

## 4.5 BIOLOGICAL RESOURCES

### 4.5.1 ALTERNATIVE A – PREFERRED CASINO-RESORT PROJECT

#### POTENTIAL EFFECTS TO HABITATS

**Table 4.5-1** provides a summary of the acreage of each habitat type that would be affected under Alternative A. As shown in this table, Alternative A would affect approximately 103.65 acres of habitat within the 151.87-acre La Center Interchange Site. Most of the habitat disturbance, approximately 89.9 acres, would occur in pasture and ruderal (i.e. developed) habitats. These areas present limited resources for wildlife and are currently subject to disturbance from existing roads, residential development, and grazing activities.

**TABLE 4.5-1**  
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE A

Habitat Type	Acreage Affected	Percentage of Site Affected
Ruderal/Developed	8.05	7.76%
Pasture	81.87	78.81%
Mixed Woodland	3.53	3.40%
Roadside Ditches	0.038	0.04%
Palustrine Emergent Wetlands	0.11	0.11%
Riparian Corridor	10.09	9.73%
<b>Total</b>	<b>103.68</b>	<b>68.27%</b>

Source: AES, 2005c; The Resource Company, 2004; ELS, 2005a.

Typically, mixed woodland communities provide habitat for reptiles and amphibians, nesting birds, and mammals. In contrast, the mixed woodland communities on the La Center Interchange Site are adjacent to Interstate 5 (I-5) and isolated within the pasture community, making them subject to repeated human disturbances, thus decreasing the likelihood of supporting persistent wildlife populations. Therefore, development of Alternative A would have a minor impact on wildlife living in the ruderal/developed, pasture, and mixed woodland habitat types at the La Center Interchange Site.

The roadside ditch and palustrine emergent wetlands (Wetlands En and Fn) that would be impacted by the development of Alternative A provide limited resources for wildlife. The palustrine emergent wetlands En and Fn are isolated and of such small size (0.03 and 0.8 acres, respectively) that these resources provide negligible habitat for wildlife species. Due to the isolation and small size of Wetland En and Fn, these wetlands are exempt from U.S. Army Corps of Engineers (USACE) jurisdiction (USACE File # 200500017) (DEIS Vol. II, **Appendix M**). Impacts to palustrine emergent wetlands would be minor, due to the small size and limited resources that these features provide to wildlife. The roadside ditch located south of NW 319<sup>th</sup> Street is subjected to constant

disturbances from road traffic. Although development of Alternative A would have a substantial impact on the jurisdictional roadside ditch, wildlife populations in the area would not be substantially affected. Impacts to this feature would be mitigated in compliance with a permit from USACE as required through measures listed in **Section 5.0**. Implementation of these measures will result in the construction of a replacement roadside ditch along the new alignment of N.W. 319<sup>th</sup> Street such that a minimum 1:1 mitigation ratio will be provided.

Stormwater and effluent discharge from Alternative A pose potential impacts to biological habitats and species, including riparian habitat, macro-invertebrates, amphibians, and reptiles that reside in the unnamed seasonal stream on site, a tributary to the East Fork Lewis River. Typically, riparian woodland communities provide habitat for a wide diversity of species and function as corridors for their movement from one habitat type to another. Impacts to the riparian corridor could affect species abilities to move through the corridor. The unnamed seasonal stream is characterized as having narrow confined reaches (30-50 feet) in the upper parts dominated by black cottonwood (*Populus balsamifera* ssp. *trichocarpa*). The lower reach has a wider riparian corridor (150-200 feet) dominated by red alder (*Alnus rubra*), and Himalayan blackberry (*Rubus discolor*). The stream banks are comprised of fine-grained material and described as having unstable bed and banks with high sediment deposition and transport (AES, 2005a) (DEIS Vol. III, **Appendix Y**). Stormwater and effluent discharges could change the on-site stream from a seasonal to a perennial stream below the point of discharge, which is located adjacent to the intersection of NW 319<sup>th</sup> Street and NW 41<sup>st</sup> Avenue on the western edge of the site. These impacts could result in increased streambank erosion, sedimentation, destruction of riparian vegetation and result in the loss of riparian habitat. However, erosion would be associated with the initial additional flows entering the unnamed stream and would not be a major long-term impact. Sediments would be an on-going constituent in effluent discharge. However, sediment loads entering the unnamed stream would be reduced prior to discharge due to implementation of buffer flow-through prior to entering the unnamed stream. Cattle grazing would be eliminated in the vicinity with the development of Alternative A, thus reducing erosion and allowing vegetation along the bank to increase. The overall impacts to the unnamed stream are considered minor because the removal of large grazing animals may improve the quality of riparian habitat along the stream. The *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**) identifies measures to reduce the effects of discharge to the unnamed seasonal stream on site which have been incorporated into the project design and mitigation measures. Stormwater and effluent discharge mitigation measures identified in **Section 5.0** would ensure the effects of discharge to the unnamed stream are minor.

#### **POTENTIAL EFFECTS TO WATERS OF THE U.S.**

Anticipated effects to jurisdictional waters of the U.S. associated with implementation of Alternative A are identified in **Table 4.5-2**.

**TABLE 4.5-2**  
ANTICIPATED EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE A

Project Component	Channel Reach	Activity Description	Linear Feet of Effect	Effect Acreage
Casino complex and roads	Roadside ditches	Casino development	1,672	0.038
		<b>TOTAL</b>		<b>0.038</b>

Source: AES, 2005c; The Resource Company, 2004; ELS, 2005a.

Alternative A would affect approximately 0.038 acres of jurisdictional waters of the U.S. The impacted waters of the U.S. include a roadside ditch adjacent to and south of NW 319<sup>th</sup> Street that would be removed with the construction of the casino-resort complex and the rerouting of NW 319<sup>th</sup> Street. Obtaining and complying with all the terms and conditions (e.g. compensatory mitigation for loss of waters of the U.S.) of a Nationwide 39 or Nationwide 18 permit from the USACE, and implementation of the minimization and avoidance measures identified in **Section 5.2.4**, would mitigate the potential for adverse effects to waters of the U.S. Additionally, the Tribe has committed in the Memorandum of Understanding (MOU) (DEIS Vol. I, **Appendix C**) with Clark County and Section 3(G) of the Tribe's Environment, Public Health and Safety (EPHS) Ordinance (**Appendix U** of the FEIS) to develop the property consistent with the CCWPO (Clark County Code Chapter 40.450).

Wastewater discharge and stormwater runoff from Alternative A would change the Type Ns unnamed stream on site from a seasonal stream to a perennial stream, but is not likely to result in increased temperature, erosion, and sedimentation. On the contrary, with the proposed cooling system for the treated wastewater, the discharge is likely to have a cooling effect on the East Fork Lewis River during the summer. Species that have the potential to reside within the East Fork Lewis River are identified in the *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**). This report also identifies additional measures to reduce the effects of discharge to the on-site stream, and thus the East Fork Lewis River. The potential for Alternative A to impact the unnamed stream and the East Fork Lewis River is also discussed in **Appendix S** of the FEIS (SWCA Environmental Consultants, 2006). Stormwater and effluent discharge mitigation measures are identified in **Section 5.0** to ensure impacts remain minor. The discharge of treated wastewater and stormwater into the unnamed stream is not expected to impact Paradise Point State Park downstream of the site due to the discharge quantities when compared to flows in the East Fork Lewis River.

#### **POTENTIAL EFFECTS TO WILDLIFE**

Many species of wildlife will avoid areas that have a high degree of human activity causing them to forage over greater distances. Implementation of Alternative A would result in a substantial increase in human activity and structures on the La Center Interchange Site, thereby potentially reducing the number of breeding and resting sites that are available for animals. However, based on the existing habitat types and quality present on the site, and the current extent of surrounding development in the

immediate vicinity, an increase in human activity and structures on the La Center Interchange Site would not result in a substantial effect on local populations of wildlife.

Suitable habitat is not present on the La Center Interchange Site for the bald eagle (*Haliaeetus leucocephalus*). Amphibians including the Pacific tree frog (*Hyla regilla*) and long-toed salamander (*Ambystoma macrodactylum*) were found on the La Center Interchange Site and mitigation measures including wetland buffers that comply with the Clark County Wetland Protection Ordinance (CCWPO) (DEIS Vol. II, **Appendix K**) are presented in **Section 5.2-4**. Evidence of mammals present on the La Center Interchange Site includes pocket gophers and voles. Evidence of large mammals was not observed. The limited size of mixed woodland habitat (3.53 acres) would provide marginal habitat for large mammals. Impacts on wildlife present on the project site would be minor due to the absence of federally listed and special concern species on site, combined with the low quality (i.e., highly disturbed) habitats present.

#### ***Potential Effects to Federally-Listed Species and Federal Species of Concern***

Based on the proposed development and area of disturbance, the following impacts to federally listed species of concern are anticipated:

##### *Plants*

The property and/or surrounding vicinity represent potential habitat for two Federally listed plant species: tall bugbane (*Cimicifuga elata*) and water howellia (*Howellia aquatilis*). Surveys performed by Russell and Associates in 2003 (DEIS Vol. II, **Appendix I**) and AES in 2005 and 2006 did not detect these species. The following discussions evaluate the potential effects Alternative A may have on these species.

##### **Tall Bugbane**

The closest occurrence of tall bugbane is approximately 1/2-mile northeast of the La Center Interchange Site. Tall bugbane has the potential to occur on the project site in and along the edges of the riparian forest and mixed woodland habitats. Tall bugbane was not observed on the project site, but the botanical surveys were not conducted during the blooming season for this species. Under Alternative A, the mixed woodland on the site would be developed into a WWTP, and a portion of the riparian forest would be developed into a storm water facility, potentially impacting any tall bugbane occurring in these areas. **Section 5.2.4** provides mitigation measures for potential impacts to this species to ensure no impacts would occur.

##### **Water Howellia**

The water howellia is known to occur in four locations in Clark County. The closest occurrence to the La Center site is located approximately 2 1/2 miles west, in the Ridgefield National Wildlife Area. Water howellia grows in vernal freshwater wetlands that are less than 3 feet deep. Potential habitat

for water howellia occurs in a ponded area of Wetland Cs, which will be used as a storm water detention facility. Addition of storm water runoff from certain project facilities will alter the hydrology of the wetland and may alter water chemistry. Alteration of the hydrology in Wetland Cs is not expected to impact this species. Water howellia grows in ephemeral bodies and depends on cycles of inundation followed by drying during the summer months. The storm water detention facility would have a similar hydrologic regime as the wetland experiences currently, consisting of inundation during winter storm periods and drying in summer months. Though storm water released into the detention basin will meet discharge requirements, changes in hydrology and water chemistry may have the potential to affect water howellia. If water howellia is present in the pond within Wetland Cs, the project has the potential to result in direct impacts. **Section 5.2.4** contains mitigation measures for the potential impacts to the water howellia under Alternative A.

#### *Mammals*

##### **Bat Species**

Pacific Townsend's big-eared bat, the long-eared myotis bat, and the long-legged myotis bat have the potential to occur in the vicinity of the La Center Interchange Site. Barns and other abandoned structures as well as trees and snags found on the site provide nesting habitat for many bat species. Mitigation measures, including a preconstruction bat survey, are presented in **Section 5.2.4** to ensure effects to this species would be minor.

#### *Fish Species*

As identified in **Table 3.5-4**, there are seven special-status fish species that would be potentially affected by Alternative A. The La Center Interchange Site northern boundary encompasses a seasonal, Type Ns, non-fish bearing stream. This unnamed seasonal stream is inaccessible to fish due to a culvert with a 12- to 15-foot waterfall, located below the I-5 crossing. A steep gradient and concrete riprap lining also characterize the area and represents barriers to fish species. The fish species have little potential to occupy the stream at the proposed site of effluent outfall. However, this stream is a tributary to the East Fork Lewis River. Consequently, any adverse impacts to the on-site stream would result in direct effects to the East Fork Lewis River. Species that have the potential to reside within the East Fork Lewis River are identified in the *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**).

Stormwater and effluent discharge from Alternative A to the on-site unnamed seasonal stream pose potential impacts to special status fish species that reside in the East Fork Lewis River. Potential impacts from stormwater discharges include increased turbidity; potential impacts from effluent discharges include increased temperature and an increase in BOD, nitrates, and phosphates. Also, stormwater and effluent discharges could change the on-site stream from a seasonal to a perennial stream below the point of discharge. Provisions to minimize impacts to the Type Ns unnamed seasonal stream include a project design with a minimum 75-foot buffer along the stream, as shown in

**Figure 2-1**, in accordance with the Clark County Habitat Conservation Ordinance (§ 40.440.010 C) . The primary wastewater treatment processes that would be implemented in the development of Alternative A would exceed those used by the City of La Center’s wastewater treatment plant WWTP. Secondary treatment, including the use of dissipaters and vegetative swales would reduce water temperature and sediment load. Additionally, three wetlands, An, Bn, and Cn, are located adjacent to the stream and would be surrounded by an average 50-foot buffer (with the buffer edge being a minimum 25 feet from the wetlands at any given point), as agreed upon in the MOU between the Tribe and Clark County (DEIS Vol. I, **Appendix C**) and the EPHS Ordinance (**Appendix U** of the FEIS). (The methods used to determine the adequacy of buffer widths for each wetland are discussed in Appendix 9 of **Appendix F** of the DEIS, Vol. I.) These measures, as well as the removal of grazing cattle from the area, would reduce sediment loads entering the stream and increase the vegetative buffer adjacent to the stream. The *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**) identifies additional measures to reduce the effects of discharge to the unnamed seasonal stream on site, and thus the East Fork Lewis River. These measures have been incorporated into the project design and stormwater and effluent discharge mitigation measures are identified in **Section 5.0** to ensure adverse effects do not occur.

As described in “*Technical Memorandum: Cowlitz Indian Tribe Casino Project, Aquatic Resources: Response to USEPA Comments*” (SWCA Environmental Consultants, 2006), the Proposed Project will not result in adverse impacts to federally-listed fish species in the East Fork Lewis River. Water temperature in the East Fork Lewis River currently exceeds the state water quality criterion during summer months. Stormwater facilities will discharge little-to-no stormwater in the summer, and stormwater flows in the wet season will be at or near ambient air temperature. No adverse impacts on the unnamed stream or the East Fork Lewis River will occur from stormwater. The proposed on-site WWTP will use a membrane bioreactor (MBR) system designed for denitrification, with ultraviolet disinfection (UV). Estimated wastewater effluent characteristics will meet water quality standards for the receiving waters and will not result in adverse ecological effects to the unnamed stream.

#### *Bird Species*

##### **Olive-Sided Flycatcher**

Historically, the olive-sided flycatcher used burned areas as foraging habitat, where they feed on large insects. With the introduction of fire suppression, burned areas have been reduced and the species has adapted to logged areas, clearings, and transitional ecotones between forests and grasslands. Riparian and mixed woodland habitats on the project site provide potential nesting habitat for olive-sided flycatcher. Surveys conducted by Russell and Associates (2003) (DEIS Vol. II, **Appendix I**) and AES in 2005 did not detect the olive-sided flycatcher, however this does not preclude the possibility of this species nesting at the site. Under Alternative A, 3.5 acres of mixed woodland on the site would be developed into a WWTP and 10 acres of riparian forest would be developed into a stormwater facility. These construction activities have the potential to impact the olive-sides

flycatcher if this species nests in the mixed woodland. **Section 5.2.4** provides mitigation measures such as a preconstruction nesting survey to ensure that the olive-sided flycatcher will not be impacted.

#### **Bald Eagle**

Bald eagle nests have been documented within approximately 1 mile of the site and adjacent to the East Fork Lewis River. Nesting has also been documented on the Ridgefield National Wildlife Refuge, within 2 miles southwest of the site. A communal roost area has been documented within 1 mile west of the site. Suitable nesting and foraging habitat for eagles does not occur on the site (Russell and Associates, 2003; AES, 2007). This species was not observed during field surveys conducted by AES in 2005 or 2006. The implementation of Alternative A would not have a major impact on resident bald eagle populations; however, due to the close proximity of reported bald eagle nests, mitigation measures are presented in **Section 5.2.4** to ensure potential effects to bald eagles are minimal.

#### **Slender-Billed White-Breasted Nuthatch**

The slender-billed white-breasted nuthatch has been documented nesting in the Ridgefield National Wildlife Refuge, approximately 2 miles away from the La Center Interchange Site. The riparian forest and mixed woodland habitats on the La Center site provide potential nesting habitat for this subspecies. Under Alternative A, the mixed woodland on the site would be developed into a WWTP and a portion of the riparian forest would be developed into a storm water facility. These construction activities have the potential to impact the olive-sided flycatcher if this species nests in the mixed woodland. **Section 5.2.4** provides mitigation measures such as a preconstruction nesting survey to ensure that the slender-billed white-breasted nuthatch will not be impacted.

#### **Federally-Listed Migratory Birds**

The development of Alternative A would change habitats that could potentially support active migratory bird populations and their nests, which are protected by the Federal Migratory Bird Treaty Act. Alternative A could affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season.

Permanent features associated with the facilities, such as night lighting, have the potential to impact migratory bird species. Certain lighting types, including pulsating and strobe lights, could potentially attract birds that could be injured or killed upon impact. Mitigation measures presented in **Section 5.2.4** would reduce this impact; however, there would still be minor immitigable impacts to wildlife from nighttime lighting under Alternative A.

## 4.5.2 ALTERNATIVE B – PREFERRED PROJECT WITHOUT REROUTING NW 319<sup>TH</sup> STREET

### POTENTIAL EFFECTS TO HABITATS

**Table 4.5-3** provides a summary of the acreage of each habitat type that would be affected under Alternative B. Habitat impacts to ruderal/developed and mixed woodland would remain the same at 8.05 and 3.53 acres, respectively. However, impacts to pasture habitat would increase to approximately 90 acres. These areas present limited resources for wildlife and are currently subject to disturbance from existing roads, residential development, and grazing activities. Development of Alternative B would have a minor impact on these habitat types.

**TABLE 4.5-3**  
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE B

Habitat Type	Acreage Affected	Percentage of Site Affected
Ruderal/Developed	8.05	6.66%
Pasture	90.00	74.95%
Mixed Woodland	3.53	2.94%
Roadside Ditches	0	0%
Palustrine Emergent Wetlands	8.41	7.00%
Riparian Corridor	10.09	8.40%
<b>Total</b>	<b>120.08</b>	<b>79.07%</b>

Source: AES, 2005c; The Resource Company, 2004; ELS, 2005a.

Under Alternative B, the casino and hotel facilities would be shifted northward within the La Center Interchange Site to avoid having to reroute NW 319<sup>th</sup> Street. This would cause Alternative B to encroach into 8.41 acres of palustrine emergent wetlands and wetland buffer areas on the north side of NW 319<sup>th</sup> Street. This is a significant impact. Mitigation measures to reduce this impact to less than significant are identified in **Section 5.2.4**.

Under Alternative B NW 319<sup>th</sup> Street would not require rerouting; therefore, the 0.038 acres of jurisdictional roadside ditch would not be filled. Impacts to this habitat resulting from construction of Alternative B would be minor.

Impacts to the unnamed seasonal stream on-site would be the same as described for Alternative A and would be a major impact to riparian habitat. However, sediment loads entering the unnamed stream would be reduced prior to discharge due to implementation of buffer flow-through prior to entering the unnamed stream. Cattle grazing would be eliminated in the vicinity with the development of Alternative B, thus decreasing fecal coliform loads to the stream, reducing erosion, and allowing vegetation along the bank to increase. The removal of large grazing animals may improve the water quality of the stream. The overall impacts to the unnamed stream are minor. The *Stream*

*Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**) identifies measures to reduce the effects of discharge to the unnamed seasonal stream on site. Stormwater and effluent discharge mitigation measures are identified in **Section 5.0**.

**POTENTIAL EFFECTS TO WATERS OF THE U.S.**

Anticipated effects to jurisdictional waters of the U.S. associated with implementation of Alternative B are identified in **Table 4.5-4**. Wetlands and stream buffers located in the northern parcel (Wetlands An, Bn, and Cn) (**Figures 2.6 and 3.5-4**) would be adversely impacted by the development of Alternative B. (The methods used to determine the width of the wetland and stream buffers is provided in Appendix 9 of **Appendix F** [DEIS Vol. I].) Approximately 8.41 acres of jurisdictional waters of the U.S. would be impacted under this alternative due to the construction of the casino and hotel facilities, parking garages, and access roads. This disturbance would require an individual permit from the USACE. Wetlands Dn and En would be adversely affected with development of Alternative B. Wetland En is considered an isolated wetland and is, therefore, not subject to jurisdiction by USACE; Wetland Dn will require mitigation, which is discussed in **Section 5.2.4**. Additionally, the Tribe has committed in the MOU (DEIS Vol. I, **Appendix C**) with Clark County and the EPHS Ordinance (**Appendix U** of the FEIS) to develop the property consistent with the CCWPO (Clark County Code Chapter 40.450). Mitigation measures are identified in **Section 5.2.4**.

**TABLE 4.5-4**  
ANTICIPATED EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE B

Project Component	Channel Reach	Activity Description	Linear Feet of Effect	Effect Acreage
Casino complex, roads, parking garage, and multi-purpose room	Palustrine emergent wetlands and wetland buffers	Casino complex, roads, parking garage, and multi-purpose room	Not applicable	8.41
		<b>TOTAL</b>		<b>8.41</b>

Source: AES, 2005c; The Resource Company, 2004; ELS, 2005a.

For a discussion of impacts to the unnamed seasonal stream on site, identified as waters of the U.S., refer to the section on impacts to Federally-listed species under Alternative A above. The *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**) identifies additional measures to reduce the effects of discharge to the unnamed seasonal stream on site, and thus the East Fork Lewis River. The technical memorandum in **Appendix S** of the FEIS (SWCA Environmental Consultants, 2006) discusses the potential for Alternative B to impact the unnamed stream, downstream habitats, and the East Fork Lewis River. Stormwater and effluent discharge mitigation measures are identified in **Section 5.0**.

### **POTENTIAL EFFECTS TO WILDLIFE**

Potential effects to wildlife would be similar to those described under Alternative A. The increase in human activity and number of structures on the La Center Interchange Site associated with development of Alternative B, in addition to the existing high volume of human activity in the vicinity of the site would not have a major impact on local populations of wildlife.

#### ***Potential Effects to Federally-Listed Species and Federal Species of Concern***

Potential effects to federally listed plant and animal species and Species of Concern would be similar to those described for Alternative A. A description of the impacts is discussed in **Section 4.5.1**.

Impacts to Federally listed fish species resulting from discharge of stormwater and effluent to the unnamed seasonal stream on site, a tributary to the East Fork Lewis River, are similar to that described for Alternative A with the exception that Wetlands An, Bn and Cn would be filled under this alternative. Provisions to minimize impacts to the Type Ns unnamed seasonal stream include a project design with a minimum 75-foot buffer along the stream. (The methods used to determine the width of the wetland and stream buffers is provided in Appendix 9 of **Appendix F** [DEIS Vol. I].) As with Alternative A, the primary wastewater treatment processes that would be implemented in the development of this alternative would exceed that used by the community sewer treatment plant. Secondary treatment, including the use of dissipaters and vegetative swales would reduce water temperature and sediment load. Additionally, the removal of grazing cattle from the area would reduce sediment loads entering the stream and increase the vegetative buffer adjacent to the stream. The *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**) identifies additional measures to reduce the effects of discharge to the unnamed seasonal stream on site, and thus the East Fork Lewis River. Stormwater and effluent discharge mitigation measures are identified in **Section 5.0**.

#### ***Potential Effects to Federally Listed Migratory Birds***

Alternative B is similar to Alternative A in impacts to migratory birds and their nests. Permanent features associated with the facilities, such as night lighting, have the potential to impact migratory bird species. Certain lighting types, including pulsating and strobe lights, could potentially attract birds that could be injured or killed upon impact. Mitigation measures presented in **Section 5.2.4** would reduce this impact; however, there would still be minor immitigable impacts to wildlife from nighttime lighting from Alternative B.

### **4.5.3 ALTERNATIVE C – REDUCED INTENSITY**

#### **POTENTIAL EFFECTS TO HABITATS**

**Table 4.5-5** provides a summary of the acreage of each habitat type that would be affected under Alternative C. The reduction in size of the facility only affects the casino and hotel complex and

construction on the parcel north of NW 319<sup>th</sup> Street. The development of the southern parcel retains the same components with the tribal offices and cultural center being rearranged. NW 319<sup>th</sup> Street is not rerouted in this alternative but is expanded to accommodate a center median.

**TABLE 4.5-5**  
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE C

Habitat Type	Acreage Affected	Percentage of Site Affected
Ruderal/Developed	8.05	7.49%
Pasture	85.7	79.74%
Mixed Woodland	3.53	3.28%
Roadside Ditches	0.08	0.07%
Palustrine Emergent Wetlands	0.03	0.03%
Riparian Corridor	10.09	9.39%
<b>Total</b>	<b>107.48</b>	<b>70.77%</b>

Source: AES, 2005c; The Resource Company, 2004; ELS, 2005a.

Potential impacts from the development of Alternative C include 8.05 acres of ruderal/developed habitat, 85.7 acres of pasture habitat, 3.53 acres of mixed woodland habitat, 0.038 acres of roadside ditches along NW 319<sup>th</sup> Street, and 0.03 acres of the isolated Category 4 Wetland En. These areas present limited resources for wildlife and are currently subject to disturbance from existing roads, residential development, and grazing activities. Development of Alternative C would have a minor impact on these habitat types.

As with Alternatives A and B, impacts to the unnamed seasonal stream on site would remain the same under Alternative C due to stormwater and effluent discharges. The Type Ns on-site stream, a tributary to the East Fork Lewis River, would be reclassified from a seasonal stream to a perennial stream, constituting a major impact to the riparian habitat. However, sediment loads entering the unnamed stream would be reduced prior to discharge due to implementation of buffer flow-through prior to entering the unnamed stream. Cattle grazing would be eliminated in the vicinity with the development of Alternative C, thus decreasing fecal coliform loads to the stream, reducing erosion, and allowing vegetation along the bank to increase. The removal of large grazing animals may improve the water quality of the stream. The overall impacts to the unnamed stream are minor. The *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**) identifies measures to reduce the effects of discharge to the unnamed seasonal stream on site. The potential for Alternative C to impact the unnamed stream, downstream habitats, and the East Fork Lewis River is discussed in the technical memorandum in **Appendix S** of the FEIS (SWCA Environmental Consultants, 2006). Stormwater and effluent discharge mitigation measures are identified in **Section 5.0**.

**POTENTIAL EFFECTS TO WATERS OF THE U.S.**

Anticipated effects to jurisdictional waters of the U.S. associated with implementation of Alternative C are identified in **Table 4.5-6**. Alternative C is designed to avoid jurisdictional Category 3 and Category 4 wetlands in the north and south parcels (**Table 3.5-3**). The roadside ditch, located south of NW 319<sup>th</sup> Street, would be impacted with the widening of NW 319<sup>th</sup> Street. Impacts would affect approximately 0.038 acres (including 1,672 linear feet for the roadside ditch along NW 319<sup>th</sup> Street); this feature is subject to USACE jurisdiction under the Clean Water Act and any discharge of dredged or fill material would require a permit. Additionally, the Tribe has committed in the MOU with Clark County and the EPHS Ordinance to develop the property consistent with the CCWPO (Clark County Code Chapter 40.450). Mitigation measures identified in **Section 5.2.4** would mitigate the potential for adverse effects to waters of the U.S.

**TABLE 4.5-6**  
ANTICIPATED EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE C

Project Component	Channel Reach	Activity Description	Linear Feet of Effect	Effect Acreage
Roads	Roadside ditches	Widening NW 319 <sup>th</sup> Street	1,672	0.038
		<b>TOTAL</b>		<b>0.038</b>

Source: AES, 2005c; The Resource Company, 2004; ELS, 2005a.

**POTENTIAL EFFECTS TO WILDLIFE**

Potential impacts to wildlife species would be similar to those described for Alternatives A and B. Based on the habitat types and quality within the La Center Interchange Site and the extent of existing surrounding development in the immediate vicinity, an increase in human activity and structures on the La Center Interchange Site would not a major effect on local populations of wildlife.

**Potential Effects to Federally Listed Species and Federal Species of Concern**

Potential effects to federally listed plant and animal species and Federal Species of Concern would be similar to those described for Alternatives A and B. A description of the impacts is discussed in **Section 4.5.1**. Impacts to Federally listed fish species resulting from discharge of stormwater and effluent to the unnamed seasonal stream on site, a tributary to the East Fork Lewis River, are similar to that described Alternative A. Provisions to minimize impacts to the Type Ns unnamed seasonal stream include a project design with a minimum 75-foot buffer along the stream. In addition to the stream buffer, Wetland An and Wetland Bn are adjacent to the stream and would be surrounded by a 25-foot wetland buffer, as agreed upon in the MOU (DEIS Vol. I, **Appendix C**) between the Tribe and Clark County and the EPHS Ordinance (**Appendix U** of the FEIS). (The methods used to determine the width of the wetland and stream buffers is provided in Appendix 9 of **Appendix F** [DEIS Vol. I]) As with Alternative A, the primary wastewater treatment processes that would be implemented in the development of this alternative would exceed that used by the community sewer

treatment plant. Secondary treatment, including the use of dissipaters and vegetative swales would reduce water temperature and sediment load. Additionally, the removal of grazing cattle from the area would reduce sediment loads entering the stream and increase the vegetative buffer adjacent to the stream. The *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**) identifies additional measures to reduce the effects of discharge to the unnamed seasonal stream on site, and thus the East Fork Lewis River. The technical memorandum in FEIS **Appendix S** (SWCA Environmental Consultants, 2006) discusses the potential for Alternative C to impact the unnamed stream, downstream habitats, and the East Fork Lewis River. Stormwater and effluent discharge mitigation measures are identified in **Section 5.0**.

#### *Potential Effects to Federally Listed Migratory Birds*

Alternative C is similar to Alternatives A and B in that it would result in impacts to habitats that could potentially support active migratory bird nests. Permanent features associated with the facilities, such as night lighting, have the potential to impact migratory bird species. Certain lighting types, including pulsating and strobe lights, could potentially attract birds that could be injured or killed upon impact. Mitigation measures presented in **Section 5.2.4** would reduce this impact; however, there would still be minor unmitigable impacts to wildlife from nighttime lighting from Alternative C.

For a discussion of impacts to the Type Ns unnamed seasonal stream on-site, identified as waters of the U.S., refer to the section on impacts to Federally listed species under Alternative A above. The *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**) identifies additional measures to reduce the effects of discharge to the unnamed seasonal stream on site, and thus the East Fork Lewis River. Stormwater and effluent discharge mitigation measures are identified in **Section 5.0**.

### **4.5.4 ALTERNATIVE D – BUSINESS PARK**

#### ***POTENTIAL EFFECTS TO HABITAT***

**Table 4.5-7** provides a summary of the acreage of each habitat type that would be affected under Alternative D. The development of Alternative D would impact approximately 76 of the 151.87 acres of habitat on the La Center Interchange Site. The layout of the office complex and warehouse facilities would be primarily within the pasture habitat and would impact approximately 64 acres of pasture. Approximately 8 acres of ruderal/developed habitat and 1 acre of mixed woodland habitat would also be impacted. These areas present limited resources for wildlife and are currently subject to disturbance from existing roads, residential development, and grazing activities. Development of Alternative D would have a minor impact on these habitat types.

Wetland habitats impacted by the alternative include: 0.03 acres of Category 4 Wetland En, a jurisdictional roadside ditch along NW 319<sup>th</sup> Street totaling 0.038 acres, and approximately 0.06 acres

of jurisdictional roadside ditches along NW 31<sup>st</sup> Avenue. **Section 5.2.4** provides mitigation measures for impacts to the wetlands and roadside ditches.

**TABLE 4.5-7**  
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE D

Habitat Type	Acreage Affected	Percentage of Site Affected
Ruderal/Developed	8.00	10.05%
Pasture	67.00	88.01%
Mixed Woodland	1.00	1.31%
Roadside Ditches	0.098	0.13%
Palustrine Emergent Wetlands	0.03	0.04%
Riparian Corridor	0	0%
<b>Total</b>	<b>76.13</b>	<b>50.13%</b>

Source: AES, 2005c; The Resource Company, 2004; ELS, 2005a.

Wastewater service for Alternative D would be provided by connection to the City of La Center municipal wastewater system; therefore, effluent discharge to the unnamed seasonal stream on site would not occur.

Development of Alternative D would impact 76 acres, affecting 64 acres of pasture habitat (less than under Alternative A), therefore, impacts to habitats from increased stormwater discharge would be less than for Alternative A, but would still be a major impact to riparian habitat. However, as with Alternative A sediment loads entering the unnamed stream would be reduced prior to discharge due to implementation of buffer flow-through prior to entering the unnamed stream. Cattle grazing would be eliminated in the vicinity with the development of Alternative D, thus decreasing fecal coliform loads to the stream, reducing erosion, and allowing vegetation along the bank to increase by the removal of grazing animals. The removal of large grazing animals may improve the water quality of the stream. The overall impacts to the unnamed stream are minor. The *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**) and technical memorandum in **Appendix S** of the FEIS (SWCA Environmental Consultants, 2006) identify measures to reduce the effects of discharge to the unnamed seasonal stream on site. Stormwater discharge mitigation measures are identified in **Section 5.0**.

#### **POTENTIAL EFFECTS TO WATERS OF THE U.S.**

Anticipated effects to jurisdictional waters of the U.S. associated with implementation of Alternative D are identified in **Table 4.5-8**. As discussed under Alternative A above, a formal delineation of waters of the U.S. occurring within the La Center Interchange Site identified an unnamed Type Ns seasonal stream, palustrine emergent wetlands, palustrine forested wetlands, and roadside drainages totaling 17.7 acres. Impacts to waters of the U.S. would include approximately 0.038 acres of jurisdictional roadside ditches located south of NW 319<sup>th</sup> Street, 0.03 acres of Category 4 Wetlands

(Wetland Area En), and approximately 0.06 acres of jurisdictional roadside ditches along NW 31<sup>st</sup> Avenue. The expansion of NW 319<sup>th</sup> Avenue and the rerouting of NW 31<sup>st</sup> Avenue would result in discharge of dredged or fill material within the roadside ditches and would require a permit from USACE. This is a major impact. Additionally, the Tribe has committed in the MOU with Clark County and EPHS Ordinance to develop the property consistent with the CCWPO (Clark County Code Chapter 40.450). Obtaining and complying with all the terms and conditions (e.g. compensatory mitigation for loss of waters of the U.S.) of a Nationwide 39 or Nationwide 18 permit from the USACE, and implementation of the minimization and avoidance measures identified in **Section 5.2.4**.

**TABLE 4.5-8**  
ANTICIPATED EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE D

Project Component	Channel Reach	Activity Description	Linear Feet of Effect	Effect Acreage
Office building, warehouse space	Roadside ditches	Office building, warehouse space	1,672	0.038
		<b>TOTAL</b>		<b>0.038</b>

Source: AES, 2005c; The Resource Company, 2004; ELS, 2005a.

Impacts to the Type Ns on-site seasonal stream, identified as waters of the U.S., could occur as a result of stormwater discharge from Alternative D. The seasonal characteristic of the stream would not change. Unlike Alternatives A, B, and C, discharges from the development of Alternative D would result from stormwater runoff only during the wet season. However, high water flows could have a major impact on the stream. The *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**) identifies additional measures to reduce the effects of discharge to the unnamed seasonal stream on site, and thus the East Fork Lewis River. Stormwater and effluent discharge mitigation measures are identified in **Section 5.0**.

#### **POTENTIAL EFFECTS TO WILDLIFE**

While development proposed under Alternative D is a business park, consisting of a 3-story office building and warehouse facilities, potential effects to wildlife would be similar to those described under Alternative A. The increase in human activity and number of structures on the La Center Interchange Site associated with development of Alternative D, in addition to the existing high volume of human activity in the vicinity of the site, would not have a major impact on local populations of wildlife

#### **Potential Effects to Federally Listed Species and Federal Species of Concern**

Potential effects to federally listed bat and fish species and Species of Concern would be similar to those described for Alternative A. A description of the impacts is discussed in **Section 4.5.1**. Alternative D would not develop the riparian forest habitat and would only develop 1 acre of mixed

woodland. This would significantly decrease to potential to impact the olive-sided flycatcher, slender-billed white-breasted nuthatch, and tall bugbane.

Impacts to Federally listed fish species resulting from discharge of stormwater to the unnamed seasonal stream on site, a tributary to the East Fork Lewis River, are similar to that described for Alternative A. This is a major impact. Provisions to minimize impacts to the Type Ns unnamed seasonal stream include a project design with a minimum 75-foot buffer along the stream. The removal of grazing cattle from the area would reduce sediment loads entering the stream and increase the vegetative buffer adjacent to the stream. The *Stream Characterization Report* (AES, 2005a) (DEIS Vol. III, **Appendix Y**) identifies additional measures to reduce the effects of discharge to the unnamed seasonal stream on site, and thus the East Fork Lewis River. **Appendix S** of the FEIS (SWCA Environmental Consultants, 2006) discusses the potential for Alternative D to impact the unnamed stream, downstream habitats, and the East Fork Lewis River. Stormwater discharge mitigation measures are identified in **Section 5.0**.

#### *Potential Effects to Federally listed Migratory Birds*

The development of Alternative D would result in effects to habitats that could potentially support active migratory bird nests. The Federal Migratory Bird Treaty Act protects migratory birds and their nests. Alternative D could affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season. Permanent features associated with the facilities, such as night lighting, have the potential to impact migratory bird species. Certain lighting types, including pulsating and strobe lights, could potentially attract birds that could be injured or killed upon impact. This is a major impact. Mitigation measures presented in **Section 5.2.4** would reduce this impact; however, there would still be minor unmitigable impacts to wildlife from nighttime lighting from Alternative D.

### **4.5.5 ALTERNATIVE E – RIDGEFIELD INTERCHANGE SITE**

#### ***POTENTIAL EFFECTS TO HABITATS***

**Table 4.5-9** provides a summary of the acreage of each habitat type that would be affected under Alternative E. As shown in this table, Alternative E would affect approximately 100.87 acres of the Ridgefield Interchange Site. Most of the habitat disturbance, 74.66 acres, would occur in the pasture and ruderal/developed habitats. Such habitat types present limited resources for wildlife and are currently subject to disturbance from existing roads, residential development, and grazing activities.

As discussed above, riparian woodland communities provide habitat for a wide diversity of reptile, amphibian, bird, and mammal species. Riparian woodlands also provide corridors for the movement of some species. During the AES site visit on March 2-4, 2005, a pair of red-tailed hawks (*Buteo jamaicensis*) and a nest was observed at the on-site riparian woodland.

**TABLE 4.5-9**  
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE E

Habitat Type	Acreage Affected	Percentage of Site Affected
Ruderal/Developed	3.48	3.45%
Pasture	71.18	70.57%
Wetlands	24.56	24.35%
Riparian Woodland	1.65	1.64%
<b>Total</b>	<b>100.87</b>	<b>61.88%</b>

Source: AES, 2005c.

Development of Alternative E would affect approximately 1.65 acres of riparian woodland habitat. Although the riparian corridor is narrow, development in this area could affect species ability to move from habitat types, affect nesting birds and other species, and affect the stream contained therein. This is a major impact. Mitigation measures for these impacts are presented in **Section 5.2.4**.

Wetland communities provide habitat for reptiles and amphibians, fish, and nesting birds. Development of Alternative E would affect approximately 24.56 acres of potential wetland habitat (**Table 4.5-9**). While the wetlands that would be impacted by development of the Ridgefield Interchange Site are not likely to support persistent fish population, these wetlands do support a population of Pacific tree frogs and a long-toed salamander population (see **Section 3.5.4**). Development of Alternative E would have a major impact on these habitat types. USACE permits typically require compensatory mitigation for acreage of filled waters of the U.S. Such mitigation, as determined by USACE, and implementation of mitigation measures identified in **Section 5.2.4**, would reduce impacts to wetland habitats.

#### ***POTENTIAL EFFECTS TO WATERS OF THE U.S.***

An informal delineation of waters of the U.S. occurring within the Ridgefield Interchange Site identified two main palustrine emergent drainages and contributing wetland areas, encompassing approximately 52.5 acres of the site. These features are subject to USACE jurisdiction under Section 404 of the Clean Water Act, which requires approval prior to discharging dredged or fill material into waters of the U.S. Any such discharge to the palustrine emergent drainages or contributing wetlands would, therefore, require a permit. Anticipated effects to potential jurisdictional waters of the U.S. associated with implementation of Alternative E are identified in **Table 4.5-10** below.

Alternative E would affect approximately 24.56 acres of jurisdictional waters of the U.S. This is a major impact. Obtaining and complying with all the terms and conditions (e.g., compensatory mitigation for loss of waters of the U.S.) of an Individual Permit from USACE, and implementation of the mitigation measures identified in **Section 5.2.4**, would reduce impacts.

**TABLE 4.5-10**  
ANTICIPATED EFFECTS TO POTENTIAL WATERS OF THE U.S. – ALTERNATIVE E

Project Component	Channel Reach	Activity Description	Linear Feet of Effect	Effect Acreage
Casino complex, roads, RV park, cultural center, Tribal offices and Tribal housing	Palustrine emergent drainages and contributing wetlands	Casino, road, RV park, cultural center, office, and housing development	Not applicable	24.56
		<b>TOTAL</b>		<b>24.56</b>

Source: AES, 2005c.

### ***POTENTIAL EFFECTS TO WILDLIFE***

Implementation of Alternative E would result in a substantial increase in human activity and structures on the Ridgefield Interchange Site, thereby potentially reducing the number of breeding and nesting sites that are available for animals. However, based on the existing habitat types and quality present on the site and the extent of surrounding development in the immediate vicinity, an increase in human activity and structures on the Ridgefield Interchange Site would not have a major effect on local populations of wildlife. Therefore, impacts to wildlife populations under Alternative E would be minor.

### ***Potential Effects to Federally Listed Species***

The Ridgefield Interchange Site and surrounding vicinity represent potential habitat for one federally listed plant species: tall bugbane. A site visit performed by AES in March 2005 occurred outside of this specie's blooming period. Presence or absence of tall bugbane is unconfirmed and, therefore, a potentially major impact. Implementation of the mitigation measures identified in **Section 5.2.4** would ensure impacts remain minor.

Eleven federally listed species or Species of Concern could be potentially affected by the development of Alternative E, these include: tall bugbane, Pacific Townsend's big-eared bat, long-eared myotis bat, long-legged myotis bat, Pacific lamprey, coastal cutthroat trout, Columbia River chum salmon, Lower Columbia River coho salmon, Lower Columbia River steelhead, Lower Columbia River Chinook salmon, olive-sided flycatcher, bald eagle, and slender-billed white-breasted nuthatch. The following discussion evaluates the potential effects Alternative E may have on these species.

### ***Plant Species***

#### **Tall Bugbane**

Potential effects to tall bugbane are similar to those described for Alternative A. **Section 5.2.4** provides mitigation measures for potential impacts to these species.

*Mammals and Birds*

**Special Status Bird and Bat Species**

Potential effects to the slender-billed white-breasted nuthatch, olive-sided flycatcher, Pacific Townsend's big-eared bat, long-legged myotis bat and the long-eared myotis bat are similar to those described for Alternative A. **Section 5.2.4** provides mitigation measures for potential impacts to these species.

*Special Status Fish Species*

As noted above, there are seven fish species identified in **Table 3.5-4** that could be affected by Alternative E. The Ridgefield Interchange Site boundaries encompass a palustrine emergent wetland, which drains into a tributary of McCormick Creek, thence to the East Fork Lewis River. Although these fish species have little to no potential to occupy the on site drainage, it is a tributary of the East Fork Lewis River. Consequently, any adverse impacts to the palustrine emergent wetland drainage could directly affect fish populations within the East Fork Lewis River. The potential for Alternative D to impact the East Fork Lewis River is discussed in **Appendix S** of the FEIS (SWCA Environmental Consultants, 2006). Implementation of the mitigation measures identified in **Section 5.0** would reduce impacts to special-status fish species.

Stormwater discharge under Alternative E poses potential impacts to special status fish species that reside in the East Fork Lewis River. Impacts to the palustrine emergent drainage could result in increased turbidity, increased temperature, and an increase in pollutant discharge similar to the impacts described for the La Center Interchange Type Ns unnamed seasonal stream under Alternative D. These potential impacts are discussed in **Appendix S** of the FEIS (SWCA Environmental Consultants, 2006). Mitigation measures are presented in **Section 5.0**.

*Potential Effects to Federally Listed Migratory Birds*

A large flock of Canada geese (*Branta canadensis*) was observed on the Ridgefield Interchange Site during the March 2005 survey conducted by AES biologists. Based on the size of the flock, it is likely that the flock was migrating and the site is used only as a stopover. The development of the site would mean the loss of stopover/foraging habitat for migrating Canada geese. However, the loss of foraging habitat on this small scale is considered minor.

Permanent features associated with the facilities, such as night lighting, have the potential to impact migratory bird species. Certain lighting types, including pulsating and strobe lights, could potentially attract birds that could be injured or killed upon impact. This is a major impact. Mitigation measures presented in **Section 5.2.4** would reduce this impact; however, there would still be minor immitigable impacts to wildlife from nighttime lighting from Alternative E.

#### **4.5.6 ALTERNATIVE F – NO ACTION**

##### ***POTENTIAL EFFECTS TO WILDLIFE AND HABITATS***

Under Alternative F, neither the La Center Interchange nor Ridgefield Interchange would be taken into Federal trust and no project-related activities would occur on either of the alternative project sites. The sites would remain under the jurisdiction of Clark County and existing land uses (e.g. pasture and rural residential) would continue for the short term. In the future, the sites could be developed consistent with local plans and zoning. For the La Center Interchange Site, this could result in agricultural or industrial development, and for the Ridgefield Interchange Site this could result in the development of a business park. These developments could have major impacts on habitats identified on both the La Center Interchange and Ridgefield Interchange Sites. However, as this future development is planned in the Clark County Comprehensive Plan, effects to biological resources have already been addressed and mitigation provided. Therefore, the No Action Alternative would have minor effects.

##### ***POTENTIAL EFFECTS TO WATERS OF THE U.S.***

Alternative F would have no effects on jurisdictional waters of the U.S. in comparison to existing conditions within the alternative project sites.

##### ***FEDERALLY LISTED SPECIES***

Alternative F would have no effects on Federally listed plant or animal species in comparison to existing conditions within the alternative project sites.

##### ***Potential Effects to Migratory Birds***

Alternative F would have no effects on migratory birds in comparison to existing conditions within the alternative project sites.