nor what an individual might view moving through the shadows of a wind farm.

The spatial relationships between a wind turbine and receptor, as well as wind direction are key factors related to shadow flicker duration. At distances of greater than 1,000 feet between wind turbines and receptors, shadow flicker usually only occurs at sunrise or sunset when the

cast shadows are sufficiently long. For situations where the rotor plane is in-line with the sun and receptor (as seen from the receptor), the cast shadows will be very narrow (blade thickness), of low intensity, and will move quickly past the stationary receptor. When the rotor plane is perpendicular to the sun-receptor "view line", the cast shadow of the blades will move within a circle equal to the turbine rotor diameter.

Shadow flicker intensity is defined as the difference in brightness at a given location in the presence and absence of a shadow. Some details are outlined below:

- 1. A wind turbine blade is narrow at the blade tip with increasing width up to the rotor hub. When a turbine is located sufficiently close to a receptor such that the wider blade portion covers most of the sun's disk (as seen by the receptor) the flicker intensity will increase. At greater distances a lower intensity will occur since the blades cover a smaller portion of the sun's disk.
- 2. The shadow flicker intensity is lowest when the cast shadow passing over a receptor originates from the rotor tip. This intensity increases as the cast shadow moves in along the blade length to a maximum at the hub/nacelle, to then diminishes as it moves back out along the opposite blade side.
- 3. Low shadow flicker impacts are usually indicative of greater receptor-turbine separation distances and incident shadows of low intensity originating from the rotor tips.
- 4. Low visibility weather conditions (still sunlight) will result in lower shadow flicker intensity.
- 5. At longer wind turbine–receptor distances the cast shadow is "out of focus". This does not contribute to lower intensity but the flickering is less distinct.
- 6. Shadows are fainter in a lighted room. Consequently, switching lights on will lower the intensity of incident shadow flicker.
- 7. Covering a window (curtains, blinds or shutters) will prevent shadow flicker.
- 8. Screening, such as trees, will reduce or prevent shadow flicker.

The WindPro software program uses a very conservative model for evaluating shadow flicker. None of the above aspects are directly considered in the WindPro shadow flicker model – only flicker or no flicker is considered. Consequently, it is likely that all receptors would experience less shadow flicker impact than modeled. It is further likely that marginally affected receptors may not experience shadow flicker at all. At times when shadow-flicker does occur, the intensity is likely to be very low.

The shadow-flicker frequency is related to the rotor speed. Typical blade pass frequencies for the types of turbines under consideration for the Wild Horse Project are 0.6 to 1.0 Hz (less than 1 alternation per second).

In terms of health and safety, such low frequencies are harmless. Frequencies higher than 3 Hz but below 10 Hz are widely used in strobe lights found in discotheques and the Epilepsy Foundation has made a statement that frequencies below 10 Hz are not likely to trigger epilepsy seizures.

#### 3. Modeling Approach

As previously stated, a near worst case approach is adopted when reporting shadow flicker results from the WindPro model. Additional general site and receptor-specific assessments that would likely reduce shadow flicker impacts are presented below.

- 1. Obstacles (terrain, trees, buildings, etc.) located between the receptor and wind turbine will significantly reduce (or eliminate) the duration and/or intensity of the shadow flicker.
- 2. The model applies a minimum sun angle of 3° and considers the topographic characteristics of the surrounding terrain out to approximately 2 miles (3.2 km) from the project boundary. Higher elevations may exist outside the modeled boundary which obstruct the sun at or above the 3° angle, this reducing the impact. This is likely to occur during dusk/twilight time periods.
- 3. Cloud or fog cover conditions are modeled as an average number of hours per day. The typical daily or hourly variation is not captured by the model. In most areas increased cloud cover (or fog) is more likely to occur in the morning and evening hours at a time when the model predicts the longest cast shadow.
- 4. Wind turbine operation (run hours) is also modeled as an average (hours per day) when wind patterns clearly change over the course of a day. In addition, the model considers the calm winds (where turbines do not run) distributed equally on a daily basis. Both situations would tend to increase the shadow flicker estimation.

The shadow-flicker model requires the following input:

- Turbine locations (coordinates)
- Shadow flicker receptor locations (coordinates)
- USGS 1:24,000 topographic map
- USGS Digital Elevation Model (height contours)
- Rotor diameter
- Hub height
- Joint wind speed and direction frequency distribution
- Sunshine hours (monthly averages)

The model calculates the shadow flicker time for either a) each receptor b) everywhere (defined areas) or both. A receptor is defined as a 1 m² window at the residence whose azimuth has been estimated (north, south, east, west or 90, 180, 270 degrees from the nearby access road). The sun's path is calculated by the software from the turbine location and the cast shadow derived over the day. The turbine run-time and direction (seen from the receptor) are calculated from the site's long-term wind speed and direction distribution. Finally, a cloud cover assumption (monthly average sunshine hours) is applied to arrive at the estimated annual flicker impact at each receptor.

For the example below, a map with line contours showing the number of hours of shadowflicker was preferred, thus computations for 25 by 25 meter squares were required. The output for the map and for tabulated data (not shown) is:

- Turbine locations and elevations
- Calculated shadow-flicker time at selected receptors
- Tabulated and plotted time of day with shadow flicker at selected receptors
- Listing of turbines causing shadow flicker at each selected receptor
- Map showing turbine locations, selected shadow-flicker receptors and line contours indicating projected shadow-flicker time (hours per year).

#### 4. Results

There is no significant impact on any of the potential shadow-flicker receptors. The closest receptor is more than one mile away from a wind turbine and at that distance – even if the angle is ideal for producing shadow flicker, the shadow-flicker intensity will be extremely low and hardly noticeable even under ideal conditions for producing shadow flicker. The plot below shows the details of a typical shadow-flicker area.



Arne Nielsen Wind Engineers, Inc. Tel.: 909 789 5281 Fax: 909 494 4069 Cell.: 760 861 6599 Email: Arne@WindEngineers.com



0 0.5 1 2 3 4



STATE OF WASHINGTON

#### DEPARTMENT OF FISH AND WILDLIFE

1701 S 24th Avenue • Yakima, Washington 98902-5720 • (509) 575-2740 FAX (509) 575-2474

October 22, 2003

Chris Taylor, Project Dovelopment Manager Zilkha Renewable Energy 210 SW Morrison Street, #310 Portland, OR 97204

Subject: Wild Horse Wind Power Project

Dear Chris:

Thanks for organizing the meeting and field tour of the Wild Horse Wind Power site that has been proposed by Zilkha Renewable Energy for eastern Kittitas County. Washington Department of Fish and Wildlife (WDFW) staff met with Andrew Young and consultants from West Inc. on September 25th and toured the site.

Part of the discussion during the tour related to the stream crossings for the proposed power transmission lines that would connect the Wild Horse project to existing transmission systems. We visited the proposed crossing site at Parke Creek and discussed several construction options. We understand that your preferred option would not require any work in the stream or any equipment crossings of the stream. Instead, you plan to pull the power conductors into position by using smaller cables, which can be placed without the use of heavy equipment. If this technique can be used, we do not anticipate any impacts to the stream or its associated riparian vegetation. Therefore, no Hydraulic Project Approval (or equivalent construction conditions) would be required from WDFW. If your plans should change, or you need to work within the streams at other locations within the project, please submit a JARPA (or equivalent EFSEC application) form, so that we can recommend measures for the protection of fish and their habitats.

Feel free to call me (509-457-9314) if you have questions.

Sincerely,

Ted & Clause

Ted A. Clausing Regional Habitat Program Manager

cc: Jeff Tayer, Regional Director Peter Birch, Deputy Assistant Director Lauri Vigue, Major Projects Brent Renfrow, District Habitat Biologist



Habitat Characterization and Rare Plant Resources Report Wild Horse Wind Power Project

DRAFT

November 2003

#### Prepared for:

Zilkha Renewable Energy 210 SW Morrison, Suite 310 Portland, OR 97204

#### Prepared by:

Elizabeth Lack Hall Sawyer Wallace Erickson Greg Johnson

WEST, Inc. 2003 Central Avenue Cheyenne, WY 82001

WEST, Inc.

## **EXECUTIVE SUMMARY**

Zilkha Renewable Energy (the "Applicant") proposes to construct and operate approximately 136 wind turbines on high open ridge tops between the towns of Kittitas and Vantage in Kittitas County, Washington, on and near Whiskey Dick Mountain. This report summarizes the results of characterization of the habitat at the 8,500-acre Project site and results of surveys for rare plant species. Also included is an evaluation of the proposed mitigation parcel for the project. Field work for the project was conducted in April and May, 2003 with follow-up visits in July, September, and October 2003.

Seven habitat types were mapped in the Project area, including shrub-steppe, herbaceous, herbaceous/rock outcrop, pine forest, woody riparian, rock outcrop, and a small seasonal water body. Shrub-steppe comprises the overwhelming majority of the Project area (92 percent). The shrub-steppe was broken down based on relative spatial density of the shrub layer – dense, moderate, and sparse. In general, areas with a dense shrub layer were found on deep-soiled sites on slopes and dominated by big sagebrush, antelope bitterbrush, or squaw current. Areas with a moderate shrub layer were flat to gently sloping, and typically dominated by big sagebrush or stiff sagebrush. Areas with sparse shrub cover were generally found on exposed ridgetops and knolls and dominated by low-growing stiff sagebrush, or in some areas, various buckwheats. Herbaceous habitats comprise an additional 7.5 percent of the project area and are generally limited to very steep slopes and exposed ridges that do not support shrubs.

A semi-quantitative assessment of habitat quality was conducted by comparing the observed communities with climax communities as reported by the Natural Resource Conservation Service. Habitat quality ranges from "fair" to "good" throughout the Project area. Livestock grazing appears to have resulted in fewer grasses and less grass cover with a resulting shift to higher shrub cover than would be expected in the climax communities. Although the Project area appears to have experienced a minor shift in species composition to higher shrub cover, native species dominate. No invasive species (e.g. cheatgrass) were observed that have significantly altered species composition. It is assumed that the relatively isolated setting has minimized the introduction and spread of noxious and/or invasive species that occurred throughout much of our western rangeland.

Washington Natural Heritage Program database includes several records for a tracked plant species and communities in the general vicinity of the Project area. These include Hoover's tauschia, Pauper milkvetch, hedgehog cactus, and one occurrence of a Wyoming big sagebrush/bluebunch wheatgrass community. None of these are federally-listed threatened or endangered species, although Hoover's tauschia is a federal "species of concern". Field surveys did not locate any federal or state listed Endangered, Threatened, Proposed, Candidate, or Sensitive plant species. Potential habitat, however, does occur for a number of these species throughout the Project area. These habitats were searched thoroughly, but none of these species were found. One plant species on the Washington State 'Review' list, hedgehog cactus, was found in the Project area. Much of the suitable habitat present in the Project area (lithosol, including sparse shrub-steppe and herbaceous habitats) was found to contain scattered individuals.

A reconnaissance level survey of a proposed mitigation parcel located within the 8,500- acre Project area was conducted. The parcel meets Washington Department of Fish and Wildlife (WDFW) guidelines for mitigation at wind power sites and was shown to include several additional benefits above and beyond WDFW guidelines. The parcel is estimated at approximately 600 acres and the Applicant has proposed to fence the parcel to eliminate livestock grazing. The Applicant has also proposed to fence the springs within the Project area to eliminate livestock grazing. Fencing used for the mitigation parcel and the springs will be designed to keep livestock out but allow game species to cross. Final mitigation measures will be negotiated with WDFW.

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## INTRODUCTION

Zilkha Renewable Energy (Applicant) proposes to construct and operate approximately 136 wind turbines on a 8,500-acre site (the "Project area") on high open ridge tops between the towns of Kittitas and Vantage in Kittitas County, Washington, on and near Whiskey Dick Mountain. The Wild Horse Wind Power Project (the "Project") is anticipated to provide up to 204 megawatts (MW) of generating capacity. It would be constructed on privately owned land and public land administered by the Washington Department of Natural Resources (WDNR) and the Washington Department of Fish and Wildlife.

The Applicant contracted with Western EcoSystems Technology, Inc. (WEST) to (1) characterize the habitat types in the Project area, including development of a habitat map and an assessment of potential impacts to vegetation in the Project area (2) conduct a survey for rare plants in the main Project area and along two proposed feeder line routes from the main Project area to existing transmission lines (BPA transmission line and PSE transmission line), including an assessment of potential impacts to rare plants, if any are present, and (3) provide a qualitative evaluation of habitat at a proposed mitigation site for the project. This report summarizes the results of these tasks.

## **PROJECT AND SITE DESCRIPTION**

#### Location

The Project is to be constructed in central Washington's Kittitas County (Figure 1). The Project will be built on high open ridge tops between the towns of Kittitas and Vantage at a site located about 10 miles east of Kittitas, on and near Whiskey Dick Mountain. The site boundary is located approximately 2 miles north of the Old Vantage Highway. The Project turbines will be located on open rangeland owned primarily by the Applicant; some turbines will be located on lands administered by the Washington Department of Natural Resources (WDNR) and Washington Department of Fish and Wildlife (WDFW). The site extends over an area of approximately 8,500 acres. The Project site has been selected for its energetic wind resource and access to power transmission lines that have adequate capacity to allow the wind generated power to be integrated into the power grid.

The Project (including the main Project area and two feeder lines) is located in portions of the following sections:

- Township 18 North, Range 21 East, Sections 15, 16, 17, 19, 20, 21, 22, 27, 28, 29, 32, 33, 34, and 35
- Township 18 North, Range 20 East, Sections 22, 23, and 24
- Township 17 North, Range 21 East, Sections 2, 3, 4, 8, 9, 17, and 18
- Township 17 North, Range 20 East, Sections 13, 14, 15, and 23

#### **Facility Description**

The Project consists of several prime elements that will be constructed in consecutive phases including roads, foundations, underground and overhead collection system electrical lines, one or two grid interconnection substations, one or two step-up substations, one or two feeder lines running from the on-site step-up substations to the interconnection substations, an operations and maintenance (O&M) center and associated supporting infrastructure and facilities (Figure 2). A permanent footprint of approximately 165 acres of land area will be required to accommodate the proposed turbines and related support facilities.

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The Project will consist of up to 136 wind turbines and have an installed nameplate capacity of up to 204 megawatts (MW). The Project will utilize 3-bladed wind turbines on tubular steel towers each ranging from 1 MW to 3 MW (generator nameplate capacity) and with rotor diameters ranging from 197 to 295 feet (60 to 90 meters). If the smallest turbine contemplated for the Project, with a rotor diameter of 197 feet (60 meters) and each with a nameplate capacity of 1 MW is used, up to 158 units would be installed for a Project nameplate capacity of 158 MW. If the largest contemplated turbine, with a rotor diameter of 295 feet (90 meters) and generator nameplate 3 MW is used, up to 104 units would be installed for a Project capacity of 312 MW. The Project Site Layout in Figure 2 shows 136 turbines with a turbine spacing based on a 236 feet (72 meter) rotor diameter, which is in the middle of the range of turbines proposed and represents the anticipated Project configuration.

The Project site is currently crisscrossed by a network of existing roads and wherever practical, existing roads have been utilized to minimize new ground disturbance. As such, roughly 17.3 miles of new gravel roads will be constructed and approximately 14.7 miles of existing roads will be improved for access to the turbines. The roads will generally consist of a 32-foot wide compacted graveled surface to allow for the safe passage of heavy construction equipment.

The Project transmission feeder lines will require the installation of a construction trail. The construction trail will be a 12-foot wide swath that is cleared of large boulders to allow high clearance vehicles to pass. The trail will be installed to allow access to support the construction of the feeder lines. Once construction is complete, the trail will remain as a minimum maintenance access way that will be used approximately every 6 months for inspection and maintenance. The PSE feeder line will require approximately 8 miles and the BPA feeder line will require approximately 5 miles of new construction trails.

#### **Physiography and Soils**

The Project area is located within the Columbia Basin physiographic province (Franklin and Dyrness 1988). This lowland province is surrounded on all sides by mountain ranges and highlands. The elevation increases from approximately 400 feet at the confluence of the Snake and Columbia Rivers to 1,300 feet near the Waterville Plateau and 1,800 feet along the eastern edge of the province. The province is incised by a network of streams and rivers that empty into the centrally located Columbia River.

The Project area is approximately 8,500 acres, made up of ridges and drainages. The highest point in the project area, Whiskey Dick peak at 3,873 feet, is located in the southwest portion of the Project area; ridges to the north are lower in elevation and generally have flatter topography. Slopes in the Project area range from approximately 10 to greater than 60 percent. Several intermittent creeks drain the Project area. The largest creeks are Whiskey Dick Creek, which flows to the east and empties into the Columbia River approximately 6 miles east of the Project area and Whiskey Jim Creek, which flows to the west and empties into Parke Creek approximately three miles west of the Project area. Several springs occur in the Project area; most of which have been modified to pipe the flow into livestock watering tanks.

The proposed BPA feeder line route lies to the west of the main Project area and primarily follows exposed ridgetops, except where it crosses Parke Creek. Likewise, the PSE feeder line route, which heads south out of the Project area and crosses the Vantage Highway and then heads southwest to the interconnection with the existing PSE line, primarily follows ridgetops, except where it drops down and crosses an unnamed creek, a county road, and the Highline Canal.

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The Soil Survey for Kittitas County is currently out-of-print, but the local USDA Natural Resource Conservation Service office provided some limited soil descriptions for the Project area. The soils in the Project area are primarily complexes of very to extremely gravelly, stony, or cobbly loams. Most of the affected soils are very shallow (5 to 12 inches) to shallow (12 to 20 inches) with a dark colored surface layer, while a few ridges have moderately deep soils (20 to 40 inches).

#### Climate

The Columbia Basin physiographic province lies within the rain shadow of the Cascade mountain range, and is characterized by semi-arid conditions, as well as a large range of annual temperatures indicative of a continental climate. However, the relatively close proximity of the Pacific Ocean and the dominant westerly winds of the region combine to moderate the continental influence (Franklin and Dyrness, 1988). Annual precipitation ranges from 7 inches in the drier localities along the southern slopes of the Saddle Mountains, Frenchman Hills and east of Rattlesnake Mountains, to 15 inches in the vicinity of the Blue Mountains.

Summer precipitation is usually associated with thunderstorms. During July and August, it is not unusual for four to six weeks to pass without measurable rainfall. The last freezing temperature in the spring occurs during the latter half of May in the colder localities of the Columbia Basin. The first freezing temperature in the fall is usually recorded between mid-September and mid-October (*Climate of Washington*, Western Region Climate Center (WRCC)).

The Ellensburg, WA weather station is located along the Yakima River, approximately 15 air miles west of the Project area. The coldest average monthly temperatures at Ellensburg occur in January, with a minimum of 18.6° Fahrenheit (F), and a maximum of 34° F. The warmest average monthly temperatures in Ellensburg occur in July, when the minimum is 53° F and the maximum is 84° F. The average total annual precipitation at Ellensburg is 8.9 inches. The wettest month is December with an average total monthly precipitation of 1.45 inches, while the driest month is August with an average total monthly precipitation of 0.27 inches. Snowfall typically occurs from November through April, with the heaviest average monthly snowfall of 9.4 inches occurring in each December and January. Ellensburg's average annual snowfall is 28 inches (WRCC, 2003).

The highest point in the Project area is approximately 2,000 feet higher in elevation than the reporting station in Ellensburg. Therefore, it is expected that the Project area likely experiences cooler temperatures and receives more precipitation than that reported for the Ellensburg station.

#### Existing Land Uses

The land within the Project area is primarily privately owned, except for the southeastern sections, which are administered by the WDNR and WDFW. Livestock grazing is the primary land use, although recreation uses, such as hunting, off-road vehicle use, and bird-watching, are common. The Project area also provides habitat for various wildlife, particularly for several big game species including elk and mule deer. A cluster of communication towers is located on a ridge top in the southeast portion of the Project area. The Beacon Ridge road runs through the center of the Project area and is improved in the southern portion of the Project area.

Land uses in the surrounding area include the Vantage Highway right-of-way, limited cattle ranching, gravel quarrying, and private residences.

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## **METHODS**

#### Habitat Characterization

Vegetation in the Project area was mapped according to "habitat types," which are considered to be the generally recognizable assemblages of plant species that occur in a pattern across the landscape. The area mapped included the 8,500-acre main Project area and the two proposed feeder lines. Habitat types were determined based on visual assessment of dominant plant species. Commercially available black and white digital aerial photography dated 2000 with a pixel size of 1 meter was used for the habitat mapping. The habitat types were mapped during late April – early May 2003, with follow-up visits in fall 2003. Initially, the roads in the Project area were driven in order to correlate habitat types with the signature (color, shading, texture) on the aerial photos. Each habitat type was then mapped based on either visual observation of the habitat from a road or high point, or by walking the boundaries of the habitat. Due to the scale of the aerial photos used, fine-scale intermingling in transition areas and small inclusions of one habitat type within another are not shown. The mapped boundaries of each habitat type were digitized using ArcView[™].

In addition to the habitat map that was developed for the Project area, a literature review was conducted to gain an understanding of previous work in similar habitats. Daubenmire (1970), in particular, is noteworthy for characterization of the vegetative communities of eastern Washington.

In accordance with draft guidelines developed by WDFW for baseline and monitoring studies for wind projects, an assessment of habitat quality was conducted (WDFW 2003). The guidelines state that "where a wind project will affect [shrub-steppe] habitat in "excellent" condition (based on federal methodologies for assessing range land), wind project developers will engage in additional consultation with WDFW regarding suitable mitigation requirements for such habitat". In order to meet the requirements for determining habitat in "excellent" using federal methodologies, a BLM botanist who specializes in shrub-steppe habitat was contacted (R. Rosentreter, BLM, pers. comm.). The BLM suggested using Natural Resource Conservation Service (NRCS) "Range Condition Classes", which classify range condition as "excellent", "good", "fair", or "poor", based on a comparison of the existing community composition to the climax community composition.

The Releve' method (Braun-Blanquet 1932) was used to document the existing community composition. The Releve' method provides a semi-quantitative analysis of vegetation, useful for comparison purposes. Sample points were taken at each turbine string. A data sheet was filled out at a sample location judged to be most representative of the habitat for each turbine string. Existing plant species were listed at each sample location. Climax community composition data was obtained from the NRCS. Although the Soil Survey for Kittitas County is currently out-of-print, the soil map and characteristic climax plant community data were available from the local NRCS office. The climax community composition data is provided for each soil type. The relative abundance of each species is also provided based on weight. According to the NRCS range condition classification, comparison of the existing community composition to the climax community composition allows an assessment of habitat quality. Based on NRCS guidelines (USDA SCS 1973), rangeland with 75 to 100 percent of its climax vegetation is in "excellent" condition. Rangeland with 50 to 75 percent of its climax vegetation is in "good" condition. Rangeland with 25 to 50 percent of its climax vegetation is in "fair" condition, and less than 25 percent is in "poor" condition.

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#### **Rare Plant Survey**

The method used for the rare plant survey is similar to methods used at other wind power projects in Washington, including Zilkha's Kittitas Valley wind project and the Maiden wind project in Benton County (Eagle Cap Consulting 2001, 2002).

#### Study Area

For the purposes of the rare plant investigation, the study area included all lands that would be occupied by proposed facilities and a 164-foot (50 meter) buffer. This included proposed turbine strings, underground and overhead electrical lines, access roads, staging areas, substation sites, potential quarry sites, and the two proposed feeder line routes (BPA and PSE). In most cases, the resultant study corridors were 328 feet wide, although in some areas, several Project facilities are proposed to be located along side each other, resulting in a wider study corridor.

Although for the purposes of impact analysis, only the study corridors were considered, a larger area was addressed during the pre-field review to determine which rare plant species had potential for occurrence within the Project area. This was necessary to analyze the Project area in a regional context, and ensure that the target species list for the investigation was complete.

#### Target Species

For the rare plant investigation, the target species included all plant taxa listed as 'Endangered', or 'Threatened' by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act that potentially occur in the Project area. In addition, taxa that have been formally proposed or are candidate species for federal listing, or taxa listed as "species of concern" that potentially occur in the Project area were also considered target species. The "species of concern" status is an unofficial status for species that appear to be in jeopardy, but information is insufficient to support listing. Target species also included all plant taxa defined as 'Endangered', 'Threatened', 'Sensitive', 'Review', or 'Extirpated' by the Washington Natural Heritage Program (WNHP) that potentially occur in the Project area. The WNHP, part of the WDNR, maintains the most complete database available for state-listed species. Taxa meeting the above criteria were targeted by the investigation to determine their presence or absence within the study area. Determinations of status for rare plant species were based on information provided by the USFWS and the WNHP's list of tracked plant species (WNHP 2003a).

It should be noted that the Endangered Species Act of 1973 (16 USC 1531, *et seq.*, as amended) (ESA), does not give plant species legal protection on non-federal lands unless a State law or regulation is being violated (ESA Section 9(a)(2)(B)). Rare plant species are not legally protected in Washington State (Swope Moody, WNHP, pers comm). Despite the lack of legal protection, every effort was made to locate rare plant species that could be impacted by the project and, if present, identify mitigation measures to avoid or minimize impacts to rare plant species.

#### Prefield Review

As part of the investigation, a review of available literature and other sources was conducted to identify the rare plant species potentially found within the Project area. As per Section 7(c)(1) of the ESA, a letter was sent to the USFWS requesting a list of federally Threatened, Endangered, or Proposed taxa that have potential to occur within the Project area (Appendix 1). In addition, the WNHP was contacted to obtain element occurrence records for any known rare plant populations in the vicinity. To supplement the

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information provided by the above agencies, a number of other resources were consulted. These sources provided additional information on rare plant species potentially occurring in the study area, including critical information such as habitat preferences, morphological characteristics, phenologic development timelines, and species ranges. Sources included taxonomic keys and species guides (WNHP 2003b; USFWS, 2001; Cronquist et al. 1977; Hitchcock and Cronquist, 1973) and online databases of common and rare plant species (Ilanga Inc. 2003; USDA, 2003).

Using data collected during the pre-field review, a list of rare plant species potentially occurring in the Project area was compiled (Table 1). Habitat preferences and identification periods were derived from the literature for each potential species. Using this information, along with topographic maps of the Project area, a field survey plan was developed to guide the timing and intensity of the field surveys.

#### Field Investigation

All fieldwork was performed by a trained botanist with experience performing rare plant surveys in the region. A summary of the investigator's education and experience is included in Appendix 2.

A pedestrian field survey was performed from April 21 - 27 and May 5 - 9, 2003 to locate rare plant species within the study area (the "study area" is defined above). Additional pedestrian field surveys were performed on July 25, September 24, and October 31, 2003 to search areas that were added or modified from the original project layout. The survey was timed to locate as many target species as possible, particularly those most likely to occur in the affected habitats (sagebrush-steppe). The survey was accomplished by performing meander pedestrian transects, zigzagging back and forth across the survey corridor. The intensity of the pattern and the speed at which the surveyor walked was variable, and depended on the structural complexity of the habitat, the visibility of the target species, and the probability of species occurrence in a given area. In habitats of low visibility with a high probability of sensitive species and habitats encountered with high probability of occurrence of sensitive species. A GPS unit showing the survey boundaries was used for navigation, supplemented by 7.5 U.S. topographic maps.

During all surveys a list of all vascular plants encountered was made. Informal collections of unknown species were taken for later identification. *Flora of the Pacific Northwest* (Hitchcock and Cronquist, 1973) was the primary authority used for vascular plant species identification. Updated taxonomy referenced in the NRCS PLANTS database or Washington Flora Project database is noted where applicable (USDA, 2003; Ilanga Inc. 2003). Notes were also taken regarding general plant associations, land use patterns, unusual habitats, etc. Photographs of the habitat types and representative individual plants were taken using a digital camera.

## RESULTS

#### Habitat Characterization

#### Habitat Description

The steppe vegetation of eastern Washington has been characterized by Daubenmire (1970). Daubenmire's classification includes nine vegetation zones; each zone is based on climate, vegetation structure, and floristics. The Project area is within the *Artemisia tridentata – Agropyron* zone. In an undisturbed condition, this zone is distinguished by big sagebrush (*Artemisia tridentata*) as the principal

Habitat Characterization and Rare Plant Resources Report Wild Horse Wind Power Project - Washington shrub and bluebunch wheatgrass (*Agropyron [Pseudoroegeneria] spicata*) as the principal grass. The soils in this zone are mostly loams or stony loams. Grazing by cattle and horses in this zone tends to result in a decline in large perennial grasses and an increase in annual cheatgrass. Big sagebrush cover can vary from 5 to 26 percent, and Daubenmire did not find a correlation with grazing (Daubenmire 1970).

In addition to big sagebrush, a number of other shrub species may be present in the *Artemisia tridentata* – *Agropyron* zone in small numbers; these include rabbitbrushes (*Chrysothamnus* spp. and *Ericameria* spp.), threetip sagebrush (*Artemisia tripartita*), and spiny hopsage (*Grayia spinosa*). The bluebunch wheatgrass is supplemented by variable amounts of needle-and-thread grass (*Hesperostipa comata*), Thurber's needlegrass (*Achnatherum thurberianum*), Cusick's bluegrass (*Poa cusickii*), and bottlebrush (*Elymus elymoides*). A low layer of plants consisting of Sandberg's bluegrass, cheatgrass, and flatspine stickseed (*Lappula occidentalis*) may also be present (Daubenmire 1970).

Within the steppe region, a variety of habitats occur that have soils sufficiently unusual in physical or chemical properties to develop unique climax communities that are not necessarily associated with a particular vegetation zone. Lithosol (shallow soils) habitats are one such habitat that commonly occurs on the ridgetops within the Project area. Daubenmire (1970) recognizes a variety of lithosolic plant associations. All are typically composed of a uniform layer of Sandberg's bluegrass, over a crust of mosses and lichens, with a low shrub layer above. Within the Project area, the shrub layer on lithosols is principally composed of stiff sagebrush (*Artemisia rigida*) and/or several different buckwheat species (*Eriogonum spp.*).

The above descriptions of generalized vegetation zones and associations are based on climax communities, which typically develop over time in the absence of anthropogenic disturbance. Within most of the shrub-steppe region, including the Project area, many of the plant communities have been modified due to numerous disturbance factors. Livestock grazing, introduction of exotic plant species, and ground disturbance from recreational activities have influenced the plant community composition in the Project area from the climax communities described above. Notable in the Project area is fewer native grass species and grass cover in general, attributable to livestock grazing (L. Stream, WDFW, pers. comm.). Additionally, the Project area does contain some non-native species and weedy species; however, native species overwhelmingly dominate the Project area.

The following habitat types were mapped in the main Project area (Figure 3) and are described below:

- *Shrub-steppe* –7,992 acres in the Project area (92 percent)
- *Herbaceous* 469 acres in the Project area (5 percent)
- *Herbaceous/Rock Outcrop* 97 acres in the Project area (1.1 percent)
- *Pine Forest* 31 acres in the Project area (0.4 percent)
- *Woody Riparian* 54 acres in the Project area (0.6 percent)
- *Rock Outcrop* 5.6 acres in the Project area (0.1 percent)
- Seasonal Water Body 1.7 acres in the Project area (0.02 percent)

The following habitat types occur along the BPA and PSE transmission line routes within the 328-foot buffer that was surveyed for rare plants:

- *Shrub-steppe* 438 acres (91 percent of the survey area)
- *Herbaceous* 37.4 acres (7.5 percent of the survey area)
- *Pasture* 3.6 acres (0.7 percent of the survey area)
- *Rock Outcrop* 2.4 acres (0.5 percent of the survey area)
- *Woody Riparian* 1.3 acres (0.3 percent of the survey area)

Within the Project area, the primary habitat type is shrub-steppe. This upland habitat type is dominated by shrubs; big sagebrush and stiff sagebrush and the most common dominants, occasionally threetip sagebrush (*Artemisia tripartita*), antelope bitterbrush (*Purshia tridentata*), and squaw current (*Ribes cereum*) dominate. A mix of grasses and forbs make up the understory. Big sagebrush is typically dominant in areas with deeper soils, while stiff sagebrush is dominant on exposed sites with shallow soils (i.e., lithosols). The shrub-steppe habitat type was broken down into three categories based on relative spatial density of the shrub layer – dense, moderate, and sparse. These categories are subjective, but generally fall into the following cover categories:

- dense greater than 60 percent shrub cover
- moderate between 30 and 60 percent shrub cover
- sparse less than 30 percent shrub cover

In general, areas with a dense shrub layer were found on deep-soiled sites (primarily on gentle to moderate slopes and valley bottoms) and were dominated by big sagebrush, antelope bitterbrush, or squaw current. The Project area has approximately 1,435 acres of dense shrub (17 percent of the Project area). Areas with a moderate shrub layer were found on flat to gently sloping sites, and were typically dominated by big sagebrush or stiff sagebrush, although threetip sagebrush was common in some areas. Most of the shrub steppe fell into the moderate category; approximately 4,935 acres (57 percent of the Project area) were mapped as moderate. Areas with sparse shrub cover were generally found on exposed ridgetops and knolls and dominated by low-growing stiff sagebrush, or in some areas, various buckwheats. Approximately 1,623 acres (19 percent of the project area) were mapped as sparse.



Typical shrub-steppe habitat in Project area.

Habitat Characterization and Rare Plant Resources Report Wild Horse Wind Power Project - Washington Areas dominated by herbaceous speices (grasses and forbs) comprise approximately 5 percent of the Project area and are generally limited to very steep slopes and exposed ridges that do not support shrubs, although scattered individual shrubs (usually stiff sagebrush or buckwheats) may be found. The herbaceous habitat type includes a variety of plant associations dominated by grass species, particularly Sandberg's bluegrass (*Poa secunda*) and bluebunch wheatgrass; forb species typically co-dominate. Common forbs include Hood's phlox (*Phlox hoodii*), Hooker's balsamroot (*Balsamorhiza hookeri*), and narrowleaf goldenweed (*Haplopappus stenophllus*). Lithosols are common in this habitat type, especially on exposed ridgetops. Sandberg's bluegrass is the dominant grass on lithosols. On some steeps slopes, fingers of exposed cobbles and rock are intermingled among the herbaceous habitat. This herbaceous/rock outcrop habitat type makes up an additional 1.1 percent of the Project area. A 5.6 acre site (0.1 percent of the Project area) on top of Whiskey Dick peak is classified as simply rock outcrop.



Herbaceous/Rock outcrop habitat in Project area

While the shrub-steppe habitat type dominates the landscape in and around the Project area, a small amount of Ponderosa pine (*Pinus ponderosa*) forest occurs in a narrow strip along one of the main Project area drainages (31 acres or 0.4 percent of the Project area). This narrow strip of forest contains mature Ponderosa pine in the overstory, with a mix of grasses and forbs in the understory.

Riparian areas associated with creeks and springs are limited, but present in the Project area. The predominant riparian area is the narrow woody riparian strip along Whiskey Dick Creek. This area comprises approximately 54 acres or 0.6 percent of the Project area. Small to medium sized trees dominate the overstory, including black hawthorn (*Crataegus douglasii*) and alder (*Alnus sp.*). Scattered shrubs occur in the understory (e.g., squaw current and big sagebrush) along with grasses and forbs such as bulbous bluegrass (*Poa bulbosa*) and fern-leaved lomatium (*Lomatium dissectum*). The riparian habitats associated with springs are degraded from heavy livestock use, and much of the riparian vegetation has been removed. The weedy species bur buttercup (*Ranunculus testiculatus*) was common around most springs.

One seasonal water body occurs near 'String K'. Water was present during the April - May survey period, however this site was dry during later site visits. Other on-site investigators report that this water body is generally dry by late May. This water body, approximately 1.7 acres in size, is located just

Habitat Characterization and Rare Plant Resources Report Wild Horse Wind Power Project - Washington outside the 164-foot buffer for 'String K'. The area is heavily used by livestock and wildlife for water and the rocky shore had very little or no riparian vegetation.

Both of the proposed BPA and PSE feeder lines are routed along exposed ridge tops in shrub-steppe habitat. The BPA feeder line heads west out of the Project area for approximately 2.5 miles along a ridge with sparse to moderate sagebrush cover; lithosol is intermixed in the shrub-steppe habitat. The line is then routed down a narrow drainage and across Parke Creek and a dirt road. Woody riparian habitat occurs along Parke Creek at the proposed transmission line crossing location. The overstory consists of tree species including black hawthorn and aspen (*Populus tremuloides*). The shrub layer includes snowberry (*Symphoriocarpos* sp.), Wood's rose (*Rosa woodsii*), golden current (*Ribes aureum*), and willow (*Salix* sp.). The understory consists of a variety of grasses and forbs. The riparian area is within a cattle pasture and the understory is heavily grazed. West of the Parke Creek and road crossing, the line once again enter shrub-steppe habitat for the remaining approximately 1.5 miles to the interconnect with the existing BPA transmission line.

The PSE feeder line heads south out of the Project area along ridge tops dominated by moderate to sparse shrub-steppe habitat for approximately 2 miles where it then crosses the Vantage Highway and heads southwest. South of the Vantage Highway, the transmission line continues along ridge tops primarily in shrub-steppe habitat, although it passes through several small areas dominated by herbaceous species (primarily grasses) on exposed knolls. The western-most half-mile of the PSE line crosses an irrigated pasture, a small creek, a local road, and the Highline Canal and then interconnects with an existing PSE transmission line.

#### Quality Assessment

Results of the habitat quality assessment conducted at each turbine string show that habitat quality ranges from "fair" to "good" (Table 2). Based on NRCS guidelines (USDA SCS 1973), rangeland with 75 to 100 percent of its climax vegetation is in "excellent" condition. Rangeland with 50 to 75 percent of its climax vegetation is in "good" condition. Rangeland with 25 to 50 percent of its climax vegetation is in "fair" condition, and less than 25 percent is in "poor" condition. No sample locations fell into the "excellent" category, presumably due to the history of grazing. Grazing appears to have resulted in fewer grasses and less grass cover than would be expected in a climax community. A similar observation was reported by Daubenmire (1970), who noted a decline in large perennial grasses due to grazing, although he could find no correlation among big sagebrush cover and grazing. Similarly, no sample locations fell into the "poor" category. Although the Project area appears to have few grasses than would be expected, native species dominate and no significant weedy invasions (e.g. cheatgrass) were observed that could alter species composition to such as degree as to result in a "poor" rating. Although the sample locations were at the turbine strings, the "fair" to "good" rating can be applied across the Project area based on general observations.

Thirteen of the eighteen sample locations were rated as "good", and five were rated as "fair". The percentages that observed vegetation differed from climax vegetation ranged from 36 percent to 60 percent. "Fair" is defined as rangeland with 25 to 50 percent of its climax vegetation, and "good" rangeland has 50 to 75 percent of its climax vegetation. Five sample locations were at 50 percent, and were "rounded up" to the "good" category. No spatial pattern was found for the sample locations rated as "good" verses "fair", although the "good" locations are generally more isolated, away from the main roads (except String E), and the "fair" locations are closer to main roads (except String M). The "fair" to "good" ratings are indicative of past land use and relatively isolated setting. Although the area has been grazed, no significant changes in species composition were observed, such as conversion of native

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vegetation to cropland. It is assumed that the relatively isolated setting has minimized the introduction and spread of noxious and/or invasive species that occurred throughout much of our western rangeland.

#### **Rare Plant Survey**

#### Preview Review

The USFWS Section 7 response letter listed one federally threatened plant species and one candidate plant species with potential for occurrence in the Project area (Appendix 1). The threatened species is Ute ladies'-tresses (*Spiranthes diluvialis*) and the candidate species is basalt daisy (*Erigeron basalticus*). No other plant species were listed in the USFWS letter.

The WNHP reported one element occurrence record for a tracked plant species in the area crossed by the proposed PSE powerline route (WNHP, 2003). This species occurrence, Hoover's tauschia, was reported from portions of Sections 4 & 9, Township 17N, Range 21E. Additional element occurrences were reported by WNHP within a three-mile radius of the Project area and include 11 occurrences of Pauper milk-vetch, 12 occurrences of Hoover's tauschia (including the one crossed by the PSE powerline), six occurrences of hedgehog cactus, and one occurrence of a Wyoming big sagebrush/bluebunch wheatgrass community. The locational information for WNHP data is not precise and generally covers portions of several sections.

#### Field Investigation

The field surveys did not locate any USFWS Endangered, Threatened, Proposed, or Candidate plant species. No habitat for Ute ladies'-tresses occurs in the survey area. Limited potential habitat was found for the federal candidate species, basalt daisy. Although basalt daisy is typically restricted to the extensive cliffs along the Yakima River and Selah Creek, all rock outcrops within the Project area were searched intensively for the presence of the species, but none were found.

Potential habitat was found within the survey area for a number of federal 'Species of Concern'. These include Columbia milkvetch, Hoover's desert-parsley, least phacelia, Seely's silene, and Hoover's tauschia. In all cases, where potential habitat was found for these species, the area was searched carefully, with none found.

Likewise, the field surveys did not locate any plants listed as Endangered, Threatened, or Sensitive by the State of Washington. Potential habitat, however, was found for a number of these species throughout the Project area. These habitats were searched thoroughly for the presence of the target species, but none were found.

One plant species on the Washington State 'Review' list, hedgehog cactus, was found in the survey area. Species on the 'Review' list are of potential concern within the state, but in need of additional field work before a status can be assigned (WNHP 2003). The Review designation carries no legal requirement for protection; however, WNHP personnel are interested in tracking occurrences of Review species to aid in the assignment of status. Most of the suitable habitat present in the Project area was found to contain scattered individuals. Suitable habitat consists of the lithosol habitats, or those areas mapped as sparse shrub-steppe and herbaceous. Most of the plants were in flower at the time of the spring survey; additional populations were found during the summer and fall surveys. Since the populations were extensive and extended well beyond the edge of the study corridors, mapping the entire extent was not undertaken.

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Hedgehog cactus

The hedgehog cactus populations found within the Project area are located in lithosolic habitats. These habitats are well represented within the Project area, intermingled among sagebrush steppe and herbaceous habitats. Much of the suitable habitat searched was found to contain the species. In addition, a large amount of suitable habitat exists adjacent to the survey corridors. Although areas outside of the corridors were typically not surveyed, it is reasonable to assume that much of this suitable habitat also contains hedgehog cactus.

A list of all plant species observed and identifiable during the rare plant survey is included in Table 3.

## IMPACT ASSESSMENT

#### Habitat

Tables 4 and 5 summarize the amount of permanent and temporary impacts to habitat types in the Project area. Six of the eight habitat types mapped in the main Project area would be affected; affected habitat types include herbaceous, herbaceous/rock outcrop, shrub-steppe dense, shrub-steppe medium, shrub-steppe sparse, and rock outcrop. Pine forest and woody riparian habitats would not be impacted by project facilities, either temporarily or permanently. Habitats along the BPA and PSE transmission lines that would be affected include herbaceous, pasture, shrub-steppe dense, shrub-steppe medium, shrub-steppe sparse, and rock outcrop. A total of approximately 148 acres would be permanently impacted, with the majority (127 acres or 86 percent) in shrub-steppe habitats. An additional 323 acres would be temporarily disturbed; 293 acres (91 percent) in shrub-steppe habitats. A breakdown of permanent and temporary impacts by habitat type is shown in Table 5.

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#### **Rare Plants**

Due to the absence of any known populations and lack of habitat within the Project area, no Projectrelated impacts are anticipated to any federally Endangered, Threatened, Proposed, or Candidate plant species. Likewise, no Project-related impacts are anticipated for any Washington State Endangered, Threatened, or Sensitive plant species.

Limited impacts are anticipated, however, to one species on the Washington State Review list, hedgehog cactus. Ground disturbance related to construction and operation of the proposed Project could cause direct adverse impacts to individuals if they are located within the impact footprint. However, due to their frequent occurrence in lithosol habitats and the high likelihood that many more individuals occur in the area adjacent to the impact corridors, the Project is not expected to significantly impact the species' viability in the Project area. Approximately 10 percent of the individuals in the Project area are estimated to be directly impacted by the Project. This level of direct impact is not anticipated to jeopardize the continued existence of the local population, or lead to the need for state or federal listing.

In addition to direct impacts from ground disturbing activities, the Project also has the potential to impact hedgehog indirectly if the Project leads to the degradation of habitat in the area through the introduction and spread of noxious weeds or the increase of human presence in the area. Although little is known about how hedgehog cactus responds to competition from non-native species, it is safest to assume that significant increases in noxious weeds in the area could adversely impact the species. At the present time, the lithosolic habitat where hedgehog cactus is found is relatively intact. If the Project leads to the degradation of these habitats by increasing noxious weed densities, it is possible that some level of adverse impact to the hedgehog populations would occur. Furthermore, uncontrolled access to the project area increases the possibility of cactus collectors on-site. Collection of hedgehog cactus for gardens has been cited as a reason for decline of the species (Taylor 1992).

## MITIGATION

A mitigation parcel has been identified within the 8,500-acre Project area. The mitigation parcel is T18N, R21E, Section 27, except for the portion of this section that will be developed as part of the Project; i.e., String 'L' follows a ridgeline that dissects Section 27 from north to south. The areas to the east and west of String 'L' proposed for mitigation are estimated to total approximately 600 acres. Use of this parcel would meet the guidelines for mitigation outlined by the WDFW for wind power projects (WDFW 2003). The Applicant intends to coordinate with WDFW regarding specific mitigation measures for this parcel, such as fencing the parcel to eliminate livestock grazing. In addition to Section 27, the Applicant has proposing to fence the springs within the Project area to eliminate livestock grazing. Fencing used for the mitigation parcel and the springs will be designed to keep livestock out but allow game species to cross. Final mitigation measures will be negotiated with the WDFW.

WDFW guidelines for wind power projects east of the Cascades provide a list of general principles for mitigation. These principles were followed during selection of Section 27 as a potential mitigation site for the Wild Horse Project. Section 27 provides opportunity for "like-kind" replacement habitat of equal or higher habitat value than the impacted area and it occurs in the same geographical region as the impacted habitat. Furthermore, since the Applicant has an option to purchase the property if the Project goes forward, the Applicant can provide legal protection and protection from degradation for the life of

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the Project. Under WDFW's general principles, grassland habitat would be replaced at a 1:1 ratio and shrub-steppe habitat at a 2:1 ratio.

Additional benefits of Section 27 as a mitigation parcel for the Project include:

- Protection of a segment of Whiskey Dick Creek
- Continuity of habitat with adjacent state lands
- Preservation of a diversity of habitats

Use of Section 27 as a mitigation parcel would result in protection of an approximately 1-mile segment of Whiskey Dick Creek near its headwaters. Protection of waterways and their adjacent riparian habitat provide significant benefits above and beyond replacement of "like-kind" habitat at agreed upon ratios. Protection of this segment of Whiskey Dick Creek provides benefits for water quality, wildlife, and species diversity. In addition, Section 27 is adjacent to state-owned lands. WDNR administers Section 34 to the south and WDFW administers Section 26 to the east. Use of Section 27 for mitigation will provide continuity of habitat with these adjacent state sections. Finally, a variety of habitat types that occur in the general Project area are found in Section 27, so a diversity of habitat types would be preserved. These include shrub-steppe (moderate and dense), herbaceous, herbaceous/rock outcrop, and woody riparian (Figure 3).

A reconnaissance level survey of Section 27 was made during late April 2003 to evaluate the parcel for use as a mitigation site for permanent impacts to Project area. The reconnaissance included a walk through both the "western half" and "eastern half" of Section 27; during these walks notes were taken on general habitat quality, species observations, plant associations, and current use of the parcel.

The "western half" of Section 27 consists of the Whiskey Dick Creek drainage and the adjacent steep slopes. The elevation of Whiskey Dick Creek in Section 27 is approximately 2,800 feet; the adjacent ridges are over 3,300 feet in elevation. The USGS 7.5 minute topographic map shows Whiskey Dick Creek to be an intermittent creek fed by Pine Spring and Government Spring (both located in the Project area). The dry, steep, west-facing slope consists of herbaceous habitat intermingled with fingers of rock outcrop. Species observed on this slope include bluebunch wheatgrass and a variety of native forbs, such as arrowleaf balsamroot (*Balsamorhiza saggitata*). Scattered individual shrubs were found, including big sagebrush, antelope bitterbrush, and squaw current. Some non-native grasses were also noted including bulbous bluegrass (*Poa bulbosa*) and cheatgrass. Shrub-steppe habitat is found on the east-facing slope and portions of the west-facing slope. Big sagebrush and stiff sagebrush are the dominant shrubs, although patches of antelope bitterbrush and squaw current were noted. Shrub composition and density appear correlated with soil type and depth. Big sagebrush was more common in drainages and on more moderate slopes in deeper soils. In some locations, mature big sagebrush was very robust. Stiff sagebrush was more common on shallow soils on exposed ridges and upper slopes.

A narrow riparian zone occurs along Whiskey Dick Creek, which is confined by steep slopes on both sides in Section 27. The riparian area has a woody overstory dominated by small to medium sized trees including black hawthorn (*Crataegus douglasii*) and alder (*Alnus sp.*). Scattered shrubs occur in the understory (e.g., squaw current and big sagebrush), along with grasses and forbs such as bulbous bluegrass and fern-leaved lomatium (*Lomatium dissectum*). Several game trails were observed throughout the "western half" of Section 27 and Whiskey Dick is likely an important source of water and shade for area wildlife. Several bird nests were noted in the trees.

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The "eastern half" of Section 27 is moderately sloping shrub-steppe habitat (dense and moderate) with some areas dominated by herbaceous species. Due to the moderate slope, soils are relatively deep and support dense, diverse shrub-steppe, often with a bluebunch wheatgrass component that is absent in other parts of the Project area shrub-steppe. The "eastern half" of Section 27 was the most diverse shrub-steppe observed in the Project area and dominated by native species. Very few weeds were observed. Several species of sagebrush were observed, including big sagebrush, stiff sagebrush, and three-tip sagebrush, along with other shrubs such as antelope bitterbrush and squaw current. Relatively dense grasses and forbs were found in the understory. Grasses observed include bluebunch wheatgrass and Sandberg bluegrass. Forbs include several species of *Eriogonum*, several species of *Lomatium*, several species of *Lupinus*, Hooker's balsamroot, and Yakima milkvetch (*Astragalus reventiformis*).



Herbaceous habitat, "western half" Section 27


Woody riparian habitat along Whiskey Dick Creek, "western half" Section 27



Shrub-steppe habitat, "eastern half" Section 27

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TABLES

Table 1. Rare Plant Species with Potential for Occurrence in the Wild Horse Wind Power Project Area

Common Name	Federal	State	-	-
Scientific Name	Status	Status	Typical Habitat	ID Period
Tall agoseris Agoseris elata		S	Meadows, open woods, and exposed rocky ridgetops	June-August
Pasque flower Anemone nuttalliana		S	Prairies to mountain slopes, mostly on well-drained soil	May-August
Palouse milk-vetch Astragalus arrectus		S	Grassy hillsides, sagebrush flats, river bluffs, and openings in open ponderosa pine and Douglas fir forests	r April-July
Columbia milk-vetch Astragalus columbianus	SOC	LT	Sagebrush-steppe	March-June
Pauper milk-vetch Astragalus misellus var. pauper		S	Open ridgetops and slopes	April-mid June
Dwarf evening-primrose Camissonia pygmaea		Т	Unstable soil or gravel in steep talus, dry washes, banks and roadcuts	June-August
Naked-stemmed evening primrose <i>Camissonia scapoidea</i>		S	Sagebrush desert, mostly in sandy, gravelly areas	May-July
Bristle-flowered collomia Collomia macrocalyx		S	Dry, open habitats	late May- early June
Golden corydalis Corydalis aurea		R1	.1 Varied habitats, moist to dry and well May-July drained soil	
Beaked cryptantha Cryptantha rostellata		S	Very dry microsites within sagebrush steppe	late April –mid June
Shining flatsedge Cyperus bipartitus		S	Streambanks and other wet, low places in valleys and lowlands	August- September
Wenatchee larkspur Delphinium viridescens	SOC	Т	Moist meadows, moist microsites in open coniferous forest, springs, seeps and riparian areas	July
White eatonella Eatonella nivea		Т	Dry, sandy, or volcanic areas within sagebrush-steppe	May
Basalt daisy Erigeron basalticus	С	Т	Crevices in basalt cliffs on canyon walls	May-June
Piper's daisy Erigeron piperianus		S	Dry, open places, often with sagebrush	May-June
Sagebrush stickseed Hackelia hispida var. disjuncta		S	Rocky talus	May-June
Longsepal globemallow Iliamna longisepala		S	Sagebrush-steppe and open ponderosa pine and Douglas fir forest	June-August
Hoover's desert-parsley Lomatium tuberosum	SOC	Т	Loose talus and drainage channels of open ridgetops within sagebrush- steppe	March-early April

Table 1. Rare Plant Species with Potential for Occurrence in the Wild Horse Wind Power Project Area

Common Name	Federal	State		-
Scientific Name	Status	Status	Typical Habitat	<b>ID Period</b>
Suksdorf's monkey-flower Mimulus suksdorfii		S	Open, moist to rather dry places within sagebrush-steppe	mid April-July
Coyote tobacco Nicotiana attenuata		S	Dry, sandy bottom lands, dry rocky washes, and other dry open places	June-September
Cespitose evening-primrose Oenothera cespitosa ssp.cespitosa		S	Open sites on talus or other rocky slopes, roadcuts, and the Columbia River terrace	Late April - mid June
Hedgehog cactus <i>Pediocactus</i> simpsonii var. robustior		R1	Desert valleys and low mountains	May-July
Brewer's cliff-brake Pellaea breweri		S	Rock crevices, ledges, talus slopes, and open rocky soil	April-August
Fuzzytongue penstemon Penstemon eriantherus var.whitedii		R1	Dry open places	May-July
Least phacelia Phacelia minutissima	SOC	S	Moist to fairly dry open places	July
Sticky goldenweed Pyrrocoma hirta var. sonchifolia		R1	Meadows and open or sparsely wooded slopes	July-August
Seely's silene Silene seelyi	SOC	Т	Shaded crevices in ultramafic to basaltic cliffs and rock outcrops, and among boulders in talus	May-August
Ute ladies'-tresses Spiranthes diluvialis	LT	E	broad low-elevation intermontane valley plains, with deltaic meandered wetland complexes; restricted to calcareous, temporarily inundated we meadow zones and segments of channels and swales where there is stable subsurface moisture and relatively low vegetation cover.	Mid July - l August et
Hoover's tauschia Tauschia hooveri	SOC	Т	basalt lithosols within sagebrush- steppe	March-mid April

Federal Status:

LT = Listed Threatened. Likely to become endangered

C = Candidate species. Sufficient information exists to support listing as Endangered or Threatened.

SOC = Species of Concern. An unofficial status, the species appears to be in jeopardy, but insufficient information to support listing.

State Status:

E = Endangered. In danger of becoming extinct or extirpated from Washington.

T = Threatened. Likely to become Endangered in Washington.

S = Sensitive. Vulnerable or declining and could become Endangered or Threatened in the state.

R1=State Review Group 1. Taxa for which there is insufficient data to support listing in Washington as Threatened, Endangered, or Sensitive

Table 2. Assessment of Habitat Quality at the Proposed Turbine String Sites			
		Characteristic Climax	
		Vegetation	General Quality
Facility	<b>Observed Vegetation¹</b>	(Based on Soil Type) ²	Assessment
Turbine String 'A'	Sandberg's bluegrass, Gray's lomatium, Hood's phlox, rock buckwheat, Hooker's balsamroot, big sage-brush, narrowleaf goldenweed, three-nerved violet	Sandberg's bluegrass, stiff sagebrush, thymeleaf buckwheat, bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, Hooker's balsamroot, narrowleaf goldenweed, rock buckwheat, bitterroot	String 'A' is located on lithosol (sparse shrub-steppe and herbaceous habitats) with exposed cobbles and rock. Habitat quality is considered " <b>good</b> " because 50% of the observed vegetation is in common with the climax vegetation. Native species dominate. The existing vegetation has a notable absence of bluebunch wheatgrass and bottlebrush squirreltail compared with the climax. Also of note is the presence of Gray's desert parsley.
Turbine String 'B'	Sandberg's bluegrass, Gray's lomatium, Hood's phlox, rock buckwheat, Hooker's balsam- root, big sage-brush, narrowleaf goldenweed, three-nerved violet	(North end) Sandberg's bluegrass, stiff sagebrush, thymeleaf buckwheat, bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, Hooker's balsamroot, narrowleaf goldenweed, rock buckwheat , bitterroot (South end) Sandberg bluegrass, stiff sagebrush, thymeleaf buck- wheat, bluebunch wheatgrass, bottlebrush squirreltai, Hood's phlox, Hooker's balsamroot, narrowleaf golden weed, rock buckwheat, bitterroot	The sample location for String 'B' was made at the northern end of the string in the same soil type described for 'String A'. Habitat quality is rated "good" because 50% of the observed vegetation is in common with the climax vegetation. The southern end is located in deeper- soiled shrub-steppe habitat on a slope. Although no samples were taken in this soil type, habitat quality is also assumed to be "good. Several weedy species were observed in the rock outcrop habitat adjacent to String 'B', due to past disturbance associated with oil and gas drilling and subsequent rehabilitation.

Table 2. Assessment of Habitat Quality at the Proposed Turbine String Sites			
		Characteristic Climax	
<b>T 11</b>		Vegetation	General Quality
Facility	Observed Vegetation	(Based on Soil Type) ²	Assessment
Turbine String 'C'	Stiff sagebrush, three tip sagebrush, Gray's lomatium, Sandberg's bluegrass, Hood's phlox, bluebunch wheatgrass, rock buckwheat, hedgehog cactus	Sandberg bluegrass, stiff sagebrush, thymeleaf buckwheat, Bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, narrow-leaf goldenweed, rock buckwheat, bitterroot	String C is located on lithosol (primarily sparse shrub-steppe habitat) with some exposed rock. Habitat quality is considered " <b>good</b> " because 56% of the observed vegetation is in common with the climax vegetation. Native species dominate.
Turbine String 'D'	Three tip sagebrush, stiff sagebrush, Sandberg bluegrass, longleaf phlox, narrowleaf goldenweed, Hooker's balsamroot, trace amount various forbs	Sandberg bluegrass, stiff sagebrush, thymeleaf buck- wheat, bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, Hooker's balsamroot, narrowleaf golden weed, rock buckwheat, bitterroot	'String D' is located on lithosol in herbaceous habitat. Habitat quality is considered "fair" because 40% of the observed vegetation is in common with the climax vegetation. Native species dominate, however weeds were noted along the existing road, including Russian thistle, knapweed, and bur buttercup.
Turbine String 'E'	Stiff sagebrush, narrowleaf goldenweed, Gray's lomatium, thymeleaf buck- wheat, Hood's phlox, Sandberg bluegrass, three- nerved violet, hedgehog cactus	Bluebunch wheatgrass, Sandberg bluegrass, rock buckwheat, Hood's phlox, narrowleaf goldenweed, threetip sagebrush, balsamroot, Hooker's balsamroot, lupine, thymeleaf buckwheat	This string includes deeper- soiled moderate shrub- steppe mixed with shallow- soiled lithosol. Habitat quality is considered " <b>fair</b> " because 40% of the observed vegetation is in common with the climax vegetation. Native species dominate. Existing vegetative cover is comprised of more shrubs and fewer grasses than would be expected in the climax community.
Turbine String 'F'	Thymeleaf buckwheat, Sandberg bluegrass, Hood's phlox, Grey's lomatium, stiff sagebrush, narrowleaf goldenweed, yarrow	Sandberg bluegrass, stiff sagebrush, thymeleaf buckwheat, Bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, narrow-leaf goldenweed, rock buckwheat, bitterroot	String 'F' is located on lithosol (primarily herbaceous habitat) with exposed rock. Habitat quality is considered " <b>good</b> " because 56% of the observed vegetation is in common with the climax vegetation. Native species dominate.

Table 2. Assessment of Habitat Quality at the Proposed Turbine String Sites			
		Characteristic Climax	
		Vegetation	General Quality
Facility	<b>Observed Vegetation</b> ¹	(Based on Soil Type) ²	Assessment
Turbine String 'G'	Three tip sagebrush, Sandberg bluegrass, bluebunch wheatgrass, rabbitbrush, stiff sagebrush, Hooker's blasamroot, Hood's phlox, thymeleaf buckwheat	Sandberg bluegrass, stiff sagebrush, thymeleaf buckwheat, Bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, narrow-leaf goldenweed, rock buckwheat, bitterroot	String 'G' is located in moderate shrub-steppe habitat with shallow soils and some exposed rock. Habitat quality is considered "good" because 56% of the observed vegetation is in common with the climax vegetation. Native species dominate.
Turbine String 'H'	Stiff sagebrush, Sandberg bluegrass, thymeleaf buck- wheat, Hoods' phlox, Hooker's balsamroot	Sandberg bluegrass, stiff sagebrush, thymeleaf buck- wheat, bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, Hooker's balsamroot, narrowleaf golden weed, rock buckwheat, bitterroot	String 'H' is located in moderate density shrub- steppe on shallow soils. Antelope bitterbrush and squaw current occur at the southern tip of the string in the buffer zone. Habitat quality is considered " <b>good</b> " because 50% of the observed vegetation is in common with the climax vegetation. Native species dominate. No weedy species were noted.
Turbine String 'I'	Stiff sagebrush, Sandberg bluegrass, thymeleaf buck- wheat, Hoods' phlox, Hooker's balsamroot, narrowleaf goldenweed	Sandberg bluegrass, stiff sagebrush, thymeleaf buck- wheat, bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, Hooker's balsamroot, narrowleaf golden weed, rock buckwheat, bitterroot	This string consists of deeper-soiled moderate shrub-steppe interspersed with areas of lithosol and exposed rocks and boulders. A portion of the associated overhead electric line crosses a patch of dense shrub habitat dominated by squaw current. Habitat quality is considered "good" because 60% of the observed vegetation is in common with the climax vegetation. Native species dominate. No weedy species were noted.

Table 2. Assessment of Habitat Quality at the Proposed Turbine String Sites			
		Characteristic Climax	
		Vegetation	General Quality
Facility	<b>Observed Vegetation¹</b>	(Based on Soil Type) ²	Assessment
Turbine String 'J'	Stiff sagebrush, big sagebrush, bluebunch wheatgrass, rock buckwheat, Sandberg bluegrass, trace amounts of various forbs.	Sandberg bluegrass, stiff sagebrush, thymeleaf buck- wheat, bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, Hooker's balsamroot, narrowleaf golden weed, rock buckwheat, bitterroot	String 'J' is located in moderate density shrub- steppe on fairly shallow soils. Habitat quality is considered "fair" because 40% of the observed vegetation is in common with the climax vegetation. Native species dominate. Existing vegetative cover is comprised of more shrubs and fewer grasses than would be expected in the climax community. Bur buttercup, a weedy species, was noted along road.
Turbine String 'K'	Stiff sagebrush, Sandberg bluegrass, Gray's lomatium, Hood's phlox, bulbiferous prairie star, thymeleaf buckwheat, trace amount various forbs	Sandberg bluegrass, stiff sagebrush, thymeleaf buck- wheat, bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, Hooker's balsamroot, narrowleaf golden weed, rock buckwheat, bitterroot	This string is located in deeper-soiled moderate shrub-steppe at the south end and cobbley lithosol with sparse shrub steppe at the north end. Habitat quality is considered "fair" because 40% of the observed vegetation is in common with the climax vegetation. Native species dominate. Bur buttercup, a weedy species, was common near the adjacent water body.

Table 2. Assessment of Habitat Quality at the Proposed Turbine String Sites			
		Characteristic Climax	
		Vegetation	General Quality
Facility	<b>Observed Vegetation</b> ¹	(Based on Soil Type) ²	Assessment
Turbine String 'L'	Big sagebrush, stiff sagebrush, three-tip sagebrush, Hooker's balsam-root, rock buckwheat, Sandberg's bluegrass, bluebunch wheatgrass, and trace amounts of other forbs.	Sandberg bluegrass, stiff sagebrush, thymeleaf buckwheat, Bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, narrow-leaf goldenweed, rock buckwheat, bitterroot	'String L' is the longest string at approximately 3 miles in length. It runs along an undulating ridge in one primary soil type and minor inclusions of other soils types. Moderate shrub steppe is found at the north end and sparse shrub steppe at the south end. The sample observation was made at a representative site in the moderate shrub steppe. Habitat quality is considered " <b>good</b> " because 50% of the observed vegetation is in common with the climax vegetation. Native species dominate. Weeds were relatively
Turbine String 'M'	Big sagebrush, bluebunch wheatgrass, Sandberg bluegrass, lupine, stiff sagebrush, Gray's lomatium, western groundsel, trace amount other forbs.	Bluebunch wheatgrass, Sandberg bluegrass, antelope bitterbrush, arrowleaf balsamroot, big sagebrush, buckwheat, Cusick's bluegrass, threadleaf sedge, thruber needlegrass, lupine, wax (squaw) current	Sring 'M' occurs in moderately dense shrub- steppe with generally shallow soils. Habitat quality is considered "fair" because 36% of the observed vegetation is in common with the climax vegetation. Native species dominate. Shrub composi- tion is different than would be expected in the climax community. Minor amounts of weedy species were noted including bur buttercup and a patch of cheatgrass along the access road.

Table 2. Assessment of Habitat Quality at the Proposed Turbine String Sites			
		Characteristic Climax	
		Vegetation	General Quality
Facility	<b>Observed Vegetation¹</b>	(Based on Soil Type) ²	Assessment
Turbine String 'N'	Stiff sagebrush, big sagebrush, lupine, Sandberg bluegrass, bluebunch wheatgrass, Gray's lomatium, rock buckwheat, narrowleaf goldenweed, trace amounts of other grasses and forbs, including cheatgrass	Sandberg bluegrass, stiff sagebrush, thymeleaf buck- wheat, bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, Hooker's balsamroot, narrowleaf golden weed, rock buckwheat, bitterroot	String 'N' is located in moderate density shrub- steppe on shallow soils. Habitat quality is considered "good" because 50% of the observed vegetation is in common with the climax vegetation. Native species dominate. Existing vegetative cover is comprised of more shrubs and fewer grasses than would be expected in the climax community. Several weedy species were noted at this site, including cheatgrass & bur buttercup.
Turbine String 'O'	Stiff sagebrush, big sagebrush, Sandberg bluegrass, bluebunch wheatgrass, Gray's lomatium, rock buckwheat, narrowleaf goldenweed, Hood's phlox	Sandberg bluegrass, stiff sagebrush, thymeleaf buck- wheat, bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, narrowleaf goldenweed, rock buckwheat, bitterroot	String 'O' is located in sparse shrub-steppe habitat with shallow soils and some exposed rock. Habitat quality is considered "good" because 56% of the observed vegetation is in common with the climax vegetation. Native species dominate.
Turbine String 'P'	Stiff sagebrush, big sagebrush, Sandberg bluegrass, Gray's lomatium, thymeleaf buckwheat, lupine, Hooker's balsamroot, Hood's phlox, narrowleaf goldenweed	Idaho fescue, bluebunch wheatgrass, antelope bitterbrush, lupine, Sandberg bluegrass, three-tip sagebrush, big sagebrush	String 'P' is located primarily in sparse shrub- steppe habitat with some shallow soils and exposed rock. Habitat quality is considered "good" because 57% of the observed vegetation is in common with the climax vegetation. Native species dominate.

Tuble 2. Assessme	eni oj maonai Quanty ai ine	Troposed Turbine Siring Sile	25
		Characteristic Climax	
		Vegetation	General Quality
Facility	<b>Observed</b> Vegetation ¹	(Based on Soil Type) ²	Assessment
Turbine String 'Q'	Stiff sagebrush, big sagebrush, Sandberg's bluegrass, Gray's lomatium, trace amounts of Hooker's balsamroot, Hood's phlox, thymeleaf buckwheat, lupine, narrowleaf goldenweed, and three-nerved violet.	(North Half) Idaho fescue, bluebunch wheatgrass, antelope bitterbrush, lupine, Sandberg bluegrass, three-tip sagebrush, big sagebrush (South Half) Sandberg bluegrass, stiff sagebrush, thymeleaf buck- wheat, bluebunch wheatgrass, bottlebrush squirreltail, Hood's phlox, Hooker's balsamroot, narrowleaf golden weed, rock buckwheat, bitterroot	'String Q' crosses two soil types capable of supporting differing climax commun- ities. The north-half is deeper-soiled, associated with higher grass cover in the climax community, while the south-half is shallow-soiled with species typical of lithosol (e.g. Sandberg bluegrass and stiff sagebrush). The sample location was in the south half in shallow soils. Habitat quality is considered " <b>good</b> " because 60% of the observed vegetation is in common with the climax vegetation. Native species dominate.
Turbine String 'R'	Stiff sagebrush, Sandberg's bluegrass, Gray's lomatium, trace amounts of Hooker's balsamroot, Hood's phlox, thymeleaf buckwheat, lupine, narrowleaf goldenweed, and three-nerved violet.	Sandberg bluegrass, blue- bunch wheatgrass, stiff sagebrush, thymeleaf buckwheat, rock buck-wheat, bottlebrush squirreltail, Hood's phlox, Hooker's balsamroot, narrowleaf goldenweed, bitterroot	String 'R' occurs on sparse shrub-steppe on lithosol. The associated overhead electric line crosses some deeper-soiled habitat with relatively large big sagebrush and bluebunch wheatgrass. Habitat quality is considered " <b>good</b> " because 60% of the observed vegetation is in common with the climax vegetation. Native species dominate. No weedy species were noted.

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 1Based  on Releve' sampling method; one sample location was used at each turbine string  2Provided  by NRCS office in Ellensburg, WA

Table 3. List of Vascular Plant Species Observed, Wild Horse Project AreaLate April–Early May 2003FamilyScientific NameCommon N

Family	Scientific Name	Common Name
MAIN PROJECT AREA		
BERBERIDACEAE	Berberis aquifolium	Shining Oregon grape
	Berberis (Mahonia) repens	Oregon grape
BORAGINACEAE	Cryptantha leucophaea	Gray cryptantha
	Lithospermum ruderale	Columbia puccoon
	Mertensia longiflora	Long-flowered bluebells
САСТАСЕЛЕ	Padiocactus simpsonii	Hedgebog cactus
CACTACEAE	Teulocacius simpsonii	Heugenog cactus
CAPRIFOLIACEAE	Symphoricarpos sp.	Snowberry
COMPOSITAE	1 - hill	
(ASTEDACEAE)	Achilled millejolium	Low pussitees
(ASTERACEAE)	Antennaria aimorpha	Low pussyloes Stiff sagebrush
	Artemisia tridentate	Big sagebrush
	Artemista triaentate Ralsamorhiza hookari	Hooker's halsomroot
	Baslamorhiza saggiatat	Arrowleaf balsamroot
	Centaurea sp	Knapweed
	Chrysothamnus nauseosus	Grav rabbitbrush
	Cirsium sn	Thistle
	Erigeron sp.	Fleabane
	Haplopappus stenophyllus	Narrow-leaf goldenweed
	Senecio integerrimus	Western groundsel
	Taraxacum officinale	Common dandelion
	Tragopogon dubius	Yellow salsify
		,
CRUCIFERAE	Arabis cusickii	Cusick's rockcress
(BRASSICACEAE)	Arabis divaricarpa	Spreadingpod rockcress
	Chorispora tenalla*	Blue mustard
	Erysimum asperum	Rough wallflower
	Phoenicaulis cheiranthoides	Daggerpod
GRAMINEAE	Agropvron spicatum	Bluebunch wheatgrass
(POACEAE)	(Pseudoroegneria spicata)	C
	Bromus tectorum*	Cheat grass
	Elymus (Leymus) cinerus	Basin wild rye
	Festuca idahoensis	Idaho fescue
	Poa bulbosa	Bulous bluegrass
	Poa pratensis	Kentucky bluegrass
	Poa sandbergii (secunda)	Sandberg's bluegrass
	Stipa thurberiana	Thurber's needlegrass

Table 3. List of Vascular Plant Species Observed, Wild Horse Project AreaLate April–Early May 2003

Family	Scientific Name	Common Name
GROSSULARIACEAE	Ribes cereum	Squaw current
HYDROPHYLLACEAE	Hydrophyllum capitatum Phacelia linearis	Ballhead waterleaf Threadleaf phacelia
LABIATA	Mentha sp.	Mint
LEGUMINOSAE (FABACEAE)	Astragalus pushii Lupinus argenteus Lupinus lepidus Lupinus sulphureus Trifolium macrcephalum Vicia Americana	Woolly-pod milkvetch Silvery lupine Prairie lupine Sulfur lupine Big-head clover American milkvetch
LILIACEAE	Allium acuminatum Brodiaea howellii (Triteleia gndiflora var. howellii) Fritillaria pudica Zigadenus venenosus	Tapertip onion Howell's brodiaea Yellow bell Death camas
POLEMONIACEAE	Phlox hoodii Phlox longifolia	Hood's phlox Long-leaf phlox
POLYGONACEAE	Eriogonum douglasii Eriogonum ovalifolium Eriogonum sphaerocephalum Eriogonum thymoides	Douglas' buckwheat Cushion buckwheat Round-headed desert buckwheat Thyme-leaved eriogonum
PORTULACEAE	Claytonia lanceolata Lewisia rediviva	Western springbeauty Bitterroot
RANUNCULACEAE	Clematis ligusticifolia Delphinium nuttallianum Ranunculus glaberrimus Ranunculus testiculatus*	Virgin's bower Larkspur Sagebrush buttercup Hornseed buttercup
ROSACEAE	Amelanchier alnifolia Crataegus douglasii Prunus virginiana Purshia tridentata Rosa woodsii	Serviceberry Black hawthorn chokecherry Bitter-brush Wood's rose
SALICACEAE	Populus tremuloides	Aspen

Habitat Characterization and Rare Plant Resources Report Wild Horse Wind Power Project - Washington

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Table 3. List of Vascular Plant Species Observed, Wild Horse Project AreaLate April–Early May 2003

Family	Scientific Name	Common Name
SAXIFRAGACEAE	Lithophragma bulbifera Lithophragma parviflora	Prairie star Small flower fringecup
SCROPHULARIACEAE	Collinsia parviflora Penstemon gairdnieri Veronica sp.	Small-flowered blue-eyed Mary Gairdneri's penstemon Speedwell
UMBELLIFERAE (APIACEAE)	Lomatium canbyi Lomatium dissectum Lomatium gormanii Lomatium grayi Lomatium macrocarpum Lomatium triternatum	Canby's lomatium Fern-leaved desert parsley Gorman's lomatium Gray's lomatium Large-fruited lomatium Nine-leaf lomatium
VIOLACEAE	Viola trinervata	Desert pansy

#### **BPA TRANSMISSION LINE**

ANACARDIACEAE	Rhus sp.	Sumac
BERBERIDACEAE	Berberis (Mahonia) repens	Oregon grape
BETULACEAE	Alnus incana	Alder
BORAGINACEAE	Amsinkia sp. Mertensia longiflora	Fiddleneck Long-flowered bluebells
CAPRIFOLIACEAE	Symphoricarpos sp.	Snowberry
CHENOPODIACEAE	Salsola kali	Russian thistle
COMPOSITAE (ASTERACEAE)	Achillea millefolium Antennaria dimorpha Artemisia rigida Artemisia tridentate Balsamorhiza hookeri Balsamorhiza saggitata Chrysothamnus nauseosus Chrysothamnus viscidiflorus Cirsium sp. Erigeron poliospermus. Haplopappus stenophyllus Senecio integerrimus	Common yarrow Low pussytoes Stiff sagebrush Big sagebrush Hooker's balsamroot Arrowleaf balsamroot Gray rabbitbrush Green rabbitbrush Thistle Cushion daisy Narrow-leaf goldenweed Western groundsel

FamilyScientific NameCommon NameTaraxacum officinale Tragopogon dubiusCommon dandelion Yellow salsifyCRUCIFERAE (BRASSICACEAE)Arabis divaricaarpa Chorispora tenalla* Descuriana sp.Rock cress Blue mustard Tanseymustard
Taraxacum officinale Tragopogon dubiusCommon dandelion Yellow salsifyCRUCIFERAE (BRASSICACEAE)Arabis divaricaarpa Chorispora tenalla* Descuriana sp.Rock cress Blue mustard Tanseymustard
Tragopogon dubiusYellow salsifyCRUCIFERAEArabis divaricaarpaRock cress(BRASSICACEAE)Chorispora tenalla*Blue mustardDescuriana sp.Tanseymustard
CRUCIFERAE (BRASSICACEAE)Arabis divaricaarpa Chorispora tenalla*Rock cress Blue mustard Tanseymustard
(BRASSICACEAE)Chorispora tenalla*Blue mustardDescuriana sp.Tanseymustard
Descuriana sp. Tanseymustard
· ·
Phoenicaulis cheiranthoides Daggerpod
EQUISETACEAE Equisetum sp. Horsetail
GRAMINEAEAgropyron spicatumBluebunch wheatgrass(DOACEAE)(Browdows converting print
(POACEAE) (Pseudoroegnerid spicala)
Elymony cinercus Pasin wild we
Elymus cinereus Basili wild Tye
Pog hulbosg Pulbous huagross
Pog pratensis Kentuelsy bluegrass
Pog sandhargij (sacunda) Sondharg's bluograss
Sting thurberiang Thurber's peedlegrass
Supa inurberiana Thurber's needlegrass
GROSSULARIACEAE Ribes aureum Golden current
Ribes cereum Squaw current
HYDROPHYLLACEAEHydrophyllum capitatumBallhead waterleaf
LEGUMINOSAE Astragalus pushii Woolly-pod milkvetch
(FABACEAE) Lupinus argenteus Silvery lupine
Lupinus lepidus Prairie lupine
Trifolium macrcephalum Big-head clover
Vicia Americana American milkvetch
LABIATA Nepeta cateria Catnip
LILIACEAE <i>Allium acuminatum</i> Tapertip onion
Brodiaea howellii Howell's brodiaea
(Triteleia gndiflora var. howellii)
Fritillaria pudica Yellow bell
Zigadenus venenosus Death camas
ONOGRACEAE <i>Epilobium sp.</i> Willowherb
Oenothera sp. Evening-primrose
POLEMONIACEAE <i>Phlox hoodii</i> Hood's phlox
Phlox longifolia Long-leaf phlox

Table 3. List of Vascular Plant Species Observed, Wild Horse Project Area

Late April–Early May 2003			
Family	Scientific Name	Common Name	
POLYGONACEAE	Eriogonum ovalifolium Eriogonum sphaerocephalum Eriogonum thymoides	Cushion buckwheat Round-headed desert buckwheat Thyme-leaved eriogonum	
PORTULACEAE	Claytonia lanceolata Lewisia rediviva	Western springbeauty Bitterroot	
PRIMULACEAE	Dodecatheon puchellum	Shooting star	
RANUNCULACEAE	Clematis ligusticifolia Delphinium nuttallianum Ranunculus glaberrimus Ranunculus testiculatus*	Virgin's bower Larkspur Sagebrush buttercup Hornseed buttercup	
ROSACEAE	Amelanchier alnifolia Crataegus douglasii Prunus virginiana Purshia tridentata Rosa woodsii	Serviceberry Black hawthorn Chokecherry Bitter-brush Wood's rose	
SALICACEAE	Populus tremuloides Salix sp.	Aspen Willow	
SAXIFRAGACEAE	Lithophragma bulbifera Lithophragma parviflora	Prairie star Small flower fringecup	
SCROPHULARIACEAE	Castilleja Castilleja Collinsia parviflora Verbascum thapsus Veronica sp.	Small-flowered blue-eyed Mary Common mullein Speedwell	
UMBELLIFERAE (APIACEAE) (APIACEAE)	Anthriscus caulus* Lomatium canbyi Lomatium dissectum Lomatium grayi Lomatium macrocarpum Lomatium triternatum	Bur chervil Canby's lomatium Fern-leaved desert parsley Gray's lomatium Large-fruited lomatium Nine-leaf lomatium	
VIOLACEAE	Viola trinervata	Desert pansy	

Table 3. List of Vascular Plant Species Observed, Wild Horse Project AreaLate April–Early May 2003

### **PSE TRANSMISSION LINE**

Late April–Early May 2003			
Family	Scientific Name	Common Name	
BORAGINACEAE	Amsinkia sp.	Fiddleneck	
	Lithospermum ruderale	Puccoon	
	Mertensia longiflora	Long-flowered bluebells	
CACTACEAE	Pediocactus simpsonii	Hedgehog cactus	
CHENOPODIACEAE	Salsola kali	Russian thistle	
COMPOSITAE	Achillea millefolium	Common yarrow	
(ASTERACEAE)	Antennaria dimorpha	Low pussytoes	
	Artemisia ludoviciana	Prairie sage	
	Artemisia rigida	Stiff sagebrush	
	Artemisia tridentata	Big sagebrush	
	Balsamorhiza hookeri	Hooker's balsamroot	
	Chrysothamnus nauseosus	Gray rabbitbrush	
	Chrysothamnus viscidiflorus	Green rabbitbrush	
	Erigeron poliospermus.	Cushion daisy	
	Haplopappus stenophyllus	Narrow-leaf goldenweed	
	Senecio integerrimus	Western groundsel	
	Taraxacum officinale	Common dandelion	
	Tragopogon dubius	Yellow salsify	
CRUCIFERAE	Chorispora tenalla*	Blue mustard	
(BRASSICACEAE)	Descuriana pinnata	Tansymustard	
(212122102102122)	Phoenicaulis cheiranthoides	Daggerpod	
	Sisymbrium altissimum*	Tumble mustard	
CYPERACEAE	Carex sp.	Sedge	
DIPSACACEAE	Dipsacus sylvestris	Teasel	
GRAMINEAE (POACEAE)	Agropyron spicatum (Pseudoroegneria spicata)	bluebunch wheatgrass	
(I ONCE/IE)	Rromus tectorum*	Cheat grass	
	Flymus cinereus	Basin wild rve	
	Festuca idahoensis	Idaho fescue	
	Phalaris arundinaceae	Reed canarygrass	
	Pog hulhosa	Bulbous bluegrass	
	Poa sandhergii (secunda)	Sandherg's hluegrass	
	i ou sumber gri (secuniu)	Sundorg 5 ondegrass	
GROSSULARIACEAE	Ribes cereum	Squaw current	
HYDROPHYLLACEAE	Hydrophyllum capitatum	Ballhead waterleaf	

Table 3. List of Vascular Plant Species Observed, Wild Horse Project Area

Late April–Early May 2003				
Family	Family         Scientific Name         Common Name			
JUNCACEAE	Juncus balticus	Baltic rush		
LEGUMINOSAE (FABACEAE)	Astragalus pushii Astragalus reventiformis Lupinus argenteus	Woolly-pod milkvetch Yakima milkvetch Silvery lupine		
	Lupinus lepidus Trifolium macrcephalum	Prairie lupine Big-head clover		
LILIACEAE	Allium sp. Brodiaea howellii (Triteleia gndiflora var. howellii)	Onion Howell's brodiaea		
	Fritillaria pudica	Yellow bell		
	Zigadenus venenosus	Death camas		
ONOGRACEAE	Epilobium sp.	Willowherb		
POLEMONIACEAE	Phlox hoodii Phlox longifolia	Hood's phlox Long-leaf phlox		
POLYGONACEAE	Eriogonum ovalifolium Eriogonum sphaerocephalum Eriogonum thymoides	Cushion buckwheat Round-headed desert buckwheat Thyme-leaved eriogonum		
PORTULACEAE	Lewisia rediviva	Bitterroot		
RANUNCULACEAE	Delphinium nuttallianum Ranunculus glaberrimus Ranunculus testiculatus*	Larkspur Sagebrush buttercup Hornseed buttercup		
ROSACEAE	Potenilla sp. Purshia tridentata Rosa woodsii	Cinquefoil Antelope bitterbrush Wood's rose		
SALICACEAE	Salix exigua Salix sp.	Sandbar willow Willow		
SAXIFRAGACEAE	Lithophragma bulbifera Lithophragma parvifolia	Prairie star Small flower fringecup		
SCROPHULARIACEAE	Castilleja thompsonii Collinsia parviflora Penstemon gairdnieri	Thompson paintbrush Small-flowered blue-eyed Mary Gairdneri's penstemon		

Table 3. List of Vascular Plant Species Observed, Wild Horse Project Area

Table 3. List of Vascular Plant Species Observed, Wild Horse Project Area			
Family         Scientific Name         Common Name			
UMBELLIFERAE	Lomatium canbyi	Canby's lomatium	
(APIACEAE)	Lomatium dissectum	Fern-leaved desert parsley	
	Lomatium grayi	Gray's lomatium	
	Lomatium macrocarpum	Large-fruited lomatium	
	Lomatium triternatum	Nine-leaf lomatium	
VIOLACEAE	Viola trinervata	Desert pansy	

Botanical nomenclature follows Hitchcock and Cronquist 1973; other accepted names in parenthesis.

Not a complete list of vascular plants in the project area – only those identifiable during the spring survey period * = introduced species

		Area Impacte	d (acres)
Project Facility	Habitat Type	Permanent	Temporary
Wind Turbines ¹	Herbaceous	0.8	25.3
	Herbaceous/Rock Outcrop	0.0	0.6
	Shrub-steppe Dense	0.1	7.7
	Shrub-steppe Medium	4.5	133.5
	Shrub-steppe Sparse	4.0	111.6
Permanent Meteorological Towers ²	Herbaceous	0.06	
-	Shrub-steppe Medium	0.12	
	Shrub-steppe Sparse	0.12	
Substations ³	Shrub-steppe Medium	6.0	
Operations and Maintenance Facility ⁴	Shrub-steppe Medium	3.6	
r	Herbaceous	0.4	
Ouarry ⁵	Herbaceous	4.7	
	Shrub-steppe Medium	6.9	
	Herbaceous/Rock outcrop	3.3	
Temporary Laydown Areas ⁶	Shrub-steppe Medium		4.0
	Shrub-steppe Sparse		2.0
Overhead Collection Lines ⁷	Herbaceous	0.02	
	Shrub-steppe Dense	0.01	
	Shrub-steppe Medium	0.04	
	Shrub-steppe Sparse	0.03	
Major Improvement Roads ⁸	Herbaceous	1.7	
5 F	Shrub-steppe Dense	0.3	
	Shrub-steppe Medium	12.3	
	Shrub-steppe Sparse	8.3	
New Roads ⁹	Herbaceous	5.6	
	Shrub-steppe Dense	1.1	
	Shrub-steppe Medium	33.9	
	Shrub-steppe Sparse	19.4	
	Rock Outcrop	0.3	
Minor Improvement Road ¹⁰	Herbaceous	1.5	
r	Shrub-steppe Medium	2.0	
Underground Trench ¹¹	Herbaceous		1.6
	Shrub-steppe Dense		0.5
	Shrub-steppe Medium		10.1
	Shrub-steppe Sparse		5.7
Construction Trail - overhead feed line ¹²	Herbaceous		2.0
	Pasture		0.1
	Shrub-steppe Dense		1.6
	Shrub-steppe Medium		11.6
	11		

 Table 4. Summary of Impacts to Habitat Types by Project Facility

Table 4. Summary of Impacts to Hab	otat Types by Project Facility		
		Area Impacte	d (acres)
Project Facility	Habitat Type	Permanent	Temporary
	Shrub-steppe Sparse		5.0
	Rock Outcrop		0.1
Feeder line (pole structures) ¹³	Herbaceous	2.6	
2	Pasture	0.2	
	Shrub-steppe Dense	2.1	
	Shrub-steppe Medium	15.3	
	Shrub-steppe Sparse	6.6	
	Rock Outcrop	0.1	
TOTAL		148	323

¹Assumes a 31' radius for each turbine of permanent disturbance and a 169' radius for temporary disturbance

²Assumes a 50' x 50' area of permanent disturbance per meteorological tower, 5 towers total

³Assumes 2 substations at 3 acres each, however only one will be built

⁴Assumes a 4-acre O&M facility, including 2 acres for the building and 2 acres for parking

⁵Assumes 3 quarry sites at 5 acres each

⁶Assumes 3 temporary laydown areas at 2 acres each

⁷Assumes 250' span with a 10' x 10' area of permanent disturbance associated with each pole

⁸Assumes 22' width associated with roads requiring major improvement

⁹Assumes 32' width associated with new roads

¹⁰Assumes 2' width associated with roads requiring minor improvement

¹¹Assumes 6' width of temporary disturbance associated with underground electric collector lines

¹²Assumes a 12' wide temporary trail associated with construction of the overhead feeder line

¹³Assumes a 12' 600' span with a 8' x 8' area of permanent disturbance associated with each pole

Tuble 5. Summary of Impacts by Hubball Type		
Impacted Area (acres)		
Habitat Type	Permanent	Temporary
Herbaceous	17.4	28.9
Herbaceous/Rock Outcrop	3.3	0.6
Pasture	0.2	0.1
Shrub-steppe Dense	3.6	9.8
Shrub-steppe Medium	84.7	159.2
Shrub-steppe Sparse	38.4	124.3
Rock Outcrop	0.4	0.1
Total	148	323

Table 5.	Summary	of Impacts	by Habitat Type	
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**CITY OF KITTITAS** 

Regular Council Meeting Second and Fourth Tuesdays at 7:30 pm

FULL STEAM AHEAD

P.O. Box 719 • Kittitas WA 98934 • (509) 968-0220 • Fax (509) 968-0223 • TDD 1-800-833-6388

#### **OFFICE OF MAYOR CHUCK LOWE**

November 20, 2003

To Whom It May Concern:

This letter will confirm the City of Kittitas' interest in providing water for temporary construction uses at the Wild Horse Wind Power Project proposed by Zilkha Renewable Energy. Zilkha currently estimates the water requirement at 4.2 million gallons over a nine-month period between September 2004 and June 2005. The City of Kittitas anticipates that it can accommodate these requirements. The water would be supplied from the City of Kittitas water tower or standby well at then-current rates set by the City.

Sincerely,

Chil h

Chuck Lowe Mayor

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A the conversion of the MRS Received water the second state of the

The City of Kittitas is an equal opportunity and affirmative action employer



# Wildlife Baseline Study for the Wild Horse Wind Project

Summary of Results from 2002-2003 Wildlife Surveys

May 10, 2002- May 22, 2003

November 2003

#### **Prepared for:**

Zilkha Renewable Energy 210 SW Morrison, Suite 310 Portland, OR 97204

#### Prepared by:

Wallace Erickson David Young Greg Johnson Jay Jeffrey Kimberly Bay Rhett Good Hall Sawyer

WEST, Inc. 2003 Central Avenue Cheyenne, WY 82001

WEST, Inc.

# **EXECUTIVE SUMMARY**

Zilkha Renewable Energy (the "Applicant") proposes to construct and operate approximately 136 wind turbines on high open ridge tops between the towns of Kittitas and Vantage in Kittitas County, Washington on and near Whiskey Dick Mountain. This report summarizes the results of the ecological baseline studies conducted from May 10, 2002 through May 22, 2003. The wildlife portion of the ecological baseline study consisted of 1) point count and in-transit surveys for wildlife species, 2) an aerial survey within approximately two miles of the Project boundary for visible raptor nests and wintering big game in the spring of 2003 and 3) aerial and ground surveys during the breeding season for sage grouse in the Project vicinity. Rare plant surveys and habitat mapping were also conducted and has been summarized in a separate report (Lack *et al.* 2003).

A total of 53 avian species were identified during the point count, in-transit, and/or sage grouse surveys at the Project Site. The mean number of species observed per survey (30-minute point count) was 2.427 with an average of 7.468 bird observations per survey. Higher overall avian-use occurred in the spring/summer (9.311/survey) compared with the fall (6.456/survey) and winter (5.056). The higher use in spring/summer was due to higher overall use for all groups except corvids.

Passerines were the most abundant avian group observed in all seasons. The majority of bird observations were horned larks, snow buntings and European starlings. The next most abundant avian group varied by season, with raptors followed by corvids in the spring and corvids followed by raptors in the fall and winter. The most common raptor species observed were American kestrels, red-tailed hawks, and golden eagles. Canada geese were only observed during the spring/summer, and common ravens were observed throughout the study period.

Flight height characteristics were estimated for avian species and groups. Percentages of observations below, within, and above the rotor swept area (RSA) of 82 to 328 feet (25 to 100m) above ground level were reported. Overall, 36.0% of the birds observed were recorded within the defined RSA, 63.3% were below the RSA and 0.7% were flying above the RSA (Table 8). Species commonly observed were often flying within the RSA, for example, 72.7% of 99 flying European starlings, 68.2% of 44 gray-crowned rosy finches, 61.0% of 141 snow buntings, 53.8% of 13 golden eagles, and 50.0% of 70 common ravens. However, other commonly observed species such as horned larks (12.8%) and mountain bluebirds (9.8%) were not often observed within the RSA. Ring-billed gull, American pipit, common nighthawk and bald eagle were always observed within the RSA based upon one group observation for each species (except for common nighthawk which was two groups of one individual).

A relative exposure index (avian-use multiplied by proportion of observations within the RSA) was calculated for each species. This index is only based on flight height observations and relative abundance and does not account for other possible collision risk factors such as foraging or courtship behavior. Snow buntings, European starlings and gray-crowned rosy finch were the top three small bird species with the highest turbine exposure indexes for small birds. Larger bird species with the highest exposure indexes for small birds. Larger bird species with the highest exposure index were common raven, American kestrel and ring-billed gull. Mortality studies at other wind projects have indicated that although ravens are often observed at wind projects within the zone of risk, they appear to be less susceptible to collision with wind turbines than other similar size birds (e.g., raptors, waterfowl).

Twelve active nest sites were documented during aerial nest surveys, including 6 great horned owls, 3 red-tailed hawks, and one American crow, common raven and prairie falcon (only 1 adult observed perched on cliff). No active nests were identified within  $\frac{1}{2}$  mile (0.80 km) of proposed turbine strings.

Sage grouse surveys consisted on two aerial surveys conducted on March 22 and April 14, 2003, and three ground surveys during March and April. No sage grouse observations (lekking or flushed birds) were observed during any of the sage grouse surveys or during other activities.

The most probable impact to birds resulting from the Project is direct mortality or injury due to collisions with the turbines or guy wires of temporary or permanent meteorological towers. Bird fatality projections of 0.6 to 3.5 bird fatalities per turbine year are anticipated, based on the results of completed studies conducted at the modern 38 turbine Vansycle wind project in Umatilla County, Oregon (Erickson *et al.* 2000), the Foote Creek Rim Phase I wind project in Carbon County, Wyoming (Young *et al.* 2003), the 16 turbine Klondike Wind Project in Sherman County Oregon (Johnson *et al.* 2003a), the 400+ turbine Buffalo Ridge wind project in southwestern Minnesota (Johnson *et al.* 2002), the Stateline Wind Project in Umatilla County Oregon and Walla Walla County Washington (Erickson *et al.* 2003a), and the Nine Canyon Wind Project in Benton County Washington (Erickson *et al.* 2003b). Most of the fatalities will likely involve resident songbirds such as horned lark, vesper sparrow, and western meadowlark, and other common species. Some upland gamebird fatalities are anticipated. Occasional nocturnal migrating songbird fatalities are also anticipated, but the risk of large mortality events would appear to be low (Erickson *et al.* 2001). Waterfowl and other waterbird (e.g., gulls) mortality are estimated to be low, given the low use of the Project area by these groups.

Red-tailed hawks and American kestrels have been the most common species of the raptor fatalities at older wind projects in California and new facilities outside California. Low numbers of fatalities of these two species have been observed at new wind projects (Erickson *et al.* 2001, Erickson *et al.* 2003a, Erickson *et al.* 2003b). Overall raptor mortality for the Project is expected to be low, considering the relatively small project size (approximately 136 turbines), the relatively low raptor use of the site compared to sites like Foote Creek Rim Wind Project and the low active raptor nest density and lack of raptor nesting habitat in the Project area. A range of 1 to 10 raptor fatalities total for the approximately 136 turbines is estimated per year, with American kestrels and red-tailed hawks likely the most common raptor fatality observed. Great horned owls, northern harriers, and golden eagles have a lower risk of collision given their low to moderate abundance in the Project area. Very low risk of collision is expected for all other raptors that occur or potentially occur given their anticipated low use of the Project site.

Some mortality of migratory bats, in particular hoary and silver-haired bats, is anticipated during operation of the Project. At the Buffalo Ridge Wind Plant, Minnesota, based on a 2-year study, bat mortality was estimated to be 2.05 bats per turbine per year (Johnson *et al.* 2000a). At the Foote Creek Rim Wind Plant, based on 3+ years of study, bat mortality was estimated at 1.34 bats per turbine per year (Young *et al.* 2003). At the Vansycle Ridge Wind Plant in Oregon, bat mortality was estimated at 0.74 bats per turbine for the first year of operation (Erickson *et al.* 2000). At the Klondike Wind Project, bat mortality was estimated at 1.16 bat fatalities per turbine per year (Johnson *et al.* 2003a). At the Stateline Wind Project, bat mortality was estimated at approximately 1 bat fatality per turbine per year (Erickson *et al.* 2003a) from July 2001 through December 31, 2002. At the Nine Canyon Wind Project, bat mortality was estimated at approximately 3 bat fatalities per turbine per year (Erickson *et al.* 2003b).

Although potential future mortality of migratory bats is difficult to predict, an estimate can be calculated based on levels of mortality documented at other wind projects. Using the estimates from other wind plants in the west and midwest, operation of the project could result in approximately 100 to 400 bat fatalities per year. Actual levels of mortality are unknown and could be higher or lower depending on regional migratory patterns of bats, patterns of local movements through the area, and the response of bats to turbines, individually and collectively. Mortality will likely involve silver-haired and hoary bats, two relatively common migratory species.

The Project is within habitats designated by WDFW as winter range for mule deer and elk. There is little information regarding wind project effects on big game. During the construction period, it is expected

that elk and mule deer will be displaced from the site due to the influx of humans and heavy construction equipment and associated disturbance. Construction related disturbance and displacement is expected to be temporary for the duration of the construction period. Most construction will take place during the summer months, minimizing construction disturbance to wintering big game. Following completion of the Project, the disturbance levels from construction equipment and humans will diminish and the primary disturbances will be associated with operations and maintenance personnel, occasional vehicle traffic, and the presence of the turbines and other facilities. Controlled access of the site by recreationists (e.g., ATV and motorcycle users, hikers, hunters, mountain bikers) will limit disturbance on big game, and reductions and possible reduction and or elimination of cattle and horse grazing on the site will improve habitat for big game within the Project area.

# PARTICIPANTS

Name	Title
Kimberly Bay	Data Technician
Wallace Erickson	Project Manager, Statistician
Rhett Good	Field Biologist, GIS Technician
Jay Jeffrey	Biologist, Field Supervisor
Greg Johnson	Biologist
Elizabeth Lack	Botanist
Hall Sawyer	GIS Technician
David Young, Jr.	Biologist

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# INTRODUCTION

Zilkha Renewable Energy (Applicant) proposes to construct and operate approximately 136 wind turbines on high open ridge tops between the towns of Kittitas and Vantage in Kittitas County, Washington, on and near Whiskey Dick Mountain. The Wild Horse Wind Power Project (the "Project") is anticipated to provide up to 312 megawatts (MW) of generating capacity. It would be constructed on privately owned land and public land administered by the Washington Department of Natural Resources (WDNR).

The Applicant has contracted with Western Ecosystems Technology, Inc. (WEST) to develop and implement a survey protocol for a baseline study of wildlife, habitat, and plants in the Project area. The protocol for the ecological baseline study is similar to protocols used at the Kittitas Valley, Vansycle, Klondike, Stateline, Maiden, Condon and Nine Canyon wind projects in Oregon and Washington, the Buffalo Ridge wind project in southwest Minnesota, and the Foote Creek Rim wind project in Wyoming.

This report summarizes the results of the ecological baseline studies conducted from May 10, 2002 through May 22, 2003. The wildlife portion of the ecological baseline study consisted of 1) point count and in-transit surveys for wildlife species, 2) an aerial survey within approximately two miles of the Project boundary for visible raptor nests and wintering big game in the spring of 2003 and 3) aerial and ground surveys during the breeding season for sage grouse in the Project vicinity. Rare plant surveys and habitat mapping were also conducted and has been summarized in a separate report (Lack et al. 2003). Information on sensitive plant and wildlife species within the vicinity of the Project was requested from the U.S. Fish and Wildlife Service (USFWS), Washington Department of Fish and Wildlife (WDFW), and the Washington Natural Heritage The recent synthesis of baseline and operational monitoring studies at wind Program (WNHP). developments by Erickson et al. (2002), as well as other relevant information has been reviewed and has been utilized for predicting impacts from the Project. Agency personnel were contacted for information regarding their concerns and data available on wildlife of the general Project area.

# SITE DESCRIPTION

#### Location

The Wild Horse Wind Power Project (the "Project") is to be constructed in central Washington's Kittitas County (Figure 1). The Project will be built on high open ridge tops between the towns of Kittitas and Vantage, at a site located about 10 miles (16km) east of the town of Kittitas known as Whiskey Dick Mountain. The site boundary is located approximately 2 miles (3km) north of the Old Vantage Highway, 11 miles (18km) east of the town of Kittitas. The Project turbines will be located on open rangeland owned by the Applicant. The site extends over an area of approximately 8,650 acres. The Project site has been selected primarily for its energetic wind resource and close proximity to power transmission lines adequate for transferring wind-generated electricity into the power grid.

#### **Facility Description**

The Project consists of several prime elements which will be constructed in consecutive phases including roads, foundations, underground, and overhead collection system electrical lines, one or two grid interconnection substations, one or two step-up substations, one or two feeder lines running from the on-site step-up substations to interconnection substations, an operations and maintenance (O&M) center and associated infrastructure and facilities (Figure 2). A permanent footprint of approximately 165 acres (67 hectares) of land area will be required to accommodate the proposed turbines and related support facilities.

The Project will consist of up to 158 wind turbines and have an installed nameplate capacity of up to 312 megawatts (MW). The Project will utilize 3-bladed wind turbines on tubular steel towers each ranging from 1 MW to 3 MW (generator nameplate capacity) and with rotor diameters ranging from 197 to 295 feet (60 to 90m, Figure 3). The smallest 1 MW turbine considered for the Project has a rotor diameter of 197 feet (60 Wild Horse Wildlife Baseline Study Report 1

meters), and up to 158 units would be installed for a Project nameplate capacity of 158 MW. The largest 3 MW turbine being considered has a rotor diameter of 295 feet (90m), and up to 104 units would be installed for a Project capacity of 312 MW. The Project Site Layout in Figure 2 shows 136 turbines with a turbine spacing based on a 236 feet (72m) rotor diameter, which is in the middle of the range of turbines proposed and represents the anticipated Project configuration.

The Project site is currently crisscrossed with an extensive network of existing roads that will be utilized to minimize new ground disturbance. Roughly 17.3 miles (23.7 km) of new gravel roads will be constructed and approximately 14.7 miles (26km) of existing roads will be improved for turbines. The roads will generally consist of a 20 foot (6m) wide compacted graveled surface to allow the safe passage of heavy construction equipment. Note that project roads along turbine strings may be up to 34 feet wide, while roads in between turbine strings will only be 20 feet (6 m) wide.

The Project transmission feeder lines will require the installation of a construction trail. The construction trail will be a 12-foot (4m) wide swath, which is cleared off large boulders to allow high clearance vehicles to pass. The trail will be installed to allow access to support the construction of the feeder lines. Once construction is complete, the trail will remain as a minimum maintenance access way, which will be used approximately every 6 months for inspection and maintenance. The PSE feeder line will require approximately 8 miles (13km) and the BPA feeder line will require approximately 5 miles (8km) of new construction trails.

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#### Climate

The Columbia Basin physiographic province lies within the rain shadow of the Cascade mountain range, and is characterized by semi-arid conditions, as well as a large range of annual temperatures indicative of a continental climate. However, the relatively close proximity of the Pacific Ocean and the dominant westerly winds of the region combine to moderate the continental influence (Franklin and Dyrness 1988). Annual precipitation ranges from 7 inches in the drier localities along the southern slopes of the Saddle Mountains, Frenchman Hills and east of Rattlesnake Mountains, to 15 inches in the vicinity of the Blue Mountains.

Summer precipitation is usually associated with thunderstorms. During July and August, it is not unusual for four to six weeks to pass without measurable rainfall. The last freezing temperature in the spring occurs during the latter half of May in the colder localities of the Columbia Basin. The first freezing temperature in the fall is usually recorded between mid-September and mid-October (*Climate of Washington*, Western Region Climate Center (WRCC)).

The Ellensburg, WA weather station is located along the Yakima River, approximately 15 air miles west of the project area. The coldest average monthly temperatures at Ellensburg occur in January, with a minimum of 18.6° Fahrenheit (F), and a maximum of 34° F. The warmest average monthly temperatures in Ellensburg occur in July, when the minimum is 53° F and the maximum is 84° F. The average total annual precipitation at Ellensburg is 8.9 inches. The wettest month is December with an average total monthly precipitation of 1.45 inches, while the driest month is August with an average total monthly precipitation of 0.27 inches. Snowfall typically occurs from November through April, with the heaviest

average monthly snowfall of 9.4 inches occurring in each December and January. Ellensburg's average annual snowfall is 28 inches (WRCC, 2003).

The highest point in the Project area is approximately 2,300 feet higher in elevation than the reporting station in Ellensburg. Therefore, it is expected that the Project area likely experiences cooler temperatures and receives more precipitation than that reported for the Ellensburg station.

#### Habitat

The Project area lies within big sagebrush/bluebunch wheatgrass vegetation zone typical of much of the Columbia Basin physiographic province (Daubenmire 1970). The primary habitat in the Project area is shrub-steppe; grasslands are also found on very steep slopes and exposed ridges (Figure 4). The following habitat types were mapped in the Project area and along the transmission line corridors (within 50-m buffer of transmission line):

	Project Area		Transmission Line Corridors	
Vegetation Type	Acres	%	Acres	%
Shrub-steppe Dense	1434.8	16.6	0.0	0.0
Shrub-steppe Medium	4934.8	57.1	313.9	64.9
Shrub-steppe Sparse	1622.7	18.8	124.9	25.8
Herbaceous	468.5	5.4	37.4	7.7
Herbaceous/Talus	96.8	1.1	0.0	0.0
Talus	5.6	0.1	2.4	0.5
Pasture	0.0	0.0	3.6	0.7
Pine Forest	31.3	0.4	0.0	0.0
Woody Riparian	53.7	0.6	1.3	0.3
Seasonal Waterbody	1.7	< 0.1	0.0	0.0
Total	8649.9	100.0	483.5	100.0

A small amount of riparian habitat is associated with the larger creeks. Native trees and shrubs, such as Douglas hawthorn and chokecherry, dominate the riparian areas. A small amount of Ponderosa pine forest occurs in a narrow strip along one of the main Project area drainages. Within the Project area, the primary habitat type is shrub-steppe. This upland habitat type is dominated by shrubs; big sagebrush and stiff sagebrush and the most common dominants, occasionally threetip sagebrush (*Artemisia tripartita*), antelope bitterbrush (*Purshia tridentata*), and squaw current (*Ribes cereum*) dominate. A mix of grasses and forbs make up the understory. Big sagebrush is typically dominant in areas with deeper soils, while stiff sagebrush is dominant on exposed sites with shallow soils (i.e., lithosols). The shrub-steppe habitat type was broken down into three categories based on relative spatial density of the shrub layer – dense, moderate, and sparse. These categories are subjective, but generally fall into the following cover categories:

- dense greater than 60 percent shrub cover
- moderate between 30 and 60 percent shrub cover
- sparse less than 30 percent shrub cover

In general, areas with a dense shrub layer were found on deep-soiled sites (primarily on gentle to moderate slopes and valley bottoms) and were dominated by big sagebrush, antelope bitterbrush, or squaw current. The Project area has approximately 1,435 acres of dense shrub (17 percent of the Project area). Areas with a moderate shrub layer were found on flat to gently sloping sites, and were typically dominated by big sagebrush or stiff sagebrush, although threetip sagebrush was common in some areas. Most of the shrub steppe fell into the moderate category; approximately 4,935 acres (57 percent of the Project area) were mapped as moderate. Areas with sparse shrub cover were generally found on exposed ridgetops and knolls and dominated by low-growing stiff sagebrush, or in some areas, various buckwheats. Approximately 1,623 acres (19 percent of the project area) were mapped as sparse.



Typical shrub-steppe habitat in Project area.

Areas dominated by herbaceous species (grasses and forbs) comprise approximately 5 percent of the Project area and are generally limited to very steep slopes and exposed ridges that do not support shrubs, although scattered individual shrubs (usually stiff sagebrush or buckwheats) may be found. The herbaceous habitat type includes a variety of plant associations dominated by grass species, particularly Sandberg's bluegrass (*Poa secunda*) and bluebunch wheatgrass; forb species typically co-dominate. Common forbs include Hood's phlox (*Phlox hoodii*), Hooker's balsamroot (*Balsamorhiza hookeri*), and narrowleaf goldenweed (*Haplopappus stenophllus*). Lithosols are common in this habitat type, especially on exposed ridgetops. Sandberg's bluegrass is the dominant grass on lithosols. On some steeps slopes, fingers of exposed cobbles and rock are intermingled among the herbaceous habitat. This herbaceous/rock outcrop habitat type makes up an additional 1.1 percent of the Project area. A 5.6 acre site (0.1 percent of the Project area) on top of Whiskey Dick peak is classified as simply rock outcrop.

# **METHODS**

## Diurnal Fixed-point and In-Transit Avian Use Surveys

The goal of the avian use surveys was to estimate the temporal and spatial use of the study area by birds. The avian use surveys combined observations collected at seven fixed-point circular plots in the study area with in-transit observations of birds made while driving to and from the study area. All wildlife species of concern and uncommon species observed were recorded while the observers were in the study area traveling between observation points and while conducting other field activities. An experienced wildlife and avian biologist, Jay Jeffrey of WEST Inc., conducted the avian surveys.
## Fixed-point Surveys

Each plot consists of a 2,625 feet (800m) radius circle centered on an observation point location (Figure 5). Landmarks were located to aid in identifying the 2,625 feet (800m) boundary of each observation point. Observations of birds beyond the 2,625 feet (800m) radius were recorded, but these observations were not included in standardized use estimates.

All detections of birds, mammals, reptiles, and amphibians in and near plots during the 30-minute plot surveys were recorded. Visual and binocular scanning of the entire plot viewshed and beyond were continuously performed throughout the survey period. A unique observation number was assigned to each sighting. The following data were recorded for each plot survey: date, start and end time of observation period, plot id, species or best possible identification, number of individuals, sex and age class when known, distance from plot center when first observed, closest distance, altitude above ground (first, low and high), flight direction, behavior(s), habitat(s), whether observed during one or more of the three instantaneous counts, and in which of the two ten minute periods it was observed. Flight paths were mapped for raptors and species of concern and given corresponding observation numbers. The map indicates whether the bird was within or outside the survey radius based on reference points at known distances from the plot center. Flight paths were digitized using ARCVIEW 3.2. Climate information, such as temperature, wind speed, wind direction, precipitation and cloud cover were also recorded for each point count survey.

Behavior categories recognized included perched (PE), soaring (SO), flapping (FL), circle soaring (CS), hunting (HU), and other (OT). Habitats were recorded as grassland-steppe (GS), coniferous forest (CF), riparian (RI), shrub-steppe (SS), deciduous forest (DS), Rock (RO), and other (OT). Initial flight patterns and habitats were identified with "1" in the data sheet and subsequent patterns and habitats (if any) recorded as an "x" or check mark. Any comments or unusual observations were recorded in the comment section of the data form.

## Incidental/In-transit Observations

All wildlife species of concern and uncommon species observed while field observers were traveling between plots were recorded on incidental/in-transit data sheets. Other incidental observations made during other surveys or visits to the sites were also recorded. These observations were recorded in a similar fashion to those recorded during the plot studies. The observation number, date, time, species, number, sex/age class, height above ground, and habitat were recorded.

## **Observation Schedule**

Surveys were conducted typically on weekly intervals during the spring, early summer and fall, and occasionally during the winter months. During a set of surveys, each selected plot was visited once. A pre-established schedule was developed prior to field work to ensure that each station was surveyed about the same number of times each period of the day, during each season, and to most efficiently utilize personnel time. The schedule was altered in response to adverse weather conditions, which required delays and/or rescheduling of observations.

## Statistical Analysis

## Avian Use

Species lists were generated by season including all observations of birds detected regardless of their distance from the observer. The number of birds seen during each point count survey was standardized to a unit area and unit time surveyed. The standardized unit time was 30 minutes and the standardized unit area was  $0.78 \text{ mi}^2 (2.01 \text{ km}^2) (2,625 \text{ ft } (800\text{m}) \text{ radius viewshed for each station})$ . For example, if four raptors were seen during the 30 minutes at a point with a viewing area of  $0.78 \text{ mi}^2 (2.01 \text{ km}^2)$ , these data may be standardized to  $4/0.78 = 5.13 \text{ raptors/mi}^2 (1.98 \text{ raptors/km}^2)$  in a 30-minute survey. For the standardized

avian use estimates, only observations of birds detected within 2,625 ft (800m) of the observer were used. Estimates of avian use (expressed in terms of number of birds/plot/30-minute survey) were used to compare differences in avian use between 1) avian groups and 2) seasons.

#### Avian Diversity and Richness

The total number of unique species was calculated by season. The mean number of species observed per survey (i.e., per station per 30-minute survey) was tabulated to illustrate and compare differences in mean number of species per survey between seasons.

#### Avian Flight Height/Behavior

The first flight height recorded was used to estimate percentages of birds flying below, within and above the rotor swept area (RSA). The zone of collision risk we used was 82-328 ft (25-100 m) above ground level (AGL).

#### Avian Exposure Index

A relative index to collision exposure (R) was calculated for bird species observed during the fixed-point surveys using the following formula:

$$R = A * P_f * P_t$$

Where A = mean relative use for species *i* (observations within 2,625 ft (800 m) of observer) averaged across all surveys,  $P_f$  = proportion of all observations of species *i* where activity was recorded as flying (an index to the approximate percentage of time species *i* spends flying during the daylight period), and  $P_t$  = proportion of all flight height observations of species *i* within the rotor-swept area (RSA). This index does not account for differences in behavior other than flight characteristics (i.e., flight heights and percent of birds observed flying).

#### Avian Flight Patterns and Behavior

Maps of flight paths of raptors and other species of concern were generated and reported to illustrate patterns in flight paths and behaviors.

#### Data Compilation and Storage

A Microsoft® ACCESS database was developed to store, organize and retrieve field observation data. Data from field forms were keyed into electronic data files using a pre-defined format to facilitate subsequent QA/QC and data analysis. All field data forms, field notebooks, and electronic data files were retained for reference.

#### Quality Assurance/Quality Control (QA/QC)

QA/QC measures were implemented at all stages of the study, field surveys, data entry, and during data analysis and report writing. At the end of each survey day, each observer was responsible for inspecting his or her data forms for completeness, accuracy, and legibility. Periodically data forms were reviewed to ensure completeness and legibility; any problems detected were corrected. Any changes made to the data forms were initialed and dated by the individual making the change.

A sample of records from the electronic files was compared to the raw data forms and any errors found were corrected. Any irregular codes detected, or any data suspected as questionable, was discussed with the observer and study team leader. All changes made to the raw data were documented for future reference. Any errors or suspect data identified in later stages of analysis were traced back to the raw data forms, and appropriate changes in all steps made.

## **Raptor Nest Surveys**

We searched for raptor, raven and American crow nests within the Project area and a two-mile buffer, an area totaling approximately 49 mi² (127km²) (Figure 6). Surveys were conducted from a helicopter with one observer on April 14, 2003. Search paths were recorded with a handheld Global Positioning System (GPS) at five second intervals. In addition to raptor nests, we also recorded observations of big game and searched for sage grouse (leks and flushed birds). Flight paths totaled 290 miles (467km) in length, of which 95 miles (153km) were conducted during sage grouse lek surveys (Figure 6). The helicopter was kept at an elevation of approximately 250' (76m) above the ground during sage grouse lek surveys.

Raptor nest surveys were scheduled after most species of raptor finished courtship and were incubating eggs or brooding young. Surveys were also scheduled just prior to the onset of leaf out to increase the visibility of raptor nests within deciduous habitats. Nest searches were conducted by searching habitat suitable for most above ground nesting species, such as cottonwood, ponderosa pine, tall shrubs, and cliffs or rocky outcrops. The helicopter is flown at an altitude of tree top level to approximately 250' (76m) above the ground during surveys. If a nest was observed the helicopter was moved to a position where nest status and species present could be determined. Efforts were made to minimize disturbance to breeding raptors, including keeping the helicopter a maximum distance from the nest at which the species could be identified. Those distances varied depending upon nest location and wind conditions. Data recorded for each nest location included species occupying the nest, nest status (inactive, bird incubating, young present, eggs present, adult present, unknown or other), nest substrate (pine, oak, cottonwood, juniper, shrub, rocky outcrop, cliff or power line), number of young present, time and date of observation and the nest location (recorded with a handheld GPS). Mule deer and elk locations were recorded while conducting sage grouse lek and raptor nest surveys.

## Sage Grouse Surveys

The objective of the sage grouse surveys was to investigate the likelihood of presence of breeding sage grouse within the Project vicinity. Surveys for breeding season sage grouse presence, including leks, included two helicopter surveys (March 20 and April 14, 2003) and 3 ground surveys (March 13, March 22, April 2, 2003). Surveys for sage grouse leks focused on relatively flat areas of sagebrush and steep canyons were avoided. Sage grouse surveys were conducted from 0600 – 0830 H. Approximately 95 linear miles (153km) were flown for each aerial sage grouse survey. The helicopter was kept at an elevation of approximately 250' (76m) above the ground. Ground surveys focused on areas of historic observations (WDFW PHS 2003) and other relatively flat observations.

# **Big Game Surveys**

Big game surveys were done in conjunction with the avian use and raptor nest surveys. Standardized observations of big game were recorded during the fixed point surveys. Observations of big game were recorded and mapped during the raptor nest survey on April 14, 2003.

# RESULTS

Field work (all survey types) on the Project occurred between May 10, 2002 and May 22, 2003. A total of 53 avian species were identified during the avian point count surveys, sage grouse surveys, in-transit travel, and incidentally while conducting other field tasks at the Project site (Table 1).

## Fixed-Point Avian Use Surveys

A total of 179 30-minute fixed-point count surveys were conducted from May 10, 2002 through May 22, 2003 at the Project (Table 2).

## Avian Diversity

A total of 50 species were observed during the fixed-point surveys (30-minute point count). The mean number of species observed per survey was 2.427 (Table 2). The mean number of species was highest in the spring/summer and lowest during the fall and winter (Table 2, Figure 7). The passerine diversity was relatively low for the Project, likely due to the low diversity of habitats associated with the point count locations.

#### Avian Use by Species

A total of 1,332 individual bird detections within 512 separate groups were recorded during the fixed-point surveys (Table 3). Three passerine species and a corvid species comprised approximately 53% of all observations; these species were horned larks, snow buntings, European starlings, and common ravens, respectively. All other species comprised less than 5% of the observations individually.

Mean avian-use estimates (number of birds/30-minute survey using detections within 800 m (2625ft) of each point) were calculated by species and season, and grouped by bird size due to differences in the detectability of small and large birds (Table 4). During the **spring/summer**, large birds with the highest use were American kestrel (0.388), common raven (0.366), Canada goose (0.352) and black-billed magpie (0.209). Small bird species with the highest spring/summer use were horned lark (3.148), European starlings (1.125), vesper sparrow (0.663), western meadowlark (0.555), and sage thrasher (0.504) (Table 4). During the **fall**, large bird species with the highest use were common raven (0.684), gray partridge (0.500), golden eagle (0.143), and northern harrier (0.102). Small bird species with the highest spring/summer use were horned lark (1.680), mountain bluebird (0.901), American robin (0.806), and gray-crowned rosy finch (0.592) (Table 4). During the **winter**, large birds with the highest use (Table 4) were common raven (0.362) and golden eagle (0.082). The only small bird species observed were snow bunting (3.347), horned lark (0.648), gray-crowned rosy finch (0.548), gray-crowned rosy finch (0.352), and northern shrike (0.102) (Table 4).

## Frequency of Occurrence by Species

Frequency of occurrence measures how often a species is observed during 30-minute point count surveys (% of surveys) and is calculated as the percent of surveys in which a particular species was observed (Table 5). During the **spring/summer**, American kestrel (28.94%), common raven (26.19%), red-tailed hawk (10.81%), and killdeer (10.44%) were observed during more than ten percent of the surveys. Small bird species observed during more than fifteen percent of the surveys were horned lark (79.12%), sage thrasher (33.70%), vesper sparrow (33.33%), western meadowlark (31.50%), and Brewer's sparrow (21.61%). During the **fall**, common raven had the highest frequency of occurrence (33.67%) for large birds, followed by golden eagle (14.29%), northern harrier (10.20%) and red-tailed hawk (8.16%). Small bird species observed during more than ten percent of the surveys were horned lark (28.57%) and mountain bluebird (14.63%). During the **winter**, common raven (23.98%) and golden eagle (8.16%) were observed during more than five percent of the surveys. The only small bird species observed were horned lark (13.78%), snow bunting (9.69%), northern shrike (8.16%), and gray-crowned rosy finch (5.61%).

Species/Group	Scientific Name	Species/Group	Scientific Name
Canada goose	Branta canadensis	northern shrike	Lanius excubitor
ring-billed gull	Larus delawarensis	rock wren	Salpinctes obsoletus
killdeer	Charadrius vociferus	ruby-crowned kinglet	Regulus calendula
American kestrel	Falco sparverius	sage sparrow	Amphispiza belli
bald eagle	Haliaeetus leucocephalus	sage thrasher	Oreoscoptes montanus
Cooper's hawk	Accipiter cooperii	Say's phoebe	Sayornis saya
golden eagle	Aquila chrysaetos	snow bunting	Plectrophenax nivalis
gyrfalcon	Falco rusticolus	spotted towhee	Pipilo maculatus
merlin	Falco columbarius	Swainson's thrush	Catharus ustulatus
northern goshawk	Accipiter gentilis	Townsend's warbler	Dendroica townsendi
northern harrier	Circus cyaneus	vesper sparrow	Pooecetes gramineus
prairie falcon	Falco mexicanus	violet-green swallow	Tachycineta thalassina
red-tailed hawk	Buteo jamaicensis	western bluebird	Sialia mexicana
rough-legged hawk	Buteo lagopus	western kingbird	Tyrannus verticalis
sharp-shinned hawk	Accipter striatus	western meadowlark	Sturnella neglecta
turkey vulture	Cathartes aura	white-crowned sparrow	Zonotrichia leucophrys
black-billed magpie	Pica pica	yellow-rumped warbler	Dendroica coronata
common raven	Corvus corax	California quail	Callipepla californica
American pipit	Anthus rubescens	chukar	Alectoris chukar
American robin	Turdus migratorius	gray partridge	Perdix perdix
Brewer's blackbird	Euphagus cyanocephalus	sage grouse	Centrocercus urophasianus
Brewer's sparrow	Spizella breweri	mourning dove	Zenaida macroura
Bullock's oriole	Îcterus bullockii	common nighthawk	Chordeiles minor
dark-eyed junco	Junco hyemalis	northern flicker	Colaptes auratus
European starling	Sturnus vulgaris	unidentified gull	-
gray-crowned rosy finch	Leucosticte arctoa	unidentified buteo	
horned lark	Eremophila alpestris	unidentified falcon	
loggerhead shrike	Lanius ludovicianus	unidentified empidonax	
mountain bluebird	Sialia currucoides	unidentified hummingbird	

Table 1. List of avian species observed during fixed-point, in-transit and sage grouse surveys on the Wild HorseProject site.

Table 2. Mean use, mean # species/survey, total number of species, and         total number of fixed-point surveys conducted by season and												
overall for the Project site.												
Season	Number	Mean	# Species/		# Surveys							
	of Visits	Use ^a	Survey	# Species	Conducted							
Spring/Summer ^c	13	9.311	3.707	36	86							
Fall	7	6.456	1.619	28	47							
Winter	7	5.056	0.857	11	46							
Overall	27	7.468	2.427	50	179							

^a # observations per 30-minute survey
 ^b % of 30-minute surveys species/group is recorded
 ^c one June survey was included in the spring/summer results

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	Sp Su	mmer ^b		Fall	W	Winter		nd Total
Species/Group	#obs.	#groups	#obs.	#groups	#obs.	#groups	# obs.	#groups
Waterfowl								
Canada goose	32	1	0	0	0	0	32	1
e								
Waterbird								
ring-billed gull	8	1	0	0	0	0	8	1
unidentified gull	0	0	1	1	0	0	1	1
Subtotal	8	1	1	1	0	0	9	2
Shorebirds								
killdeer	13	9	0	0	0	0	13	9
Raptors								
Accipiters								
northern goshawk	0	0	0	0	2	2	2	2
sharp-shinned hawk	0	0	2	2	0	0	2	2
Subtotal	0	0	2	2	2	2	4	4
Buteos					_			
red-tailed hawk	12	12	4	4	0	0	16	16
rough-legged hawk	1	1	1	1	2	2	4	4
unidentified buteo	0	0	1	1	0	0	1	1
Subtotal	13	13	6	6	2	2	21	21
Eagles						_		
bald eagle	0	0	0	0	1	1	1	1
golden eagle	3	3	7	7	5	5	15	15
Subtotal	3	3	7	7	6	6	16	16
Falcons					0	0	~ ~	
American kestrel	34	31	l	l	0	0	35	32
merlin	l	l	l	l	0	0	2	2
prairie falcon	4	4	l	l	0	0	5	5
unidentified falcon	1	1	0	0	0	0	1	1
Subtotal	40	37	3	3	0	0	43	40
northern harrier	4	4	5	5	2	2	11	11
Raptor Subtotal	60	57	23	23	12	12	95	92
	10	0	0	0	2	2	20	11
black-billed magple	18	9	0	0	2	2 15	20	
common raven	52	26	33	19	22	15	8/	60
Subtotal	50	55	55	19	24	1/	10/	/1
Deservines								
A maniage minit	0	0	7	1	0	0	7	1
American pipit	0	U 11	/	1	0	0	/	1
American robin	21	11	38	3	U	0	39	14

Table 3. Avian species observed while conducting fixed-point surveys (May 10, 2002 – May 22,2003) on the Project Site. a

Table 3 (continued).								
	Spring/ Summer ^b			Fall	Winter		Grar	nd Total
Species/Group	#obs.	#groups	#obs.	#groups	#obs.	#groups	# obs.	#groups
Passerines (continued)								
Brewer's blackbird	6	1	0	0	0	0	6	1
Brewer's sparrow	35	22	0	0	0	0	35	22
Bullock's oriole	1	1	0	0	0	0	1	1
dark-eyed junco	0	0	6	1	0	0	6	1
European starling	99	5	0	0	0	0	99	5
gray-crowned rosy finch	0	0	29	2	15	2	44	4
horned lark	271	94	73	14	31	6	375	114
loggerhead shrike	4	3	0	0	0	0	4	3
mountain bluebird	16	8	44	9	0	0	60	17
northern shrike	0	0	1	1	5	4	6	5
rock wren	0	0	1	1	0	0	1	1
ruby-crowned kinglet	1	1	0	0	0	0	1	1
sage sparrow	12	8	0	0	0	0	12	8
sage thrasher	42	41	1	1	0	0	43	42
Say's phoebe	0	0	1	1	0	0	1	1
snow bunting	0	0	1	1	140	4	141	5
spotted towhee	2	2	0	0	0	0	2	2
Townsend's warbler	1	1	0	0	0	0	1	1
unidentified empidonax	0	0	1	1	0	0	1	1
vesper sparrow	56	33	1	1	0	0	57	34
violet-green swallow	2	2	0	0	0	0	2	2
western bluebird	0	0	6	1	0	0	6	1
western kingbird	1	1	0	0	0	0	1	1
western meadowlark	48	27	7	2	0	0	55	29
yellow-rumped warbler	3	1	4	1	0	0	7	2
Subtotal	622	263	221	41	191	16	1034	320
Upland Gamebirds								
California quail	1	1	0	0	0	0	1	1
chukar	2	1	0	0	0	0	2	1
gray partridge	0	0	21	1	0	0	21	1
Subtotal	3	2	21	1	0	0	24	3
D.								
Doves			0	0	0	0		
mourning dove	1	1	0	0	0	0	1	1
Other Birds								
common nighthawk	2	2	0	0	0	0	2	2
northern flicker	13	9	1	1	Õ	Ő	14	10
unidentified hummingbird	1	1	0	0	Õ	Ő	1	1
Subtotal	16	12	1	1	0	0	17	13
Grand Total	805	381	300	86	227	45	1332	512

^a all observations included even those outside the 2,625 ft (800m) viewshed ^b one June survey was included in the spring/summer results

		2003)	•			
		Large Birds				
Spring/Summer	a	Fall		Winter		
Species/Group	Use	Species/Group	Use	Species/Group	Use	
American kestrel	0.388	common raven	0.684	common raven	0.362	
common raven	0.366	gray partridge	0.500	golden eagle	0.082	
Canada goose	0.352	golden eagle	0.143	northern goshawk	0.041	
black-billed magpie	0.209	northern harrier	0.102	rough-legged hawk	0.041	
killdeer	0.148	red-tailed hawk	0.082	black-billed magpie	0.041	
red-tailed hawk	0.132	sharp-shinned hawk	0.041	bald eagle	0.020	
ring-billed gull	0.088	American kestrel	0.024	northern harrier	0.020	
northern harrier	0.048	prairie falcon	0.024			
prairie falcon	0.044	merlin	0.020			
golden eagle	0.035	rough-legged hawk	0.020			
common nighthawk	0.026					
chukar	0.022					
merlin	0.011					
rough-legged hawk	0.011					
unidentified falcon	0.011					
California quail	0.011					

Table 4.	Avian spec	ies observed within 2,625 ft (800m) of the observer and estimated
	mean use	(#/30-minute survey) on the Project site (May 10, 2002 – May 22,
		2002)

Table 4 (continued).											
Small Birds											
Spring/Summer ^a		Fall		Winter							
Species/Group	Use	Species/Group	Use	Species/Group	Use						
horned lark	3.148	horned lark	1.680	snow bunting	3.347						
European starling	1.125	mountain bluebird	0.901	horned lark	0.648						
vesper sparrow	0.663	American robin	0.806	gray-crowned rosy finch	0.352						
western meadowlark	0.555	gray-crowned rosy finch	0.592	northern shrike	0.102						
sage thrasher	0.504	American pipit	0.167								
Brewer's sparrow	0.416	western meadowlark	0.167								
American robin	0.240	dark-eyed junco	0.122								
mountain bluebird	0.176	western bluebird	0.122								
sage sparrow	0.152	yellow-rumped warbler	0.082								
northern flicker	0.145	rock wren	0.024								
Brewer's blackbird	0.077	Say's phoebe	0.024								
loggerhead shrike	0.048	sage thrasher	0.024								
spotted towhee	0.037	vesper sparrow	0.024								
yellow-rumped warbler	0.033	northern shrike	0.020								
violet-green swallow	0.024	snow bunting	0.020								
ruby-crowned kinglet	0.013	unidentified empidonax	0.020								
western kingbird	0.013	northern flicker	0.020								
Bullock's oriole	0.011										
Townsend's warbler	0.011										
mourning dove	0.011										
unidentified hummingbird	0.011										

-	2	22, 2	2003).		-
		Large Bird	<u>s</u>		
Spring/Summer	r ^a	Fall		Winter	
Species/Group	% freq.	Species/Group	% freq.	Species/Group	% freq.
American kestrel	28.94	common raven	33.67	common raven	23.98
common raven	26.19	golden eagle	14.29	golden eagle	8.16
red-tailed hawk	10.81	northern harrier	10.20	northern goshawk	4.08
killdeer	10.44	red-tailed hawk	8.16	rough-legged hawk	4.08
black-billed magpie	9.52	American kestrel	2.38	black-billed magpie	4.08
northern harrier	4.76	prairie falcon	2.38	bald eagle	2.04
prairie falcon	4.40	gray partridge	2.38	northern harrier	2.04
golden eagle	3.48	merlin	2.04		
common nighthawk	2.56	rough-legged hawk	2.04		
California quail	1.10	sharp-shinned hawk	2.04		
chukar	1.10				
Canada goose	1.10				
ring-billed gull	1.10				
merlin	1.10				
rough-legged hawk	1.10				
unidentified falcon	1.10				

Table 5.	Avian species observed within 2,625 ft (800m) of observer and estimated frequency
	of occurrence for large and small birds on the Project Site (May 10, 2002 – May
	22 2002

Table 5 (continued).												
Small Birds												
Spring/Summer ^a		Fall		Winter								
Species/Group	% Freq	Species/Group	% Freq	Species/Group	% Freq							
horned lark	79.12	horned lark	28.57	horned lark	13.78							
sage thrasher	33.70	mountain bluebird	14.63	snow bunting	9.69							
vesper sparrow	33.33	American robin	6.46	northern shrike	8.16							
western meadowlark	31.50	gray-crowned rosy finch	4.08	gray-crowned rosy finch	5.61							
Brewer's sparrow	21.61	American pipit	2.38									
American robin	12.82	rock wren	2.38									
northern flicker	10.07	Say's phoebe	2.38									
mountain bluebird	8.79	sage thrasher	2.38									
sage sparrow	6.23	vesper sparrow	2.38									
European starling	5.86	western meadowlark	2.38									
spotted towhee	3.66	dark-eyed junco	2.04									
loggerhead shrike	3.48	northern shrike	2.04									
violet-green swallow	2.38	snow bunting	2.04									
Brewer's blackbird	1.28	unidentified empidonax	2.04									
ruby-crowned kinglet	1.28	western bluebird	2.04									
western kingbird	1.28	yellow-rumped warbler	2.04									
Bullock's oriole	1.10	northern flicker	2.04									
Townsend's warbler	1.10											
yellow-rumped warbler	1.10											
mourning dove	1.10											
unidentified hummingbird	1.10	1 . / 14										

#### text continued from page 7

#### Avian Use by Seasons and Groups

Higher overall avian use occurred in the spring/summer (9.311) compared to the fall and winter use (6.456 and 5.056, respectively) (Table 6, Figure 8). The apparent higher use in spring/summer was due to the higher overall use for all groups except corvids.

#### Passerines

Passerines were the most abundant avian group observed during all seasons (Table 6). Passerines showed higher abundance in spring/summer (7.244) compared to fall and winter (4.796 and 4.449, respectively, Figure 8). The moderate winter use was primarily due to several large flocks of snow buntings (140 individuals) (Table 6). Passerines made up approximately 74% or more of the avian use in all seasons. Passerines were observed during 90.11% of the surveys in the spring/summer, 58.16% in the fall and 33.16% in the winter (Table 6, Figure 9).

#### Raptors

Raptor use was second highest to passerines in the spring/summer (0.679) and third to passerines and corvids in the fall (0.456) and winter (0.204) (Table 6). American kestrels, red-tailed hawks, and golden eagles were the most abundant raptor species. Raptor use decreased from spring/summer through the fall, and more during the fall to winter period (Figure 8). In all seasons, raptors made up less than eight percent of overall avian use, and were observed in 43.77% of the spring/summer surveys, 31.29% in the fall and 16.33% of the winter surveys (Table 6, Figure 9).

## <u>Corvids</u>

Corvid use and frequency of occurrence was similar in all seasons, and consisted of several groups of common ravens (Table 6, Figure 8 and 9).

## Waterfowl

The only waterfowl use occurred in the spring/summer, and consisted of one group of Canada geese.

## Spatial Use of the Project Area

No large differences for use are apparent other than the higher use at station D from the large flocks of snow buntings, European starlings and Canadian geese observed (Figure 9). Passerine use by station shows the same pattern as all birds (Figure 10). Raptor use by station ranged from 0.1 to 0.8, indicating relatively similar spatial use of the Project area (Figure 11). Station F had the lowest raptor use. Station E, located to the northeast of the Project area, had moderate raptor use compared to the other stations.

Flight paths for large birds are found in Figures 12-15. A few spatial patterns of raptor use appear to exist. The ridge along Whiskey Dick Creek near station G is effectively perpendicular to prevailing winds. There appears to be a pattern of raptor flight paths flying parallel to the western side of the ridge, which is consistent behavior observed in similar situations. The one bald eagle observation was flying along the Whiskey Dick drainage (Figure 13). There appears to be little pattern in the flight paths in the areas of the project with less topographic relief, such as near station D and E. The raptor flight paths near station C at the highest point of the project sometimes follow the main Whiskey Dick Mountain ridgeline and other times cross the ridgeline. The main ridgeline in this case is not perpendicular to the prevailing wind direction, likely affecting patterns of use in this area. The turbine arrangement near station C with gaps along the ridgeline may pose less collision risk for raptors to a long string of turbines along this ridgeline with no gaps based on these patterns of use. Most prominent saddles along the Whiskey Dick Mountain Ridge, which may have higher bird use, do not contain turbine locations. American kestrel observations did not show distinctive patterns in use of topography, but did appear more abundant near Station E, the one station where no turbines proposed.

<i>Table 6. Mean use, percent composition and percent frequency of occurrence for avian groups by season</i>											
for the Wild Horse Project site.											
Species/Group	Mean Use	(#/30 mi	n. survey)	Group C	omposi	tion (%)	%	% Frequency			
	Spring/	Fall	Winter	Spring/	Fall	Winter	Spring/	Fall	Winter		
	Summer			Summer			Summer				
Waterfowl	0.352	0.000	0.000	3.78	0.00	0.00	1.10	0.00	0.00		
Waterbirds	0.088	0.000	0.000	0.94	0.00	0.00	1.10	0.00	0.00		
Shorebirds	0.148	0.000	0.000	1.59	0.00	0.00	10.44	0.00	0.00		
Accipiters	0.000	0.041	0.041	0.00	0.63	0.81	0.00	2.04	4.08		
Buteos	0.143	0.102	0.041	1.53	1.58	0.81	11.90	10.20	4.08		
Eagles	0.035	0.143	0.102	0.37	2.21	2.02	3.48	14.29	10.20		
Large Falcons	0.044	0.024	0.000	0.47	0.37	0.00	4.40	2.38	0.00		
Small Falcons	0.399	0.044	0.000	4.29	0.68	0.00	30.04	4.42	0.00		
Unidentified Falcons	0.011	0.000	0.000	0.12	0.00	0.00	1.10	0.00	0.00		
Northern Harriers	0.048	0.102	0.020	0.51	1.58	0.40	4.76	10.20	2.04		
Raptors	0.679	0.456	0.204	7.30	7.06	4.04	43.77	31.29	16.33		
Corvids	0.575	0.684	0.403	6.18	10.59	7.97	35.71	33.67	26.02		
Passerines	7.244	4.796	4.449	77.79	74.29	87.99	90.11	58.16	33.16		
Upland Gamebirds	0.033	0.500	0.000	0.35	7.74	0.00	2.20	2.38	0.00		
Doves	0.011	0.000	0.000	0.12	0.00	0.00	1.10	0.00	0.00		
Other Birds	0.181	0.020	0.000	1.95	0.32	0.00	11.36	2.04	0.00		
Subtotal	9.311	6.456	5.056								

## Flight Height Characteristics

At least 10 groups of flying birds were observed for seven species during the fixed-point surveys. Of these species, golden eagle (53.8%), common raven (50.0%) and red-tailed hawk (42.9%) were most often observed within the RSA. Common passerines including horned lark (12.8%) and mountain bluebird (9.8%) were not often observed within the RSA (Table 7).

Overall, 36.0% of the birds observed were recorded within the defined RSA, 63.3% were below the RSA, and 0.7% were flying above the RSA (Table 8). As a group, raptors had the third highest percentage of observations within the RSA (36.5%) behind waterbirds and corvids. Raptor subgroups observed above this mean percent within the RSA included eagles (57.1%; mostly golden eagles), buteos (44.4%) and large falcons (40.0%). The majority of all groups were observed below the RSA except waterbirds, which were most often observed within the RSA (88.9%; all ring-billed gulls).

## Exposure Indices

Relative exposure indices (use multiplied by proportion of observations where bird flew within the rotor swept area) were calculated by species (Table 9). This index is only based on flight height observations and relative abundance and does not account for other possible factors such as foraging behavior. Small bird species with the highest exposure indexes were snow bunting. European starling and gray-crowned rosy finch. Due to high use estimates, horned lark had the highest exposure index at the Stateline and Foote Creek Rim wind plants, and has been the most commonly observed fatality. The large bird species with the highest exposure index was common raven, followed by American kestrel, and ring-billed gull. Mortality studies at other wind projects have indicated that although ravens are often observed at wind projects within the zone of risk, they appear to be less susceptible to collision with wind turbines than other similar size birds (e.g., raptors, waterfowl).

Species/Group	# Groups	# Birds	% Birds	Colli	sion Risk 5-100 m A	Height
Speered, Growp	Flying	Flying	Flying	Below	Within	Above
ring-billed gull	1	8	100.0	0.0	100.0	0.0
American pipit	1	7	100.0	0.0	100.0	0.0
common nighthawk	2	2	100.0	0.0	100.0	0.0
bald eagle	1	1	100.0	0.0	100.0	0.0
European starling	5	99	100.0	27.3	72.7	0.0
gray-crowned rosy finch	4	44	100.0	31.8	68.2	0.0
snow bunting	5	141	100.0	39.0	61.0	0.0
golden eagle	13	13	86.7	30.8	53.8	15.4
rough-legged hawk	4	4	100.0	50.0	50.0	0.0
northern goshawk	2	2	100.0	50.0	50.0	0.0
common raven	47	70	80.5	48.6	50.0	1.4
red-tailed hawk	14	14	87.5	35.7	42.9	21.4
prairie falcon	5	5	100.0	60.0	40.0	0.0
American kestrel	29	31	88.6	67.7	32.3	0.0
western meadowlark	2	7	12.7	71.4	28.6	0.0
northern harrier	11	11	100.0	81.8	18.2	0.0
horned lark	52	218	58.1	87.2	12.8	0.0
killdeer	5	9	69.2	88.9	11.1	0.0
mountain bluebird	11	41	68.3	90.2	9.8	0.0
vellow-rumped warbler	2	7	100.0	100.0	0.0	0.0
Brewer's blackbird	1	6	100.0	100.0	0.0	0.0
dark-eved junco	1	6	100.0	100.0	0.0	0.0
western bluebird	1	6	100.0	100.0	0.0	0.0
merlin	2	2	100.0	100.0	0.0	0.0
sharp-shinned hawk	2	2	100.0	100.0	0.0	0.0
violet-green swallow	2	2	100.0	100.0	0.0	0.0
Bullock's oriole	1	1	100.0	100.0	0.0	0.0
Say's phoebe	1	1	100.0	100.0	0.0	0.0
Townsend's warbler	1	1	100.0	100.0	0.0	0.0
mourning dove	1	1	100.0	100.0	0.0	0.0
ruby-crowned kinglet	1	1	100.0	100.0	0.0	0.0
unidentified gull	1	1	100.0	100.0	0.0	0.0
unidentified hummingbird	1	1	100.0	100.0	0.0	0.0
western kingbird	1	1	100.0	100.0	0.0	0.0
black-billed magpie	9	18	90.0	100.0	0.0	0.0
American robin	6	48	81.4	100.0	0.0	0.0
loggerhead shrike	2	3	75.0	100.0	0.0	0.0
northern shrike	3	3	50.0	100.0	0.0	0.0
northern flicker	4	6	42.9	100.0	0.0	0.0
sage sparrow	1	1	8.3	100.0	0.0	0.0
vesper sparrow	3	3	5.3	100.0	0.0	0.0
sage thrasher	1	1	2.3	100.0	0.0	0.0

# Table 7. Flight height characteristics by species observed during fixed-point surveys.

Table 7 (continued).						
Species/Group	# Groups Flying	# Birds Flying	% Birds Flying	Coll (82-328 Below	ision Risk 3 ft (25-10 Within	t Height 0m) AGL) Above
Brewer's sparrow	0	0	0.0	N/A	N/A	N/A
California quail	0	0	0.0	N/A	N/A	N/A
Canada goose	0	0	0.0	N/A	N/A	N/A
chukar	0	0	0.0	N/A	N/A	N/A
gray partridge	0	0	0.0	N/A	N/A	N/A
rock wren	0	0	0.0	N/A	N/A	N/A
spotted towhee	0	0	0.0	N/A	N/A	N/A
unidentified buteo	0	0	0.0	N/A	N/A	N/A
unidentified empidonax	0	0	0.0	N/A	N/A	N/A
unidentified falcon	0	0	0.0	N/A	N/A	N/A
Overall	262	849	63.7	63.3	36.0	0.7

Table 8. Flight height characteristics by avian group during fixed-point surveys.						
Group	# Groups Flying	# Birds	% Birds	Collision Risk Height (82-328 ft (25-100m) AGL)		
	1 1 9 11 8	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	119.008	below	within	above
Waterfowl	0	0	0.0	N/A ^a	N/A	N/A
Waterbirds	2	9	100.0	11.1	88.9	0.0
Shorebirds	5	9	69.2	88.9	11.1	0.0
Accipiters	4	4	100.0	75.0	25.0	0.0
Buteos	18	18	85.7	38.9	44.4	16.7
Northern Harriers	11	11	100.0	81.8	18.2	0.0
Eagles	14	14	87.5	28.6	57.1	14.3
Unidentified Falcons	0	0	0.0	N/A	N/A	N/A
Large Falcons	5	5	100.0	60.0	40.0	0.0
Small Falcons	31	33	89.2	69.7	30.3	0.0
All Raptors	83	85	89.5	57.6	36.5	5.9
Corvids	56	88	82.2	59.1	39.8	1.1
Passerines	108	648	62.7	64.7	35.3	0.0
Upland Gamebirds	0	0	0.0	N/A	N/A	N/A
Doves	1	1	100.0	100.0	0.0	0.0
Other Birds	7	9	52.9	77.8	22.2	0.0
Subtotal	262	849	63.7	63.3	36.0	0.7

^a not applicable, no data on flight heights.

Table 9. Mean exposure indices calculated by species observed during fixed- point surveys at the Project site.				
Que estimation / Que est	Overall	%	% Flying	Exposure
Species/Group	Mean Use	Flying	within RSA	Index
snow bunting	0.873	100.00	60.99	0.532
European starling	0.541	100.00	72.73	0.394
common raven	0.448	80.46	50.00	0.180
gray-crowned rosy finch	0.245	100.00	68.18	0.167
horned lark	2.119	58.13	12.84	0.158
American kestrel	0.193	88.57	32.26	0.055
American pipit	0.043	100.00	100.00	0.043
ring-billed gull	0.042	100.00	100.00	0.042
golden eagle	0.075	86.67	53.85	0.035
red-tailed hawk	0.085	87.50	42.86	0.032
mountain bluebird	0.318	68.33	9.76	0.021
common nighthawk	0.012	100.00	100.00	0.012
western meadowlark	0.310	12.73	28.57	0.011
prairie falcon	0.027	100.00	40.00	0.011
rough-legged hawk	0.021	100.00	50.00	0.011
northern harrier	0.055	100.00	18.18	0.010
killdeer	0.071	69.23	11.11	0.005
northern goshawk	0.011	100.00	50.00	0.005
bald eagle	0.005	100.00	100.00	0.005
vesper sparrow	0.325	5.26	0.00	0.000
American robin	0.325	81.36	0.00	0.000
sage thrasher	0 249	2 33	0.00	0.000
Brewer's sparrow	0.200	0.00	N/A ^a	N/A
Canada goose	0 169	0.00	N/A	N/A
grav partridge	0.130	0.00	N/A	N/A
black-billed magnie	0 1 1 1	90.00	0.00	0 000
northern flicker	0.075	42.86	0.00	0.000
sage sparrow	0.073	8 33	0.00	0.000
Brewer's blackbird	0.037	100.00	0.00	0.000
vellow-rumped warbler	0.037	100.00	0.00	0.000
dark-eved junco	0.032	100.00	0.00	0.000
northern shrike	0.032	50.00	0.00	0.000
western bluebird	0.032	100.00	0.00	0 000
loggerhead shrike	0.023	75.00	0.00	0.000
spotted towhee	0.018	0.00	N/A	N/A
violet-green swallow	0.011	100.00	0.00	0.000
merlin	0.011	100.00	0.00	0.000
sharp-shinned hawk	0.011	100.00	0.00	0.000
chukar	0.011	0.00	N/A	N/A
Say's phoebe	0.006	100.00	0.00	0 000
ruby-crowned kinglet	0.006	100.00	0.00	0.000
western kinghird	0.006	100.00	0.00	0.000
Bullock's oriole	0.005	100.00	0.00	0.000
Townsend's warbler	0.005	100.00	0.00	0.000

Table 9 Maan exposure indices calculated by species observed during fixed.

Table 9 (continued).					
Spacing/Crown	Overall	%	% Flying	Exposure	
Species/Group	Mean Use	Flying	within RSA	Index	
mourning dove	0.005	100.00	0.00	0.000	
unidentified hummingbird	0.005	100.00	0.00	0.000	
rock wren	0.006	0.00	N/A	N/A	
California quail	0.005	0.00	N/A	N/A	
unidentified empidonax	0.005	0.00	N/A	N/A	
unidentified falcon	0.005	0.00	N/A	N/A	
unidentified gull	N/A	100.00	0.00	N/A	
unidentified buteo	N/A	0.00	N/A	N/A	

^a not applicable, no data on flight heights.

#### text continued from page 17

#### In-transit Survey Data and Non-avian Observations

#### Avian Observations During In-transit Surveys

Observations of state or federally listed species, raptors, and other species of interest observed while intransit between surveys points were recorded (Table 10). The most abundant avian species recorded (# of observations) were yellow-rumped warbler (19), followed by snow bunting (7), and mountain bluebird (6). Six species observed during in-transit surveys were not detected during the fixed-point surveys including white-crowned sparrow, Swainson's thrush, Copper's hawk, gyrfalcon, and turkey vulture (Table 10). Sage grouse pellets were observed on the southern side of Whiskey Dick Mountain during the fall 2002. One loggerhead shrike was observed along the PSE transmission line route.

#### Reptiles and Amphibians

The only reptile observed during the field studies was short-horned lizard (Phrynosoma douglassii).

#### Mammals

Paiute ground squirrels were seen regularly within the Project site but most commonly around station B. Mule deer and elk were observed throughout the Project area during the entire year, with larger but fewer groups observed during the winter periods. Coyotes were observed on a regular basis, and white and black-tailed jackrabbits were observed in a few locations.

surveys (big ga	me not recorae	<i>ea)</i> .
Species	# Obs.	# Groups
yellow-rumped warbler	19	2
snow bunting	7	2
mountain bluebird	6	1
sage thrasher	5	5
northern harrier	5	5
dark-eyed junco	5	1
white-crowned sparrow	3	1
red-tailed hawk	2	2
golden eagle	2	2
rough-legged hawk	2	2
Swainson's thrush	1	1
western kingbird	1	1
Cooper's hawk	1	1
gyrfalcon	1	1
turkey vulture	1	1
loggerhead shrike	1	1
sage grouse pellets	2 ^a	2
Avian Subtotal	62	29
Paiute ground squirrel	28	16
white-tailed jack rabbit	6	5
black-tailed jack rabbit	1	1
coyote	1	1
Mammal Subtotal	36	23
short-horned lizard	7	7

Table 10. Summary of observations of state or federal-listed species, raptors, other species, and non-avian species observed during in-transit surveys and sage grouse surveys that were not observed during the fixed-point surveys (big game not recorded).

^a pellets not included in subgroup total.

# **Raptor Nests**

The majority of the study area is dominated by sagebrush habitats ranging from flat to steeply sloping draws. Raptor nesting habitat within these canyons includes relatively tall shrubs, widely scattered cliffs and rock outcrops, and occasional patches of ponderosa pine with some intermixed aspen and/or cottonwood. A few patches of ponderosa pine are also present on the north end of the search area. Overall, habitat for above ground nesting raptors is very limited within the search area.

A total of 23 nests were found during surveys, 11 of which, showed no signs of raptor activity (Table 11). Species observed with active nests include red-tailed hawk, American crow and common raven. One great-horned owl was observed flying from a tree with a nest structure, but relatively dense branches prevented a good view of the nest. The status of the great-horned owl nest is considered unknown. One adult prairie falcon was observed perched on a cliff face and may have an unobserved nest within a pothole or cavity. One inactive nest was located in an area described as a historic golden eagle nest within the northern portion of the search area. No active golden eagle nests were found.

## Sage Grouse Surveys

No sage grouse observations (leks or flushed birds) were observed during any of the sage grouse surveys or during other activities.

## **Big Game Surveys**

Mule deer (*Odocoileus hemionus*) were commonly observed near points E, F and G (Table 12). Observations of 3-11 individuals were commonly observed in the spring/summer, with 6 or less individuals observed throughout the winter and fall for each observation. Elk (*Cervis elaphus*) were observed in some large groups, 7-26 individuals near the northern points (A, D, F and G) during the spring/summer and winter surveys, with no observations made in the fall period.

Observations 331 mule deer within 27 groups were recorded during the raptor nest survey. In addition, 129 elk observations with 17 groups were observed. Density from this survey is approximately 7 deer per square mile and 3 elk per square mile based on this one survey. Big game likely move around between this area, the state wildlife areas to the east, private range and agricultural lands to the west and south, and the forested lands to the north of the Project.

Table 11. Raptor and other nests observed within the two-mile search buffer.						
	Number of		N	est Subst	trate	
Species	Nests	Cottonwood	Shrub	Pine	Radio	Rock or
					Tower	Cliff
red-tailed hawk ^a	6	2	0	2	0	2
great-horned owl ^b	1	1	0	0	0	0
prairie falcon ^c	1	0	0	0	0	1
American crow ^d	3	1	0	0	0	2
Common raven ^e	1	0	0	0	1	0
inactive ^f	11	5	1	2	0	3
Total	23	9	1	4	1	8

^aAdults were observed incubating at all six nests ^bNest status was unknown ^c1 Adult observed on cliff face, nest hole was not located. ^dAdults were observed incubating at all six nests ^eNest located in radio tower

^fNo adults, young or signs of activity were observed.

Table 12. Summary of observations and mean use of big game speciesobserved during the fixed-point surveys.				
Species	Station	#Obs.	#Groups	Mean Use
Mule deer	А	3	1	0.115
	В	2	2	0.077
	С	0	0	0.000
	D	6	2	0.222
	Е	61	7	2.259
	F	48	5	1.778
	G	48	7	1.778
Subtotal		168	24	0.890
Elk	А	67	1	2.913
	В	8	2	0.348
	С	0	0	0.000
	D	60	4	2.500
	Е	0	0	0.000
	F	71	4	2.958
	G	104	10	4.333
Subtotal		310	21	1.865
Grand Total		478	45	1.377

^a # observations/30-minute survey

# WILDLIFE IMPACT ASSESSMENT

# **Evaluation Criteria**

Some impacts to wildlife species and in particular avian and bat species are expected to occur from the Project. Measured use of the site by avian species in addition to mortality estimates from other existing wind plants is used to predict mortality of birds and bats from the Project. For example, use of the site by raptors is relatively low compared to other wind plants and mortality estimates of raptors from other "newer generation" wind plants are relatively low (e.g. 0.07 raptors/turbine/year for Nine Canyon Wind Project, <0.04 raptors/turbine/year for Foote Creek Rim wind plant, Wyoming; <0.01 raptors/turbine/ year for the Buffalo Ridge wind plant, Minnesota). Therefore mortality estimates for raptors from the Project are expected to be low. Post construction monitoring is proposed to validate mortality predictions and monitor the actual level of mortality from the Project.

Other impacts include direct loss of habitat due to the Project facilities, and indirect impacts such as disturbance and displacement from the wind turbines, roads and human activities. Both construction (e.g., blasting) and operations impacts are discussed. Potential impacts are discussed for fish, bats, big game, other mammals, reptiles and amphibians, and birds. Discussion of potential impacts to unique species including State and Federal listed species is also included.

# Fish

There are no fish-bearing streams within the project area, according to the WDFW habitats and species maps and the StreamNet database (WDFW 2003). However, the majority of the project streams drain into fish-bearing streams and/or priority fish-bearing streams. Priority fish are defined as any federal or state listed threatened, endangered, or candidate species, or any special status species of concern.

The nearest fishery is located along Quilomene Creek approximately 1 mile (1.6 km) to the north of the Project and will not be impacted. Downstream from the project area, The lower ends of Whiskey Dick, the North Fork of Whiskey Dick and Skookymchuck Creeks contain rainbow trout, and summer steelhead is identified along the lower end of Whiskey Dick Creek as well. These fisheries are more than five miles to the east of the Project. Provided best management practices are employed on site and compliance with applicable permits regarding runoff and sediment control is maintained, no fish should be affected by construction or operation of the Project.

No other waterbodies in the project area, including wetlands and the Highlands irrigation canals contain any priority fish species based on WDFW habitat and species maps. No survey information was available for these waters. If any fish species are present in these other water bodies, they would most likely be warmwater fish that would not be subject to federal or state mitigation requirements.

# Bats

The potential for bats to occur is based on key habitat elements such as food sources, water, and roost sites. Potential roost structures such as trees are in general are limited within the Project to "the Pines" area near Government Springs and within the riparian corridors along Whiskey Dick and Skookymchuck Creeks. The various springs within the Project area may be used as foraging and watering areas. Little is known about bat species distribution, but several species of bats could occur in the Project area based on the Washington GAP project and inventories conducted on the Hanford Site, Arid Lands Ecology Reserve (ALE) located in Benton County to the south (Table 13).

Ta	Table 13. Bat species of potential occurrence in the Project area.				
Common Name and Scientific Name	Typical Habitat	Expected Occurrence in Project Area	Occurrence Documentation		
California bat <i>Myotis californicus</i>	Generally found in open habitats where it forages along tree edges, riparian areas, open water; roosts in cliffs, caves, trees	Possible; documented on ALE	WA GAP Analysis Project ^a , 1999; England, 2000; Fitzner and Gray, 1991		
small-footed myotis <i>Myotis ciliolabrum</i>	Varied arid grass/shrublands, ponderosa pine and mixed forests; roosts in crevices and cliffs; hibernates in caves, mines	Possibe; documented on ALE	WA GAP Analysis Project, 1999; England, 2000; West <i>et al.</i> , 1998, 1999		
long-eared myotis <i>Myotis evotis</i>	Primarily forested habitats and edges, juniper woodland, mixed conifers, riparian areas; roosts snags, crevices, bridges, buildings, mines	Unlikely due to habitat; not documented on ALE	WA GAP Analysis Project, 1999; England, 2000; TNC, 1999		
little brown bat <i>Myotis lucifugus</i>	Closely associated with water; riparian corridors; roosts buildings, caves, hollow trees; hibernates in caves	Possible; documented on ALE	WA GAP Analysis Project, 1999; England, 2000; West <i>et al.</i> , 1998, 1999		
fringed myotis Myotis thysanodes	Primarily forested or riparian habitats; roosts buildings, trees; hibernates in mines and caves	Possible in suitable habitat; not documented on ALE	WA GAP Analysis Project, 1999; England, 2000; TNC, 1999		
long-legged myotis <i>Myotis volans</i>	Coniferous and mixed forests, riparian areas; roosts caves, crevices, buildings, mines	Possible in suitable habitat; documented on ALE	WA GAP Analysis Project, 1999; England, 2000; Fitzner and Gray, 1991		
yuma myotis Myotis ymanensis	Closely associated with water; varied habitats: riparian, shrublands, forests woodlands; roosts in mines, buildings, caves, bridges	Possible; documented on ALE	WA GAP Analysis Project, 1999; England, 2000; West <i>et al.</i> , 1998, 1999		
hoary bat <i>Lasiurus cinereus</i>	Forested habitats, closely associated with trees; roosts in trees; migratory species	Possible in suitable habitat; probable migrant; documented on ALE	WA GAP Analysis Project, 1999; England, 2000; West <i>et al.</i> , 1998, 1999		
silver-haired bat Lasionycteris noctivagans	Forested habitats; generally coniferous forests; roosts under bark; believed to be a migratory species	Possible in suitable habitat; probable migrant; documented on ALE	WA GAP Analysis Project, 1999; England, 2000; West <i>et al.</i> , 1998, 1999		

Table 13 (continued).			
Common Name and Scientific Name	Typical Habitat	Expected Occurrence in Project Area	Occurrence Documentation
western pipistrelle <i>Pipistrellus hesperus</i>	Primarily desert lowlands; desert shrublands; canyons; roosts under rocks, crevices and possibly in sagebrush	Possible; documented on ALE	WA GAP Analysis Project, 1999; England, 2000; West <i>et al.</i> , 1998, 1999
big brown bat Eptesicus fuscus	Generally deciduous forests; buildings; roosts in buildings, trees, crevices; hibernates in caves, mines	Possible; documented on ALE	WA GAP Analysis Project, 1999; England, 2000; West <i>et al.</i> , 1998, 1999
spotted bat Euderma maculatum	Varied habitat—pine forests to desert scrub with nearby cliffs; roosts in crevices, cliff faces	Unlikely due to rarity; not documented on ALE	WA GAP Analysis Project, 1999; England, 2000; TNC, 1999
Townsend's big-eared bat Corynorhinus townsendii	Varied habitats—forests to desert scrub; roosts in buildings, caves, mines, bridges; hibernates in caves	Possible in suitable habitat; not documented on ALE	WA GAP Analysis Project, 1999; England, 2000; TNC, 1999
pallid bat Antrozous pallidus	Generally occurs in arid regions, desert scrub habitats; roosts in cliff faces, caves, mines, buildings	Unlikely due to lack of suitable habitat; documented on ALE	WA GAP Analysis Project, 1999; England, 2000; West <i>et al.</i> , 1998, 1999

^a GAP Analysis Program (GAP). The Washington State Gap Analysis Project is based on a two primary data sources: vegetation types (actual vegetation, vegetation zone, and ecoregion) and species distribution. The two data sources are combined to map the predicted distribution of vertebrate species. More information about the Washington Gap Analysis Project can be found on the WDFW web page: www.wa.gov/wdfw/wlm/gap/dataprod.htm

**Construction.** Impacts to bats or bat habitat on the site are unlikely during construction. The potential for bats to occur is based on key habitat elements such as food sources, water, and roost sites. Potential roost structures such as trees are in general are limited within the Project to "the Pines" area near Government Springs and within the riparian corridors along Whiskey Dick and Skookymchuck Creeks. The various springs within the Project area may be used as foraging and watering areas. None of the key habitat elements will be impacted by construction.

**Operations.** Bat research at other wind plants indicates that migratory bat species are at some risk of collision with wind turbines, mostly during the fall migration season (Johnson *et al.* 2003b). It is likely that some bat fatalities would occur at the Project site. Most bat fatalities found at wind plants have been tree-dwelling bats, with hoary and silver-haired bats being the most prevalent fatalities. Both hoary bats and silver-haired bats may use the forested habitats near the Project site and may migrate through the Project.

Some mortality of mostly migratory bats, especially hoary and silver-haired bats, is anticipated during operation of the Project. At the Buffalo Ridge Wind Plant, Minnesota, based on a 2-year study, bat mortality was estimated to be 2.05 bats per turbine per year (Johnson *et al.* 2003b). At the Foote Creek Rim Wind Plant, based on 3+ years of study, bat mortality was estimated at 1.34 bats per turbine per year (Young *et al.* 2003). At the Vansycle Ridge Wind Plant in Oregon, bat mortality was estimated at 0.74 bats per turbine for the first year of operation (Erickson *et al.* 2000). At the Klondike Wind Project, bat mortality was estimated at 1.16 bat fatalities per turbine per year (Johnson *et al.* 2003a). At the Stateline Wind Project, bat mortality was estimated at approximately 1 bat fatality per turbine per year (Erickson *et al.* 2003a) from July 2001 through December 31, 2002. At the Nine Canyon Wind Project, bat mortality was estimated at approximately 3 bat fatalities per turbine per year (Erickson *et al.* 2003b).

Although potential future mortality of migratory bats is difficult to predict, an estimate can be calculated based on levels of mortality documented at other wind plants. Using the estimates from other wind plants, operation of the Project could result in approximately 100 to 400 bat fatalities per year. Actual levels of mortality are unknown and could be higher or lower depending on regional migratory patterns of bats, patterns of local movements through the area, and the response of bats to turbines, individually and collectively. Mortality will likely involve silver-haired and hoary bats, two relatively common migratory species.

The significance of this impact is hard to predict since there is very little information available regarding bat populations. Studies do suggest resident bats do not appear to be significantly impacted by wind turbines (Johnson *et al.* 2003b, Johnson 2003, Gruver 2002), since almost all mortality is observed during the fall migration period. Furthermore, hoary bat, which is expected to be the most common fatality, is one of the most widely distributed bats in North America. Pre-construction studies to predict impacts to bats may be relatively ineffective, because current state-of-the-art technology for studying bats does not appear to be highly effective for documenting migrant bat use of a site (Johnson *et al.* 2003b).

# Big Game

The Project is located within habitats designated by WDFW as winter range for mule deer and elk, is located adjacent to the Quilomene migration corridor, and the northern boundary of the Project is approximately ½ mile (0.80km) from the Colockum elk calving area (Figure 16, WDFW 2003). The Quilomene elk winter range is approximately 83,000 acres in size and winters approximately 1500-2000 elk. The Quilomene mule deer winter range is approximately 40,000 acres in size and winters

approximately 700-800 deer. The Project area is not located within the high-density deer sub-area of Quilomene mule deer winter range that typically supports 100-200 deer. This area begins approximately 1.5 miles (2.4 km) to the north east of the Project area, and extends to the east towards the Columbia River. The Project area is also not located within the Quilomene primary winter range, a sub-area of the Quilomene winter range, which winters approximately 500 elk.

Aerial surveys are conducted for deer and elk near the project in February and March by WDFW. The Project area is overlapped by four different deer survey units (Appendix B). Three of the units were surveyed in March 2003, and a total of 1065 deer were observed. The Project area (approximately 8650 acres) comprises about 20% of the area surveyed in 2003. Historical WDFW elk and deer survey units and counts from WDFW surveys near the project area shown in Appendix B.

Wintering elk forage on native grass species such as Sandberg's bluegrass, which greens up with fall and winter rains, while mule deer likely utilize more shrub species in the Project area. Wind-blown slopes and ridges remain snow-free most of the year. West and south-facing slopes green up earlier and provide accessible nutritious forage during the harsh winter months. Mule deer and elk also use the site during the other seasons. The riparian corridors of Whiskey Dick Creek provide some cover and the various developed and undeveloped springs provide a constant water source. Mule deer and elk hunting have been allowed on the Project area lands historically.

The site appears to get some year-round use by mule deer and elk, but is more concentrated in the winter. The biologist conducting the helicopter survey on April 14, 2003 identified 129 elk in 15 groups and 331 mule deer in 27 groups within 2 miles of the Project site. Several large groups ( $\sim$  4) of 50 or more elk were observed on March during reconnaissance level surveys of the Project site.

The WDFW has expressed some concern over the potential effects of wind project development and operation wintering big game. Winter is a crucial period of time for the survival of many big game species. Deer, for example, cannot maintain body condition during the winter because of reduced forage availability combined with the increased costs of thermogenesis (Reeve and Lindzey 1991). In other words, as deer expend more energy than they take in, body condition gradually declines throughout the winter (Short 1981). Unnecessary energy expenditures may increase the rate at which body condition declines, and the energy balance determining whether a deer will survive the winter is thought to be relatively narrow, especially for fawns (Wood 1988). Overwinter fawn survival may decrease in response to human activity or other disturbances (Stephenson *et al.* 1996). Roads and energy development may also fragment otherwise continuous patches of suitable habitat, effectively decreasing the amount of winter range available for big game. Fragmentation of habitat may also limit the ability of big game populations to move throughout the winter range as conditions change, causing big game to utilize less suitable habitat (Brown 1992).

**Construction**: The elk and mule deer on site primarily occupy the grassland/shrub-steppe habitats, springs, and riparian corridors. During the construction period, it is expected that elk and mule deer will be displaced from the site due to the influx of humans and heavy construction equipment and associated disturbance (e.g., blasting). Construction related disturbance and displacement is expected to be limited to the construction period time frame. Most construction will take place during the summer months, minimizing construction disturbance to wintering big game. Following completion of the Project, the disturbance levels from construction equipment and humans will diminish and the primary disturbances will be associated with operations and maintenance personnel, occasionally vehicular traffic, and the presence of the turbines and other facilities.

Operations:A few published studies of big game winter use may be relevant to the development of<br/>wind turbines and wintering deer and elk (Rost and Bailey 1979; Van Dyke and Klein 1996, Johnson et<br/>Wild Horse Wildlife Baseline Study Report31

al. 2000c, Bracken and Musser 1993, Wisdom et al. 2002). Van Dyke and Klein (1996) documented elk movements through the use of radio telemetry before, during and after the installation of a single oil well within an area used year round by elk. Drilling activities during their study ceased by November 15, however, maintenance activities continued throughout the year.

Elk showed no shifts in home range between the pre and post drilling periods, however, elk shifted core use areas out of view from the drill pad during the drilling and post drilling periods. Elk also increased the intensity of use in core areas after drilling and slightly reduced the total amount of range used. It was not clear if the avoidance of the well site during the post-drilling period was related to maintenance activities or to the use of a new road by hunters and recreationalists. The authors concluded that if drilling activities occupy a relatively small amount of elk home ranges, that elk are able to compensate by shifting areas of use within home ranges.

Studies have been conducted at the Starkey Research Unit, a large fenced experimental study area near La Grande using radio-collared elk and deer. Results of spring studies (April – early June) suggest that elk habitat selection may be negatively related to traffic and other human disturbance (Johnson et al. 2000c). Elk also tended to increase movement distances as a function of increased use by humans, including ATV use, hiking, and horse back riding (Wisdom et al. 2002). Mule deer habitat selection, on the other hand, appears to primarily be related to elk distribution, with mule deer avoiding areas used by elk. Traffic and roads did not appear to be an important factor in spring distribution of mule deer. In fact, there was some selection for areas close to roads with medium levels of traffic, but the cause of this relationship is unknown. Mule deer showed some increase in movement distances as a function of increased use by humans, including ATV use, hiking and horseback riding (Wisdom et al. 2002), but much less response than elk showed.

Rost and Bailey (1979) found that wintering mule deer and elk avoided areas within 656 ft (200m) of roads in eastern portions of their Colorado study area, where presumably greater amounts of winter habitat were present. Road avoidance was greater where roads were more traveled. Only mule deer showed a clear avoidance of roads in the western portion of their study area, where winter range was assumed to be more limiting. Mule deer also showed greater avoidance of roads in shrub habitats versus more forested areas. The authors concluded that impacts of roads depended on the availability of suitable winter range away from roads, as well as the amount of traffic associated with roads.

There is little information regarding wind project effects on big game. At the Foote Creek Rim wind project in Wyoming, pronghorn observed during raptor use surveys were recorded year round (Johnson *et al.* 2000b). The mean number of pronghorn observed at the six survey points was 1.07 prior to construction of the wind plant and 1.59 and 1.14/survey the two years immediately following construction, indicating no reduction in use of the immediate area. Mule deer and elk also occurred at Foote Creek Rim, but their numbers were so low that meaningful data on wind plant avoidance could not be collected.

Due to the lack of knowledge regarding the potential impacts of energy development on big game, it is difficult to predict with certainty the effects of the Project on mule deer and elk. Van Dyke and Klein (1996) showed wintering elk shifted use of core areas out of view of human related activities associated with an oil well and access road. Most turbines and roads in the Project area will be located on ridges and will be visible over a fairly large area. While human related activity at wind turbines during regular maintenance will be less than during the construction period, it is not known if human activity associated with regular maintenance activity will exceed tolerance thresholds for wintering elk. If tolerance thresholds during regular maintenance activities are exceeded, elk are likely to permanently utilize areas away from the wind development. The Project area proposed for development has historically received regular use throughout the year by hunter's and other recreationalists including motorcycle and ATV riders, campers, birders and hikers. Access during construction and operation of the Project will be Wild Horse Wildlife Baseline Study Report 32

controlled by the Applicant and disturbance to big game may be minimized and actually less than that which occurred pre-development.

WDFW has also expressed concern regarding the potential for wind projects to increase elk and mule deer damage claims on private agricultural lands near wind projects. Elk and mule deer, if displaced from the Project area, may increase their utilization of agricultural lands in the vicinity of the Project area. If elk and mule deer and not displaced from the Project, then WDFW is concerned that the Project may create a "santuary", if WDFW cannot manage the herds. The Project area is more than 5 miles (8km) from the nearest agricultural areas, so the "santuary effect" is not anticipated. The Applicant has agreed to work with WDFW to allow for management of herds within the project area if this effect does appear to occur. In addition, the Applicant has agreed to allow controlled hunting within the Project area.

## **Other Mammals**

Other mammals that likely exist within the Project site include, badger, coyote, pocket gopher, Pauite ground squirrels and other small mammals such as rabbits, voles and mice. Construction of the Project may affect these mammals on site through loss of habitat and direct mortality of individuals occurring in construction zones. Excavation for turbine pads, roads, or other wind project facilities could kill individuals in underground burrows. Road and facility construction will result in loss of foraging and breeding habitat for small mammals. Ground-dwelling mammals will lose the use of the permanently impacted areas; however, they are expected to repopulate the temporarily impacted areas. Some small mammal fatalities can be expected from vehicle activity during operations. Impacts are expected to be very low and not significant.

# Reptiles and Amphibians

Twenty-seven species of reptiles and amphibians occur in Kittitas County and could be present in the Project area. Short-horned lizards were commonly observed within the Project area. Other reptiles that may likely occur in the Project site include snakes such as the yellow-bellied racer and rattlesnakes. Amphibian and aquatic reptile habitat is limited within the Project area. No migration corridors for reptiles or amphibians are known to be present in the Project area. Many amphibians migrate short distances during spring or fall breeding periods to and from suitable wetlands and during fall dispersal of juveniles.

**Construction**: Impacts to reptiles and amphibians on site through loss of habitat and direct mortality of individuals occurring in construction zones. Provided best management practices are employed on site and compliance with applicable permits regarding runoff and sediment control is maintained, no amphibians should be affected by construction or operation of the Project. The level of mortality to reptiles on site associated with construction would be based on the abundance of species on site. Some mortality may be expected as common reptiles that may occur on site such as short-horned lizards and yellow-bellied racers often retreat to burrows underground for cover or during periods of winter dormancy. Excavation for turbine pads, roads, or other Project facilities could kill individuals in underground burrows. While above ground, yellow bellied racers and other snakes are likely mobile enough to escape construction equipment, however, short horned lizards do not move fast over long distances and rely heavily on camouflage for predator avoidance. Some individual lizard fatalities can be expected from vehicle activity.

**Operations**: No impacts to amphibians are anticipated during operations. Impacts to reptiles during operation are likely limited to some potential direct mortality due to vehicle collisions. While above ground, yellow bellied racers and other snakes are likely mobile enough to escape most vehicles, however, short horned lizards do not move fast over long distances and rely heavily on camouflage for predator avoidance. Some individual lizard fatalities can be expected from vehicle activity.

#### Birds

Primary habitats for birds on the Project area are the grassland/shrub-steppe and riparian communities, although some species will utilize lithosol type habitats for various resources. The various springs on site likely provide important water sources for avian species. The Project area is located within the Pacific Flyway, one of four principal north-south bird migration routes in North America. Bounded roughly by the Pacific Ocean and the Rocky Mountains, the Pacific Flyway extends from the arctic regions of Alaska and Canada to Central and South America. Within the flyway, certain groups of birds may travel along narrower migration corridors.

The Project's location along the east flank of the Cascades places it within possible migration corridors of several bird species. Given the limited riparian and other important stopover habitat (water bodies), and the few likely migrants observed during the study, use by migratory birds is likely low. It would be expected that areas further to the east along and closer to the Columbia River would be more important to migrating birds, including songbirds, waterfowl and raptors.

Information about bird fatalities at other wind plants suggests that a wide variety of species and groups are susceptible to collision with turbines. Some evidence also suggests that peak mortality may occur during migration periods although some mortality has been documented throughout all seasons (see Erickson *et al.* 2000, Young *et al.* 2003, Johnson *et al.* 2002, Erickson *et al.* 2003a, Erickson *et al.* 2003b).

Potential impacts to birds using the study area include fatalities from collision with wind turbines or from construction equipment, loss of habitat, disturbance to foraging and breeding behavior, collision with overhead power lines, and electrocution. Project-related human activity could alter bird behavior and cause displacement during the construction phase of the Project, and the post-construction density of turbines and facilities on the developed portion of the site may alter avian use.

**Construction.** Wind plant construction may affect birds through loss of habitat, potential fatalities from construction equipment, and disturbance/displacement effects from construction and human occupation of the area. Vegetation type/habitat losses from the Project are addressed in Lack *et al.* (2003). Potential mortality from construction equipment on site is expected to be quite low. Equipment used in wind plant construction generally moves at slow rates (e.g., cranes) or is stationary for long periods. The risk of mortality from construction to avian species is most likely limited to potential destruction of a nest with eggs or young for ground and shrub nesting species when equipment initially disturbs the habitat. Disturbance type impacts can be expected to occur if construction activity occurs near an active nest or primary foraging area. Birds displaced from these areas may move to areas with less disturbance, however, breeding effort may be affected and foraging opportunities altered during the life of the construction. No disturbance or displacement impacts to raptor nests are anticipated, since no active raptor nests were identified within ¹/₂ mile (0.80km) of Project facilities (Figure 6).

#### **Operations - Mortality**

**Raptors.** Raptor use at the Project is estimated to be lower than the Kittitas Valley Wind Project (KVP), and similar or lower compared to other wind projects with similar turbine types (Figure 17). Data were recorded in the field to allow standardization to 10, 20 and 30 minute survey duration, to allow comparison to survey data from other wind projects. As a group, raptor use ranged from 0.122 per 20 minute survey in the winter, to 0.41 and 0.35 in the spring and fall respectively. For comparison, raptor use at the KVP Wind Project was estimated to be 1.01 raptors per 20-minute survey in the spring, and 0.727 in the fall. The primary differences in use are primarily due to higher red-tailed hawk use at the KVP site. Only bald eagle surveys, and not general avian use surveys were conducted in the winter at the KVP site. Raptor use at the Vansycle wind project in Oregon and the Buffalo Ridge wind project in

Minnesota is estimated similar to the Project (0.36 and 0.49 raptors per 20-minute survey respectively). Raptor use at the Foote Creek Rim wind project was approximately 0.73 raptors per 20-minute survey.

Raptor mortality at new generation wind projects has been low. The estimate of raptor mortality at the Foote Creek Rim wind project in Wyoming, which is located in native grassland and shrub steppe habitat, was estimated at 0.03 raptors per turbine per year based on a three-year study of 69 turbines (Young *et al.* 2002). No raptor mortality was observed at the Vansycle wind project in Oregon during a one-year study (Erickson *et al.* 2000); and 1 raptor was recorded over a four-year study at the Buffalo Ridge wind project (Johnson *et al.* 2002). No raptor fatalities were observed at the 16-turbine Klondike wind project in Sherman County, Oregon (Johnson *et al.* 2003a), and one American kestrel fatality has been observed at the Ponnequin Wind Project in Weld County Colorado (Kerlinger pers. comm.). Raptor mortality estimates from the Stateline Wind Project (Erickson *et al.* 2003a) and the Nine Canyon Wind Project (Erickson *et al.* 2003b) have ranged from 0.05 to 0.07 raptor fatalities per turbine per year, with most fatalities consisting of red-tailed hawks and American kestrels. Completed studies at other small wind projects have not documented any raptor fatalities (Erickson *et al.* 2001).

Considering these mortality results as well as raptor use estimates at these wind projects, it is estimated that potential raptor mortality at the Project will be within the range of raptor mortality observed at other projects in the west and midwest. We expect approximately 1 to 10 raptor fatalities per year at the Project if 136 turbines are constructed. It should be noted that the fatality estimates may vary from the expected range based on many factors, including the number of occupied raptor nests near the wind project after construction, turbine size and other site specific and/or weather variables.

American kestrels and red-tailed hawks account for much of the diurnal raptor use at the site, and are expected to be the two species of raptors with the highest fatality rates over the life of the Project. Species with low risk of collisions includes northern harrier, golden eagle, rough-legged hawk and Swainson's hawk. Northern goshawk, bald eagle, Cooper's hawk and sharp-shinned hawk are expected to have a very low risk of collision. Turkey vultures appear less susceptible to collision that most other raptors (Orloff and Flannery 1992). Very few northern harrier fatalities, Cooper's hawks, sharp-shinned hawks and rough-legged hawks and no bald eagle fatalities have been observed at wind projects to date. Golden eagle use of the site is low relative to other existing wind projects (e.g., Foote Creek Rim and Altamont Pass, Erickson et al. 2002) and the mortality risk for golden eagles is also expected to be low. Golden eagle mortality at Foote Creek Rim is estimated to be approximately 1 per 200 turbines per year (Erickson et al. 2002), and estimates at the Project are expected to be lower.

Passerines. Passerines have been the most abundant avian fatality at other wind projects studied (see Johnson et al. 2002; Young et al. 2003; Erickson et al. 2000, Erickson et al. 2001), often comprising more than 80% of the avian fatalities. Both migrant and resident passerine fatalities have been observed. Given that passerines make up the vast majority of the avian observations on-site, it is expected passerines will make up the largest proportion of fatalities. Species most common to the study area will likely be most at risk, including western meadowlark, vesper sparrow and horned lark. Horned larks have been the most commonly observed fatality at several wind projects, including Vansycle, Foote Creek Rim, Stateline, and Nine Canyon (Erickson et al. 2000, Young et al. 2003, Erickson et al. 2003a, Erickson et al. 2003b). A few large flocks of birds such as snow buntings were observed, but given their infrequent use, mortality would be expected to be low. Estimates of passerine use during daytime surveys suggest much higher use at the KVP project compared to the Wild Horse Project (Figure 18). Some nocturnal migrating songbird fatalities are expected. However, no large events have been documented at wind projects. Only two small events have been reported. At Buffalo Ridge Minnesota, fourteen migrating passerine fatalities (vireos, warblers, flycatchers) were found at two turbines during a single night in May 2002 (Johnson et al. 2002). Approximately 25 to 30 migrating passerine fatalities (mostly warblers) were observed near three turbines and a well-lit substation at the Mountaineer West Virginia Wild Horse Wildlife Baseline Study Report 35

wind project. Based on the mortality estimates from the other wind plants studied, between 50 and 300 passerine fatalities may occur per year at the Project if 136 turbines are constructed.

Carcass search studies at the Foote Creek Rim Wind Plant, Wyoming, have found avian casualties associated with guyed met towers. Based on searches of five permanent met towers at Foote Creek Rim over a three-year period, it was estimated that these towers resulted in approximately 8.1 avian casualties per tower per year (Young *et al.* 2003). The vast majority of these avian casualties were passerines. The nine permanent met towers proposed for the Project would be expected to result in collision deaths for passerines at the site, although the use of bird flight diverters on guy wires should reduce the risk of collision.

**Waterfowl.** Some waterfowl mortality has been documented at other wind plants (Erickson *et al.* 2001, Johnson *et al.* 2002 2003a, Kerlinger pers. comm., Erickson *et al.* 2003). However, studies at Foote Creek Rim, Vansycle, and Buffalo Ridge have not documented mortality of Canada geese, the only waterfowl species observed flying over the Project area. Two Canada geese fatalities were recorded at the Klondike project, in an area where relatively high use has been documented (Johnson *et al.* 2003a), and one Canada goose fatality has been documented at the Stateline Wind Project (Erickson *et al.* 2003). Because of the low use of the site by waterfowl, little waterfowl mortality would be expected from the Project.

**Other Avian Groups/Species.** Some upland game bird mortality has been documented at wind projects (Erickson *et al.* 2001, Erickson *et al.* 2003). Based on habitat and use, there is potential for mortality of some upland gamebirds such as chukars and gray partridge. Other avian groups (e.g., doves, shorebirds) occur in relatively low numbers within the study area and mortality would be expected to be very low.

## **Operations - Disturbance**

Most studies of disturbance or displacement effects have been conducted in Europe, and most of the impacts have involved wetland habitats and groups of birds not common on this Project, including waterfowl, shorebirds and waders (Larsen and Madsen 2000; Pederson and Poulsen 1991; Vauk 1990; Winkelman 1989; Winkelman 1990; Winkelman 1992). Most disturbance has involved feeding, resting, and migrating birds in these groups (Crockford 1992). European studies of disturbance to breeding birds suggest negligible impacts and disturbance effects were documented during only one study (Pedersen and Poulsen 1991). For most avian groups or species or at other European wind plants, no displacement effects on breeding birds were observed (Karlsson 1983; Phillips 1994; Winkelman 1989; Winkelman 1990).

Avian disturbance or displacement associated with wind power development has not received as much attention in the U.S. At a large wind plant on Buffalo Ridge, Minnesota, abundance of shorebirds, waterfowl, upland game birds, woodpeckers, and several groups of passerines was found to be significantly lower at survey plots with turbines than at plots without turbines. There were fewer differences in avian use as a function of distance from turbine, however, suggesting that the area of reduced use was limited primarily to those areas within 328 ft (100m) of the turbines (Johnson et al. 2000a). A sizeable portion of these effects are likely due to the direct loss of habitat near the turbine for the turbine pad and associated roads. These results are similar to those of Osborn et al. (1998) who reported that birds at Buffalo Ridge avoided flying in areas with turbines. Also at Buffalo Ridge, Leddy et al. (1999) found that densities of male songbirds were significantly lower in Conservation Reserve Program (CRP) grasslands containing turbines than in CRP grasslands without turbines. Grasslands without turbines as well as portions of grasslands located at least 591 ft (180m) from turbines had bird densities four times greater than grasslands located near turbines. Reduced avian use near turbines was attributed to avoidance of turbine noise and maintenance activities and reduced habitat effectiveness due to the presence of access roads and large gravel pads surrounding turbines (Leddy 1996; Johnson et al. 2000a).

Construction and operation of the Foote Creek Rim wind plant did not appear to cause reduced use of the wind plant and adjacent areas by most avian groups, including raptors, corvids, or passerines (Johnson *et al.* 2000b). Some reduced use of the areas near turbines was apparent for a local population of mountain plovers, although a regional downward trend was also observed during the same time period (Young, 2003 pers. comm.). A pair of golden eagles successfully nested  $\frac{1}{2}$  mile (0.80km) from the wind plant after one phase was operational and another phase was under construction.

Development of wind turbines near raptor nests may result in indirect and direct impacts to the nesting birds; however, the only report of avoidance of wind plants by raptors occurred at Buffalo Ridge, where raptor nest density on 261 km² of land surrounding a wind plant was 5.94/100 km², yet no nests were present in the 32 km² wind plant facility itself, even though habitat was similar (Usgaard *et al.* 1997). The difference between observed (0 nests) and expected (2 nests) is not statistically significant. Similar numbers of raptor nests were found before and after construction of Phase 1 of the Montezuma Hills, California wind plant (Howell and Noone 1992). A pair of golden eagles successfully nested 0.8 km from the Foote Creek Rim, Wyoming wind plant for three different years after it became operational (Johnson *et al.* 2000b), and a Swainson's hawk nested within 0.8 km of a small wind plant in Oregon (Johnson *et al.* 2003a). Anecdotal evidence indicates that raptor use of the Altamont Pass, California wind resource area (WRA) may have increased since installation of wind turbines (Orloff and Flannery 1992, American Wind Energy Association 1995).

Operation of the proposed Project would not affect raptor nests unless there were disturbance or displacement effects that caused raptors to not return to the nests close to the Project site. Impacts would be considered low since no active raptor nests were identified within  $\frac{1}{2}$  mile (0.80km) of turbines, and since there is very little raptor nesting habitat near the wind turbines.

Based on the available information, it is probable that some disturbance or displacement effects may occur to the grassland/shrub-steppe avian species occupying the study area. The extent of these effects and their significance is unknown and hard to predict but could range from none to several hundred feet, resulting in a low level of impacts.

## **Unique Species**

A list of state and federally protected species that potentially occur within the Project area was generated to assess the potential for impacts to these species (See Table 14). Species were identified based on the WDFW Species of Concern list, which includes state listed endangered, threatened, sensitive and candidate species; and the USFWS, Central Washington Ecological Services office list of Endangered, Threatened, Proposed, Candidate and Species of Concern for Kittitas County.

Information about occurrence of these species in the Project area is based largely on the following resources:

- Habitat mapping and predicted distribution from Washington State Gap Analysis Program (GAP) project;
- WDFW Priority Habitats and Species (PHS) records for the project area and a buffer or approximately 5 miles (8km);
- Breeding Bird Atlas of Washington State, Location Data and Predicted Distributions (Smith *et al.* 1997);
- Baseline field studies being conducted on site (this report); and
- Other published literature where available.

## Critical Habitat

According to Washington Department of Fish and Wildlife (WDFW), there are no riparian areas within the project areas labeled as priority habitats. Riparian and priority habitats are listed as Critical Areas by Kittitas County (Kittitas County Critical Area Ordinance Title 17A.02.230 and 17A.02.250). No riparian areas will be impacted by construction of project roads and wind turbines. No impacts are anticipated from the transmission line crossing of Parke Creek (WDFW letter, Exhibit 11, WH ASC).

The Endangered Species Act defines critical habitat for threatened or endangered species as specific area(s) within the geographical range of a species where physical or biological features are found that are essential to the conservation of the species and which may require special management consideration or protection. Critical habitat is a specific geographic area designated by the USFWS for a particular species.

Under the ESA, it is unlawful to adversely modify designated critical habitat. According to the USFWS letter, critical habitat for the northern spotted owl may be present at or near the proposed wind plant. However, it was determined that no critical spotted owl habitat is present within the Project area after further review of critical habitat maps by the USFWS (Skip Stonesifer, USFWS, pers. comm.). Therefore, construction, maintenance, and operation of the proposed Project will not adversely modify critical habitat for endangered or threatened species.

## No Effect

Resource investigations indicated that gray wolf, bull trout, Canada lynx, northern spotted owl, and western yellow-billed cuckoo are not likely to occur or only accidentally occur in the Project area and that essential habitat for some of these species is lacking within the Project area. The Project is not likely to impact these species.

Group/Species	Status ^a	Notes
Mammals		
black-tailed jack rabbit (Lepus californicus)	SC	Documented as occurring near the Project area. One observation during the baseline study. The species is likely to occur within the Project area due to the presence of suitable sagebrush and shrub habitats.
white-tailed jack rabbit (Lepus townsendi)	SC	Documented as occurring near the Project area. 6 individuals were observed during the baseline study. The species is likely to occur within the Project area due to the presence of suitable sagebrush and shrub habitats.
brush prairie pocket gopher ( <i>Thomomys talpoides</i> douglasi)	SC	Project occurs within the potential range of the species. No individuals have been documented near the Project area.
Merriam's shrew (Sorex merriami)	SC	Project occurs within the potential range of the species. No individuals have been documented near the Project area.
Townsend's big-eared bat (Coryhorhinus townsendii)	SC	Project occurs within the potential range of the species. No individuals have been documented near the Project area.
Amphibians and Reptiles		
Columbia spotted frog ( <i>Rana luteiventris</i> )	SC	The Project area occurs within the potential range for the species, although no observations were made during the baseline study. However, impacts to wetlands and springs from the Project are not anticipated, and no impacts to the species are anticipated. The Project area occurs within the potential range for the species
western toad (Bufo boreas)	SC	although no observations were made during the baseline study. However, impacts to wetlands and springs from the Project are expected not anticipated, and no impacts to the species are anticipated.
sharptail snake ( <i>Contia tenuis</i> )	SC	The Project area occurs within the potential range for the species although no observations were made during the baseline study.
striped whipsnake (Masticophis taeniatus)	SC	The Project area occurs within the potential range for the species although no observations were made during the baseline study.

Table 14. Species of special status documented as occurring or likely to occur within the vicinity of theProject area.

Table 14 (continued).		
Group/Species	Status ^a	Notes
Raptors		
bald eagle (Haliaeetus leucocephalus)	ST FT	One bald eagle was observed during the winter. No documented breeding records within two miles of the Project. Bald eagles may rarely fly through the Project area, especially in the winter. No impacts to bald eagles are anticipated. Removal and reduction of cattle grazing may reduce bald eagle use and risk, due to lack of carrion.
golden eagle (Aquila chrysaetos)	SC	WDFW has historic nesting records within two miles of the Project area. No active golden eagle nests were observed during raptor nest surveys in 2003. Mean use of the Project area was low overall, but highest in the fall (0.143 observations / 30-minute survey) and winter (0.082 observations / 30 minute survey). Two individuals were observed during the in-transit surveys
peregrine falcon (Falco peregrinus)	SS	Potential exists for species to rarely fly through the Project area during migration or rarely to forage in breeding season. No peregrine falcons were observed during raptor nest, fixed-point, in-transit count surveys. Active eyries do exist more than 6.5 miles (10.5km) to the east of the Project between the Quilomene Creek and Vantage. No impacts to peregrine falcons are expected
burrowing owl (Athene cunicularia)	SC	One documented burrowing owl breeding area occurs 3- 4 miles (5-6km) southeast of the Project area and transmission route. However, no burrowing owls were observed during surveys within the Project area, and no impacts to the species are expected.
ferruginous hawk (Buteo regalis)	ST	The species is considered a rare migrant and potential breeder within the Project area. No ferruginous hawks were observed during fixed-point, in-transit, or raptor nest surveys. No impacts to the species are anticipated.
merlin (Falco columbarius)	SC	Two observations of merlins were noted during fixed point surveys. The species is considered a rare migrant through the Project area and is not likely to breed within the Project area. No impacts to migrating merlins are expected.
flammulated owl (Otus flammeolus)	SC	owls. Suitable habitat exists for the species within patches of conifer within and to the north of the Project area. If flammulated owls occur within the Project area, a low potential exists for the species to collide with turbines. Only one flammulated owl has been documented as a fatality at wind plants within the U.S. (Erickson <i>et al.</i> 2001).
northern goshawk (Accipiter gentiles)	SC	Two observations of two individuals were made within the Project area during the winter of 2002 - 2003. Overall use of the Project area by breeding northern goshawks appears to be relatively low, and no impacts to the species are anticipated.
Table 14 (continued).		
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Group/Species	Status ^a	Notes
Grouse		
sage grouse (Centrocercus urophasianus)	ST	The Project area occurs within a mapped area of historic high use. One documented lek is present approximately 2.75 miles (4.43km) from a proposed southern transmission route. No sage grouse or leks were observed during fixed point or lek surveys within the Project area, although pellets were found incidentally on the south side of Whiskey Dick Mountain in the fall. Although potentially used historically, the Project area is not currently occupied by sage grouse leks, and no to very low impacts to the species are anticipated. The project is located within the Colockum Management Unit in the Draft Washington Recovery Plan for Sage- grouse. This managment unit is most important for potential connectivity between the breeding population on the YTC and the populations in Douglas County.
sharp-tailed grouse ( <i>Tympanuchus phasianellus</i> )	ST	The WDFW has one record of a sharp-tailed grouse sighting from 1981 approximately $4 - 6$ miles (6-10km) from the Project area and 3 miles northwest of the BPA feeder line. No sharp-tailed grouse were observed during surveys. It is unlikely that the species occupies the Project area and no impacts are expected.
Waterbirds / Waterfowl		
common loon ( <i>Gavia immer</i> )	SS	Common loons are considered a rare migrant through the Project area. No loons were observed during surveys, and no impacts to the species are anticipated.
western grebe (Aechmophorus occidentalis)	SC	Western grebes are considered a rare migrant through the Project area. No grebes were observed during surveys, and no impacts to the species are anticipated.
Songbirds		
Lewis' woodpecker ( <i>Melanerpes lewis</i> )	SC	The Project occurs within the potential range of the Lewis' woodpecker. Suitable habitat exists for the species within patches of conifer within and to the north of the Project area. However, no Lewis' woodpeckers were observed during surveys, and no impacts to the species are anticipated.
white-headed woodpecker (Picoides albolarvatus)	SC	The Project occurs within the potential range of the White-headed woodpecker. Suitable habitat exists for the species within patches of conifer within and to the north of the Project area. However, no White-headed woodpeckers were observed during surveys, and no impacts to the species are anticipated.
loggerhead shrike (Lanius ludovicianus)	SC	Three observations totaling four individuals were observed within the Project area during the spring of 2002 and 2003. One observation was made along the PSE transmission route. Use of the Project area by breeding loggerhead shrikes appears to be relatively low, and low impacts to the species are anticipated.

Table 14 (con	ntinued).							
Group/Speci	ies	Status ^a	Notes					
sage sparrow ( <i>Amphispiza belli</i> ) sage thrasher ( <i>Oreoscoptes montanus</i> ) Vaux's swift ( <i>Chaetura vauxi</i> )		SC	Sage sparrows are documented as occurring within sagebrush habitats within and surrounding the Project are during fixed point surveys and by the WDFW. The potential exists for the migrating individuals to collide with turbines. Observations of breeding individuals indicate that the species generally does not fly within blade height (Table 7 and 9)					
		SC	Sage thrashers are documented as occurring within sagebrush habitats within and surrounding the Project during the fixed and in-transit surveys. The potential exists for the migrating individuals to collide with turbines. Observations of breeding individuals indicate that the species generally does not fly within blade height (Table 7 and 9).					
		SC	The Project area occurs within the potential range of the Vaux's swift. No individuals were observed during fixed point surveys. The potential exists for migrating individuals to collide with turbines, however, the overall risk to the species is considered low.					
• FE	Federal Endanger	red,						
FT	Federal Threaten	ed						
FC	Federal Candidat	e						
FSC	Federal Species o	of Concern						
SE	State Endangere							
ST	State Threatened							
SC	State Candidate							
SS	State Sensitive							

#### Potentially Impacted Species

#### <u>Birds</u>

**Bald Eagle.** Only one bald eagle was observed during surveys within the Project area. The bald eagle was observed during the winter, and no bald eagle nests were observed during raptor nest surveys. Based on the apparent low use of the Project area by bald eagles, impacts to the species are considered negligible. Bald eagle is the only federal threatened or endangered species documented to occur on the Project site. No bald eagle fatalities have been observed at other wind projects (Erickson *et al.* 2001), and many have estimated bald eagle use similar or higher than this Project.

During Project construction the possibility of mortality effects to bald eagles is considered negligible and very unlikely to occur. Bald eagles in the area during the construction period are unlikely to occur within the construction zones due to disturbances and therefore unlikely to be at risk of construction related mortality. In addition, the majority of construction is likely to take place during late spring, summer and fall months when bald eagles very rarely or do not occur in the area.

During Project operations, based on the available information about bald eagle use of the site, potential bald eagle mortality due to operation of the wind plant will confined to the winter and early spring

seasons. Bald eagles will not be at risk from the wind plant in the summer or fall. Bald eagles are not expected to frequently occur within the wind plant and operation of the wind plant should have minimal disturbance on bald eagles. Additionally, proposed mitigation measures are intended to further reduce the possibility of disturbance or displacement.

Although the risk is low, the potential exists for bald eagle fatalities during operation of the Project. The status of bald eagle in the Project area and range wide is not expected to change due to the Project. Bald eagle populations appear to be generally increasing and the USFWS has proposed the species for delisting (USFWS 1999). Bald eagle populations in Washington and throughout North America will likely continue to increase during and after the Project is constructed.

**Golden Eagle.** Although no active nests were documented during surveys, golden eagles were documented during fixed point surveys throughout the year and golden eagles have nested historically within two miles of the Project area. Overall use of the Project area by golden eagles is relatively low compared to other wind plants where golden eagle fatalities have been documented. While the potential exists for golden eagles to collide with turbines, overall risks to golden eagle populations are considered low and only a few individuals are expected to collide with turbines over the life of the Project.

**Sage Sparrow and Sage Thrasher.** Sage sparrows and sage thrashers breed within sagebrush and shrub habitats within the Project area. Most sagebrush and other shrub habitats within the Project area occur on the sides of ridges and in drainages, while most turbines will be located on ridge tops lacking dense shrub habitats. Observations of breeding individuals indicate that the species generally does not fly within blade height (Table 7 and 9). The potential exists for the migrating individuals to collide with turbines. It is likely that the presence of turbines, roads and associated facilities will result in local displacement of breeding sage sparrows and sage thrashers from shrub habitats near Project facilities. However, based on research in Minnesota, displacement effects will likely be limited to areas within 328 ft (100m) of turbines and associated facilities (Johnson *et al.* 2000a). Overall impacts to sage sparrow and sage thrasher populations are considered negligible.

**Sage Grouse.** The Project area has been used historically by sage grouse (WDFW PHS Data). Sage grouse have historically been observed in the Project area, especially in the fall and winter, with the most recent observations that were entered into the WDFW PHS data occurring in the fall 1997. Apparently no leks have been observed near the Project area based on systematic searches, as well as incidental observations. The nearest known lek is 5 miles (16km) south of the Project area and 2.75 miles (4.4km) at the closest point to the proposed PSE transmission line (Figure 6). At least one brood was observed in the general vicinity of the Project in the early 1990's, suggesting nesting may have occurred near the Project at that time (WDFW PHS). No sage grouse or leks were observed during targeted surveys in March and April 2003 within and surrounding the proposed Project area. In addition, no sage grouse were observed during avian use surveys between May 10, 2002 and May 22, 2003. Two sage grouse pellet groups were observed on the south side of Whiskey Dick Mountain during the fall 2002.

Currently, two populations of sage grouse remain in Washington; one within the Yakima Training Center in Yakima and Kittitas counties south of the Project area, and one within Douglas and Grant counties to the northeast of the Project area. The sage grouse population in 1997 was estimated at approximately 1000 birds, with 600 located in Douglas County and 400 birds on the YTC (Hays *et al.* 1998).

The Project area is located within the western portion of the Colockum sage grouse management unit, as defined in the Draft Washington Sage Grouse Recovery Plan (Stinson *et al.* 2003). The Colockum management unit primarily provides a possible corridor between the sage grouse population within the Yakima Training Center to the south of the Project and the populations to the north and west of the Project in Douglas County population. The potential function of the Colochum management unit includes Wild Horse Wildlife Baseline Study Report 43

secondary breeding¹, connectivity², and seasonal use³ with uncertain but apparently limited potential for reintroduction and established breeding.

Presence of very young broods at the Foote Creek Rim Wind Project suggest nesting has likely occurred somewhere near wind turbines, although the exact nesting location relative to the wind project is not known (R. Good pers. comm.). Historic data suggest the potential for sage grouse to use the Proposed Project area for winter habitat and for potential movement between the YTC and Douglas County populations. It would appear there is currently much less likelihood of consistent use of the Project area for nesting, based on no documented birds observed in the Project vicinity during the breeding season in the past 10 years, the current nesting habitat quality, and other factors (Stinson et al. 2003). Important components to nest sites and nest success include a large grass and sagebrush canopy cover (Sveum 1995). The grass cover component would appear to be lacking within the Project area, due to current grazing practices. Proposed mitigation measures include reduction and possible elimination of domestic cattle and horse grazing within the Project area, which likely would improve residual grass cover and potential nesting, brood-rearing and wintering habitat for sage grouse. It is not known what impact the project will have on seasonal movements and movements, if they exist, between the two existing populations. There still does exist relatively large blocks of shrub-steppe habitats within WDFW lands to the east that may serve to connect the two populations. Controlled access to the project area will limit human activity, and in fact, may reduce human disturbance levels compared to current levels.

**Peregrine Falcon.** The nearest known peregrine eyrie is located approximately 6.5 miles (10.5km) from the Project area. No peregrine falcon eyries were located during raptor nest surveys. Cliff habitat is present within two miles of the Project area, and the potential exists for peregrine falcons to nest within these cliff habitats. However, most suitable peregrine falcon nesting habitat is located along the Columbia River and it is unlikely that peregrine falcons will nest within two miles of the Project area. Use of the Project area by peregrine falcons is likely limited rare dispersal events or occasional individuals migrating or hunting within the Project area. Over the life of the Project there is a very low risk that an individual peregrine falcon will collide with turbines, however, there will be no effect to peregrine falcon populations from the Project.

**Burrowing Owl.** Although no burrowing owls have been documented within the Project area during surveys, burrowing owl breeding areas have been designated by the WDFW 3-4 miles (5-6km) southeast of the Project area. The potential exists for breeding burrowing owls to occur within the Project area. However, considering the lack of sightings within the Project area, burrowing owls likely occur only occasionally within the Project area, and no impacts to burrowing owl populations are expected.

**Other Bird Species.** The potential range of several other species listed as candidates under the Washington Endangered Species Act overlap with the Project, including ferruginous hawk, flammulated owl, merlin, northern goshawk, sharp-tailed grouse, common loon, western grebe, Lewis' woodpecker, white-headed woodpecker, and Vaux's swift (Table 14). The potential exists for these species to occur within the Project area; however, use of the Project area by these species is expected to occur very rarely during migration or dispersal events. The potential exists for a few individuals of each species to collide with turbines over the life of the Project; however, impacts to these species populations are not anticipated.

³ areas likely to be used seasonally during winter, summer, or fall.

¹ areas that may support limited breeding

² providing habitat connectivity between breeding areas or seasonal use areas

Wild Horse Wildlife Baseline Study Report

#### Mammals

The Project occurs within the potential range of several species of federally and state protected mammals, which are unlikely to occur within the Project area due to habitat constraints and/or uncertain population status in Washington. These species include Townsend's big-eared bat, long-legged myotis, and long-eared myotis. These species are not expected to occur within the Project area and no impacts to these species are likely to occur.

Both the white-tailed and black-tailed jackrabbits have been documented in the Project area. The potential exists for individuals to be killed by vehicles on roads, and some suitable habitat for these species will be lost to turbine pads and road construction. Limits on vehicle speeds within the Project will minimize the potential for road kills, and the permanent loss of suitable habitat is relatively small. Overall, impacts to these species should be minimal.

Suitable habitat for three bat species, which are listed as federal species of concern, is present within the Project area: fringed myotis, small-footed myotis and Yuma myotis. However, only general descriptions of habitat requirements and potential distribution are available for the three species. Very little is known concerning the ecology of the three species, making it even more difficult to accurately predict potential impacts to these species. To date, we are unaware of any documented fatalities of these species at wind projects within the U.S.

Merriam's shrew has been documented within Kittitas County, and suitable habitat for the species occurs within the Project area. The potential also exists for the brush prairie pocket gopher to occur within the Project area. Assuming these species are present within the Project area, the construction of turbine pads and roads, and vehicle traffic has the potential to crush individuals within burrows or moving about above ground. Overall, total impacts to habitat are small and no significant impacts to populations of these species are expected to occur as a result of this Project.

#### Reptiles and Amphibians

The Project area occurs within the potential range of the striped whipsnake, sharptail snake, western toad and Columbia spotted frog. There is very little suitable habitat for amphibians or aquatic reptiles (e.g., turtles) in the study area. None of these sensitive status reptiles or amphibians were documented on the Project site and no impacts are anticipated.

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Figure 3. Wind turbine dimensions































# APPENDIX A – USFWS LETTER



# United States Department of the Interior

FISH AND WILDLIFE SERVICE.

Central Washington Ecological Services Office 215 Melody Lane, Suite 119 Wenatchee, Washington 98801 Phone: (509) 665-3508 Fax: (509) 665-3509

November 19, 2002

Rhett E. Good WEST, Inc. 203 Central Avenue 2003 (antral avenue Cheyenne, Wyoming \$200**45** 

RE. Species List Request FWS Reference: 03-SP-W0047

Dear Mr. Good:

Thank you for your request dated November 26, 2002. The following threatened or endangered species may be present, at or near the proposed wind plant in Kittitas County, Washington. KITTITAS COUNTY

LISTED Endangered Gray wolf (Canis lupus)

<u>Threatened</u> Bald cagle (Haliaeetus leucocephalus) Bull trout (Salvelinus confluentus) Canada lyrot (Lyrtx canadensis) Northern spotted owl (Stru occidentalis caurina) Ute ladies '-tresses (Spiranthes diluvialis), plant

Designated Critical habitat for the northern spotted owl

PROPOSED None

# CANDIDATE

Basalt daisy (Erigeron basalticus), plant Western sage grouse (Centrocercus urophasianus phatos) Western yellow-billed cuckoo (Coccyzus americanus) Western yellow-billed cuckoo (Coccyzus americanus)

If there is federal agency involvement in this project (funding, authorization, or other action),

the involved federal agency must meet its responsibilities under section 7 of the Endangered Species Act of 1973, as amended (Act), as outlined in Enclosure A. Enclosure A includes a discussion of the contents of a Biological Assessment (BA), which provides an analysis of the impacts of the project on listed and proposed species, and designated and proposed critical habitat. Preparation of a BA is required for all major construction projects. Even if a BA is not prepared, potential project effects on listed and proposed species should be addressed in the environmental review for this project. Federal agencies may designate, in writing, a non-federal representative to prepare a BA. However, the involved federal agency retains responsibility for the BA, its adequacy, and ultimate compliance with section 7 of the Act.

Preparation of a BA would be prudent when listed or proposed species, or designated or proposed critical habitat, occur within the project area. Should the BA determine that a listed species is likely to be affected by the project, the involved federal agency should request section 7 consultation with the U.S. Fish and Wildlife Service (Service). Us proposed species is likely to be jeopardized by the project, regulations require conferencing between the involved federal agency and the Service. If the BA concludes that the project will have no effect on any listed or proposed species, we would appreciate receiving a copy for our information

Candidate species receive no protection under the Act, but are included for your use during planning of the project. Candidate species could be formally proposed and listed during project planning, thereby falling within the scope of section 7 of the Act. Protection provided to these species now may preclude possible listing in the future. If evaluation of the subject project indicates that it is likely to adversely impact a candidate species, we encourage you to modify the project to minimize/avoid these impacts.

If there is no federal agency involvement in your project, and you determine that it may negatively impact a listed or proposed species, you may contact us regarding the potential need for permitting your actions under section 10 of the Act.

Several species of anadromous fishes that have been listed by the National Marine Fisheries Service (NMFS) may occur in the project area. Please contact NMFS in Seattle, Wushington, at (206) 526-6150, in Portland, Oregon, at (503) 231–2319, or in Boise, Idaho, at (208) 378-5696 to reduced a list of these species.

If you would like information concerning state listed species or species of concern, you may contact the Washington Department of Fish and Wildlife, at (360) 902–2543, for fish and wildlife species: or the Washington Department of Natural Resources, at (360) 902-1667, for plant species.

This letter fulfills the requirements of the Service under section 7 of the Act. Should the project plans change significantly, or if the project is delayed more than 90 days, you should request an update to this response.

Thank you for your efforts to protect our nation's species and their habitats. If you have any questions concerning the above information, please contact Skip Stonesifer at (509)664-2793.

Sincerely,

Supervisor

Enclosure

# Enclosure A

# Responsibility of Federal Agencies under Section 7 of the Endangered Species Act

# Section 7(a) - Consultation/Conferencing

- Requires: 1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;
  - 2) Consultation with the U.S. Fish and Wildlife Service (Service) when a federal action may affect a listed species to ensure that any action authorized, funded, or carried out by a federal agency will not jeopardize the continued existence of listed species, or result in destruction or adverse modification of critical habitat. The process is initiated by the federal agency after determining that the action may affect a listed species; and
  - Conferencing with the Service when a federal action may jeopardize the continued existence of a proposed species, or result in destruction or adverse modification of proposed critical habitat.

# Section 7(c) Biological Assessment for Major Construction Activities

Requires (ederal agencies or their designees to prepare a Biological Assessment (BA) for major construction activities¹. The BA analyzes the effects of the action, including indirect effects and effects of interrelated or interdependent activities, on listed and proposed species, and designated and proposed critical habitat. The process begins with a request to the Service for a species list. If the BA is not initiated within 90 days of receipt of the species list, the accuracy of the list should be verified with the Service. The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable between the Service and the involved federal agency).

We recommend the following for inclusion in a BA: an onsite inspection of the area to be affected by the proposal, which may include a detailed survey of the area to determine if listed or proposed species are present; a review of pertinent literature and scientific data to determine the species' distribution, habitat needs, and other biological requirements; interviews with experts, including those within the Service, state conservation departments, universities, and others who may have data not yet published in scientific literature; an analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; and an analysis of alternative actions considered. The BA should document the results of the impacts analysis, including a discussion of study methods used, any problems encountered, and other relevant information. The BA should conclude whether or not any listed species may be affected, proposed species may be jeopardized, or critical habitat may be adversely modified by the project. Upon completion, the BA should be forwarded to the Service.

Major concerns that should be addressed in a BA for listed and proposed animal species include:

- 1. Level of use of the project area by the species, and amount or location of critical habitat;
- 2. Effect(s) of the project on the species' primary feeding, breeding, and sheltering areas;
- Impacts from project construction and implementation (e.g., increased noise levels, increased human activity and/or access, loss or degradation of habitat) that may result in disturbance to the species and/or their avoidance of the project area or critical habitat.

Major concerns that should be addressed in a BA for listed or proposed plant species include:

- 1. Distribution of the taxon in the project area;
- 2. Disturbance (e.g., trampling, collecting) of individual plants or loss of habitat; and
- 3. Changes in hydrology where the taxon is found.

#### Section 7(d) - Irreversible or Irretrievable Commitment of Resources

Requires that, after initiation or reinitiation of consultation required under section 7(a)(2), the Federal agency and any applicant shall make no irreversible or irretrievable commitment of resources with respect to the action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternatives which would avoid violating section 7(a)(2). This prohibition is in force during the consultation process and continues until the requirements of section 7(a)(2) are satisfied

¹ A major construction activity is a construction project, or other undertaking having similar physical impacts, which is a major action significantly affecting the quality of the human environment as referred to in the National Environmental Policy Act [42 U.S.C. 4332 (2)(c)].

#### Enclosure B

### Additional Information for Spiranthes diluvialis - Ute Ladies'-treases Status: Threatened

Spiranthes dihevialis was first described in 1984 (Sheviak 1984), and it is not yet included in many of the dichotomous keys commonly used by botanists in the northwest or Great Basin regions. It is found up to about 6,000 feet in elevation throughout much of its range in the western United States, below the lower margin of montane forests or in the transitional zone. It generally occurs in wetland and riparan areas of open shrub or grassland habitats, including springs, messe to wet meadows, river meanders, and flood plains. This species has only recently been recorded on a few sites in central Washington, where it can occur at relatively low elevations (down to roughly 700 feet in Chelan County). It is possible that the species occurs in other appropriate wetland and riparian areas in central and extern Washington.

Ute ladies'-tresses is a perennial, terrestrial orchid (family Orchidaceae) with stems 20 to 50 centimeters (cm) (8 to 20 inches (in]) tall, arising from tuberously thickened roots. Its narrow (0.5 to 1 cm; 0.2 to 0.4 in) leaves are about 28 cm (11 in) long at the base of the stem, and become reduced in size going up the stem. The flowers consist of 7 to 32 small (0.8 to 1.5 cm; 0.1 to 0.6 in) white or ivory flowers clustered into a spike arrangement at the top of the stem. The species is characterized by whitish, stout, ringent (gaping at the mouth) flowers. The sepals and petals, except for the lip, are rather straight, although the lateral sepals are variably oriented, often spreading abriptly from the base of the flower. Sepals are sometimes free to the base.

The non-blooming plants of Ute ladies'-tresses are very similar to those of the widespread, congeneric species S romanzoffiana - hooded ladies' tresses. Usually, it is only possible to positively identify Ute ladies'-tresses when it is flowering. S. romanzoffiana has a tight helix of inflated ascending flowers around the spike and lateral appressed sepals. S. diluvialis has flowers facing directly away from the stalk, neither ascending nor nodding, and appressed or tree lateral sepals (please refer to the attached drawings). Ute ladies'- tresses generally blooms from late July through September, depending on location and climatic conditions. However, in some areas, including central Washington, this species may bloom in early July or as late as early October. Bomblebees are apparently required for pollination.

Manire plants may not produce above ground shoots for one or more growing seasons, or may exhibit vegetative shoots only. Orchids generally require symbiotic associations with mycorthizal fungi for seed germination. In addition, many plants of some *Spiranthes* species are initially saprophytic, and persist underground for several years before emerging (USFWS 1995). Therefore, it may require multiple years of surveys to document the presence or absence of Ute ladies'-tresses in a given area.

This species may be adversely affected by alterations of its habitar due to livestock grazing, vegetation removal, excavation, construction, stream channelization, and other actions that alter hydrology

#### References Cited

- Sheviak, C.J. 1984. Spiranthes diluvialis (Orchidaceae), a new species from the western United States Brittonia 36(1):8-14.
- USFWS: 1995 Ute Ladies'-tresses (Spiranthes diluviality: Agency Review Draft Recovery Plan. Prepared by the U.S. Fish and Wildlife Service Ute Ladies'-tresses Recovery Team for Region 6, Denver, Colorado.

27 ç Å Elle, De Horse Project Area 1 括 F. L *b*  $\sim$ Ŋ 25 Der **<**2003 Miles

APPENDIX B – WDFW Big Game Survey Data



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# Figure 1a, SV1 Vantage HWY East of Beacon Ridge Road looking west: Base Photo



## Figure 1b, SV1 Vantage HWY East of Beacon Ridge Road looking west: Visual Simulation of Project and Feeder Line



# Figure 1c, SV1 Vantage HWY East of Beacon Ridge Road looking west: Simulation of feeder transmission Lines



# Figure 2a, SV2 Vantage HWY at Parke Creek Road looking east: Base Photo



Figure 2b, SV2 Vantage HWY at Parke Creek Road looking east: Visual Simulation of Project



# Figure 2c, SV2 Vantage HWY at Parke Creek Road looking east: Visual Simulation of Project with 60m RD WTG



# Figure 2d, SV2 Vantage HWY at Parke Creek Road looking east: Visual Simulation of Project with 90m RD WTGs



Figure 3a, SV3 Beacon Ridge in T19N, R21E, Section 32 looking south: Base Photo



Figure 3b, SV3 Beacon Ridge in T19N, R21E, Section 32 looking south: Visual Simulation of Project



# Figure 4a, SV4 Patrick Ave and Clerf road looking east: Base Photo



# Figure 4b, SV4 Patrick Ave and Clerf road looking east: Visual Simulation of Project



# Figure 4c, SV4 Patrick Ave and Clerf road looking east: Visual Simulation of Project with 60m RD WTGs



# Figure 4d, SV4 Patrick Ave and Clerf road looking east: Visual Simulation of Project with 90m RD WTGs



# Figure 5a, SV5 I-90 west of Silica Road exit looking east: Base Photo



Figure 5b, SV5 I-90 west of Silica Road exit looking east: Visual Simulation of Project



# Figure 6a, SV6 I-90 east of Stevens Road looking west: Base Photo



Figure 6b, SV6 I-90 east of Stevens Road looking west: Visual Simulation of Project Substation and Feeder Lines



## EXHIBIT 18-F

Photograph of Nine Canyons Wind Power Project at Night Illustrating a Typical Lighting Visual Impact.



Daytime photograph of the Nine Canyon Wind Power Project Site from a helicopter. The yellow arrow indicates the direction from which the night photo was taken.



Nine Canyon Wind Power Project at Night.



Nine Canyon Wind Power Project Night Photo Location and Direction

# THE EFFECT OF WIND DEVELOPMENT ON LOCAL PROPERTY VALUES



**Renewable Energy Policy Project** 

George Sterzinger Fredric Beck Damian Kostiuk

Analytical Report | May 2003

# Authors

#### George Sterzinger, REPP Executive Director gsterzinger@repp.org

### Fredric Beck, REPP Research Manager fbeck@repp.org

#### Damian Kostiuk, REPP Research & Communications Specialist dkostiuk@repp.org

All authors can be reached at REPP's offices: (202) 293-2898

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Renewable Energy Policy Project 1612 K Street, NW, Suite 202 Washington, D.C. 20006 Tel: (202) 293-2898 Fax: (202) 293-5857 www.repp.org

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# The Effect of Wind Development on Local Property Values

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# **Chapter I. Project Overview**

### The Claim Against Wind Development

Wind energy is the fastest growing domestic energy resource. Between 1998 and 2002 installed capacity grew from 1848 MW to 4685 MW, a compound growth rate of 26 percent. Since wind energy is now broadly competitive with many traditional generation resources, there is wide expectation that the growth rate of the past five years will continue. (Source for statistics: www.awea.org).

As the pace of wind project development has increased, opponents have raised claims in the media and at siting hearings that wind development will lower the value of property within view of the turbines. This is a serious charge that deserves to be seriously examined.

### No Existing Empirical Support

As a result of the expansion of capacity from 1998 to 2002, it is reasonable to expect any negative effect would be revealed in an analysis of how already existing projects have affected property values. A search for either European or United States studies on the effect of wind development on property values revealed that no systematic review has as yet been undertaken.

As noted above, the pace of development and siting hearings is likely to continue, which makes it important to do systematic research in order to establish whether there is any basis for the claims about harm to property values. (For recent press accounts of opposition claims see: The Charleston Gazette, WV, March 30, 2003; and Copley News Service. Ottawa, IL, April 11, 2003).

This REPP Analytical Report reviews data on property sales in the vicinity of wind projects and uses statistical analysis to determine whether and the extent to which the presence of a wind power project has had an influence on the prices at which properties have been sold. The hypothesis underlying this analysis is that if wind development can reasonably be claimed to hurt property values, then a careful review of the sales data should show a negative effect on property values within the viewshed of the projects.

### A Serious Charge Seriously Examined

The first step in this analysis required assembling a database covering every wind development that came on-line after 1998 with 10 MW installed capacity or greater. (Note: For this Report we cut off projects that came on-line after 2001 because they would have insufficient data at this time to allow a reasonable analysis. These projects can be added in future Reports, however.) For the purposes of this analysis, the wind developments were considered to have a visual impact for the area within five miles of the turbines. The five mile threshold was selected because review of the literature and field experience suggests that although wind turbines may be visible beyond five miles, beyond this distance, they do not tend to be highly noticeable, and they have relatively little influence on the landscape's overall character and quality. For a time period covering roughly six years and straddling the on-line date of the projects, we gathered the records for all property sales for the view shed and for a community comparable to the view shed. For all projects for which we could find sufficient data, we then conducted a statistical analysis to determine how property values changed over time in the view shed and in the comparable community. This database contained more than 25,000 records of property sales within the view shed and the selected comparable communities.

### **Three Case Examinations**

REPP looked at price changes for each of the ten projects in three ways: Case 1 looked at the changes in the view shed and comparable community for the entire period of the study; Case 2 looked at how property values changed in the view shed before and after the project came on-line; and Case 3 looked at how property values changed in the view shed and comparable community after the project came on-line.

**Case 1** looked first at how prices changed over the entire period of study for the view shed and comparable region. Where possible, we tried to collect data for three years preceding and three years following the on-line date of the project. For the ten projects analyzed, property values increased faster in the view shed in eight of the ten projects. In the two projects where the view shed values increased slower than for the comparable community, special circumstances make the results questionable. Kern County, California is a site that has had wind development since 1981. Because of the existence of the old wind machines, the site does not provide a look at how the new wind turbines will affect property values. For Fayette County, Pennsylvania the statistical explanation was very poor. For the view shed the statistical analysis could explain only 2 percent of the total change in prices.

**Case 2** compared how prices changed in the view shed before and after the projects came on-line. For the ten projects analyzed, in nine of the ten cases the property values increased faster after the project came on line than they did before. The only project to have slower property value growth after the on-line date was Kewaunee County, Wisconsin. Since Case 2 looks only at the view shed, it is possible that external factors drove up prices faster after the on-line date and that analysis is therefore picking up a factor other than the wind development.

Finally, **Case 3** looked at how prices changed for both the view shed and the comparable region, but only for the period after the projects came online. Once again, for nine of the ten projects analyzed, the property values increased faster in the view shed than they did for the comparable community. The only project to see faster property value increases in the comparable community was Kern County, California. The same caution applied to Case 1 is necessary in interpreting these results.

If property values had been harmed by being within the view-shed of major wind developments, then we expected that to be shown in a majority of the projects analyzed. Instead, to the contrary, we found that for the great majority of projects the property values actually rose more quickly in the view shed than they did in the comparable community. Moreover, values increased faster in the view shed after the projects came on-line than they did before. Finally, after projects came on-line, values increased faster in the view shed than they did in the comparable community. In all, we analyzed ten projects in three cases; we looked at thirty individual analyses and found that in twenty-six of those, property values in the affected view shed performed better than the alternative.

This study is an empirical review of the changes in property values over time and does not attempt to present a model to explain all the influences on property values. The analysis we conducted was done solely to determine whether the existing data could be interpreted as supporting the claim that wind development harms property values. It would be desirable in future studies to expand the variables incorporated into the analysis and to refine the view shed in order to look at the relationship between property values and the precise distance from development. However, the limitations imposed by gathering data for a consistent analysis of all major developments done post-1998 made those refinements impossible for this study. The statistical analysis of all property sales in the view shed and the comparable community done for this Report provides no evidence that wind development has harmed property values within the view shed. The results from one of the three Cases analyzed are summarized in Table 1 and Figure 1 below.

### **Regression Analysis**

REPP used standard simple statistical regression analyses to determine how property values changed over time in the view shed and the comparable community. In very general terms, a regression analysis "fits" a linear relationship, a line, to the available database. The calculated line will have a slope, which in our analysis is the monthly change in average price for the area and time period studied. Once we gathered the data and conducted the regression analysis, we compared the slope of the line for the view shed with the slope of the line for the comparable community (or for the view shed before and after the wind project came on-line).

Project/On-Line Date	Monthly Average Price Change (\$/month)				
	View Shed	Comparable			
Riverside County, CA	\$1,719.65	\$814.17			
Madison County, NY (Madison)	\$576.22	\$245.51			
Carson County, TX	\$620.47	\$296.54			
Kewaunee County, WI	\$434.48	\$118.18			
Searsburg, VT	\$536.41	\$330.81			
Madison County, NY (Fenner)	\$368.47	\$245.51			
Somerset County, PA	\$190.07	\$100.06			
Buena Vista County, IA	\$401.86	\$341.87			
Kern County, CA	\$492.38	\$684.16			
Fayette County, PA	\$115.96	\$479.20			

#### Table 1: Summary of Statistical Model Results for Case 1

While regression analysis gives the best fit for the data available, it is also important to consider how "good" (in a statistical sense) the fit of the line to the data is. The regression will predict values that can be compared to the actual or observed values. One way to measure how well the regression line fits the data calculates what percentage of the actual variation is explained by the predicted values. A high percentage number, over 70%, is generally a good fit. A low number, below 20%, means that very little of the actual variation is explained by the analysis. Because this initial study had to rely on a database constructed after the fact, lack of data points and high variation in the data that was gathered meant that the statistical fit was poor for several of the projects analyzed. If the calculated linear relationship does not give a good fit, then the results have to be looked at cautiously.



#### Monthly Price Change in the View Shed Relative to Comparable: All Years



### **Case Result Details**

Although there is some variation in the three Cases studied, the results point to the same conclusion: the statistical evidence does not support a contention that property values within the view shed of wind developments suffer or perform poorer than in a comparable region. For the great majority of projects in all three of the Cases studied, the property values in the view shed actually go up faster than values in the comparable region. Analytical results for all three cases are summarized in Table 2 below.

Location: Buena Vista County, IA								
Project			Rate of					
			Change (\$/	Model Fit				
Model	Dataset	Dates	month)	(R2)	Result			
Case 1	View shed, all data	Jan 96 - Oct 02	\$401.86	0.67	The rate of change in average view shed			
	Comparable, all data	Jan 96 - Oct 02	\$341.87	0.72	sales price is 18% greater than the rate of			
					change of the comparable over the study			
0			¢ 070 F 0	0.51	period.			
Case 2	view shed, before	Jan 96 - Apr 99	\$370.52	0.51	I ne rate of change in average view shed			
	View shed, after	May 99 - Oct 02	\$631.12	0.53	sales price is 70% greater after the on-line			
					date than the rate of change before the on-			
					line date.			
Case 3	View shed, after	May 99 - Oct 02	\$631.12	0.53	The rate of change in average view shed			
	Comparable, after	May 99 - Oct 02	\$234.84	0.23	sales price after the on-line date is 2.7			
	•	5			times greater than the rate of change of the			
					comparable after the on-line date.			

#### Table 2: Detailed Statistical Model Results

Project: L	lano Estacado				
2			Rate of		
			Change (\$/	Model Fit	
Model	Dataset	Dates	month)	(R2)	Result
Case 1	View shed, all data	Jan 98 - Dec 02	\$620.47	0.49	The rate of change in average view shed
	Comparable, all data	Jan 98 - Dec 02	\$296.54	0.33	sales price is 2.1 times greater than the rate
					of change of the comparable over the study
					period.
Case 2	View shed, before	Jan 98 - Oct 01	\$553.92	0.24	The rate of change in average view shed
	View shed, after	Nov 01 - Dec 02	\$1,879.76	0.83	sales price after the on-line date is 3.4 times
					greater than the rate of change before the
					on-line date.
Case 3	View shed, after	Nov 01 - Dec 02	\$1,879.76	0.83	The rate of change in average view shed
	Comparable, after	Nov 01 - Dec 02	-\$140.14	0.02	sales price after the on-line date increased
					at 13.4 times the rate of decrease in the
					comparable after the on-line date.

## Location: Carson County, TX

#### Location: Fayette County, PA Project: Mill Run

110,000.1					
			Rate of		
			<u>Change</u> (\$/	Model Fit	
Model	Dataset	Dates	month)	(R2)	Result
Case 1	View shed, all data	Dec 97-Dec 02	\$115.96	0.02	The rate of change in average view shed
	Comparable, all data	Dec 97-Dec 02	\$479.20	0.24	sales price is 24% of the rate of change of the
	-				comparable over the study period.
Case 2	View shed, before	Dec 97 - Nov 01	-\$413.68	0.19	The rate of change in average view shed sales
	View shed, after	Oct 01-Dec 02	\$1,562.79	0.32	price after the on-line date increased at 3.8
					times the rate of decrease before the on-line
					date.
Case 3	View shed, after	Oct 01-Dec 02	\$1,562.79	0.32	The rate of change in average view shed sales
	Comparable, after	Oct 01-Dec 02	\$115.86	0.00	price after the on-line date is 13.5 times greater
	-				than the rate of change of the comparable after
					the on-line date.

#### Location: Kern County, CA Project: Pacific Crest, Cameron Ridge, Oak Creek Phase II

	· · · · · · · · · · · · · · ·	<b>_</b>	Rate of		
			<u>Change</u> (\$/	Model Fit	
Model	Dataset	Dates	month)	(R2)	Result
Case 1	View shed, all data	Jan 96 - Dec 02	\$492.38	0.72	The rate of change in average view shed
	Comparable, all data	Jan 96 - Dec 02	\$684.16	0.74	sales price is 28% less than the rate of
					change of the comparable over the study
					period.
Case 2	View shed, before	Jan 96-Feb 99	\$568.15	0.44	The rate of change in average view shed
	View shed, after	Mar 99 - Dec 02	\$786.60	0.75	sales price is 38% greater after the on-line
					date than the rate of change before the on-
					line date.
Case 3	View shed, after	Mar 99 - Dec 02	\$786.60	0.75	The rate of change in average view shed
	Comparable, after	Mar 99 - Dec 02	\$1,115.10	0.95	sales price after the on-line date is 29% less
					than the rate of change of the comparable
					after the on-line date.

#### Location: Kewaunee County, WI Project: Red River (Rosiere), Lincoln (Rosiere), Lincoln (Gregorville)

Model	Dataset	Dates	<u>Rate of</u> <u>Change</u> (\$/ month)	<u>Model Fit</u> (R2)	Result
Case 1	View shed, all data Comparable, all data	Jan 96 - Sep 02 Jan 96 - Sep 02	\$434.48 \$118.18	0.26 0.05	The rate of change in average view shed sales price is 3.7 times greater than the rate of change of the comparable over the study period.
Case 2	View shed, before View shed, after	Jan 96 - May 99 Jun 99 - Sep 02	-\$238.67 \$840.03	0.02 0.32	The increase in average view shed sales price after the on-line date is 3.5 times the decrease in view shed sales price before the on-line date.
Case 3	View shed, after Comparable, after	Jun 99 - Sep 02 Jun 99 - Sep 02	\$840.03 -\$630.10	0.32 0.37	The average view shed sales price after the on-line date increases 33% quicker than the comparable sales price decreases after the on-line date.

#### Location: Madison County, NY Project: Madison

			Rate of		
			<u>Change</u> (\$/	Model Fit	
Model	Dataset	Dates	month)	(R2)	Result
Case 1	View shed, all data	Jan 97 - Jan 03	\$576.22	0.29	The rate of change in average view shed
	Comparable, all data	Jan 97 - Jan 03	\$245.51	0.34	sales price is 2.3 times greater than the rate
					of change of the comparable over the study
					period.
Case 2	View shed, before	Jan 97 - Aug 00	\$129.32	0.01	The rate of change in average view shed
	View shed, after	Sep 00 - Jan 03	\$1,332.24	0.28	sales price after the on-line date is 10.3 times
					greater than the rate of change before the
					on-line date.
Case 3	View shed, after	Sep 00 - Jan 03	\$1,332.24	0.28	The rate of change in average view shed
	Comparable, after	Sep 00 - Jan 03	-\$418.71	0.39	sales price after the on-line date increased
					at 3.2 times the rate of decrease in the
					comparable after the on-line date.
Case 2 Case 3	View shed, before View shed, after View shed, after Comparable, after	Jan 97 - Aug 00 Sep 00 - Jan 03 Sep 00 - Jan 03 Sep 00 - Jan 03	\$129.32 \$1,332.24 \$1,332.24 -\$418.71	0.01 0.28 0.28 0.39	The rate of change in average view sh sales price after the on-line date is 10 greater than the rate of change before on-line date. The rate of change in average view sh sales price after the on-line date incre at 3.2 times the rate of decrease in th comparable after the on-line date.

#### Location: Madison County, NY Project: Fenner

			Rate of		
			<u>Change</u> (\$/	Model Fit	
Model	Dataset	Dates	month)	(R2)	Result
Case 1	View shed, all data	Jan 97 - Jan 03	\$368.47	0.35	The rate of change in average view shed
	Comparable, all data	Jan 97 - Jan 03	\$245.51	0.34	sales price is 50% greater than the rate of
					change of the comparable over the study
					period.
Case 2	View shed, before	Jan 97 - Nov 01	\$587.95	0.50	The rate of decrease in average view shed
	View shed, after	Dec 01 - Jan 03	-\$418.98	0.04	sales price after the on-line date is 29%
					lower than the rate of sales price increase
					before the on-line date.
Case 3	View shed, after	Dec 01 - Jan 03	-\$418.98	0.04	The rate of decrease in average view shed
	Comparable, after	Dec 01 - Jan 03	-\$663.38	0.63	sales price after the on-line date is 37% less
					than the rate of decrease of the comparable
					after the on-line date.

<u>Project: Cabazon, Enron, Energy Onininited, Mountain view Power Partners La II, westwind</u>							
-			Rate of				
			<u>Change</u> (\$/	Model Fit			
Model	Dataset	Dates	month)	(R2)	Result		
Case 1	View shed, all data	Jan 96 - Nov 02	\$1,719.65	0.92	The rate of change in average view shed		
	Comparable, all data	Jan 96 - Nov 02	\$814.17	0.81	sales price is 2.1 times greater than the rate		
					of change of the comparable over the study		
					period.		
Case 2	View shed, before	Jan 96 - Apr 99	\$1,062.83	0.68	The rate of change in average view shed		
	View shed, after	May 99 - Nov 02	\$1,978.88	0.81	sales price is 86% greater after the on-line		
		-			date than the rate of change before the on-		
					line date.		
Case 3	View shed, after	May 99 - Nov 02	\$1,978.88	0.81	The rate of change in average view shed		
	Comparable, after	May 99 - Nov 02	\$1,212.14	0.74	sales price after the on-line date is 63%		
					greater than the rate of change of the		
					comparable after the on-line date.		

#### Location: Riverside County, CA

#### Project: Cabazon, Enron, Energy Unlimited, Mountain View Power Partners I & II, Westwind

#### Location: Bennington and Windham Counties, VT Project: Searsburg

	Jourg				
			Rate of		
			<u>Change</u> (\$/	Model Fit	
Model	Dataset	Dates	month)	(R2)	Result
Case 1	View shed, all data	Jan 94 - Oct 02	\$536.41	0.70	The rate of change in average view shed
	Comparable, all data	Jan 94 - Oct 02	\$330.81	0.45	sales price is 62% greater than the rate of
					change of the comparable over the study
					period.
Case 2	View shed, before	Jan 94 - Jan 97	-\$301.52	0.88	The rate of change in average view shed
	View shed, after	Feb 97 - Oct 02	\$771.06	0.71	sales price after the on-line date increased
					at 2.6 times the rate of decrease before the
					on-line date.
Case 3	View shed, after	Feb 97 - Oct 02	\$771.06	0.71	The rate of change in average view shed
	Comparable, after	Feb 97 - Oct 02	\$655.20	0.78	sales price after the on-line date is 18%
					greater than the rate of change of the
					comparable after the on-line date.

#### Location: Somerset County, PA Project: Excelon, Green Mountain

			Rate of		
			<u>Change</u> (\$/	Model Fit	
Model	Dataset	Dates	month)	(R2)	Result
Case 1	View shed, all data	Jan 97 - Oct 02	\$190.07	0.30	The rate of change in average view shed
	Comparable, all data	Jan 97 - Oct 02	\$100.06	0.07	sales price is 90% greater than the rate of
					change of the comparable over the study
					period.
Case 2	View shed, before	Jan 97 - Apr 00	\$277.99	0.37	The rate of change in average view shed
	View shed, after	May 00 - Oct 02	\$969.59	0.62	sales price after the on-line date is 3.5 times
					greater than the rate of change before the
					on-line date.
Case 3	View shed, after	May 00 - Oct 02	\$969.59	0.62	The rate of change in average view shed
	Comparable, after	May 00 - Oct 02	-\$418.73	0.23	sales price after the on-line date increased
					at 2.3 times the rate of decrease in the
					comparable after the on-line date.

Each of the three Cases takes a different approach to evaluating the price changes in the view shed and comparable community. By finding consistent results in all three Cases, the different approaches help to address concerns that could be raised about individual approaches. The selection of the comparable community is based upon a combination of demographic statistics and the impressions of local assessors and is inherently subjective. It is possible that arguments about the legitimacy of the selection of the comparable could arise and be used to question the legitimacy of the basic conclusion. However, since Case 2 looks only at the view shed and since the results of the Case 2 analysis are completely consistent with the other Cases, the selection of the comparable community will not be crucial to the legitimacy of the overall conclusion. To take another example, Case 1 uses data from the entire time period, both before and after the on-line date. We anticipate possible criticisms of this Case as masking the "pure" effect of the development that would only occur after the project came on-line. However, Cases 2 and 3 look separately at the before and after time periods and produce results basically identical to the Case 1 results. Because all three Cases produce similar results, Cases 2 and 3 answer the concerns about Case 1.

### The Database

The results of the analysis depend greatly upon the quality of the database that supports the analysis. The Report is based on a detailed empirical investigation into the effects of wind development on property values. The study first identified the 27 wind projects over 10 MW installed capacity that have come on-line since 1998. REPP chose the 1998 on-line date as a selection criterion for the database because it represented projects that used the new generation of wind machines that are both taller and quieter than earlier generations. (REPP did not consider projects that came on-line in 2002 or after since there would be too little data on property values after the on- line date to support an analysis. These projects can be added to the overall database and used for subsequent updates of this analysis, however.) REPP chose the 10 MW installed capacity as the other criterion because if the presence of wind turbines is having a negative affect it, should be more pronounced in projects with a large rather than small number of installations. In addition, we used the 10 MW cut-off to assure that the sample of projects did not include an over-weighting of projects using a small number of turbines.

Of the 27 projects that came on-line in 1998 or after and that were 10MW or larger installed capacity, for a variety of reasons, 17 had insufficient data to pursue any statistical analysis. For six of the 17 projects we acquired the data, but determined that there were too few sales to support a statistical analysis. For two of the remaining 11, state law prohibited release of property sales information. The remaining nine projects had a combination of factors such as low sales, no electronic data, and paper data available only in the office. (For a project-by-project explanation, see Chapter 2 of the Report.)

For each of the remaining ten projects, we assembled a database covering roughly a six-year period from 1996 to the present. For each of these projects we obtained individual records of all property sales in the "view shed" of the development for this six-year period. We also constructed a similar database for a "comparable community" that is a reasonably close community with similar demographic characteristics. For each of the projects, we selected the comparable community on the basis of the demographics of the community and after discussing the appropriateness of the community with local property assessors. As shown in Table 3 below, the database of view shed and comparable sales included more than 25,000 individual property sales. The initial included database of view shed and comparable sales includes over 25,000 individual property sales, as shown in Table 3 below.
Project/On-Line Date	Viewshed Sales	Comparable Sales	Total Sales
Searsburg, VT / 1997	2,788	552	3,340
Kern County, CA / 1999	745	2,122	2,867
Riverside County, CA / 1999	5,513	3,592	9,105
Buena Vista County, IA / 1999	1,557	1,656	3,213
Howard County, TX / 1999*	2,192	n/a	2,192
Kewaunee County, WI / 1999	329	295	624
Madison Co./Madison, NY / 2000	219	591	810
Madison Co./Fenner, NY / 2000**	453	591	1,044
Somerset County, PA / 2000	962	422	1,384
Fayette County, PA / 2001	39	50	89
Carson County, TX / 2001	45	224	269
TOTAL	14,842	9,504	24,346

Table 3: Number of Property Sales Analyzed, by Project

*Howard County, TX comparable data not received at time of publication.

**Both wind projects in Madison County, NY, use the same comparable. Column totals adjusted to eliminate double counting.

## Recommendations

The results of this analysis of property sales in the vicinity of the post-1998 projects suggest that there is no support for the claim that wind development will harm property values. The data represents the experience up to a point in time. The database will change as new projects come online and as more data becomes available for the sites already analyzed. In order to make the results obtained from this initial analysis as useful as possible to siting authorities and others interested in and involved with wind development, it will be important to maintain and update this database and to add newer projects as they come on-line.

Gathering data on property sales after the fact is difficult at best. We recommend that the database and analysis be maintained, expanded and updated on a regular basis. This would entail regularly updating property sales for the projects already analyzed and adding new projects when they cross a predetermined threshold, for example financial closing. In this way the results and conclusions of this analysis can be regularly and quickly updated.

# **Chapter II. Methodology**

The work required to produce this report falls into two broad categories – data collection and statistical analysis. Each of these areas in turn required attention to several issues that determine the quality of the result.

According to the American Wind Energy Association (AWEA), approximately 225 wind projects were completed or under development in the United States as of 2002. The first wave of major wind project development in the United States took place between approximately 1981 and 1995. Wind farm development slowed considerably in 1996, with only three wind projects installed, the largest of which was 600 kW. The first major post-1996 project was the 6 MW Searsburg site in Bennington County, Vermont, which came on-line in 1997.

# A. Project Selection Criteria

This report focuses on major wind farm projects that constitute the second wave of wind farm development. This second wave of projects employs modern wind turbine technology likely to be installed over the next several years as part of continuing U.S. wind farm development. Compared to the previous generation of wind turbines, modern wind turbines generally have greater installed capacities, taller towers, larger turbine blades, lower rotational speeds and reduced gearbox noise.

In addition to the 6 MW Searsburg wind farm, this report analyses potential property value effects for wind farms of 10 MW capacity or greater installed from 1998 through 2001. Projects completed in 2002 and later are excluded from this analysis because not enough time has elapsed to collect sufficient data to statistically determine post-installation property value effects. To determine property value trends prior to wind farm installation, we collected property sales data from three years prior to the on-line year to the present for each of the wind farms analyzed.

Twenty-seven wind farm projects met the project selection criteria.

## **B.** Data Compilation

Once the projects were selected for analysis, the process of acquiring data was initiated through phone calls to county assessment offices. For each project, varying sources of data and information were available, ranging from websites with on-line data, purchased data on CD-ROM or via e-mail from government offices, purchased data from private vendors or postal carried paper records. In many cases data was only available in paper, but not by mail – a person would physically have to appear before the assessment office clerk and search storage boxes, which in some cases had been archived to remote locations for long-term storage. Many states do not require local offices to retain records past certain age limits, often between one to five years. After that, files may be destroyed, and in some cases had been.

Where paper records were obtained, data was transferred into electronic form through scanning or manual data entry. In many cases, both with paper and/or electronic data, the fields we received did not provide good geographic specificity. For example, in some cases, townships and/or cities, but not street addresses were identified. Where street addresses were included, in some cases not all properties had street addresses given, or street addresses were truncated or otherwise incomplete. Out of the 27 counties with wind farms meeting the project selection criteria, ten sites were selected for statistical analysis based on availability of property sales data. The other 17 eligible sites were excluded from statistical analysis for a number of reasons, including insufficient sales to perform statistical analysis (for example, one site had only five sales in five years), lack of readily available data (data requiring in-person visits to the Assessors Office to manually go through paper files), and two cases where state law prohibited the Assessors Office from releasing property sales data to the public.

This report contains one section for each of the ten sites analyzed, with project site and community descriptions, view shed and comparable selection details, and analytical results and discussion. In addition, the report contains one section providing detailed explanations of why each of the 17 other sites are excluded from analysis. The dataset used in this report, exclusive of proprietary data, is available on the REPP web site at www.repp.org, or by request from REPP.

# C. View Shed Definition

In order to determine whether the presence of a wind farm has an adverse effect on property values in the wind farm's vicinity, the area potentially affected by the wind farm must be defined. In this report, the area in which potential property value effects are being tested for is termed the "view shed."

How the view shed is defined will affect the type of data required to test for property value effects, as well as the analytical model employed. Choosing the value of the appropriate radius for such a view shed is subjective. To help determine the radius, numerous studies regarding line-of-sight impacts were reviewed, and interviews with a power industry expert on visual impacts of transmission lines were conducted. In the end, three separate resources for estimates of visual impact were used to support defining the view shed as the area within a five-mile radius of the wind farms. These resources are:

- The U.S. Department of Agriculture (USDA). In a handbook titled "National Forest Landscape Management" (1973) developed for the Forest Service by the USDA, three primary zones of visual impact are defined: foreground, middleground and background. These zones relate to the distance from an object in question, be it a fire lookout tower, tall tree, or mountain in the distance. In this definition, foreground is 0 to 1/2 mile, middleground is 1/4 to 5 miles and background is 3 to 5 miles. The USDA handbook states that for foreground objects people can discern specific sensory experiences such as sound, smell and touch, but for background objects little texture or detail are apparent, and objects are viewed mostly as patterns of light and dark.
- The Sinclair-Thomas Matrix. This is a subjective study of the visual impact of wind farms published in the report Wind Power in Wales, UK (1999). Visual impact is defined in a matrix of distance from a wind turbine versus tower hub height. At the highest hub height considered in the matrix, 95 meters [312 feet], the visual impact of wind towers is estimated to be moderate at a distance of 12 km [7.5 miles]. The matrix estimates that not until a distance of 40 km [25 miles] is there "negligible or no" visual impact from wind turbines under any atmospheric condition. Of the ten sites considered in this REPP report, the majority of towers have hub heights of 60 to 70 meters, which, according to the Sinclair-Thomas matrix, corresponds to moderate visual impact at a distance of 9 to 10 km [5.6–6.2 miles].

o Interviews with Industry Experts. A power industry analyst with extensive experience in quantitative analysis of visual impacts of transmission lines stated in an interview that a rule of thumb used for the zone of visual influence of installations such as transmission lines and large wind turbines is a distance of approximately five miles.

There are other possible definitions of the view shed. At present, new proposals are sometimes required to conduct a Zone of Visual Influence (ZVI) analysis to determine the extent of visibility of a development. The zone comprises a visual envelope within which it is possible to view the development, notwithstanding the presence of any intervening obstacles such as forests, buildings, and other objects. Digital terrain computer programs are used to calculate and plot the areas from which the wind farm can be seen on a reference grid that indicates how many turbines can be seen from a given point. One weakness of the standard ZVI analysis is that all turbines are given equal weight of visual impact. That is, a turbine 20 miles from the viewer is assigned the same visual impact as a turbine one mile away.

Possible definitions for view sheds include the set of real properties that have a view of one or more wind turbines from inside the residence, that have a view of one or more turbines from any point on the property, or that are simply within some defined distance from the wind turbines, whether there is a view from each property in that area or not. In the last case, it is assumed that property owners in the area will still be potentially affected by views of the wind farms, as they will see them while traveling and conducting business in their vicinity.

Because this project lacked the resources to determine (through site visits, interviews, or other means) whether or not individual properties in the vicinity of the ten selected wind farms have a direct view of the wind turbines, the view shed is defined as all properties within a given radius of the outermost wind turbines in a wind farm. The value of this radius will clearly affect the results of the analysis. If the radius is too large, including many properties not potentially affected will overshadow the potential effect of the presence of wind turbines on property values. If the radius is too small, not all potentially effected properties will be accounted for in the analysis, and the number of data points gathered may be too small to yield valid statistical results.

# D. Comparable Criteria

With the view shed of the wind farm defined, a set of neighboring communities outside of the view shed is selected to evaluate trends in residential house sales prices without the potential effects of wind farms on property values. These townships and incorporated cities are required to be clearly outside of the view shed area and not containing any large wind turbines. This selection is the "comparable" region. To define the comparable REPP consulted with local County Assessors and analyzed 1990 and 2000 U.S. Census data for the townships and incorporated cities under consideration.

Criteria used in selection of comparable communities include economic, demographic, and geographic attributes and trends. The goal in selecting comparable communities is to have communities that are as similar as possible with respect to variables that might affect residential house values, with the exception of the presence or absence of wind farms. When possible, comparable communities are selected in the same county as the wind farm location. If this is not possible due to placement of wind farm or availability of suitable data, comparable communities are selected from counties immediately adjacent to the county containing the wind farm.

After considering a number of criteria, including population, income level, poverty level, educational attainment, number of homes, owner occupancy rate, occupants per household, and housing value, five criteria from 1990 and 2000 U.S. Census were selected for evaluation:

- Population
- Median Household Income
- Ratio of Income to Poverty Level
- Number of Housing Units
- · Median Value of Owner-occupied Housing Units

Data for these criteria is obtained for both the wind farm and comparable communities. Percent change from 1990 to 2000 for each criterion is calculated for each township or city considered as potentially comparable areas. The criteria are used in the following manner:

- a) Change in population is calculated to identify any communities that had excessively large changes in population relative to the change in population from 1990 to 2000 in the wind farm area. Such large changes could indicate either a major construction boom, or major exodus of habitants from an area, which could skew comparisons in residential home values over the period in question. These communities are eliminated as possible comparables.
- b) The average median household income in the wind farm communities in 1990 and 2000 is calculated. The first criterion is that comparable communities should have similar median household incomes in 2000. The second criterion is that median incomes should not have changed at significantly different rates from 1990 to 2000 between wind farm and comparable communities. Communities that meet both criteria are considered as potential comparables.
- c) The percent of the population whose income is below poverty level is calculated from the ratio of income to poverty level. Absolute poverty levels and percent changes in poverty levels from 1990 to 2000 are compared. Communities that have significantly different poverty levels or rates of change of these levels as compared to the wind farm areas are eliminated as possible comparables.
- d) Change in the number of housing units is used to identify any communities that had excessively large changes in housing relative to the change in housing from 1990 to 2000 in the wind farm area. Such large changes could indicate a major construction boom, or reduction in housing stock, which could skew comparisons in residential home values over the period in question. These communities are eliminated as possible comparables.
- e) The average median house value in the wind farm communities in 1990 and 2000 is obtained from Census data. These values are owner-reported, and therefore may not accurately reflect actual market value of the properties. The criterion is that comparable communities should have similar median house values. Communities meeting these criteria are considered as potential comparables.

Communities that meet all five of the above criteria are selected for consideration as comparable communities. In addition to analysis of Census data, interviews with County Assessors, other local and state officials, and in some cases with knowledgeable real estate agents are taken into account in the selection of comparables.

# E. Analysis

#### i. Literature Review

In selecting the type of analysis to use in determining whether there is any statistical evidence that wind farms negatively affect property values, we first conducted literature research to identify any studies previously conducted for this purpose. We found only four studies relating wind and property value effects, three of which are only qualitative.

A 1996 quantitative study, Social Assessment of Wind Power (Institute of Local Government Studies, Denmark), applied regression analysis to determine the effect of individual wind turbines, small wind turbine clusters, and larger wind parks on residential property values. The regression used the hedonic method, discussed in more detail below, in which site-specific data on a number of quantitative and qualitative variables is used to predict housing values. The study concluded that homes close to a wind turbine or turbines ranged in value from DKK 16,200 to 94,000 [approximately \$2,900 to \$16,800] less than homes further away. The study had a number of weaknesses, including a lack of definition of the distance from turbines, lack of specification of the size and number of turbines, and regression on a very small data sample. In contrast, a 2002 qualitative study, Public Attitudes Towards Wind Power (Danish Wind Industry Association), quoted the 1997 Sydthy Study as concluding that residents closer than 500 meters to the nearest wind turbine tend to be more positive about wind turbines than residents further away.

A 2001 qualitative study, Social Economics and Tourism (Sinclair Knight Mertz), said that for highly sought after properties along Salmon Beach, Australia closer than 200 meters from wind turbines, the general consensus among local real estate agents is that "property prices next to generators have stayed the same or increased after installation." However, the study concluded that while properties with wind turbines on them may increase in value, other properties may be adversely affected if within sight or audible distance of the wind turbines. Finally, the 2002 qualitative study, Economic Impacts of Wind Power in Kittitas County (ECO Northwest), concluded from interviews with assessors around the United States that there is no evidence of a negative impact on property values from wind farms. The weakness of the study is that it relies on subjective comment to arrive at its conclusion.

We also reviewed several studies that attempt to quantify the visual and property value impacts of electric transmission towers and lines. There is a large body of information on this subject, as transmission lines have been the subject of scrutiny and regulation for many years.

A 1992 study, The Effects of Overhead Transmission Lines on Property Values (C.A. Kroll and T. Priestley), reviews the methodology and conclusions of a number of studies on overhead transmission lines and property values over the 15 year period of 1977 through 1992. This study was very helpful in identifying the types of analysis, and their strengths and weaknesses, which could be adopted for use in this REPP report. The study concluded that appraisal offices have the longest history of studying and evaluating line impacts, but lack in-depth statistical analysis to verify obtained results. Data collected from face-to-face conversation and through surveys attempts to ascertain the attitudes and reactions of property owners to transmission equipment, but personal opinions were found to produce widely varying results. Statistical analysis of appraiser findings provided a better interpretation of appraiser information, but produced varying results due to different methodologies.

### ii. Choice of Analytic Method

A number of analytic methods may be used to assess property value impacts from wind farms, ranging from interviews with assessors and surveys of residents to simple regression models and hedonic regression analysis. In order to produce results that could determine whether or not there was statistical evidence that wind farms have a negative impact on property values, simple linear regression analysis on property sales price as a function of time was selected.

A more complex method, hedonic regression analysis, can also be used to gauge property value impacts. Hedonic analysis, used in a number of studies on visual impacts of transmission lines, employs both quantitative and qualitative values to describe the property and local, regional, and even national parameters that may influence housing values. Property data such as number of bedrooms and bathrooms, linoleum or tile floors, modern appliances, kitchen cabinets or not are collected for each property in the study area, as well community information such as school district quality, subjective criteria derived from interviews with every resident in a study area, and other parameters. However, because this report is based on historic data, much of the detail needed for a hedonic analysis may not be available. An important consideration for this analysis, given the limits of the data, was to apply a consistent methodology to the site analyses. The only data consistent across all sites is sales date and sales price.

### iii. Data Analysis

The key variables used in this analysis are sale price, sale date, and one locational attribute allowing data to be separated into view shed and comparable data sets. The first step of analysis was to remove any erroneous data from the dataset. Sales with incomplete information, duplicate sales, and zero price were removed. Parcel sales under \$1,000 were also removed, as they often represent transfer within a family or business, rather than a bona fide sale. Finally, any sales with values much higher than any other sales were researched to determine whether or not that sale was bona fide. Interviews with assessors with knowledge of the properties in question were used to determine whether these high value sales were erroneous. Where they were, they were removed.

The second step in data analysis was to reduce cyclic effects of the real estate market on sales prices, as well as to reduce the high variability and heterogeneity of the data when viewed on a day sale basis. First, for each month, we calculated the monthly average sales price for each month to eliminate the variability of day-to-day sales. In some cases data supplied was already in monthly averaged form. Second, a six-month trailing average of the average monthly sales price is used to smooth out seasonal fluctuations in the real estate market. The averaging technique used the current month sales plus the previous six months of sales to compute trailing averages.

Third, a unit of analysis is defined. Because this project generally lacks resources to identify properties by street address, the smallest units of geographical analysis used are townships and incorporated cities within each county. Townships that are partly but not fully within the view shed radius are excluded from the view shed. In some cases zip code 4-digit ZIP+4 regions are used to identify location, and in some cases where the data offered no other alternative, individual street locations were manually identified in order to define the location of properties within the view shed and comparable.

Fourth, as stated above, linear regression is selected as the method to test for potential property value impacts. A least-squares linear regression of the six-month trailing average price is constructed for the view shed and comparable areas to determine the magnitude and rate of change in property sales price for each of the areas. The regression yields an equation for the line that best fits the data. The slope of this line gives the month-by-month expected change in the price of homes in the view shed and comparable areas. The regression also yields a value for "R2."

The R2 value measures the goodness of fit of the linear relationship to the data, and equals the percentage of the variance (change over time) in the data that is described by the regression model. The value of R2 ranges from zero to one. If R2 is small, say less than 0.2 to 0.3, the model explains only 20 to 30 percent of the variance in the data and the slope calculated is a poor indicator of the change in sales price over time. If R2 is large, say 0.7 or greater, then the model explains 70 percent or more of the variance in the data, and the slope of the regression line is a good indicator for quantifying the change in sales price over time. Regression models with low R2 values must be interpreted with caution. Often, knowledge and examination of factors not included in the regression model can help one understand why the regression provides a poor fit.

#### iv. Case I, II, and III Definitions

This report tests for effects of wind farms on property sales prices using three different models, or cases. All employ linear regression on six-month trailing averaged monthly residential sales data as outlined above.

**Case 1** compares changes in the view shed and comparable community sales prices for the entire period of the study. If wind farms have a negative effect, we would expect to see prices increase slower (or decrease faster) in the view shed than in the comparable. Case 1 takes into account the wind farm on-line date only in that the data set begins three years before the on-line date. An appropriate comparable is important in this case in order that meaningful comparison of sale price changes over time can be made.

**Case 2** compares property sales prices in the view shed before and after the wind farm in question came on-line. If wind farms have a negative effect, we would expect to see prices increase slower (or decrease faster) in view shed after the wind farm went on-line than before. Case 2 is susceptible to effects of macroeconomic trends and other pressures on housing prices not taken into account in the model. Because Case 2 looks only at the view shed, it is possible that external factors change prices faster before or after the on-line date, and the analysis may therefore pick up factors other than the wind development.

**Case 3** compares property sales prices in the view shed and comparable community, but only for the period after the projects came on-line. If wind farms have a negative effect, we would expect to see prices increase slower (or decrease faster) in view shed than comparable after the on-line date. Again, an appropriate comparable is important in this case in order that meaningful comparison of sale price changes over time can be made.

# **Chapter III. Site Reports**

# Site Report 1: Riverside County, California

# A. Project Description

The topography ranges from desert flats to arid mountains with views of snow capped peaks in winter – all of which encompass areas both in and out of the view shed.

The area has extreme elevation changes from the Palm Springs flats at an elevation of 450 feet, to the San Gorgonio Pass at an elevation of 2,500 feet. The Pass cuts through the two peaks of Mt. San Gorgonio to the north and Mt. San Jacinto to the southeast, and is five miles from the western edge of Palm Springs (15 to downtown), and about 80 miles east of Los Angeles.



## Figure 1.1 View of wind farms at San Gorgonio Pass, Riverside County, CA Photo by David F. Gallagher, 2001 - www.lightningfield.com

The projects are located in the San Gorgonio Pass immediately west of the Palm Springs area in Riverside County, California. Developers installed 3,067 turbines from 1981 to 2001, with the tallest turbine at 63 meters (207 feet). Repowering projects built 130 modern turbines. They begin northwest of Palm Spring heading up Interstate 10 from Indian Avenue; then they extend more than 10 miles along the flats up into the San Gorgonio Mountains, along the Pass, and stop shortly before reaching Cabazon.







Figure 1.3 San Gorgonio, Riverside County, California View shed (5 Mile Radius from project edge) Map Source: U.S. Census Bureau Website Project Location Details: Interviews and Aerial Photographs

The county is considered a metro area with 1 million population or more, but that is due to the population of the Los Angeles area. See Appendix 1 for a definition of rural urban continuum codes. The view shed represents fewer than 30,000 people.

# **B.** Project Timeline

Project Name	Completion Date	Capacity (MW)	Project Name	Completion Date	Capacity (MW)
Mountain View Power Partners I	2001	44.4	Altech 3	1981-1995	21.7
Mountain View Power Partners II	2001	22.2	Westwind Trust	1981-1995	15.7
Enron Earth Smart/Green Power	1999	16.5	Painted Hills B & C	1981-1995	15.3
Energy Unlimited	1999	10.0	Difwind, Ltd.	1981-1995	15.0
Pacific West I	1999	2.1	Energy Unlimited	1981-1995	14.5
Westwind-Repower	1999	47.3	Edom Hill	1981-1995	11.0
Cabazon-Repower	1999	39.8	So. Cal. Sunbelt	1981-1995	10.5
Westwind - PacifiCorp-Repower	1999	1.5	Difwind V	1981-1995	7.9
East Winds-Repower	1997	4.2	Meridian Trust	1981-1995	7.5
Karen Avenue-Repower	1995	3.0	Kenetech/Wintec	1981-1995	7.3
Dutch Pacific	1994	10.0	San Jacinto	1981-1995	5.0
Kenetech (various)	1981-1995	30.3	Painted Hills B & C	1981-1995	4.0
Zond-PanAero Windsystems	1981-1995	29.9	Altech 3	1981-1995	3.3
Alta Mesa	1981-1995	28.2	San Gorgonio Farms	1981-1995	3.2
Section 28 Trust	1981-1995	26.2	San Gorgonio Farms	1981-1995	2.0
San Gorgonio Farms	1981-1995	26.1			

## Table 1.1 Wind Project History, San Gorgonio, CA

# C. Analysis

### i. Data

Real property sales data for 1996 to 2002 was obtained from First American Real Estate Solutions in Anaheim, CA. The dataset is quite detailed and contains many property and locational attributes, among them nine-digit zip code (ZIP+4) locations. Sales data was purchased for four zip codes encompassing the wind farm area and surrounding communities. These zip codes are Palm Springs (92262), White Water (92282), Cabazon (92230), and Banning (92220).

Sales for the following residential property types were included in the analysis: Condominiums, Duplexes, Mobile Homes, and Single-Family Residences. Upon initial analysis, of the 9105 data points analyzed, approximately 10 sales in the view shed had unusually high prices. Conversations with the Assessors Office confirmed these were incorrect values for the data points. Correct values were obtained and the data corrected.

Projects that went on-line during the study period are the Cabazon, Enron, Energy Unlimited, Mountain View Power Partners I & II, and Westwind sites. Of these, two sites added 87 MW of repowered capacity in May 1999, two sites added 27 MW of new capacity in June 1999, and two sites added 66 MW of new capacity in October 2001.

## ii. View shed Definition

All ZIP+4 regions within five miles of the wind turbines define the view shed. The location of the ZIP+4 regions were derived from the latitude and longitude of the ZIP+4 areas obtained from the U.S. Census TIGER database. The view shed includes the northwest portion of Palm Springs, Desert Hot Springs, and Cabazon, and 5,513 sales from 1996 to 2002. The view shed portion of northwest Palm Springs corresponds very closely to the boundaries of Palm Springs zip code 92262.

Interviews with State of California Palm Springs Regional Assessors Office were conducted by phone to determine what percentage of residential properties in the view shed can see all or a portion of the wind turbines. In Assessment District Supervisor Gary Stevenson's opinion, over 80 percent of Cabazon properties can see some wind turbines; over 80 percent of Desert Hot Springs properties can see some wind turbines; almost all of the properties on the outer edge of northwest Palm Springs can see some wind turbines, but due to foliage (mainly palm trees) and tall buildings, only five percent or less of the properties in the interior of Pam Springs can see any wind turbines.

#### iii. Comparable Selection

The comparable community was selected through interviews with State of California San Gorgonio Regional Assessors Office personnel, as well as analysis of demographic data from the 1990 and 2000 U.S. Census for communities near but outside of the view shed. Selection of the comparable in this case was difficult, as the eastern side of the view shed is close to downtown Palm Springs, which is growing fairly quickly, while the western portion of the view shed, including Cabazon, is not growing quickly and has more stable housing sales prices. Tables 1.2 and 1.3 summarize the Census data reviewed. Because Census data by zip code is not available for 1990, we were unable to determine 1990 demographic statistics for the Palm Springs view shed, as it is not separable from the Palm Springs non-view shed area.

Based on his extensive experience in the area, Assessment District Supervisor Gary Stevenson suggested Banning and Beaumont in Riverside County, to the west of the wind farms, and Morongo Valley in San Bernardino County, to the north of the wind farms as appropriate comparables to the view shed area. Banning and Beaumont are visually separated from the wind farm area by a ridge, and Morongo Valley is separated by approximately seven miles distance.

In order to determine the most appropriate comparable community we looked at the demographics of 10 surrounding areas. The 92264 zip code area of Palm Springs to the south of northwest Palm Springs was initially considered as a comparable, but Supervisor Stevenson said that this area was closer to the metropolitan center and had significantly different demographics than the view shed area. Towns adjacent to Banning and Beaumont, including Hemet, San Jacinto, and Cherry Valley, were considered but rejected for use after discussion with Supervisor Stevenson. Upon examination of Census data, sales data availability, and review of Assessor comments, Banning was selected as the comparable, with a total of 3,592 sales from 1996 to 2002.

Year	View shed	Location	Population	Median Household Income	% Population below poverty level	Number housing units	Median value- owner-occupied housing unit
1990	Y	Cabazon CDP	1,588	\$13,830	19%	754	\$64,000
1990	Y	Palm Springs City*	n/a	n/a	n/a	n/a	n/a
1990	Y	White Water**	n/a	n/a	n/a	n/a	n/a
1990	VIEW S	HED DEMOGRAPHICS	n/a	n/a	n/a	n/a	n/a
1990	COMP	Banning City	20,570	\$22,514	17%	8,278	\$89,300
1990	COMP	ARABLE DEMOGRAPHICS	20,570	\$22,514	17%	8,278	\$89,300
1990	Ν	Beaumont City	9,685	\$22,331	23%	3,718	\$89,700
1990	Ν	Cathedral City	30,085	\$30,908	13%	15,229	\$114,200
1990	Ν	Cherry Valley CDP	5,945	\$29,073	9%	2,530	\$127,500
1990	Ν	Hemet City	36,094	\$20,382	14%	19,692	\$90,700
1990	Ν	Idyllwild-Pine Cove CDP	2,937	\$31,507	4%	3,635	\$147,200
1990	Ν	Morongo Valley CDP***	1,554	\$38,125	23%	827	\$74,100
1990	Ν	Rancho Mirage City	9,778	\$45,064	7%	9,360	\$252,400
1990	Ν	San Jacinto City	16,210	\$20,810	16%	6,845	\$90,200
1990	N	Valle Vista CDP	8,751	\$22,138	8%	4,444	\$125,500

## Table 1.2 Riverside County, California: 1990 Census Data

*Census data by zip code not available for 1990. Unable to determine demographics of view shed as the Palm Springs view shed area is not separable from the Palm Springs non-view shed area.

**White Water not listed in 1990 U.S. Census. ***San Bernardino County.

				Median	% Population	Number	value-owner-
\/	View		Develotion	household	below poverty	housing	occupied
Year	snea	Location	Population	income	level	units	nousing unit
2000	Y	Cabazon Zip Code 92230	2,442	\$22,524	32%	884	\$48,200
2000	Y	Palm Springs- Zip Code 92262	24,774	\$32,844	18%	15,723	\$133,100
2000	Y	White Water Zip Code 92282	903	\$35,982	23%	380	\$82,400
2000	VIEW SI	HED DEMOGRAPHICS	28,119	\$30,450	24%	16,987	\$87,900
2000	COMP	Banning City—Zip Code 92220	23,443	\$32,076	20%	9,739	\$97,300
2000	COMP	ARABLE DEMOGRAPHICS	23,443	\$32,076	20%	9,739	\$97,300
2000	Ν	Beaumont City	11,315	\$29,721	20%	4,258	\$93,400
2000	Ν	Cathedral City	42,919	\$38,887	14%	17,813	\$113,600
2000	Ν	Cherry Valley CDP	5,857	\$39,199	6%	2,633	\$121,700
2000	Ν	Hemet City	58,770	\$26,839	16%	29,464	\$69,900
2000	Ν	Idyllwild-Pine Cove CDP	3,563	\$35,625	13%	4,019	\$164,700
2000	Ν	Morongo Valley CDP*	2,035	\$36,357	19%	972	\$73,300
2000	N	Rancho Mirage City	12,973	\$59,826	6%	11,643	\$251,700
2000	Ν	San Jacinto City	23,923	\$30,627	20%	9,435	\$78,500
2000	N	Valle Vista CDP	10,612	\$32,455	12%	4,941	\$76,500

## Table 1.3 Riverside County, California: 2000 Census Data

Median

*San Bernardino County.

#### iv. Analytical Results and Discussion

In all three of the regression models, monthly average sales prices grew faster in the view shed than in the comparable area, indicating that there is no significant evidence that the presence of the wind farms had a negative effect on residential property values. For Cases II and III, the on-line date is defined as the month the first wind project came on-line during the study period, May 1999.

In Case I, the monthly sales price change in the view shed is twice the monthly sales price change of the comparable over the study period. The Case I model provides a good fit to the data, with over 80 percent of the variance in the data explained by the linear regression. In Case II, the monthly sales price change in the view shed is 86 percent greater after the on-line date than before the on-line date. The Case II model provides a good fit to the data, with over two-thirds of the variance in the data explained by the linear regression. In Case III, the monthly sales price change by the linear regression. In Case III, the monthly sales price change in the view shed after the on-line date is 63 percent greater than the monthly sales price change of the comparable after the on-line date. The data for the full study period is graphed in Figure 1.4, and regression results for all cases are summarized in Table 1.4 below.

#### Table 1.4 Riverside County, California: Regression Results

Model	Dataset	Dates	<u>Rate of</u> <u>Change</u> (\$/ month)	<u>Model</u> <u>Fit</u> (R2)	Result		
Case 1	View shed, all data Comparable, all data	Jan 96 - Nov 02 Jan 96 - Nov 02	\$1,719.65 \$814.17	0.92 0.81	The rate of change in average view shed sales price is 2.1 times greater than the rate of change of the comparable over the study period.		
Case 2	View shed, before View shed, after	Jan 96 - Apr 99 May 99 - Nov 02	\$1,062.83 \$1,978.88	0.68 0.81	The rate of change in average view shed sales price is 86% greater after the on-line date than the rate of change before the on- line date.		
Case 3	View shed, after Comparable, after	May 99 - Nov 02 May 99 - Nov 02	\$1,978.88 \$1,212.14	0.81 0.74	The rate of change in average view shed sales price after the on-line date is 63% greater than the rate of change of the comparable after the on-line date.		

Projects: Cabazon, Enron, Energy Unlimited, Mountain View Power Partners I & II, Westwind





#### **D.** Additional Interviewee Comments

Jack Norie of Desert Hot Springs, who provides tours of the wind projects, said that since 1998 there has been a discernable sense that more turbines were in the area. Norie felt that the 41 new turbines built high up along the nearest peaks facing Palm Springs near the intersection of Highway 111 and Interstate 10 on the north side, contributed to this impression. (These are possibly the Mountain View Power Partners II project with 37 turbines). Mr. Norie's descriptions of project locations and aerial photographs available from Microsoft's Terraserver and Mapquest, allowed us to determine project locations.

# Site Reports 2.1 and 2.2: Madison County, New York

# A. Project Description

Madison County has two wind farms meeting the criteria for analysis, Madison and Fenner. Because they are separated by distance, and have different on-line dates, each wind farm is analyzed separately. However, since they are in the same county and share the same comparable region, both analyses are presented in this section.

The Fenner turbines are seated in a primarily agricultural region southeast of Syracuse and southwest of Utica, with 20 turbines at 100 meters (328 feet). The Madison project is about 15 miles southeast of Fenner, and 2.5 miles east of Madison town with seven turbines standing 67 meters (220 feet).

Madison County is classified as a "county in a metro area with 250,000 to 1 million population." See Appendix 1 for a definition of rural urban continuum codes. The view shed areas have a population less than 8,000.



Figure 2.1 View of Fenner wind farm. Photo Courtesy: New York State Energy Research and Development Authority (NYSERDA)









# **B.** Project Timeline

Project Name	Completion Date	Capacity (MW)
Fenner Wind Power Project	2001	30.0
Madison Windpower	2000	11.6

## Table 2.1 Wind Project History, Madison County, NY

# C. Analysis

#### i. Data

Real property sales data for 1997 to 2002 was purchased on CD-ROM from Madison County Real Property Tax Services in Wampsville, NY. The sales data was purchased for the townships and cities encompassing the wind farm areas and surrounding communities. The unit of analysis for this dataset is defined by either township or incorporated city boundaries. Though street addresses are included in the dataset, this analysis lacked the resources to identify the location of properties by street address.

In addition to basic sales data, the dataset included property attributes such as building style, housing quality grade, and neighborhood ratings. The CD-ROMs contained four files that required merging on a common field to create the composite database of all sales. A significant number of redundant, incomplete, and blank entries were deleted prior to analysis. Sales for the following residential property types were included in the analysis: one-, two-, and three-family homes, rural residences on 10+ acres, and mobile homes.

Upon initial analysis, of the 1,263 data points analyzed, approximately six sales in the Madison view shed had unusually high prices. Conversations with the Assessors Office confirmed four of these were valid sales, but that two were not. The invalid sales were eliminated from the analysis.

Projects that went on-line during the study period are the Madison wind farm, which went online September 2000 with a capacity of 11.6 MW, and the Fenner wind farm, which went on-line December 2001 with a capacity of 30 MW. The wind farms are approximately 15 miles apart.

### ii. View Shed Definition

Two separate view sheds are defined for Madison County, one for each wind farm. A five-mile radius around the Madison wind farm encompasses the town of Madison and over 95 percent of Madison Township. The view shed also encompasses portions of three townships in Oneida County. However, due to lack of resources to identify the location of individual properties within townships, the Oneida townships were excluded from the analysis. The Madison view shed is defined as Madison town and all of Madison Township. The Fenner view shed is defined as all of Fenner, Lincoln, and Smithfield Townships, which are fully within a five-mile radius around the Fenner wind farm, with the exception of a small corner of Smithfield Township. The Madison and Fenner view sheds accounts for 219 and 453 sales over the study period, respectively.

Interviews with the State of New York Madison County Assessors Office were conducted by phone to determine what percentage of residential properties in the view shed can see all or a portion of the wind turbines. In Fenner Assessment District Supervisor Russell Cary's opinion, over 80 to 85 percent of Fenner properties can see some wind turbines, over 85 percent of Lincoln properties can see some wind turbines, over 75 percent of Madison properties can see some wind turbines. Cary said that in his opinion, only a few properties in Fenner Township, near Route 13, could not see some wind turbines.

#### iii. Comparable Selection

The comparable community was selected through interviews with State of New York Madison County Assessors Office personnel, as well as analysis of demographic data from the 1990 and 2000 U.S. Census for communities near but outside of the view shed. Tables 2.2 and 2.3 summarize the Census data reviewed. In order to determine the most appropriate comparable community, we looked at the demographics of 13 surrounding areas. Based on his experience in the area, Assessment District Supervisor Russell Cary suggested Lebanon, Deruyter and Stockbridge Townships along with villages of Deruyter, Munnsville and Hamilton, all in Madison County, as appropriate comparables for both view sheds. However, Cary added that Hamilton has higher property values than Madison because it is home to Colgate University. Upon examination of Census data, sales data availability, and review of Assessor comments, Lebanon, Deruyter, Hamilton, Stockbridge Townships, and the Villages of Deruyter and Munnsville were selected as the comparable for both view sheds, with a total of 591 sales from 1997 to 2002.

	View			Median	% Population	Number	Median value-
Year	shod	Location	Population	household	below poverty	housing	owner-occupied
	Sheu			income	level	units	housing unit
1990	Y	Fenner town	1,694	\$31,875	13%	609	\$73,700
1990	Υ	Lincoln town	1,669	\$32,073	8%	587	\$63,900
1990	Υ	Smithfield town	1,053	\$23,355	13%	380	\$52,200
FENNER	R DEMO	GRAPHICS	4,416	\$29,101	11%	1,576	\$63,267
1990	Y	Madison town	2,774	\$29,779	10%	1,239	\$65,200
1990	Y	Madison village	316	\$26,250	12%	135	\$50,000
MADISC	ON DEMO	OGRAPHICS	3,090	\$28,015	11%	1,374	\$57,600
1990	COMP	DeRuyter town	1,458	\$26,187	11%	811	\$51,800
1990	COMP	DeRuyter village	568	\$24,125	10%	218	\$52,200
1990	COMP	Hamilton town	6,221	\$28,594	17%	1,820	\$69,800
1990	COMP	Lebanon town	1,265	\$26,359	12%	581	\$49,600
1990	COMP	Munnsville village	438	\$23,194	15%	174	\$54,700
1990	COMP	Stockbridge town	1,968	\$24,489	11%	723	\$53,600
COMPA	ARABLE	DEMOGRAPHICS	11,918	\$25,491	13%	4,327	\$55,283
1990	Ν	Cazenovia town	6,514	\$39,943	4%	2,372	\$122,300
1990	Ν	Cazenovia village	3,007	\$31,622	5%	995	\$101,100
1990	Ν	Chittenango village	4,734	\$34,459	7%	1,715	\$72,400
1990	Ν	Earlville village	883	\$28,839	5%	362	\$44,300
1990	Ν	Georgetown town	932	\$25,000	10%	287	\$42,700
1990	Ν	Hamilton village	3,790	\$31,960	16%	869	\$88,000
1990	Ν	Morrisville village	2,732	\$26,875	30%	443	\$55,500

#### Table 2.2 Madison County, New York: 1990 Census Data

Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value- owner-occupied housing unit
2000	Y	Fenner town	1,680	\$43,846	7%	651	\$84,400
2000	Y	Lincoln town	1,818	\$46,023	5%	700	\$85,000
2000	Y	Smithfield town	1,205	\$35,109	16%	446	\$61,900
FENNE	R DEMO	GRAPHICS	4,703	\$41,659	9%	1,797	\$77,100
2000	Y	Madison town	2,801	\$35,889	13%	1,325	\$77,100
2000	Y	Madison village	315	\$27,250	13%	151	\$68,400
MADIS	ON DEM	OGRAPHICS	3,116	\$31,570	13%	1,476	\$72,750
2000	COMP	DeRuyter town	1,532	\$34,911	12%	867	\$68,200
2000	COMP	DeRuyter village	531	\$31,420	12%	231	\$70,300
2000	COMP	Hamilton town	5,733	\$38,917	14%	1,725	\$79,300
2000	COMP	Lebanon town	1,329	\$34,643	14%	631	\$62,900
2000	COMP	Munnsville village	437	\$35,000	15%	176	\$66,400
2000	COMP	Stockbridge town	2,080	\$37,700	13%	802	\$67,900
COMP	ARABLE	DEMOGRAPHICS	11,642	\$35,432	13%	4,432	\$69,167
2000	Ν	Cazenovia town	6,481	\$57,232	4%	2,567	\$142,900
2000	Ν	Cazenovia village	2,614	\$43,611	7%	1,031	\$115,200
2000	Ν	Chittenango village	4,855	\$43,750	6%	1,968	\$75,700
2000	Ν	Earlville village	791	\$32,500	12%	329	\$51,400
2000	Ν	Georgetown town	946	\$37,963	11%	315	\$54,600
2000	Ν	Hamilton village	3,509	\$36,583	19%	785	\$104,600
2000	Ν	Morrisville village	2,148	\$34,375	20%	398	\$73,900

### Table 2.3 Madison County, New York: 2000 Census Data

#### iv. Analytical Results and Discussion

In five of the six regression models, monthly average sales prices grew faster or declined slower in the view shed than in the comparable area. However, in the case of the underperformance of the view shed, the explanatory power of the model is very poor. Thus, there is no significant evidence in these cases that the presence of the wind farms had a negative effect on residential property values.

## Madison View shed

In Case I, the monthly sales price change in the view shed is 2.3 times the monthly sales price change of the comparable over the study period. However, the Case I model provides a poor fit to the data, with approximately 30 percent of the variance in the data explained by the linear regression. In Case II, the monthly sales price change in the view shed is 10.3 times greater after the online date than before the on-line date. However, the Case II model provides a poor fit to the data, with less than 30 percent of the variance in the data after the on-line date, and only 1 percent of the variance before the on-line date explained by the linear regression. In Case III, average monthly sales prices increase in the view shed after the on-line date, but decrease in the comparable region. The average view shed sales price after the on-line date increased at 3.2 times the rate of decrease in the comparable after the on-line date. The Case III model describes less than 30 percent of the variance in the view shed, sales price after the variance in the comparable. The poor fit of the models, at least for the view shed, is partly due to a handful of property sales that were significantly higher than the typical view shed property sale. The data for the full study period is graphed in Figure 2.4, and regression results for all cases are summarized in Table 2.4 below.

			Data of		
			Rate or		
			<u>Change</u> (\$/	<u>Model Fit</u>	
Model	Dataset	Dates	month)	(R2)	Result
Case 1	View shed, all data	Jan 97 - Jan 03	\$576.22	0.29	The rate of change in average view shed
	Comparable, all data	Jan 97 - Jan 03	\$245.51	0.34	sales price is 2.3 times greater than the rate
					of change of the comparable over the study
					period.
Case 2	View shed, before	Jan 97 - Aug 00	\$129.32	0.01	The rate of change in average view shed
	View shed, after	Sep 00 - Jan 03	\$1,332.24	0.28	sales price after the on-line date is 10.3
					times greater than the rate of change before
					the on-line date.
Case 3	View shed, after	Sep 00 - Jan 03	\$1,332.24	0.28	The rate of change in average view shed
	Comparable, after	Sep 00 - Jan 03	-\$418.71	0.39	sales price after the on-line date increased
					at 3.2 times the rate of decrease in the
					comparable after the on-line date.





Figure 2.4 Average Residential Housing Sales Price For Madison Project Madison County, New York 1997-2002

## **Fenner View shed**

In Case I, the monthly sales price change in the view shed is 50 percent greater than the monthly sales price change of the comparable over the study period. The Case I model explains approximately one-third of the variance in the data. In Case II, average monthly sales prices increase in the view shed prior to the on-line date, but decrease after the on-line date. The average view shed sales price after the on-line date decreased at 29 percent of the rate of increase before the on-line date. The Case II model provides a fair fit to the data before the on-line date, with half of the variance in the data explained by the linear regression, but a poor fit after the on-line date, explaining only 4 percent of the variance in the data. The poor fit is partly due to having only 14 months of data after the on-line date, which may not be enough data establish clear price trends in a housing market that exhibits significant price fluctuations over time. In Case III, average monthly sales prices decrease in both the view shed and comparable after the on-line date, with the view shed decreasing less quickly. The decrease in average view shed sales price after the on-line date is 37 percent less than the decrease of the comparable after the on-line date. The Case III model again describes only 4 percent of the variance in the view shed, but over 60 percent of the variance in the comparable. The data for the full study period is graphed in Figure 2.5, and the regression results are summarized in Table 2.5.

			Rate of		
			<u>Change</u>	Model Fit	
Model	Dataset	Dates	(\$/month)	(R2)	Result
Case 1	View shed, all data	Jan 97 - Jan 03	\$368.47	0.35	The rate of change in average view shed
	Comparable, all data	Jan 97 - Jan 03	\$245.51	0.34	sales price is 50% greater than the rate of
					change of the comparable over the study
					period.
Case 2	View shed, before	Jan 97 - Nov 01	\$587.95	0.50	The rate of decrease in average view shed
	View shed, after	Dec 01 - Jan 03	-\$418.98	0.04	sales price after the on-line date is 29%
					lower than the rate of sales price increase
					before the on-line date.
Case 3	View shed, after	Dec 01 - Jan 03	-\$418.98	0.04	The rate of decrease in average view shed
	Comparable, after	Dec 01 - Jan 03	-\$663.38	0.63	sales price after the on-line date is 37% less
					than the rate of decrease of the comparable
					after the on-line date.

#### Table 2.5 Madison County, New York: Regression Results Project: Fenner



Figure 2.5 Average Residential Housing Sales Price For Fenner Project Madison County, New York 1997-2002

#### **D.** Additional Interviewee Comments

Madison County assessors Carol Brophy and Priscilla Suits said they have not seen any impact of the turbines on property values, and Suits added, "There's been no talk of any impact on values." Assessor Russell Cary noted that there were worries about views of the turbines, and that the project siting was designed such that the town of Cazenovia could not see the project – it rests just outside the five-mile perimeter view shed this study designated.

# Site Report 3: Carson County, Texas

# A. Project Description

Situated in the middle of the Texas panhandle among large agricultural farms and small herds of cattle on fallow, 80 turbines stand at 70 meters (230 feet) high. Southwest of the project by 2.5 miles is White Deer town, which is 41 miles northeast of Amarillo.

The area is just about dead flat since Carson is right on the edge of the Texas High Plains. The general classification of the county is "completely rural or less than 2,500 urban population, but adjacent to a metro area." See Appendix 1 for a definition of rural urban continuum codes. The view shed represents fewer than 1,200 people.



Figure 3.1 : White Deer Wind Farm Photo Courtesy: Ted Carr © 2003

# **B.** Project Timeline

### Table 3.1 Wind Project History, Carson County, TX

Project Name	Completion Date	Capacity (MW)
Llano Estacado Wind Ranch	2001	80



Figure 3.2. Regional Wind Project Location (Dots approximate wind farm locations)



Figure 3.3. Carson County, Texas View shed Site Location Source: Carson Appraisal District Base Map Source: U.S. Census Bureau

## C. Analysis i. Data

Real property sales data for 1998 to 2002 was purchased in paper format from Carson County Appraisal District in Panhandle, TX. The sales data was purchased for the entire county, including the wind farm area and surrounding communities. The unit of analysis for this dataset is defined by census block and section and incorporated city boundaries. A detailed landowners map from for the County that identified every parcel, section, and block in the county was purchased. The Appraiser marked the exact parcel locations of the wind farms on the map, eliminating any estimation of the actual wind farm location.

The dataset included only a few property attributes, such as residence square footage and age of home. While the dataset included all sales of land, commercial property, and residential property, the analysis included only improved lots with residential housing, with a total of 269 sales over the study period. While there were no questions about unusual data points, the view shed had only 45 sales over the five years of data analyzed. This meant that many months had no sales in the view shed. While the six-month trailing average smoothed out most of the gaps, there was a seven-month gap in view shed data from August 2001 through February 2002. As a proxy for the missing data, the average of the two previous months with sales was used to fill in the gap. In addition, a few low value sales and a number of months with no sales contributed to a very low average sale price in the view shed between July 2000 and May 2001.

#### ii. View Shed Definition

View shed definition using the five-mile radius was straightforward given the land owner map, exact wind farm location, and one-mile reference scale on the map. The town of White Deer lies entirely within the view shed. The region of Skellytown lies just outside the edge of the five-mile radius, too far to be defined as view shed, but too close given the flat land and easily seen wind turbines to be considered as part of the comparable. Thus Skellytown, with a total of 16 sales, was excluded from the analysis. The view shed accounts for 45 sales over the study period.

Interviews with the State of Texas Carson County Appraisal District officers were conducted by phone to determine what percentage of residential properties in the view shed can see all or a portion of the wind turbines. In Appraiser Mike Darnell's opinion, 90 to 100 percent of White Deer residents can see the project.

#### iii. Comparable Selection

The comparable community was selected through interviews with State of Texas Carson County Appraisal District personnel, as well as analysis of demographic data from the 1990 and 2000 U.S. Census for communities near but outside of the view shed. Tables 3.2 and 3.3 summarize the Census data reviewed. In order to determine the most appropriate comparable community we looked at the demographics of three remaining residential areas in the county that were not part of the view shed and not excluded by being too close to the view shed.

Based on his experience in the area, Appraiser Mike Darnell suggested that Groom would be an appropriate comparable to the view shed area. However, Darnell said that homes in Fritch and Panhandle are more expensive, and have been increasing in value faster over time. Upon examination of Census data, sales data availability, and review of Assessor comments, all three residential areas, Fritch, Groom, and Panhandle were selected as the comparable, with a total of 224 sales from 1998 to 2002.

Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value- owner-occupied housing unit
1990	Y	White Deer-Groom division	2,863	\$23,883	8%	1,319	\$34,700
1990	Ν	Panhandle division	3,713	\$28,569	10%	1,537	\$44,100
1990 C	OUNT	Y DEMOGRAPHICS	6,576	\$26,226	9%	2,856	\$39,400

### Table 3.2 Carson County, Texas: 1990 Census Data

#### Table 3.3 Carson County, Texas: 2000 Census Data

	View			Median household	% Population below poverty	Number housing	Median value- owner-occupied
Year	shed	Location	Population	income	level	units	housing unit
2000	Y	White Deer-Groom CCD	2,702	\$36,117	9%	1,261	\$46,900
2000	Ν	Panhandle CCD	3,814	\$43,349	6%	1,554	\$59,400
2000 C	OUNT	Y DEMOGRAPHICS	6,516	\$39,733	7%	2,815	\$53,150

#### iv. Analytical Results and Discussion

In all three of the regression models, monthly average sales prices grew faster in the view shed than in the comparable area, indicating that there is no significant evidence that the presence of the wind farms had a negative effect on residential property values.

In Case I, the monthly sales price change in the view shed is 2.1 times the monthly sales price change of the comparable over the study period. The Case I model provides a fair fit to the view shed data, with almost half of the variance in the data explained by the linear regression. However, the model only explains one-third of the variance in the comparable data. In Case II, the monthly sales price change in the view shed is 3.4 times greater after the on-line date than before the on-line date. The Case II model provides a poor fit to the data prior to the on-line date, with a quarter of the variance in the data explained by the linear regression. However, the fit after the on-line date is good, with over 80 percent of the variance explained. In Case III, average monthly sales prices increase in the view shed after the on-line date, but decrease in the comparable region. The average view shed sales price after the on-line date increased at 13.4 times the rate of decrease in the comparable after the on-line date. The Case III model describes over 80 percent of the variance in the view shed, but provides a very poor fit with only 2 percent of the variance explained in the comparable. The data for the full study period is graphed in Figure 3.4, and regression results for all cases are summarized in Table 3.4 below.

Model	Dataset	Dates	Rate of Change (\$/month)	Model Fit (R2)	Result
Case 1	View shed, all data Comparable, all data	Jan 98 - Nov 02 Jan 98 - Nov 02	\$620.47 \$296.54	0.49 0.33	The rate of change in average view shed sales price is 2.1 times greater than the rate of change of the comparable over the study period.
Case 2	View shed, before View shed, after	Jan 98 - Oct 01 Nov 01 - Nov 02	\$553.92 \$1,879.76	0.24 0.83	The rate of change in average view shed sales price after the on-line date is 3.4 times greater than the rate of change before the on-line date.
Case 3	View shed, after Comparable, after	Nov 01 - Nov 02 Nov 01 - Nov 02	\$1,879.76 -\$140.14	0.83 0.02	The rate of change in average view shed sales price after the on-line date increased at 13.4 times the rate of decrease in the comparable after the on-line date.

# Table 3.4 Carson County, Texas: Regression ResultsProject: Llano Estacado Wind Ranch





# **D. Additional Interviewee Comments**

Carson County officers Mike Darnell, appraisal district office, and Barbara Cosper, tax office, said most of the land in the view shed were farms, and that most residents in White Deer worked on the farms. Therefore, White Deer residents' interest in housing values was wholly dependent on their proximity to farms with no concern for the wind towers, she said. Darnell added that most residents in White Deer liked the turbines because they brought new jobs to the area, and there has been no talk of discontent with the turbines.

The county's main claim to fame is it's the home of Pantex; the only nuclear armament production and disassembly facility in the U.S., according to Department of Energy's www.pantex.com website.

# Site Report 4: Bennington County, Vermont

# A. Project Description

One mile due south of Searsburg, atop a ridge, stand 11 turbines with 40-meter (131 foot) hub heights in a line running north-south. The solid, white, conical towers rise well above dense woods, but the black painted blades are virtually invisible – especially when in motion. The site is in Bennington County less than a mile west of Windham County, and is midway between the two medium-size towns of Bennington and Brattleboro.

The area is defined as a non-metro area adjacent to a metro area, though not completely rural and with a population between 2,500 and 19,999. See Appendix 1 for a definition of rural urban continuum codes. The view shed has a population of fewer than 4,000.



Figure 4.1 Searsburg wind project turbines Photo courtesy Vermont Environmental Research Associates, 2002. www.northeastwind.com



Figure 4.2 The Searsburg wind project is located in Southern Vermont Base map image source: U.S. Census Bureau





# **B.** Project Timeline

	Project Name	Completion Date	Capacity (MW)
Searsburg		1997	6

Table 4.1 Wind Pro	oject History,	Bennington	County, VT

## C. Analysis

#### i. Data

Real property sales data for 1994 to 2002 was purchased in electronic form from Phil Dodd of VermontProperty.com in Montpelier, VT. Sales data was purchased for the townships and cities encompassing the wind farm area and surrounding communities, and was provided in two separate datasets. The first dataset, covering years 1994 through 1998, contained only annual average property sale prices and sales volumes, by town. No other locational data or property attributes were included. Property types from this dataset used in the analysis are primary residences and vacation homes, accounting for 1,584 sales.

The second dataset, contained information on individual property sales from May 1998 through October 2002, and accounted for 2,333 sales. The unit of analysis for the second dataset is towns. Some street addresses were included in the property descriptions, but many of these were only partial addresses. Property types from this dataset used in the analysis are primary homes, primary condominiums, vacation condominiums, and camp or vacation homes. The Searsburg wind farm went on-line in February 1997, with a capacity of 6 MW, during the time when only annually averaged sales data was available.

#### ii. View Shed Definition

The view shed is defined by a five-mile radius around the wind farm, and encompasses four incorporated towns: Searsburg in Bennington county, and Dover, Somerset, and Wilmington in Windham County. Interviews with the State of Vermont Windham County Listers Office were conducted by phone to determine what percentage of residential properties in the view shed can see all or a portion of the wind turbines. According to Newfane town Lister Doris Knechtel, approximately 10 percent of the Searsburg homes can see the wind farm. Listers were unable to estimate what percentage of properties could see the wind farms in the other view shed towns. The final view shed dataset contained 1,055 sales from 1994 to 1998 and 1,733 sales for 1999 to 2002, for a total of 2,788 sales.

#### iii. Comparable Selection

The comparable community was selected through interviews with Phil Dodd of VermontProperty.com, interviews with State of Vermont Listers, as well as analysis of demographic data from the 1990 and 2000 U.S. Census for communities near but outside of the view shed. Tables 4.2 and 4.3 summarize the census data reviewed. In order to determine the most appropriate comparable community, we looked at the demographics of seven surrounding areas. Upon examination of Census data, sales data availability, and review of interview comments, Newfane and Whitingham in Windham County were selected as the comparable. The final comparable dataset contained 288 sales from 1994 to 1998 and 264 sales for 1999 to 2002, for a total of 552 sales from 1994 to 2002.

#### iv. Analytical Results and Discussion

In all three of the regression models, monthly average sales prices grew faster in the view shed than in the comparable area, indicating that there is no significant evidence that the presence of the wind farms had a negative effect on residential property values.

Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value- owner-occupied housing unit
1990	Y	Searsburg village, Bennington Cty.	85	\$26,875	9%	92	\$61,500
1990	Y	Dover village, Windham Cty.	994	\$30,966	7%	2450	\$103,000
1990	Y	Wilmington village, Windham Cty.	1,968	\$27,335	6%	2,176	\$110,600
1990	VIEW S	HED DEMOGRAPHICS	3,047	\$28,392	7%	4,718	\$91,700
1990	COMP	Newfane town, Windham Cty.	1,555	\$31,935	7%	974	\$103,000
1990	COMP	Whitingham village, Windham Cty.	1,177	\$28,580	8%	737	\$88,500
1990	COMPA	RABLE DEMOGRAPHICS	2,732	\$30,258	8%	1,711	\$95,750
1990	Ν	Halifax village, Windham Cty.	588	\$23,750	15%	473	\$81,600
1990	Ν	Readsboro village, Bennington Cty.	762	\$25,913	12%	478	\$65,400
1990	Ν	Stratton village, Windham Cty.	121	\$31,369	2%	864	\$162,500
1990	Ν	Woodford village, Bennington Cty.	331	\$24,118	18%	267	\$75,000
1990	N	Marlboro village, Windham Cty.	924	\$29,926	10%	474	\$103,300

## Table 4.2 Bennington and Windham Counties, Vermont: 1990 Census Data

## Table 4.3 Bennington and Windham Counties, Vermont: 2000 Census Data

Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value- owner-occupied housing unit
2000	Y	Searsburg village, Bennington Cty.	114	\$17,500	18%	65	\$86,700
2000	Y	Dover village, Windham Cty.	1410	\$43,824	10%	2749	\$143,300
2000	Y	Wilmington village, Windham Cty.	2,225	\$37,396	9%	2,232	\$120,100
2000	VIEW S	HED DEMOGRAPHICS	3,749	\$32,907	12%	5,046	\$116,700
2000	COMP	Newfane town, Windham Cty.	1,680	\$45,735	5%	977	\$123,600
2000	COMP	Whitingham village, Windham Cty.	1,298	\$37,434	8%	802	\$111,200
2000	COMPA	RABLE DEMOGRAPHICS	2,978	\$41,585	6%	1,779	\$117,400
2000	Ν	Halifax village, Windham Cty.	782	\$36,458	16%	493	\$98,800
2000	Ν	Readsboro village, Bennington Cty.	803	\$35,000	7%	464	\$78,600
2000	Ν	Stratton village, Windham Cty.	136	\$39,688	5%	1,091	\$125,000
2000	Ν	Woodford village, Bennington Cty.	397	\$33,929	17%	355	\$91,300
2000	N	Marlboro village, Windham Cty.	963	\$41,429	4%	495	\$150,000

In Case I, the monthly sales price change in the view shed is 62 percent greater than the monthly sales price change of the comparable over the study period. The Case I model provides a reasonable fit to the view shed data, with 70 percent of the variance in the data for the view shed and 45 percent of the variance in the data for the view shed and to the view shed are the comparable explained by the linear regression. In Case II, sales prices decreased in the view shed prior to the on-line date, and increased after the on-line date. The average view shed sales price after the on-line date increased at 2.6 times the rate of decrease in the view shed before the on-line date. The Case II model provides a good fit to the data, with 71 percent of the variance in the data for the view shed after the on-line date and 88 percent of the variance in the data before the on-line date are 18 percent greater than in the comparable. The Case III model describes over 70 percent of the variance in the data. The data for the variance in the data for the variance in the data. The data for the variance in the data for the variance in the data. The data for the variance in the data for the variance in the data. The data for the variance in the data for the variance in the data. The data for the variance in the data for the variance in the data. The data for the variance in the data for the variance in the data. The data for the variance in the data for the variance in the data. The data for the full study period is graphed in Figure 4.4, and regression results for all cases are summarized in Table 4.4 below.

# **D. Additional Interviewee Comments**

Newfane town Lister¹ Doris Knechtel said the area has a wide cross section of home values, styles, and uses (permanent residential and vacation homes). The other primary community in the view shed was Wilmington, which Knechtel said was a resort destination with more turnover than Searsburg.

Model	Dataset	Dates	Rate of Change (\$/month)	<u>Model Fit</u> (R2)	Result
Case 1	View shed, all data Comparable, all data	Jan 94 - Oct 02 Jan 94 - Oct 02	\$536.41 \$330.81	0.70 0.45	The rate of change in average view shed sales price is 62% greater than the rate of change of the comparable over the study period.
Case 2	View shed, before View shed, after	Jan 94 - Jan 97 Feb 97 - Oct 02	-\$301.52 \$771.06	0.88 0.71	The rate of change in average view shed sales price after the on-line date increased at 2.6 times the rate of decrease before the on-line date.
Case 3	View shed, after Comparable, after	Feb 97 - Oct 02 Feb 97 - Oct 02	\$771.06 \$655.20	0.71 0.78	The rate of change in average view shed sales price after the on-line date is 18% greater than the rate of change of the comparable after the on-line date.







1 Vermont property assessors are organized differently from any other state researched for this analysis. Assessors are called "listers" and operate per town – not on a township or county level. With small tax regions to support officials, local town offices are infrequently available, and in many cases neither had answering machines nor computers. The county government office confirmed that many Vermont offices didn't have computers, but were in the process of receiving them as of October 2002.

# Site Report 5: Kewaunee County, Wisconsin

# A. Project Description

The regional topography has slight elevation changes with some rolling hills, but is mostly cleared agricultural land with intermittent groves. The two major wind farm projects occupy three sites that are all within five miles of each other, two in Lincoln Township and one in Red River Township. There are several small communities in Red River and Lincoln Townships that primarily work the agricultural lands.

The projects, installed in 1999, consist of 31 turbines with hub heights of 65 meters (213 feet). The nearest incorporated towns are Algoma to the east, Kewaunee to the southeast, and Luxemburg to the southwest. The wind farms are roughly 15 miles from the center of the Green Bay metropolitan area, and 10 miles from the outer edges of the city. The area is defined as a non-metro area adjacent to a metro area, though not completely rural and with a population between 2,500 and 19,999. See Appendix 1 for a definition of rural urban continuum codes. The view shed has a population of approximately 3,000.



Figure 5.1 Wind Projects in Red River and Lincoln Townships Photo Courtesy Wisconsin Public Service Corporation



Figure 5.2 Location of Kewaunee County wind projects Base map image source: U.S. Census Bureau



Location Source: Kewaunee County Assessors Office

Base Map Source: U.S. Census Bureau
### **B.** Project Timeline

Project Name	Completion Date	Capacity (MW)
Lincoln (Gregorville, Lincoln Township)	1999	9.2
Rosiere (Lincoln and Red River Townships)	1999	11.2

#### Table 5.4 Wind Project History, Kewaunee County, WI

## C. Analysis

### i. Data

Real property sales data for 1996 to 2002 was purchased in paper and electronic form from the State of Wisconsin Department of Revenue Bureau of Equalization Green Bay Office. Sales data was obtained for the townships and cities encompassing the wind farm area and surrounding communities, and was provided in two separate datasets. The first dataset consisted of paper copy of Detailed Sales Studies for residential properties from 1994 to 1999. These contained individual property sales by month, year, and township or district. Parcel numbers were included, but no other locational data or property attributes were available. The second dataset consisted of electronic files containing residential property sales data for 2000 to 2002. This dataset contained no detailed property attributes, and only partial street addresses. The units of analysis for the combined dataset are townships and villages. After discussion with the Property Assessment Specialist, three unusually high value sales were removed from the view shed dataset. The final dataset included 624 sales from 1996 to 2002.

The Lincoln wind farm near Gregorville and the Rosiere wind farm on the Lincoln/Red River Township Border both went on-line June 1999, with capacities of 9.2 MW and 11.2 MW, respectively.

### ii. View Shed Definition

The view shed is defined by a five-mile radius around the wind farms. Because the view sheds of the individual wind farm sites overlap, and because all wind farms went on-line at the same time, a single view shed was defined. It encompasses all of Lincoln and Red River Townships, and the incorporated town of Casco in Casco Township. To assist in the view shed definition, detailed Plat maps for Lincoln and Red River Townships were obtained from the State of Wisconsin Bureau of Equalization Green Bay Office. These maps indicated every block and parcel in each township, and provided a one square mile grid to allow distance measurements. The location of each wind farm was marked on the map by the Bureau, and detailed aerial photos of each wind farm were also provided. This information allowed concise definition of the view shed area. Because only portions of Ahnapee, Luxemborg, and Casco Townships are in the view shed, these townships were excluded from consideration for either the view shed or comparable. The final view shed dataset contained 329 sales from 1996 to 2002.

Interviews with Kewaunee County Assessors were conducted by phone to determine what percentage of residential properties in the view shed can see all or a portion of the wind turbines. Assessor Dave Dorschner said 20 to 25 percent of Red River Township properties have views of the turbines. No one interviewed was able to estimate the percentage of properties in Lincoln Township or Casco Village with a view of the wind farms.

### iii. Comparable Selection

The comparable community was selected through interviews with James W. Green, Bureau of Equalization Property Assessment Specialist, and analysis of demographic data from the 1990 and 2000 U.S. Census for communities near but outside of the view shed. Tables 5.2 and 5.3 summarize the Census data reviewed. In order to determine the most appropriate comparable community, we looked at the demographics of eight surrounding areas. Upon examination of Census

data, sales data availability, and review of interview comments, Carlton, Montpelier, and West Kewaunee Townships were selected as the comparable. The final comparable dataset contained 295 sales from 1996 to 2002.

Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value- owner-occupied housing unit
1990	Y	Casco village	544	\$25,313	6%	223	\$54,200
1990	Y	Lincoln town	996	\$28,958	7%	338	\$44,800
1990	Y	Red River town	1,407	\$32,614	3%	552	\$60,600
VIEW SH	HED DEM	IOGRAPHICS	2,947	\$28,962	6%	1,113	\$53,200
1990	COMP	Carlton town	1,041	\$30,385	8%	383	\$42,600
1990	COMP	Montpelier town	1,369	\$31,600	8%	457	\$61,300
1990	COMP	West Kewaunee town	1,215	\$31,094	8%	451	\$51,300
COMPA	ARABLE I	DEMOGRAPHICS	3,625	\$31,026	8%	1,291	\$51,733
1990	Ν	Ahnapee town	941	\$26,850	7%	406	\$47,500
1990	Ν	Algoma City	3,353	\$21,393	8%	1,564	\$44,000
1990	Ν	Casco town	1,010	\$33,807	4%	344	\$57,200
1990	Ν	Franklin town	990	\$32,625	14%	360	\$53,300
1990	Ν	Kewaunee City	2,750	\$22,500	14%	1,213	\$46,600
1990	Ν	Luxemburg town	1,387	\$35,125	5%	424	\$60,600
1990	N	Luxemburg village	1,151	\$24,702	6%	460	\$58,200
1990	N	Pierce town	724	\$25,812	12%	369	\$60,400

### Table 5.2 Kewaunee County, Wisconsin: 1999 Census Data

### Table 5.3 Kewaunee County, Wisconsin: 2000 Census Data

Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value- owner-occupied housing unit
2000	Y	Casco village	572	\$44,583	4%	236	\$88,700
2000	Y	Lincoln town	957	\$42,188	9%	346	\$100,000
2000	Y	Red River town	1,476	\$47,833	6%	601	\$117,900
VIEW SH	HED DEM	IOGRAPHICS	3,005	\$44,868	6%	1,183	\$102,200
2000	COMP	Carlton town	1,000	\$50,227	3%	383	\$98,900
2000	COMP	Montpelier town	1,371	\$51,000	4%	492	\$112,000
2000	COMP	West Kewaunee town	1,287	\$47,059	6%	485	\$101,300
COMPA	ARABLE I	DEMOGRAPHICS	3,658	\$49,429	4%	1,360	\$104,067
2000	Ν	Ahnapee town	977	\$47,500	3%	426	\$95,200
2000	Ν	Algoma City	3,357	\$35,029	5%	1,632	\$74,500
2000	Ν	Casco town	1,153	\$46,250	4%	404	\$107,800
2000	Ν	Franklin town	997	\$52,019	2%	359	\$114,900
2000	Ν	Kewaunee City	2,806	\$36,420	11%	1,237	\$79,700
2000	Ν	Luxemburg town	1,402	\$54,875	1%	459	\$121,600
2000	N	Luxemburg village	1,935	\$45,000	6%	754	\$105,100
2000	Ν	Pierce town	897	\$43,000	15%	407	\$98,900

### iv. Analytical Results and Discussion

In all three of the regression models, monthly average sales prices grew faster in the view shed than in the comparable area, indicating that there is no significant evidence that the presence of the wind farms had a negative effect on residential property values. However, the fit of the linear regression is poor for all cases analyzed. Very low sales volumes, averaging 3.6 sales per month from 1996 to 1999, lead to large fluctuations in average sales prices from individual property sales. This contributes to the low R2 values.

In Case I, the monthly sales price change in the view shed is 3.7 times the monthly sales price change of the comparable over the study period. However, the Case I model provides a poor fit to the view shed data, with 26 percent and 5 percent of the variance in the data explained by the linear regression in the view shed and comparable, respectively. In Case II, sales prices decreased in the view shed prior to the on-line date, and increased after the on-line date. The average view shed sales price after the on-line date increased at 3.5 times the rate of decrease in the view shed before the on-line date. The Case II model provides a poor fit to the data, with 32 percent of the variance in the data for the view shed after the on-line date and 2 percent of the variance in the data before the on-line date explained by the linear regression. In Case III, average monthly sales prices increase in the view shed after the on-line date, but decrease in the comparable region. The average view shed sales price after the on-line date. The Case III model describes approximately a third of the variance in the data. The data for the full study period is graphed in Figure 5.4, and regression results for all cases are summarized in Table 5.4 below.

Model	Dataset	Dates	Rate of Change (\$/ month)	<u>Model</u> <u>Fit</u> (R2)	Result
Case 1	View shed, all data Comparable, all data	Jan 96 - Sep 02 Jan 96 - Sep 02	\$434.48 \$118.18	0.26 0.05	The rate of change in average view shed sales price is 3.7 times greater than the rate of change of the comparable over the study period.
Case 2	View shed, before View shed, after	Jan 96 - May 99 Jun 99 - Sep 02	-\$238.67 \$840.03	0.02 0.32	The increase in average view shed sales price after the on-line date is 3.5 times the decrease in view shed sales price before the on-line date.
Case 3	View shed, after Comparable, after	Jun 99 - Sep 02 Jun 99 - Sep 02	\$840.03 -\$630.10	0.32 0.37	The average view shed sales price after the on-line date increases 33% quicker than the comparable sales price decreases after the on-line date.

## Table 5.4 Regression Results, Kewaunee County, WIProjects: Red River (Rosiere), Lincoln (Rosiere), Lincoln (Gregorville)



Figure 5.4 Average Residential Housing Sales Price Kewaunee County, Wisconsin 1996-2002

### **D. Additional Interviewee Comments**

Assessor Dave Dorschner said he has not seen an impact on property values except for those immediately neighboring the project sites. In the cases of neighboring property, he said some homes were sold because of visual and/or auditory distraction, but some of the properties were purchased speculatively in hope that a tower might be built on the property.

James W. Green, Wis. Bureau of Equalization property assessment specialist, also said he has not seen any impact of the turbines on property values. He added that he has seen greater property value increases in the rural areas than in the city because people were moving out of the Green Bay area opting for rural developments or old farmhouses.

## Site Report 6: Somerset County, Pennsylvania

## A. Project Description

There are two major wind farms in Somerset County, Somerset and Green Mountain. They are about 20 miles due east of the wind farm in Fayette County, PA. The Somerset project has six turbines 64 meters (210 feet) high along a ridge crest east Somerset town. The Green Mountain project has eight turbines at 60 meters (197 feet). They are about 10 miles southwest of the Somerset project, and a mile west of Garret town.

The area is almost the same as Fayette County, but slightly less hilly – dense populations of tall trees, frequent overcast, and primarily rural development. The area is classified as a "county in a metro area with fewer than 250,000." See Appendix 1 for a definition of rural urban continuum codes. The view shed has a population of approximately 19,000.



Figure 6.1 Somerset wind tower Photo courtesy GE Wind Energy © 2002



Figure 6.2 General location of Somerset and Fayette County wind projects Base map image source: U.S. Census Bureau





Base Map Source: U.S. Census Bureau

## **B.** Project Timeline

### Table 6.1 Wind Project History, Somerset County, PA

Project Name	Completion Date	Capacity (MW)
Somerset	2001	9.0
Green Mountain Wind Farm	2000	10.4

### C. Analysis

### i. Data

Real property sales data for 1997 to 2002 was obtained in electronic form from the State of Pennsylvania Somerset County Assessment Office in Somerset, PA. Sales data was obtained for the townships and cities encompassing the wind farm area and surrounding communities. The electronic files contain residential property sales data for 2000 to 2002. Residential types included in the analysis are homes, homes converted to apartments, mobile homes with land, condominiums, townhouses, and one mobile home on leased land. The dataset contained lot acreages and brief building descriptions, and some, but not all, records provided additional property attributes. As street addresses were not provided, the units of analysis for the dataset are townships and villages. The final dataset included 1,506 residential property sales from 1997 to 2002.

The Somerset wind farm went on-line October 2001 and the Green Mountain wind farm near Garrett went on-line May 2000, with capacities of 9.0 MW and 10.4 MW, respectively.

### ii. View Shed Definition

The view shed is defined by a five-mile radius around the wind farms. Because the view sheds of the individual wind farm sites overlap, a single view shed was defined. It encompasses all of Somerset and Summit Townships, and the Garrett and Somerset Boroughs within these townships. Locational data for the wind farms was obtained from utility and wind industry web sites, and used in conjunction with maps and interviews with the Somerset County Mapping Department to identify the exact location and extent of the wind farms and view shed. Townships only partially within the view shed were excluded from consideration for either the view shed or comparable. The final view shed dataset contains 962 sales from 1997 to 2002.

Interviews with Somerset County Assessors were conducted by phone to determine what percentage of residential properties in the view shed can see all or a portion of the wind turbines. In Assessor Hudack's opinion, 10 percent of Somerset properties can see the turbines, and roughly 20 percent of Garrett properties have a view.

### iii. Comparable Selection

The comparable community was selected through interviews with Assessors John Riley and Joe Hudack of the State of Pennsylvania Somerset County Assessment Office, and analysis of demographic data from the 1990 and 2000 U.S. Census for communities near but outside of the view shed. Tables 6.2 and 6.3 summarize the Census data reviewed. In order to determine the most appropriate comparable community we looked at the demographics of three surrounding areas. Upon examination of Census data, sales data availability, and review of interview comments, Conemaugh Township was selected as the comparable. The final comparable dataset contained 422 sales from 1997 to 2002.

### iv. Analytical Results and Discussion

In all three of the regression models, monthly average sales prices grew faster in the view shed than in the comparable area, indicating that there is no significant evidence that the presence of the wind farms had a negative effect on residential property values.

In Case I, the monthly sales price change in the view shed is 90 percent greater than the monthly sales price change of the comparable over the study period. The Case I model provides a poor fit to the view shed data, with 30 percent of the variance in the data for the view shed and 7 percent of the variance in the data for the comparable explained by the linear regression. In Case II, the monthly sales price change in the view shed is 3.5 times greater after the on-line date than before the on-line date. The Case II model provides a poor fit to the data prior to the on-line date, with 37 percent, of the variance in the data explained by the linear regression, but a reasonable fit after the on-line date, with 62 percent of the variance explained. In Case III, average monthly sales

prices increase in the view shed after the on-line date, but decrease in the comparable region. The average view shed sales price after the on-line date increased at 2.3 times the rate of decrease in the comparable after the on-line date. The Case III model describes 62 percent of the variance in the view shed, but only 23 percent of the variance in the comparable. The data for the full study period is graphed in Figure 6.4, and regression results for all cases are summarized in Table 6.4 below.

Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value-owner- occupied housing unit
1990	Υ	Garrett Borough	520	\$16,071	26%	218	\$27,100
1990	Υ	Somerset Borough	6,454	\$19,764	18%	3,100	\$58,800
1990	Υ	Somerset Twsp	8,732	\$25,631	10%	3,296	\$57,100
1990	Υ	Summit Twsp	2,495	\$22,868	17%	942	\$40,800
VIEW SI	HED DEM	OGRAPHICS	18,201	\$21,084	18%	7,556	\$45,950
1990	COMP	Conemaugh Twsp	7,737	\$25,025	8%	3,070	\$43,100
СОМРА	RABLE D	EMOGRAPHICS	7,737	\$25,025	8%	3,070	\$43,100
1990	N	Boswell Borough	1,485	\$16,128	29%	670	\$39,700
1990	N	Milford Twsp	1,544	\$24,821	9%	666	\$47,400

### Table 6.2 Somerset County, Pennsylvania: 1990 Census Data

### Table 6.3 Somerset County, Pennsylvania: 2000 Census Data

Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value-owner- occupied housing unit
2000	Y	Garrett Borough	449	\$24,609	16%	180	\$38,600
2000	Y	Somerset Borough	6,762	\$29,050	12%	3,313	\$87,200
2000	Y	Somerset Twsp	9,319	\$33,391	9%	3,699	\$76,300
2000	Y	Summit Twsp	2,368	\$32,115	17%	930	\$67,700
VIEW	SHED DI	EMOGRAPHICS	18,898	\$29,791	13%	8,122	\$67,450
2000	COMP	Conemaugh Twsp	7,452	\$30,530	7%	3,089	\$61,800
COMF	PARABLE	E DEMOGRAPHICS	7,452	\$30,530	7%	3,089	\$61,800
2000	N	Boswell Borough	1,364	\$20,875	29%	681	\$54,000
2000	N	Milford Twsp	1,561	\$34,458	14%	658	\$75,300

			Rate of	Model	
			<u>Change</u> (\$/	<u>FII</u>	
Model	Dataset	Dates	month)	(R2)	Result
Case 1	View shed, all data	Jan 97 - Oct 02	\$190.07	0.30	The rate of change in average view shed
	Comparable, all data	Jan 97 - Oct 02	\$100.06	0.07	sales price is 90% greater than the rate of
					change of the comparable over the study
					period.
Case 2	View shed, before View	Jan 97 - Apr 00	\$277.99	0.37	The rate of change in average view shed
	shed, after	May 00 - Oct 02	\$969.59	0.62	sales price after the on-line date is 3.5 times
					greater than the rate of change before the
					on-line date.
Case 3	View shed, after	May 00 - Oct 02	\$969.59	0.62	The rate of change in average view shed
	Comparable, after	May 00 - Oct 02	-\$418.73	0.23	sales price after the on-line date increased
					at 2.3 times the rate of decrease in the
					comparable after the on-line date.







## **D. Additional Interviewee Comments**

Assessor Joe Hudack said he has not seen any impact on property values from wind farms. The turbines outside Somerset were also "not glaring," but could be seen from the PA Turnpike. The Green Mountain turbines outside Garret were noticeable, but because there were so few people residing there, he hasn't seen much housing turnover to base an opinion, he said.

## Site Report 7: Buena Vista County, Iowa

### A. Project Description

The geography of the view shed and comparable regions is flat with minimal elevation changes. The region is mostly cleared land for agricultural production, with trees along irrigation ditches or planted around homes for shade and wind dampening.



Figure 7.1 750 kW Zond wind turbines 1.5 miles east of Alta, Iowa Photo Courtesy: Waverly Light and Power © 2002

Surrounding Alta, Iowa and west of the town along the Buena Vista and Cherokee counties' border, 257 towers with 63 meter [207 ft] hub heights stand among agricultural farms and scattered homes. Project Storm Lake I comprises 150 towers around Alta extending 1.5-2.5 miles east and west, 1.5 miles south, and five miles north. Throughout the project, the turbines are consistently spaced 3.6 rotor diameters, or about 180 m (590 ft) apart. Project Storm Lake II comprises 107 towers, eight miles northwest of Alta, with several towers over the county border into neighboring Cherokee County. The exact location of all turbines was obtained from the Waverly Power and Light website. All towers have white color blades and hubs with either grey, trussed towers or white solid towers. Solid red lights are required by the FAA on the nacelles of alternate turbines.

Buena Vista County is classified as an "urban population with 2,500 to 19,999 not adjacent to a metro area." See Appendix 1 for a definition of rural urban continuum codes. This analysis defines two possible view sheds, depending on whether Storm Lake City is included in the analysis. Accordingly, the view shed has a population of either 4,000 or 14,000, depending on its definition.







Figure 7.3. Buena-Vista, County, Iowa View shed Location Source: Buena-Vista County Assessors Office

Base Map Source: U.S. Census Bureau

### **B.** Project Timeline

Project Name	Completion Date	Capacity (MW)
Storm Lake I	1999	112.5
Storm Lake II	1999	80.2

Table 7.1	Wind Proje	ect History,	Somerset	County,	PA
				, , ,	

### C. Analysis

### i. Data

Real property sales data for 1996 to 2002 was obtained in electronic form from the Iowa State Assessors Office Website at www.iowaassessors.com. Sales data was obtained for the townships and cities encompassing the wind farm area and surrounding communities. The electronic data gathered contains residential property sales prices, parcel numbers, street addresses, year built and square footage. The unit of analysis for this dataset is defined by either township or incorporated city boundaries. Though street addresses are included in the dataset, this analysis lacked the resources to identify the location of properties by street address. The final dataset included 3,213 residential property sales from 1996 to 2002.

The Storm Lake II wind farm went on-line June 1999 and the Storm Lake I wind farm went on-line May 1999, with capacities of 112.5 MW and 80.2 MW, respectively.

#### ii. View Shed Definition

The view shed is defined by a five-mile radius around the wind farms. Because the view sheds of the individual wind farm sites overlap, and the on-line dates are within a month of each other, a single view shed was defined. Locational data for the wind farms was obtained from utility and wind industry web sites, and used in conjunction with maps and phone interviews to identify the exact location and extent of the wind farms and view shed. Townships only partially within the view shed were excluded from consideration for either the view shed or comparable.

Interviews with Somerset County Assessors were conducted by phone to determine what percentage of residential properties in the view shed can see all or a portion of the wind turbines. In Buena Vista County Assessor Ted Van Groteest's opinion, 100 percent of the properties in Alta have views of turbines, 75 percent of Nokomis Township have views, and five to 10 percent of Storm Lake City properties have views. However, he estimated that all the waterfront properties on the southeast side of Storm Lake can see turbines when looking northwest. Storm Lake City has a population of approximately 10,000, while Nokomis Township and Alta City have a combined population of approximately 2,000.

This report examines two cases for Buena Vista County.

#### Analysis #1: Storm Lake City Excluded from View Shed

For the first analysis, the view shed consists only of the village and township in which the wind turbines are located. In this case approximately 75 to 100 percent of the residential properties sold are within view of the wind farm, and are at most 3.5 miles from wind turbines, and in most cases much closer. We believe that if wind farms negatively effect property values, this effect would be strongest in this smaller radius view shed. The Analysis #1 view shed dataset contains 288 sales from 1996 to 2002.

#### Analysis #2: Storm Lake City Included in View Shed

For the second analysis, the view shed contains Storm Lake City, which is mainly within the five-mile view shed radius, in addition to Alta City and Nokomis Township as included in Analysis #1. Because Storm Lake City's population is five times larger than that of the Alta and Nokomis

#### The Effect of Wind Development on Local Property Values

combined, and because estimates are that roughly 5 percent of Storm Lake City properties can see the wind farms, we believe that any negative property value effects from the wind farms may be overshadowed by economic and demographic trends in Storm Lake City that are distinct from any effect the wind farms may have. The Analysis #2 view shed dataset contains 1,557 sales from 1996 to 2002.

### iii. Comparable Selection

The comparable community was selected through interviews with Buena Vista County Assessor Ted Van Groteest, and analysis of demographic data from the 1990 and 2000 U.S. Census for communities near but outside of the view shed. Tables 7.2 and 7.3 summarize the Census data reviewed. In order to determine the most appropriate comparable community, we looked at the demographics of five comparable communities. Upon examination of Census data, sales data availability, and review of interview comments, one city and four townships in Clay County, just to the north of Buena Vista County, were selected as the comparable. The comparables are Spencer City, and Meadow, Riverton, Sioux, and Summit Townships. The final comparable dataset contained 1,656 sales from 1996 to 2002.

Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value-owner- occupied housing unit
1000	V	Nokomis Township, Buena Vista	0.174	¢04.015	100/	070	¢ 11 000
1990	Y	County	2,174	\$24,915	10%	872	\$41,300
1990	Y	Alta City, Buena Vista County	1,824	\$23,043	12%	754	\$40,400
VIEW S	HED DEM	IOGRAPHICS #1	3,998	\$23,979	11%	1,626	\$40,850
		Nokomis Township, Buena Vista					
1990	Y	County	2,174	\$24,915	10%	872	\$41,300
1990	Y	Storm Lake City, Buena Vista County	8,769	\$23,755	9%	3,557	\$47,000
1990	Y	Alta City, Buena Vista County	1,824	\$23,043	12%	754	\$40,400
VIEW S	HED DEM	IOGRAPHICS #2	12,767	\$23,904	11%	5,183	\$42,900
1990	COMP	Meadow Township, Clay County	432	\$24,000	12%	142	\$60,500
1990	COMP	Riverton Township, Clay County	323	\$26,875	19%	115	\$47,500
1990	COMP	Sioux Township, Clay County	348	\$35,417	2%	134	\$42,100
1990	COMP	Spencer City, Clay County	11,066	\$24,573	10%	4,824	\$45,200
1990	COMP	Summit Township, Clay County	409	\$27,266	5%	201	\$30,400
COMPA	RABLE D	EMOGRAPHICS	12,578	\$27,626	9%	5,416	\$45,140

### Table 7.2 Buena Vista County, Iowa: 1990 Census Data

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Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value-owner- occupied housing unit
		Nokomis Township, Buena Vista	· ·				
2000	Y	County	2,261	\$33,533	11%	922	\$69,800
2000	Y	Alta City, Buena Vista County	1,848	\$31,941	11%	791	\$66,700
VIEW SI	HED DEM	OGRAPHICS #1	4,109	\$32,737	11%	1,713	\$68,250
		Nokomis Township, Buena Vista					
2000	Υ	County	2,261	\$33,533	11%	922	\$69,800
2000	Y	Storm Lake City, Buena Vista County	10,150	\$35,270	12%	3,732	\$70,300
2000	Y	Alta City, Buena Vista County	1,848	\$31,941	11%	791	\$66,700
VIEW SI	HED DEM	OGRAPHICS #2	14,259	\$33,581	11%	5,445	\$68,933
2000	COMP	Meadow Township, Clay County	323	\$49,167	2%	129	\$82,900
2000	COMP	Riverton Township, Clay County	323	\$49,200	3%	116	\$124,100
2000	COMP	Sioux Township, Clay County	324	\$37,417	0%	144	\$107,400
2000	COMP	Spencer City, Clay County	11,420	\$32,970	10%	5,177	\$80,700
2000	COMP	Summit Township, Clay County	411	\$36,500	1%	179	\$68,000
COMPA	RABLE D	EMOGRAPHICS	12,801	\$41,051	3%	5,745	\$92,620

### Table 7.3 Buena Vista County, Iowa: 2000 Census Data

#### iv. Analytical Results and Discussion

### Analysis #1: Storm Lake City Excluded from View Shed

In all three of the regression models, monthly average sales prices grew faster in the view shed than in the comparable area, indicating that there is no significant evidence that the presence of the wind farms had a negative effect on residential property values.

In Case I, the monthly sales price change in the view shed is 18 percent greater than the monthly sales price change of the comparable over the study period. The Case I model provides a good fit to the data, with over two-thirds of the variance in the data explained by the linear regression. In Case II, the monthly sales price change in the view shed is 70 percent greater after the on-line date than before the on-line date. The Case II model provides a reasonable fit to the data, with over half of the variance in the data explained by the linear regression. In Case III, average view shed sales prices after the on-line date are 2.7 times greater than in the comparable. The Case III model describes over half of the variance in the data for the view shed, but only 23 percent of the variance for the comparable. The data for the full study period is graphed in Figure 7.4, and regression results for all cases are summarized in Table 7.4 below.

#### Analysis #2: Storm Lake City Included in View Shed

In all three of the regression models, monthly average sales prices grew slower in the view shed than in the comparable area.

In Case I, the monthly sales price change in the view shed is 34 percent less than the monthly sales price change of the comparable over the study period. The Case I model provides a good fit to the data, with over 60 percent of the variance in the data explained by the linear regression. In Case II, the monthly sales price change in the view shed is 59 percent less after the on-line date than before the on-line date. The Case II model explains over half of the variance in the data prior to the on-line date explained, but only 27 percent of the variance after the on-line date. In Case III, average view shed sales prices after the on-line date are 22 percent lower than in the comparable.

The Case III model provides a poor fit to the data, explaining less than 30 percent of the variance for the data. The data for the full study period is graphed in Figure 7.5, and regression results for all cases are summarized in Table 7.5 below.

			Rate of		
			<u>Change</u>	<u>Iviodei Fit</u>	
Model	Dataset	Dates	(\$/month)	(R2)	Result
Case 1	View shed, all data	Jan 96 - Oct 02	\$401.86	0.67	The rate of change in average view shed
	Comparable, all data	Jan 96 - Oct 02	\$341.87	0.72	sales price is 18% greater than the rate of
					change of the comparable over the study
					period.
Case 2	View shed, before	Jan 96 - Apr 99	\$370.52	0.51	The rate of change in average view shed
	View shed, after	May 99 - Oct 02	\$631.12	0.53	sales price is 70% greater after the on-line
					date than the rate of change before the on-
					line date.
Case 3	View shed, after	May 99 - Oct 02	\$631.12	0.53	The rate of change in average view shed
	Comparable, after	May 99 - Oct 02	\$234.84	0.23	sales price after the on-line date is 2.7
					times greater than the rate of change of the
					comparable after the on-line date.

## Table 7.4Regression Results, Buena Vista County, IAProjects: Storm Lake I & II(Without Storm Lake City)





			Rate of		
			<u>Change</u>	Model Fit	
Model	Dataset	Dates	(\$/month)	(R2)	Result
Case 1	View shed, all data	Jan 96 - Oct 02	225.97	0.60	The rate of change in average view shed
	Comparable, all data	Jan 96 - Oct 02	341.87	0.72	sales price is 34% less than the rate of
					change of the comparable over the study
					period.
Case 2	View shed, before	Jan 96 - Apr 99	450.11	0.59	The rate of change in average view shed
	View shed, after	May 99 - Oct 02	183.92	0.27	sales price is 59% less after the on-line date
		-			than before the on-line date.
Case 3	View shed, after	May 99 - Oct 02	183.92	0.27	The rate of change in average view shed
	Comparable, after	May 99 - Oct 02	234.84	0.23	sales price after the on-line date is 22%
					lower than the rate of change of the
					comparable after the on-line date.

## Table 7.5Regression Results, Buena Vista County, IAProject: Storm Lake I & II(With Storm Lake City)



### **D. Additional Interviewee Comments**

Buena Vista County Assessor Ted Van Groteest said the comparable area around Spencer City in the northern neighboring county, Clay, would have higher property values because of its proximity to recreational lakes to the north, but that the two areas' property values rose at equal rates. He added that the predominate business mix was similar, but that the productive value of the land in Clay might be a little higher.

Between October 2002 and March 2003 the following information was obtained through other interviews with Groteest:

- Most of the residences at the Lake Creek Country Club, a golf course community located just west of Storm Lake City (between the city and the wind farms), have views of the towers. Several towers are one-half mile north and southwest of the Country Club. The assessor owns a home at the Country Club.
- In the assessor's opinion, the wind projects have no impact on property values. According to the assessor, the only issue that influences prices is the school district.
- There is also a hog farm on the west side of Storm Lake the same direction as the wind projects. Groteest said the property values did not change around the hog farm.

## Site Report 8: Kern County, California

## A. Project Description

The Tehachapi Mountains stretch northeast and southwest with Tehachapi City and neighboring communities seated within a flat valley inside the range. Despite the arid climate, Tehachapi's elevation of 4,000 feet affords it four seasons. This region is known for its extensive wind farm development, which has been ongoing for over two decades.





Figures 8.1 – 8.2: Views of the Tehachapi region wind farms Top Photo Courtesy Jean-Claude Criton © 2000 ~ Bottom Photo Courtesy Windland Inc. © 2003

Between 1981 and 2002 developers installed 3,569 towers with varied hub heights up to 55 meters (180.5 feet), and repowered six sites with 199 towers between 1997 and2002. The projects nestle within the Tehachapi pass five miles east of Tehachapi City, through the Tehachapi mountains, and scatter along the east-face just as Highway 58 drops sharply southeast toward Mojave and California cities bordering the Mojave Desert. The wind farm locations are shown in the regional area map, Figure 8.3, and view shed map, Figure 8.4, below.

To the east of the mountains are the cities of Mojave, California, and Rosamond. The incorporated limits of these cities are all approximately three to four miles from the base of the range, where the Mojave Desert begins. Foliage is patchy with many areas covered in wild, dry grasses, Juniper, and Cottonwood much like the terrain between Albuquerque and Santa Fe, New Mexico. However, there are some green portions with dense grasses allowing for cattle grazing or equestrian spreads.

Although Kern County is classified as a "county in a metro area with 250,000 to 1 million population," the view shed has a population of less than 15,000. See Appendix 1 for a definition of rural urban continuum codes. Also, Tehachapi is 40 miles to the nearest metro area of Bakersfield, and 115 miles to Los Angeles.



Figure 8.3. Regional Wind Project Location (Dots approximate wind farm locations)



Figure 8.4. Kern County, California View shed Project Location Source: Kern County Assessors Office Base Map Source: U.S. Census Bureau

### **B.** Project Timeline

Project Name	Completion Date	Capacity (MW)	Project Name	Completion Date	Capacity (MW)
Oak Creek	2002	2.5	Coram Energy Group	1981-1995	6.8
Oak Creek-Phase 2A-Repower	1999	0.8	Cannon (various)	1981-1995	4.5
Pacific Crest-Repower	1999	45.5	Mogul Energy	1981-1995	4.0
Cameron Ridge-Repower	1999	56.0	Coram Energy Group	1981-1995	4.0
Oak Creek Phase 2-Repower	1999	23.1	Windridge	1981-1995	2.3
Victory Gardens - Repower	1999	6.7	Coram Energy Group	1981-1995	1.9
Oak Creek Phase 1-Repower	1997	4.2	Victory Gardens I & IV	1981-1995	1.0
Mojave 16, 17 & 18	1981-1995	85.0	Sky River	1993	77.0
Mojave 3, 4 & 5	1981-1995	75.0	Victory Gardens Phase IV	1990	22.0
Ridgetop Energy	1981-1995	32.6	Various Names	1982-87	64.0
Calwind Resources	1981-1995	14.1	Various Names	1982-87	24.0
Cannon	1981-1995	13.5	Various Names	1986	0.2
Calwind Resources	1981-1995	8.7	Windland (Boxcar II	Mid-1980s	14.3
AB Energy-Tehachapi	1981-1995	7.0			

### Table 8.1 Wind Project History, Tehachapi, CA

## C. Analysis

### i. Data

Real property sales data for 1996 to 2002 was obtained from First American Real Estate Solutions in Anaheim, CA. The dataset is quite detailed and contains many property and locational attributes, among them 9-digit zip code (ZIP+4) locations. Sales data was purchased for two zip codes encompassing the wind farm area and surrounding communities. These zip codes are Mohave (93501) and Tehachapi (93561).

Sales for the following residential property types were included in the analysis: single-family residences, condominiums, apartments, duplexes, mobile homes, quadruplexes, and triplexes. Of 21 apartment sales in the database, five in the view shed had unusually high sales prices. After discussion with the local Assessor, it was determined that these did not represent single sale data points, and they were eliminated from the analysis. A total of 2,867 properties are used in the analysis.

Projects that went on-line during the study period are the Cameron Ridge, Pacific Crest, and Oak Creek Wind Power Phase II sites. All three are repowering projects, with installed capacities of 56, MW, 45 MW, and 23 MW, respectively. Cameron Ridge went on-line March 1999, and the other two came on-line June 1999.

### ii. View Shed Definition

All ZIP+4 regions within 5 miles of the wind turbines define the view shed. The location of the ZIP+4 regions were derived from the latitude and longitude of the ZIP+4 areas obtained from the U.S. Census TIGER database. Because the view sheds of the individual wind farm sites overlap, and because all projects went on-line within three months of each other, a single composite view shed is defined. The view shed is approximated by two rectangles that overlap the combined area swept out by a five-mile radius from each wind farm location.

Locational data for the wind farms was obtained from utility and wind industry web sites, and used in conjunction with detailed block maps, wind farm site maps, topographic maps and interviews to identify the exact location and extent of the wind farms and the composite view shed. The final view shed dataset contains 745 sales from 1996 to 2002.

Interviews with Kern County Assessors were conducted by phone to determine what percentage of residential properties in the view shed can see all or a portion of the wind turbines. Assessor Ron Stout said 50 to 60 percent of residents within Tehachapi City could see the turbines, but the Golden Hills area was too far and had views only if one intentionally tried to see them. He said about 30 percent of residents in the northwest corner of Mojave (north of Purdy Avenue and West of the Airport) could see turbines.

### iii. Comparable Selection

The comparable community was selected through extensive interviews with Assessor Ron Stout of the State of California Kern County Assessment Office and analysis of topographic and site maps. Because the U.S. Census does not provide Census data at the resolution of individual ZIP+4 regions, we were unable to use Census data as part of the comparable selection process in this case. Based on review of the Assessor interviews, the ZIP+4 regions in Golden Hills, Bear Valley Springs, Stallion Springs and the central and southeastern portions of Mohave, all within Mohave zip code 93501 and Tehachapi zip code 93561, were selected as the comparable. The final comparable dataset contained 2,122 sales from 1996 to 2002.

### iv. Analytical Results and Discussion

In one of the regression models, monthly average sales prices grew faster in the view shed than in the comparable area, and in two of the regression models it did not.

In Case I, the monthly sales price change in the view shed is 28 percent less than the monthly sales price change of the comparable over the study period. The Case I model provides a good fit to the view shed data, with over 70 percent of the variance in the data explained by the linear regression. In Case II, the monthly sales price change in the view shed is 38 percent greater after the on-line date than before the on-line date. The Case II model provides a good fit to the post on-line data, with 75 percent of the variance in the data explained by the linear regression. For the pre-on-line period, the regression explains 44 percent of the variance in the data. In Case III, average view shed sales prices after the on-line date are 29 percent less than in the comparable. The Case III model provides a good fit to the data, with 75 percent of the variance in the variance in the view shed data and 95 percent of the variance in the comparable data explained by the regression. The data for the full study period is graphed in Figure 8.4, and regression results for all cases are summarized in Table 8.2 below.

### **D. Additional Interviewee Comments**

Assessor Stout also said that Mojave has not seen any new residential development in eight years. Both Stout and Assessor James Maples said they have not seen any impact of the farms on property values. However, Maples said the area was so agricultural or lightly populated that it would be hard to isolate price changes due to the wind projects. Maples, added that over 30 years of wind project development an industrial cement manufacturer, among other projects, was built close to Tehachapi on the east. The cement plant spewed out dust for 10 years or more until county and federal government inspectors required upgrades 15 years ago, said Stout.

Tehachapi is the busiest single-tracked [locomotive] mainline in the world, according to the Tehachapi Chamber of Commerce. It runs through the Tehachapi Mountains between Mojave and Bakersfield. Of other notable businesses, Tehachapi has a manufacturing plant for GE Wind Energy (formerly Zond) wind turbines.

Table 8.2         Regression Results, Kern County, CA
Projects: Pacific Crest, Cameron Ridge, Oak Creek Phase II

			Rate of		
			<u>Change</u>	Model Fit	
Model	Dataset	Dates	(\$/month)	(R2)	Result
Case 1	View shed, all data	Jan 96 - Dec 02	\$492.38	0.72	The rate of change in average view shed
	Comparable, all data	Jan 96 - Dec 02	\$684.16	0.74	sales price is 28% less than the rate of
					change of the comparable over the study
					period.
Case 2	View shed, before	Jan 96-Feb 99	\$568.15	0.44	The rate of change in average view shed
	View shed, after	Mar 99 - Dec 02	\$786.60	0.75	sales price is 38% greater after the on-line
					date than the rate of change before the on-
					line date.
Case 3	View shed, after	Mar 99 - Dec 02	\$786.60	0.75	The rate of change in average view shed
	Comparable, after	Mar 99 - Dec 02	\$1,115.10	0.95	sales price after the on-line date is 29% less
					than the rate of change of the comparable
					after the on-line date.





# Site Report 9: Fayette County, Pennsylvania

## A. Project Description

Although the area is famous for being the home of Frank Lloyd Wright's Falling Water House built for a wealthy Pittsburg family, much of the area is low-income and rural. The 10 turbines rising 70 meters (230 feet) were built along a ridge on the border of Stewart and Springfield Townships, and run north/south against the county border with Somerset. The land is owned primarily by one family who rents some of the acreage to a petroleum pumping company and for the turbines.

The area is very hilly with densely populated tall trees. The project site is approximately 62 miles from Pittsburg with several ski lodges in the vicinity. The local economy is primarily agricultural or tourism related.

The view shed area of Springfield and Stewart Townships is rural with a combined population less than 2,000 although the county is classified as a "fringe county of a metro area with 1 million population or more." See Appendix 1 for a definition of rural urban continuum codes. This discrepancy is because the southeastern periphery of suburban Pittsburg creeps a little into northwest Fayette. The view shed is at least 62 miles from downtown Pittsburg.



Figure 9.1 View of a Mill Run Turbines Photo Courtesy GE Wind Energy © 2002







Figure 9.3. Fayette County, Pennsylvania View shed Project Location Source: Fayette County Assessors Office Base Map Source: U.S. Census Bureau

### **B.** Project Timeline

Project Name	Completion Date	Capacity (MW)
Mill Run Windpower LLC	2001	15.0

#### Table 9.1 Wind Project History, Fayette County, PA

## C. Analysis

### i. Data Source

Real property sales data for 1998 to 2002 was obtained electronically from the Fayette County Assessment Office Website, www.fayetteproperty.org/assessor. The dataset contains all property sales in Stewart and Springfield Townships. The sales volume is the smallest of all sites analyzed, with only 89 sales over the five-year period studied. The wind farm went on-line October 2001, with an installed capacity of 15 MW.

Complete addresses and detailed sales data are available on the website only by clicking on each parcel individually. However, there is no parcel map of the entire township to help identify parcel locations. We combined over 50 local parcel maps into one composite parcel map for the view shed, and used this in combination with street maps to identify the view shed and non-view shed areas.

### ii. View Shed Definition

The view shed is defined by a five-mile radius around the wind farm. The view shed covers the eastern portion of both Springfield and Stewart Townships in Fayette County. The five-mile radius also covers portions of Lower Turkey Foot, Upper Turkey Foot, and Middlecreek Townships in Somerset County. Because the Somerset County Townships are only partially in the view shed, and because the Somerset data we obtained is identified primarily by township or city, these areas are not included in the analysis. The view shed is therefore defined as the portions of Springfield and Stewart Townships falling within the five-mile radius. The view shed accounts for 39 sales over the study period.

Interviews with the State of Pennsylvania Fayette County Assessors Office were conducted by phone to determine what percentage of residential properties in the view shed can see all or a portion of the wind turbines. In Fayette County Chief Assessor James A. Hercik's opinion, 10 to 20 percent of residents have views of the turbines.

### iii. Comparable Selection

The comparable community was selected based on the availability of parcel-level data and through interviews with Fayette County Chief Assessor James A. Hercik. Assessor James Hercik said properties to the west of the view shed had no views of the wind turbines. Upon examination of sales data availability and review of Assessor comments, the western portions of Springfield and Stewart Townships, outside the five-mile view shed radius, were selected as the comparable, with a total of 50 sales from 1997 to 2002.

Demographic data from the 1990 and 2000 U.S. Census for Springfield and Stewart Townships was gathered, but not used because both the view shed and comparable are in the same township. Tables 9.2 and 9.3 summarize the Census data reviewed.

Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value- owner-occupied housing unit
		Springfield					
1990	partial	Township	2,968	\$15,686	28%	1,137	\$40,200
1990	partial	Stewart Township	734	\$18,235	24%	331	\$42,500
VIEW	SHED DE	MOGRAPHICS	3,702	\$16,961	26%	1,468	\$41,350

### Table 9.2 Fayette County, Pennsylvania: 1990 Census Data

### Table 9.3 Fayette County, Pennsylvania: 2000 Census Data

Year	View shed	Location	Population	Median household income	% Population below poverty level	Number housing units	Median value- owner-occupied housing unit
		Springfield		+ o o / o o			
2000	partial	Iownship	3,111	\$29,133	22%	1,283	\$57,400
2000	partial	Stewart Township	743	\$32,917	11%	338	\$64,000
VIEW SHED DEMOGRAPHICS 3,854			\$31,025	16%	1,621	\$60,700	

### iv. Analytic Results and Discussion

In two of the three regression models, monthly average sales prices grew faster or declined slower in the view shed than in the comparable area. However, in the case of the underperformance of the view shed, the explanatory power of the model is very poor. Thus, there is no significant evidence in these cases that the presence of the wind farms had a negative effect on residential property values.

In Case I, the monthly sales price increase in the view shed is only 24 percent that of the comparable over the study period. However, the Case I model provides a poor fit to the view shed data, with only two percent of the variance in the data for the view shed and 24 percent of the variance in the data for the comparable explained by the linear regression. In Case II, sales prices decreased in the view shed prior to the on-line date, and increased after the on-line date. The average view shed sales price after the on-line date increased at 3.8 times the rate of decrease in the view shed before the on-line date. The Case II model provides a poor fit to the data, with less than one-third of the variance in the data explained by the linear regression. In Case III, average view shed sales prices after the on-line date are 13.5 times greater than in the comparable. However, the Case III model describes only 32 percent of the variance in the view shed data, and none of the variance in the comparable data. The data for the full study period is graphed in Figure 9.4, and regression results for all cases are summarized in Table 9.4 below.

The poor fit of the model, as evidenced by the low R2 values, is partly due to the very small sales volume, on average only 2.1 sales per month in the view shed and comparable combined. As can be seen from Figure 9.4, the small sales volume leads to very high variability in average sale price from month to month. In addition, for regressions fit to data after the on-line date, only 13 months' sales data was available, accounting for 18 sales total, which leads to the caveat that these results should be viewed carefully.

			Rate of	<u>Model</u>	
			<u>Change</u>	<u>Fit</u>	
Model	Dataset	Dates	(\$/month)	(R2)	Result
Case 1	View shed, all data	Dec 97-Dec 02	\$115.96	0.02	The rate of change in average view shed
	Comparable, all data	Dec 97-Dec 02	\$479.20	0.24	sales price is 24% of the rate of change of the
					comparable over the study period.
Case 2	View shed, before	Dec 97 - Nov 01	-\$413.68	0.19	The rate of change in average view shed sales
	View shed, after	Oct 01-Dec 02	\$1,562.79	0.32	price after the on-line date increased at 3.8
					times the rate of decrease before the on-line
					date.
Case 3	View shed, after	Oct 01-Dec 02	\$1,562.79	0.32	The rate of change in average view shed sales
	Comparable, after	Oct 01-Dec 02	\$115.86	0.00	price after the on-line date is 13.5 times greater
					than the rate of change of the comparable after
					the on-line date.

Table 9.4 Fayette County, Pennsylvania: Regression ResultsProject: Mill Run



Figure 9.4 Average Residential Housing Sales Price Fayette County, Pennsylvania 1998-2002

### **D. Additional Assessor Comments**

James A. Hercik, Fayette County chief assessor/director of assessments, said he has not seen any impact of the wind farms on property values, with the exception that the assessed value of properties with turbines went up. He also noted that on the same property as the turbines are on, there are natural gas wells, which additionally impact valuations. Finally, Hercik said that often, sales in the view shed were family-to-family sales that may reflect sales prices lower than assessed value.

## Site Report: **Projects Excluded From Analyses**

Of the 27 projects selected for analysis, four were excluded from analysis because there were not enough sales in the view shed for statistical analysis; one was excluded because comparable data was not available at time of publication of this report; and an additional 12 projects were excluded because property sales data was unavailable, not readily available, or because there were not enough sales in the view shed for statistical analysis. Table S1 below summarizes the reasons for project exclusion from analysis.

Table SI. Summary OF FIGULE EXCLUDED IT OM Analyses	Table S1:	Summary of P	rojects Excl	uded from	Analyses
-----------------------------------------------------	-----------	--------------	--------------	-----------	----------

I. Data acquired, but insufficient for analysis				
County	State	Reason for Exclusion		
Logan	CO	Not enough sales to make a valid judgment (5 Sales)		
Worth	IA	Not enough sales to make a valid judgment (38 sales over 7 years)		
Umatilla	OR	Not enough sales to make a valid judgment (28 sales)		
Howard	ТΧ	Comparable data not acquired at time of publication (1,896 view shed sales)		
Upton	ТΧ	Not enough sales to make a valid judgment (7 sales)		

CountyStateReason for ExclusionWeldCONot enough sales to make a valid judgmentCerro GordoIANo electronic data - accessible in office on paper onlyGrayKSState law prohibits access to informationPipestoneMNNo electronic data - accessible in office on paper only - and not enough salesLincolnMNNo electronic data - accessible in office on paper onlyGilliamORNo electronic data - accessible in office on paper onlyGulbersonTXNo electronic data - accessible in office on paper onlyPecosTXNo electronic data - accessible in office on paper onlyPaylorTXNo electronic data - accessible in office on paper onlyTaylorTXNo electronic data - accessible in office on paper onlyBentonWANot enough sales to make a valid judgment (Project came on-line in 2002)Walla WallaWANo sales in the view shed since project completionIowaWINo electronic data - accessible in office on paper onlyCarbonWYState law prohibits access to information	II. Data not ac	quired	
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BentonWANot enough sales to make a valid judgment (Project came on-line in 2002)Walla WallaWANo sales in the view shed since project completionIowaWINo electronic data - accessible in office on paper onlyCarbonWYState law prohibits access to information	Taylor	ТΧ	No electronic data - accessible in office on paper only
Walla WallaWANo sales in the view shed since project completionIowaWINo electronic data - accessible in office on paper onlyCarbonWYState law prohibits access to information	Benton	WA	Not enough sales to make a valid judgment (Project came on-line in 2002)
Iowa         WI         No electronic data - accessible in office on paper only           Carbon         WY         State law prohibits access to information	Walla Walla	WA	No sales in the view shed since project completion
Carbon WY State law prohibits access to information	Iowa	WI	No electronic data - accessible in office on paper only
	Carbon	WY	State law prohibits access to information

## I. Data Acquired, but Insufficient for Analysis

#### County State Reason for Exclusion

#### Not enough sales to make a valid judgment (Five Sales) Logan CO

Years Reviewed: 1996 to 2002

Assessor comments: Assessor Ann Rogers-Ridnour said her office has seen no impact from the wind project, and that it was hard gauge because there are so few sales.

## WorthIANot enough sales to make a valid judgment (38 sales over seven years)Years Reviewed: 1996 to 2002

Assessor comments: Assessor said the project was surrounded only by agricultural land, that it was hard to pinpoint home locations on farms if any because addresses are vague, and that they felt the wind projects have been welcomed.

### Umatilla OR Not enough sales to make a valid judgment (28 sales)

Years Reviewed: 1995 to 2002

Assessor comments: Assessor Lee Butler said there were only 28 sales in view shed.

### Howard TX Comparable not available at time of publication

Years Reviewed: 1996 to 2002

The exact location of the Big Spring wind farm in Howard County, TX, and thus definition of the view shed, was elusive. While site maps with individual turbine locations were obtained, they were hand drawn and not to scale. Interviews with county Assessors and on-site operations staff yielded conflicting descriptions of the exact location of the turbines. In the end, the wind farm location was fixed in an interview with one of the original site developers, Mark Haller of Zilkha Inc. According to Mr. Haller, the turbine towers reach out far away from the Big Spring, but the closest one is only 100 yards or so from the third tee of a golf course on the south side of town – close enough for golfers often take chip shots at it.

The view shed covers portions, but not all of, the three school districts in the county: Coahoma, Big Spring, and Forsan. Approximately 70 percent of Big Spring City, all of Coahoma City, and none of Forsan City are within the view shed. Because this project lacks the resources to identify every property by street address, the view shed is defined to include all of Big Spring City, which is equivalent to using a six-mile radius view shed instead of a five-mile radius view shed for this case only. The final view shed dataset contains 1,896 sales from 1996 to 2002.

Interviews with Howard County Assessors were conducted by phone to determine what percentage of residential properties in the view shed can see all or a portion of the wind turbines. In Chief Assessor Keith Toomire's opinion, 30 percent of Big Spring City properties can see the turbines. Mr. Haller added that due to the various plateaus surrounding Big Spring, there are portions of the town that cannot see the turbines.

The selection of an appropriate comparable for Big Spring is difficult because the area has experienced an economic downturn and loss of jobs for a number of years. According to Howard County Chief Assessor Keith Toomire, the two major employment categories in the Big Spring are agriculture and petroleum extraction. Due to a 10-year draught in the region, crop yields are severely reduced, with significant economic impacts for the city. Additionally, depletion of petroleum resources has led to the closing of wells and economic downturn in the local petroleum industry.

Because the view shed for Big Spring was defined very late in the process of producing this report, data for a comparable has not yet been obtained.

### <u>Upton TX Not enough sales to make a valid judgment (Seven sales)</u>

Years Reviewed: 1996 to 2002

Assessor comments: Chief Appraiser Shari Stevens said no sales near southwest Mesa, and only seven sales near the King Mountain project.

## II. Data Not Acquired

### County State Reason for Exclusion

### Weld CO Not enough sales to make a valid judgment

Years Reviewed: 1996 to 2002

Assessor comments: Office staff said there were very few people in the project area and didn't think anybody could see it.

### Cerro Gordo IA No electronic data - accessible in office on paper only

Years Reviewed: 1996 to 2002

Assessor comments: Assessor said we were the third group to call them about the same question and that they've looked into every way they could to parse their data, and could find no proof that there was any impact on county property values.

### Gray KS State law prohibits access to information

Years Reviewed: 1996 to 2002

Assessor comments: Assessor Jerry Dewey said area had only small populations and that most land was agricultural; therefore he said they have seen no impact, primarily because the land is assessed for productive use.

### Pipestone MN No electronic data - accessible in office on paper only – and not enough sales

Years Reviewed: 1991 to 2002

Assessor comments: Interim Assessor "Farley" said he's not seen any impact on property values. Also, he added that there haven't been enough sales to make a judgment call, and all property surrounding the project is agricultural land which is valued on productive use (so unless the turbines were on the property itself, then the property value would not go up).

### Lincoln MN No electronic data - accessible in office on paper only

Years Reviewed: 1991 to 2002

Assessor comments: Assessor "Bruce" (last name unavailable) said the project was a "non-issue" and has not seen any impact on values. Specifically, the projects were welcomed and some people tried to have the turbines built on their land.

### Gilliam OR No electronic data - accessible in office on paper only

Years Reviewed: 1997 to 2002

Assessor comments: Assessor Pat Shaw said area around project had a population less than 700 all living dispersed among agricultural land. Also, he expressed no sense of impact on property values

### Culberson TX No electronic data - accessible in office on paper only

Years Reviewed: 1992 to 2002

Assessor comments: Appraiser Sally Carrasco said they've been very happy with the wind farms. She added that because they have a terrible economy, she wasn't sure if they would even have a town were it not for the revenue from turbines that support the schools.

### Pecos TX No electronic data - accessible in office on paper only – and no sales in view shed

Years Reviewed: 1997 to 2002

Assessor comments: Assessor Santa S. Acosta said there were no residences with a view, and that there are so few sales in general that the area wasn't due for re-appraisal until 2003.

### Taylor TX No electronic data - accessible in office on paper only

Years Reviewed: 1997 to 2002

Assessor comments: Assessor Ralf Anders said no homes had a view.

### Benton WA Not enough sales to make a valid judgment

(Project came on-line in 2002)

Years Reviewed: 1996 to 2002

Assessor comments: Office clerk "Harriet" said they only have the past three months of data in electronic form; everything else is in paper and a person must go to office to search records.

### Walla Walla WA No sales in the view shed since project completion

Years Reviewed: 1996 to 2002

Assessor comments: Walla-Walla County Assessor Larry Shelley said there have been no sales since the wind project was built.

### Iowa WI No electronic data - accessible in office on paper only

Years Reviewed: 1996 to 2002

Assessor comments: Assessor said only small village areas had views, but that the wind projects were welcomed. –Assessor specifically made a comment that a bowling alley has built a small tourist attraction around the project.

### Carbon WY State law prohibits access to information

Years Reviewed: 1996 to 2002

Assessor comments: Assessor Darrell Stubbs said that although it is illegal to release individual property information, he has seen no impact on values. Specifically, he noted if any impact occurred, property values have risen because the population is so small that the infusion of a few jobs from the project in the area is enough to raise prices.

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# Appendix 1. County Classification Descriptions

## U.S. Department of Agriculture, Economic Research Service Rural-Urban Continuum Codes

Metro counties:	
0	Central counties of metro areas of 1 million population or more.
1	Fringe counties of metro areas of 1 million population or more.
2	Counties in metro areas of 250,000 to 1 million population.
3	Counties in metro areas of fewer than 250,000 population.
Nonmetro counties:	
4	Urban population of 20,000 or more, adjacent to a metro area.
5	Urban population of 20,000 or more, not adjacent to a metro area.
6	Urban population of 2,500 to 19,999, adjacent to a metro area.
7	Urban population of 2,500 to 19,999, not adjacent to a metro area.
8	Completely rural or less than 2,500 urban population, adjacent to a metro area.
9	<u>Completely rural or less than 2,500 urban population, not adjacent to a metro area.</u>

Note: New Rural-Urban Continuum Codes based on the 2000 Census are not expected to be available until 2003. The development of the updated codes requires journey-to-work commuting data from the long form of the 2000 Census and delineation of the new metropolitan area boundaries by the Office of Management and Budget. OMB's work is not scheduled to be completed until 2003. www.ers.usda.gov/ briefing/rurality/RuralUrbCon/

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## Economic Impacts of Wind Power in Kittitas County

**Final Report** 

A Report for the

## Phoenix Economic Development Group

by

## **ECONorthwest**

888 SW Fifth Ave, Suite 1460 Portland, OR 97204 (503) 222-6060

October 2002

## Acknowledgements

This report was prepared by ECONorthwest's Portland office and was paid for by the Phoenix Economic Development Group of Ellensburg, WA. Dr. Stephen Grover was the ECONorthwest project manager for this analysis and was the primary author of this report. Questions regarding this report should be directed to him at <u>grover@portland.econw.com</u> or by phoning the Portland office at (503) 222-6060. Dr. Grover was assisted in this project by Anne Fifield, Alec Josephson, and Bob Whelan.
# The Economic Impacts of A Proposed Wind Power Plant in Kittitas County, WA

An Evaluation of Potential Impacts on Property Values, Tax Revenues, and the Local Economy

# I. Introduction and Summary

Two different wind energy companies are currently developing plans for constructing and operating wind power turbines in Kittitas County. The energy company Zilkha Renewable Energy has proposed a project with 110 wind turbines that have the combined potential to generate approximately 165 megawatts of electricity during peak wind periods. A second company enXco is proposing building 150 additional wind turbines with a total of 225 megawatts of generation potential. These two project combined would involve the construction and operation of 265 wind turbines with a potential generating capacity of 390 megawatts of electricity.

As part of the planning process for these projects, the Phoenix Economic Development Group has hired ECONorthwest to evaluate the potential economic impacts of constructing and operating the wind plants in Kittitas County. Specifically, ECONorthwest was asked to analyze and help quantify impacts in three key areas of interest:

- **Property Values**. Local residents have voiced concern that constructing numerous wind turbines in the valley will detract from views and ultimately reduce property values.
- **Economic Impacts.** The wind plants will create jobs and increase spending in the economy during the construction phase and during plant operations.
- **Tax Revenues.** The increase in jobs and local spending will also increase tax revenues for Kittitas County.

To research these issues, we utilized several different analysis techniques. We surveyed tax assessors in other counties with wind projects to determine the potential effects of wind farms on property values. We also conducted a review of the available academic literature for additional information on property value effects. Local economic impacts were estimated using an input-output model based on construction and operations data obtained from the two companies proposing wind projects in Kittitas County. Tax revenues were estimated from the input-output model results based on tax rate and spending information obtained from Kittitas County.

Our analysis in these areas has resulted in the following key findings:

• *Views of wind turbines will not negatively impact property values.* Based on a nation-wide survey conducted of tax assessors in other areas with wind power projects, we found no evidence supporting the claim that views of wind farms decrease property values.

- *Wind plant construction will have significant economic benefits.* The construction of over 250 turbines will create approximately 185 full and part time jobs in Kittitas County and will increase total income to the county by over \$12 million during the construction period.
- *Wind plant operation will provide additional annual economic benefits.* The wind farm operations will require 53 additional jobs and will increase income to the county from salaries and operations expenses by over \$4 million annually.
- *Property tax revenues will increase*. The construction of the wind farm will increase property tax revenues collected in the Kittitas County by approximately \$2.8 million dollars annually -- an increase of 11 percent over current property tax revenues. The majority of this increase is due to the property tax paid on the wind turbines.
- *Tax revenues to Kittitas County Government will also increase*. Tax revenues accruing directly to Kittitas County Government will be approximately \$693,000 annually. This increase results from the County's share of new property tax revenue and from increases in other taxes.

Details on the analysis underlying each of these results are presented in the remainder of this report.

## II. Property Value Impacts

One of the biggest concerns of the community is that the installation of numerous wind turbines will detract from the current viewscape in the Kittitas Valley and that the destruction of this view will ultimately reduce residential property values.

We conducted two separate analysis tasks to address this issue. First, we conducted a phone survey of tax assessors for counties that recently had wind turbines installed in their areas. In addition to interviewing tax assessors, we also reviewed the current literature for statistical studies that quantified the impact of wind turbines on property values. For comparison purposes, we also reviewed the literature on the impact that transmission lines have on property values.

## A. Tax Assessor Interviews

The first step in our survey of tax assessors was to develop an appropriate sample of sites for the analysis. These sites were chosen using the following criteria:

- *Projects constructed within the last 10 years.* Recently completed projects were used to ensure that reliable information was obtained from the assessor. Recent sites are also more likely to have the same turbine technology that is planned for Kittitas County.
- *View locations*. As much as possible, we attempted to find wind farms that could be seen from residences rather than focusing only on sites in remote or very rural locations.

• *Multiple turbines*. We focused on those areas where multiple turbines were installed to be comparable with the projects proposed for Kittitas County.

We applied these criteria to information obtained from the American Wind Energy Association website to locate candidate wind projects in areas throughout the U.S. Table 1 shows descriptive information on 19 projects we located using this method.

State	Location	County	Project Name	Year	MW	Turbine Manufacti	# of Turbines
WY	Carbon County	Carbon	Foote Creek Rim 4	2000	16.80	NEG Micon	28
CA	San Gorgonio Pass	Riverside	Cabazon	1999	39.75	Zond Z-750	53
CA	San Gorgonio Pass	Riverside	Westwind	1999	46.50	NEG Micon	65*
CA	Tehachapi	Kern	Oak Creek Phase 2	1999	23.10	NEG Micon-700	33
CA	Tehachapi	Kern	Cameron Ridge	1999	56.00	NEG Micon	80
CA	Tehachapi	Kern	Pacific Crest	1999	45.54	Vestas V-47	69
WY	Carbon County	Carbon	Foote Creek Rim 1	1999	41.40	Mitsubishi	69
WY	Carbon County	Carbon	Foote Creek Rim 3	1999	24.75	NEG Micon	33
ТΧ	Culberson County	Culberson	American Nat. Wind Power/ Orion Energy	1999	30.00	Zond	40
ТΧ	Big Spring I	Howard	Howard County	1999	27.72	Vestas V-47	42
ТΧ	Crockett County	Crockett	Southwest Mesa Wind Farm	1999	74.90	NEG Micon (107)	107
MN	Pipestone County	Lincoln	Lake Benton - 2	1999	103.50	Zond	138
IA	Storm Lake	Buena Vista	Storm Lake	1999	112.50	Zond - 50 (150)	150
IA	Storm Lake	Buena Vista	Storm Lake	1999	80.25	Zond - 50 (150)	107*
OR	Helix	Umatilla	1. Vansycle Ridge	1998	25.10	Vestas V-47	38
MN	Pipestone County	Lincoln	Lake Benton - I	1998	107.25	Zond	143
ТΧ	Culberson County	Culberson	Lower Colorado River Authority	1995	35.00	Kenetech	112
MN	Buffalo Ridge	Nobles	Kenetech Windpower	1994	25.00	Kenetech	73
CA	Tehachapi	Kern	Sky River	1993	76.95	Vestas V-27	342

Table 1: Location and Size of Wind Farms Used In Analysis

Note: * Number of turbines estimated by ECONorthwest based on reported MW capacity.

In addition to the sites shown in Table 1, we also added projects in Alameda County, California, Walla Walla County, Washington, and the Town of Lincoln, Wisconsin as they all contain wind projects that are similar to that proposed for Kittitas County. The final sample included 22 wind projects located in 13 different counties throughout the country.

Once the sample was determined, the next step was to interview tax assessors within each county to determine the effect these projects had on residential property values. We chose to interview assessors as they are required to provide objective assessments of property values. If assessments are perceived to be too high by the landowners, the assessed value may be challenged in court. Unlike real estate agents, who have a financial stake in the market values of properties they sell, tax assessors do not have an incentive to inflate property values or to exaggerate the possible effects of wind turbines. For these reasons, we chose to interview tax assessors as they are the best available source for unbiased information on the effects of wind turbines on property values.

From our initial target sample, we were able to interview assessors from all thirteen counties. Based on these interviews, we found no evidence indicating that views of wind turbines decreased property values. Of the counties we interviewed, six contain residential properties with views of the wind turbines, and six counties lack residences with a view of the turbines. One county reported that the wind farm is too new for the assessor's office to know if nearby property values have been affected.

Six counties reported that residential properties have views of the wind turbines, but the turbines have not altered the value of those properties. Responses from assessors in these counties were similar:

- Kern, California—Residents are able to see the turbines from many locations within the town of Tehachapi. The views of the wind turbines have not affected the assessed values of these residences.
- Lincoln, Minnesota—The turbines are located about two miles outside of town. The turbines do not block the view of any particular feature, but residents can see them if they look for them. The assessor hasn't heard anyone complain about the turbines' appearance. Some residences located in the rural parts of the county have closer views of the turbines, but the turbines have not impacted their land values.
- Buena Vista, Iowa—Many residences in the towns of Alta and Storm Lake have views of the turbines. The turbines are easily seen from town, they are located a couple of miles outside of town, and sit on a high ridge. There has been no impact on land values.
- Howard, Texas—There are no homes within two miles of the wind turbines, but because the terrain is so flat, the turbines are visible from as far as 25 miles away. Appraised land values have not declined because of views of the turbines. The appraiser reported that their office expected property owners to complain about lowered property values caused by a diminished view, but so far they have received no complaints.
- Walla Walla County, WA—The turbines are on a high cliff that has a lot of wind and low land values. The unincorporated town of Touchet lies about 8 miles from the turbines and some residents do not like the views of the turbines as it affects their view of the sunset. This factor has not translated into lower land values according to the assessor. Touchet's tax base rose from just over \$100 million to \$265 million with the addition of the wind farm and resulted in the addition of 20 to 25 permanent local jobs according to the assessor.
- Town of Lincoln, Wisconsin—The assessor reported that when the turbines were first installed, residents complained about the diminished view. However, in the three years since installation, residents have become used to them, and no one complains now. One homeowner had claimed that the assessed value of his property should be reduced because of the wind turbines. The County asked him to show that the value of sales of properties near the turbines had diminished, and he was unable to do so.

To investigate further the potential impacts on property values, Lincoln's assessor compared the 2001 assessed value to actual sales (for arms-length transactions of residential properties) and found that the ratio of assessed values to actual sales prices for properties less than one mile from the wind turbines was no greater than for properties more than a mile from the wind turbines. The assessor noted that the wind turbines had negatively impacted television reception for nearby properties, but the utility company provided the impacted homes with better antennas or a satellite dish to bring reception back to previous levels.

The wind farms have had no impact on neighboring property values in five counties as neighboring properties are in agricultural production. Assessors' offices in Alameda, California, Carbon, Wyoming, Crockett and Culberson in Texas, and Umatilla, Oregon reported that no residential properties have views of the wind farms. The neighboring properties are grazing land, and the value of the land is determined by its productivity, not its views. For Riverside County, California, the wind farm was built along the freeway with a buffer zone to separate it from residences. Consequently, very few homes have a view of the turbines in that county and the assessor reports that there has been no impact on property values. Nobles County, Minnesota reported that the wind farm in the county was installed in the past year, and it is too early to determine if they have affected neighboring property values.

One county reported that land parcels with wind turbines located on them have changed in value. Kern County, California reported that property eligible for a wind turbine greatly increases in value. The first step to siting a wind turbine is to change the land from a grazing zone to a "wind-energy" zone. By changing the zone, the land value increases from about \$300 to about \$1000 per acre. No other county reported such an impact to land values.

Wind farms in two counties, Howard in Texas and Umatilla in Oregon, have added to the tax base. The assessors' offices reported that the wind turbines are large capital improvements, and they have contributed to the tax base. This was not a specific question in the interview, and these two counties volunteered the information. The same is likely true in other counties, but the issue was not pursued during the assessor interviews.

Representatives from three assessors' officers reported that community members like the appearance of the wind turbines. The appraiser in Kern County speculated that residents like the appearance of the wind turbines as long as the turbines are functioning. The turbines that were built in the early 1980s had a high failure rate, and many of the turbines just sat on the property in disrepair. That experience led many to feel that wind farms are an eyesore. The newer turbines have a very low failure rate, and residents can see the turbines are operating and creating an economic good, which positively impacts their perceptions of the turbines.

In Kern County, some residents located on rural properties complained about the plan to locate wind turbines near their properties. They argued that they had bought their properties with the expectation of a view of grazing land, not a wind farm. To solve the problem, the wind developer paid them for the property and the people moved. The wind developer then sold the property, although the property values did not decrease.

## **B. Literature Review**

The results of the tax assessor interview show that views of wind turbines do not negatively impact property values. In addition to these interviews, we also conducted a literature review to determine if other studies had found credible evidence of a negative impact on property values. We restricted our literature review to academic journals that only publish articles that have been subjected to a peer review process. References for the articles we reviewed are included in Appendix B of this report. We found only one study that specifically addressed the potential impact of wind turbines on property values and this study was based on residential property in Denmark. The hedonic study showed that house values were 94 Danish kroners (about \$17 per home in 1995 U.S. dollars) lower close to wind farms than other houses located further away but with otherwise similar characteristics. This result was based on a small sample of homes, however, and was not statistically significant.

One of the likely reasons that wind turbines do not diminish property values is that not all people agree that views of wind turbine are undesirable. As reported by the tax assessors, some residents find views the wind turbines attractive. If a homeowner dislikes having a view of the wind farm, they may move and sell their house to someone who likes the view. In this case, property values would not be diminished.

We also reviewed the academic literature addressing transmission lines and their impact on property values. Unlike wind turbines, transmission lines are almost universally considered unattractive. There is also widespread belief that living near transmission lines is a health hazard. For these reasons, there is a much clearer case that transmission lines will negatively affect property values.

Legal cases have agreed that the public perception of danger or health risk can impact property value, regardless of the reasonableness of the public's fear (Rikon 1996).

It is important to emphasize the purpose of reviewing the literature on transmission lines for this analysis. Our review of the literature on transmission lines was done solely to provide an indication of the maximum negative effect views of wind turbines might have on property values *if such a negative impact exists*. As we have indicated from our assessor interviews and literature review, we have not found any evidence that views of wind turbines have any effect on property values. Nevertheless, the information from the literature on power lines is informative.

The evidence from the literature on transmission lines shows that their effect on property values is small and relatively short-lived. The maximum impact on adjacent properties due to transmission lines is about a 10 percent reduction in value. Many studies use hedonic estimation techniques to measure the impact transmission lines have on property values while controlling for other features of the homes. The most recent study (Des Rosiers 2002) found a severe visual encumbrance due to a direct view on a transmission line pylon does exert a negative impact on property prices. Overall, the price reduction stands at roughly 10 percent of average house value. However, being adjacent to the easement will not necessarily cause a house to depreciate. It may even increase its value where proximity advantages (enlarged visual field, increased privacy) exceed drawbacks. Additionally, findings for the non-adjacent properties that have views of the power lines translates in most cases into higher values, due to the improved visual clearance.

Some earlier studies agree that transmission lines have a slight negative impact on property values. Hamilton (1995) found that properties adjacent to a line lose 6.3 percent of their value due to proximity and the visual impact. Properties more distant from transmission lines are scarcely affected, losing roughly 1 percent of their value. Delaney and Timmons (1992) found that, generally, real estate appraisers believe that transmission lines reduce the value of nearby residential properties by 10 percent. The authors' survey found that 84 percent of the surveyed appraisers believed transmission line have a negative impact, 10 percent believed that there is no impact, and 6 percent believed that there was a positive impact on property values. Colwell (1990) found that properties within 50 feet of an HTVL have a 6 percent to 9 percent lower value than comparable properties, but that drop in value lessens over time and tends to fade away.

As the literature indicates, the negative effect on property values due to transmission lines is 10 percent or less, with this effect diminishing over time. This is reported only for comparison purposes for the case of wind turbines. Again, information from tax assessors and the literature indicate that views of wind turbines do not negatively affect property values.

# III. Local Economy

A second component of our analysis addressed the economic impact of the wind turbines on the Kittitas County economy. We interviewed representatives from both Zilkha and enXco to determine the amount of spending and employment for the proposed projects. Using this information, we used a regional 'input-output' model with data specific to Kittitas County to estimate the economic impacts of the project. We used our model to estimate the economic impacts for both the construction phase and the operations phase of this project. Details on both these phases are reported below.

## A. Construction

The construction of 265 individual wind turbines will involve a significant amount of employment and spending during the construction period. We have talked to representatives from both Zilkha and enXco to determine the likely employment and construction spending. Based on these conversations and our experience analyzing similar projects we developed estimates for use in our model. Our input parameters for the construction phase included:

- 85 full and part time local construction jobs
- 10 full and part time jobs for wind company and utility personnel to manage the plant construction phase
- \$6,400,000 in local spending on construction materials (i.e., gravel, concrete)
- \$886,000 in spending on food and lodging for non-local labor brought to Kittitas County for the construction period

Based on these and other input parameters, we estimated the impacts to the local economy for a construction period predicted to last approximately one year.

For the input-output model, economic impacts are grouped into three different categories:

- **Direct economic impacts**. Businesses directly purchase goods and services in their local economies. An increase in spending, therefore, affects the economy directly through increased purchases.
- **Indirect economic impacts**. Businesses also indirectly affect local economies, as those firms that provide direct services to the wind project must also purchase materials and supplies themselves. For instance, a construction contractor working on this project will lease some equipment or purchase supplies locally. Increased purchases of "intermediate" goods and services will also promote additional economic activity.

• **Induced economic impacts**. The direct and indirect effects of employment and income affect overall economy purchasing power, thereby affecting further consumption spending. For instance, wind plant employees who use their income to buy groceries or take their family to the movies generate economic impacts for workers and businesses in those sectors. These individuals will, in turn, spend their income much like the wind plant employees do. This cycle continues until the spending eventually leaks out of the local economy as a result of taxes, savings, or purchases of non-locally produced goods and services or "imports."

In addition to these categories, economic impacts are also divided into different income effects. In the following tables, the impact on *Wages* reflects the increase in wage income for all workers as a result of the project. Similarly, *Business Income* is the increase in income to local business as a result of spending associated with the wind plant. *Personal Income* is the sum of wages and business income. The *Other Income* category is used to capture additional income that results from other sources due to the project, such as rents to land owners leasing land for wind turbines. Finally, *Jobs* reflects the number of full and part time jobs that result directly from the project and from the increase in spending in other sectors of the economy.

Additional technical detail on the input-output model is included in Appendix A of this report.

			-	•	
Impact type	Wages	Business	Personal	Other	Jobs
	_	Income	Income	Income	
Direct	\$8,420,000	\$1,027,000	\$9,447,000	\$388,000	95.2
Indirect	732,000	139,000	871,000	242,000	30.3
Induced	1,050,000	225,000	1,275,000	234,000	60.0
Total	\$10,202,000	\$1,391,000	\$11,593,000	\$864,000	185.5

The following tables show the economic impacts for the construction period.

Indirect	732,000	139,000	871,000	242,000	30.3
Induced	1,050,000	225,000	1,275,000	234,000	60.0
Total	\$10,202,000	\$1,391,000	\$11,593,000	\$864,000	185.5
As shown in Table 2, the construction phase of the project will result in approximately 9 full and part time jobs. Spending from this project on labor and materials will result in an additional 90 jobs for a total of approximately 185 full and part time jobs during the construction period. Wages during this period will be \$10,202,000 due to the hiring of					

 Table 2: Construction Phase Economic Impacts for Kittitas County

As shown in Table 2, the construction phase of the project will result in approximately 95 full and part time jobs. Spending from this project on labor and materials will result in an additional 90 jobs for a total of approximately 185 full and part time jobs during the construction period. Wages during this period will be \$10,202,000 due to the hiring of local construction workers and the increases in services needed to support the construction work. Similarly, business incomes will increase by \$1,391,000 due to spending on local materials and other items such as food and lodging for non-local labor hired for the project. Taken together, personal income is estimated to increase by \$11,593,000 in Kittias County due to spending during the construction phase. When the income of \$864,000 from other sources is considered, the increase in income to the county totals \$12,457,000.

Table 3 provides the same information broken out by industry sector. Most of the spending during this phase occurs in the Construction sector. Sectors that will support this sector such as the Wholesale and Retail Trade and Services sectors will also see a significant increase in spending.

Industry	Wages	Business	Personal	Other	Jobs
		Income	Income	Income	
Agriculture, Forestry, and					
Fisheries	\$37,000	\$7,000	\$44,000	\$15,000	1.7
Construction	7,978,000	\$1,044,000	\$9,022,000	\$389,000	90.4
Manufacturing	42,000	\$4,000	\$46,000	\$16,000	1.4
Trans., Comm., & Utilities	778,000	\$34,000	\$812,000	\$57,000	9.7
Wholesale and Retail Trade	611,000	\$56,000	\$667,000	\$90,000	36.2
Finance, Insurance, & Real					
Estate	66,000	\$29,000	\$95,000	\$120,000	3.5
Services	618,000	\$218,000	\$836,000	\$146,000	41.2
Government	71,000	\$0	71,000	\$31,000	1.3
Total	\$10,202,000	\$1,391,000	\$11,593,000	\$864,000	185.5

Table 3: Construction Phase Economic Impacts by Industry

## **B.** Operations

Spending will continue in the local economy during the operation of the wind turbines once the construction phase has ended. During the operations phase, spending will consist of primarily:

- 22 employees hired to operate and manage the wind power plants
- Spending on equipment, maintenance and materials to operate the wind turbines
- Income to property owners that rent land for the wind turbines (\$4,500 per turbine.)

The impact to the local economy due to the wind plant operations was modeled based on these factors. As during the construction phase, there is a direct effect from these factors as well as an indirect effect that results from the spending due to the increases in income from the new jobs and from the rental income. These impacts are summarized in Table 4 and Table 5.

Table 4 shows the effect on incomes due to continued operations of the wind turbines. The operations will require 22 full and part time jobs, and the spending on these jobs and plant equipment will create approximately 31 additional jobs in businesses that support the wind plants. The combined effect of direct and indirect spending will result in approximately 53 additional new and part time jobs in Kittitas County. Similarly, spending on these jobs will increase annual wages by \$2,728,000 and yearly business income by \$351,000. Income from other sources is estimated at \$1,188,000 annually and will consist primarily of rental fees paid to land owners where the wind turbines are situated. Taken together, the wind turbines operations will increase income to the county by \$4,267,000 annually.

Impact type	Wages	Business Income	Personal Income	Other Income	Jobs
Direct	\$2,165,000	\$216,000	\$2,381,000	\$819,000	22.0
Indirect	77,000	30,000	107,000	22,000	3.1
Induced	486,000	105,000	591,000	347,000	28.2
Total	\$2,728,000	\$351,000	\$3,079,000	\$1,188,000	53.3

Table 4: Wind Plant Operations Annual Economic Impacts for KittitasCounty

Table 5 shows the economic impacts resulting from wind turbine operations broken out by industry sector. Most of the impacts will be in the Transportation, Communications, and Utilities sector. The Real Estate and Service sectors will also see increased economic activity due to the continued operation of the wind farm.

Industry	Wages	Business Income	Personal Income	Other Income	Jobs
Agriculture, Forestry, and					
Fisheries	\$10,000	\$1,000	\$11,000	\$4,000	0.5
Construction	63,000	29,000	92,000	4,000	2.6
Manufacturing	11,000	1,000	12,000	5,000	0.4
Trans., Comm., & Utilities	2,190,000	226,000	2,416,000	27,000	22.7
Wholesale and Retail Trade	211,000	19,000	230,000	76,000	13.3
Finance, Insurance, & Real					
Estate	29,000	12,000	41,000	1,012,000	1.5
Services	185,000	64,000	249,000	35,000	11.8
Government	29,000	0	29,000	25,000	0.5
Total	\$2,728,000	\$351,000	\$3,079,000	\$1,188,000	53.3

Table 5: Annual Wind Plant Operation Impacts by Industry

## IV. Tax Revenues

The overall increase in economic activity from the wind power plant will increase tax revenues for Kittitas County. ECONorthwest was asked to estimate the impact on tax revenues for the major sources of tax income for the county. Note that we did not attempt to estimate the increases in costs or the provision of county services (i.e., fire, sheriff) that the wind power plant might require.

Based on our review of Kittitas County budgets and spending and our evaluation of the proposed wind power facility, we have estimated the potential revenue impacts for the Kittitas County. Table 6 shows the estimated increases in revenue for the major tax revenue sources.

As shown in Table 6, the primary increase in tax revenues is from property taxes on the wind turbines themselves. For this calculation, we have used the value of \$750,000 per turbine, which is consistent with our experience in other wind projects and with the information provided to us by the wind companies involved with the Kittitas County project. The property tax rate used for the calculation is the 1.35 percent for Kittitas County. Using this tax rate and property value for the 265 turbines results in new property tax revenues of \$2,683,125 annually.

The development of this project will also have an effect of increasing the value of other properties due to the increase in wages and overall economic activity in Kittitas County. This results in an additional \$201,971 in property tax revenues annually due to increases in other property values.

When the property tax revenues from both sources are combined, the additional tax revenue collected within Kittitas County totals \$2,885,096 annually.¹ For comparison, property tax revenues from all sources in Kittitas County totaled \$25,223,948 for the 2001-02 budget year.² The increase in property tax revenues due to the wind farm amounts to an increase of 11 percent over these levels.

Revenue Source	Amount
Property taxes on wind farms	\$2,683,125
Taxes from higher values on other properties	201,971
Total	\$2,885,096

#### Table 6: Increases in Annual Property Tax Revenues in Kittitas County

A complicating factor in these revenue estimates is the recently passed Initiative 747 (I-747) in Washington State, which limits increases in tax levies to 1 percent a year. From our conversations with the Kittitas County assessor and from information provided by Washington State, it appears that most of the value of a wind turbine (\$500,000) would be considered personal property and as such would be subjected to this limit. For Kittitas County, total personal property is assessed at \$2,355.4 million. The addition of 265 windmills with a personal property value of \$500,000 each would add \$132.5 million to the total property value of the county - an increase of 5.6 percent. Since this increase is greater than 1 percent, it is possible that taxes in other areas would need to be reduced in order to comply with I-747. This might involve decreases in personal property tax rates and/or bond levies. It should be stressed that ECONorthwest is not an accounting firm, and the implication of I-747 is discussed here only as one possible scenario based on preliminary tax estimates. However, the tax revenue estimates provided here should be viewed with I-747 in mind, as actual revenues may ultimately be reduced in the County in order to comply with the initiative.

Table 7 shows the likely distribution of the new tax revenues based on the spending allocations reported in the 2002 Kittitas County Budget. This information is also presented graphically in Figure 1.

¹ Approximately 30 percent of the turbines are to be built on land managed by the Washington Department of Natural Resources rather than on private land. For these turbines, the rental fee for land will be paid to the State, which then returns these funds to schools throughout the state based on district need. At the annual rental rate of \$4,500 per turbine, this amounts to an additional \$351,000.

² Kittitas County Assessor's Report 2001 Assessed Valuations Levies and Taxes to be Collected 2002, page 4.

Spending Category	Amount
Local schools	\$874,761
State schools	\$807,538
Fire districts	\$171,952
Local communities	\$240,617
County roads	\$291,106
County government	\$362,657
Hospitals and other local services	\$136,465
Total	\$2,885,096

Table 7: Allocation of Property Tax Revenues





Based on current spending patterns, local schools receive the largest share of the tax revenue increase at \$874,761 annually. Following the local schools, state schools would receive the next largest share of revenues at \$807,538 annually. The local county government budget would receive \$362,657 annually, local county roads revenues would increase by \$291,106 annually, and annual funds going to

local communities from the county would increase by \$240,617. Finally, annual spending for local fire districts would increase by \$171,952 and funds allocated to hospitals and other services in the county would increase by \$136,465.

The property tax revenue estimates reflect funds that are spent in a variety of sectors, both inside and outside Kittitas County. In addition to these property taxes, we estimated the tax revenue that will accrue to the Kittitas County Government. This was done by comparing the current tax revenues as a fraction of total economic output for Kittitas County with and without the wind farm. Using the results from our input-output model, we estimated the total increase in economic output from the proposed wind plant. Given the increase of output with the project, we estimated the increase in tax revenues assuming that tax rates remained constant. For each individual tax, the increases were generally on the order of 0.2 percent annually.

The estimated increase in annual revenue for the Kittitas County Government from these taxes is shown in Table 8. The majority of these additional tax revenues are the property taxes collected for county government and roads. Other sources include smaller taxes such as those collected for fees and services as well as revenue returned to the county by the State. Together, these tax revenues total \$693,777. Given the Kittitas County Government expenditures of \$44,312,102 planned for 2002, the additional revenue generated by the wind farm represents an increase of almost 2 percent over the budgeted amount.³

Spending Category	Amount
Property taxes – County government and roads	\$653,763
Sales and use taxes	\$7,103
All other taxes	\$2,927
Licenses and permits	\$2,094
Charges for services	\$8,509
Fines and forfeits	\$2,138
State collected taxes distributed to County	\$17,244
Total	\$693,777

Table 8: Additional Kittitas County Government Tax Revenues

³ *Kittitas County 2002 Annual Budget,* page 15.

# V. Alternative Uses

A final analysis issue was to assess the types of additional costs Kittitas County would likely occur with a new residential development. Our understanding is that a residential development as has been suggested as an alternative to building the wind farm, although it is unlikely that such a development would utilize all the land that is currently being considered for the wind project.

For this task, we did not attempt to estimate these costs or the amount of tax revenue that might be generated from such a development. Rather, we are listing areas of increased costs to the County based on our experiences conducting fiscal impact analyses for other jurisdictions.

With a new residential development, additional costs will be incurred for extending utilities and roads to the development, with road construction likely comprising the highest share of costs. Utility-related costs include extending water lines, sewer, phone lines, and power lines to the new development. The utility-related costs are usually paid for by system development charges and if the charges are properly constructed, these services will be cost neutral to the County as they will be paid for entirely by the fees collected. Maintenance of items such as roads, however, will likely increase costs for the County.

Additional cost considerations for Kittitas County will be the extension of all county services to a new development. Affected service areas include fire, sheriff, hospital, libraries, and other community services funded by the County. In order to maintain current levels of service to the new county residences in these areas, additional staff may need to be hired.

If the new residential development is large enough, it may also require that additional Kittitas County government officials be hired to handle the increased workloads in all government areas. For example, the addition of a large residential development may require hiring more staff in the assessor's office or possibly additional teachers for that particular school district.

# Appendix A: Modeling Process

Expenditure in the utility sectors and construction sectors affect the Washington economy *directly*, through the purchases of goods and services in this state, and *indirectly*, as those purchases, in turn, generate purchases of intermediate goods and services from other, related sectors of the economy. In addition, the direct and indirect increases in employment and income enhance overall economy purchasing power, thereby *inducing* further consumption- and investment- driven stimulus.

The economic modeling framework that best captures these direct, indirect, and induced effects is called input-output modeling. Input-output models provide an empirical representation of the economy and its inter-sectoral relationships, enabling the user to trace out the effects (economic impacts) of a change in the demand for commodities (goods and services).

Because input-output models generally are not available for state and regional economies, special data techniques have been developed to estimate the necessary empirical relationships from a combination of national technological relationships and county-level measures of economic activity. This modeling framework, called IMPLAN (for IMpact Analysis for PLANning), is the technique that ECONorthwest has applied to the estimation of impacts.⁴

The IMPLAN model reports the following economic impacts:

- Total Industrial Output (output) is the value of production by industries for a specified period of time. Output can be also thought of as the value of sales including reductions or increases in business inventories.
- Personal income consists of the wages and salaries received by households (employee compensation) and the payments received by small-business owners or self-employed individuals (proprietary income). Employee compensation includes workers' wages and salaries, as well as other benefits such as health and life insurance, and retirement payments. Proprietary income, for example, would include income received by private business owners, doctors, accountants, lawyers, etc.

⁴ IMPLAN was developed by the Forest Service of the US Department of Agriculture in cooperation with the Federal Emergency Management Agency and the Bureau of Land Management of the US Department of the Interior to assist federal agencies in their land and resource management planning. Applications of IMPLAN by the US Government, public agencies and private firms span a wide range of projects, from broad, resource management strategies to individual projects, such as proposals for developing ski areas, coal mines, and transportation facilities, and harvesting timber or other resources. ECONorthwest has applied the model to a variety of public and private sector energy projects including a major US/Canada gas pipeline project and the proposed purchase of Portland General Electric by local counties.

- Other property type income (other income) in the IMPLAN model includes payments to individuals in the form of rents received on properties, royalties from contracts, dividends paid by corporations, and corporate profits earned by corporations.
- Job impacts include both full and part time employment.
- Tax revenues for various federal, state and local taxing jurisdictions.

Ideally, expenditures for the proposed wind farm would be available and specific enough to allocate to each of the 528 industry sectors contained in the IMPLAN model. In addition, the expenditures should be delineated between local and non-local providers, as purchases of goods and services from out-of-state vendors will have no economic impact on Washington employees and businesses.

In absence of this detailed information, ECONorthwest opted to use the production function data for the utility and government sectors contained in the IMPLAN modeling software. From an input-output modeling perspective, this is a standard modeling approach in the absence of detailed primary source data. Indeed, IMPLAN's production function data contains information, called regional purchase coefficients that describe the proportion of a given commodity that will be provided by Washington producers. Our previous modeling experience has shown that the data contained in the IMPLAN modeling system for the various sectors is sufficient to permit an accurate rendering of impacts.

# VI. Appendix B: References

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#### PRELIMINARY

NOT FOR CONSTRUCTION Wind Ridge Power Partners, LLC 

EXHIBIT 22 RECREATIONAL AREAS SURROUNDING PROJECT SITE (25 miles)

Wild Horse Wind Power Project

DWG: EXHIBIT 20 RECREATIONAL AREAS SURROUNDING PROJECT SITE

DATE: NOV 3, 2003

FILENAME: WHRec.mxd



### **Kittitas County Solid Waste Programs**

925 Industrial Way, Ellensburg, WA 98926 Telephone: (509) 962-7542 Fax: (509) 962-7087 Ryegrass Landfill: (509) 856-0299

## INERT DEMOLITION AND CONSTRUCTION WASTES

NOTE: This list is not to be construed as complete, but will serve to answer most questions on what is acceptable. Contact Kittitas County Solid Waste Programs with additional questions at 962-7542 or Landfill 856-0299.

## ACCEPTABLE WASTES:

Asphalt Construction Debris Wood Pallets Wood Debris from Housing Bricks **Demolition Debris** Wood Beams Concrete Tables Cuiverts Roofing Material Fencing Material Bath Tubs Sinks Toilets Tile Plastics PVC Windows Doors Wiring Metal Piping

#### UNACCEPTABLE WASTE:

Liquids Sheet Rock Plaster Air Conditioners Carpet or Pad Tires Dirt Insulation Mattresses Refrigerators Hazardous Waste Yard Waste Household Waste Ashestos Cardboard or Paper Freezers



#### Zilkha Renewable Energy: Wild Horse Project

#### **Executive Summary – Wind Power GeoPlanner**TM

#### Licensed Microwave Search & Worse Case Fresnel Zone

Comsearch performed an analysis to evaluate the potential effects of the planned Wild Horse wind turbine project area to existing microwave telecom systems. Comsearch identified microwave paths that intersect the defined project area and calculated a Worse Case Fresnel Zone for each path.

Comsearch's Wind Power GeoPlanner [™] provides a graphical representation of the microwave paths and provide supporting technical parameters, as maintained in Comsearch's corporate database. The microwave path data (including CC, OF and TV services) is overlaid on USGS topographic basemaps. Comsearch identified microwave paths that intersected the Wild Horse project area.

Comsearch then calculated Worse Case Fresnel Zones (WCFZ) for each microwave path in the project area. The midpoint of a full microwave path is the location were the widest (or worst) Fresnel zone occurs. Fresnel zones are calculated for each path using the following formula.

$$Rn \cong 17.3 \sqrt{\frac{n}{FGHz} \left(\frac{d1d2}{d1+d2}\right)}$$

Each microwave path in the project area is buffered by the calculated WCFZ radius, giving the linear path an area or swath. The distance unit is in meters and can be found in the column attribute "WCFZ." In general this is the XY area where the planned wind turbines should be avoided, if possible. This area is shown in the Figures below.

For this project, latitude and longitude values for turbine locations and the turbine blade radius were not given. If given, the executive summary would have identified specific microwave telecom paths and turbines if a potential XY conflict exists. When wind turbines need to be located inside a WCFZ, Comsearch offers and recommends a detailed interference study, which considers the vertical Z-height clearance objectives. Please contact your sales representative, or Denise Finney (703) 726 – 5650 for assistance.

**NOTE:** Per Mark Johnson at the DNR Department Natural Resources SE Headquarters, the actual coordinates for the Wiskey Dick tower (WNEZ423) differ from the licensed coordinates. The actual coordinates are 47 00 12.4 N and 120 11 22.3 W.



Figure 1 – Wind Power GeoPlannerTM & WCFZ



Figure 2 – Wind Power GeoPlannerTM & WCFZ Detail 1





19700 Janelia Farms Blvd Ashburn, VA 20147 703-726-5500

#### Executive Summary Off-Air TV Reception Analysis with the Proposed Wild Horse Wind Power Project in Kittitas County, Washington

Comsearch was contracted by Zilkha Renewable Energy (Applicant) to identify and analyze potential effects of wind turbines installed at the proposed Wild Horse Wind Power Project (Project) to the reception of off-air TV signals in Kittitas County, Washington. To do this, Comsearch used its database to determine the TV station operators in the area and performed field measurements to establish a baseline condition for TV reception in the area. Measurements were also performed at an operating wind power facility in Joice, Iowa to obtain measured off-air TV signal data to support the analytical work in Kittitas County. The purpose of the measurements in Kittitas County was to determine by measurement the quality of the off-air TV signals before the wind turbines are installed. The purpose of the measurements in Joice was to quantify the effects of the existing wind turbine facility on off-air TV reception in the surrounding communities and then apply the measurement results to the communities closest to the proposed Wild Horse Project.

Comsearch has been in the telecommunication consulting business for over 25 years. In that time, Comsearch has performed measurements and used its databases to evaluate potential interference problems around the world. The evaluations utilize the skills of its staff of telecommunication professionals made up of database specialists, software developers, field engineers and telecommunication analysts. Off-air TV reception in the presence of physical structures is an area that Comsearch has examined in urban, suburban and rural environments with respect to water and communication towers, buildings and other structures. This experience has been applied to the analysis of the proposed Project in Washington.

Comsearch personnel who worked on this evaluation included Roger Maier (Product Manager), John Manzer (Geographic Information Software (GIS) Analyst) David Cole (Field Engineer) and Les Polisky (Engineer).

The proposed Project is shown in Figure 1. Also shown in Figure 1 are the locations of the broadcast antennas for those TV stations providing TV service to the area and the five field measurement locations.



Figure 1

The results of the TV Station measurements made in the Kittitas County area are presented in the Table below.

<u>Channel</u>	Site A	Site B	Site C	Site D	Site E
2	N/R	N/R	3	4	N/R
9	5	4	5	3	5
11	5	4	5	4	4
25	3	2	2	2	2
31	1	1	1	1	1
39	1	1	1	1	1
41	2	2	2	2	1
45	N/R	N/R	4	4	N/R
47	N/R	N/R	3	3	5
51	1	1	1	1	1
54	1	1	1	1	1
63	1	1	1	1	1
69	2	1	1	1	1

#### Video Quality Measured in Kittitas County

Key:

1-Perfect cable quality

2-Good picture with some noise

3-Servicable picture but some rolling video and noisy picture

4-Trace of picture but unfit for watching

5-No video or audio discernable

N/R-No TV signal received

It should be noted from the measured results that Channels 2, 9, 11, 45 and 47 presently produce unacceptable TV reception in the area. The remaining eight channels measured produce generally good reception. Also, it is important to note that of the eight channels producing good TV reception, three of them have transmitting antennas located both to the North and Southwest direction of the Wild Horse Project. They are Channels 51, 63 and 69. Channels 25, 31, 39, 41 and 54 have their transmitting antennas located to the Southwest direction of the proposed Project.

Based on the TV signal measurements performed in Kittitas County, and Joice, IA and previous measurements of TV signal propagation, the following conditions are expected to occur after the installation of the Project:

- 1. Since all of the viewable TV stations in the area are located to the North and Southwest of the Project site, and the population centers in the area are to the West and Southwest of the Project site, for the vast majority of the residents in the area, there should be no degraded TV reception of the currently viewable TV stations.
- 2. In the areas to the East of the Project site there may be degradation of some of the TV signals. However, it is Comsearch's understanding from a review of the area's

demographic data, supported by information obtained from the Applicant, that the land to the East is uninhabited for more than ten miles East of the Project. Further to the East of the Columbia River, population densities continue to be extremely sparse, as most of the land is used for grazing or agriculture. Land to the immediate East of the Project site and down to the Columbia River is owned by Zilkha's partner landowners and is flanked by the Quilomene Wildlife Refuge to the Northand the Whiskey Dick Wildlife Area to the South.

- 3. In the sector Northeast of the Project, the TV stations from the Southwest may be degraded. However, the three TV stations to the North will still provide coverage in the sector, which is almost entirely uninhabited. It is expected that the reduction in signal strength in the Northeast sector from TV broadcast antennas in the Southwest area and in the Southeast sector from TV transmit antennas in the North may be as great as 8 dB. However, the Applicant has reported that they know of no primary residences for more than 12 miles to the Northeast of the Project. The area to the Northeast is occupied almost entirely by the Quilomene and Colockum Wildlife Areas.
- 4. In the sector Southeast of the Project, the TV stations from the North will be degraded but there will still be eight TV stations providing coverage. The area to the Southeast of the Project is dominated by the Yakima Firing Range and the Whiskey Dick Wildlife Area.

Picture flicker caused by the motion of the wind turbine blades may occur in TV sets that are in locations close to the Project. This effect is normally seen in TV sets in close proximity to a wind power project. Since the nearest home is nearly 2 miles from the Project, this is unlikely to be an issue.

Electromagnetic noise generated from the wind turbines can affect the low VHF frequency channels only, and only in TV sets located less than 0.1 of a mile from the Project. In the Project area, it could affect Channel 2 reception, but the TV field measurements have shown that this channel already has an unacceptable TV signal coverage in the area and there are no houses within almost two miles of the Project. The off-air TV Channels that provide good TV service in the area are all UHF channels. Because TV transmitting antennas for Channels 51, 63 and 69 are located both North and Southwest of the proposed Project, TV reception of these channels to the Northeast and Southeast should be unaffected.

#### **Conclusion:**

Based on the measurements and analysis performed for this study there should be no degradation to the population centers west of the Wild Horse Project site. Some degraded off-air TV reception may occur at locations in the Northeast sector from the proposed Project. However, good reception should still be available from the three TV

stations located North of the wind power facility, and the area to the Northeast of the Project site is almost totally uninhabited. No degradation of TV service will occur to the Southeast sector because the Northern TV station signals that would be degraded are also transmitted from Southwestern locations.

Comsearch has documented degradation of TV signals due to signal reflections and multipath interference at locations within a 2-mile radius of operating wind power projects. However, at the Wild Horse Project site, there are only three residences within 2 miles of the Project, and all are greater than 1.7 miles from the nearest proposed turbine.

## WILD HORSE WIND POWER PROJECT

### SUMMARY OF TRIBAL CORRESPONDENCE

DAT	E	FROM	ТО	REGARDING
	3/5/2003	Lithic Analysts	Yakama Nation	Letter informing them or proposed project
	3/5/2003	Lithic Analysts	Colville Tribes	Letter informing them or proposed project
	3/5/2003	Lithic Analysts	Wanapum	Letter informing them or proposed project
	6/30/2003	Zilkha	Yakama Nation	Formal Consultation Initiation Notice and Invitation to Participate
	6/30/2003	Zilkha	Colville Tribes	Formal Consultation Initiation Notice and Invitation to Participate
	8/13/2003	Zilkha	Colville Tribes	Copy transmitted of the Draft Cultural Resources Report
	8/19/2003	Zilkha	Yakama Nation	Copy transmitted of the Draft Cultural Resources Report
	9/19/2003	Colville Tribe	Zilkha	Response to receipt of Draft Cultural Resources Report
1	0/17/2003	Zilkha	Colville Tribe	Response to CCT Report Comments date 9/19/2003
1	2/16/2003	Zilkha	Colville Tribe	Transmit Draft ASC Section 3.14
1	2/16/2003	Zilkha	Wanapum	Transmit Draft ASC Section 3.14
1	2/16/2003	Zilkha	Yakama Nation	Transmit Draft ASC Section 3.14
	1/5/2004	Colville Tribe	Zilkha	Response to Draft ASC Section 3.14
	1/14/2004	Colville Tribe	Zilkha	Suggestions regarding Draft ASC report section 3.14
	2/4/2004	ZRE	Colville Tribe	E-Mail to D. Shannon
	2/9/2004	Colville Tribe	Zilkha	Response to e-mail 2/4/04

LITHIC ANALYSTS P.O. Box 684 Pullman, WA 99163 (509) 334-9781

March 5, 2003

Adelin Fredin, THPO Confederated Tribes of the Colville Reservation PO Box 150 Nespelem, WA 99155-0150

Re: Proposed Wind Ridge Power Project, Kittitas County

Dear Ms. Fredin:

Lithic Analysts has been retained to conduct the required cultural resource survey for the Wind Ridge Power Partners, LLC, project located in Kittitas County, Washington. This project will take place within Sections 15, 17, 20, 21, 22, 27, 28, 29, and 33, Township 18 North, Range 21 East, Whiskey Dick Mountain, Washington, 1966 Quadrangle (See enclosed map).

Lithic Analysts personnel will conduct an on-ground cultural resource survey of the proposed project area. A literature search has been conducted at the Office of Archaeology and Historic Preservation in Olympia, Washington, as well as among other pertinent sources.

Thank you for your assistance in this matter. If you have any questions, please do not hesitate to call Jeff Flenniken at 509-334-9781 or Pam Trautman at 360-943-3388.

Sincerely,

rautman

c: Chris Taylor, Project Development Manager



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Camille Pleasants Interim Tribal Historical Preservation Officer Confederated Tribes of the Colville Reservation PO Box 150 Nespelem, WA 99115-0150

June 30, 2003

Re: Proposed Wild Horse Wind Power Project

Dear Ms. Pleasants,

On March 5, Lithic Analysts notified the Confederated Tribes of the Colville Reservation that Wind Ridge Power Partners, LLC, proposes to construct the Wild Horse Wind Power Project in the area of Whiskey Dick Mountain in eastern Kittitas County (see enclosed project site layout). The proposed project includes approximately 100 wind turbines, associated roads and underground electric cables, substation sites, and an operations and maintenance facility.

We are hereby initiating formal consultation for this project and invite you to comment on the project's area of potential effect, as well as to provide assistance in identifying any previously unrecorded cultural resources which may be located within the area.

Lithic Analysts has conducted preliminary archival research at the appropriate locations, including the Washington State Office of Archaeology and Historic Preservation. They have also completed the required cultural resource survey for the proposed project. A copy of their final report will be forwarded to you upon completion. Sean Hess, of your office, contacted Lithic Analysts in response to their March 5 letter and indicated Colville concerns for traditional cultural properties (TCPs). We also invite Colville comments on TCPs for the project area and assure you that traditional land uses will be addressed in the cultural resources report.

Your response to this letter is greatly appreciated. Please contact me at your earliest convenience if you would like to meet with Sagebrush Power Partners, LLC, to discuss our proposed project. If you have any questions, please call me at (503) 222-9400, ext. 3.

Sincerely,

Chris Taylor Project Development Manager

Enclosure- Project Site Layout



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August 13, 2003

Camille Pleasants Interim Tribal Historical Preservation Officer Confederated Tribes of the Colville Reservation PO Box 150 Nespelem, WA 99115-0150

Re: Proposed Wild Horse Wind Power Project, Cultural Studies

Dear Ms. Pleasants,

Per the request of Guy Maura, enclosed you will find draft copies of Cultural Resources assessment and Archaelogical Survey for the proposed project site, prepared by Lithic Analysts.

These documents have not yet been finalized but we wanted to share them with you as soon as possible.

If you have any questions or would like to visit the site, please call me at (503) 222-9400, ext.103.

Sincerely,

Chris Taylor Project Development Manager

CC: Pam Trautman, Lithic Analysts

Enclosure Archaeological Survey ASC Section 5.1.7



The Confederated Tribes of the Colville Reservation P.O. Box 150, Nespelem, WA 99155 (509) 634-2695 History/Archeology Program FAX: (509) 634-2694



September 19, 2003

Mr. Chris Taylor Project Development Manager Zilkha Renewable Energy 210 SW Morrison, Suite 310 Portland OR 97204 c/o Magalie Roman Salas Frank Winchell and Deborah Osborne Federal Energy and Regulatory Commission 888 First Street N.E. Washington, D.C. 20426

#### **RE: Wild Horse Wind Power Project**

Dear Mr. Taylor,

The Colville Confederated Tribes History/Archeology Program appreciates your letter of August 13, 2003, which stated that we would find enclosed "draft copies of Cultural Resources assessment and Archeological Survey for the proposed project site". Instead we received <u>Draft Archeological Survey of the WHWPPA, Kittitas County, Washington</u> (Flenniken and Trautman 2003) and <u>Draft 5.1.7 Historical and Cultural Preservation</u>. It appears to us that the latter document is intended as a chapter in a NEPA compliance document, but we cannot be sure since a cover page did not accompany it.

The Confederated Tribes of the Colville Reservation (CCT) are pleased that Lithic Analysts, Zilkha Renewable Energy's cultural resource contractor, has delivered an impressive and wellrounded report for the Wild Horse Wind Power Project. We find that it addresses CCT Traditional Cultural Property (TCP) interests in a responsible manner. The CCT definitely has TCP interests in the Project Area (PA) and we are pleased that Lithic Analysts has acknowledged this. We have already documented TCP interests near the PA, the closest of which is three miles to the west along the Bonneville Power Administration's Schultz-Hanford transmission line.

The location of the proposed undertaking is in the traditional territory of the Moses-Columbia Tribe and the Wenatchee Tribe. Both tribes are constituent members of the CCT, who is their only legal representative. The History/Archaeology Department of the CCT is authorized through tribal resolution to address cultural resource management issues on and off the reservation for the CCT. A 1996 assumption agreement between the CCT and Department of the Interior's National Park Service transfers the National Historic Preservation Act (NHPA) State Historic Preservation Officer authority to the THPO on specified Indian lands and provides authority for consultation within the CCT traditional lands.

The CCT adheres to cultural resources laws, regulations and mandates. One of the more prominent of these is the NHPA, which requires consultation with tribes prior to initiating an undertaking in which Federal funds or permits are involved. Any impacts to historic properties listed on or eligible for the National register of Historic Places must be identified and any adverse impacts must be mitigated.

While this department appreciates inclusion in the consultation process, we are disappointed that the initial consultation letter came to us on Zilkha Renewable Energy letterhead, signed by Mr. Chris Taylor, an employee of that entity. We wish to inform you that private corporations have no authority to initiate what should be government-to-government consultation with any Tribal Government. This is a duty of the Federal Agency responsible for the undertaking, as defined by Federal legislation. However, based on the correspondence and literature delivered here, we are unable to determine the Federal Agency responsible for this undertaking. We expect formal consultation with the official representative of the Federal Agency responsible for this undertaking. Please be aware that "agency official" has a specific meaning within the NHPA. The agency official is the federal agency official with jurisdiction over and legal and financial responsibility for the undertaking. We appreciate that technical coordination is occurring between the History/Archaeology Department and Zilkha Renewable Energy, but this is neither the proper process nor the preferred path for initiating consultation. In spite of this and in the spirit of moving forward in a cooperative manner, we forward the following technical recommendations.

In the report and NEPA section, Lithic Analysts state that they have conducted a literature search and that no TCPs have been located in the Wild Horse Wind Power Project Area (Flenniken and Trautman 2003:33, Draft Section 5.1.7 Historical and Cultural Preservation: 16). Unfortunately they do not cite what literature was reviewed to reach this conclusion. While we are impressed with the report and with its treatment of TCPs, we would like to suggest that in the future, cultural resource contractors cite in-text the references they have used to reach specific conclusions. Enclosed are sources we recommend your contractors add to any future literature review.

The draft report has classed TCPs with "Previously Recorded Archeological Sites" when they should be in their own section.

A further point of clarification we would like regards two rock features described by Lithic Analysts. Both sites were unrecorded and unidentified prior to this report. Even though they are well described in the inventory section, this department needs a professional assessment by Lithic Analysts of the function of these features. To us, WHWP Rock Feature #1 and #2 descriptions appear to be consistent with those of burials.

If <u>Draft 5.1.7 Historical and Cultural Preservation</u> is, in fact, destined to be part of a NEPA compliance document, then the locational information is too specific. When it is time to discuss TCP identification, History/Archaeology can provide guidance on what is expected.

Although this letter is addressed to Mr. Chris Taylor, it is also being directed to the Federal Energy Regulatory Commission for action. If FERC is not the appropriate Federal Agency, then we would hope that they would assist us by forwarding it to the responsible Federal Agency.

Please feel free to contact me at (509) 634-2654 if you should need any further clarification.

Sincerely,

CREENSUE

Camille Pleasants Interim THPO History/Archaeology Program Colville Confederated Tribes

cc: Chrono File

Mr. Guy Moura, Traditional Cultural Property Coordinator, CCT Mr. Frank Winchell, Federal Energy Regulatory Commission

Enclosures: Recommended literature Zilkha letter of June 30, 2003 Zilkha letter of August 13, 2003
### **Recommended literature**

### Clark, Ella

1953 Indian Legends of the Pacific Northwest. University of California Press, Berkeley, Los Angeles, London.

### Hollenbeck, Jan, & S. Carter

1986 A Cultural Resource Overview: Prehistory and Ethnography. Wenatchee National Forest. U.S. Forest Service, Wenatchee National Forest, Leavenworth, Washington.

### Ray, Verne F.

- 1960 The Columbia Indian Confederacy A League of Central Plateau Tribes
- 1974 Ethnohistorical Notes on the Columbia, Chelan, Entiat, and Wenatchee Tribes. In Interior Salish and Eastern Washington Indians, IV. Garland, New York.

### Relander, Click

1956 Drummers and Dreamers: The Story of Smohalla the Prophet and His Nephew Puck Hyah Toot, the Last Prophet of the Nearly Extinct River People, the Last Wanapums. With a Foreword by Frederick Webb Hodge. Caldwell, Idaho: The Caxton Printers. (Reprinted: Pacific Northwest National Parks and Forests Association, Seattle, WA, 1986).

### Schuerman, Richard D., (ed.)

1982 The Wenatchi Indians: Guardians of the Valley. Fairfield, WA, Ye Galleon Press.

#### Smith, Allan H.

1983 Ethnohistory 1811-1855, and The Native Peoples. In Cultural Resources of the Rocky Reach of the Columbia River, Vol. I. Project Report No. 1, Center for Northwest Anthropology, edited by Randall Schalk and Robert Mierendorf, Washington State University, Pullman, Washington.



<u>Ellensburg Offices</u> 222 Fourth Street Ellensburg, WA 98926 Phone: 509-962-1122 Fax: 509-962-1123 Northwestern Regional Office 210 SW Morrison Suite 310 Portland, OR 97204 Phone: 503-222-9400 Fax: 503-222-9404

October 17, 2003

Camille Pleasants Interim Tribal Historical Preservation Officer Confederated Tribes of the Colville Reservation PO Box 150 Nespelem, WA 99115-0150

Re: Wild Horse Wind Power Project, CCT letter dated Sept. 19, 2003

Dear Ms. Pleasants,

Thank you for your recent comments on the <u>DRAFT Archaeological Survey of the</u> <u>WHWPP Area</u> and the <u>DRAFT Section 5.1.7 Historical and Cultural Preservation</u> for the above project, which we had previously forwarded to you for review. Both documents were prepared by Lithic Analysts as part of the Wild Horse Wind Power Project EFSEC application process. We welcome the comments offered by the Confederated Tribes of the Colville Reservation (CCT) pertaining to content of both documents. CCT technical comments and suggestions are well-founded and will be incorporated into the final documents submitted for the above project application process.

Regarding CCT concerns about Government-to-Government consultation, there is no federal agency responsible for this undertaking. As the project is not sited on federal land and the power is not being marketed to BPA, there is no federal involvement and no NEPA process is anticipated. We understand that many tribes wish to enter into consultation only with Federal agencies. However, since 2001, Washington state law has permitted alternative energy resources of any size to submit applications to the Energy Facility Site Evaluation Council (EFSEC) for state review. In July 2003, a request for a Potential Site Study for the Wild Horse Wind Power Project was made to EFSEC as the state licensing process for siting, construction and operation of this energy project.

The Potential Site Study is conducted prior to submitting an Application for Site Certification (ASC) to construct and operate the facility. The site study is to determine what engineering, environmental, socioeconomic, cultural, and other information is required to be included in the ASC. As part of the review of the ASC, EFSEC will prepare a detailed Environmental Impact Statement. Both documents above that were submitted to the CCT for review will, after revisions are made, become part of the Application for Site Certification.

Irina Makarow (360-956-2047) is the EFSEC Siting Manager who is handling the Wild Horse Wind Power Project. She will be contacting you to inquire if the CCT is interested in offering comment through EFSEC on the application.

Our invitation to solicit CCT comments and input was extended in the spirit of cooperation and good faith. Our intent was to offer the above reports to the CCT for review early in the application process, rather than later.

We thank you for your comments and technical recommendations on our Draft documents and look forward to hearing from you again.

Sincerely,

Chris Taylor Project Development Manager

Cc: Guy Moura, Technical Cultural Property Coordinator, CCT Frank Winchell, Federal Energy Regulatory Commission Irina Makarow, Siting Manager, EFSEC



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December 16, 2003

Camille Pleasants Interim Tribal Historical Preservation Officer Confederated Tribes of the Colville Reservation PO Box 150 Nespelem, WA 99115-0150

Re: Proposed Wild Horse Wind Power Project, Cultural Resource Studies

Dear Ms. Pleasants,

Following up on correspondence earlier this year and previous conversations between our archeologists and your staff, enclosed you will find the final copies of the Cultural Resources Assessment and Archaeological Survey for the proposed Wild Horse Wind Power Project site, prepared by Lithic Analysts, in preparation for Zilkha's Application for Site Certification.

We appreciate your comments and cooperation; we have done our best to incorporate your comments and concerns.

If you have any further questions regarding this project, please call me at (503) 222-9400, ext.103.

Sincerely.

Chris Taylor Project Development Manager

CC: Pam Trautman, Lithic Analysts

Enclosure Archaeological Survey ASC Section 3.14



The Confederated Tribes of the Colville Reservation P.O. Box 150, Nespelem, WA 99155 (509) 634-2654 FAX: (509) 634-94



Mr. Chris Taylor Project Development Manager Zilkha Renewable Energy 210 SW Morrison, Suite 310 Portland OR 97204

January 5, 2004

RE: Wild Horse Wind Power Project TCPs

Mr. Taylor,

We have received your letter dated December 16, 2003, and after review, have found three specific points that need to be addressed:

- 1. There is site-specific information in this document. If this is a document that will be made available to the public, then revelation of site-specific information is illegal.
- 2. There is no acknowledgement of the possibility of burials (thus TCPs) in Features #1 and u#2./ Lacaus, have particulated condition
- 3. The report states several times that there are no TCPs in the project area. But there has not been a field survey for TCPs; only a literature search has been conducted. TCPs have been identified by the CCT History/Archaeology Program three miles west of the proposed project area. Therefore, there is no reason to think that the project area is devoid of TCPs.

You may contact Mr. Donald Shannon for technical questions (509) 634-2653, or myself (509) 634-2564 for all other questions. Thank you.

Sincerely, Celeana

Ms. Camille Pleasants Program Manager/Interim Tribal Historic Preservation Officer

eur beigen in field - and sie fiel. De leis gener al le supplie e same le fine been conducted. DEPs mays Cc: Dr. Robert Whitlam, Office of Archaeology and Historic Preservation

Energy Facility Site Evaluation Council

Mr. Donald Shannon, CCT Traditional Cultural Property Project Supervisor



The Confederated Tribes of the Colville Reservation P.O. Box 150, Nespelem, WA 99155 (509) 634-2654





Mr. Chris Taylor Project Development Manager Zilkha Renewable Energy 210 SW Morrison, Suite 310 Portland OR 97204

January 14, 2004

RE: Wild Horse Wind Power Project TCPs

Dear Mr. Taylor,

Yesterday morning our Program was contacted by Ms. Pam Trautman of Lithic Analysts regarding our letter to you of January 5, 2004. Unfortunately, we have no written delegation of authority from Zilkha stating that Ms. Trautman or Lithic Analysts will conduct consultation with Native American tribes.

In our letter of September 19, 2003, we identified seven sources that should be consulted in the contractor report regarding traditional information. To date, we do not see any evidence that these sources have been consulted. For instance, the draft Energy Facility Site Evaluation Council Application dated 11/24/03 and accompanying archaeological survey report do not include any of these references.

In the same letter of September 19th, we state "When it is time to discuss TCP identification, History/Archaeology can provide guidance on what is expected." We were not contacted until yesterday, almost four months after the September 19th letter and six weeks after the draft application.

These same concerns were reiterated to EFSEC in a letter sent to Ms. Irina Makarow dated December 1st. Again, we have received no response.

Furthermore, in the telephone conversation, Ms. Trautman did not address the first two concerns of the January 5th letter;

- 1. There is site-specific information in this document. If this is a document that will be made available to the public, then revelation of site-specific information is unlawful, per National Historic Preservation Act, Section 304, 16 U.S.C., 470w-3 and RCW 27.53.070.
- 2. There is no acknowledgement of the possibility of burials (thus TCPs) in Features #1 and #2.

The Confederated Tribes of the Colville Reservation formally requests, in written form, to be made aware of who is to consult on cultural resource matters. At this point, and based on your letter of October 17, and a letter from EFSEC on November 18, it is unclear to us who is delegated to consult with us on this matter. We request the appropriate party arrange a meeting to consult with us on this project to resolve this matter.

In addition, we request your cultural resource investigations and documentation be amended to address the following problem. Specifically, on pg. 28 of "Wild Horse Wind Power Project Potential Site Study" prepared by Jones and Stokes in October 2003, John St. Pierre of the Colville Tribe is listed as having been "contacted indirectly by mail or via phone message, and have not responded." The appropriate contacts are Tribal Business Council Chairman Joe Pakootas and Interim Tribal Historic Preservation Camille Pleasants. Furthermore, contrary to the quote about our not responding, this program has been in contact with Zilkha since March of 2003 regarding Traditional Cultural Property concerns in the proposed project area. These concerns were specifically identified in a letter of September 19, 2003.

Please feel free to contact me at (509) 634-2654 to discuss this matter. Thank you.

Sincerely,

Cleant

Ms. Camille Pleasants Program Manager/Interim Tribal Historic Preservation Officer

 Cc: Dr. Robert Whitlam, Office of Archaeology and Historic Preservation Energy Facility Site Evaluation Council Chrono file
 Mr. Donald Shannon, CCT Traditional Cultural Property Project Supervisor



The Confederated Tribes of the Colville Reservation P.O. Box 150, Nespelem, WA 99155 (509) 634-2654





February 9, 2004

Irina Makarow Siting Manager PO Box 43172 Olympia WA 98504-3172

RE: Wild Horse Wind Power Project, Kittitas County, Washington Potential Site Study Project

Dear Ms. Makarow,

Thank you for your email correspondence with Donald Shannon of 2/04/04 with the attached letter regarding *Kittitas Valley and Wild Horse Wind Power Projects- Identification of Archeological Resources*. We have the following comments.

In paragraph 1, 2nd sentence, paragraph 2, 3rd sentence, and paragraph 4, 3rd sentence, please replace 'Mr. Shannon' with 'CCT'. In the first paragraph, we request that the word 'inadvertent', preceding "release of site specific", be removed.

In the last paragraph, it states that "We request that prior to submittal of the formal Application for Site Certification for the Wild Horse Wind Power Project, Zilkha Renewable Energy verify with Stephenie Kramer and Donald Shannon that the archeological information being submitted to EFSEC is adequately edited to remove all site specific information". Please note that our efforts thus far have far exceeded those required of our Tribal Historic Preservation Office. We cannot continue to devote our time and effort without compensation. We will continue to participate in the review process, but must enter into a contractual arrangement for technical and professional services.

If you have any technical questions, please contact Donald Shannon, Traditional Cultural Property Project Supervisor, at (509) 634-2653. For management decisions, please contact me at (509) 634-2654.

Sincerely,

Camille Pleasants Program Manager/Tribal Historic Preservation Officer History/Archaeology Program Confederated Tribes of the Colville Reservation

cc: Stephenie Kramer, OAHP Donald Shannon, CCT Darrel Peeples, Counsel to Wind Ridge Power Partners, LLC Chris Taylor, Zilkha LITHIC ANALYSTS P.O. Box 684 Pullman, WA 99163 (509) 334-9781

March 5, 2003

Mr. Johnson Meninick Cultural Resources Director Yakama Nation PO Box 151 Toppenish, WA 98948

Re: Proposed Wind Ridge Power Project, Kittitas County

Dear Mr. Meninick,

Lithic Analysts has been retained to conduct the required cultural resource survey for the Wind Ridge Power Partners, LLC, project located in Kittitas County, Washington. This project will take place within Sections 15, 17, 20, 21, 22, 27, 28, 29, and 33, Township 18 North, Range 21 East, Whiskey Dick Mountain, Washington, 1966 Quadrangle (See enclosed map).

Lithic Analysts personnel will conduct an on-ground cultural resource survey of the proposed project area. A literature search has been conducted at the Office of Archaeology and Historic Preservation in Olympia, Washington, as well as among other pertinent sources.

Thank you for your assistance in this matter. If you have any questions, please do not hesitate to call Jeff Flenniken at 509-334-9781 or Pam Trautman at 360-943-3388.

Sincerely,

utman Pam Trautman

c: Chris Taylor, Project Development Manager



Ellensburg Offices 222 Fourth Street Ellensburg, WA 98926 Phone: 509-962-1122 Fax: 509-962-1123 Northwestern Regional Office 210 SW Morrison Suite 310 Portland, OR 97204 Phone: 503-222-9400 Fax: 503-222-9404

Mr. Johnson Meninick Cultural Resources Director Yakama Nation PO Box 151 Toppenish, WA 98948

June 30, 2003

Re: Proposed Wild Horse Wind Power Project

Dear Mr. Meninick,

On March 5, Lithic Analysts notified the Yakama Nation that Wind Ridge Power Partners, LLC, proposes to construct the Wild Horse Wind Power Project in the area of Whiskey Dick Mountain in eastern Kittitas County (see enclosed project site layout). The proposed project includes approximately 100 wind turbines, associated roads and underground electric cables, substation sites, and an operations and maintenance facility.

We are hereby initiating formal consultation for this project and invite you to comment on the project's area of potential effect, as well as to provide assistance in identifying any previously unrecorded cultural resources which may be located within the area.

Lithic Analysts has conducted preliminary archival research at the appropriate locations, including the Washington State Office of Archaeology and Historic Preservation. They have also completed the required cultural resource survey for the proposed project. A copy of their final report will be forwarded to you upon completion.

Your response to this letter is greatly appreciated. Please contact me at your earliest convenience if you would like to meet with Wind Ridge Power Partners, LLC, to discuss our proposed project. If you have any questions, please call me at (503) 222-9400, ext. 3.

Sincerely,

Chris Taylor Project Development Manager

Enclosure- Project Site Layout



Ellensburg Offices 222 Fourth Street Ellensburg, WA 98926 Phone: 509-962-1122 Fax: 509-962-1123 Northwestern Regional Office 210 SW Morrison Suite 310 Portland, OR 97204 Phone: 503-222-9400 Fax: 503-222-9404

Mr. Johnson Meninick Cultural Resources Director Yakama Nation PO Box 151 Toppenish, WA 98948

August 19, 2003

Re: Proposed Wild Horse Wind Power Project Cultural Resource Studies

Dear Mr. Meninick,

Following up on my letter dated June 30, 2003 and previous conversations between our archeologists and your staff, enclosed you will find draft copies of the Cultural Resources assessment and Archaeological Survey for the proposed Wild Horse Wind Power Project site, prepared by Lithic Analysts.

These documents have not yet been finalized but we wanted to share them with you as soon as possible.

If you have any questions or would like to visit the site, please call me at (503) 222-9400, ext.103.

Sincerely,

Chris Taylor Project Development Manager

Enclosure



Ellensburg Offices 222 Fourth Street Ellensburg, WA 98926 Phone: 509-962-1122 Fax: 509-962-1123 Northwestem Regional Office 210 SW Morrison Suite 310 Portland, OR 97204 Phone: 503-222-9400 Fax: 503-222-9404

December 16, 2003

Mr. Johnson Meninick Cultural Resources Director Yakama Nation PO Box 151 Toppenish, WA 98948

Re: Proposed Wild Horse Wind Power Project Cultural Resource Studies

Dear Mr. Meninick,

Following up on correspondence earlier this year and previous conversations between our archeologists and your staff, enclosed you will find the final copies of the Cultural Resources Assessment and Archaeological Survey for the proposed Wild Horse Wind Power Project site, prepared by Lithic Analysts, in preparation for Zilkha's Application for Site Certification.

If you have any further questions regarding this project, please call me at (503) 222-9400, ext.103.

Sincerely,

Chris Taylør Project Development Manager

CC: Pam Trautman, Lithic Analysts

Enclosure Archaeological Survey ASC Section 3.14 LITHIC ANALYSTS P.O. Box 684 Pullman, WA 99163 (509) 334-9781

March 5, 2003

Lenora Seelatsee Wanapum Tribe 15655 Wanapum Loop SW Beverly, WA 99321

Re: Proposed Wind Ridge Power Project, Kittitas County

Dear Ms. Seelatsee:

Lithic Analysts has been retained to conduct the required cultural resource survey for the Wind Ridge Power Partners, LLC, project located in Kittitas County, Washington. This project will take place within Sections 15, 17, 20, 21, 22, 27, 28, 29, and 33, Township 18 North, Range 21 East, Whiskey Dick Mountain, Washington, 1966 Quadrangle (See enclosed map).

Lithic Analysts personnel will conduct an on-ground cultural resource survey of the proposed project area. A literature search has been conducted at the Office of Archaeology and Historic Preservation in Olympia, Washington, as well as among other pertinent sources.

Thank you for your assistance in this matter. If you have any questions, please do not hesitate to call Jeff Flenniken at 509-334-9781 or Pam Trautman at 360-943-3388.

Sincerely,

Amay

c: Chris Taylor, Project Development Manager



Corporate Offices 1001 McKinney Street Suite 1740 Houston, TX 77002 Phone: 713-571-6640 Fax: 713-571-6659 Northwestern Regional Office 210 SW Morrison Suite 310 Portland, OR 97204 Phone: 503-222-9400 Fax: 503-222-9404

www.zilkha.com

December 16, 2003

Lenora Seelatsee Wanapum Tribe 15655 Wanapum Loop SW Beverly, WA 99321

Re: Proposed Wild Horse Wind Power Project Application for Site Certification, Cultural Resource Studies

Dear Ms. Seelatsee,

Following up on a letter from our archeological consultant, Lithic Analysts, dated March 5, 2003, you will find enclosed the Cultural Resource Studies prepared for Zilkha's Application for Site Certification of the proposed Wild Horse Wind Power Project.

We are providing these studies for your information and records. If you have any further questions regarding this project, please call me at (503) 222-9400, ext.103.

Sincerely,

Chris Taylor

Project Development Manager

CC: Pam Trautman, Lithic Analysts

Enclosure Archaeological Survey ASC Section 3.14





850 NW View Ridge Court Camas, WA 98607 (360) 210-4066 Fax (360) 210-4039

November 13, 2003

Mr. Chris Taylor Zilkha Renewable Energy 210 SW Morrison Street, Suite 310 Portland, OR 97204

Re: Frequency of icing events at proposed windfarm near Kittitas, WA

Dear Chris:

In order to estimate the frequency of icing events at the Wild Horse Windfarm site, I have obtained meteorological records from the Ellensburg Airport. The airport became an automated 24-hour station in mid 1998. Therefore there are about five years of reliable records from the airport. During this 5-year period there were an average of three days per year of freezing rain. Freezing rain is the condition that could cause icing on the wind turbine blades, so it is the most relevant weather event.

Because the elevation of the proposed windfarm is about 1000-ft to 1500-ft higher than the airport, I would estimate that icing events would occur slightly more frequently than at the airport. Therefore, I would estimate that there would be approximately four to five days per year where ice might accumulate on the turbine blades. It is impossible to determine the thickness that the ice would build up on the blades from the airport data.

Truly Yours,

Ron Nierenberg

Ron Nierenberg



## APPLICATION FOR COVERAGE SAND AND GRAVEL GENERAL PERMIT

For the Discharge of Process Water, Stormwater or Mine Dewatering Water Associated with Sand and Gravel Mining, Rock Quarries and Similar Mining Operations, Including Stockpiles of Mined Material, Concrete Batch Operations and Hot Mix Asphalt Operations

### **COVERAGE FOR PORTABLE OPERATIONS**

# WASHINGTON STATE USE ONLY: Permit Number Ecology Region W.R.I.A. Date Received Coverage Date

### I. PERMITTEE:

Business/Company Name: Wind Ridge Power Partners,	Person Name: Andrew Young
LLC, c/o Zilkha Renewable Energy	

### II. RESPONSIBLE PARTY MAILING AND CONTACT INFORMATION:

Name (primary mailing address)	□ Operator	Name	□ Operator
Zilkha Renewable Energy	□ Owner □ Other		□ Owner
Mailing Address: 210 SW Morrison #	# 310	Mailing Address	
City: Portland, OR	Zip + 4: 97204	City	Zip+4
Contact Person: Andrew Young		Contact Person	Phone No.
Phone No.: 503-222-9400			
UBI No.: Federal Taxpayer ID# 75-2'	757863	UBI No.	

### **III. BILLING ADDRESS AND CONTACT INFORMATION**

Business/Company Nam	e: as above	Contact Person
Mailing Address		Phone No.
City	Zip+4	Site Identifier: Wild Horse Wind Power Project

### **IV. PORTABLE INFORMATION**

Portable is:	Concrete Batch	Asphalt B	latch	⊠Rock Crusher	
	Dry Batch	Bag Ho	use	XDry	
	Wet Batch	Wet Scr	rubber	Wash	
Portable Nar	ne (Unique Identifier):		Attach a li	ist of the major components (equip	ment and
To be provid	led		materials)	typically associated with this port	able.
			To be prov	vided	
Design Capa	city: To be provided		Date Porta	able First Operated in Washington	State:
			To be prov	vided	

IV. PORTABLE INFORMATION (continued)
Does facility operate year round? $\Box$ YES $\boxtimes$ NO
If no, indicate months of operation (circle all that apply): Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Other periodic operation: Temporary operation during construction period between Sept. 2004-August 2005
Indicate typical annual quantity of product produced using codes from the instructions.
Crushed Rock 300,000 cu yards Hot Mix Asphalt N/A Concrete 35,000 cu yards
V. APPLICATION TYPE:
X New Permit
X New facility
Or
Existing Facility
Permit Change - Permit Number WAG-50-     Describe change:
Permit Renewal Permit Number WAG-50
VI. SEPA Determination
Type of SEPA Determination:  DNS  DS  Mitigated DNS

### VII. CERTIFICATION BY PERMITTEE

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Printed Name of Person Signing Below

Signature of Applicant

Date Applicant Signed

NOTE: Federal regulations require this application to be signed as follows: A.) For corporation, by a principal executive officer of at least the level of vice president; B.) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or C.) For a municipality, State, Federal, or other public facility, by either a principal executive officer or ranking elected official.

If you require this document in an alternate format, please contact the Water Quality Program at 360-407-6401(Voice) or 711 or 1-800-833-6388 (TTY).



# Memorandum of Option and Real Estate Purchase and Sale Agreement

Oct 15 03 04:11p Albert K. Davies

When recorded, please return to: Zilkha Renewable Energy, LLC NW Region Office: 210 SW Morrison, Suite 310 Portland, OR 97204 Phone (503) 222-9400

### MEMORANDUM OF OPTION AND REAL ESTATE PURCHASE AND SALE AGREEMENT

**Grantors:** American Minerals and Land Corporation Land Development and Promotion Services, Inc.

Grantee: Zilkha Renewable Energy Northwest I, LLC Zilkha Renewable Energy, LLC Caurus Power, Inc.

Legal Description (lot, block and plat name, or section-township range):

Portions of Section 1, T, 17, R 20 E., W.M.

Portions of Section 3, 4, 5, 6, 7, 8, 9 and 15, T 17, R 21 E., W.M.

Portions of Sections 1, 11, 12, 13, 14, 22, 23, 24, and 25, T 18, R 20 E., W.M.

Portions of Sections 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 27, 28, 29, 30, 31 and 33, T 18, R 21 E.; WM

Portions of Section 3, 5, 7, 8, 9, 11, 15, 17 and 20, T 18, R 22 E., W.M.; and

Portions of Section 3, T 19, R 21 E., W.M., in Kittitas County, Washington.

Additional legal description is on Schedule A of document

Assessor's Property Tax Parcel Account Numbers: See Schedule B of document

Oct 15 03 04:11p Albert K. Davies

When recorded, please return to: Zilkha Renewable Energy, LLC NW Region Office: 210 SW Morrison, Suite 310 Portland, OR 97204 Phone (503) 222-9400

### MEMORANDUM OF OPTION AND REAL ESTATE PURCHASE AND SALE AGREEMENT

This Memorandum of Option and Real Estate Purchase and Sale Agreement dated **October 7**, 2003 between Zilkha Renewable Energy Northwest I, LLC, a Delaware limited liability company; Zilkha Renewable Energy, LLC, a Delaware limited liability company; and Caurus Power, Inc., a California corporation (collectively, "Optionee"), and American Minerals Land Corporation and Land Development Promotion Services, Inc. (collectively, "Optionor"), who agree as follows:

1. Original Agreement. Optionor and Optionce's predecessor in interest, Albert K. Davies, are parties to that certain Option and Real Estate Purchase and Sale Agreement dated as of January 15, 2002 (the "Agreement") pursuant to which the Optionce holds an Option to Purchase the real property described above. A memorandum of the Option and Agreement was recorded January 25, 2002, in the real property records of Kittitas County, Washington under Auditor's File No. 200201250018.

2. Amendments to Agreement. On March 13, 2002, Optionor and Optionee's predecessor in interest, Albert K. Davies, entered into that certain First Amendment to Option and Real Estate Purchase and Sale Agreement ("First Amendment") whereby the parties modified the Agreement. On August 27, 2002, Optionor and Optionee's predecessor in interest, Albert K. Davies, further modified the Agreement by entering into a Second Amendment to Option and Real Estate Purchae and Sale Agreement ("Second Amendment"). Concurrently herewith, Optionor and Optionee are entering into a Third Amendment to Option and Real Estate Purchase and Sale Agreement ("Third Amendment") which further modifies and extends the Agreement and Option Term.

3. Assignments of Agreement. On October 8, 2002, Albert K. Davies assigned all of his rights and interests under the Agreement, as amended to Caurus power, Inc. On October 14, 2002, Caurus Power, Inc. assigned certain of its rights and interests under the Agreement, a amended, to Zilkha Renewable Energy Northwest I, LLC pursuant to an Assignment Agreement ("Assignment") under which Assignment Zilkha Renewable Energy, LLC was named as Guarantor.

Oct 15 03 04:11p Albert K. Davies

707-546-5457

4. **Extended Term of Option.** The Agreement, as amended contains provisions extending the Option Term until June 12, 2005.

5. Purpose of Memorandum. This Memorandum is prepared for the purpose of recordation to give notice of the Agreement as amended. Reference is made to the Agreement and the amendments thereto for the specific provisions of the option rights and other terms and conditions of such Agreement.

ZILKHA RENEWABLE ENERGY NORTHWEST I, LLC

2 annance By: Title?

ZILKHA RENEWABLE ENERGY, LLC

C. Comaro

CAURUS POWER, INC.

Bv: Title: <u>Precident</u>

AMERICAN MINERALS AND LAND CORPORATION

By: ______ Title: _____

LAND DEVELOPMENT AND PROMOTION SERVICES, INC.

By: ______ Title: ______ Oct 15 03 04:12p Albert K. Davies

:

707-546-5457

4. **Extended Term of Option.** The Agreement, as amended contains provisions extending the Option Term until June 12, 2005.

5. **Purpose of Memorandum.** This Memorandum is prepared for the purpose of recordation to give notice of the Agreement as amended. Reference is made to the Agreement and the amendments thereto for the specific provisions of the option rights and other terms and conditions of such Agreement.

ZILKHA RENEWABLE ENERGY NORTHWEST I, LLC

ZILKHA RENEWABLE ENERGY, LLC

Ву:		
Title:		

CAURUS POWER, INC.

By: Title:

AMERICAN MINERALS AND LAND CORPORATION

LAND DEVELOPMENT AND PROMOTION SERVICES, INC.

By: Title

10/21/2003 08:47 5032229404

ZILKHA NW

PAGE 11 p.12

Oct 15 03 04:12p Albert K. Davies

LARRIS STATE OF TEXAS COUNTY: :ss

I certify that I know or have satisfactory evidence that  $\underline{\text{TosePH J. Romano}}$ is the person who appeared before me and acknowledged that the person signed this instrument; the person is authorized to sign this instrument on behalf of  $\underline{f_{1}}$  where  $\underline{f_{1}}$  and  $\underline{f_{2}}$  and  $\underline{f_$ 

Dated: _7(October	- 2005.
Notony Public, State of Texas My Commission Biolifes January 25, 2006	Notary Public My Commission Expires: 25 January 2006

AREIS COUNTY: :ss STATE OF TEXNS

I certify that I know or have satisfactory evidence that  $\underline{J_{05\Xi}OH} J. Romano$ is the person who appeared before me and acknowledged that the person signed this instrument; the person is authorized to sign this instrument on behalf of  $\underline{J_{IL}HA}$   $\underline{J_{ENEWABLE}}$   $\underline{J_{IL}EBC}$ ,  $\underline{JLE}$ and, the execution of this instrument was the free and voluntary act of the person and of  $\underline{JEE}$   $\underline{JLE}$ 

Dated: <u>7 October</u> Notory Public, State of Texas My Commission Expires January 25, 2006	Notary Public My Commission Expires: 25 January 2006
STATE OF,	COUNTY: :ss

Dated: _____, 2003.

Notary Public My Commission Expires: _____ . .....

707-546-5457

p.13

Oct 15 03 04:12p Albert K. Davies 707 CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of Ca	lifornia SANNMA	} ss.
County of	<u>COUNTREE</u>	j
on <u>DA. 1</u> personally	14,2003, before met appeared ALDCIT	K. Davies of Storer(s)
		☐ <del>personally known to m</del> e X proved to me on the basis of satisfactory evidence
	TABATHA SHORY Commission # 1393767 Notary Public - California Sonoma County My Comm. Expires Jan 14, 2007	to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s)
	Fiece Notary Scel Above	WITNESS roy hand and official seel.
		• OPTIONAL
though th	and could prevent fraudulent ramo	val and reattachment of this form to another document.
Descriptio Title or Type ESEH Document D	on of Attached Document of Document: MUMDIA FWChase and Date:O+	ndum of Option and Real Sale agreement Number of Pages: _[0
Signer(s) O	ther Than Named Above:	
Capacity(i Signer's Na Individua	tes) Claimed by Signer	Top of thumb here
Attorney     Attorney     Trustee     Guardian     Other:	- Limited Li General in Fact	
Signer is Re	sprøsenting:	

10/21/200<u>3</u> <u>08:</u>47 5032229404

707-546-5457

Oct 15 03 04:12p Albert K. Davies

COUNTY: :ss STATE OF I certify that I know or have satisfactory evidence that is the person who appeared before me and acknowledged that the person signed/this instrument; the person is authorized to sign this instrument on behalf of american Mineral thank and, the execution of this instrument was the free and voluntary act of the person and of AMLC & LDPS Leptember 25 . 2003. Notary Public My Commission Expires: COUNTY: :ss What I know or have satisfactory evidence that 0rlig is the person who appeared before me and acknowledged that the person signed this instrument; the person is authorized to sign this instrument on bchalf of and, the execution of this instrument was the free and voluntary act of the person and of Dated: . 2003.

Notary Public My Commission Expires: 14.16 Exhibits. This agreement is subject to the terms and conditions of exhibits referenced herein, which are attached hereto and by this reference made a part hereof.

UBI 602 154 567

Exhibits: Exhibit A: Legal Description of Premises and Encumbrances

Exhibit B: Reclamation Plan Requirements

Exhibit D: Memorandum of Lease

Exhibit E: Lease Termination and Surrender Agreement

Exhibit F: Easements to Premises

Dated: 1R=Ruber 17, 2003.

By Zilkha Renewable Energy, LLC, a member By: Muchen Skal, Autonized harvent at ive Name and Title

WIND RIDGE POWER PARTNERS, LLC

1001 McKinney, Suite 1740 Houston, TX 77002

Local Phone (509) 962-1122

STATE OF WASHINGTON DEPARTMENT OF NATURAL RESOURCES

20 Dated:

Approved as to form this 13th day of March, 2003 Jim Schwartz, Assistant Attorney General

ND

DOUG SUTHERLAND Commissioner of PLAN



Wind Power Development Lease

Lease No. 60-075018

### NOTARIAL CERTIFICATE ACKNOWLEDGMENT IN A REPRESENTATIVE CAPACITY

STATE OF TEXAS COUNTY OF Harris ) ss.

I certify that I know or have satisfactory evidence that <u>Michael P. Skely</u> [name(s)] (is / are) the person(s) who appeared before me, and said person(s) acknowledged that (he / she / they) signed this instrument, on oath stated that (he / she / they) (was / were) authorized to execute the instrument, and acknowledged it as the <u>VP Business Development</u> [office(s) or representative title(s)] of <u>Wid Ridge Tower Partners</u> (business name of the Lessee) to be the free and voluntary act of such party(ies) for the uses and purposes mentioned in the instrument.

DATED: Dec	. 17,2003
(Seal or Stamp)	NOTARY PUBLIC in and for the State of Texes
MARY JANE RUBLE NOTARY PUBLIC State of Texas Comm. Exp. 01-25-2006	My appointment expires <u>\-25-2006</u>

### NOTARIAL CERTIFICATE ACKNOWLEDGMENT IN A REPRESENTATIVE CAPACITY

STATE OF WASHINGTON ) Sounty of Thurston )

On this <u>A4</u>th day of <u>December</u>, 2003, personally appeared before me Doug Sutherland, to me known to be the Commissioner of Public Lands of the Department of Natural Resources, State of Washington, who executed the within and foregoing instrument on behalf of the State of Washington, and acknowledged said instrument to be the free and voluntary act and deed of the State of Washington for the uses and purposes therein mentioned, and on oath stated that [he/she] was authorized to execute said instrument and that the seal affixed is the official seal of the Commissioner of Public Lands for the State of Washington.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year first above written.



DATED: 12.24-03

NOTARY PUBLIC in and for the State of <u>Washington</u> My appointment expires <u>5-14-06</u>

### EXHIBIT A

### Legal Description of Premises and Encumbrances

All of Sections 16, 32, and 34, in Township 18 North, Range 21 East, W. M, and All of Section 2, Township 17 North, Range 21 East, W. M, Kittitas County, Washington, containing 2,560 acres.

### Encumbrances

Class	Number	Event	ExpireDt	Agent	DateGtd
LSE	10-071962	GRAZE	07/31/2010	Dept. of Fish &	
LUL	10 01 01 01			Wildlife	
W/R	78-W3041	SURFH20	INDEF	DNR	03/08/1973
W/R	78-W2016	SURFH20	INDEF	DNR	02/11/1971
W/R	78-W2020	SURFH20	INDEF	DNR	02/11/1971
LSE	52-046460	COMMSITE	INDEF	BPA	04/07/1986
LSE	52-051350	COMMSITE	09/30/2015	Kittitas Cellular L. P	. (AT&T
202				Wireless)	
LSE	52-A69017	COMMSITE	07/31/2011	USCC Western Sub-	RSA Ltd

Wind Power Development Lease

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٠.

# Memoranda of Option Agreements -Transmission Easements

. .

When recorded, please return to: Zilkha Renewable Energy, LLC NW Region Office: 210 SW Morrison, Suite 310 Portland, OR 97204 Phone (503) 222-9400

### MEMORANDUM OF OPTION AGREEMENT

Grantor: Howard Clerf and Vivian Clerf

Grantee: Zilkha Renewable Energy, LLC, a Delaware limited liability company, its successors and assigns (collectively "ZRE")

Legal Description (abbreviated) Sec. 14, T. 17 N., R. 20 E., WM, Portion S1/2 of the SW1/4

### Assessor's Tax Parcel ID Numbers: 17-20-14030-0006

This is a memorandum of a Option for Transmission and Facility Easements ("Option Agreement") dated <u>May 1, 2003</u> ("Effective Date") between, <u>Howard and Vivian Clerf</u>, successors and assigns ("Grantor"), as grantor, and Zilkha Renewable Energy, LLC, 1001 McKinney, Suite 1740, Houston, Texas 77002, Tel. 713-571-6640, its successors and assigns ("ZRE"), as grantee, pertaining to the purchase of Owner's Property which is legally described **Exhibit A**.

The initial term of the Option Agreement began on the Effective Date and will be for Four (4) years after the Effective Date, with the right to ZRE to extend the initial option period to be negotiated for additional years. The Option is an exclusive option with respect to the easements for transmission facilities on Grantor's Property described in **Exhibit A**.

1



Grantors: Howard Clerf

ZRE: 12/16/2003, Name:



Title: <u>NW DEVISLOPMENT</u> DIRECTOR

### STATE OF WASHINGTON, Kittitas COUNTY: ss

I certify that I know or have satisfactory evidence that, <u>Howard Clerf and Vivian Clerf</u> are the person(s) who appeared before me, acknowledged that they signed this instrument, and acknowledged it to be their free and voluntary act for the uses and purposes mentioned in this instrument.

Dated: 2003. Notary Public 23 My Commission Expires: 9 2006

#### 

I certify that I know or have satisfactory evidence that <u>ANDREW</u> Koung, is the person who appeared before me and acknowledged that the person signed this instrument; the person is authorized to sign this instrument on behalf of Zilkha Renewable Energy, LLC; and, the execution of this instrument was the free and voluntary act of the person and of Zilkha Renewable Energy, LLC.

₂₀₀ उ Dated: 2/16Notary Public My Commission Expires: 3/20/06

Exhibit "A"

That portion of the South one-half (S1/2) of the Southwest one-quarter (SW1/4), of Section 14, Township 17 North, Range 20 East, W.M., in the County of Kittitas, State of Washington, lying North of the North right-of-way boundary of Interstate Highway I-90 and lying West of the Westerly right-of-way boundary of Stevens County Road.

3
When recorded, please return to: Zilkha Renewable Energy, LLC NW Region Office: 210 SW Morrison, Suite 310 Portland, OR 97204 Phone (503) 222-9400

#### MEMORANDUM OF OPTION AGREEMENT

#### Grantor: Poison Springs, LLC, a Washington Limited Liability Company

Grantee: Zilkha Renewable Energy, LLC, a Delaware limited liability company, its successors and assigns (collectively "ZRE")

#### Legal Description (abbreviated)

Assessor's Tax Parcel ID Numbers: 17-20-13000-0003, 17-21-08040-0003 & 17-21-17000-0001

This is a memorandum of a Option for Transmission and Facility Easements ("Option Agreement") dated May 15, 2003 ("Effective Date") between, Poison Springs, LLC, successors and assigns ("Grantor"), as grantor, and Zilkha Renewable Energy, LLC, 1001 McKinney, Suite 1740, Houston, Texas 77002, Tel. 713-571-6640, its successors and assigns ("ZRE"), as grantee, pertaining to the purchase of Owner's Property which is legally described Exhibit A.

The initial term of the Option Agreement began on the Effective Date and will be for <u>four (4)</u> years after the Effective Date, with the right to ZRE to extend the initial option period <u>to be negotiated</u> for additional years. The Option is an exclusive option with respect to the easements for transmission facilities on Grantor's Property described in **Exhibit A**.



STATE OF WASHINGTON, Kittitas COUNTY: ss

I certify that I know or have satisfactory evidence that, <u>Judy Webb</u> is the person(s) who appeared before me, acknowledged that they signed this instrument, and acknowledged it to be their free and voluntary act for the uses and purposes mentioned in this instrument.

Dated: December 15, 2003.

Commission Expires: October 1, 2006

OREGON, MUITNOMAH

STATE OF Washington, Kittitas COUNTY: ss

I certify that I know or have satisfactory evidence that <u>ANDREW YOUNC</u>, is the person who appeared before me and acknowledged that the person signed this instrument; the person is authorized to sign this instrument on behalf of Zilkha Renewable Energy, LLC; and, the execution of this instrument was the free and voluntary act of the person and of Zilkha Renewable Energy, LLC.

Dated: 12/17, 200 3 Notar APublic My Commission Expires: 03/20/06

_____

### Exhibit "A"

The following described property is located with in the Kittitas County, State of Washington:

All that portion of Section 13, excepting that portion lying Westerly of the Lateral Irrigation Canal, located within Township 17 North, Range 20 East, W.M.;

#### And

All that portion of Section 8, lying Southerly of the Vantage Highway, Excepting there from that portion conveyed to the USA (BLM).

And

All of Section 17, Township 17 North, Range 21 East., W.M.

When recorded, please return to: Zilkha Renewable Energy, LLC NW Region Office: 210 SW Morrison, Suite 310 Portland, OR 97204 Phone (503) 222-9400

#### MEMORANDUM OF OPTION AGREEMENT

#### Grantor: Doris Clerf

Grantee: Zilkha Renewable Energy, LLC, a Delaware limited liability company, its successors and assigns (collectively "ZRE")

# Legal Description (abbreviated) S1/2 Sec. 9, T. 17 N., R21 E., WM, Lying Southerly and Westerly of the Vantage Highway

#### Assessor's Tax Parcel ID Numbers: 17-21-09000-0002

This is a memorandum of a Option for Transmission and Facility Easements ("Option Agreement") dated May 15, 2003 ("Effective Date") between, Doris Clerf successors and assigns ("Grantor"), as grantor, and Zilkha Renewable Energy, LLC, 1001 McKinney, Suite 1740, Houston, Texas 77002, Tel. 713-571-6640, its successors and assigns ("ZRE"), as grantee, pertaining to the purchase of Owner's Property which is legally described Exhibit A.

The initial term of the Option Agreement began on the Effective Date and will be for <u>Four (4)</u> years after the Effective Date, with the right to ZRE to extend the initial option period <u>to be negotiated</u> for additional years. The Option is an exclusive option with respect to the easements for transmission facilities on Grantor's Property described in Exhibit A.

PUBLIC OF WASHING	Grantor: <u>Noris Clerg</u>
	ZRE: Male Cong Name: ANOREN PONNG
OFFICIAL SEAL HILARY A. FOOTE NOTARY PUBLIC-OREGON COMMISSION NO. 355939 MY COMMISSION EXPIRES MARCH 20, 2006	Title: <u>NW OFVELOPMENT DRE</u> CTOR

STATE OF WASHINGTON, Kittitas COUNTY: ss

I certify that I know or have satisfactory evidence that, Doris Clerf is the person who appeared before me, acknowledged that they signed this instrument, and acknowledged it to be their free and voluntary act for the uses and purposes mentioned in this instrument.

Dated: December 10, 2003. <u>~ 1,2006</u> Commission Expires:

STATE OF OREGON , MULTNOMAH COUNTY: :ss

I certify that I know or have satisfactory evidence that <u>ANOREW COUNG</u>, is the person who appeared before me and acknowledged that the person signed this instrument; the person is authorized to sign this instrument on behalf of Zilkha Renewable Energy, LLC; and, the execution of this instrument was the free and voluntary act of the person and of Zilkha Renewable Energy, LLC.

Dated: 12/17-, 200_3. 2 Notary Rublic 🤛 My Commission Expires: 03/20/06

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# Exhibit "A"

The following described real property is located with in the Kittitas County, State of Washington:

All that portion of the South one-half (S1/2), Section 9, Township 17 North, Range 21 East, WM., lying Southerly and Westerly of the Vantage Highway.

When recorded, please return to: Zilkha Renewable Energy, LLC NW Region Office: 210 SW Morrison, Suite 310 Portland, OR 97204 Phone (503) 222-9400



#### MEMORANDUM OF OPTION AGREEMENT

Grantor: Charles and Betty Hopper

Grantee: Zilkha Renewable Energy, LLC, a Delaware limited liability company, its successors and assigns (collectively "ZRE")

Legal Description (abbreviated) Portion's of Sec. 14 & Sec. 23, lying South of Bentley Road and Easterly of Stevens Road, T. 17 N., R. 20 E., WM.

Assessor's Tax Parcel ID Numbers: 17-20-23010-0001, 17-20-14030-0007, 17-20-14030-0008 & 17-20-14040-0004.

This is a memorandum of a Option for Transmission and Facility Easements ("Option Agreement") dated June 10, 2003 ("Effective Date") between, Charles and Betty Hopper successors and assigns ("Grantor"), as grantor, and Zilkha Renewable Energy, LLC, 1001 McKinney, Suite 1740, Houston, Texas 77002, Tel. 713-571-6640, its successors and assigns ("ZRE"), as grantee, pertaining to the purchase of Owner's Property which is legally described **Exhibit A**.

The initial term of the Option Agreement began on the Effective Date and will be for Four (4) years after the Effective Date, with the right to ZRE to extend the initial option period to be negotiated for additional years. The Option is an exclusive option with respect to the easements for transmission facilities on Grantor's Property described in Exhibit A.

REVIEWED BY KITTITAS COUNTY TREASURER DEPUTY DATE

IN Galf



Grantor:

Grantor:

STA .... NOTARY PUBLIC

STATE

NOTAD PUBLIC

ZRE:	$A \rightarrow$
< Name:	MOREN Youth.
Title:	PROT. DEV. MIR.

# STATE OF WASHINGTON, Kittitas COUNTY: ss

I certify that I know or have satisfactory evidence that, Charles Hopper, Betty Hopper are the persons who appeared before me, acknowledged that they signed this instrument, and acknowledged it to be their free and voluntary act for the uses and purposes mentioned in this instrument.

Dated: Notary Public 2 My Commission Expires: 2006 23 STATE OF WAShington, 10, TT, TAS COUNTY: 55 I certify that I know or have satisfactory evidence that  $\underline{AnTron }$  (ovne), is the person who appeared before me and acknowledged that the person signed this instrument; the person is authorized to sign this instrument on behalf of Zilkha Renewable Energy, LLC; and, the execution of this instrument was the free and voluntary act of the person and of Zilkha Renewable Energy, LLC.

18/____,200_3 Dated: 12 Notary Public My Commission Expires:



#### Exhibit "A"

The following described real property is located with in Kittitas County, State of Washington:

All that portion of the Southeast one-quarter (SE1/4) lying South of Bentley Road, and that portion of the Southwest one-quarter (SW1/4) lying Southerly of Bentley Road and Easterly of Stevens Road, located in Section 14.

And

All that portion of the North one-half (N1/2) Section 23, lying Northerly of US Highway I-90.

All of the above is located within Township 17 North, Range 20 East, WM.

# Cart

When recorded, please return to: Zilkha Renewable Energy, LLC NW Region Office: 210 SW Morrison, Suite 310 Portland, OR 97204 Phone (503) 222-9400

#### MEMORANDUM OF OPTION AGREEMENT

#### Grantor: HO'S Brothers, LLC

Grantee: Zilkha Renewable Energy, LLC, a Delaware limited liability company, its successors and assigns (collectively "ZRE")

Legal Description (abbreviated) N1/2 Sec. 18, T. 17 N., R. 21 E., WM

Assessor's Tax Parcel ID Numbers: 17-21-18000-0001

This is a memorandum of a Option for Transmission and Facility Easements ("Option Agreement") dated <u>01/29/2004</u> ("Effective Date") between, HO'S Brothers, LLC., a Washington Limited Liability Company, successors and assigns ("Grantor"), as grantor, and Zilkha Renewable Energy, LLC, 1001 McKinney, Suite 1740, Houston, Texas 77002, Tel. 713-571-6640, its successors and assigns ("ZRE"), as grantee, pertaining to the purchase of Owner's Property which is legally described Exhibit A.

The initial term of the Option Agreement began on the Effective Date and will be for Four (4) years after the Effective Date, with the right to ZRE to extend the initial option period to be <u>negotiated for</u> additional years. The Option is an exclusive option with respect to the easements for transmission facilities on Grantor's Property described in **Exhibit A**.

HO MANAGER Grantor: HO'S BROTHER'S LLC

ZRE: Name: ANDREW

Title:	NW DEVELOPMENT	DIRECTUR

Whatcom STATE OF WASHINGTON, COUNTY: ss I certify that I know or have satisfactory evidence that, Raymond Ho are the person(s) when preared before me, acknowledged that they signed this instrument, and acknowledged it to be the state t SHON ER Dated: 200 Notary Public My Commission Expires:

STATE OF OREGON, Multhomach COUNTY: :ss

HUINN

I certify that I know or have satisfactory evidence that <u>ANDERN</u> YouNG, is the person who appeared before me and acknowledged that the person signed this instrument; the person is authorized to sign this instrument on behalf of Zilkha Renewable Energy, LLC; and, the execution of this instrument was the free and voluntary act of the person and of Zilkha Renewable Energy, LLC.

Dated: February 10th, 2	2004
OFFICIAL SEAL HILARY A. FOOTE NOTARY PUBLIC-OREGON COMMISSION ND. 355939 MY COMMISSION EXPIRES MARCH 20, 2006	Notary Public My Commission Expires: MARCH 20, 2006

### Exhibit "A"

The following described real estate, situated in the County of Kittitas, State of Washington, and more particularly described as follows:

Government Lots 1 and 2 and the East one-half (E1/2) of the Northwest one-quarter (NW1/4), and the Northeast one-quarter (NE1/4), Section 18, Township 17 North, Range 21 East, W.M.

14.16 Exhibits. This agreement is subject to the terms and conditions of exhibits referenced herein, which are attached hereto and by this reference made a part hereof.

UBI 602 154 567

Exhibits: Exhibit A: Legal Description of Premises and Encumbrances

Exhibit B: Reclamation Plan Requirements

Exhibit D: Memorandum of Lease

Exhibit E: Lease Termination and Surrender Agreement

Exhibit F: Easements to Premises

Dated: 1R=Ruber 17, 2003.

By Zilkha Renewable Energy, LLC, a member By: Muchen Skal, Autonized harrisent at ice Name and Title

WIND RIDGE POWER PARTNERS, LLC

1001 McKinney, Suite 1740 Houston, TX 77002

Local Phone (509) 962-1122

STATE OF WASHINGTON DEPARTMENT OF NATURAL RESOURCES

20 Dated:

Approved as to form this 13th day of March, 2003 Jim Schwartz, Assistant Attorney General

ND

DOUG SUTHERLAND Commissioner of PLAN



Wind Power Development Lease

Lease No. 60-075018

### NOTARIAL CERTIFICATE ACKNOWLEDGMENT IN A REPRESENTATIVE CAPACITY

STATE OF TEXAS COUNTY OF Harris ) ss.

I certify that I know or have satisfactory evidence that <u>Michael P. Skely</u> [name(s)] (is / are) the person(s) who appeared before me, and said person(s) acknowledged that (he / she / they) signed this instrument, on oath stated that (he / she / they) (was / were) authorized to execute the instrument, and acknowledged it as the <u>VP Business Development</u> [office(s) or representative title(s)] of <u>Wid Ridge Tower Partners</u> (business name of the Lessee) to be the free and voluntary act of such party(ies) for the uses and purposes mentioned in the instrument.

DATED: Dec	. 17,2003
(Seal or Stamp)	NOTARY PUBLIC in and for the State of Texes
MARY JANE RUBLE NOTARY PUBLIC State of Texas Comm. Exp. 01-25-2006	My appointment expires <u>\-25-2006</u>

# NOTARIAL CERTIFICATE ACKNOWLEDGMENT IN A REPRESENTATIVE CAPACITY

STATE OF WASHINGTON ) Sounty of Thurston )

On this <u>A4</u>th day of <u>December</u>, 2003, personally appeared before me Doug Sutherland, to me known to be the Commissioner of Public Lands of the Department of Natural Resources, State of Washington, who executed the within and foregoing instrument on behalf of the State of Washington, and acknowledged said instrument to be the free and voluntary act and deed of the State of Washington for the uses and purposes therein mentioned, and on oath stated that [he/she] was authorized to execute said instrument and that the seal affixed is the official seal of the Commissioner of Public Lands for the State of Washington.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year first above written.



DATED: 12.24-03

NOTARY PUBLIC in and for the State of <u>Washington</u> My appointment expires <u>5-14-06</u>

# EXHIBIT A

# Legal Description of Premises and Encumbrances

All of Sections 16, 32, and 34, in Township 18 North, Range 21 East, W. M, and All of Section 2, Township 17 North, Range 21 East, W. M, Kittitas County, Washington, containing 2,560 acres.

### Encumbrances

Class	Number	Event	ExpireDt	Agent	DateGtd
LSE	10-071962	GRAZE	07/31/2010	Dept. of Fish &	
LUL	10 01 01 01			Wildlife	
W/R	78-W3041	SURFH20	INDEF	DNR	03/08/1973
W/R	78-W2016	SURFH20	INDEF	DNR	02/11/1971
W/R	78-W2020	SURFH20	INDEF	DNR	02/11/1971
LSE	52-046460	COMMSITE	INDEF	BPA	04/07/1986
LSE	52-051350	COMMSITE	09/30/2015	Kittitas Cellular L. P	. (AT&T
202				Wireless)	
LSE	52-A69017	COMMSITE	07/31/2011	USCC Western Sub-	RSA Ltd

Wind Power Development Lease

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# State of Washington DEPARTMENT OF FISH AND WILDLIFE

Mailing Address: 600 Capitol Way N • Olympia, WA 98501-1091 • (360) 902-2200, TDD (360) 902-2207 Main Office Location: Natural Resources Building • 1111 Washington Street SE • Olympia, WA

December 15, 2003

Mr. Chris Taylor Project Development Manager Zilkha Renewable Energy 210 SW Morrison Street, #310 Portland, Oregon 97204

Dear Mr. Taylor:

On November 21, the Fish and Wildlife Commission approved the Washington State Department of Fish and Wildlife's (WDFW) request to allow Wind Ridge Power Partners to include adjacent WDFW lands in their application to the Energy and Facility Site Evaluation Council (EFSEC) for the Wild Horse Wind Project in Kittitas County.

Development of an actual lease for wind energy development on WDFW lands would be subject to EFSEC approval of the overall project, subsequent to negotiations with WDFW staff and final approval of a lease by the Fish and Wildlife Commission.

Please don't hesitate to call me at (360) 902-2402, if you have any questions.

Sincerely,

Mark Quinn, Manager Lands Division

cc: Irina Makarow (EFSEC) Jeff Tayer Dave Brittell Greg Hueckel David Mudd



1600 SW Western Blvd, Suite 100 Corvallis, OR 97333 Phone:(541) 766-4601 Fax: (541) 766-8972

# Wild Horse Wind Energy Project

# 230-kV Transmission Line

# **ELECTRIC AND MAGNETIC FIELDS (EMF)**

# Prepared for **Zilkha Renewable Energy** By:

TriAxis Engineeing, Inc. 1600 SW Western Boulevard, Suite 100 Corvallis, Oregon 97333



Contact: S. Gordon Ormsby, P.E. 541-766-4601 November 25, 2003

# INTRODUCTION

<u>Generation of Electric and Magnetic Fields</u>. All electric utility wires and devices generate alternating electric and magnetic fields (EMF). The Earth itself generates steady-state magnetic and electric fields. The EMF produced by the AC electrical power system in the United States has a frequency of 60 Hz, meaning that the fields change from positive to negative and back to positive, 60 times per second. This section addresses the estimates of the maximum possible AC electric and magnetic field strengths that will be produced by Wild Horse 230-kV Transmission Line. These estimates are computed for a height of 1 meter above the ground along the proposed transmission line right-of-way.

Electric fields around transmission lines are produced by electrical charges, measured as voltage, on the energized conductor. Electric field strength is directly proportional to the line's voltage; that is, increased voltage produces a stronger electric field. The electric field is inversely proportional to the distance a sensor is from the conductors, so that the electric field strength declines as the distance from the conductor increases. For this transmission line, the voltage and electric field alternate at a frequency of 60 Hz. The strength of the electric field is measured in units of kilovolts per meter (kV/m). The voltage, and therefore the electric field, around a transmission line remains practically steady and is not affected by the common daily and seasonal fluctuations in usage of electricity by customers.

Magnetic fields around transmission lines are produced by the electrical load or the level of current flow, measured in terms of amperage, through the conductors. Like the electric field, the magnetic field alternates at a frequency of 60 Hz. The magnetic field strength is directly proportional to the amperage; that is, increased amperage produces a stronger magnetic field. The magnetic field is inversely proportional to the sensors distance from the conductors. Also, like the electric field, the magnetic field strength declines as the distance from the conductor increases. Magnetic fields are expressed in units of milligauss (mG). However, unlike voltage, the amperage and therefore the magnetic field around a transmission line, fluctuate daily and seasonally as the usage of electricity varies and the amount of current flow varies.

In AC power systems, voltage swings positive to negative and back to positive, a 360degrees cycle, 60 times every second. Current follows the voltage, flowing forward, reversing direction, and returning to the forward direction, again a 360-degrees cycle, 60 times every second. Each AC transmission circuit carries power over three conductors. One phase of the circuit is carried by each of the three conductors. The AC voltage and current in each phase conductor is out of sync with the other two phases by 120 degrees, or one-third of the 360-degrees cycle. The fields from these conductors tend to cancel out because of the phase difference. However, when a person stands on the right-of-way under a transmission line, one conductor is always significantly closer and will contribute a net uncanceled field at the person's location. The strength of the magnetic field depends on the current in the conductor, the geometry of the structures, the degree of cancellation from other conductors, and the distance from the conductors.

Considerable research has been conducted over the last 30 years on the possible biological effects and human health effects from EMF. This research has produced many studies that offer no uniform conclusions about whether long-term exposure to EMF is harmful or not. In the absence of conclusive or evocative evidence, many states, including Washington and Oregon, chose not to specify maximum levels of EMF. Instead, these states mandate a program of prudent avoidance whereby EMF exposure to the public would be minimized by encouraging electric utilities to use low-cost techniques to reduce the levels of EMF. The states reason that because there is no established scientific evidence linking between EMF and health risks, it is difficult to justify expensive mitigations. The prudent-avoidance approach encourages new projects to incorporate design features or configurations that will significantly reduce EMF exposure and risk levels, if the cost of those features or alternative configurations do not add significantly to the cost of the project. A 5% construction cost premium is usually considered to be a significant increase in cost if done solely for the purpose of EMF risk mitigation.

For this project, EMF exposure risk is very low because the line passes over and through undeveloped land. Construction with single wood poles where the conductors would be configured in a triangle, instead of horizontally would reduce EMF levels on the right-ofway and under the conductors. However, a triangular configuration would not reduce EMF levels at any distance from the right-of way, nor would it significantly reduce EMF risk levels, which are judged to be extremely low with the standard horizontal conductor configuration. Triangular construction on single wood poles would require twice as many structure locations and would increase the cost of construction by more than 5% compared to the standard horizontal H-frame configuration.

The proposed conductor arrangement for the Wild Horse 230-kV Transmission Line consists of one, three phase, 230-kV circuit, with one conductor per phase (a total of 3 wires) and two shield wires for the first mile of the transmission line starting from the Wild Horse Substation. After the first mile, shield wires will no longer be required. Figure 1 illustrates the typical proposed structural configuration of the 230-kV Transmission Line for the segment of the transmission line with shield wires. After the first mile, the transmission line will be build without the shield wires. Figure 2 illustrates the typical configuration of the transmission line without the shield wires. Except for special construction required for crossing under other transmission lines, the ground-level magnetic field intensity across the corridor is determined by the currents and geometry of these typical facilities.

# Line Loads for EMF Calculation.

It is important that any discussion of EMF include the assumptions used to calculate these fields. It is also important to remember that EMF in the vicinity of the power lines varies with regard to line design, line loading, distance from the line, and other factors. The electric field depends upon line voltage, which remains nearly constant for a transmission line in normal operation. The magnetic field is proportional to line loading (amperage), which varies as power plant generation is changed by the wind. Maximum magnetic fields are produced at the maximum (peak) conductor currents.

Figure 1 is a cross section of the proposed transmission line corridor with shield wires present. Figure 2 is a cross section of the proposed transmission line without the shield wires. The entire overhead line in this study is rated for a nominal voltage of 230 kV. Line loading value assumed for the line is 200 MVA, or 530 amperes per phase, at peak system load. This value is used in the EMF study.



# **Calculation Methods.**

To estimate the maximum fields, calculations are performed at mid-span where the conductor is positioned at its lowest point between structures (the estimated maximum sag point). The magnetic fields are computed at 1 meter above ground using a program called "Corona and Field Effect Program (Version 3)" developed by the Bonneville Power Administration. This program, and others like it, have been used to predict electric and magnetic field levels for many years, and have been confirmed by field measurements by numerous utilities.

The actual distance between the centerline of 230-kV circuit and the edge of the right-ofway is assumed to be 75 feet.

# **Results of EMF Calculations**

Table 1 gives the calculated values of the magnetic and the electric field values at left and right edges of the right-of-ways, and at the centerline, for the projected maximum currents during peak load, for minimum conductor ground clearances. The actual magnetic field values vary, as load varies daily, seasonally, and as conductor sag changes with ambient temperature. The levels shown represent the highest magnetic fields expected for the proposed project. Average fields along the ground between poles, and over a year's time would be considerably reduced from the peak values shown.

Case	Voltage	Magnetic Field		F	Electric Fiel	d	
Figure		(mGauss)		(KV/M)			
		Left $P/W(75')$	Max. on	Right R/W	Left $P/W(75')$	Max. on	Right
		$\mathbf{K}$ $\mathbf{W}(75)$	IV/ W	(75)	K/ W(75)	IV/ W	(75')
1	230-kV	19.6	107.4	19.6	0.56	2.66	0.56
2	230-kV	19.6	107.4	19.6	0.57	2.74	0.57

 Table 1 Calculated Maximum Magnetic and Electric Field Values

As shown in Table 1, magnetic field and electric field values are higher on the right-of-way than at the edges of the right-of-way.

These results are plotted on graphs and included here.

For Case Figure 1, see Figure 1M for the magnetic field graph, and Figure 1E for the electric field graph.

For Case Figure 2, see Figure 2M for the magnetic field graph, and Figure 2E for the electric field graph.

Table 2 indicates the magnetic and electric field strength values for locations adjacent to the transmission line right-of-way as distance from the centerline increases. Values on Table 2 are valid for either Case 1 (shield wire) or Case 2 (no shield wire).

DISTANCE FROM	ELECTRIC FIELD	MAGNETIC FIELD
CENTERLINE (FT)	(KV/m)	(m-GAUSS)
75	0.57	19.6
500	0.003	0.47
1000	0.001	0.12
1500	0.0	0.05

# TABLE – 2 Calculated EMF Adjacent to the Right-of-Way

Average magnetic-field strength in most homes (away from electrical appliances and home wiring, etc.) is less than 2 mG. Very close to appliances carrying high current, fields of tens or hundreds of milligauss can be present. Unlike electric fields, magnetic fields from outside power lines are not reduced in strength by trees and building materials. So, transmission or distribution lines can be a major source of magnetic-field exposure throughout a home located adjacent to a heavily-loaded power line.

As noted earlier, there are no national standards for electric or magnetic fields and the State of Washington has not set a standard for magnetic or electric fields. The State of Oregon has not set a standard for magnetic fields, however, it has set 9-kilovolts per meter (kV/m) as the maximum standard for electric fields. BPA has the same electric field standard of 9-kV/m. BPA uses 5 kV/m maximum electric field standard at the edge of the ROW. Neither Washington, Oregon, or BPA have set standards for magnetic fields. The proposed Wild Horse 230-kV Transmission Line project would not exceed 0.6 kV/m electric field standard.

# **Transmission Line Noise**

Audible noise can be produced by a transmission line phenomenon called corona. Corona is the ionization of the air at the surface of the energized conductor and suspension hardware, due to very high electric field strength. Corona may also be visible, cause radio and television reception interference, and the production of ozone. Corona is a function of voltage, the diameter of the conductor, and the condition of the conductor and suspension hardware. The electric field around an energized conductor is directly related

to the line voltage and is the greatest at the surface. For the same voltage, large-diameter conductors have lower electric field gradients at the conductor surface and, hence, lower corona, than smaller conductors. Also, irregularities (such as nicks and scrapes on the conductor surface), or sharp edges on suspension hardware, concentrate the electric field gradient at these locations, and increases corona at these spots. Similarly, contamination on the conductor surface, such as dust or insects, can cause irregularities that are a source of corona. Raindrops, snow, fog, and condensation are also sources of irregularities. Corona typically becomes a design concern for transmission lines having voltages of 345 kV and above.

The proposed 230-kV conductors for the Wild Horse transmission line will use a conductor of sufficient diameter to control corona effects. Special care is employed during conductor stringing to minimize nicks and scrapes to the conductor. With 230-kV construction, standard conductor attachment hardware is typically adequate to control corona. Higher voltages require special low-corona hardware.

Foul-weather audible noise from a transmission line is caused by corona and occurs during periods of rain, fog, snow, or icing. Environmental noise, including transmission line noise, is usually measured in decibels on the audible (A) scale (dBA), which models the sound to correspond to human perception.

Along the proposed 230-kV transmission line, the background ambient noise level in remote areas varies with wind, rain, traffic, or other human activity. The calculations included in Appendix A indicate that, at the edge of our project right-of-way, the audible noise contribution due to foul weather corona is predicted to be 44.4 dBA. This value is less than the  $50 \pm 2$  dBA value that BPA uses as a maximum design criterion for new facilities. Although The State of Washington does not have a noise requirement, the Department of Ecology has accepted a 50-dBA criterion as a reasonable maximum for the edge of new transmission line rights-of-way.



E-34-Triaxis EMF Report.doc

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Page 10 of 10



#### **Department of Energy**

Official File

Bonneville Power Administration P.O. Box 3621 Portland, Oregon 97208-3621

ENVIRONMENT, FISH AND WILDLIFE

November 24, 2003

In reply refer to: KEC-4

Ms. Irina Makarow, Siting Manager Energy Facility Site Evaluation Council 925 Plum Street SE, Bldg. 4 PO Box 43172 Olympia, WA 98504-3172

DEC 0 2 2003

#### **Re: Wild Horse Wind Project Environmental Process**

Dear Ms. Makarow:

Thank you for notifying us that the Potential Site Study Report (Report) is available for the Wild Horse Wind Power Project (Project), proposed by Wind Ridge Partners L.L.C. (a subsidiary of Zilkha Renewable Energy). The Report indicates that Wind Ridge Partners proposes to interconnect the Project to either Puget Sound Energy (PSE) or Bonneville Power Administration (BPA) transmission facilities and they have submitted requests for transmission interconnection services to both PSE and BPA.

After reviewing available information on the Project, BPA believes that it is not necessary for BPA to formally participate in EFSEC's SEPA process, in light of BPA's uncertain role in interconnecting the proposed Project. If in the future, Wind Ridge Partners formalizes its request for interconnection services through a request for an interconnection agreement with BPA, BPA will prepare its own appropriate NEPA documentation at that time.

We understand that Wind Ridge Partners has not submitted their formal EFSEC application yet, but that once this is done, the Council will hold an initial public meeting in the vicinity of the proposed project. Because any NEPA documentation that BPA may need to prepare could require public involvement, BPA requests that we be allowed to informally participate in your agency's public meetings. Our role would be simply to inform the public of BPA's potential interconnection of the Project, and to be available in the event that interested parties want to contact BPA for more information. To facilitate this, I would attend EFSEC public meetings for the Project, and would appreciate it if you (or those conducting the meetings) could explain, at some time during the meeting, BPA's limited role of being one of the parties that may potentially interconnect the Project, and identify me as the BPA point of contact for any questions. Please add me to the project mailing list so that I will receive notification of meeting dates and locations. If you have any questions or concerns about our intended course of action, please do not hesitate to contact me at 503.230.5361.

Sincerely,

St. Have imper

Kimberly R. St. Hilaire Environmental Protection Specialist

cc:

Mr. Chris Taylor, Zilkha Renewable Energy, 210 SW Morrison St., Portland, OR 97204 Mr. Mike Raschio, TM-OPP-2 Mr. Steve Enyeart, TOC-PPO2-1 Ms. Kevin Prickett, TM-OPP-2