

Visual Resources

Affected Environment

The affected area for visual resources extends beyond the corridor to adjacent lands.

The project area encompasses a variety of landscape settings ranging from the Roosevelt Lake reservoir and the rugged basalt outcrops near Grand Coulee to agricultural, rangeland, woodland, and scrubland over most of the route, to urban environments near and in Spokane. Important visual and recreational features include Grand Coulee Dam, Banks Lake, Roosevelt Lake, the Spokane River, and Riverside State Park along the Spokane River just outside the City of Spokane. No other distinct or rare land forms or other features are present. However, a common element of the visual setting is that it includes a corridor with four transmission lines over most of the project's length.

At the west end of the corridor near the Columbia River, terrain is rugged, with large basalt outcrops, steep slopes and canyons. The area is scenic because the landscape is vast and encompasses a variety of landscape features of differing form, color, and texture, including the Grand Coulee Dam and Lake Roosevelt. The City of Grand Coulee is also located here, which was built around the construction of Grand Coulee Dam. Grand Coulee Dam is a major producer of electricity, and there are many transmission lines of different sizes, shapes, and colors that cross the area (see Figure 3-15 and 16).

The landscape east of Grand Coulee is dominated by large dryland farms broken in places by intervening drainages (some rugged and forested), rangelands and scrublands. Much of the terrain east of Grand Coulee is relatively flat and rolling farmland that changes seasonally as farmers plow fields, plant and harvest crops (see Figure 3-17). The rights-of-way in this area tend to blend with the adjacent land because crops are grown in the right-of-way. The area is dry and a surface haze often lessens distant views.

The setting in the eastern part of the study area is more urban and varied. It encompasses the scenic Spokane River and adjacent park land; residential, commercial, and institutional areas east of the Spokane River; and an industrial landscape near Bell Substation. The Spokane River, which flows through Spokane, has numerous recreational and scenic opportunities along its banks (see Figure 3-18). The main resource for scenic and recreational opportunities along the Spokane River is within Riverside State Park. The existing Grand Coulee-Bell corridor crosses the park north of Deep Creek. The crossing is visible from Nine Mile Road to the east and Riverside Park Drive to the west approximately between corridor mile 76/8 and 77/6.

3 Affected Environment, Environmental Consequences, and Mitigation



Figure 3-15. Grand Coulee Area (from North Dam Park looking south)



Figure 3-16. Grand Coulee Area (looking north from Delano Heights)



Figure 3-17. Cultivated Area (looking east)



Figure 3-18. Spokane River/Riverside Park (looking east).

3 Affected Environment, Environmental Consequences, and Mitigation

Suburban Spokane is hilly and tree-covered, with many housing developments next to the corridor or within view of it (see Figures 3-19, 20 and 21). The corridor is readily apparent in this area because trees have been cleared and/or houses are present up to the edge of the ROW. Along Indian Trail Road between corridor mile 78/2 and 79/2, two subdivisions have been built adjacent to the southern corridor boundary. Lattice steel towers and wood poles are clearly visible from the housing developments. The corridor skirts the northern edge of Fivemile Prairie, with more sparsely developed residential uses in the area, and then descends in elevation toward Whitman College. Continuing east, the right-of-way passes between single-family housing developments and Whitworth College (see Figures 3-22). The northern boundary of Whitworth College campus does not have views of the corridor due to grade changes and screening by trees. On the northern boundary of the corridor between Waikiki Road and U.S. Highway 395 (corridor mile 81/10 to 82/7) single-family homes are present adjacent to the corridor. Those homes immediately adjacent to the corridor have clear views of the existing lattice steel towers and wood pole structures. The corridor passes near another single-family housing development between corridor mile 82/8 and 83/3. Homes in this area are more set back from the right-of-way (there are two intervening Avista 110-kV transmission lines in this area, and trees provide partial screening). Between corridor mile 83/4 and 83/6, the corridor (which consists of just the two 115-kV lines in this area) traverses the Hico Village Northpointe commercial area (see Figure 3-23). Near Bell Substation the land is flat and covered with grass (see Figure 3-24). This is an industrial area with the Kaiser Aluminum plant adjacent to Bell Substation.



Figure 3-19. Residences Next to Corridor – Indian Trails Area.



Figure 3-20. Residences Next to Corridor – Brentwood Area.



Figure 3-21. Middle Ground View From Subdivision.

3 Affected Environment, Environmental Consequences, and Mitigation



Figure 3-22. Whitworth College Area



Figure 3-23. Commercial Area



Figure 3-24. Industrial Area.

Environmental Consequences

Construction, operation and maintenance of transmission facilities can affect visual resources for both the long and the short term. Any part of the facility can contribute to visual impacts: structures, conductors, insulators, spacers, aeronautical safety markings, right-of-way clearing, access roads, clearing for structures, and pulling and reeling sites for the conductors. Distance from sensitive viewpoints decreases visibility. Different landforms and vegetation influence visual impact; some are more able to screen transmission line features. The visual setting also influences the visual experience. Because the setting already contains four transmission lines, impacts would be less than for a setting without transmission lines. Also, due to aviation safety concerns, it could be necessary to paint or light towers in some locations (e.g., hill tops or river crossings).

Facilities can be visible from potential viewpoints such as private residences, highways and roads, and commercial areas. Locating facilities in areas where soils are highly erodible or have poor potential for revegetation contributes to visual impact. Because a transmission line is a physical element, its visual presence would last from construction through the life of the line.

Residents are normally very sensitive to changes in their surrounding environments and views. Changes to facilities within the corridor would alter existing views, depending on the topography, vegetation, and size and color of the new structures. Residents in those areas adjacent to the corridor would be more adversely affected by the change in views. However, those traveling on highways are not as sensitive to changes in view because they only pass the lines for a short time and are generally headed to other destinations.

3 Affected Environment, Environmental Consequences, and Mitigation

Impact Definitions

A **high** impact would have these outcomes.

- A large number of people highly sensitive to their surroundings see the line in *foreground* and *middle ground* views; or
- The lines dominate views and/or appear uncoordinated and chaotic. This may occur when two or more lines are visible and are dissimilar in size, configuration, color and/or spacing.
- The area is officially recognized for its scenic or recreational values.

A **moderate** impact would have these outcomes.

- The line would be visible to large numbers of people but it is not a dominant element in the landscape because electrical facilities are commonplace in the area, views are partially screened, large segments of the line may be visible but only for a short time, and/or most views are in the middle ground.
- Scarring, and/or erosion from access roads or clearing is evident but not severe or extensive.
- The line would conflict with prevailing land patterns but be visible to few people or for short periods.

A **low** impact would have the following outcomes.

- Few viewers would see the line because it is isolated, screened, or seen at a distance; existing conditions (transmission lines) have already established impacts.
- Access road scars and clearing would not significantly detract from the setting.
- Views would be short-lived and no visually sensitive resource would be affected.

Impacts

Transmission lines are commonplace in the Grand Coulee area and they are a major element of the visual setting. There are many transmission lines that vary in size, shape, and color and extend in many directions. The new transmission line would be a relatively small addition to the setting. The new line would extend across North Dam Park, an existing landfill, and SR 155 near single-family housing. Residents in and around Grand Coulee, tourists, motorists and pedestrians would be able to see the transmission lines. The line would be in the immediate foreground of users of the park, which may adversely affect their experience. The new towers, though large, would be consistent with existing conditions. Overall, the impacts would be low to moderate because the large number of the existing lines has altered the visual character of the existing landscape (see Figures 3-25 and 26). However, depending on tower placement, the line could intrude on a viewshed that encompasses Grand Coulee and the Columbia River from an archeological site in the area. If such visual intrusion occurs, the level of impact would be high.



Figure 3-25. Grand Coulee Area With Photo Simulation (from North Dam Park looking south)



Figure 3-26. Grand Coulee Area With Photo Simulation (looking north from Delano Heights)

3 Affected Environment, Environmental Consequences, and Mitigation

At corridor mile 3/8, the new transmission line would join and be part of the existing corridor that has already impacted the area. The old Grand Coulee Highway passes under and parallels the corridor from corridor mile 3/8 to 4/4. The level of impacts would be low because traffic volume is light and road conditions require drivers' attention. Motorists would have intermittent, brief views of the line. The change from existing conditions would not be apparent to the average viewer.

From corridor mile 4/5 to 6/4, the corridor is isolated and not easily seen. Terrain is rugged basalt outcrops and coulees with sparse vegetation. Impacts would be low.

Between corridor miles 6/4 and 6/5, cultivated fields begin and continue to corridor mile 68/9, interrupted only by intervening drainages, woodlands, and scrublands, especially in the Bachelor Prairie/Hawk Creek area, where rugged terrain prevents farming. Though most of this segment is isolated, it does parallel and/or cross local and county roads. Most viewers would see the line briefly and/or in the background. Because most views are from afar, the expansiveness of the landscape would diminish the scale of the large towers and would absorb the towers into the landscape. An exception may be during periods of low sun angles in the early morning and late afternoon. Unless mitigated, the sun reflecting off the towers, conductors, and insulators would increase visibility by several miles. A representative view of the corridor traversing agricultural land is shown on Figure 3-27.



Figure 3-27. Cultivated Area with Photo Simulation (looking east)

In the agricultural land the right-of-way would not be visible. In the non-agricultural areas, vegetation is sparse and canyons can be spanned with minimal clearing. These areas are isolated with few viewing opportunities. Overall, the level of impacts for this segment would be low because the segment is isolated, few people would see the line because there are few residences and roads are lightly traveled, and it would be in an established corridor.

The line remains isolated until corridor mile 69/8 near the crossing of Brook Road and Coulee Hite Road. Here the line would be visible to travelers on these roads and to rural residents. From corridor mile 70/3 to corridor mile 72/7 the line is out of view and would have low impacts. Between corridor mile 73/1 and 74/7, the line is next to Coulee Hite Road and crosses Four Mound Road. Travelers would see the line in the foreground for 2 to 4 minutes. The new line would appear more massive and provide greater contrast with use of double-circuit towers (approximately 175 feet high) between corridor mile 73/1 and 73/4. From corridor mile 74/7 to 76/6 the line is not seen except for two crossings of Seven Mile Road. These are rural roads, traffic is light on these roads, and, there are few residences; impacts would be low to moderate.

The corridor passes through Riverside State Park between corridor miles 76/7 and 77/6. The park allows public access to the Spokane River for recreational and scenic uses. Visitors to Riverside State Park and the Centennial Trail would experience moderate to high impacts depending on their distance from the line. The line within the park is generally not visible except when next to or under the line. Existing lines have already impacted the park but park visitors normally have a high awareness of their surroundings. Mitigation, such as using plants as screens at critical vantage points, is recommended.

The transmission line crossing of the Spokane River would cause moderate to high impacts to viewers depending on viewer location (see Figure 3-28). Most views would be in the middle ground and background with towers *backdropped* or well screened by trees and topography. Motorists using Nine Mile Road would have moderate impacts. Traffic is light but motorists would see the line for 2 to 3 minutes.

Between towers 77/7 and 81/8, the line is next to housing developments (see Figure 3-29) and/or visible to many residents with middle ground and background views. East of Nine Mile Road the corridor passes immediately adjacent to a housing development between corridor miles 78/1 and 79/2. In this section, the line would remain a prominent feature and be visible to many viewers, with impacts ranging from moderate to high. In some areas, such as near Five Mile Road, residents would have panoramic views of the new line because towers and conductors would occupy most of their view. The level of impacts would be high in these areas.

Crossing Waikiki Road and continuing to corridor mile 83/3 the new line would be close to and in direct view of many residents (see Figure 3-30). The northern boundary of the corridor is adjacent to single-family homes between corridor miles 81/10 and 83/1. The size of the 500-kV line and conductors, in relation to nearby objects, would be more dominating. Residents nearest

3 Affected Environment, Environmental Consequences, and Mitigation



Figure 3-28. Spokane River/Riverside Park with Photo Simulation (looking east)



Figure 3-29. Residences Next to Corridor with Photo Simulation –Indian Trails Area



Figure 3-30. Residences Next to Corridor with Photo Simulation – Brentwood Area

to the corridor would likely experience high impacts, but as people become accustomed to the new line, their awareness of it would moderate over time. Most residents beyond about 500 feet would have low to moderate impacts because much of the line would be blocked from view by other houses or vegetation (see Figure 3-31).

Between corridor miles 82/1 and 82/6 the corridor runs adjacent to the northern boundary of Whitworth College (see Figure 3-32). The northern boundary of the college slopes down to the corridor and is heavily vegetated. The new transmission line would have a low impact to the college given the amount of vegetation and topography. At corridor mile 83/1 the corridor travels southeasterly towards Bell Substation. Between corridor miles 83/1 and 83/3 the corridor passes close to existing single-family homes. The impact to these homes would be low to moderate depending on the amount of screening of the line from existing vegetation.

Between corridor miles 82/6 and 83/7 the line would be less visible because the flat terrain and screening from trees and buildings would limit views from off the right-of-way. With use of double-circuit towers between corridor mile 83/1 and 83/6, the transmission line would contrast with the existing corridor to a greater extent, and would be more visually apparent to viewers. Between corridor mile 83/4 and 83/6 where the corridor traverses across a commercial area that also supports RV use, the transmission line would be readily apparent in the foreground (see Figure 3-33). In this area, the double-circuit lattice steel towers would be on the southerly side of the corridor. Impacts would be moderate in this area. Commuters on U.S. Highway 395 and U.S. Highway 2 would have views of the line but impacts would be low to moderate because views would be brief, with other distractions such as traffic, road signs and vegetation competing for viewer's attention.

3 Affected Environment, Environmental Consequences, and Mitigation



Figure 3-31. Middle Ground View From Subdivision with Photo Simulation



Figure 3-32. Whitworth College Area with Photo Simulation



Figure 3-33. Commercial Area with Photo Simulation

Impacts would be low from corridor mile 83/6 to Bell Substation. This is an industrial area that has been modified by many lines entering Bell Substation (see Figure 3-34).

Short-term construction activity within the corridor would introduce new elements into the visual environment. Access roads would be built or improved as necessary, and staging areas designated along the corridor. Materials stockpiled within staging areas such as tower steel, bolts, conductor reels, insulators, and culverts would provide rectangular bulk and linear complexity to the existing visual landscape. The color and texture of these materials may be reflective and different compared to the backdrop of the existing landscape. Areas along the corridor that would be the most sensitive to construction activity are those near residential, recreational or scenic uses. These areas include new right-of-way coming into Grand Coulee that passes over and/or near residential and recreational areas; and sections of the corridor from corridor mile 76/5 to 77/6, 78/2 to 79/2, and 79/9 to 83/3 through Riverside Park and adjacent to residential areas. Once constructed, all unused material would be disposed of or recycled, equipment removed, and the landscape restored to its original condition. Overall, the level of visual impacts during construction would be low to moderate.

3 Affected Environment, Environmental Consequences, and Mitigation



Figure 3-34. Industrial Area with Photo Simulation.

Environmental Consequences of the Alternative Action

Constructing a double-circuit transmission line within the easterly 9 miles of the corridor would result in greater visual impacts. The taller towers (nominally 175 feet) and their greater complexity (double versus single circuit) would provide greater contrast with the existing transmission structures in the corridor. Their greater size would also increase their visibility to residents and travelers in the area, which is the most populous section of the corridor. Overall, impacts would be moderate to high and greater than under the Agency Proposed Action.

Cumulative Impacts

The Grand Coulee-Bell corridor consists of lattice steel and wood pole structures. The proposed project would replace one of the existing wood pole structures and upgrade it with a lattice steel structure. The rough texture and dark brown color of the wood pole structures are natural looking, smaller, weather to a lighter color, and tend to blend into the surrounding landscape better over time. The proposed project would increase the number of steel structures within the corridor in relation to what exists today, leading to greater combined visual impacts associated with the corridor's transmission lines. In addition, greater residential development will occur in the vicinity of the line that would contribute to greater cumulative impacts over time. The greatest cumulative impact would be in the urban Spokane area where residents, recreational uses and scenic views would be affected. However, as loads continue to grow, using existing right-of-way by removing small lines and building larger ones may be a preferred choice for utilities because, in some cases, using existing right-of-way may have fewer environmental impacts and potentially lower economic costs to ratepayers. No known additional changes to the transmission system in the area are planned that would contribute to adverse visual impacts.

Mitigation

The transmission lines and structures would blend more effectively with the surrounding environment using the following mitigation:

- Impacts will be lessened with placement of towers adjacent to the existing 230-kV towers, where practical, and by maintaining tower heights that are about the same as the 230-kV towers.
- Use tower steel that has been treated to reduce reflectivity.
- Use *non-specular* conductors.
- Use non-luminous insulators (i.e., non-ceramic insulators or porcelain).
- Plant vegetative screens, do selective clearing/tree topping at Riverside State Park and other selected sites.
- Develop site-specific mitigation after construction is complete. For example, because the new transmission line would potentially detract from recreational users' experience at North Dam Park in Grand Coulee, improvement of park access roads or comparable mitigation could help offset this impact.
- Use existing topography and vegetation when ever possible to limit views of lines and structures.
- Locate construction staging areas out of sight of potential viewers as much as possible.
- Require that contractors maintain a clean construction site and that the corridor is kept clean after construction.
- Maintain permanent access roads.
- BPA will work with the Federal Aviation Administration to determine if there are any concerns about aviation safety and whether painted or lighted towers need to be considered.

Also, if any new towers intrude on the viewshed east of an archeological site in the Grand Coulee area, the Colville Confederated Tribe's Historic Preservation Officer will be consulted.

3 Affected Environment, Environmental Consequences, and Mitigation

Environmental Consequences of the No Action Alternative

Existing transmission lines in the corridor would continue to be seen. No new visual impacts would be expected.