Table 1-5: Summary of Potential Impacts of Offsite Alternatives

Swauk Valley Ranch	Springwood Ranch
3.1 Earth Resources	
Project construction activities, including clearing, excavation, and filling, would result in soil impacts. Based on an estimated number of 42 turbines, the total amount of ground disturbance during construction is estimated to be approximately 97 acres of temporary impact, of which 53 acres would be permanently impacted. Total site disturbance and cut-and-fill activities in steep slope areas could result in significant erosion and some sliding of soil and alluvial materials. Soils and surface topography would not be altered after project construction is complete. Landscaping, grass, and other vegetative cover would prevent significant soil erosion during operation and maintenance of the project. The total amount of fill that might be required for a project located on the Swauk Valley Ranch site would be approximately 115 thousand cubic yards. Development would have no influence on the level of seismic or volcanic hazard in the project area. A large earthquake in the project area could impact wind power operations, disrupt the regional electrical distribution system, damage wind power equipment, or cause collapse of the turbine towers. A volcanic eruption from any of the five Washington volcanoes would contribute hazards from volcanic ash. Impacts of decommissioning would slightly alter topography and potentially cause minor erosion. *Mitigation Measures* Similar to the proposed action, a detailed SWPPP and site-specific BMPs would be developed to minimize the potential for pollutant discharge and erosion from the project site during construction, operations, and decommissioning. Project design and implementation of emergency plans would minimize potential impacts from seismic or volcanic events.	Project construction activities, including clearing, excavation, and filling, would result in soil impacts. Based on an estimate of 40 to 45 turbines for this alternative, the total amount of ground disturbance during construction is estimated to be approximately 125 acres of temporary impact, of which 30 acres would be permanently impacted. Short-term erosion impacts would likely occur from clearing and grading activities during construction. During project operation, the risk of erosion would be similar to existing conditions on the site. Approximately 10 to 15 turbines could be located near areas of either high or moderate landslide potential. Fewer turbines are proposed for the Springwood Ranch alternative than for the KVWPP. Springwood Ranch also would have a smaller project area. It is, therefore, probable that the amount of new access roads to be developed would also be smaller than for the KVWPP. The resulting amount of required fill would therefore probably be half that required for the KVWPP. It is unknown if this amount of fill would be available onsite, or if it would have to be imported from elsewhere in the county. As described for the Swauk Valley Ranch alternative, development would have no influence on the level of seismic or volcanic hazard in the project area and the impacts of decommissioning would depend on the degree of facility removal that would be required. It is anticipated that decommissioning activities would slightly alter topography and potentially cause minor erosion. *Mitigation Measures* Mitigation measures related to earth resources would be similar to those described for the proposed action in Table 1-3 and the Swauk Valley Ranch alternative. In addition, setback and/or engineered protective measures would be required for the 10 to 15 turbines that could be located near areas of either high or moderate landslide potential.
3.2 Vegetation, Wetlands, Wildlife and Habitat, Fisheries and Threatened and Endangered Species	
Vegetation and Wetlands Estimated construction impacts would be similar to, but less than, those described for the Kittitas Valley site. Approximately 97 acres would be temporarily disturbed for up to 1 year. Habitats that would be most affected by the project include grassland, shrub-steppe, and low sagebrush communities. Sensitive lithosol habitat would be potentially impacted in areas where shrub-steppe is disturbed. It is not known if there would be impacts to wetlands from construction. The project could potentially affect 17 acres of a thyme buckwheat/Sandberg's bluegrass plant community located adjacent to the south site boundary. As currently proposed, five	*Vegetation and Wetlands* Impacts to vegetation communities at the Springwood Ranch site would be similar to, but less than, those described for the Kittitas Valley site and the other alternatives. It is estimated that approximately 30 acres of existing vegetation would be permanently displaced to accommodate wind energy facilities with an additional 110 acres temporarily disturbed for construction. Grasslands (generally used for grazing now) and shrublands would be the vegetation communities most affected by the project. Portions of woodland in the northwest corner of the site could possibly be affected by clearing for construction of project facilities. No other plant communities would be temporarily or permanently disturbed.

Table 1-5: Continued

Swauk Valley Ranch	Springwood Ranch
wind turbines would be located within the designated sensitive area. Impacts from operations and maintenance activities would be similar to those described for the proposed action. No impacts on wetlands are anticipated during project operations if proper management practices are implemented. *Wildlife and Habitat* Site-specific information for the Swauk Valley Ranch site is not available, but because of its smaller scale, this alternative would be expected have less construction and operational impacts to wildlife habitat than the KVWPP, Wild Horse, or Desert Claim alternatives. Wind plant construction could possibly affect birds through loss of habitat, disturbance and displacement effects due to human presence, noise, and potential fatalities from construction equipment. Disturbance effects would be expected to occur only if the construction activity took place near an active nest or a foraging area. If this was the case, breeding might be affected and foraging opportunities altered during the duration of construction. Potential avian mortality during operation has not been calculated for this alternative, and would be dependent upon the number of turbines built and the use of the area by avian species. Mortality of individuals associated with vehicular traffic may also occur. *Fisheries* The Swauk Valley Ranch alternative could have adverse affects on important fish habitat and on Endangered, Threatened, Sensitive and Priority Species in the Yakima River and Taneum Creek. Construction-related impacts, primarily delivery of sediment to streams, would most likely occur even though required shoreline setbacks would avoid construction disturbance close to the streams. *Mitigation Measures* Similar to the proposed action, a detailed site-specific package of mitigation measures would be developed for the Swauk Valley Ranch alternative to minimize potential impacts related to vegetation, wildlife, and fisheries. Mitigation measures could include, but would not be limited to, design features to avoid habitat areas and minimize avian fatalities, construction BMPs, noxious and invasive weed control, nest avoidance during construction, habitat restoration, implementation of a monitoring plan, and provision of replacement habitat. In addition, the Swauk Valley Ranch alternative would be likely to employ micro-siting techniques for specific turbine	Construction of access roads and collection cable routes through or near wetland areas would be the two main activities affecting wetlands. Five wetlands lie in the northern and western portions of the site and would be subject to temporary disturbance by construction activity or displacement by permanent project facilities. The total area of potential wetland impacts has not been determined. Based on current available information, no impact on federal or state threatened, endangered, or sensitive plant species would be expected to occur as a result of the project. Impacts from operation and maintenance activities would be similar to those described for the Kittitas Valley site. *Wildlife and Habitat* Wind plant construction could possibly affect birds through loss of habitat, disturbance and displacement effects due to human presence, noise, and potential fatalities from construction equipment. Disturbance effects would be expected to occur only if the construction activity took place near an active nest or a foraging area. If this was the case, breeding might be affected and foraging opportunities altered during the duration of construction. Under this alternative it is estimated that there would be approximately 110 acres of temporary impact to vegetation and 28 to 30 acres of permanent impact to vegetation. Therefore, this alternative would have less impact to wildlife habitat than the KVWPP, and both the Wild Horse and the Desert Claim alternatives. Potential avian mortality has not been calculated for this alternative, and would be dependent upon the number of turbines built and the use of the area by avian species. Given the location of this site lower in the valley and closer to sources of water, fatality rates may not be comparable to either the Kittitas Valley, and the Desert Claim or the Wild Horse alternatives; however, baseline studies would be needed to determine this. Given the assumed higher incidence of bald eagle use of this site due to proximity to the Yakima River and known winter use sites, the potential for bald eagle mortality under this alternative could be greater than described for the other alternatives. Operation and maintenance activities could lead to avoidance of the area by mule deer. It is possible, however, that they would become habituated to the turbines and continue to use the area. Development would have little direct impact on elk, as there is little use of the site by elk and the riparian areas along the Yakima River and Taneum Creek would be protected by existing regulations. Deer impacts would likely include disturbance and displacement impacts from construction activity.

Table 1-5: Continued

Swauk Valley Ranch	Springwood Ranch
placement to reduce wetland impacts by placing project facilities outside wetland buffers.	Mortality of individuals associated with vehicular traffic may also occur. *Fisheries* The Springwood Ranch alternative has a higher potential to impact fish than the KVWPP, or the Wild Horse and Desert Claim alternatives, and could have adverse affects on important fish habitat, and on Endangered, Threatened, Sensitive and Priority Species in both the Yakima River and Taneum Creek. Construction-related impacts, primarily delivery of sediment to streams, would most likely occur, even though required shoreline setbacks would avoid construction disturbance close to the streams. Some of the turbine locations near the top of steep slopes above the Yakima River or Taneum Creek have been identified as high erosion and/or landslide hazard areas, posing a risk of sedimentation. These physical conditions represent localized concerns for potential impacts to fish and fish habitat from construction disturbance. *Mitigation Measures* Mitigation measures would be similar to those described for the proposed action in Table 1-3 and for the Swauk Valley Ranch alternative, above. Further site-specific mitigation measures would be warranted in addition to the standard BMPs because of localized concerns about physical conditions at the site. This alternative would have a higher potential to impact fish than the other alternatives, and could have adverse affects on important fish habitat and on Endangered, Threatened, Sensitive and Priority Species in both the Yakima River and Taneum Creek. Some of the turbine locations near the top of steep slopes above the Yakima River or Taneum Creek have been identified as high erosion and/or landslide hazard areas, posing a risk of sedimentation. The Springwood Ranch alternative would also be likely to employ micro-siting techniques for specific turbine placement to reduce wetland impacts by placing project facilities outside wetland buffers.
3.3 Water Resources	
Impacts during construction of the Swauk Valley Ranch alternative could include sediment-laden surface runoff from ground disturbance and exposed soils. If not properly mitigated, runoff from disturbed areas could adversely affect nearby surface waters. Construction of the project would require delivery of water to the site for road construction, concrete preparation, dust control, and other activities. Construction activities would not result in any adverse impacts on local groundwater. The amount of water required would depend on the number of turbines and other facilities constructed, and the total length of access roads. The overall impact on groundwater in the project area is expected to be temporary and unlikely to affect water wells. Project operations and maintenance would result in no significant erosion or sedimentation impacts on local surface waters. Operation of the project would require	Impacts during construction of the Springwood Ranch alternative could include sediment-laden surface runoff from ground disturbance and exposed soils. If not properly mitigated, runoff from disturbed areas could adversely affect nearby surface waters. In particular, six to eight of the presumed turbine locations (and their associated access roads) would be within approximately one-quarter mile of the Yakima River, near slopes marked with high erosion and landslide potential. Site construction would have minimal impacts on groundwater. Runoff from disturbed areas would be infiltrated on site, resulting in a minor temporary increase in groundwater recharge. No analysis has been performed to determine the source or volume of water required during construction activities.

Table 1-5: Continued

Swauk Valley Ranch	Springwood Ranch
a domestic well to serve the limited needs of the O&M facility. No significant impacts on groundwater supplies are expected because of facility operations. Impacts on water resources from decommissioning of the project would be similar to those described for construction. *Mitigation Measures* Similar to the proposed action, a detailed SWPPP would be developed to minimize the potential for pollutant discharge from the project site during construction, operations, and decommissioning. As part of the project a licensed well driller would install a potable water well to serve the O&M facility.	Operation of a wind energy project would have minimal influence on existing surface water runoff patterns for Springwood Ranch. Therefore, long-term operation would not result in significant impacts on surface water resources. Operation of the project would likely have minimal long-term impacts on groundwater. Impervious surfaces associated with turbines, roads, and buildings would result in a minor increase in surface runoff volume, some of which could translate into a minor increase in groundwater recharge. Water demands for project operation would likely be filled through construction of a domestic well and would have no impact on groundwater supply. Impacts on water resources from decommissioning of the project would be similar to those described for construction. *Mitigation Measures* Mitigation measures related to water resources would be similar to those described for the proposed action in Table 1-3 and the Swauk Valley Ranch alternative. Additional site specific mitigation measures would be warranted for the six to eight turbines (and their associated access roads) that would be located within one-quarter mile of the Yakima River, near slopes marked with high erosion and landslide potential. These measures could include setback distances for structures, infiltration systems, detention ponds, and additional sediment and erosion control BMPs.
3.4 Health and Safety	
The types of health and safety impacts described for the proposed action would be similar for all alternatives. Because the Swauk Valley Ranch alternative is an overall smaller proposal, with fewer turbines and fewer miles of access roads, it may present a lower fire and explosion risk during both construction and operation compared to the proposed action. Detailed analyses of potential shadow-flicker impacts were not performed for the hypothetical layout for the Swauk Valley Ranch alternative. It is expected, however, that based on the hypothetical layout, some residences concentrated along the Yakima River and to the south of the proposed site could be exposed to shadow-flicker (based on a 2,000-foot distance threshold). *Mitigation Measures* Similar to the proposed action, a package of site-specific mitigation measures related to health and safety would be developed for the Swauk Valley Ranch alternative. For both the construction and operations phases of the project, a fire and explosion risk management plan would be developed and measures to reduce potential releases of hazardous materials and limit risks from electrical hazards would be implemented.	The types of health and safety impacts possible would be similar for all alternatives. Because the Springwood Ranch alternative is an overall smaller proposal, with fewer turbines, and fewer miles of access roads, it may present a lower fire and explosion risk during both construction and operation compared to the proposed project. Similar to the Swauk Valley Ranch alternative, detailed analyses of potential shadow-flicker impacts were not performed, but based on the hypothetical layout, some residences on the eastern edge of Sunlight Waters would be exposed to shadow-flicker (assuming a 2,000-foot distance threshold). *Mitigation Measures* Mitigation measures would be similar to those described for the proposed action in Table 1-3 and for the Swauk Valley Ranch alternative, above. Site-specific measures to minimize shadow-flicker effects could be implemented by potentially affected property owners of Sunlight Water.

Table 1-5: Continued

Swauk Valley Ranch	Springwood Ranch
Also, minimum setbacks for project facilities from nearby residences and public roads, as well as other safety measures, would be established to minimize risks from ice throw, tower collapse, and blade throw. Site-specific measures to minimize shadow-flicker effects could be implemented at the option of potentially affected property owners along the Yakima River and to the south of the proposed site. Because this alternative would be smaller than the proposed action, and would represent fewer health and safety risks, application of health and safety mitigation measures might not need to be as physically wide spread as under the proposed action.	
3.5 Energy and Natural Resources	
Specific data for energy and natural resource use are not available for this alternative, however the types of resources used would be similar to those used in the Kittitas Valley alternative, since it is also a wind power plant construction project. Based on estimated construction of 42 turbines under this alternative, use of natural resources for construction, operations, and maintenance is expected to be less than the Kittitas Valley, Wild Horse and Desert Claim alternatives and similar to the Springwood Ranch alternative. The project would generate 21 aMW of electricity annually and would increase the availability of renewable energy in the Pacific Northwest. *Mitigation Measures* Mitigation measures related to energy conservation for Swauk Valley Ranch would be the same as those described for the proposed action (see Table 1-3).	Specific data for energy and natural resource use are not available for this alternative, however the types of resources used would be similar to those used in the Kittitas Valley alternative, since it is also a wind power plant construction project. Based on construction of 40 to 45 turbines under this alternative, use of natural resources for construction, operations, and maintenance is expected to be less than the Wild Horse, Kittitas Valley, and Desert Claim alternatives. The project would generate 20 to 25 aMW of electricity annually and would increase the availability of renewable energy in the Pacific Northwest. *Mitigation Measures* Mitigation measures related to energy conservation for Springwood Ranch would be the same as those described for the proposed action (see Table 1-3).
3.6 Land Use and Recreation	
Potential direct impacts include conversion of rural lands to utility-related uses. The project would permanently alter 53 acres on the site to accommodate project facilities including turbine tower foundations, access roads, underground and overhead transmission lines, substations, operating and maintenance center and other supporting facilities. This permanent conversion of rangeland uses to wind energy production would result in an unavoidable impact. Construction activities could temporarily interfere with existing rangeland uses and grazing operations. Cattle or other livestock would need to be removed from the most intensive construction areas. Construction activities could affect the use and enjoyment of recreational activities such as hunting and hiking in the project area. Some wind turbines may be visible from I-90 and portions of the John Wayne Trail. *Mitigation Measures* Similar to the mitigation proposed for the proposed action in Table 1-3, livestock would be removed from the area during construction, and after construction, disturbed areas would be returned as closely as possible to their original state.	Approximately 30 acres of grasslands would be converted to wind energy facility use, with existing grazing activity being temporarily displaced or disturbed. Wind turbines would be greater in scale than nearby rural residential uses, but are not more intensive than other resource activities in terms of noise and land use impacts. The overall direct effect of the project on land use patterns is not likely to be significant because wind production is generally seen as compatible with rural resource uses. In addition, the project would not attract supporting land uses, generate more development, significantly increase traffic, or increase demand for commercial, industrial, or housing services nearby. *Mitigation Measures* Mitigation measures would be similar to those described for the proposed action in Table 1-3 and for the Swauk Valley Ranch alternative, above.

Table 1-5: Continued

Swauk Valley Ranch	Springwood Ranch
3.7 Socioeconomics	
Impacts from construction of the Swauk Valley Ranch alternative on population, housing, and economics would be similar to, but less than, the proposed action described above. Construction jobs created by the project would result in short-term benefits to overall County and regional employment. Operation of the proposed project is expected to require between 12 and 20 full-time employees, resulting in long-term benefits to overall County employment. However, given that this site would accommodate only 42 turbines, a more realistic estimate of operations personnel would be on the order of between 6 to 10 fulltime employees. Decommissioning impacts would be similar to, but less than, those described for the proposed action above because this alternative would be a smaller project overall. *Mitigation Measures* No mitigation measures relating to social and economic conditions have been identified for Swauk Valley Ranch alternative.	Impacts from construction of the Springwood Ranch alternative on population, housing, and economics would be similar to, but less than, the proposed action described above. The project would employ an estimated 150 workers during the construction phase. Non-local workers would most likely seek temporary housing during construction, and impacts are not expected to be significant. Spending on labor and materials would indirectly result in additional jobs, and total labor income would increase during the construction phase. Operation of the proposed project is expected to require 10 full-time employees. Economic impacts during operations would include an estimated $315,000 in labor income and $700,000 in other value added per year. Decommissioning impacts would be similar to, but less than, those described for the proposed action above because this alternative would be a smaller project overall. *Mitigation Measures* No mitigation measures relating to social and economic conditions have been identified for the Springwood Ranch alternative.
3.8 Cultural Resources	
No recorded archaeological sites are located within the boundaries of the Swauk Valley Ranch site; however, eleven recorded sites are known to exist within a 1-mile radius of the site. Ground-disturbing activity during construction could potentially uncover prehistoric archaeological sites. No direct impacts on any known cultural resources would occur during normal operation and maintenance of the project. There would be no increase in the potential for disturbance and/or removal of artifacts from cultural resource sites. Decommissioning the project at the end of its useful life also poses the potential for further impacts if decommissioning activities stray beyond the perimeters of the pre-existing disturbance zones used during construction. *Mitigation Measures* Mitigation measures related to cultural resources would be similar to those proposed by the Applicant for the proposed action in Table 1-3. A qualified archaeologist would monitor the ground-disturbing activities. Any affected Tribal Nation would be notified prior to ground disturbing activities, and would be invited to have representatives present during such activities. If intact archaeological resources or human burials were encountered during construction, activities that could further disturb the deposits	Construction activities could destroy artifacts or structures or disturb relationships among artifacts and their context; however, it is not known how many of the seven identified resources would be subject to direct impacts from project construction. Because one of the cultural resources is a prehistoric trail that reportedly crossed through the middle of the property, it is possible the trail route would intersect multiple elements of a wind energy project on this site. The two prehistoric resources and the historic resources associated with railroad and irrigation activities are likely to be located near the Yakima River and would not likely be subject to direct impacts. No direct impacts on any known cultural resources would occur during normal operation and maintenance of the project. There would be no increase in the potential for disturbance and/or removal of artifacts from cultural resource sites. Indirect impacts to cultural resources would primarily involve changes to the visual context of the resources and to a number of the 30 cultural resources that have been identified in the area surrounding the Springwood Ranch. Decommissioning the project at the end of its useful life also poses the potential for further impacts if decommissioning activities stray beyond the perimeters of the pre-existing disturbance zones used during construction.

Table 1-5: Continued

Swauk Valley Ranch	Springwood Ranch
would be directed away from their vicinity. The Washington State Archaeologist and other pertinent parties would be contacted to determine how the materials should be treated, and the area would be secured.	*Mitigation Measures* Mitigation measures related to cultural resources would be similar to those proposed by the Applicant for the proposed action in Table 1-3 and as described above for the Swauk Valley Ranch alternative. Prior to construction, mitigation measures appropriate for any crossing of the reported onsite prehistoric trail would need to be developed in consultation with any affected Tribal Nation and with approval by EFSEC.
3.9 Visual Resources	
Under the Swauk Valley Ranch alternative, construction activity and operating turbines would be visible from I-90, SR10, and from nearby residences. Although information from individual viewpoints is not available for this alternative, it is expected that high level impacts would result from this alternative due to its location. During project operations, the visual quality of expected future views would be affected by the size, color, and arrangement of the turbines. The additional impact of experiencing the turbine's strong vertical forms across the wide-open, horizontal space would affect rural residences. Overall, development of a wind farm on Swauk Valley Ranch would significantly change the aesthetic character of the local landscape. Nighttime lighting of turbines and facilities would also be required. The required aviation marking lights would result in significant additional impacts on nearby residents and passing motorists. Security lighting at an O&M facility and a project substation would have minimal impact on the nighttime visual environment if it were tied to motion sensors. Blade glint or glare from sunlight reflecting off moving blades could possibly be an annoyance to potential viewers late in the day. *Mitigation Measures* Mitigation measures for the Swauk Valley Ranch alternative would be similar to those proposed by the Applicant for the proposed action in Table 1-3. Mitigation measures implemented could include dust suppression and restoration related to construction, use of neutral colors and nonreflective finishes on project facilities to reduce contrast with surrounding areas, minimum lighting to meet FAA regulations and security concerns, location of electrical facilities underground, pubic education, vegetative screening, and other uniform design features. Additional mitigation measures appropriate to the specific project site could also be proposed. Some of those measures could be published recommendations from current literature about wind power project aesthetic impacts.	Visual impacts associated with construction of the Springwood Ranch alternative would have a temporary but moderate visual impact on views from nearby residences and roads in the Thorp Prairie area. The construction-related visual impact from more distant viewpoints would be low. The Springwood Ranch project would have significant visual impacts during operation. This alternative would be highly visible from I-90, with turbines located in middleground views and breaking the skyline, with similar impacts to views from SR 10 and the Thorp Highway. Overall, development of a wind farm on Springwood Ranch would significantly change the aesthetic character of the local landscape, especially as viewed from I-90, and high level impacts would be expected. The required aviation marking lights would result in significant additional impacts on nearby residents and passing motorists. Security lighting at an O&M facility and a project substation would have minimal impact on the nighttime visual environment if it were tied to motion sensors. Blade glint or glare from sunlight reflecting off moving blades could possibly be an annoyance to eastbound drivers on I-90 late in the day. *Mitigation Measures* Mitigation measures would be similar to those proposed by the Applicant for the proposed action in Table 1-3 and for the Swauk Valley Ranch alternative, above.

Table 1-5: Continued

Swauk Valley Ranch	Springwood Ranch
3.10 Transportation	
Potential impacts of construction include traffic delays and degradation of the road surface caused by trucks delivering tower components. Most construction traffic would travel to the site using I-90, SR 10, and the Kittitas County road network. Construction-related parking would be located at an appropriate, designated area or along site access roads. Wind turbine components would need to be transported along state highways from a larger metropolitan area such as Seattle. Trucks delivering construction equipment and materials to the project site would exceed the WSDOT legal load limit, requiring special permits to be issued for vehicles exceeding the state's maximum size, weight, and load limits. Trips generated by onsite workers present during operation would not affect the existing level of service at local intersections. The wind towers would be closer to I-90 compared to the Kittitas Valley, Desert Claim, and Wild Horse sites, and it is anticipated that some travelers on I-90 would leave the freeway to take a closer look at the facility. A detailed evaluation of potential airspace conflicts has not been completed for the Swauk Valley Ranch alternative. *Mitigation Measures* A TMP would be prepared for this project containing similar construction traffic management measures as described for the proposed action. The TMP would contain site-specific measures to accommodate travelers on I-90 that would leave the freeway to take a closer look at the facility.	Due to the very low existing traffic volumes, the traffic generated by construction would not affect level of service on local roads in the project area. Potential impacts of construction include degradation of the road surface caused by trucks delivering tower components. In addition, the delivery of turbine components might be difficult due to the physical constrictions of the Elk Heights interchange and the adjacent intersection of Elk Heights Road and Thorp Prairie Road. The Thorp Prairie Road has numerous horizontal and vertical curves that might be problematic for transporters with low clearances. Increases in traffic could result in an increase in accidents in the project area. Trips generated by onsite workers present during operation would not affect the existing level of service at local intersections. The wind towers would be closer to I-90 compared to the Kittitas Valley, Wild Horse, and Desert Claim sites, and it is anticipated that some travelers on I-90 would leave the freeway to take a closer look at the facility. A detailed evaluation of potential airspace conflicts has not been completed. However, based on the project site location, it does not appear that a wind energy project at the Springwood Ranch site would interfere with air traffic or airspace at either Bowers Field or the Cle Elum Municipal Airport. *Mitigation Measures* A TMP would be prepared for this project containing similar construction traffic management measures as described for the proposed action in Table 1-3. The TMP would contain site-specific measures to address physical roadway constrictions for trucks delivering tower components (i.e., the Elk Heights interchange, the adjacent intersection of Elk Heights Road and Thorp Prairie Road, and numerous horizontal and vertical curves on Thorp Prairie Road). To avoid tourists making U-turns on county roads with narrow or no shoulders, a turnaround and small off-road parking area at a suitable viewpoint on Thorp Prairie Road would be constructed where interpretive information could be included.
3.11 Air Quality	
Impacts of this alternative would be similar to those described for the proposed action due to the similarities in construction, operations, and maintenance activities associated with the proposed projects. *Mitigation Measures* Because of similarities in construction, operations, and maintenance activities, the	Impacts of this alternative would be similar to those described for the proposed action due to the similarities in construction, operations, and maintenance activities associated with the proposed projects. *Mitigation Measures* Because of similarities in construction, operations, and maintenance activities, the

Table 1-5: Continued

Swauk Valley Ranch	Springwood Ranch
Swauk Valley Ranch alternative would implement the same mitigation measures for construction-related air emissions and dust as described for the proposed action (see Table 1-3).	Springwood Ranch alternative would implement the same mitigation measures for construction-related air emissions and dust as described for the proposed action (see Table 1-3).
3.12 Noise	
Noise generated by construction equipment is expected to vary, depending on the construction phase, but would not be expected to substantially impair nearby residential land uses. Temporary blasting noise impacts would be associated with construction of the wind turbines. Construction vehicles traveling on local roadways and other nearby roads would temporarily increase noise levels. Noise levels during project operations could exceed regulatory thresholds, depending on the distance between turbine strings and residences. Changes in background noise levels could be perceived as adverse depending on the magnitude of that change and the nature of the receptor. Minor increases in traffic along US 97 and project access roads during project operations would not be expected to generate substantial adverse noise effects. The project would not result in any significant impacts from ground borne vibration. Noise emissions resulting from decommissioning would be expected to be similar to, or lower than, noise levels encountered during construction. *Mitigation Measures* The Swauk Valley Ranch alternative would implement mitigation measures for construction noise similar to those recommended for the proposed action in Table 1-3. An acoustical analysis of the final turbine layout could be prepared similar to that described for the proposed action. Turbines could be relocated or removed, to the extent necessary to meet applicable regulatory thresholds.	Noise generated by construction equipment is expected to vary, depending on the construction phase, but would not be expected to substantially impair nearby residential land uses. Several residences are within approximately 500 feet of one or two turbine locations in the northwestern corner of the Springwood Ranch layout. The closest residences could be subject to operational noise in excess of the nighttime noise level of 50 dBA for EDNA Class A receivers and/or noise level increases of about 10 dBA. It is possible that the proposed Springwood Ranch project might result in significant noise impacts to these residences unless the turbines in question were relocated or eliminated. Noise emissions resulting from decommissioning would be expected to be similar to, or lower than, noise levels encountered during construction. *Mitigation Measures* Mitigation measures would be similar to those described for the proposed action in Table 1-3 and for the Swauk Valley Ranch alternative, above.
3.13 Public Services and Utilities	
Demands on public services and utilities for the Swauk Valley Ranch alternative would be similar to, but likely less than, those described for the proposed action and the other alternatives due to the relatively small size of this alternative. Construction activities could potentially result in additional calls for fire response and law enforcement. As with any construction site, the demand for EMS could increase due to the potential for construction related accidents. Project-related demands on schools, water supply, sewer and solid waste disposal, and communication services would also be less than those described for the proposed action.	Impacts of the Springwood Ranch alternative on public services and utilities would be similar to those described for the proposed action. Potential needs for fire service during construction and operation would likely be addressed by a service contract with Fire District No. 1, based in Thorp. It is anticipated that project-related demands for police, schools, solid waste disposal, and communications services would be limited or minimal on existing service systems. Needs for water supply and sewer service would be addressed internally through project construction and operation plans and would have minimal impacts on existing delivery systems for those utility services.

Table 1-5: Continued

Swauk Valley Ranch	Springwood Ranch
Mitigation Measures If the Swauk Valley Ranch alternative were constructed, mitigation measures similar to those described for the proposed action in Table 1-3 would be implemented to address potential impacts to local public service and utility providers. Appropriate mitigation would be coordinated with local providers and designed to address specific project issues related to law enforcement, fire protection, emergency medical services, schools, water supply, wastewater, and communication services.	*Mitigation Measures* If the Springwood Ranch alternative were constructed, mitigation measures similar to those described for the proposed action in Table 1-3 would be implemented to address potential impacts to local public service and utility providers. Potential needs for fire service during construction and operation would likely be addressed by a service contract with Fire District No. 1, based in Thorp. Needs for water supply and sewer service would be addressed internally through project construction and operation plans.