EXHIBIT M

FINANCIAL ANALYSIS
OAR 345-021-0010(1)(m)

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APPENDICES

M-1 LEGAL OPINION ON AUTHORITY TO CONSTRUCT

M.1 INTRODUCTION

OAR 345-021-0010(1)(m) *Information about the applicant's financial capability, providing evidence to support a finding by the Council as required by OAR 345-022-0050(2). Nothing in this subsection shall require the disclosure of information or records protected from public disclosure by any provision of state or federal law. The applicant shall include:*

M.2 OPINION OF LEGAL COUNSEL

OAR 345-021-0010(1)(m)(A) *An opinion or opinions from legal counsel stating that, to counsel's best knowledge, the applicant has the legal authority to construct and operate the facility without violating its bond indenture provisions, articles of incorporation, common stock covenants, or similar agreements;*

Response: The legal opinion of Christopher Wright, in-house legal counsel for Pacific Ethanol, Inc., is attached as Appendix M-1.

M.3 BOND, SECURITY, OR OTHER FINANCIAL INSTRUMENT

OAR 345-021-0010(1)(m)(B) *The type and amount of the applicant's proposed bond or letter of credit to meet the requirements of OAR 345-022-0050; and*

Response: Based on a letter from Parsons RCIE, Inc, the value of scrap steel exceeds the costs of dismantling buildings, tanks and equipment, and therefore this demolition could be done for a zero total cost contract. See Appendix X-1 for additional information. Therefore, no bond or obtain a letter of credit should be needed in order to assure that the facility is retired to a useful industrial condition for a future user.

M.4 EVIDENCE OF REASONABLE LIKELIHOOD OF OBTAINING SECURITY

OAR 345-021-0010(1)(m)(C) *Evidence that the applicant has a reasonable likelihood of obtaining the proposed bond or letter of credit in the amount proposed in paragraph (B), before beginning construction of the facility*.

Response: As stated above, there should be no net cost to retiring the facility, and no evidence of the likelihood of obtaining security should be required.

M.5 CONCLUSION

Based on the above information, the applicant has satisfied the requirements in OAR 234-021-0010(1)(m).

APPENDIX M-1

Legal Opinion on Authority to Construct

Pacific Ethanol, Inc.

Please Reply To:

Christopher W. Wright
Vice President and General Counsel
Office (559) 435-1771
Fax (559) 435-1478
Email: cwright@pacificethanol.net

August 7, 2006

Oregon Department of Energy
625 Marion Street, NE
Salem, Oregon 97310

Re: Application of Pacific Ethanol Colombia LLC for Site Certificate

Dear Ladies and Gentlemen:

I am General Counsel for Pacific Ethanol Columbia LLC, a Delaware limited liability company (the "Applicant").

In connection with this opinion, I have examined and relied upon originals or copies, certified to my satisfaction, of such records, documents, letters, certificates, opinions, memoranda and other instruments as in my judgment are necessary or appropriate to enable me to render the opinion expressed below. In rendering this opinion, I have assumed: the genuineness and authenticity of all signatures on original documents; the authenticity of all documents submitted to me as originals; the conformity to originals of all documents submitted to me as copies; the accuracy, completeness and authenticity of certificates of public officials; and the due authorization, execution and delivery of all documents, where authorization, execution and delivery are prerequisites to the effectiveness of such documents. I have also assumed that all individuals executing and delivering documents had the legal capacity to so execute and deliver such documents. As to certain factual matters, I have relied to the extent I deemed proper upon statements and certifications of officers and managers of the Applicant.

My opinion is expressed only with respect to the federal laws of the United States of America and the General Corporation Law of the State of Delaware. I express no opinion as to whether the laws of any particular jurisdiction apply, and no opinion to the extent that the laws of any jurisdiction other than those identified above are applicable to the subject matter hereof.

5711 N. West Avenue
Fresno, California 93711
www.pacificethanol.net

Pacific Ethanol, Inc.

On the basis of the foregoing, in reliance thereon and with the foregoing qualifications, I am of the opinion that:

1. The Applicant has the legal power and authority required to construct and operate the up to 35 mgy name-plate capacity fuel ethanol plant and associated facilities located in Morrow County, Oregon (the "Project") that the Applicant proposes in its Application for Site Certificate to be filed with the Oregon Energy Facility Siting Council and in connection with which this opinion is rendered.

2. The construction and operation of the Project have been duly authorized by all necessary company action on the part of the Applicant.

3. To my best knowledge, the construction and operation of the Project (a) are not prohibited by, and will not violate or conflict with, any provision of the limited liability company agreement of the Applicant, and (b) are not prohibited by, and will not constitute a breach of any provision of, any material contract to which the Applicant is a party.

Please contact me if you have any additional questions regarding this matter.

Very truly yours,

Pacific Ethanol, Inc.

Christopher W. Wright
Vice President and General Counsel

CWW:daw

5711 N. West Avenue
Fresno, California 93711
www.pacificethanol.net

EXHIBIT N

NON-GENERATING FACILITY

OAR 345-021-0010(1)(n)

Exhibit N requires information about a non-generating facility. Exhibit N is not required for this application because the applicant is not proposing to construct a non-generating energy facility.

EXHIBIT O

WATER RESOURCES
OAR 345-021-0010(1)(o)

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O-1 Water Balance Diagram

O.1 INTRODUCTION

OAR 345-021-0010(1)(o) *Information about the water requirements the applicant anticipates for construction and operation of the proposed facility. If the applicant has submitted any permit applications to the Office, as described in OAR 345-021-0000(4), that contain this information, the applicant may copy relevant sections of those documents into this exhibit or include in this exhibit cross-references to the relevant sections of those documents. The applicant shall include:*

Response: Water will be obtained for construction and plant operations as described below.

O.2 SOURCES OF WATER

OAR 345-021-0010(1)(o)(A) *A description of each source of water and the applicant's estimate of the amount of water the facility will need from each source under annual average and worst-case conditions;*

Response: The facility will purchase water from the Port of Morrow, which supplies users in the Boardman Industrial Park with water for industrial use. The Port obtains this water from a 1.5-cubic foot per second (cfs) water right held by the City of Boardman (permit # G2664). The water is obtained from a horizontal Ranney well collection system adjacent to and under the Columbia River.

O.3 WATER RIGHTS

OAR 345-021-0010(1)(o)(B) *If a new water right is required, the approximate location of the points of diversion with the estimated quantity of water to be taken at each point;*

Response: No new water right will be required.

O.4 WATER USE

OAR 345-021-0010(1)(o)(C) *A description of how the water is to be used*;

Response: During construction water will be used for dirt compaction, dust control and mixing concrete. Up to 55,000 gallons per day will be used during the approximately 1 year construction time period; average daily usage will be less.

During operations, up to 298 gpm of water will be used, of which 231 gpm will be used for cooling. Approximately 67 gpm will enter a reverse osmosis process, and be used for boiler operation (18 gpm), process water (28 gpm), and other uses. The water balance diagram (Appendix O-1) provides additional detail on water use at the plant.

O.5 WATER LOSSES

OAR 345-021-0010(1)(o)(D) *A description of each avenue of water loss or output from the facility site, the applicant's estimate of the amount of water in each avenue under annual average and worst-case conditions, and the final disposition of all wastewater, including stormwate*r.

Response: Approximately 202 gpm of (68 percent (%)) from the plant will be lost through evaporation from the cooling towers. Approximately 50 gpm (17%) will be discharged to the wastewater treatment system operated by the Port of Morrow. Forty six gpm will be used in the ethanol production process, and leave the plant site in the distillers' wet grain or be removed from the ethanol by a desiccant.

Storm water will run off of approximately 10 acres of impervious surface at the site will sheet flow over surrounding vegetated areas prior to infiltrating into the ground.

O.6 WATER BALANCE DIAGRAM

OAR 345-021-0010(1)(o)(E) *For operation, a water balance diagram, including the source of cooling water and the estimated consumptive use of cooling water, based on annual average conditions;*

Response: See Appendix O-1.

O.7 PERMITS OR TRANSFERS REQUIRED

OAR 345-021-0010(1)(o)(F) *If the facility does not require a groundwater permit, a surface water permit, or a water rights transfer, an explanation why no such permit or transfer is required for the construction and operation of the proposed facility;*

Response: The applicant will purchase water from the Port of Morrow. Under the existing municipal water right, the Boardman Industrial Park is an approved location for the use of water.

O.8 EVIDENCE IN SUPPORT OF PERMITS OR TRANSFERS

OAR 345-021-0010(1)(o)(G) *Evidence to support Council findings that the Water Resources Department should issue a groundwater or a surface water permit under ORS Chapter 537 or should approve a transfer of a water use under ORS Chapter 540, including a discussion and evaluation of all relevant factors, including those listed in ORS 537.153(2) and (3), 537.170(8) and OAR Chapter 690, divisions 15 and 310*;

Response: No water right permit or transfer of water use is required.

O.9 MEASURES TO REDUCE CONSUMPTIVE USE OF WATER

OAR 345-021-0010(1)(o)(H) *A discussion of any steps proposed by the applicant to reduce consumptive water use; and*

Response: Water will be cycled 7 times through the cooling tower to minimize water use.

O.10 OTHER MITIGATION MEASURES

OAR 345-021-0010(1)(o)(I) *A discussion of any mitigation steps proposed by the applicant to address the impact of the applicant's water use on affected resources*.

Response: Water is available and approved by the Water Resources Department for use. The applicant will recycle the water in the cooling process to the extent feasible, by using multiple cycles prior to discharge. No significant impact to resources is expected as a result of the water use.

APPENDIX O-1

Water Balance Diagram

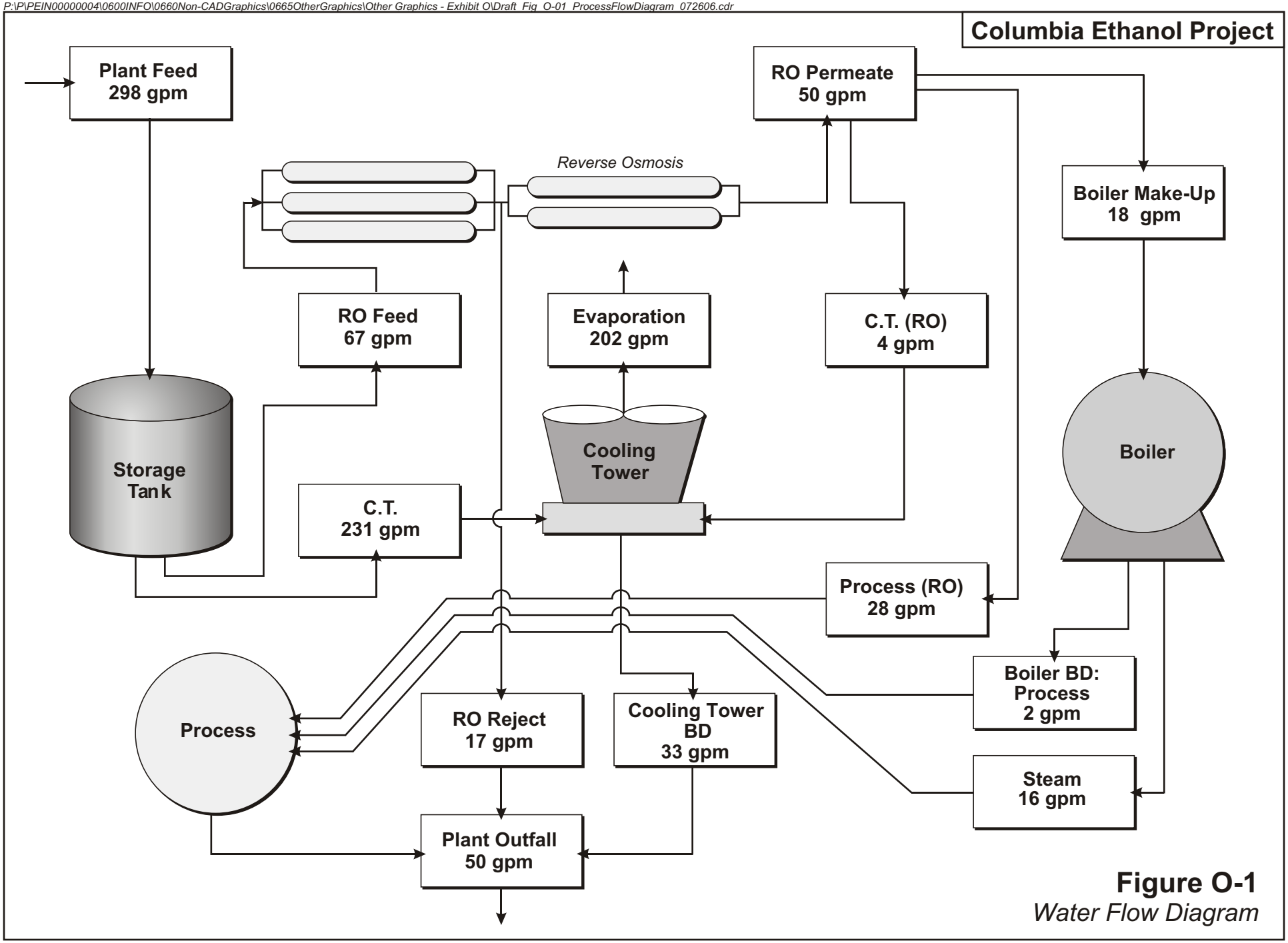


Figure O-1
Water Flow Diagram

EXHIBIT P

FISH AND WILDLIFE HABITATS AND SPECIES

OAR 345-021-0010(1)(p)

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APPENDIX

P-1 PROJECT ANALYSIS AREA – MAP

FISH AND WILDLIFE AREA PROJECT ANALYSIS – MAP

P-2 VERIFICATION OF PROPOSED SURVEY PROTOCOL FROM STEVE CHERRY, OREGON DEPARTMENT OF FISH AND WILDLIFE, MAY 4, 2006

P.1 INTRODUCTION

OAR 345-021-0010(1)(p) *Information about the fish and wildlife habitats and the fish and wildlife species, other than the species addressed in subsection (q) that may be affected by the proposed facility, providing evidence to support a finding by the council as required by OAR 345-022-0060. The applicant shall include:*

Response: The Energy Facility Siting Council (EFSC) fish and wildlife habitat standard states that "to issue a site certificate, the council must find that the design, construction, operation, and retirement of the facility, taking into account mitigation, are consistent with the fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025." OAR 345-022-0600.

Oregon Department of Fish and Wildlife (ODFW) goals and standards to mitigate impacts to fish and wildlife habitat caused by land and water development actions are set forth in OAR 635-415-0000 through -0025. EFSC has also adopted these habitat mitigation rules, and this document addresses these rules. Steve Cherry, ODFW Assistant District Wildlife Biologist, was contacted to discuss special concerns and survey needs for the project (Cherry, pers. comm. 2006).

The council requires Exhibit P to include information about the fish and wildlife habitats and the fish and wildlife species, other than the species addressed in Exhibit Q, which may be affected by the proposed facility, providing evidence to support a finding by the council as required by OAR 345-022-0060. Those species considered endangered, threatened, proposed, or candidates for listing under the state and/or federal Endangered Species Act, with the potential to occur in the analysis area, are addressed in Exhibit Q.

P.2 FISH AND WILDLIFE HABITAT MITIGATION GOALS AND STANDARDS

EFSC uses the fish and wildlife habitat mitigation goals and standards described in OAR 635-415-0025 to prioritize fish and wildlife habitats. OAR 635-415-0025 defines six habitat categories and establishes mitigation goals and implementation standards for each category. The six habitat categories and corresponding mitigation goals and implementation standards are described below:

> **"Habitat Category 1"** *is irreplaceable, essential habitat for a fish or wildlife species, population, or a unique assemblage of species and is limited on either a physiographic province or site-specific basis, depending on the individual species, population or unique assemblage.*
>
> *(a) The mitigation goal for Category 1 habitat is no loss of either habitat quantity or quality.*
>
> *(b) The Department (ODFW) shall act to protect Category 1 habitats described in this subsection by recommending or requiring:*
>
> *(A) Avoidance of impacts through alternatives to the proposed development action; or*

(B) No authorization of the proposed development action if impacts cannot be avoided.

"Habitat Category 2" *is essential habitat for a fish or wildlife species, population, or unique assemblage of species and is limited either on a physiographic province or site-specific basis depending on the individual species, population or unique assemblage.*

(a) The mitigation goal if impacts are unavoidable, is no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or quality.

(b) The Department shall act to achieve the mitigation goal for Category 2 habitat by recommending or requiring:

(A) Avoidance of impacts through alternatives to the proposed development action; or

(B) Mitigation of impacts, if unavoidable, through reliable in-kind, in-proximity habitat mitigation to achieve no net loss of either pre-development habitat quantity or quality. In addition, a net benefit of habitat quantity or quality must be provided. Progress towards achieving the mitigation goals and standards shall be reported on a schedule agreed to in the mitigation plan performance measures. The fish and wildlife mitigation measures shall be implemented and completed either prior to or concurrent with the development action.

(c) If neither 635-415-0025(2)(b)(A) or (B) can be achieved, the Department shall recommend against or shall not authorize the proposed development action.

"Habitat Category 3" *is essential habitat for fish and wildlife, or important habitat for fish and wildlife that is limited either on a physiographic province or site-specific basis, depending on the individual species or population.*

(a) The mitigation goal is no net loss of either habitat quantity or quality.

(b) The Department shall act to achieve the mitigation goal for Category 3 habitat by recommending or requiring:

(A) Avoidance of impacts through alternatives to the proposed development action; or

(B) Mitigation of impacts, if unavoidable, through reliable in-kind, in-proximity habitat mitigation to achieve no net loss in either pre-development habitat quantity or quality. Progress towards achieving the mitigation goals and standards shall be reported on a schedule agreed to in the mitigation plan performance measures. The fish and wildlife mitigation measures shall be implemented and completed either prior to or concurrent with the development action.

(c) If neither 635-415-0025(3)(b)(A) or (B) can be achieved, the Department shall recommend against or shall not authorize the proposed development action.

"Habitat Category 4" *is important habitat for fish and wildlife species.*

(a) The mitigation goal is no net loss in either existing habitat quantity or quality.

(b) The Department shall act to achieve the mitigation goal for Category 4 habitat by recommending or requiring:

(A) Avoidance of impacts through alternatives to the proposed development action; or

(B) Mitigation of impacts, if unavoidable, through reliable in-kind or out-of-kind, in-proximity or off-proximity habitat mitigation to achieve no net loss in either pre-development habitat quantity or quality. Progress towards achieving the mitigation goals and standards shall be reported on a schedule agreed to in the mitigation plan performance measures. The fish and wildlife mitigation measures shall be implemented and completed either prior to or concurrent with the development action.

(c) If neither 635-415-0025(4)(b)(A) or (B) can be achieved, the Department shall recommend against or shall not authorize the proposed development action.

"Habitat Category 5" *is habitat for fish and wildlife having high potential to become either essential or important habitat.*

(a) The mitigation goal, if impacts are unavoidable, is to provide a net benefit in habitat quantity or quality.

(b) The Department shall act to achieve the mitigation goal for Category 5 habitat by recommending or requiring:

(A) Avoidance of impacts through alternatives to the proposed development action; or

(B) Mitigation of impacts, if unavoidable, through actions that contribute to essential or important habitat.

(c) If neither 635-415-0025(5)(b)(A) or (B) can be achieved, the Department shall recommend against or shall not authorize the proposed development action.

"Habitat Category 6" *is habitat that has low potential to become essential or important habitat for fish and wildlife.*

(a) The mitigation goal is to minimize impacts.

(b) The Department shall act to achieve the mitigation goal for Category 6 habitat by recommending or requiring actions that minimize direct habitat loss and avoid impacts to off-site habitat.

P.3 IDENTIFICATION AND DESCRIPTION OF FISH AND WILDLIFE HABITATS IN THE ANALYSIS AREA

OAR 345-021-0010(1)(p)(A) *Identification and description of all habitat within the analysis area, classified by the habitat categories as set forth in OAR 635-415-0030;*

Response: The analysis area is described below. The results of the Vegetation Mapping are also described below. Table P-1 summarizes the habitat types within the project analysis areas, with their corresponding ODFW habitat categories (1-6) and GIS mapping code.

Table P- 1. Habitat Types and Habitat Categories in the Columbia Ethanol Project

Habitat Type	Habitat Subtype	Habitat Category
RIPARIAN	Riparian (non-forested)	4 – essential or important wildlife habitat, which is limited (e.g., habitat that is limited within the area); important perching/roost structure/forage for wildlife, in disturbed /human impacted area, with moderate to heavy cover by weeds.
GRASSLAND	Grassland	4 – essential or important wildlife habitat, which is limited (e.g., relatively undisturbed habitat, moderate cover by native grasses, moderate structure/forage for wildlife). May contain 5-15 percent cover by shrub species
		5 – important wildlife habitat (e.g., moderately to highly disturbed, moderate structure/forage for wildlife); usually weedy and contains a high percentage of non-native grasses.
DEVELOPED	Developed	6 – non-essential wildlife habitat with limited potential to become important or essential in the foreseeable future (e.g., commercial facilities, silos, gravel quarries).
SURFACE WATER	Perennial Streams	2- essential and limited habitat for fish and wildlife

P.3.1 Analysis Area

This section describes the analysis area with regard to special status/sensitive plants and fish and wildlife species. The analysis area for these species is measured from the site boundary, and is defined below (OAR 345-001-0010(53)(b).

For purposes of this Application, the "site" and the "site boundary" are defined as:

- 150 feet from the linear elements, such as the power supply, gas supply pipeline, and the ethanol pipeline, and
- The approximately 25-acre parcel leased from the Port of Morrow, including the staging area.

The project analysis area is illustrated in Figure P-1 (in Appendix P-1). The site and the site boundary are illustrated in Figure P-2 (in Appendix P-1). For the purposes of this application, the analysis area for evaluating impacts to fish and wildlife habitat and sensitive species is as follows:

Fish and Wildlife Habitat: Habitat types were mapped within the Vegetation Mapping Area (VMA). The VMA includes areas that could reasonably be affected, directly or indirectly, by construction. This mapping is shown in Figure P-2.

Sensitive Wildlife: For sensitive animal species, the standard analysis area includes the site and those areas within two miles of the site boundary (OAR 345-001-0010(53)(b).

The initial database search was conducted within two miles of the site boundary; however, based upon the degraded site conditions that do not provide habitat to sensitive species, ODFW suggested a ¼ mile analysis area (Cherry, pers. comm. 2006).

Sensitive Plants: For sensitive plant species, the standard analysis area includes the site and those areas within two miles from the site boundary (OAR 345-001-0010(53)(b). An initial database search was conducted within two miles of the site boundary, and sensitive plant surveys were conducted within the VMA.

P.3.2 Category 2 Habitat Description

The Columbia River was identified as Category 2 within the analysis area.

P.3.2.1 Perennial Streams

The Columbia River runs along the north edge of the project. Although no impacts to the Columbia River are proposed, a supporting and relating structure for the proposed facility will be attached to a dock above the OHW of the river. Therefore, it has been mapped in Figure P-2. The River is wide in the project reach, and extends more than 2.5 miles from shore to shore. Riparian habitat is described in the following sections.

P.3.3 Category 4 Habitat Description

Riparian (non-forested) and some grassland habitats were identified as Category 4 within the analysis area.

P.3.3.1 Grassland

Category 4 grassland habitat occurs in one small area within the northern corner of the analysis area between the railroad tracks and the Columbia River. This habitat category consists mainly of weedy herbaceous species with scattered native shrubs, such as bitterbrush (*Purshia tridentata*), and other weedy shrub species such as grey and yellow rabbitbrush (*Chrysothamnus nauseosus*), broom snakeweed (*Gutierrezia sarothrae*), and prickly pear (*Puntia polyacantha*). Shrubs may cover up to 15 percent of the area. Soils are extremely sandy and well-drained. Cheatgrass (*Bromus tectorum*) is very common, with generally at least 40-50 percent cover. Other common weeds include tumblemustard (*Sisymbrium altissimum*), Russian thistle (*Salsola kali*), storksbill (*Erodium cicutarium*), and fiddleneck tarweed (*Amsinckia lycopsoides*).

The herbaceous layer includes very small patches of native grasses such as Sandberg bluegrass (*Poa secunda*), western needle and thread grass (*Hesperostipa comata*), and Indian ricegrass (*Oryzopsis hymenoides*), as well as trace elements of native forbs such as buckwheat (*Eriogonum* sp.) and Lomatium (*Lomatium* sp.). Although the habitat is quite weedy (greater than 50 percent cover), it is the best remaining grassland habitat to be found within the vicinity and, as such, provides important habitat for wildlife.

Category 4 grasslands do not support robust bunchgrasses, but may contain enough grass, forb, and native shrub structure to provide potential habitat for ground-nesting birds such

as the western meadowlark, and potential foraging habitat for raptors such as red-tailed hawk. However, prey species may be less common than in better habitat off-site, due to the prevalence of less valuable forage such as cheatgrass. In addition, perching trees are scarce within the vicinity, and industrial disturbance levels are high, both of which would discourage use by raptors, songbirds, and other wildlife that are more sensitive to humans.

P.3.3.2 Riparian (non-forested)

Riparian (non-forested) habitat was mapped along the shoreline of the Columbia River. The riparian vegetation is dominated by cheatgrass and contains an average of 50 percent cover by bare rock and sand. Scattered small and medium-sized willows (*Salix lucida* and *Salix exigua),* American elm (*Ulmus americana*), and bitterbrush are found at or near the waterline along the shore. The non-forested riparian habitat is designated a Category 4 habitat based upon its percent cover by weeds and lack of vegetation. However, it does have importance to adjacent aquatic habitats, due to the scarcity of riparian vegetation along the Columbia River within the region.

P.3.4 Category 5 Habitat Description

The vast majority of grassland habitat within the analysis area was identified as Category 5.

P.3.4.1 Grassland

Category 5 grasslands were found in the majority of the area outside the abandoned crop pivot. This habitat type included areas completely dominated by cheatgrass and other weeds such as tumblemustard, bulbous bluegrass, Russian thistle, and cereal rye (*Secale cereale*). Patches of native bunchgrass were very uncommon. The dense weed cover limits the ability of most wildlife species to use these areas for forage or cover, and would continue to limit use unless intense management, such as burning or plowing and re-seeding with native grasses, was conducted.

The lack of native cover may be due to overspray of herbicides from adjacent crop pivots, which can destroy the native cover and replace it with weedy species. In addition, the area may have been covered with dredge spoils from the adjacent Columbia River and appears to have been graded. This type of ground disturbance would facilitate colonization by weedy species.

Category 5 grasslands also include irrigated agricultural croplands, which occupied the center pivot field in the middle of the proposed project, until the field was abandoned within the last few years. This agricultural area has been completely covered by weeds such as tumblemustard and Russian thistle.

P.3.5 Category 6 Habitat Descriptions

P.3.5.1 Developed

Category 6 developed areas include gravel and dredge spoil piles found in the northern corner of the analysis area, as well as graveled roads and a 20-foot corridor centered on the existing railroad loop track. All areas mapped as developed are highly disturbed on a regular basis and have been mostly or entirely cleared of native vegetation.

Due to the high level of disturbance, no special status/sensitive species are known or expected to occur in the Category 6 habitats and these areas are unlikely to become important or essential wildlife habitat in the foreseeable future.

P.3.6 Special Status/Sensitive Plants and Wildlife

Table P-2 summarizes special status/sensitive plant, fish, and wildlife species that may occur within the analysis area according to the results of the pre-field review (ORNHIC 2006, USFWS 2006), and the results of the informal survey technique for the project that was approved by ODFW (Cherry, pers. comm. 2006).

Those species considered endangered, threatened, proposed, or candidates for listing under the state and/or federal Endangered Species Act, with the potential to occur in the analysis area, are addressed in Exhibit Q.

Table P- 2. Special Status/Sensitive Species with the Potential to Occur within the Analysis Area of the Columbia Ethanol Project

Species	Federal Status[1]	State Status[1]	ORNHIC List[2]	Observed/Documented in the VMA
Birds				
Northern goshawk (*Accipiter gentilis*)	SoC	SC	4	None observed. No suitable habitat.
Western burrowing owl (*Athene cunicularia hypugaea*)	SoC	SC	2	None observed. Suitable habitat could exist within grassland areas, but presence unlikely due to human disturbance.
Rough-legged hawk (*Buteo lagopus*)	--	--	--	None observed. No foraging habitat exists due to high levels of human disturbance.
Red-tailed hawk (*Buteo jamaicensis*)	--	--	--	Pair noted 500 feet to southwest of VMA. No nest visible in tree.
Ferruginous hawk (*Buteo regalis*)	SoC	SC	4	None observed. No foraging habitat exists due to high levels of human disturbance.
Swainson's hawk (*Buteo swainsoni*)	--	SV	4	None observed. No foraging habitat exists due to high levels of human disturbance.
Grasshopper sparrow (*Ammodramus savannarum*)	SoC	SV	2	None observed. Marginal habitat exists in Category 4 grassland, but unlikely due to human disturbance.
Olive-sided flycatcher (*Contopus cooperi*)	SoC	SV	4	None observed. No suitable habitat.
Eastern Oregon Willow flycatcher (*Empidonax trailli adastus*)	SoC	SU	4	None observed. No suitable habitat.

Species	Federal Status[1]	State Status[1]	ORNHIC List[2]	Observed/Documented in the VMA
Yellow-breasted chat (*Icteria virens*)	SoC	SC	4	None observed. No suitable habitat.
Lewis' woodpecker (*Melanerpes lewis*)	SoC	SC	4	None observed. No suitable habitat.
Mountain quail (*Oreortyx pictus*)	SoC	SU	4	None observed. No suitable habitat.
White-headed woodpecker (*Picoides albolarvatus*)	SoC	SU	2	None observed. No suitable habitat.
Mammals				
White-tailed jackrabbit (*Lepus townsendii*)	--	SU	3	None observed. Marginal habitat exists in Category 4 grassland, but unlikely due to human disturbance.
Spotted bat (*Euderma maculatum*)	SoC	--	2	None observed. No suitable habitat.
Pale western big-eared bat (*Corynorhinus townsendii pallescens*)	SoC	SC	2	None observed. No suitable habitat.
Silver-haired bat (*Lasionycteris noctivagans*)	SoC	SU	4	None observed. No suitable habitat.
Small-footed myotis (*Myotis ciliolabrum*)	SoC	SU	4	None observed. No suitable habitat.
Long-eared myotis (*Myotis evotis*)	SoC	SU	4	None observed. No suitable habitat.
Long-legged myotis (*Myotis volans*)	SoC	SU	4	None observed. No suitable habitat.
Yuma myotis (*Myotis yumanensis*)	SoC	--	4	None observed. No suitable habitat.
Fringed myotis (*Myotis thysanodes*)	SoC	SU	4	None observed. No suitable habitat.
Amphibians & Reptiles				
Northern sagebrush lizard (Sceloporus graciosus graciosus)	SoC	SV	4	None observed. Suitable habitat may exist within analysis area, but unlikely due to human disturbance.
Painted turtle (Chrysemys picta)	--	SC	2	None observed. No suitable habitat within VMA, but may exist in ponds to the southwest.
Fish				
Pacific lamprey (Lampetra tridentata)	SoC	SC	4	None observed. No suitable habitat.
Margined sculpin (Cottus marginatus)	SoC	SV	4	None observed. No suitable habitat.
Interior redband trout (Oncorhynchus mykiss gibbsi)	SoC	SV	2	None observed. No suitable habitat.

[1] *State and Federal Status Definitions*

SoC *– Species of Concern. Former Category 2 candidates for which additional information is needed in order to propose as threatened or endangered under the ESA; these species are under review for consideration as Candidates for listing under the ESA.*

SC *– State Sensitive-Critical. Species for which listing is pending; or those for which listing may be appropriate if immediate conservation activities are not taken. Also considered critical are some peripheral species which are at risk throughout their range, and some disjunct populations.*

SV *– State Sensitive-Vulnerable. Species for which listing as threatened or endangered is not believed to be imminent and can be avoided through continued or expanded use of adequate protective measures and monitoring. In some cases the population is sustainable, and protective measures are being implemented; in others, the population may be declining and improved protective measures are needed to maintain sustainable populations over time.*

SU *– State Sensitive-Undetermined Status. Animals in this category are species whose status is unclear. They may be susceptible to population decline of sufficient magnitude that they could qualify for endangered, threatened, critical or vulnerable status, but scientific study would be required before a judgment can be made.*

[2] ORNHIC Definitions

List 1 *- taxa that are threatened with extinction or presumed to be extinct throughout their entire range.*

List 2 *– taxa threatened with extirpation or presumed extirpated from Oregon; often peripheral or disjunct species which are of concern considering species diversity within Oregon; can be very significant in protecting the genetic diversity of the taxon; ORNHIC regards extreme rarity as a significant threat and has included species which are very rare in Oregon on this list.*

List 3 *– taxa for which more information is needed before status can be determined, but which may be threatened or endangered in Oregon or throughout their range.*

List 4 *– taxa which are of conservation concern but not currently threatened or endangered; including taxa that are very rare but considered secure as well as those declining in numbers or habitat but still too common to be proposed as threatened or endangered; these taxa require continued monitoring.*

Ex *– Presumed extirpated or extinct*

Of the fish species listed in Table P-1, only Pacific lamprey and margined sculpin have the potential to utilize the Columbia River during various life stages and at various times of the year. The interior redband trout does not inhabit the Columbia River. No aquatic habitat will be impacted by project construction or operation, as described in the impacts section below. The Columbia River, which flows adjacent to the project area, would not be impacted by the project. Therefore, the biology of individual fish species is not addressed in this document.

There are no ditches, dry channels, or other water features located within the site boundary. Soils within the entire site boundary consist of very well-drained sandy types on level ground – likely dredge spoils from the river, which allow the scant rainfall in the area to percolate to the water table.

P.4 DESCRIPTION OF BIOLOGICAL AND BOTANICAL SURVEYS PERFORMED

OAR 345-021-0010(1)(p)(B) *A description of biological and botanical surveys performed that support the information in this exhibit, including a discussion of the timing and scope of each survey;*

Response: See sections P.4.1 through P.4.4, below.

P.4.1 Information Review

The pre-field review for special status/sensitive species of plants and wildlife within the analysis area included a query of the ORNHIC and USFWS databases for documented and projected occurrences of candidate, proposed, and listed species in the analysis area (ORNHIC 2006, USFWS 2006).

To supplement the information provided by ORNHIC and USFWS, a number of other sources were consulted for information on special status/sensitive plants. These sources provided additional information such as habitat preferences, morphological characteristics, phenologic development timelines, and species ranges. Sources included taxonomic keys and species guides (Washington Natural Heritage Program [WNHP]

2004, Flora ID Northwest 2001, Hickman 1993, Cronquist *et al.* 1977-1997, and Hitchcock and Cronquist 1973, Csuti *et al.* 1997, Marshall 2003, and Verts *et al.* 1998).

P.4.2 Habitat Typing and Categorization

All fish and wildlife habitat types within the VMA were analyzed and mapped according to the ODFW Habitat Mitigation Policy. Aerial photography, at an acquisition scale of 1:24,000, was used to create a preliminary map of the boundaries of the fish and wildlife habitat types within the VMA. Habitat boundaries were then ground-truthed by qualified biologists. For each habitat polygon, field notes included dominant vegetation and habitat quality (structure, age, presence/absence of invasive vegetation, history of disturbance).

A habitat classification system (vegetation cover types) was developed for the project analysis area based on the following: (1) the unique signature of each habitat type/ category on the aerial photographs; (2) the habitat types considered important for threatened, endangered, or special status/sensitive species; and (3) consistency with classification systems used by resource agencies. Habitat types were categorized (1 through 6) using the ODFW habitat mitigation goals and standards defined in OAR 635-415-0025 (as described in Section P.2)

Aerial photos were generally sufficient to determine habitat types; however, categorization factors such as disturbance, weed cover, and vegetation type could not always be determined from aerial photos. Ground-truthing was necessary to verify habitat categories and boundaries. Habitat types and categories were validated during field surveys conducted on May 16, 2006. Vegetation maps were adjusted as necessary to reflect actual conditions in the field. Figure P-2 (in Appendix P-1) illustrates the habitat types and categories found within the analysis area.

P.4.3 Vegetation

One survey for special status/sensitive plants was conducted on May 16, 2006. Based upon the results of the database searches (USFWS 2006, ORNHIC 2006), site visit, and known suitable habitat, there are no special status/sensitive plants within the analysis area.

P.4.4 Wildlife

As described in a memorandum dated May 4, 2006 (Appendix P-2), and approved by ODFW, no specific concerns for listed or sensitive species were noted.

P.4.4.1 Wildlife Surveys

Due to a lack of habitat, no formal raptor surveys, wildlife surveys, or jackrabbit surveys were conducted for the project. However, ODFW requested a search for raptor nesting sites within ¼ mile of the site boundary in order to determine general species use within and adjacent to the impacted areas. At the time of the site visits, general notes on wildlife habitat and use within the VMA were made.

P.5 MAP OF HABITAT LOCATION

OAR 345-021-0010(1)(p)(C) *A map showing the locations of habitat identified in (A);*

Response: The habitat types and categories described in Section P.3 are illustrated in Figure P-2 in Appendix P-1.

P.6 DESCRIPTION OF SIGNIFICANT POTENTIAL IMPACTS ON IDENTIFIED HABITATS

OAR 345-021-0010(1)(p)(D) *A description of the nature, extent and duration of significant potential impacts on the habitat identified in (A) that may result from construction, operation and retirement of the proposed facility;*

Response: This section describes potential significant impacts of the proposed project to habitats and associated wildlife during construction, operation, and retirement. The nature, extent, and duration of significant potential impacts that could result from construction, operation, and retirement of the project were identified based on the existing values of each area that would be directly or indirectly impacted by the proposed project.

P.6.1 Impacts to Fish and Wildlife Habitat

Potential impacts to wildlife habitat include temporary and permanent habitat loss, habitat alteration, and disturbance during construction and operation. Table P-3 summarizes the temporary and permanent impacts to wildlife habitat from construction of the proposed project.

Temporary impacts are the construction-related impacts associated with the laydown areas, proposed ethanol pipeline, and the underground gas pipeline. These areas will be temporarily disturbed during construction and will be restored to pre-construction condition or better after the construction-related activities are complete.

Table P- 3. Impacts to Wildlife Habitat from the Columbia Ethanol Project

	IMPACTS (acres)	
	Temporary	Permanent
Category 5		
Grassland	7.3	6.7
Category 6		
Developed	3.4	2.8

P.6.2 Impacts to Special Status/Sensitive Species

This section describes the potential impacts to sensitive species from the construction, operation, and retirement of the proposed facility.

P.6.2.1 Plants

Based upon the results of the database searches (USFWS 2006, ORNHIC 2006), site visits, and known suitable habitat, there are no special status/sensitive plant species within the analysis area. Therefore, no direct construction, operation or retirement-related impacts would be anticipated to these plants or their suitable habitat.

P.6.2.2 Fish and Wildlife

The pre-field review (ORNHIC 2006, USFWS 2006) identified 27 special status/sensitive species with the potential to occur within the project vicinity. Of the species found on the USFWS Morrow County list (USFWS 2006), only western burrowing owl, bald eagle, and ferruginous hawk are potentially present within the analysis area. The site-specific, ORNHIC database results returned records of only three wildlife species within two miles of the site boundary: grasshopper sparrow, Washington ground squirrel (which is addressed in Exhibit Q), and painted turtle.

Fish

Potential impacts to fish include only the potential for accidental release of fluids transferred during the docking process, which could cause contamination of the waters below the dock, thus potentially affecting listed fish species using the area.

Wildlife

Of the bird species listed in the ORNHIC results, only grasshopper sparrow could potentially be nesting within the project area. However, only a small portion of remnant grassland habitat (Category 4) is present and disturbance levels may be too high. Painted turtle are known to occur within Messner pond, southwest of the project, but no water or habitat for the species exists within the site boundary or near the project site. ODFW did not believe that habitat for these species was likely to exist within or near the project area (Cherry, pers. comm. 2006).

The analysis area is not anticipated to provide suitable habitat for any sensitive species. Due to a lack of suitable habitat, only burrowing owl, white-tailed jackrabbit, grasshopper sparrow, and northern sagebrush lizard have the potential to exist within the analysis area. However, their presence is highly unlikely due to historic and ongoing human disturbance. During the field review, no sensitive species were identified within the analysis area.

A potential red-tailed hawk breeding pair was seen in a cottonwood tree, 500 feet to the southwest of the analysis area, but no nest was observed. This pair (or this species) would probably not be impacted by the construction, operation, and retirement of the project due to the existing high levels of industrial disturbance within the area.

Based upon the results of the database searches (USFWS 2006, ORNHIC 2006), site visits, and known suitable habitat, there are no special status/sensitive species of wildlife within the analysis area. Therefore, no direct construction, operation, or retirement-related impacts would be anticipated to these species or their suitable habitat.

P.7 MITIGATION MEASURES

OAR 345-021-0010(1)(p)(E) *A description of any measures the applicant proposes to avoid, reduce or mitigate potential adverse impacts;*

Response: This section describes the measures that will be implemented to avoid, reduce, or mitigate potential adverse impacts to special status/sensitive species and wildlife habitat. Measures employed in project design to avoid or minimize adverse impacts include conducting the informal wildlife survey site visit to determine potential use patterns and species diversity. For the habitat impacts that cannot be avoided or minimized, mitigation will be developed by means of reliable methods and in compliance with ODFW habitat mitigation rules (OAR 635-415-0025).

P.7.1 Mitigation for Habitat Impacts

Only Category 6 developed areas and Category 5 grassland habitat would be impacted by the project. A proposed habitat mitigation plan is being designed in coordination with ODFW. As requested by ODFW (Cherry, pers. comm. 2006), the ODFW Coyote Springs Wildlife Refuge would be enhanced in coordination with the Refuge Manager. Activities could include native grassland habitat improvements, construction and placement of burrowing owl nesting boxes, weed removal, or other projects deemed appropriate by the Refuge Manager. This program would be supported by the applicant through a cost-share program or other method.

P.7.2 Mitigation for Impacts to Special Status/Sensitive Species

P.7.2.1 Plants

There are no anticipated impacts to special status/sensitive plants; therefore, no mitigation is required.

P.7.2.2 Fish

No new structures were designed to be placed in the water. Construction techniques have been planned to avoid impacts to aquatic resources. Construction of the dock structure and attachment of the pipelines would consist of welding and physical attachment processes only. No pouring of concrete or other fluids would be necessary, and no materials would enter the waterway.

Accidental release of fluids transferred during the docking process could cause contamination of the waters below the dock, thus potentially affecting listed fish species using the area. Containment of fluids transferred during the docking process would be achieved as follows. Coast Guard-required loading protocols would be observed during the process. In addition, overfill alarms on the barges are designed to avoid backflow of ethanol caused by overfilling of the barges. A motor-operated-valve located on the shoreline is designed to assure one-way flow of fluids onto the barges. Moreover, a loader operator is assigned to watch the entire loading process to minimize the chances of

leaks should the mechanical safeguards fail. These precautions make it extremely unlikely that an accidental release would occur.

P.7.2.3 Wildlife

Based upon the background research, site visit, and conversations with ODFW (Cherry, pers. comm. 2006), the project construction, operations, and retirement are not expected to cause significant impacts to special status/sensitive wildlife species; therefore, no mitigation is required.

P.8 EVIDENCE THAT THE PROPOSED FACILITY COMPLIES WITH ODFW FISH AND WILDLIFE HABITAT MITIGATION GOALS

OAR 345-021-0010(1)(p)(F) *Evidence that the proposed facility, including any proposed mitigation, complies with the fish and wildlife habitat mitigation goals and standards in OAR 345-415-0030; and*

Response: The Columbia Ethanol Project complies with the ODFW habitat mitigation goals and standards as described in this section. See sections P.8.1 through P.8.6, below.

P.8.1 Category 1 Habitat

The mitigation goal requires avoidance of this habitat category. There is no Category 1 habitat within the analysis area and no Category 1 habitat will be impacted by the project; therefore, no mitigation is required.

P.8.2 Category 2 Habitat

The mitigation goal requires avoidance of this habitat category. No Category 2 habitat will be impacted by the project; therefore, no mitigation is required.

P.8.3 Category 3 Habitat

The mitigation goal, if impacts are unavoidable, is no net loss of either habitat quantity or quality, and the provision of a net habitat benefit. There is no Category 3 habitat within the analysis area and no Category 3 habitat will be impacted by the project; therefore, no mitigation is required.

P.8.4 Category 4 Habitat

The mitigation goal for Category 4 habitat, if impacts are unavoidable, is no net loss in either existing habitat quantity or quality. No Category 4 habitat will be impacted by the project; therefore, no mitigation is required.

P.8.5 Category 5 Habitat

P.8.5.1 Grassland

6.7 acres of Category 5 grassland habitat will be permanently impacted by the placement of project facilities and 7.3 acres will be temporarily impacted during project construction. To mitigate for these unavoidable impacts, the area that will be temporarily impacted will be restored to pre-construction conditions following construction activities, with an ODFW and Morrow County Soil and Water Conservation District - approved seed mix. Permanent impacts will be mitigated by a habitat mitigation plan that is being designed in coordination with ODFW. As requested by ODFW, an existing ODFW wildlife refuge, Coyote Springs, would be enhanced in coordination with the Coyote Springs Refuge Manager. This mitigation plan complies with the ODFW fish and wildlife habitat mitigation goals.

P.8.6 Category 6 Habitat

The mitigation goal for Category 6 habitat, if impacts are unavoidable, is to minimize the impacts. 2.8 acres of Category 6 developed areas will be permanently impacted by the placement of permanent project facilities and 3.4 acres will be temporarily impacted by construction activities. Impacts to developed areas have been reduced to the minimum amount possible by 1) requiring the project facilities to be the minimum size needed for operations, 2) using best management practices to prevent loss of topsoil during construction, and 3) controlling noxious weeds in areas disturbed by the project construction activities. This mitigation plan complies with the ODFW fish and wildlife habitat mitigation goals.

P.9 MONITORING PROGRAM

OAR 345-021-0010(1)(p)(G) *The applicant's proposed monitoring program, if any, for impacts to such fish and wildlife species and their habitats.*

Response: There is no on-site mitigation required and the mitigation activities at the Coyote Springs Wildlife Refuge would be conducted and monitored by ODFW through a cost-share program or other method paid by the applicant. Therefore, no monitoring program is required for the project.

P.10 CONCLUSION

The facility siting process has considered and complied with the ODFW Fish and Wildlife Habitat Mitigation Policy as set forth in OAR 635-415-0000 through -0025. As part of the siting process, all of the fish and wildlife habitats within the fish and wildlife habitat analysis area were identified and categorized according to the ODFW Policy. In summary, there are no Category 1 or 3 habitats within the analysis area, and there are no impacts to Category 2 or 4 habitats. Only Category 5 grassland and Category 6 developed areas would be impacted and the applicant will mitigate for the permanent loss of Category 5 grassland. The low level of impacts to habitat verifies that this facility siting process has met ODFW's standard of minimizing habitat loss.

Based upon the pre-field review, habitat typing, and site visits, there are no anticipated impacts to special status/sensitive plants and wildlife species as a result of project construction or operation.

Based upon the above information, the applicant will satisfy the requirements in OAR 345-021-0010(1)(p), and the council may find that the design, construction, operation, and retirement, taking into account mitigation, will be consistent with fish and wildlife habitat mitigation goals and standards pursuant to OAR 345-022-0060.

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P.11.1 Personal Communications

Steve Cherry, Assistant District Wildlife Biologist in Heppner, Oregon Department of Fish & Wildlife (ODFW), April 17, and July 6, 11, and 12, 2006.

APPENDIX P-1

FIGURE P-1

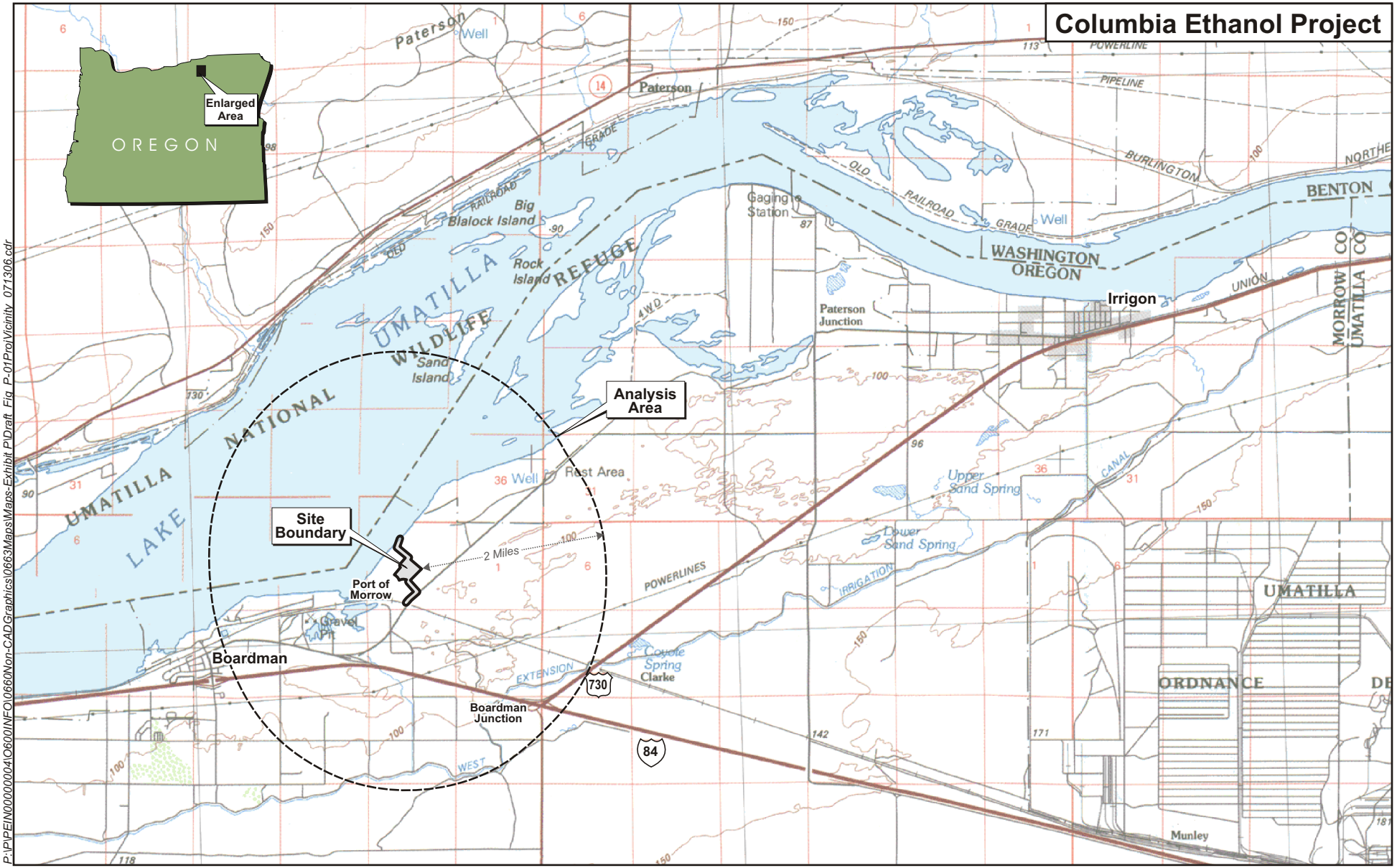
PRE-FIELD ORNHIC DATABASE SEARCH AREA – MAP

FIGURE P-2

FISH AND WILDLIFE HABITAT ANALYSIS AREA – MAP

APPENDIX P-2

VERIFICATION OF PROPOSED SURVEY PROTOCOL FROM STEVE CHERRY, OREGON DEPARTMENT OF FISH AND WILDLIFE, MAY 4, 2006

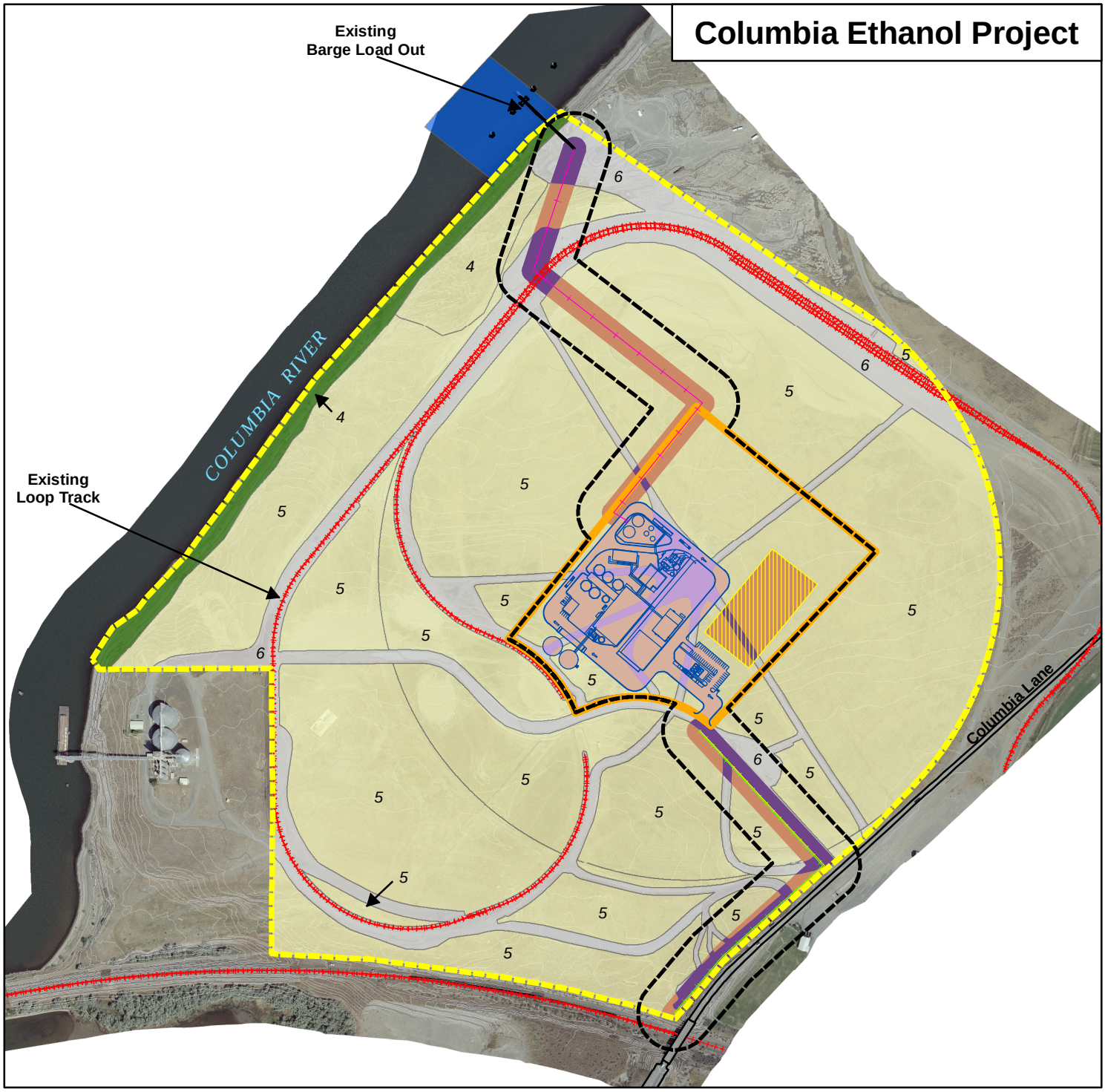


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USGS 30x60 Series Quadrangle: Hermiston, Oregon-Washington 1984

Figure P-1
Project Analysis Area

Scale - 1 : 100,000



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Existing Features

- Paved Road
- Railroad
- Major Contour
- Minor Contour

Proposed Features

- Lease Boundary
- Site Boundary
- Ethanol Plant Footprint
- Power (Umatilla Electric Coop)
- Gas (Cascade Natural Gas)
- Barge Loadout
- Staging Area

Vegetation Classifications

- Vegetation Mapping Area
- Developed
- Grassland
- Riparian
- Perennial Stream

Vegetation Impacts (20.08 Acres)

- Category 5, Grassland, Permanent (6.66 Acres)
- Category 5, Grassland, Temporary (7.24 Acres)
- Category 6, Developed, Permanent (2.75 Acres)
- Category 6, Developed, Temporary (3.43 Acres)

FIGURE P-2

Fish and Wildlife Habitat Analysis Area

0 300 600 1,200

Feet

DAVID EVANS
AND ASSOCIATES INC.

DATE: May 4, 2006

TO: Steve Cherry, ODFW Assistant District Wildlife Biologist in Heppner

FROM: Phil Rickus

SUBJECT: Record of personal communications with ODFW regarding survey methodology and ODFW comments to NOI

PROJECT: Pacific Ethanol Power Project

PROJECT NO: PEIN0000-0004

COPIES: Tom Koehler / Paul Koehler, Pacific Ethanol, Inc., Russ Morgan, ODFW; Adam Bless, Oregon Department of Energy; Dana Siegfried, DEA

This memorandum summarizes the personal communications between ODFW Assistant District Wildlife Biologist Steve Cherry and DEA Ecologist Phil Rickus on April 17, 2006. The personal communication pertains to ODFW comments to the Pacific Ethanol Power Project NOI and proposed survey methodology as agreed upon by the two parties at the time of the conversation.

As discussed on April 17, the study area for the project is highly degraded and impacted historically. The entire proposed site boundary, excluding portions of the proposed Ethanol pipeline, and gas pipeline was occupied by a pivot irrigation circle, as visible on the aerial photograph (see attached Figure). The remainder of the land has been graded and converted to industrial uses. There are no trees or shrubs visible within the project area, and little, if any, riparian vegetation exists along the Columbia River in the project vicinity due to homeland security requirements and historic impacts. Wildlife habitat within the project area is extremely limited and wildlife use of the site is expected to be limited to common, generalist species. ODFW expressed no concern for listed or sensitive species within the site.

The ORNHIC results returned records of three wildlife species within 2 miles of the project section: grasshopper sparrow, Washington ground squirrel, and painted turtle. Of the species found on the USFWS Morrow County list, only western burrowing owl, bald eagle, and Ferruginous hawk are potentially present within the project vicinity.

Of the species listed in the ORNHIC results, grasshopper sparrow could potentially be found within the project area if any remnant grassland habitat is present. This will be determined at the time of the vegetation mapping site visit. Washington ground squirrel is found near the Umatilla National Wildlife Refuge more than 1.5 miles northeast of the project site, and is unlikely to utilize the highly impacted and compacted soils within or near the project. Painted turtle is known to occur within Messner pond southwest of the project, but no water or habitat for the species exists in or near the project. ODFW expressed no concern for habitat for these species within or near the project area.

Bald eagles are known to utilize areas within Messner Lake southeast of the site boundary, as well as portions of the Umatilla National Wildlife Refuge for wintering and forage. However, as Steve Cherry mentioned, no

roosting habitat exists within the project area, and the species moves up and down the river during winter. ODFW concerns for listed species include only those whose **nesting** activity outside the footprint of the project area may be affected by noise or visual disturbance. Since no impacts to nesting bald eagles would occur from project construction ODFW has no concerns from the project. However, observations of bald eagles and any other listed species will be documented during the site visits.

Although ODFW expressed no specific concerns for listed or sensitive species, ODFW requested a search for raptor nesting sites within ¼ mile of the site boundary in order to determine general species use within and adjacent to the impacted areas. At the time of the site visits, general notes on wildlife habitat and use within the project area and vicinity will be made as well. Surveys will also be necessary to determine the acreage of impacted habitat classified into the various Fish and Wildlife Habitat Mitigation Policy categories.

Sincerely,

Philip Rickus

DEA Ecologist

Attachments/Enclosures: Site Plan

Initials: prr

File Name: p:\p\pein00000004\0600info\0670reports\0670 exq\0670 exq - agency communications\060425 odfw memo.doc

Project Number: PEIN0000-0004

From: "Steve Cherry" <Steve.P.Cherry@state.or.us>
To: "Philip Rickus" <Prr@deainc.com>
Date: Thu, May 4, 2006 3:08 PM
Subject: RE: Pacific Ethanol

Phil I think this looks fine to me. Let me know if you need anything else.

Steve Cherry
Assistant District Wildlife Biologist
Heppner District Office
(541) 676-5230 phone
(541) 676-9075 fax
steve.p.cherry@state.or.us

-----Original Message-----
From: Philip Rickus [mailto:Prr@deainc.com]
Sent: Thursday, May 04, 2006 2:28 PM
To: CHERRY Steve P
Cc: Ethan Rosenthal
Subject: Pacific Ethanol

Hello Steve- I've attached a memo summarizing our conversation concerning wildlife and habitat surveys for the Pacific Ethanol Power Project. Please review the memo and let me know if your comments have been represented correctly.

I've also included the draft base map, although elements are changing slightly in the process- the project will remain within the general footprint shown on the map, but a new barge dock will not be needed- the ethanol pipeline would run to the existing dock north of the site boundary.

Thanks >phil

ps- Our landscape architect working on the job, Sean Sullivan, will be contacting you to obtain any management plans you may have for an area within 30 or so miles of the project in order to conduct his portion of the analysis.

Phil Rickus
Ecologist
David Evans & Assoc., Inc.
2100 SW River Parkway
Portland, OR 97201
503.499.0573
prr@deainc.com

EXHIBIT Q

THREATENED AND ENDANGERED SPECIES
OAR 345-021-0010(1)(q) and OAR 345-022-0070

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APPENDICES

Q-1 FIGURE Q-1: BARGE DOCK CONSTRUCTION DETAIL

Q-2 RESULTS OF USFWS DATABASE SEARCH

Q-3 VERIFICATION OF PROPOSED SURVEY PROTOCOL FROM STEVE CHERRY, OREGON DEPARTMENT OF FISH AND WILDLIFE, MAY 4, 2006

Q.1 INTRODUCTION

OAR 345-021-0010(1)(q) *Information about threatened and endangered plant and animal species that may be affected by the proposed facility, providing evidence to support a finding by the Council as required by OAR 345-022-0070. The applicant shall include:*

Response: The U.S. Fish and Wildlife Service (USFWS) and the Oregon Natural Heritage Information Center (ORNHIC) were queried for information on listed and sensitive species within the 2-mile analysis area (see Appendix Q-2). The Oregon Department of Fish and Wildlife (ODFW) was contacted for information on fish and wildlife habitat requirements and distribution. The Oregon Department of Agriculture (ODA) was contacted for information about plant distribution and protection and conservation programs. Federal Species of Concern, State Sensitive species, and other non-listed, rare species are addressed in Exhibit P; this Exhibit addresses all state and federally listed, candidate, and proposed species. Candidate and proposed species are included in Exhibit Q due to their potential for listing during the project application process.

Based upon the database results received from USFWS (USFWS 2006) and ORNHIC (ORNHIC 2006), as well as additional contacts and references consulted during the prefield review, a total of 12 federal and state listed and candidate plant and wildlife species have the potential to exist within the analysis area. The database results identified three species and seven runs of federal listed, proposed, and candidate anadromous fish that occur within the analysis area, including steelhead (three runs), sockeye salmon (one run), and chinook salmon (three runs). All of the state and federal listed species that will be addressed within this Exhibit are listed in Table Q-1.

Table Q- 1. State and Federal Listed, Candidate, and Proposed Species with the Potential to Occur Within the Analysis Area of the Columbia Ethanol Project

Species	Federal Status[1]	State Status[1]	ORNHIC List[2]	Occurrence	Impacts
Birds					
Bald Eagle (*Haliaeetus leucocephalus*)	LT	LT	4	Potential	No
Yellow-billed Cuckoo (*Coccyzus americanus*)	C	--	--	No	No
Mammals					
Canada Lynx (*Lynx canadensis*)	LT	--	--	No	No
Washington Ground Squirrel (*Spermophilus washingtonii*)	C	LE	1	No	No
Fish					
Steelhead – (Mid-Columbia River) (*Oncorhynchus mykiss*)	LT	SV	2,3	Yes	No
Steelhead – (Snake River Basin) (*Oncorhynchus mykiss*)	LT	--	2,3	Yes	No

Species	Federal Status[1]	State Status[1]	ORNHIC List[2]	Occurrence	Impacts
Steelhead – (Upper Columbia River) (*Oncorhynchus mykiss*)	LE	--	--	Yes	No
Snake River Sockeye Salmon – Salmon River Tributary to the Snake River (*Oncorhynchus nerka*)	LE	--	--	Yes	No
Chinook Salmon – (Upper Columbia River) (*Oncorhynchus tshawytscha*)	LE	--	--	Yes	No
Snake River Chinook Salmon – fall runs in the Snake River (*Oncorhynchus tshawytscha*)	LT	--	--	Yes	No
Snake River Chinook Salmon – spring/summer runs in the Snake River (*Oncorhynchus tshawytscha*)	LT	--	--	Yes	No
Plants					
Northern wormwood (*Artemisia campestris* var. *wormskioldii*)	C	LE	1-ex	No	No

[1] State and Federal Status Definitions

LE *– Listed Endangered. Taxa listed by the USFWS or National Marine Fisheries Service (NMFS) as Endangered under the Endangered Species Act (ESA), or by the Departments of Agriculture (ODA) and Fish and Wildlife (ODFW) of the state of Oregon under the Oregon Endangered Species Act of 1987 (OESA). Endangered taxa are those which are in danger of becoming extinct within the foreseeable future throughout all or a significant portion of their range.*

LT *– Listed Threatened. Taxa listed by the above agencies as Threatened; defined as those taxa likely to become endangered within the foreseeable future.*

PE *– Proposed Endangered. Taxa proposed by the above agencies to be listed as endangered.*

PT *– Proposed Threatened. Taxa proposed by the above agencies to be listed as threatened.*

C *– Candidate. Candidate taxa for which NMFS or USFWS have sufficient information to support a proposal to list under the ESA, or which is a candidate for listing by the ODA under the OESA.*

SoC *– Species of Concern. Former Category 2 candidates for which additional information is needed in order to propose as threatened or endangered under the ESA; these species are under review for consideration as Candidates for listing under the ESA.*

SC *– State Sensitive-Critical. Species for which listing is pending; or those for which listing may be appropriate if immediate conservation activities are not taken. Also considered critical are some peripheral species which are at risk throughout their range, and some disjunct populations.*

SV *– State Sensitive-Vulnerable. Species for which listing as threatened or endangered is not believed to be imminent and can be avoided through continued or expanded use of adequate protective measures and monitoring. In some cases the population is sustainable, and protective measures are being implemented; in others, the population may be declining and improved protective measures are needed to maintain sustainable populations over time.*

SU *– State Sensitive-Undetermined Status. Animals in this category are species whose status is unclear. They may be susceptible to population decline of sufficient magnitude that they could qualify for endangered, threatened, critical or vulnerable status, but scientific study would be required before a judgment can be made.*

[2] ORNHIC Definitions

List 1 *- Taxa that are threatened with extinction or presumed to be extinct throughout their entire range.*

List 2 *– Taxa threatened with extirpation or presumed extirpated from Oregon; often peripheral or disjunct species which are of concern considering species diversity within Oregon; can be very significant in protecting the genetic diversity of the taxon; ONHP regards extreme rarity as a significant threat and has included species which are very rare in Oregon on this list.*

List 3 *– Taxa for which more information is needed before status can be determined, but which may be threatened or endangered in Oregon or throughout their range.*

List 4 *– Taxa which are of conservation concern but not currently threatened or endangered; including taxa that are very rare but considered secure as well as those declining in numbers or habitat but still too common to be proposed as threatened or endangered; these taxa require continued monitoring.*

Ex *– Presumed extirpated or extinct*

All the fish species listed in Table Q-1 have the potential to utilize the Columbia River during various life stages and at various times of the year. However, no aquatic habitat will be impacted by project construction or operation, as described in the impacts section below. The Columbia River, which flows adjacent to the project area, would not be impacted by the project. Therefore, the biology of individual fish species are not addressed in this document.

There are no ditches, dry channels, or other water features located within the site boundary. Soils within the entire site boundary consist of very well-drained sandy types on level ground – likely dredge spoils from the river, which allow the scant rainfall in the area to percolate to the water table. Since no impacts to waterways are anticipated, no impacts to fish will occur.

The ORNHIC results for the Washington ground squirrel referenced a sighting from 1997 approximately 1.5 miles to the northeast near the portion of the Umatilla Wildlife Refuge within Section 31 (ORNHIC 2006). However, soils within the entire area have been repeatedly and recently disturbed, first as a result of agricultural practices, and more recently to prepare the site for industrial development. Therefore, no suitable habitat for the species exists within the site boundary. In addition, no burrows, scat, or other sign of Washington ground squirrel were found during the site visit. No impacts to the species are anticipated.

The Canada lynx, yellow-billed cuckoo, and northern wormwood are considered extirpated from the state and are, therefore, not anticipated to occur within the project vicinity. Because there are no anticipated impacts to fish, the Washington ground squirrel, the Canada lynx, yellow-billed cuckoo, or northern wormwood, these species will not be addressed further within this Exhibit.

The standard also calls for a description of the nature, extent, locations, and timing of each species occurrence in the analysis area and how the facility might adversely affect each listed, proposed, or candidate species (OAR 345-021-0010(q)(B)). The descriptions and evaluation of potential impacts on these species are included in Section Q.4. The measures proposed to avoid and/or reduce the potential impacts are presented in Section Q.5. Sections Q.6 and Q.7 document the likelihood of the project, causing a significant reduction in the survival or recovery of the listed species; Section Q.8 addresses the proposed monitoring approach.

Q.2 ANALYSIS AREA

This section describes the analysis area with regard to threatened and endangered species. The analysis area for threatened and endangered species is defined below (OAR 345-001-0010(53)(b).

For purposes of this Application, the "site" and the "site boundary" are defined as:

- 150 feet from the linear elements, such as the power supply, gas supply pipeline, and the ethanol pipeline; and
- The approximately 25-acre parcel leased from the Port of Morrow, including the staging area.

For the purposes of this application, the analysis area for evaluating impacts to the various species is the following:

Threatened and endangered fish and wildlife: For threatened and endangered animal species the standard analysis area is within the site boundary and two miles from the site boundary (OAR 345-001-0010(53)(b). The initial database search was conducted within two miles of the site boundary, however, based upon the degraded site conditions that do not provide habitat to sensitive species, ODFW suggested a ¼ mile analysis area (Cherry, pers. comm. 2006).

Threatened and endangered plants: For threatened and endangered plant species the standard analysis area is within the site boundary and two miles from the site boundary (OAR 345-001-0010(53)(b). An initial database search was conducted within two miles of the site boundary, and plant surveys were conducted within the vegetation mapping area (see Exhibit P for a description).

Q.2.1 Description of Project Vicinity

The project site is situated adjacent to the Columbia River, at the Port of Morrow, a few miles east of Boardman, Oregon (Township 4 North, Range 25 East, Section 2). The majority of the site was previously used for growing crops, utilizing center pivot irrigation, and is occupied by weedy upland plant species. The irrigation system has recently been dismantled, crops are no longer being grown, and the site is zoned industrial. The remainder of the land has been repeatedly graded and leveled, and converted to industrial uses.

There are few scattered shrubs and trees visible within the analysis area, and little riparian vegetation exists along the Columbia River within the project vicinity. The Umatilla National Wildlife Refuge (UNWR) is approximately 0.10 miles away, on the other side of the Columbia River. Large industrial complexes lie along the river both east and west of the project, with agricultural and scattered residential areas along Interstate I-84 to the south. Wildlife habitat within the analysis area is extremely limited and wildlife use of the site is expected to be limited to common, generalist species.

A small, weedy wetland/upland matrix area exists approximately .10 miles to the southwest and is part of an area called Messner Lake. The tree and shrub habitat in the Messner Lake area is dominated by large Russian olive (*Eleagnus angustifolia*) and scattered mid-mature black cottonwood (*Populus balsamifera*). No raptor nests were seen within the cottonwood trees, the closest of which stand approximately .15 miles from the project analysis area. No large trees or snags suitable for large raptor nesting were seen, although a red-tailed hawk pair was noted utilizing the trees for perching and perhaps foraging. No breeding behavior was noted.

Q.3 METHODOLOGY

OAR 345-021-0010(q)(A) *Based on appropriate literature and field study, identification of all threatened or endangered species listed under ORS 496.172(2), ORS 564.105(2) or 16 USC § 1533 that may be affected by the proposed facility;*

Response: See sections Q.3.1 through Q 3.3, below.

Q.3.1 General

Letters were written to USFWS and the ORNHIC requesting information on threatened, endangered, and sensitive species within the analysis area (i.e., the area within the site boundary and two miles beyond the site boundary). The results of these database searches provide the basis for the species included in this Exhibit (USFWS 2006, ORNHIC 2006). The results of the USFWS database search is included in Appendix Q-2, but the results of the ORNHIC database search is not included because of the sensitivity of the site-specific information.

Q.3.2 Fish and Wildlife

Existing literature and scientific data were reviewed, and ODFW biologists and other experts were contacted to determine species distribution and habitat requirements (Anthony et al. 1982; Csuti et al. 1997, Cherry, pers. comm. 2006; Isaacs, pers. comm. 2006).

Although ODFW expressed no specific concerns for listed species, ODFW requested a search for raptor nesting sites within ¼ mile of the site boundary in order to determine potential foraging use by bald eagle within and adjacent to the impacted areas. This informal protocol is documented in Appendix Q-3, "Verification of Proposed Survey Protocol from Steve Cherry, Oregon Department of Fish and Wildlife, May 4, 2006". The analysis area was walked or driven to determine potential habitats. At the time of the site visits, general notes on wildlife habitat and use within the project area and vicinity were made as well.

Q.3.3 Plants

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 analysis area. A letter was sent to the USFWS requesting a list of federally Threatened, Endangered, or

Proposed taxa that have potential to occur within the analysis area. In addition, the ORNHIC was contacted to obtain element occurrence records for any known rare plant populations within two miles of the lease boundary. To supplement the information provided by the above agencies (ORNHIC 2006, USFWS 2006), a number of other sources were consulted. These sources provided additional information on the potential rare plant species for the project, including critical information such as habitat preferences, morphological characteristics, phenologic development timelines, and species ranges. The site was walked or driven to determine whether habitat or individual listed plant species were present.

Q.4 EXISTING CONDITIONS AND POTENTIAL IMPACTS TO STATE AND FEDERAL LISTED, CANDIDATE AND PROPOSED SPECIES

OAR 345-021-0010(1)(q)(B) *For each species identified under (A), a description of the nature, extent, locations and timing of its occurrence in the analysis area and how the facility might adversely affect it;*

Response: Table Q-1 outlines the fish, wildlife, and plant species that are either known to occur or considered to have the potential to occur within the analysis area, based on habitat suitability and information received from the USFWS and ORNHIC. Table Q-1 also addresses the potential occurrence of each species within the analysis area and the potential for impacts to these species from the construction and operation of the proposed project based upon the evaluation of fish and wildlife habitats in the analysis area.

The following section describes the "…*nature, extent, location and timing*…" (OAR 345-021-0010(q)(B) of each of the listed species that has the potential to occur within the analysis area or that may be affected by the proposed project. This section also addresses how the construction and operation of the project might affect these species (OAR 345-021-0010(q)(B). Mitigation for potential impacts is addressed in Section Q.6.

Q.4.1 Fish and Wildlife

Q.4.1.1 Listed Fish Species - Natural History and Occurrence in Analysis Area

All the fish species listed in Table Q-1 have the potential to utilize the Columbia River during various life stages and at various times of the year. However, since no aquatic habitat will be impacted by project construction or operation, the biology of individual fish species are not addressed in this document.

Q.4.1.2 Potential Impacts to Listed Fish Species

New over-water structures will be limited to three small-diameter pipes extending above the OHW on the shore, along the west side of the existing barge facility (Figure Q-1, Appendix Q-1). These include a 10-inch diameter ethanol pipeline, an 8-inch diameter vapor line, and a 3-inch diameter natural gas pipeline. The pipelines would be attached to the existing barge dock structure, which extends approximately 125 feet from shore. The pipelines will terminate at a 12-foot by 12-foot new dock platform and safety structure built about five feet above the ordinary high water mark (OHWM). The dock platform

would consist of a metal grate structure located on the west side of the existing barge dock.

Shoreline developments in the Columbia River may have the potential to impede out-migration of salmonid smolts, or to increase predation on smolts through the creation of predator habitat or by concentrating juvenile salmonids in areas where predators are more effective. Deep shade under overwater structures near the shoreline creates cover for predators and may increase predation on salmonid smolts. Smallmouth bass (*Micropterus dolomieui*) in particular are known to seek out structural cover in shallow water during spring, and northern pikeminnow (*Ptychocheilus oregonensis*) are likely to seek shelter from current velocities over about 2.5 feet per second. Both species are potential salmonid smolt predators.

In addition, accidental release of fluids transferred during the docking process could cause contamination of the waters below the dock, thus potentially affecting listed fish species using the area.

Q.4.1.3 Bald Eagle - Natural History and Occurrence in Analysis Area

The bald eagle (*Haliaeetus leucocephalus*) is a federal and state listed threatened species. Critical habitat has not been designated for the bald eagle. The three main factors affecting distribution of nests and territories are proximity to water and availability of food; suitable trees for nesting, perching, and roosting; and the number of breeding-aged eagles (Stalmaster et al. 1985). The critical nesting period for the bald eagle is from January 1 to August 15 (USFWS 1986; Stalmaster et al. 1985). Bald eagles are not known to nest within the analysis area (Cherry, pers. comm. 2006).

Wintering bald eagles concentrate in areas where food is abundant and disturbance is minimal. The birds use perches during the day, which are selected primarily according to their proximity to a food source. Wintering bald eagles may roost communally at night near major foraging areas. Roosts typically are established in isolated areas, in old growth stands that have trees taller than the surrounding trees (USFWS 1986). The key wintering period is from November 15 to March 15 (USFWS 1986; Stalmaster et al. 1985). ODFW and other researchers conduct winter raptor surveys within the project vicinity and they have found that bald eagles in the region are feeding on wintering waterfowl and are, therefore, primarily found along the Columbia River corridor. These winter surveys have not noted any bald eagle use of the upland areas within the site boundary, although bald eagles are known to utilize areas within Messner Lake less than one mile southeast of the site boundary, as well as portions of the UNWR for wintering and forage (Cherry, pers. comm. 2006). The UNWR lies approximately .10 miles from the site, across the Columbia River.

The ORNHIC database did not identify any bald eagle nests or roosting areas within the analysis area (ORNHIC 2006). Frank Isaacs indicated the closest bald eagle nest is located on the Columbia River at the mouth of the Umatilla River (Isaacs, pers. comm. 2006). This nest is approximately 16 miles from the site boundary.

Q.4.1.4 Potential Impacts to Bald Eagle

No impacts to bald eagle are anticipated, and ODFW expressed no concern for listed species within the site (Cherry, pers. comm. 2006). No observations of bald eagles were documented during the site visits. As previously mentioned, no bald eagle nesting habitat exists within the analysis area, and the species moves up and down the river during winter. ODFW concerns for listed species include only those whose nesting activity may be affected by noise or visual disturbance from the project (Cherry, pers. comm. 2006). Since no impacts to nesting bald eagles would occur from the project construction, ODFW has no concerns with the project.

The nesting ranges and locations of the bald eagle are constantly expanding (Isaacs, pers. comm. 2006); therefore, the database will be reviewed again should project construction be postponed.

Q.4.2 Plants

No direct project-related impacts would be predicted for any ODA Endangered, Threatened, or Candidate plant species. However, the list of species provided by ODA is addressed below.

Q.4.2.1 Natural History and Potential Occurrence in Analysis Area

Henderson's needlegrass *(Achnatherum hendersonii*). This species is a federal species of concern and is considered a candidate for listing under the Oregon ESA. It occurs in dry, rocky, shallow soil, in sagebrush or ponderosa pine habitats. There are no records of this species within the project vicinity and no habitat within the analysis area.

Dwarf suncup *(Camissonia pygmaea).* This species is a federal species of concern and is considered a candidate for listing under the Oregon ESA. It occurs in unstable soil or gravel, steep talus, dry washes, banks, and roadcuts in sagebrush-steppe. There are no records of this species within the project vicinity and no habitat within the analysis area.

Vernal pool mousetail *(Myosurus sessilis).* This species is a federal species of concern and is considered a candidate for listing under the Oregon ESA. It occurs in vernal pools, alkali flats, and grasslands. There are no records of this species within the project vicinity and no habitat within the analysis area.

Whitehead navarretia *(Navarretia leucocephala).* This species is listed as endangered under the federal ESA and currently has no status under the Oregon ESA. It occurs in vernal pools and margins of ponds. There are no records of this species within the project vicinity and no habitat within the analysis area.

Laurence's milkvetch (*Astragalus collinus* var. *laurentii*). This species is a federal species of concern and is listed as threatened under the Oregon ESA. There are no records of this species within the project vicinity and no habitat within the analysis area.

Disappearing monkeyflower (*Mimulus evanescens*). This species is a federal species of concern and is considered a candidate for listing under the Oregon ESA. This species occurs in seasonally moist areas in and near sagebrush plant communities. There are no records of this species within the project vicinity and no habitat within the analysis area.

Liverwort monkeyflower (*Mimulus jungermannioides*). This species is a federal species of concern and is listed as threatened under the Oregon ESA. This species occurs in shaded seeps along cliffs. There are no records of this species within the project vicinity and no habitat within the analysis area.

Q.4.2.2 Potential Impacts to Plants

Since no sensitive plant species were found within the area of mapped vegetation (Figure P-1), no direct project-related impacts would be anticipated to any state or federal Endangered, Threatened, Proposed, or Candidate plant species.

Q.5 DESCRIPTION OF MEASURES PROPOSED TO AVOID OR REDUCE ADVERSE IMPACTS TO SPECIES

OAR 345-021-0010(1)(q)(C) *For each species identified under (A), a description of measures proposed by the applicant, if any, to avoid or reduce adverse impact;*

Response: The following section complies with OAR 345-021-0010 by discussing the possible means by which adverse impacts to state and federal listed species from the proposed project can be avoided or minimized.

Q.5.1 Fish and Wildlife

Q.5.1.1 Listed Fish Species

No new structures were designed to be placed in the water. The scale and height above OHWM of the proposed new platform was limited to keep new overwater shading to a negligible level. The metal grating of the new dock structure would allow light to pass through and further minimize shading at the water level. Therefore, the project will neither impede salmonid migration nor increase salmonid predation.

Construction techniques have been planned to avoid impacts to aquatic resources. Construction of the dock structure and attachment of the pipelines would consist of welding and physical attachment processes only. No pouring of concrete or other fluids would be necessary, and no materials would enter the waterway.

Accidental release of fluids transferred during the docking process could cause contamination of the waters below the dock, thus potentially affecting listed fish species using the area. Containment of fluids transferred during the docking process would be achieved as follows. Coast Guard-required loading protocols would be observed during the process. In addition, overfill alarms on the barges are designed to avoid backflow of ethanol caused by overfilling of the barges. A motor-operated-valve located on the shoreline is designed to assure one-way flow of fluids onto the barges. Moreover, a

loader operator is assigned to watch the entire loading process to minimize the chances of leaks should the mechanical safeguards fail. These precautions make it extremely unlikely that an accidental release would occur.

Q.5.1.2 Bald Eagle

There are no anticipated impacts to the bald eagle from the construction and operation of the project; therefore, no additional mitigation is required.

Q.5.2 Plants

Because no direct project-related impacts to any federal or state Endangered, Threatened, Sensitive, Proposed, or Candidate plant species are anticipated, no species-specific mitigation measures are proposed. However, temporarily disturbed areas will be re-seeded with native seed mix to help prevent the establishment of noxious weeds.

Q.6 FINDINGS THAT THE PROPOSED FACILITY WILL NOT LIKELY CAUSE A SIGNIFICANT REDUCTION IN THE LIKELIHOOD OF SURVIVAL OR RECOVERY OF THE PLANT SPECIES IDENTIFIED

OAR 345-021-0010(1)(q)(D) *For each plant species identified under (A), a description of how the proposed facility, including any mitigation measures, complies with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3);*

Q.6.1 Identified Plant Species with an ODA protection and conservation program

Response: Protection and Conservation Programs are prepared by ODA for plant species that are listed as threatened or endangered under the Oregon ESA. Of the species with the potential to occur within the analysis area, only the Laurence's milkvetch and the liverwort monkeyflower are listed as threatened under the Oregon ESA; however, these species do not currently have a formal Protection and Conservation Plan (Currin, pers. comm. 2006).

Q.6.2 Identified Plant Species without an ODA protection and conservation program

OAR 345-021-0010(1)(q)(E) *For each plant species identified under (A), if the Oregon Department of Agriculture has not adopted a protection and conservation program under ORS 564.105(3), a description of significant potential impacts of the proposed facility on the continued existence of the species and on the critical habitat of such species and evidence that the proposed facility, including any mitigation measures, is not likely to cause a significant reduction in the likelihood of survival or recovery of the species;*

Response: As there were no anticipated occurrences of state or federal Endangered, Threatened, Sensitive, Proposed, or Candidate species within the analysis area, the construction and operation of the proposed project are not likely to cause a significant reduction in the likelihood of survival or recovery of these species.

Q.7 FINDINGS THAT THE PROPOSED FACILITY WILL NOT LIKELY CAUSE A SIGNIFICANT REDUCTION IN THE LIKELIHOOD OF SURVIVAL OR RECOVERY OF THE FISH AND WILDLIFE SPECIES IDENTIFIED

OAR 345-021-0010(1)(q)(F) *For each animal species identified under (A), a description of significant potential impacts of the proposed facility on the continued existence of such species and on the critical habitat of such species and evidence that the proposed facility, including any mitigation measures, is not likely to cause a significant reduction in the likelihood of survival or recovery of the species;*

Response: In compliance with these requirements, Section Q.5 of this Exhibit described no potential impacts of the proposed facility on the continued existence of state and federal species and on the suitable habitat for these species. Since no potential impacts exist, no mitigation would be necessary.

Q.8 MONITORING PROGRAM

OAR 345-021-0010(1)(q)(G) *The applicant's proposed monitoring program, if any, for impacts to threatened and endangered species;*

Response: Since no potential impacts exist, no mitigation or monitoring is required for the project.

Q.9 CONCLUSION

The pre-field review identified a total of 12 federal and state listed and candidate plant and wildlife species that have the potential to exist within the analysis area.

Field surveys were conducted for threatened and endangered plants and wildlife. Based upon the pre-field review and the fish and wildlife habitat analysis, there are no anticipated impacts to threatened and endangered species from the construction, operation, and retirement of the Columbia Ethanol project.

Based upon the above information, the applicant will satisfy the requirements in OAR 345-021-0010(1)(q), and the Council will be able to find compliance with OAR 345-022-0070.

Q.10 REFERENCES

Q.10.1 Documents and Websites

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Q.10.2 Personal Communications

Frank Isaacs, Senior Faculty Research Assistant, Oregon Cooperative Fish & Wildlife Research Unit, Oregon State University, July 7, 2006

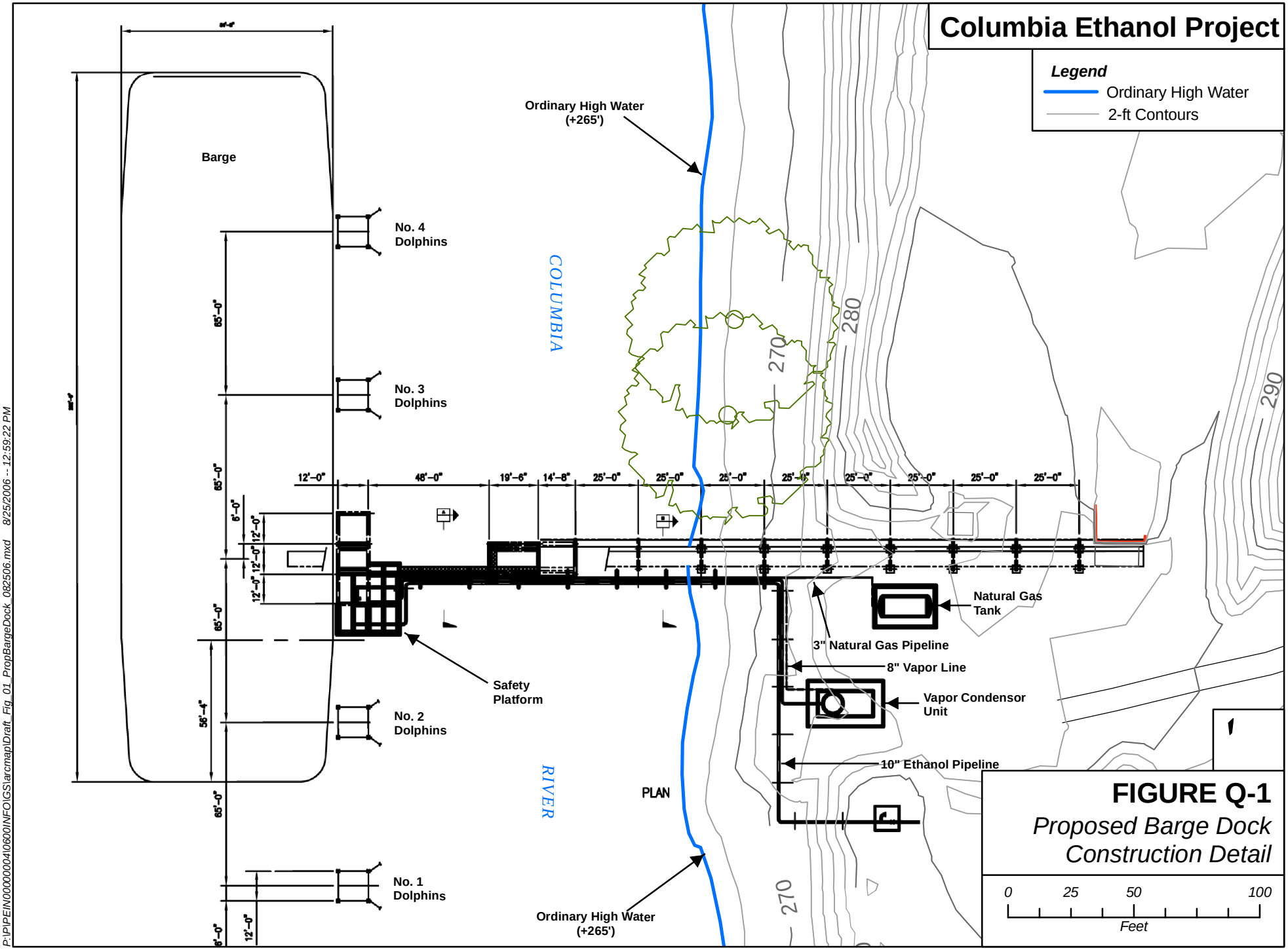
Rebecca Currin, Oregon Department of Agriculture (ODA), July 7, 2006

Steve Cherry, Assistant District Wildlife Biologist in Heppner, Oregon Department of Fish & Wildlife (ODFW), April 17, and July 6, 11, and 12, 2006

APPENDIX Q-1
Figure Q-1
Barge dock Construction detail

APPENDIX Q-2
Results of USFWS Database Search

APPENDIX Q-3
Verification of Proposed Survey Protocol from Steve Cherry, Oregon Department of Fish and Wildlife, May 4, 2006


Columbia Ethanol Project
Legend
Ordinary High Water
2-ft Contours
Ordinary High Water (+265')
Barge
No. 4 Dolphins
No. 3 Dolphins
No. 2 Dolphins
No. 1 Dolphins
COLUMBIA
RIVER
280
270
290
Safety Platform
Natural Gas Tank
3" Natural Gas Pipeline
8" Vapor Line
Vapor Condensor Unit
10" Ethanol Pipeline
PLAN
Ordinary High Water (+265')
FIGURE Q-1
Proposed Barge Dock Construction Detail
0 25 50 100
Feet
P:\P\PEIN\00000004\06600\INFO\GS\arcmap\Draft_Fig_01_PropBargeDock_082506.mxd 8/25/2006 - 12:59:22 PM

Enclosure A

FEDERALLY LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES, CANDIDATE SPECIES AND SPECIES OF CONCERN THAT MAY OCCUR IN MORROW COUNTY

LISTED SPECIES[1/]

Mammals		
Canada lynx[2/]	*Lynx canadensis*	T
Birds		
Bald eagle[3/]	*Haliaeetus leucocephalus*	T
Fish		
Steelhead (Middle Columbia River)[4/]	*Oncorhynchus mykiss*	**PT
Steelhead (Snake River Basin)[5/]	*Oncorhynchus mykiss*	**T
Steelhead (Upper Columbia River)[5/]	*Oncorhynchus mykiss*	** E
Snake River Sockeye salmon	*Oncorhynchus nerka*	CH **E
Salmon River tributary to the Snake River, Idaho.		
Chinook salmon (Upper Columbia River)[6/]	*Oncorhynchus tshawytscha*	** E
Snake River Chinook salmon	*Oncorhynchus tshawytscha*	CH **T
Fall runs in the Snake River		
Snake River Chinook salmon	*Oncorhynchus tshawytscha*	CH **T
Spring/summer runs in the Snake River		

PROPOSED SPECIES

None

CANDIDATE SPECIES[7/]

Birds	
Yellow-billed cuckoo[9/]	*Coccyzus americanus*
Mammals	
Washington ground squirrel	*Spermophilus washingtoni*
Plants	
Northern wormwood	*Artemisia campestris* var. *womskioldii*

SPECIES OF CONCERN

Mammals	
Pale western big-eared bat	*Corynorhinus townsendii pallescens*
Silver-haired bat	*Lasionycteris noctivagans*
Small-footed myotis (bat)	*Myotis ciliolabrum*
Long-eared myotis (bat)	*Myotis evotis*
Fringed myotis (bat)	*Myotis thysanodes*
Long-legged myotis (bat)	*Myotis volans*
Yuma myotis (bat)	*Myotis yumanensis*
Birds	
Northern goshawk	*Accipiter gentilis*
Western burrowing owl	*Athene cunicularia hypugea*

Ferruginous hawk	*Buteo regalis*
Olive-sided flycatcher	*Contopus cooperi borealis*
Willow flycatcher	*Empidonax trailli adastus*
Yellow-breasted chat	*Icteria virens*
Lewis' woodpecker	*Melanerpes lewis*
Mountain quail	*Oreortyx pictus*
White-headed woodpecker	*Picoides albolarvatus*
<u>Amphibians and Reptiles</u>	
Northern sagebrush lizard	*Sceloporus graciosus graciosus*
<u>Fish</u>	
Margined sculpin	*Cottus marginatus*
Pacific lamprey	*Lampetra tridentata*
Interior redband trout	*Oncorhynchus mykiss gibbsi*
<u>Plants</u>	
Robinson's onion	*Allium robinsonii*
Laurence's milk-vetch	*Astragalus collinus* var. *laurentii*

(E) - Listed Endangered *(T) - Listed Threatened* *(CH) - Critical Habitat has been designated for this species*
(PE) - Proposed Endangered *(PT) - Proposed Threatened* *(PCH) - Critical Habitat has been proposed for this species*
(S) - Suspected *(D) - Documented*

Species of Concern - Taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

** *Consultation with National Marine Fisheries Service may be required.*

1/ *U. S. Department of Interior, Fish and Wildlife Service, October 31, 2000, <u>Endangered and Threatened</u> <u>Wildlife and Plants</u>, 50 CFR 17.11 and 17.12*

2/ *Federal Register Vol. 65, No. 58, Mar 24, 2000, Final Rule-Canada lynx*

3/ *Federal Register Vol. 60, No. 133, July 12, 1995 - Final Rule - Bald Eagle*

4/ *Federal Register Vol. 64, No. 57, March 25, 1999, Final Rule - Middle Columbia and Upper Willamette River Steelhead*

5/ *Federal Register Vol. 62, No. 159, August 18, 1997, Final Rule-Upper Columbia and Snake River Steelhead*

6/ *Federal Register Vol. 64, No. 56, March 24, 1999, Final Rule - West Coast Chinook Salmon*

7/ *Federal Register Vol. 69, No. 86, May 4, 2004, Notice of Review - Candidate or Proposed Animals and Plants*

8/ *Federal Register Vol. 69, No.68, April 8, 2004, 12-Month Finding for a Petition to List the West Coast Distinct Population Segment of the Fisher*

9/ *Federal Register Vol. 66, No. 143, July 25, 2001, 12-Month Finding for a Petition To List the Yellow-billed Cuckoo*

OREGON NATURAL HERITAGE INFORMATION CENTER

OSU
Oregon State University
Institute for Natural Resources
1322 SE Morrison Street
Portland, Oregon 97214-2423
503.731.3070
http://oregonstate.edu/ornhic

February 24, 2006

Kim Powers
David Evans and Associates, Inc.
2100 SW River Parkway
Portland, OR 97201

Dear Dr. Powers:

Thank you for requesting information from the Oregon Natural Heritage Information Center (ORNHIC). We have conducted a data system search for rare, threatened and endangered plant and animal records for your Pacific Ethanol Energy Project in Township 4 North, Range 25 East, Sections 2 and 11, W.M.

Five (5) records were noted within a two-mile radius of your project and are included on the enclosed computer printout. A key to the fields is also included.

Please remember that the lack of rare element information from a given area does not mean that there are no significant elements there, only that there is no information known to us from the site. To assure that there are no important elements present, you should inventory the site, at the appropriate season.

This data is confidential and for the specific purposes of your project and is **not to be distributed**.

If you need additional information or have any questions, please do not hesitate to contact me.

Sincerely,

Cliff Alton
Conservation Information Assistant

encl.: invoice (H-022406-CWA1)
computer printout and data key

DAVID EVANS
AND ASSOCIATES INC.

DATE: May 4, 2006

TO: Steve Cherry, ODFW Assistant District Wildlife Biologist in Heppner

FROM: Phil Rickus

SUBJECT: Record of personal communications with ODFW regarding survey methodology and ODFW comments to NOI

PROJECT: Pacific Ethanol Power Project

PROJECT NO: PEIN0000-0004

COPIES: Tom Koehler / Paul Koehler, Pacific Ethanol, Inc., Russ Morgan, ODFW; Adam Bless, Oregon Department of Energy; Dana Siegfried, DEA

This memorandum summarizes the personal communications between ODFW Assistant District Wildlife Biologist Steve Cherry and DEA Ecologist Phil Rickus on April 17, 2006. The personal communication pertains to ODFW comments to the Pacific Ethanol Power Project NOI and proposed survey methodology as agreed upon by the two parties at the time of the conversation.

As discussed on April 17, the study area for the project is highly degraded and impacted historically. The entire proposed site boundary, excluding portions of the proposed Ethanol pipeline, and gas pipeline was occupied by a pivot irrigation circle, as visible on the aerial photograph (see attached Figure). The remainder of the land has been graded and converted to industrial uses. There are no trees or shrubs visible within the project area, and little, if any, riparian vegetation exists along the Columbia River in the project vicinity due to homeland security requirements and historic impacts. Wildlife habitat within the project area is extremely limited and wildlife use of the site is expected to be limited to common, generalist species. ODFW expressed no concern for listed or sensitive species within the site.

The ORNHIC results returned records of three wildlife species within 2 miles of the project section: grasshopper sparrow, Washington ground squirrel, and painted turtle. Of the species found on the USFWS Morrow County list, only western burrowing owl, bald eagle, and Ferruginous hawk are potentially present within the project vicinity.

Of the species listed in the ORNHIC results, grasshopper sparrow could potentially be found within the project area if any remnant grassland habitat is present. This will be determined at the time of the vegetation mapping site visit. Washington ground squirrel is found near the Umatilla National Wildlife Refuge more than 1.5 miles northeast of the project site, and is unlikely to utilize the highly impacted and compacted soils within or near the project. Painted turtle is known to occur within Messner pond southwest of the project, but no water or habitat for the species exists in or near the project. ODFW expressed no concern for habitat for these species within or near the project area.

Bald eagles are known to utilize areas within Messner Lake southeast of the site boundary, as well as portions of the Umatilla National Wildlife Refuge for wintering and forage. However, as Steve Cherry mentioned, no

roosting habitat exists within the project area, and the species moves up and down the river during winter. ODFW concerns for listed species include only those whose **nesting** activity outside the footprint of the project area may be affected by noise or visual disturbance. Since no impacts to nesting bald eagles would occur from project construction ODFW has no concerns from the project. However, observations of bald eagles and any other listed species will be documented during the site visits.

Although ODFW expressed no specific concerns for listed or sensitive species, ODFW requested a search for raptor nesting sites within ¼ mile of the site boundary in order to determine general species use within and adjacent to the impacted areas. At the time of the site visits, general notes on wildlife habitat and use within the project area and vicinity will be made as well. Surveys will also be necessary to determine the acreage of impacted habitat classified into the various Fish and Wildlife Habitat Mitigation Policy categories.

Sincerely,

Philip Rickus



DEA Ecologist

Attachments/Enclosures: Site Plan

Initials: prr

File Name: p:\p\pein00000004\0600info\0670reports\0670 exq\0670 exq - agency communications\060425 odfw memo.doc

Project Number: PEIN0000-0004

From: "Steve Cherry" <Steve.P.Cherry@state.or.us>
To: "Philip Rickus" <Prr@deainc.com>
Date: Thu, May 4, 2006 3:08 PM
Subject: RE: Pacific Ethanol

Phil I think this looks fine to me. Let me know if you need anything else.

Steve Cherry
Assistant District Wildlife Biologist
Heppner District Office
(541) 676-5230 phone
(541) 676-9075 fax
steve.p.cherry@state.or.us

-----Original Message-----
From: Philip Rickus [mailto:Prr@deainc.com]
Sent: Thursday, May 04, 2006 2:28 PM
To: CHERRY Steve P
Cc: Ethan Rosenthal
Subject: Pacific Ethanol

Hello Steve- I've attached a memo summarizing our conversation concerning wildlife and habitat surveys for the Pacific Ethanol Power Project. Please review the memo and let me know if your comments have been represented correctly.

I've also included the draft base map, although elements are changing slightly in the process- the project will remain within the general footprint shown on the map, but a new barge dock will not be needed- the ethanol pipeline would run to the existing dock north of the site boundary.

Thanks >phil

ps- Our landscape architect working on the job, Sean Sullivan, will be contacting you to obtain any management plans you may have for an area within 30 or so miles of the project in order to conduct his portion of the analysis.

Phil Rickus
Ecologist
David Evans & Assoc., Inc.
2100 SW River Parkway
Portland, OR 97201
503.499.0573
prr@deainc.com

P:\P\PEIN00000004\0300COM\0330Agency\ODFW response PacificEthanol.doc

EXHIBIT R

SCENIC AND AESTHETIC VALUES
OAR 345-021-0010(l)(r)

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APPENDICES

R-1 VISIBLE SCENIC AND AESTHETIC VALUES - MAP

R-2 PHOTOGRAPHS – SCENIC AND AESTHETIC VALUES

R.1 INTRODUCTION

Exhibit R addresses impacts the proposed facility would have on Scenic and Aesthetic Values in the analysis area. The exhibit responds to the requirements of OAR 345-021-0010(1)(r), as follows:

OAR 345-021-0010(1)(r) *An analysis of significant potential impacts of the proposed facility, if any, on scenic and aesthetic values identified as significant or important in applicable federal land management plans or in local land use plans for the analysis area, providing evidence to support a finding by the Council as required by OAR 345-022-0080, including:*

Response: Pursuant to OAR 345-022-0080(1), "the Council must find the design, construction, operation, and retirement of the facility, taking into account mitigation, are not likely to result in significant adverse impact to scenic and aesthetic values identified as significant or important in applicable federal land management plans or in local land use plans in the analysis area described in the project order."

This Exhibit is organized in accordance with the application requirements contained in OAR 345-021-0010(1)(r) and provides evidence to support a finding by the Council as required by OAR 345-022-0080. All figures cited herein are included in Appendix R-1. All photographs cited herein are included in Appendix R-2.

R.2 APPLICABLE FEDERAL LAND MANAGEMENT PLANS AND LOCAL LAND USE PLANS

OAR 345-021-0010(1)(r)(A) *Identification of the applicable federal land management plans and local land use plans:*

Response: The analysis area for Exhibit R includes the area within the site boundary and extends 30 miles beyond the site boundary. The following federal land management plans and local land use plans have been determined to be applicable because their jurisdictions intersect the analysis area:

- John Day Proposed Management Plan, Two Rivers and John Day Resource Management Plan Amendments and Final Environmental Impact Statement, June 2000 (Record of Decision issued February 2001)

- Proposed Two Rivers Resource Management Plan Final Environmental Impact Statement, September 1985 (Record of Decision issued June 1986)

- Baker Resource Management Plan Record of Decision, July 1989

- Proposed Spokane Resource Management Plan Amendment Final Environmental Impact Statement, 1992

- Management and Use Plan Update Final Environmental Impact Statement Oregon National Historic Trail and Mormon Pioneer National Historic Trail, August 1999 (Record of Decision issued November 1999)
- Lewis and Clark National Historic Trail Comprehensive Plan for Management and Use, January 1982
- Morrow County (Oregon) Comprehensive Plan, January 30, 1986
- Umatilla County (Oregon) Comprehensive Plan, May 9, 1983, Amended December 2, 1987
- Gilliam County (Oregon) Comprehensive Land Use Plan, October 25, 2000
- Benton County (Washington) Comprehensive Plan, 1997
- Klickitat County (Washington) Comprehensive Plan, August, 1977
- Yakima County (Washington) Policy Plan, May 20, 1997, amended December 28, 1998

R.3 IDENTIFICATION AND DESCRIPTION OF SCENIC AND AESTHETIC VALUES IDENTIFIED AS SIGNIFICANT OR IMPORTANT

OAR 345-021-0010(1)(r)(B) *Identification and description of the scenic and aesthetic values identified as significant or important in the applicable plans;*

Response: Applicable federal management plans and local land use plans were reviewed to identify significant or important scenic and aesthetic values occurring within the analysis area.

R.3.1 Two Rivers Resource Management Plan

The Two Rivers Resource Management Plan (RMP) identifies the Fourmile Canyon Site (Photo R-1) of the National Historic Oregon Trail as a Special Management Areas and prescribes that "the unusual qualities of these sites will be maintained and protected" (USDI 1986a).

R.3.2 Baker Resource Management Plan

The Baker RMP identifies seven parcels of Bureau of Land Management (BLM) land that comprise the Oregon Trail Area of Critical Environmental Concern (ACEC). One of these parcels, Echo Meadows, occurs within the analysis area and is managed as a BLM Visual Resource Management (VRM) Class III or IV resource (Gribskov 2006). The Class III Objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic

landscape. The Class IV Objective is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements (USDI 1986b).

R.3.3 Management and Use Plan Update Final Environmental Impact Statement Oregon National Historic Trail and Mormon Pioneer National Historic Trail, August 1999 (Record of Decision issued November 1999)

In 1978, Congress authorized the Oregon National Historic Trail to commemorate this significant travel route and to promote its preservation, interpretation, public use, and appreciation (USDI 1999). The management plan is a coordinating document that provides broad-based policies, guidelines, and standards for administering the trail to guide its protection, interpretation, and continued use. Within the analysis area, the plan identifies four High-Potential Sites and one High-Potential Segment based on "historic significance, the presence of visible historic remnants, scenic quality, and relative freedom from intrusion" (USDI 1999). These resources include Echo Complex, Echo Meadows (same as the BLM ACEC above), Well Spring, Fourmile Canyon, and the Boardman Segment (Photos R-2 through R-7). The plan does not identify specific scenic or aesthetic values in the analysis area beyond these sites and segment.

R.3.4 Other Plans

The remaining federal land management plans and local land use plans did not identify important scenic or aesthetic values in the analysis area (Benton County, WA 1997, Gilliam County, OR 2000, Klickitat County, WA 1977, Morrow County, OR 1986, Umatilla County, OR 1987, USDI 1982, USDI 1992, Yakima County, WA 1998,). These findings were confirmed with agency staff to the extent possible (Priebe 2006, McKane 2006, Cook 2006, Hoge 2006).

Umatilla National Wildlife Refuge (NWR) is within the analysis area. The refuge does not have a Comprehensive Conservation Plan in place; a draft is expected to be complete in October 2006. The refuge has no scenic or aesthetic quality goals or objectives in place and none are identified in the draft. The refuge does not manage for scenic or aesthetic quality (Linehan 2006).

Significant or important scenic and aesthetic values identified in the applicable plans are illustrated in Figure R-1 and listed in Table R-1.

Table R- 1. Scenic and Aesthetic Values within Analysis Area and Their Approximate Minimum Distance from the Proposed Facility

Scenic or Aesthetic Value	Direction and Distance from Columbia Ethanol Project (miles)
Oregon National Historic Trail High Potential Sites and Segment:	
Echo Complex	SE, 23.8
Echo Meadows	SE, 19.4
Well Spring	S, 15.5
Boardman Segment	S, 14.1
Fourmile Canyon	SW, 24.8

R.4 SIGNIFICANT POTENTIAL ADVERSE IMPACTS TO SCENIC AND AESTHETIC VALUES

OAR 345-021-0010(1)(r)(C) *A description of significant potential significant adverse impacts to the scenic and aesthetic values identified in (B), including, but not limited to, potential impacts such as*:

(i) Loss of vegetation or alteration of the landscape as a result of construction or operation;

Response: There would be no significant loss of vegetation as a result of construction or operation of the proposed facility. Further, the proposed facility would not be visible from the scenic and aesthetic values as described below in *(ii)*.

(ii) Visual impacts of facility structures, including cooling tower or other plumes, if any; and

Response: Determining potential visual impacts of the proposed facility, including its 150-foot-tall distillation tower, included use of an integrated approach including computer modeling and visibility analyses, field investigation, and interviews with local, state, and federal agency staff. This response first describes the computer modeling methods used and presents their results. The results are then applied to the important or significant scenic or aesthetic resources in the analysis area to determine the significance of any potential impact.

Computer Modeling Method and Results

Visibility analyses were conducted for the analysis area using Geographic Information Systems (GIS) technology and US Geological Survey (USGS) Digital Elevation Models (DEMs). Visibility analyses and modeling techniques were used to determine areas from which the proposed facility (i.e., the top of the cooling tower) would potentially be visible. The DEMs used in the analyses have

10-meter resolutions, meaning the ground is represented by a grid of squares that are 10m x 10m, and each square is assigned a single elevation. As such, the resolution of the DEMs is a limiting factor in the precision of these analyses. The models used in the analyses also do not include vegetation or structures, and do not account for variable climatic conditions. Therefore, it should be noted that these analyses generally overestimate areas of visibility.

The results of these analyses are presented in Figure R-2 and indicate the proposed facility would not be visible from the National Historic Oregon Trail sites and segment in the analysis area. These results were verified on June 29 and 30, 2006, by visiting each site and assuming that the proposed facility would not be visible if the existing Coyote Springs generating facility (which is adjacent to the proposed facility site and includes two cooling towers of similar size as the proposed facility) was not visible.

The Coyote Springs facility steam plume was also not visible from the trail sites during the field verification. Given the viewing distances ranging between approximately 15 and 20 miles, it is not likely that the steam plume would be visible from the trail sites. If it were visible, impacts, if any, would be negligible due to attenuating factors such as distance, haze, humidity, background landscape, light conditions, or weather.

(iii) Visual impacts from air emissions resulting from facility construction or operation, including, but not limited to, impacts on Class 1 visual resources as described in OAR 340-031-0120 [renumbered to 340-204-0050].

Response: Air emissions from the facility have been permitted by DEQ, and are not expected to have adverse visual impacts on significant or important scenic and aesthetic values.

Dust may be generated during construction and will be controlled through the construction period by watering. Any potential impacts are anticipated to be temporary and negligible.

There are no Class 1 visual resources in the analysis area.

R.5 OPPORTUNITY FOR MITIGATION

OAR 345-021-0010(1)(r)(D) *The measures the applicant proposes to avoid, reduce or otherwise mitigate any significant adverse impacts*;

Response: Because the proposed project would not result in significant adverse impacts, no mitigation is proposed.

R.6 MAP

OAR 345-021-0010(1)(r)(E) *A map or maps showing the location of the visible scenic and aesthetic values analyzed under (B)*; and

Response: The analysis area for impacts on Scenic and Aesthetic Values includes the area within the site boundary and extends 30 miles beyond the site boundary. Locations of the visible scenic and aesthetic values analyzed are included in Figure R-1.

R.7 MONITORING

OAR 345-021-0010(1)(r)(F) *The applicant's proposed monitoring program, if any, for impacts to scenic and aesthetic values.*

Response: The proposed facility would not result in significant adverse impacts to scenic and aesthetic values, and therefore, the applicant does not propose an active monitoring program specific to the monitoring for impacts to scenic and aesthetic values.

R.8 CONCLUSION

The project will comply with all applicable regulatory guidelines concerning scenic and aesthetic resources as discussed in the responses above to the criteria contained in OAR 345-021-0010(l)(r)(A), (B), (C), (D), (E) and (F). Based on the above information, the applicant has satisfied the requirements in OAR 345-021-0010(1)(r), and the Council may find that the standards contained in OAR 345-022-0080 are satisfied.

R.9 REFERENCES

R.9.1 Telephone Contacts/Personal Interviews

Cook, J.R.. Assistant Planning Director. Umatilla County, Oregon. Telephone conversation with Sean Sullivan. June 27, 2006.

Gribskov, Polly. Recreation Planner. Vale District, Bureau of Land Management. Email correspondence with Sean Sullivan. July 6, 2006.

Hoge, Phil. Senior Project Planner. Yakima County, Washington. Telephone conversation with Sean Sullivan. June 27, 2006.

Linehan, Dave. Project Leader. Mid-Columbia River National Wildlife Refuge Complex. U.S. Fish and Wildlife Service. Telephone conversation with Sean Sullivan. June 22, 2006.

Priebe, Diane. Recreation Planner. Wenatchee District, Bureau of Land Management. Email correspondence with Sean Sullivan. July 7, 2006.

McKane, Carla. Planning Director. Morrow County, Oregon. Telephone conversation with Sean Sullivan. June 27, 2006.

R.9.2 Website/Document References

Benton County, Washington. Benton County Comprehensive Plan. 1997.

Gilliam County, Oregon. Gilliam County Comprehensive Land Use Plan and Zoning Ordinances as Amended October 25, 2000.

Klickitat County, Washington. Klickitat County Comprehensive Plan. August, 1977.

Morrow County, Oregon. Morrow County Comprehensive Plan. January 30, 1986.

Umatilla County, Oregon. Umatilla County Comprehensive Plan. May 9, 1983, Amended December 2, 1987.

USDI Bureau of Land Management. Two Rivers Resource Management Plan Record of Decision. June 1986a.

USDI Bureau of Land Management. BLM Manual Handbook 8410-1 Visual Resource Inventory. January 17, 1986b.

USDI Bureau of Land Management. Proposed Spokane Resource Management Plan Amendment Final Environmental Impact Statement. 1992.

USDI National Park Service. Lewis and Clark National Historic Trail Comprehensive Plan for Management and Use. January 1982.

USDI National Park Service. Management and Use Plan Update Final Environmental Impact Statement Oregon National Historic Trail and Mormon Pioneer National Historic Trail, August 1999.

Yakima County, Washington. Policy Plan May 20, 1997, amended December 28, 1998.

APPENDIX R-1

Figure R-1: Scenic and Aesthetic Values – Map

Figure R-2: Visible Analysis

APPENDIX R-2

Photographs – Scenic and Aesthetic Values

Columbia Ethanol Facility

Figure R-1
Scenic and Aesthetic Values

Toppenish
Pasco
Kenniwick
Yakima County
Klickitat County
Benton County
Hermiston
Horn Butte ACEC
Arlington
Gilliam County
Morrow County
Umatilla County
Echo Complex
Echo Meadows (Oregon Trail ACEC)
Pendleton
Fourmile Canyon
Well Spring
Hoppner

Legend

- Visibility Analysis Area
- ProposedColumbia Ethanol Facility
- Points of Scenic and Aesthetic Value
- Umatilla National Wildlife Refuge
- National Historic Oregon Trail (ONHT)
- Boardman Segment of ONHT

Note: Some boundaries on this map were digitized from hard-copy maps provided by various sources. Accordingly, the boundaries are approximate and are suitable for illustrative purposes only.

0 3 6 12 Miles

P:\P\PEIN00000004\0600INFO\GS\arcmap\30_mile_working.mxd 08/09/06

Columbia Ethanol Facility
Figure R-2
Visibility Analysis

Toppenish
Van Belle
Pasco
Kennewick
Washington
Benton County
Oregon
Hermiston
Horn Butte ACEC
Arlington
Gilliam County
Morrow County
Umatilla County
Echo Complex
Echo Meadows (Oregon Trail ACEC)
Boardman Segment
Well Spring
4-Mile Canyon
Pendleton
Bickleton Divide
Big Butter Creek
Little Butter Creek
Sand Hollow
Athena Holdman
Stage Gulch
Middle Walla Walla

Legend

- Visibility Analysis Area
- Proposed Columbia Ethanol Facility
- Points of Scenic and Aesthetic Value
- Potentially Visible Areas
- Oregon Trail (ONHT)
- Boardman Segment of ONHT

Notes:
1. Many boundaries on this map were digitized from hard-copy maps provided by various sources. Accordingly, the boundaries are approximate and are suitable for illustrative purposes only.

2. Model results illustrate areas from which the top of the proposed cooling tower may be visible. The model results do not account for screening that may be provided by existingvegetation, structures, and climatic conditions.

0 2.5 5 10 Miles

P:\P\PEIN00000004\0600INFO\GS\arcmap\30_mile_working.mxd 08/09/06



PHOTO R-1: BLM Fourmile Canyon Interpretive Site.



PHOTO R-2: Echo Complex Interpretive Site at Umatilla River crossing.



PHOTO R-3: BLM Echo Meadows Interpretive Site entry.



PHOTO R-4: BLM Echo Meadows Interpretive Site kiosk.



PHOTO R-5: BLM Well Spring Interpretive Site kiosk.



PHOTO R- 6: National Historic Oregon Trail marker at Well Spring Interpretive Site.

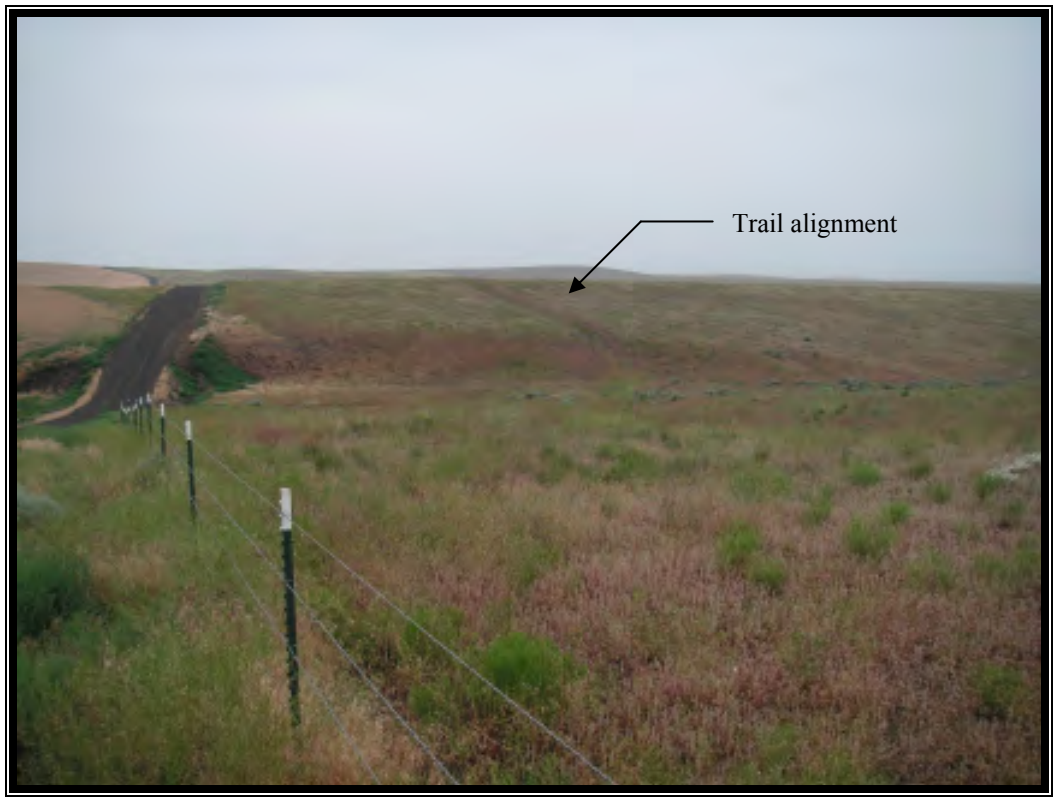


PHOTO R-7: National Historic Oregon Trail Boardman Segment alignment.

EXHIBIT S

HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES
OAR 345-021-0010(1)(s)

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S-1 CULTURAL RESOURCES ANALYSIS REPORT

S.1 INTRODUCTION

OAR 345-021-0010(1)(s) *Information about historic, cultural and archaeological resources providing evidence to support a finding by the Council as required by OAR 345-022-0090, including:*

Response: OAR 345-022-0090 states in full:

> *(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction, operation and retirement of the facility, taking into account mitigation, are not likely to result in significant adverse impacts to:*
>
> *(a) Historic, cultural or archaeological resources that have been listed on, or would likely be listed on the National Register of Historic Places;*
>
> *(b) For a facility on private land, archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in ORS 358.905(1)(c); and*
>
> *(c) For a facility on public land, archaeological sites, as defined in ORS 358.905(1)(c)*
>
> *(2) The Council may issue a site certificate for a facility that would produce power from wind, solar or geothermal energy without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.*
>
> *(3) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.*

This Exhibit provides information about historic, cultural, and archaeological resources that will support a finding by the Council as set forth above. The analysis area for cultural resources includes the approximately 25-acre construction area of the proposed ethanol production facility and pipeline corridor (Appendix S-1, Figure 2).

S.2 SUMMARY

The following is a brief summary of the methods, results, and conclusions of the historic, cultural, and archaeological investigation performed for the Columbia Ethanol facility. Full investigation results are provided in the technical report prepared for the project, which is included as Appendix S-1.

Field investigations for the Columbia Ethanol project were conducted in two field sessions under the general supervision of AINW Senior Archaeologist David. V. Ellis, M.P.A. A pedestrian survey of the proposed ethanol plant was conducted on May 30,

2006. The field crew for this survey consisted of Mr. Ellis, AINW Staff Archaeologist David Cox and field archaeologists Ricky Ralls and Roger Warren, B.S. The pedestrian survey was supplemented with subsurface exploratory probes on July 18-20, 2006. The crew during this field session was supervised by AINW Staff Archaeologist Mini Sharma, M.S., and consisted of Messrs. Ralls and Warren and AINW Staff Archaeologist Morgan Frazier, B.A. Mr. Ellis was present on July 18. One previously recorded archaeological site, 35MW13 was relocated as being within the proposed pipeline alignment during the testing phase of the survey. One previously unrecorded prehistoric isolate, 061288-IF-1 was also recorded during the current survey. No historic-period resources were identified.

The May 30 pedestrian survey examined the proposed ethanol plant location, which was surveyed in a series of east-west-oriented transects at 10 m (33 ft) intervals. Construction of the plant had been initiated at the time of the AINW survey. As a result, vegetation had been removed and land-leveling had begun at the time of the fieldwork. These cleared areas were characterized by 100% ground surface visibility. A large pit up to 3 m (10 ft) deep had been excavated in the northern portion of the planned plant location. The southern and eastern portions of the plant location had not been cleared of vegetation at the time of the May survey. These areas were in sparse cover of an introduced mustard plant (Brassica sp.) commonly found in abandoned agricultural fields. Ground surface visibility in these areas averaged about 60 to 70%.

A total of 40 subsurface shovel tests/auger probes (STs) were conducted in the northern and southern portions of the pipeline alignment. The shovel tests were placed at 30 m (100 ft) intervals except for those units excavated within 200 m (656 ft) of the Columbia River, which were placed at 20 m (66 ft) intervals (STs 6-15). The shovel tests placed within or near the previously recorded boundaries of 35MW13 were excavated at 10 m (33 ft) intervals (STs 1-5). All tests were excavated to a minimum of 2 m (6.5 ft) and sediments and soils were screened using 6.4- and 3.2-millimeter (mm) (¼- and ⅛-in) mesh hardware cloth. Artifacts were bagged and labeled according to provenience and transferred to AINW's laboratory for analysis and curation.

No evidence of archaeological or historical resources was encountered in any of the shovel tests except ST-2. Five pieces of lithic debitage of cryptocrystalline silicate (CCS) material were recovered from this shovel test at varying depths between the surface and 100 cm (39 in) below the surface. ST-2 was approximately 60 m (196 ft) from an existing barge load-out, which is the location of the proposed new barge facility for the Columbia Ethanol project. This shovel test is about 60-65 m (197-213 ft) from the Columbia River shoreline. Although this places the unit about 30-35 m (100-115 ft) south (inland) from the arbitrarily defined inland boundary of 35MW13, AINW considers the materials recovered from ST-2 to represent deposits associated with the site.

One lithic debitage fragment was identified on the surface in the vicinity of ST-18, excavated along the northern portion of the pipeline alignment. Subsurface excavation in the vicinity of the surface find failed to identify any other artifacts. This isolate is about 250 m (820 ft) south of 35MW13 and was recovered in an area previously disturbed by farming and construction associated with the Columbia Ethanol facility. None of the

shovel tests excavated between ST-2 and ST-18 produced any evidence of archaeological deposits. We have therefore recorded this surface find as prehistoric isolate 06/1288-IS-1.

S.3 RESOURCES LISTED OR ELIGIBLE FOR LISTING UNDER NATIONAL REGISTER OF HISTORIC PLACES

OAR 345-021-0010(1)(s)(A) *Historic and cultural resources within the analysis area that have been listed, or would likely be eligible for listing, on the National Register of Historic Places;*

Response: One archaeological site (35MW13) was previously recorded near the project area, the site boundaries of which were expanded during the current pedestrian survey and subsurface testing as the result of encountering artifacts in one shovel test. The significance of 35MW13 is unknown at this time given the lack of systematic research to determine the site's possible eligibility for listing on the NRHP. Finds in ST-2 are the first evidence that the archaeological deposits appear to extend some distance inland from the Columbia River shoreline, although no other evidence of 35MW13 was observed on the surface or in other shovel tests in the vicinity of ST-2. The boundaries of 35MW13 have been revised to incorporate the ST-2 location into the site boundaries (see Appendix S-1, Figure 2) and a site form amendment has been prepared.

S.4 ARCHAEOLOGICAL OBJECTS AND SITES ON PRIVATE LANDS

OAR 345-021-0010(1)(s)(B) *For private lands, archaeological objects, as defined in ORS 358.905(1)(a), and archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area;*

Response: No evidence of archaeological or historical resources was encountered in any of the shovel tests except ST-2. Five pieces of lithic debitage of CCS material were recovered from this shovel test at varying depths between the surface and 100 cm (39 in) below the surface. ST-2 was approximately 60 m (196 ft) from an existing barge load-out, which is the location of the proposed new barge facility for the Columbia Ethanol project. This shovel test is about 60-65 m (197-213 ft) from the Columbia River shoreline.

One lithic debitage fragment was identified on the surface, in the vicinity of ST-18, excavated along the northern portion of the pipeline alignment. Subsurface excavation in the vicinity of the surface find failed to identify any other artifacts. This isolate is about 250 m (820 ft) south of 35MW13 and was recovered in an area previously disturbed by farming and construction associated with the Columbia Ethanol facility. None of the shovel tests excavated between ST-2 and ST-18 produced any evidence of archaeological deposits. This surface find was recorded as prehistoric isolate 06/1288-IS-1.

S.5 ARCHAEOLOGICAL OBJECTS AND SITES ON PUBLIC LANDS

OAR 345-021-0010(1)(s)(C) *For public lands, archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area;*

Response: The Columbia Ethanol Project and associated pipelines would be located entirely on private land. No public land will be affected by the proposed project.

S.6 IMPACTS OF PROPOSED PROJECT ON HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES

OAR 345-021-0010(1)(s)(D) *The significant potential impacts, if any, of the construction, operation and retirement of the proposed facility on the resources described in paragraphs (A), (B) and (C) and a plan for protection of those resources that includes at least the following:*

(i) A description of any discovery measures, such as surveys, inventories, and limited subsurface testing work, recommended by the State Historic Preservation Officer and the National Park Service of the U.S. Department of Interior for the purpose of locating, identifying and assessing the significance of resources listed in OAR paragraphs (A), (B), and (C);

(ii) The results of surveys, inventories, and subsurface testing work recommended by the state and federal agencies listed in subparagraph (i), together with an explanation by the applicant of any variations from the survey, inventory, or testing recommended;

(iii) A list of measures to prevent destruction of the resources identified during surveys, inventories and subsurface testing referred to in subparagraph (i) or discovered during construction; and

(iv) A completed copy of any permit applications submitted pursuant to ORS 358.920. Notwithstanding OAR 345-021-0000(4), the applicant shall include copies of the permit applications as part of the site certificate application. If the same information required by subparagraphs (i) through (iii) above is contained in the permit applications, then the applicant may provide cross-references to the relevant sections of the permit applications in substitution; and

Response: The survey was completed to address State of Oregon laws protecting significant archaeological sites and requirements of the Oregon Energy Facility Siting Council that address archaeological and historical resources (OAR 345-022-0090). The work was completed using federal compliance standards, and was done by AINW staff meeting the professional qualification standards of the Secretary of the Interior. In addition to the fieldwork, a literature review and records search was performed to identify previously recorded sites and surveys near the project area and to determine if archaeological resources have been previously identified in the project area. A summary of the records search and archaeological field survey is presented in Appendix S-1. The subsurface exploratory probes were excavated under terms of State of Oregon Archaeological Permit AP-894.

As presently proposed, the Columbia Ethanol pipeline to the Columbia River may affect 35MW13 deposits. It has not been decided at this time if the pipeline would be buried or constructed aboveground. In general, aboveground construction is less likely to disturb

buried archaeological deposits, but posts, piers, or other supports for an aboveground pipeline could still disturb buried archaeological deposits. No evidence of archaeological or historical resources was encountered in any of the shovel tests except ST-2, which AINW considers the materials recovered from ST-2 to represent deposits associated with the 35MW13.

The proposed ethanol pipeline will be constructed in a location that minimizes, to the extent practicable, impacts to areas where archeological deposits have been identified. If the pipeline is constructed in the vicinity of ST-2, further excavations will be conducted to better define the vertical and horizontal extent of the archaeological deposits and to better understand the relationships between the more inland site area and the beach and bank archaeological deposits.

One lithic debitage fragment was identified on the surface, in the vicinity of ST-18, excavated along the northern portion of the pipeline alignment. AINW has recorded this surface find as prehistoric isolate 06/1288-IS-1. It is the general policy of the Oregon SHPO that archaeological isolates are not significant resources and are not eligible for listing in the NRHP. AINW has also stated, based on professional opinion, that the specific isolate identified by AINW are not significant resources. No mitigation measures are therefore necessary to address possible project effects to this resource.

S.7 PROPOSED MONITORING PROGRAM

OAR 345-021-0010(1)(s)(E) *The applicant's proposed monitoring program, if any, for impacts to historic, cultural and archaeological resources during construction, operation and retirement of the proposed facility;*

Response: Any changes in the project area outside of the area surveyed boundaries should be surveyed for cultural resources prior to the beginning of the project. If unanticipated prehistoric or historic-period archaeological resources are encountered during construction, all ground-disturbing activity in the vicinity of the find should be stopped. The SHPO and the Umatilla Tribe should be promptly notified to assure compliance with relevant state and federal laws and regulations. If evidence of Indian burials or other human remains is encountered in any of the excavations, all ground-disturbing activity in the vicinity of the find(s) should be halted immediately and the SHPO, the Confederated Tribes of the Umatilla Indian Reservation, the Commission on Indian Services, the Oregon State Police, and the Morrow County Medical Examiner promptly notified pursuant to ORS 97.745(4).

S.8 CONCLUSION

As demonstrated in this Exhibit, the facility may result in an adverse impact to an identified archaeological resource (35MW13) if the pipeline crosses ST-2. Prior to construction of the pipeline, additional investigation should be conducted to better define the vertical and horizontal extent identify the extent of the archeological resources in the vicinity of the proposed pipeline. If the pipeline were relocated to a new location, additional investigation similar to that completed for this exhibit should be conducted.

Based on above information, the Applicant has satisfied the requirements in OAR 345-0021-0010 (1)(s), and the Council may find that the requirements in OAR 345-022-0090 are satisfied.

APPENDIX S-1

Cultural Resources Analysis Results

Appendix S-1, the Cultural Resource Report, contains information not generally available to the public (ORS 192.502(11)) and is intentionally not included.

EXHIBIT T

RECREATIONAL FACILITIES AND OPPORTUNITIES

OAR 345-021-0010(1)(t)

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T-1 RECREATIONAL FACILITIES AND OPPORTUNITIES – MAP

T-2 RECREATIONAL FACILITIES AND OPPORTUNITIES – PHOTOGRAPHS OF FACILITIES

T.1 INTRODUCTION

Exhibit T addresses impacts the proposed facility would have on important recreational opportunities in the analysis area. This exhibit responds to the requirements of OAR 345-021-0010(1)(t), as follows:

OAR 345-021-0010(1)(t) *Information about the impacts the proposed facility would have on important recreational opportunities in the analysis area, providing evidence to support a finding by the Council as required by OAR 345-022-0100*, *including:*

Response: **OAR 345-022-0100(1)** requires that the application for site certificate for the proposed energy facility address important recreational opportunities, and that "the Council must find that the design, construction, and operation of a facility, taking into account mitigation, are not likely to result in significant adverse impact to important recreational opportunities in the analysis area as described in the project order."

The Exhibit is organized in accordance with the application requirements contained in OAR 345-021-0010(1)(t) and provides evidence to support a finding by the Council as required by OAR 345-022-0100.

All photographs referenced herein are included in Appendix T-2.

T.2 IMPORTANT RECREATIONAL OPPORTUNITIES AND FACILITIES IN THE ANALYSIS AREA

OAR-345-021-0010(1)(t)(A) *A description of any important recreational opportunities in the analysis area considering the criteria in OAR 345-022-0100*;

Response: The analysis area for impacts on recreational opportunities includes the area within the site boundary and extends five miles beyond the site boundary as shown in Figure T-1 (Appendix T-1). In general, recreational activities within the analysis area include water-based recreation activities on the Columbia River such as boating, fishing, and waterfowl hunting, upland and limited big game hunting, nature and wildlife photography, and trail walking. There are no recreational activities within the site boundary.

OAR 345-022-0100 prescribes criteria used to evaluate a recreation facility's relative importance: any special designation or management, degree of demand, outstanding or unusual qualities, availability or rareness, and irreplaceability or irretrievability of the opportunity. No important recreational facilities or opportunities exist within the site boundary. Five important facilities or opportunities have been identified in the analysis area; and these are shown in Figure T-1.

- Umatilla National Wildlife Refuge
- Columbia River (i.e., Lake Umatilla)

- Coyote Springs Wildlife Area
- Columbia River Heritage Trail
- The Marina Park (Boardman)

Several Boardman municipal parks occur within the analysis area including Boardman City Park, Thomas E. Brownhill Park, Dunes Street Park, Hill View Park, and Desert Springs Estates Park. These parks are not considered important because they do not meet the criteria prescribed in OAR 345-022-0100; demand is low, they lack special designation or management, they are not outstanding, and could easily be replaced if impacted.

T.2.1 Umatilla National Wildlife Refuge

The Umatilla National Wildlife Refuge (NWR) was established in 1969 to mitigate habitat loss resulting from construction of the John Day Lock and Dam. The refuge encompasses approximately 25,000 acres and includes land and water areas within and adjacent to the river. Habitats include open water, shallow marsh, backwater sloughs, croplands, islands, and shrub-steppe uplands. Migrating waterfowl, bald eagle, songbirds, and resident wildlife can be found on the refuge. The refuge is a key wintering site and resting area for arctic nesting geese and ducks. As such, it is managed intensively for waterfowl recreational opportunities for birders, hunters, and wildlife enthusiasts (USFWS 2006). As a "wildlife first" agency, U.S. Fish and Wildlife Service (USFWS) places a priority on habitat and wildlife resources over recreational, scenic, and aesthetic values (Allen 2006). Most areas of the refuge are very remote with no restroom or drinking water facilities.

Photographs T-1 and T-2 illustrate conditions viewed from the Callow Overlook on the McCormack Unit and from an SR-14 wayside on the Ridge Unit wayside, respectively.

T.2.2 Columbia River (i.e., Lake Umatilla)

The Columbia River travels approximately 1,200 miles through British Columbia, Idaho, Washington, and Oregon draining much of the Pacific Northwest. Lake Umatilla was created when the Columbia River was impounded by the John Day Lock and Dam which was completed in 1971. The river offers many recreational opportunities including water-skiing, boating, swimming, fishing, and waterfowl and upland bird hunting in the general project vicinity. Developed boat ramps located in Boardman, Irrigon, and Umatilla, Oregon, Plymouth, Washington, and the Patterson Unit of the Umatilla NWR provide boat access to the river. A significant portion of the river within the analysis area is included in the Umatilla NWR.

Photographs T-3 through T-5 represent typical views of the Columbia River in the general project vicinity.

T.2.3 Coyote Springs Wildlife Area

Coyote Springs Wildlife Area is owned and managed for habitat and recreation (primarily hunting) by Oregon Department of Fish and Wildlife (ODFW). Located two miles east of Boardman, the area is open seven days a week and offers upland bird and waterfowl hunting during legal seasons.

Photographs T-6 and T-7 illustrate conditions at Coyote Springs WA.

T.2.4 Columbia River Heritage Trail

The Columbia River Heritage Trail is a 12-mile, non-motorized recreational trail roughly paralleling the Columbia River connecting the communities of Boardman and Irrigon. The trail is ideal for hiking, jogging, bicycling, horseback riding, and nature study; a segment of the trail traverses the Umatilla NWR. The property on which the trail occurs is owned by government agencies and private corporations.

Photographs T-8 and T-9 illustrate typical points of ingress and egress along the trail.

T.2.5 The Marina Park (Boardman)

The Marina Park is owned and operated by the Boardman Parks and Recreation District. Located adjacent to the Columbia River, it was developed by the U.S. Army Corps of Engineers (USACE) as a replacement project when the John Day Dam was built. The park comprises approximately 74 acres and offers trails, swimming, boat launch and marina facilities, overnight camping, ball fields, picnic areas, and restrooms.

Photograph T-10 depicts the boat ramp and marina facilities at the park.

T.3 SIGNIFICANT POTENTIAL ADVERSE IMPACTS TO THE OPPORTUNITIES IDENTIFIED

OAR 345-021-0010(1)(t)(B) *An assessment of significant potential adverse impacts to the opportunities identified in (A) including, but not limited to, potential impacts such as*:

(i) Direct or indirect loss of an opportunity as a result of construction or operation;

Response: Direct or indirect loss of opportunities for each of the identified important recreational opportunities is discussed below.

Umatilla NWR: There will be no direct loss of opportunity, because the proposed facility would not impact refuge lands, lesser opportunities to hunt, fish, or bird, or take habitat or wildlife. Indirect losses could result from an impact to groundwater levels affecting shallow marsh habitat (and thus the presence of waterfowl and other species dependent on this habitat type) in the McCormack Unit of the Umatilla NWR. However, this impact is expected to be negligible, if any, and is described in *(iv)* below.

Columbia River: There will be no direct loss of opportunity. In the context of recreational hunting and fishing, no direct impacts to wildlife along the river are anticipated because the proposed facilities are not located along the river itself, are sited between large-scale existing industrial facilities, and would not increase ambient noise or pollution levels significantly. No loss of riparian vegetation along the river would occur, and no nesting or foraging habitat would be eliminated. Impacts to weedy grassland habitat would be mitigated for and would not affect wildlife along the river.

Potential minor indirect impacts could occur as a result of the project. Up to 3 barges per week would service the facilities. Indirect impacts from barge traffic could include wake disturbance to hunters, fishers, and boaters. These losses, if any, are expected to be very low.

Coyote Spring Wildlife Area (WA): The proposed facility would not take WA lands, reduce opportunities to use the WA, or affect wildlife using the WA. There would be no direct impact to the Coyote Springs WA. Indirect losses could result from traffic impacts that are expected to be low and are described in (*iii*) below.

Columbia River Heritage Trail: There would be no direct loss of opportunity to the Columbia River Heritage Trail because the facility would not take or otherwise disrupt the trail alignment or prevent users from using the trail. Indirect losses could result from traffic impacts to portions of the trail in the immediate vicinity of the proposed facility. These impacts are expected to be low and are described in (*iii*) below

The Marina Park: There would be no direct loss of opportunity at The Marina Park because the proposed facility would not take park lands or reduce recreational opportunities provided by the park. Indirect losses could result from traffic impacts to the access route to the park. These impacts are expected to be negligible and are described in (*iii*) below.

(ii) Noise resulting from facility construction or operation;

Response: As detailed in Exhibit X, projected noise levels resulting from facility construction and operation would be minimal. The nearest sensitive noise receptor, a residential property located approximately 0.9 miles from the proposed facility, would not be affected by the proposed facility. It follows that Umatilla NWR, Coyote Springs WA, and The Marina Park would not be affected because they are all further from the proposed facility than the nearest sensitive noise receptor. Although the Columbia River and the Columbia River Heritage Trail occur in relatively close proximity to the proposed facility, the river and trail are currently exposed to the Port of Morrow, the Boardman Industrial Park, and other nearby industries, and already experience notable use and movement of industrial equipment and large transport vehicle traffic.

Given projected noise levels, noise resulting from facility construction or operation would not adversely impact important recreation resources in the analysis area.

(iii) Increased traffic resulting from facility construction or operation;

Response: A detailed description of traffic resulting from facility construction and operation is included in Exhibit U.

No adverse impacts are anticipated to the local transportation system. Roads within the project area are lightly traveled and would be able to accommodate the increased traffic, even in a worst case scenario where all materials would be transported via truck, as opposed to rail and barge as currently planned.

Construction related traffic may cause short-term traffic delays when trucks deliver construction-related equipment and the preassembled portions of the facility, but those delays will be temporary and are not anticipated to have an adverse impact on highways in the project area. Construction-related traffic delays on local roadways could occur but are anticipated to be limited due to low use of these local roadways. The traffic generated from employees during plant operations will be small and existing usage is low.

Because the construction and operation of the proposed facility would not adversely impact the road system, access to the nearby recreation opportunities would not be affected. Increased traffic would not adversely affect important recreation opportunities in the analysis area.

(iv) Water use during facility construction or operation;

Response: As stated in Exhibit O, no significant impact to resources is expected as a result of water use during facility construction or operation.

The facility will purchase water from the Port of Morrow, which supplies users in the Boardman Industrial Park with water for industrial use. The water is obtained from a horizontal Ranney well collection system adjacent to and under the Columbia River. No new water right will be needed. It is not anticipated that the Ranney well collection system would impact the McCormack Unit of the Umatilla NWR because the water needed for facility operation would be drawn from the Columbia River and the shallow marsh habitat at the McCormack Unit is driven primarily by groundwater, not river levels (Allen 2006).

Consequently, water use during facility construction or operation would not adversely affect important recreation opportunities in the analysis area.

(v) Wastewater resulting from facility construction or operation;

Response: As stated in Exhibit V, wastewater will be generated during construction from washdown of equipment during earthwork and construction

phases. Concrete trucks could also be cleaned after concrete loads have been emptied. Washdown will be up to the contractor and will likely occur at a contractor owned batch plant. Portable toilets will be provided for on-site sewage handling during construction and will be pumped and cleaned regularly by the construction contractor. No other wastewater will be generated during construction.

Industrial wastewater generated during operations will be treated at the Port of Morrow industrial wastewater treatment facility. Sewage from the toilets and sinks will be treated at the Boardman wastewater treatment plant located in Boardman.

Wastewater resulting from facility construction or operation would not affect recreational opportunities in the analysis area.

(vi) Visual impacts of facility structures, including cooling tower or other plumes, if any; and

Response: As stated in Exhibit R, the proposed facility, including the cooling tower, distillation towers, and plume would be visible from the five important recreational opportunities in the analysis area. However, the proposed facility is located in an area already heavily impacted by industrial development and would be compatible with any applicable federal or local land use plans governing those facilities.

Visual impacts of facility structures would not adversely affect important recreational opportunities in the analysis area.

(vii) Visual impacts from air emissions resulting from facility construction or operation, including, but not limited to, impacts on Class 1 visual resources as described in OAR 340-204-0050;

Response: Air emissions from the facility have been permitted by DEQ, and are not expected to have adverse effects on recreation facilities or opportunities.

Dust may be generated during construction and will be controlled through the construction period by watering. Any potential impacts are anticipated to be temporary and negligible.

There are no Class 1 Visual Resources in the analysis area.

T.4 MITIGATION MEASURES

OAR 345-021-0010(1)(t)(C) *A description of any measures the applicant proposes to avoid, reduce or otherwise mitigate the significant adverse impacts identified in (B);*

Response: Because the proposed project would not result in significant adverse impacts, no mitigation is proposed.

T.5 MAP OF ANALYSIS AREA

OAR 345-021-0010(1)(t)(D) *A map of the analysis area showing the locations of important recreational opportunities identified in (A)*; and

Response: Figure T-1 shows the analysis area for recreational opportunities and facilities and important recreational facilities identified pursuant to OAR 345-021-0010(t)(A).

T.6 MONITORING PROGRAM

OAR 345-021-0010(1)(t)(E) *The applicant's proposed monitoring program, if any, for impacts to important recreational opportunities.*

Response: Because no significant impacts have been identified and because no mitigation is warranted or proposed, a monitoring plan is not proposed.

T.7 CONCLUSION

The project will comply with all applicable regulatory guidelines concerning important recreational opportunities as discussed above in the responses to the requirements contained in OAR 345-021-0010(l)(t)(A), (B), (C), (D), and (E). Based on the above, the applicant has satisfied OAR 345-021-0010(1)(t), and the council may find requirements in OAR 345-22-0100 are satisfied.

T.8 REFERENCES

Telephone Contacts

Allen, Brian. Operational Manager. Umatilla National Wildlife Refuge. Telephone conversation with Sean Sullivan. June 24, 2006.

Website/Document References

USFWS website. 2006. http://www.fws.gov/Refuges/profiles/index.cfm?id=13583

APPENDIX T-1

Recreational Facilities and Opportunities – Map

APPENDIX T-2

Recreational Facilities and Opportunities – Photographs of Facilities

Columbia Ethanol Facility

Figure T-1
Important Recreation Opportunities

Columbia River

Umatilla National Wildlife Refuge

Callow Overlook

Coyote Springs Wildlife Area

The Marina Park at Boardman

Legend

- Recreation Resources Analysis Area
- Proposed Columbia Ethanol Facility
- Recreation Opportunities
- Columbia River Heritage Trail
- Umatilla National Wildlife Refuge Boundary

Note: Some boundaries on this map were digitized from hard-copy maps provided various sources. Accordingly, the boundaries are approximate and are suitable for illustrative purposes only.

0 0.5 1 2 Miles

P:\P\PEIN00000004\0600INFO\GS\arcmap\Draft_Fig_T-1_Recreation.mxd 08/09/06

Appendix T-2. Columbia Ethanol Project



PHOTO T-1: Callow Overlook at McCormack Unit, Umatilla NWR.



PHOTO T-2: SR-14 Wayside at Ridge Unit, Umatilla NWR looking toward project area.



PHOTO T-3: The Marina Park boat ramp at Boardman, OR.



PHOTO T-4: Columbia River near Irrigon, OR looking west.



PHOTO T-5: Columbia River viewed from Ridge Unit, Umatilla NWR looking east.



PHOTO T- 6: Coyote Springs Wildlife Area looking east.



PHOTO T-7: Coyote Springs Wildlife Area looking west (Coyote Springs Generating Facility at center middleground).



PHOTO T-8: Columbia River Heritage Trail at west entry to Umatilla NWR, looking east.



PHOTO T-9: Columbia River Heritage Trail near Irrigon, OR looking west.

EXHIBIT U

PUBLIC SERVICES / SOCIO-ECONOMIC IMPACTS
OAR 345-021-0010(1)(u)

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U.1 INTRODUCTION

OAR 345-021-0010(1)(u) *Information about significant potential adverse impacts of construction and operation of the proposed facility on the ability of public and private providers in the analysis area to provide the services listed in OAR 345-022-0110, providing evidence to support a finding by the Council as required by OAR 345-022-0110. The applicant shall include:*

Response: Under OAR 345-022-0110(1), the Council must find that the construction and operation of the proposed facility, taking into account mitigation, are not likely to result in significant potential adverse impacts to the ability of the public and private providers in the analysis area described in the project order to provide: sewers and sewage treatment, water, storm water drainage, solid waste management, housing, traffic safety, police and fire protection, health care, and schools.

U.2 IMPORTANT ASSUMPTIONS USED TO EVALUATE POTENTIAL IMPACTS

OAR 345-021-0010(1)(u)(A) *The important assumptions the applicant used to evaluate potential impacts*;

Response: In undertaking this analysis, Columbia Ethanol, LLC made the following estimates:

A. Facility construction is anticipated to take about 12 months and employ an estimated 100 workers at peak construction periods. Approximately 80 percent of construction employment will be filled locally, as local expertise and availability permits. The remaining 20 percent of construction employment will be hired from outside the local area. When feasible, preference will be given to local workers.

B. During the anticipated 30-year life of the proposed facility, operation and maintenance ("O&M") will employ 30 to 35 full-time and part-time employees.

C. The study area includes nine incorporated communities in Oregon and seven incorporated communities in Washington with a combined 2004 population of 156,985, or about 34% of the combined population for Gilliam, Morrow, and Umatilla counties in Oregon, and Benton and Yakima counties in Washington. Average annual unemployment rates, as reported by the U.S. Bureau of Labor Statistics, vary by county. Benton County had the lowest unemployment rate at 5.7% followed by Gilliam County (5.8%), Morrow County (7.5%), Yakima County (7.6%), and Umatilla County (7.9%). Based on existing unemployment in the analysis area, it is assumed that approximately 85 % of the full-time and part-time operational employees (30 employees) would be hired from within the analysis area, and 15% (5 employees) would be hired from outside the area (in-migrant).

D. Existing capacities of public services were used to estimate the current level of service for the communities within the analysis area. It is assumed that proposed

amendments to the Port of Morrow transportation and water supply system will be completed prior to Morrow County issuing occupancy permits.

E. Columbia Ethanol, LLC will lease land for the facility from the Port of Morrow.

U.3 PUBLIC AND PRIVATE PROVIDERS IN THE ANALYSIS AREA

OAR 345-021-0010(1)(u)(B) *Identification of the public and private providers in the analysis area that would likely be affected*;

Response: Responses are provided in sections U.3.1 and U.3.2, below.

U.3.1 Population Within Analysis Area

While the project itself is entirely within Morrow County, the analysis area also includes portions of Gilliam, Umatilla, Benton, and Yakima counties and incorporated communities with a 30-mile radius of the project site. Table U-1 shows the population of jurisdictions within the analysis area. There are 9 incorporated communities in Oregon and 5 incorporated communities in Washington within the 30-mile analysis area. These are Arlington, Boardman, Echo, Ione, Irrigon, Hermiston, Lexington, Stanfield, and Umatilla in Oregon, and Benton City, Kennewick, Prosser, Grandview, and Mabton in Washington. The 2004 population for all of these communities is 105,980, which accounts for about 23 percent of the entire population of the five counties in the analysis area. The largest communities in the analysis area are Kennewick and Hermiston. Kennewick Hermiston had 2004 populations of 57,900 and 14,700 people, respectively, which together account for about 69 percent of the analysis area's population in incorporated communities.

Between 1990 and 2004, communities in the analysis area added population at varying rates, with the highest percent change occurring in Irrigon, which grew by about 143 percent. Other communities increasing at substantial rates since 1990 include Boardman (125%), and Umatilla (106%). Lexington is the only community that has lost population for the same time frame. Since 2000, growth has continued in most jurisdictions; Umatilla has experienced the highest percent increase, growing by 26 percent, between 2000 and 2004. Hermiston grew by 12 percent since 2004. All other jurisdictions experienced some growth except for Lexington, which lost about 1 percent of its population.

Table U- 1. Population of Incorporated Communities within the Analysis Area[1]

	Population				
	1990	2000	2004	Percent Change 1990-2004	Percent Change 2000-2004
Gilliam (OR)	1,717	1,915	1,900	11%	-1%
Arlington	*425*	*524*	*570*	34%	9%
Morrow (OR)	7,625	10,995	11,750	54%	7%
Boardman	*1,387*	*2,855*	*3,120*	125%	9%
Ione	*255*	*321*	*340*	33%	6%
Irrigon	*737*	*1,702*	*1,790*	143%	5%
Lexington	*286*	*263*	*260*	-9%	-1%
Umatilla (OR)	59,249	70,548	72,250	22%	2%
Echo	*500*	*650*	*690*	38%	6%
Hermiston	*10,047*	*13,154*	*14,700*	46%	12%
Stanfield	*1,568*	*1,979*	*1,980*	26%	0%
Umatilla	*3,046*	*4,978*	*6,270*	106%	26%
Benton County (WA)	112,560	142,475	155,100	38%	9%
Benton City	*1,806*	*2,624*	*2,815*	56%	7%
Kennewick	*42,152*	*54,751*	*57,900*	37%	6%
Prosser	*4,476*	*4,838*	*4,940*	10%	2%
Yakima County (WA)	188,823	222,581	227,500	20%	2%
Grandview	*7,169*	*8,377*	*8,540*	19%	2%
Mabton	*1,482*	*1,891*	*2,065*	39%	9%
Combined population of cities within the analysis area	75,336	98,907	105,980		
Percentage of five county total population	20%	22%	23%		

Source: Center for Population Research and Census, 2005; State of Washington Office of Financial Management, 2005

It is likely that full-time, operational in-migrant employees would relocate to one of the above communities within the 30-mile radius of the proposed facility. In-migrants could also potentially relocate to Washington because there is a bridge over the Columbia River near on I-82 that would provide a direct connection to the Oregon portion of the project area. There are also small, unincorporated communities (where localized census data are not available) within the analysis area boundary. It is possible that workers moving to the area may choose to relocate to one of these communities or choose to live in a rural area outside of a town or city where the residences would likely have private wells and septic systems.

[1] Klickitat County, WA, is also within the analysis area, but does not have any incorporated communities within 30 miles of the proposed project.

U.3.2 Public and Private Providers

Table U-2 identifies the public service and utility providers for the affected communities in the analysis area that provide the essential governmental services listed in OAR 345-022-0110(1). The following is a description of the current public service providers by community in the analysis area.

Table U- 2. Public Service Providers in the Analysis Area

Type of Service	Provider by Jurisdiction	Relevant Issues/Concerns:
Sewers and Sewage Treatment		
Oregon	Arlington: City of Arlington. Lagoon treatment system with 0.13 mgd capacity. No other information available.	Unknown
	Boardman: Lagoon treatment system with .65 mgd capacity. Currently using .35 mgd	None. Have capacity to meet long-term future demand
	Echo: City of Echo. Lagoon System. Capacity 0.14 mgd, currently treating 0.07 mgd.	Infiltration and treatment issues. Working with DEQ to address problems. May add new cell in 2008. Algae issue at Umatilla River discharge.
	Ione: None. Individual septic systems	None
	Irrigon: STEP system. System capacity: 0.15 mgd, currently treating 0.11 mgd.	Near capacity. DEQ compliance issues with nitrates.
	Lexington: Individual septic systems	None
	Hermiston: City of Hermiston. RBC system with 2.94 mgd capacity. Currently treating 1.2 mgd	In the process of planning for a new wastewater treatment facility. Drains to Umatilla River.
	Stanfield: Unknown	Unknown
	Umatilla: City of Umatilla. Oxidation Ditch system with 0.84 mgd capacity. Currently treating 0.50 mgd.	None
Washington	Benton City: UV system with discharge to filtration ponds. 1 mgd capacity. Currently using about 0.30 mgd.	None. 3 years old. Discharges to Yakima river.
	Grandview: Clarifiers with UV lights. 5 mgd capacity. Currently using 1 mgd	None. Completely rebuilt 3 years ago.
	Kennewick: Activated sludge plant with 12 mgd capacity. Currently treating 5.2 mgd.	None
	Mabton: Mechanical System. Unknown capacity or use.	None
	Prosser: Unknown	Unknown

Type of Service	Provider by Jurisdiction	Relevant Issues/Concerns:
Water		
Oregon	Arlington: City of Arlington. Wells within city limits providing 0.17 mgd. No other information available.	Unknown
	Boardman: Groundwater, Columbia River Aquifer. Capacity 0.14 mgd. Currently at 50 percent capacity	Added reservoir recently. Plans for replacing some pipes and increasing pipe size for fire flow.
	Echo: City of Echo. Ground water, 3 deep wells. 1.50 mgd capacity, currently using 1.00 mgd. One 300,000 reservoir	May add another reservoir. Has capacilty for full buildout, but could not accommodate a high demand infdustrial user.
	Ione: City of Ione. Two wells. Unsure of capacity	Drilled new well in 1998. No capacity issues.
	Irrigon: City of Irrigon: Two wells. Capacity 6.50 mgd. Using 0.11 mgd	Planning to update system based on 2002 master plan
	Lexington: Groundwater and wells. 0.30 mgd capacity. Unsure about capacity used.	Currently expanding and upgrading. Not yet completed.
	Hermiston: City of Hermiston. Ground and surface water, 4 active wells, Columbia River. 12.0 mgd capacity; currently using 7.0 mgd	None
	Stanfield: Unknown	Unknown
	Umatilla: Groundwater, 4 deep wells. 7.6 mgd capacity, currently using 2.5 mgd. Has water right for an additional 14 mgd from Columbia River.	None
Washington	Benton City: 3 wells. 2 reservoirs (0.45 mg and 0.75 mg) 0.2 mgd capacity. Unsure of current use.	None. Just completed several upgrades
	Grandview: 16 wells. Capacity and use unknown	Rebuilding two wells. No other plans.
	Kennewick: City of Kennewick. Ground and surface water, wells, Columbia River. 18 mgd capacity; have adequate capacity. 8 reservoirs with a total storage capacity of 25 mg.	Completing improvements to surface treatment system. Will increase capacity by 5 mgd.
	Mabton: 3 city wells. One 0.8 mg capacity reservoir. Near capacity	Constructing new well to add capacity.
	Prosser: Unknown	Unknown
Storm Water		
Oregon	Arlington: None	
	Boardman: None	
	Echo: None	
	Ione: None	
	Irrigon: None	
	Lexington: None	
	Hermiston: Dry wells through most of town, but coverage varies	Adding oil/water separater on one system.
	Stanfield: Unknown	

Type of Service	Provider by Jurisdiction	Relevant Issues/Concerns:
	Umatilla: None	
Washington	Benton City: None	
	Grandview: Storm drains cover entire city. Drains to canal then to the Yakima River	None
	Kennewick: Cover entire city. Primarily dry wells, but about 20 percent drains to canals	none
	Mabton: Some catch basins and drywells for portions of the city	Unknown
	Prosser: Unknown	Unknown
Solid Waste Management		
Oregon	Arlington: City of Arlington. The City provides collection service for the entire city.	None.
	Boardman: Sanitary Disposal	
	Echo: Sanitary Disposal	
	Ione: Sanitary Disposal	
	Irrigon: Sanitary Disposal	
	Lexington: Sanitary Disposal	
	Hermiston: Sanitary Disposal	
	Stanfield: Sanitary Disposal	
	Umatilla: Sanitary Disposal	
	Columbia Ridge Recycling and Landfill/ Chemical Waste Management of the Northwest	None. The landfill and recycling portion of the operation serves Oregon, Washington, Idaho, Alaska, Montana, and British Columbia and has approximately 56 years left with the current configuration. The hazardous waste facilties have the same service area, but also accept some materials from other sources nationwide.
	Finley Buttes Landfill	Regional Landfill. Accepts debris from Washington and Oregon. Subtitle D facility that can accept special waste (asbestos etc.) . No hazardous waste permitted. Capacity adequate for forseeable future.
	Sanitary Disposal and Recycling: Provides garbage and recycling services to all of Morrow County, western Umatilla County and southern Benton County.	Collects household and commercial waste for service area, including the Port of Morrow. Provides consruction dropboxes as needed.

Type of Service	Provider by Jurisdiction	Relevant Issues/Concerns:
Washington	Benton City: BID	Local service only
	Grandview: City of Grandview	Local service only
	Kennewick: City of Kennewick	Local service only
	Mabton: City of Mabton	Local service only
	Prosser: Unknown	
Police		
Oregon	Arlington: Gilliam County Sheriff's Department	See Gilliam County Sheriff's Department
	Boardman: Boardman Police Department. Nine paid and reserve officers.	None
	Echo: Contract with Hermiston Police Department	City of Echo contracts with the Cit y of Hermiston Police Department for 112 hours per month of police protection and 24 hour emergency response
	Ione: Morrow County Sheriff's Department	The Morrow County Sheriff's Department provides police service to the City of Ione.
	Irrigon: Morrow County Sheriff's Department	The Morrow County Sheriff's Department provides police service to the City of Irrigon.
	Lexington: Morrow County Sheriff's Department	
	Hermiston: Hermiston Police Department. 27 paid and reserve officers	None. Covers city, but also dispatches to cities of Echo and Stanfield.
	Stanfield: Hermiston Police Department	See City of Hermiston
	Umatilla: Umatilla Police Department. 19 paid and reserve staff	None
	Gilliam County Sheriff's Department. 4 full time officers and 1 office deputy.	None: Have mutual aid agreements with neighboring counties to respond, if necessary.
	Morrow County Sheriff's Department. 15 full-time officers.	None. Sheriff Department would patrol project area. No change to patrols. Have mutual aid agreements with neighboring counties to respond, if necessary.
	Umatilla County Sheriff's Department. 9 full-time officers	None. Have mutual aid agreements with neighboring counties to respond, if necessary.
Washington	Benton City: Benton County Sheriff's Department	None
	Grandview: Grandview Police Department.	None
	Kennewick: Kennewick Police Department. Several divisions including SWAT, K9, and traffic	None
	Mabton: Mabton Police Department	None
	Prosser: Prosser Police Department. The department operates with 11 full time officers, 6 reserve officers and 5 dispatchers to provide emergency services to the city and surrounding unincorporated areas.	None

Type of Service	Provider by Jurisdiction	Relevant Issues/Concerns:
	Benton County Sheriff's Department: Patrol Division consists of 36 deputies. Patrols Hanford Nuclear Reservation	None
	Klickitat County Sheriff's Department: 2 sergeants and 10 deputies for patrol in addition to administrative and other support staff.	None
	Yakima County Sheriff's Department: 10 detectives in addition to other deputies and support staff	None
Fire Protection and Emergency Response		
Oregon	Arlington: Gilliam County Rural Fire Department	Unknown
	Boardman: Boardman Rural Fire Department. 25 paid and volunteer firefighters. One main station in Boardman and two satellite stations.	None. Provides fire service to the Port of Morrow, Boardman, and unincorporated northern Morrow County. Fire Department working with the applicant to ensure adequate fire suppression and emergency services.
	Echo: Echo Rural Fire Protection District. 3 stations, 20 paid and volunteer staff	None
	Ione: Ione Fire Department. Paid and volunteer firefighters.	None
	Irrigon: Irrigon Rural Fire Department. 19 paid and volunteer staff	None
	Lexington: Lexington Fire Department. 9 paid and volunteer staff.	None
	Hermiston: Hermiston Fire and Emergency Services. 43 paid and volunteer staff	Provides fire and ambulance service to city. Also provides ambulance service to Stanfield and Echo.
	Stanfield: Stanfield Rural Fire Department. 14 paid and volunteer staff	None
	Umatilla: Umatilla Rural Fire Department and Umatilla Tribal Fire Department. 32 paid and volunteer staff in both departments.	None
	Port of Morrow: Boardman Rural Fire Department	See Boardman Rural Fire Department
	Emergency Medical Services include six ambulance vehicles located at four separate dispatch sites. Two vehicles are located in Heppner, two in Boardman, and one each in Irrigon and Lexington. The community of Ione has a First Response Vehicle.	

Type of Service	Provider by Jurisdiction	Relevant Issues/Concerns:
Washington	Benton City: Benton Fire Protection District #2	Unknown
	Grandview: City of Grandview Fire Department. It currently has 26 dedicated volunteers, one paid chief and a paid captain.	None
	Kennewick: City of Kennewick Fire Department. Provides fire services including hazardous materials response	None
	Mabton: City of Mabton Fire Department	Unknown
	Prosser: Benton Fire Protection District #3	Unknown
Health Care (Regional Facilities)		
	Mid-Columbia Medical Center: Regional Medical Center (The Dalles). Full service facility providing emergency and surgery services.	None. Mid-Columbia Medical Center is a regional full service facility. Emergency services would be able to accommodate emergency situations.
	Good Shepherd Community Hospital: Full service medical center located in Hermiston. Critical care, surgical, full ER staff.	None. Full service for most accidents. Cardiac emergencies are stabilized and then transfered to St. Anthony's in Pendleton.
	St. Anthony's Hospital: Full service medical center located in Pendleton. Critical care, surgical, full ER staff.	None. Full service for most accidents. Ability to treat cardiac emergencies.
Education		
Oregon	Arlington: Arlington School District #13. One K-8 and one high school. Approximately 136 students.	Enrollment has declined recently from approximately 160 students to 136. Loss of students equates to a loss of revenue for the school district. There are no outstanding facility issues, other than reduced revenue for upkeep.
	Boardman: Morrow School District 1 Serves all of Morrow County. 6 elementary schools, 3 junior/senior high schools.	None. Growing at approximately 3 percent per year, adding approximately 50 kids annually. Constructing new schools with bond money. No facility capacity issues.
	Echo: Echo School District 5. 1 K-12 school	Unkown. Enrollment currently 240 students
	Ione: Morrow School District 1	See City of Boardman
	Irrigon: Morrow School District 1	See City of Boardman
	Lexington: Morrow School District 1	See City of Boardman
	Hermiston: Hermiston School District. Serves the city limits. 5 K-5 elementary schools, 2 6-8 schools, and 1 9-12 high school.	Ongoing issues with continuing growth and old schools. Have adequate capacity.
	Stanfield: Stanfield School District	Unkown
	Umatilla: Umatilla School District	Unkown

Type of Service	Provider by Jurisdiction	Relevant Issues/Concerns:
Washington	Benton City: Kiona-Benton School District: 4 schools (1 Pre K-3, 1 4-5, 1 6-8 and 1 9-12)	Unkown. Enrollment currently 1,660 students
	Grandview: Grandview School District. 8 schools (3 K-5, 1 6-8, 1 9-12, 2 10-12, and alternative high school)	Unkown. Enrollment currently 3,200 students
	Kennewick: Kennewick School District	Enrollment has been increasing, currently 16,500 students. No capacity or facility issues.
	Mabton: 1 K-6 elementary school and one 7-12 high school	Enrollment relatively stable, currently serving 890 students. No capacity or facility issues.
	Prosser: Prosser School District. 6 schools (1 Pre K-2, 1 3-5, 1 9-12 and 1 alternative high school)	Unkown. Enrollment currently 2,780 students

U.4 SERVICE PROVIDERS IN COMMUNITIES

OAR 345-021-0010(1)(u)(C) *A description of any likely adverse impact to the ability of the providers identified in (B) to provide the services listed in OAR 345-022-0110;*

Response: Responses are provided in sections U.4.1 through U.4.11, below.

U.4.1 Economic and Demographic Impacts

U.4.1.1 Population

Limited in-migration for construction-related employment as well as permanent O&M employment is expected to occur as a result of the proposed project, having a beneficial impact on businesses in the nearby communities from increased patronage of area motels, restaurants, and other supporting services. Temporary construction-related jobs filled from outside of the analysis area are anticipated to last no more than 12 months, but during that time workers will likely stay in one of the area motels, eat at local restaurants, and purchase other amenities such as gas and groceries, all having a beneficial impact on the local economy. To the extent practicable, residents from the local communities would fill the 30 to 35 permanent full-time and part-time O&M jobs. In-migrant operational staff and their families would not have a significant impact on local population. Assuming 15% of permanent positions are filled from outside the analysis area, approximately 13 new residents would be added (5 new employees x 2.43 average persons per household) to the analysis area's population. If all in-migrant staff relocated to Morrow County, the additional population would increase the county population by approximately 0.1%.

U.4.1.2 Economic Activity

The applicant will enter into a long-term lease with the Port of Morrow to construct and operate the ethanol facility on Port property. Revenue from the facility would be generated for the Port and through property taxes paid to Morrow County. Lease payments to the Port of Morrow will also benefit the local economy because it is likely

that a portion of the lease payments will be spent in nearby communities. While Gilliam, Umatilla, Benton, and Yakima counties would not gain revenue from the site operation through tax payments, residents from communities within those counties may be employed during the construction or operation phases of the project. Income earned by those individuals as a result of the proposed facility would contribute to the local economy indirectly through local purchases. In addition, the proposed facility itself would purchase goods and services from local and regional businesses, from facility maintenance services to office equipment to business services. All of this would result in a net inflow of dollars into the local economy that would have a beneficial effect beyond that of the new employment.

U.4.1.3 Tax Revenues

The proposed energy facility would be a major new source of tax revenue to local government. This injection of additional tax revenues and/or in-lieu of contributions would contribute to the provision of improved roads, quality education, police, fire, and other municipal needs that would benefit the entire area, particularly because the proposed project has shown to have no adverse impacts to existing public facilities, as described below.

The Columbia Ethanol Project is estimated to provide roughly $1 million to the local tax authority annually through the life of the project, estimated to operate for 30 years, and lease payments to the Port of Morrow annually for the life of the project.

U.4.2 Sewers and Sewage Treatment

The proposed project will be connected to the Port of Morrow wastewater collection system. Domestic sewer service (toilets, sinks) will be piped from the proposed facility in the Port owned and operated collection system to a pressure main that connects the Port collection system with the City of Boardman collection and treatment system. From that junction, domestic wastewater would be mixed with waste water from the City of Boardman and treated at the Boardman wastewater treatment plant, a lagoon system with land application. The Boardman treatment plant has undergone recent upgrades, including the addition of a new cell to the lagoon, upgrades to 3 lift stations, and acquisition of additional land application acreage, to accommodate development within the city and Port.

Industrial wastewater is collected in a separate system owned and operated by the Port. Industrial wastewater is dispersed on Port-owned land. The Port's existing industrial wastewater permit with DEQ is adequate, but because of the projected demand for industrial wastewater collection and treatment as the Port adds tenants, the Port is working with DEQ to modify its permit to increase capacity. This will likely require the Port to purchase additional land for land application.

Outside of the Port of Morrow property, the nearest system serves the City of Boardman, located approximately 0.5 miles from the project site. As described above, the City has just completed extensive upgrades to its existing system to accommodate projected Port

and city needs. Both the Port and the City of Boardman have confirmed that with the existing and proposed upgrades, the Port of Morrow and City of Boardman wastewater collection and treatment systems would have the capacity to accommodate the proposed project and projected growth within Boardman. No adverse effects to those facilities are anticipated.

Most jurisdictions within the analysis area provide wastewater collection and treatment (within the city limits), generally lagoon facilities, although larger jurisdictions operate higher capacity activated sludge or UV systems. Plants drain into local streams such as the Yakima River in Washington, or the Umatilla River in Oregon, which both drain to the Columbia River. Plants with lagoon systems have designated land application areas where treated wastewater from the lagoon systems are applied.

Several improvements to existing systems within local communities have recently occurred or are planned in the near future. The cities of Boardman, Hermiston, Benton City, and Grandview have added capacity or will add capacity to meet environmental standards for wastewater. Echo and Irrigon are working with DEQ to address infiltration, treatment, and capacity issues. Improvements to these systems may include constructing additional lagoons for storage and improving dispersion techniques.

Residents living outside of incorporated communities use private subsurface sewage disposal systems and would have no impact to local wastewater collection and treatment systems.

U.4.3 Water

The proposed project would connect to the existing Port of Morrow water system, which is adequate to meet current demand, including the proposed project, but plans to add capacity to meet future demand. The Port currently draws its water from its own wells and supplies water to facilities within Port boundaries. The Port plans to increase capacity to provide up to 13,000 gallons per minute by using existing wells and constructing a Ranney system (horizontal well) under the Columbia River. The Port estimates that the proposed improvements will meet the needs of the Port at full build out.

The water transmission system will be reconstructed when road improvements are completed. They are estimated to be completed by the end of 2006. Water transmission system improvements will include construction of a 30-inch main supply line. Port industries will connect directly to the 30-inch line for water service. Based on the existing and proposed capacity improvements, no adverse impacts are expected to occur to the local water system from either construction or operation of the proposed facility.

All jurisdictions in the analysis area rely on wells, groundwater, or combination of both for drinking water. Existing facilities are generally adequate to meet municipal water needs although several local communities have recently upgraded or are in the process of upgrading local water systems. Boardman recently added a new reservoir and Echo plans to add additional storage capacity. The Communities of Ione, Irrigon, Lexington, Benton City, Grandview, and Kennewick have added or plan to add capacity by either drilling

new wells or improving their surface water treatment system. Even without these improvements, there are no water systems within the project area that are unable to meet the water needs of its residents. Capacity improvements are generally proposed for accommodating planned future growth or to provide backup systems in the event the main water system fails.

Residents living outside of incorporated communities use private wells.

U.4.4 Storm Water

The proposed project is not within any jurisdiction's storm water system and would have no impact to existing storm water systems or providers.

The Port of Morrow does not provide stormwater collection, but requires businesses located on Port property to manage stormwater on site, typically using catch basins and filter strips. Exhibit V describes the proposed stormwater treatment and disposal for the proposed project. The applicant has a 1200c NPDES permit through DEQ to release stormwater during construction into the Columbia River. If the applicant determines that stormwater during construction will be accommodated onsite, then the NPDES permit will not be required. When the plan is operational, onsite vegetation filter strips and infiltration will accommodate stormwater from the site.

Construction-related storm water impacts could occur during the construction of the proposed project. Erosion control measures would be developed to mitigate these potential impacts (see Appendix I-2).

U.4.5 Solid Waste Management

The Port of Morrow contracts with Sanitary Disposal to provide refuse and recycling collection. Hermiston Sanitary will provide drop boxes during construction and regular pick up for garbage during operation of the facility. Garbage is generally transported to Finley Buttes (location), a private landfill, or the Columbia Ridge Recycling and Landfill site located near Arlington. Columbia Ridge is a large regional facility that accepts refuse from the northwest and Canada.

Sanitary Disposal does not provide hazardous waste pickup, although hazardous waste disposal is available at Chemical Waste Management of the Northwest, a facility located adjacent to the Columbia Ridge facility. Waste Management, Inc. operates both facilities.

Temporary and permanent population increases for construction and operation of the proposed project are minimal compared to the population of the affected communities. Sanitary Disposal and Recycling already provides services for all of the Port and Morrow County and has adequate capacity to accommodate construction-related debris and service to the proposed project facility. The proposed project would have no adverse impact on the ability of Hermiston Sanitation and Recycling to provide solid waste collection services.

Solid waste generated in the construction and operation of the proposed facility is described in Exhibit V. The proposed project will generate minimal construction waste and very little solid waste when the facility is operational, that would require offsite disposal. Finley Buttes Landfill, where the majority of refuse would be taken, is not projected to reach capacity for the foreseeable future. Columbia Ridge Recycling and Landfill Center located near Arlington is not projected to reach capacity for at least 56 years and conversations with landfill operators did not specify any concerns regarding solid waste generation from construction or operation of the proposed project.

Other providers in the analysis area are the City of Arlington, which provides refuse and recycling services for the City of Arlington, BID (Benton City), City of Grandview, the City of Kennewick, and the City of Mabton. Local jurisdictions that provide refuse and recycling collection do so only within the community's city limits. The proposed project will be located outside of these service areas and, therefore, will not affect these providers.

U.4.6 Housing

Housing availability and supply in the affected communities is described in Table U-3. According to the 2000 census, there are 57,396 housing units in communities in the analysis area, totaling approximately 34% of all housing units within Gilliam, Morrow, Umatilla, Benton, and Yakima counties. Housing vacancy rates in the analysis area vary considerably depending on location, but appear to be higher in Oregon than Washington. Arlington and Benton City have the highest vacancy rates of the local jurisdictions.

The demand for permanent housing in the analysis area is not anticipated to increase significantly because the proposed project would employ about 30 to 35 full-time and part-time employees. Only 5 new employees are assumed to move to the area with the remainder hired locally. Employees hired from the local community would not require new housing and, given the small number of in-migrant households and the housing vacancy rate in the affected communities, there would be no adverse impact in terms of finding permanent housing.

U.4.6.1 Temporary Housing

Approximately 100 temporary construction workers will be needed for the duration of construction. Approximately 20% of the construction workers will likely be hired from outside of the area, identifying a need for temporary housing. There are several potential temporary housing options within the analysis area. During construction, temporary workers would likely be housed in motels in Boardman and Arlington. There are also several motels located in Hermiston. As a result, there would be no adverse impact to temporary housing and lodging in the analysis area.

Table U- 3. Housing Supply and Availability in Communities Within the Analysis Area

Jurisdiction	Total Housing Units			
	Occupied	Vacant	Total	Vacancy Rate
Gilliam (OR)	819	224	1,043	21%
Arlington	228	50	278	18%
Morrow (OR)	3,776	500	4,276	12%
Boardman	861	87	948	9%
Ione	125	14	139	10%
Irrigon	566	40	606	7%
Lexington	108	6	114	5%
Umatilla (OR)	25,195	2,481	27,676	9%
Echo	244	10	254	4%
Hermiston	5,047	374	5,421	7%
Stanfield	648	51	699	7%
Umatilla	1,378	137	1,515	9%
Benton County (WA)	52,866	3,097	55,963	6%
Benton City	871	151	1,022	15%
Kennewick	20,869	1,174	22,043	5%
Prosser	1,658	123	1,781	7%
Yakima County (WA)	73,993	5,181	79,174	7%
Grandview	2,409	162	2,571	6%
Mabton	440	17	457	4%

Source: U. S. Census Bureau, 2000 Summary File 3.

U.4.7 Traffic Safety

Construction-related traffic as a result of the proposed project will use public roads to access the site. All roads that would be used are public facilities.

The assumed route of construction-related traffic is to take I-84 to exit 165 east of Boardman onto Laurel Lane. Trucks would travel a short distance north to the Laurel Lane/Columbia Boulevard intersection where trucks would travel east on Columbia Boulevard to the project site. Workers traveling from Washington would take I-82 south across the Columbia River bridge at Umatilla and then travel west on I-84 to exit 165. Construction-related traffic would then travel east on Columbia Boulevard, located north of I-84 to the project site. Columbia Lane is two-lane paved facility.

No adverse impacts are anticipated to the local transportation system. All of the corn that would be processed at the proposed facility would be delivered by rail will be via 110-car unit trains. It is possible that if a local supplier were found, that a portion of the corn could be supplied locally and delivered to the facility in trucks, although by far the majority of corn would not be shipped via truck.

Although the applicant proposes that the majority of corn and ethanol products would be transported via rail or barge on the Columbia River, Table U-4 describes the potential traffic impacts if all corn deliveries and ethanol products/byproducts were transported via truck.

Table U-4. Estimated Traffic Volumes

Type of Vehicle	Vehicles per day	Trips per day	Peak Hour Trips
Employee vehicles	35 cars & light duty vehicles	70	10
Corn deliveries:			
Unit train (110 cars)	1 train every two weeks		
or	or		
Trucks	40 trucks per day	80	5
Wet Grains removal	40 trucks	80	5
Ethanol shipments	12 trucks	24	5
Production supplies	3 trucks	6	1
CO2 shipments	12 trucks	24	2
Total	**137**	**284**	**28**

Source: Columbia Ethanol, LLC, 2006

Under the worst case scenario described above, anticipated traffic generated from the proposed project would generate approximately 284 trips per day, seven days per week. Morrow County would not require the project to complete a traffic impact assessment because the estimated traffic the project would generate would be less than 400 trips per day. Roads within the project area are lightly traveled and would be able to accommodate the increased traffic, even in a worst case scenario where all materials would transported via truck. Traffic impacts are anticipated to be lower than Table U-4 indicates because rail and barge would be the preferred methods of delivery to and from the project site, significantly reducing the amount of traffic that would be generated.

Construction related traffic may cause short-term traffic delays when trucks deliver construction-related equipment and the preassembled portions of the facility, but those delays will be temporary and are not anticipated to have an adverse impact on highways in the project area. Construction-related traffic delays on local roadways could occur but are anticipated to be limited due to low use of these local roadways.

Permanent staff for the proposed project, assumed to be between 30 and 35 employees, will use the improved local road system and who will work on a 3 shifts per day, 7 days per week schedule. Because the traffic generated from these employees is small and existing usage is low, no adverse impacts to the road system as a result of new permanent staff are anticipated.

U.4.8 Police

Some local jurisdictions provide their own police service, while others rely on the county sheriff for police service. The cities of Boardman, Grandview, Hermiston, Kennewick, Mabton, Prosser, and Umatilla provide their own police service. All other jurisdictions contract with their county sheriff department for police services.

The Morrow County Sheriff's Department provides police service for all of Morrow County, including the Port of Morrow and the project site. Other sheriff's departments within the analysis area include Benton, Gilliam, Klickitat, Umatilla, and Yakima County Sheriff's Departments. The Morrow County Sheriff's department is the largest of the three Oregon departments, with 15 full-time officers. Gilliam and Umatilla Counties

employ 4 and 9 full-time officers, respectively. All three departments have agreements to provide backup service for each other if needed.

In Washington, the Benton County Sheriff's Department, Klickitat County Sheriff's Department, and Yakima County Sheriff's Department provide law enforcement for the respective county. The project area would be outside of the service areas for sheriff departments in Washington.

U.4.9 Fire Protection and Emergency Response

The project site is located in the Boardman Rural Fire Department service area based in Boardman. The Department provides fire protection and has trained EMT volunteers, although the District does not provide ambulance service. Ambulance service is provided by the Morrow County Health District. Morrow County Health District's Emergency Medical Services include six ambulance vehicles located at four separate dispatch sites. Two vehicles are located in Heppner, two in Boardman, and one each in Irrigon and Lexington. The community of Ione has a First Response Vehicle. These units are called to stabilize patients until an ambulance crew arrives for transport. In a medical emergency, north Morrow County residents would be transported to Good Shepherd Hospital in Hermiston. If necessary, patients can be flown via helicopter or fixed-wing aircraft to higher levels of trauma care in: Bend, Oregon; Portland, Oregon; or Walla Walla, Washington.

Aside from the Boardman Rural Fire Department, there are 8 other fire departments or districts in Oregon and 5 departments or districts in Washington that provide, at minimum, fire protection. Those that provide only fire service contract with other districts that have ambulance service. Communities that provide their own fire service include the cities of Echo, Ione, Irrigon, Lexington, Hermiston, Stanfield, and Umatilla in Oregon and Grandview, Kennewick, and Mabton in Washington. Rural fire districts serving other parts of the analysis area include the Gilliam County Rural Fire District, Benton County Rural Fire District 3#, and Klickitat Rural Fire District #7. Fire districts often serve small communities such as Arlington and Prosser as well as rural portions of counties. Some local fire departments, such as the Boardman Rural Fire Department, also provide fire response to areas outside of local communities.

Local farmers also provide fire suppression and are often the first to respond because of the large service areas. Local service providers indicated that farmers often have their own fire equipment and also often respond to emergencies.

To minimize the potential of fires starting from construction-related activities, roads would be established prior to construction to minimize vehicle contact with dry grass; idling vehicles in grassy areas would be avoided; and open flames, such as cutting torches, would be kept away from grassy areas. Staging areas will be graveled to minimize fire potential.

Interviews with the Boardman Rural Fire Department and Morrow County Health District indicated that the proposed project would not affect either department's ability to

provide fire protection or ambulance service for their service areas. The applicant has agreed to pay for 8 fire department personnel to attend a week long training seminar designed educate staff in the proper procedures to respond to a fire at a facility that handles highly flammable materials. The remaining fire department staff will be trained as part of agreements with other proposed industrial facilities (not proposed as a part of this application) that plan to locate at the Port of Morrow.

In addition, the Fire Department has reviewed and approved the fire suppression system and location of fire hydrants.

Ambulance service is provided by the Morrow County Health District, which provides ambulance service for all of Morrow County. Accidents victims would be transported to Good Shepherd Community Hospital where they are stabilized and then stay until well or are transferred to Saint Anthony's or Mid-Columbia Medical Center if the hospital is unable to treat them or the patient's needs are to severe.

U.4.10 Health Care

Good Shepherd Community Hospital is the only hospital within the analysis area. The facility provides emergency and surgical care and can accommodate most types of injuries, although cardiac emergencies are stabilized at the facility and then patients are transported to Saint Anthony's in Pendleton, which is a full service facility that has larger and more expansive capability than Good Shepherd. If an accident were to occur at the site, ambulance service provided by the Morrow County Health District would transport patients to Good Shepherd. Evacuation via helicopter is also available, if needed.

Although outside of the analysis area, the Mid-Columbia Medical Center, located in The Dalles, is a regional full-service medical facility that would treat patients from Good Shepherd or Saint Anthony's if those hospitals did not have the capacity or capability to treat a particular type of injury. The Center provides emergency services as well as surgery.

The proposed project would not adversely impact medical services in the analysis area or region. Good Shepherd and Saint Anthony's would most likely be able to provide services, or could be transferred to the Mid-Columbia Valley Medical Center in The Dalles, if more specialized services are needed.

U.4.11 Schools

The Morrow County School District serves all of Morrow County. The school district operates 3 junior/senior high schools (grades 7 to 12) and 6 elementary schools, serving approximately 2,300 students. The number of students in the school district is increasing at approximately 3 percent annually (approximately 50 students per year). The school district recently passed a bond to construct new schools and add capacity to meet future demand. Currently, the Morrow County School District has adequate capacity to accommodate students.

Other school districts in the analysis area in Oregon include the Arlington, Echo, Hermiston, and Umatilla School Districts. In Washington, the analysis area includes Kiona, Benton, Grandview, Kennewick, Mabton, and Prosser School Districts. The Echo School District operates one K-12 school. The Arlington and Mabton school districts each operate one elementary school and one high school. Other school districts are larger, operating several facilities with various grade combinations, depending on the district.

Generally, larger school districts tend to be adding students, especially in Washington where the largest school districts in the analysis area are located. The only school district that reported a loss of students was the Arlington School district, which has lost students recent years, despite increasing in population.

No adverse impact to local schools is anticipated to occur as a result of the construction and operation of the proposed project. No demand on school facilities is expected from the construction of the proposed project, because the portion of the construction work force that might temporarily live in the area is not expected to include any families. Therefore, temporary increases in the analysis area population caused by in-migration of construction workers would result in little to no increase in the student population.

The number of in-migrant operational staff is anticipated to be small, creating few new households with school-age children. Consequently, there would be no significant increase in the student population. Interviews with local school districts indicated that the small number of potential new students would not have a significant adverse impact on the school districts and all districts would be able to accommodate students with existing capacity. All school districts said that an increase in the number of students would have a beneficial impact on school districts because each additional student would increase revenue for the district without having to add new services or facilities.

U.5 ADVERSE IMPACT TO THE ABILITY OF PROVIDERS TO PROVIDE SERVICES

OAR 345-021-0010(1)(u)(D) *Evidence that adverse impacts described in (C) are not likely to be significant, taking into account any measures the applicant proposes to avoid, reduce or otherwise mitigate the impacts; and*

Response: Responses are provided in sections U.5.1 through U.5.12, below.

U.5.1 Economic and Demographic Impacts

U.5.2 Population

Limited in-migration for construction-related employment as well as permanent O&M employment is expected to occur as a result of the proposed project and would have a beneficial impact on businesses in the nearby communities from increased patronage of area motels, restaurants, and other supporting services. No significant adverse impacts as a result of temporary construction activities are anticipated. In-migrant operational staff and their families would not have a significant impact on local population.

U.5.3 Economic Activity

The proposed project would not have significant adverse economic impacts to the analysis area. On the contrary, revenue generated for the local economy as a result of the project may improve Morrow County's ability to provide public services, including schools and others services Morrow County provides for its residents. Increased employment opportunities, both temporary and permanent, may increase the amount of money spent at local businesses. Landowners who receive payments for permitting the location of turbines on their property may also see an increase in income, and as a result may spend a portion of that at local businesses.

U.5.4 Tax Revenues

The proposed project would have no significant adverse tax revenue consequences within the analysis area. As with other industrial facilities in Morrow County, the proposed facility would be a new source of tax revenue to local government. This injection of additional tax revenues to Morrow County and lease payments to the Port and Morrow would contribute to the provision of improved roads, quality education, police, fire, and other municipal needs that would benefit the entire area.

U.5.5 Sewers and Sewage Treatment

The proposed project would be connected to the Boardman wastewater collection and treatment system for general sewer service. Industrial wastewater would be treated by the Port of Morrow's industrial wastewater collection and treatment system. Based on discussions with the Port and Boardman public works staff, both systems are adequate to accommodate the proposed project. No significant adverse impacts to wastewater facilities are anticipated.

During construction, a local provider will supply portable toilets to the site, which would be treated at a local treatment facility chosen by the toilet provider. No impacts from using the portable toilets are anticipated because the toilet provider will be required to dispose wastewater in an appropriate manner.

Temporary construction and permanent employees will use existing wastewater or private septic systems, and would have no additional impact on facilities in the analysis area. Temporary employees from outside the area would likely stay in one of the area's motels or RV parks and use those facilities, which are adequately sized to provide wastewater service. Permanent employees moving to the area would likely reside in existing dwellings already connected to a public wastewater or private septic system and would not increase need for or have an adverse impact to wastewater collection or treatment systems in the analysis area.

U.5.6 Water

No significant adverse impacts to the local water system are anticipated. The proposed project will be connected to the Port of Morrow water system, which has adequate water to support the facility.

U.5.7 Storm Water

No significant adverse impacts to existing storm water facilities are anticipated. Storm water will either be managed by vegetated filter strips and infiltration onsite or discharged to the Columbia River. Construction-related storm water drainage impacts could occur during the construction of the proposed project. Erosion control measures would be implemented, as needed, to meet any applicable local regulations and reduce the potential for project related erosion (see Appendix I-2).

U.5.8 Solid Waste Management

Sanitary Disposal has adequate capacity to accommodate construction-related debris and service to the new facility. The proposed project would have no adverse impact on the ability of Sanitary Disposal to provide these services. Byproducts from the ethanol process (Distiller's wet grain) would be used for animal feed and will not enter the waste stream. Waste generated from the site is anticipated to be typical office waste that does not require special handling.

Solid waste generated in the construction and operation will require offsite disposal. The nearest landfill is the Finley Buttes Landfill, which is not projected to reach capacity for at least the foreseeable future. While the proposed project will generate some solid waste, the amount would not have a significant adverse impact on landfill operations that provide solid waste management services in the area.

U.5.9 Housing

No adverse impacts to housing in the analysis area are anticipated as a result of the proposed project. Employees hired from the local community would not require new housing and, given the small number of in-migrant households and the housing vacancy rate in the affected communities, adequate housing is available. Businesses would experience a beneficial impact from construction workers renting accommodations and permanent in-migrant workers purchasing homes.

Temporary employees hired from outside the area will likely stay in nearby motels along I-84 or in neighboring communities. Although, not all of these would likely be available at one time, there are many temporary-housing possibilities within these communities compared to the relatively small number of in-migrant construction workers. There would be adequate motel and camping/trailer facilities to accommodate the short-term needs for in-migrant construction workers.

U.5.10 Traffic Safety

No significant adverse impacts to traffic safety are anticipated.

Construction related traffic may cause short-term traffic delays when trucks deliver construction-related equipment, but those delays will be temporary and are not anticipated to have an adverse impact on highways in the project area. Construction-

related traffic delays on local roadways could occur but are anticipated to be limited due to very low use these local roadways currently have.

Permanent staff for the proposed project, assumed to be between 30 and 35 employees, will use the local road system. Because the traffic generated from these employees is small and existing usage light, no adverse impacts to the road system, as a result of new permanent staff, are anticipated.

Anticipated traffic generated from the proposed project would generate approximately 284 trips per day, seven days per week. Given that Morrow County would not require the project to complete a traffic impact assessment because the estimated traffic the project would generate would not meet the minimum threshold for completing a traffic impact study even in a worst case scenario where all materials would be transported via truck. Roads within the project area are lightly traveled and would be able to accommodate the increased traffic.

U.5.11 Police

The small population increase attributed to the proposed facility would not have a significant adverse impact on local police services. Discussions with the Morrow County Sheriff's Department did not identify any concerns about the in-migrant construction workers or any need for increased patrols near the proposed project, either when it is under construction or when it is operational. Therefore, the proposed project would not have a significant adverse impact on police service.

U.5.12 Fire Protection and Emergency Response

No significant adverse impacts to fire protection and emergency response are anticipated. No additional staff or equipment is anticipated to support the proposed facility. Fire and emergency response personnel (with the specialized training completed, see below) and equipment are adequate to provide fire and emergency response services.

The applicant has agreed to pay for 8 fire department personnel to attend a week long training seminar designed to educate staff in the proper procedures to respond to a fire at a facility that handles highly flammable materials. The remaining fire department staff will be trained as part of agreements with other proposed industrial facilities (not proposed as a part of this application) that plan to locate at the Port of Morrow.

In addition, the Fire Department has reviewed and approved the fire suppression system and location of fire hydrants.

Ambulance service is provided by the Morrow County Health District, which provides ambulance service for all of Morrow County. Accidents victims would be transported to Good Shepherd Community Hospital where they would be stabilized and then stay until well. They will be transferred to Saint Anthony's or Mid-Columbia Medical Center if the hospital is unable to treat them or the patient's needs are too severe.

U.5.13 Health Care

The proposed project would not adversely impact medical services in the analysis area. Good Shepherd Community Hospital in Hermiston, Saint Anthony's Hospital in Pendleton, and The Mid-Columbia Valley Medical Center in The Dalles would be capable of providing services for construction and operational employees in case of an emergency.

U.5.14 Schools

No significant adverse impact to local schools is anticipated to occur. No short-term demand on school facilities is expected from the construction of the proposed project, because the portion of the construction work force that might temporarily live in the area is not expected to include any families. The number of in-migrant operational staff is anticipated to be small, creating few new households with school-age children. Consequently, there would be no significant increase in the student population. Interviews with local school districts indicated that any new students would not have a significant adverse impact on the school district. On the contrary, many school districts in the analysis area have lost students; an increase in the student population would have a beneficial impact on school districts because each additional student increases revenue for the district.

U.5.15 Mitigation Measures

The proposed facility could have an adverse impact to fire service providers if an accident were to occur and staff was not trained properly. The applicant has agreed to pay for 8 fire department personnel to attend a week long training seminar designed to educate staff in the proper procedures to respond to a fire at a facility that handles highly flammable materials.

The proposed facility would not result in any other significant adverse impacts to the public service and utility providers within the analysis area. Therefore, no other mitigation is required.

U.6 MONITORING PROGRAMS

OAR 345-021-0010(1)(u)(E) *The applicant's proposed monitoring program, if any, for impacts to the ability of the providers identified in (B) to provide the services listed in OAR 345-022-0010;*

Response: No monitoring program is anticipated.

U.7 CONCLUSION

Based on the information presented in this Exhibit, no adverse impacts to any public services are expected. Training will be provided to Boardman Fire Department personnel to be able to adequately respond in the event of a fire. Based on the above information, the applicant has satisfied OAR 345-021-0010(1)(u), and the Council may find the requirements contained in OAR 345-022-0110 are satisfied.

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