Chapter 7 Visual Resources

This chapter describes the existing visual resources in the project area, and how the project alternatives could affect these resources. Related information can be found in Chapter 5, Land and Chapter 6, Recreation, and Appendix E, Visual Assessment.

Words in **bold** and acronyms are defined in Chapter 32, Glossary and Acronyms.

7.1 Methodology

The methodology used for this visual resources assessment is based on the BLM's Visual Resource Management (VRM) system. This methodology is effective for evaluating many different types of development, including transmission line projects within rural and urban settings, and is regularly used for visual resource assessments by federal agencies. Visual resources within 5 miles of the action alternatives were inventoried using BLM Visual Resource Inventory methods (BLM 1986a). This distance was used because it represents locations with a potential **foreground** or **middle-ground view**, and the assumed maximum distance at which a transmission line would present a dominant or intrusive presence to the viewer (BLM 1986a). This methodology assesses landscapes according to the attributes described below. Impact levels incorporating these attributes are defined in Section 7.3.1, Impact Levels.

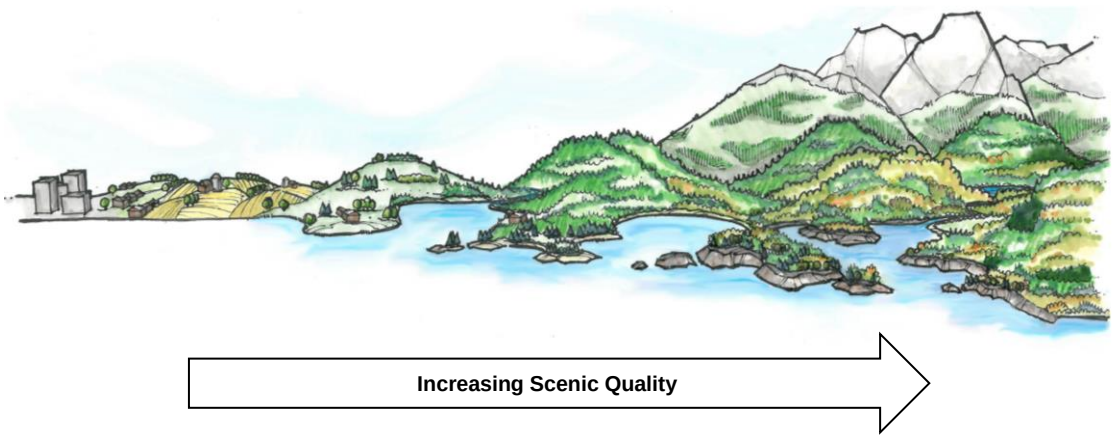
7.1.1 Landscape Rating Determination

The BLM's VRM system rates a landscape's scenic value by combining a rating of the scenic quality of the landscape with the sensitivity rating of the viewers. This landscape rating is then combined with a **contrast rating** of project components to evaluate visual impacts. These ratings are not intended as estimates of beauty.

7.1.1.1 Scenic quality

Scenic quality is a measure of the overall potential appeal of a view. The classification of scenic quality is based on the premise that natural landscapes with greater diversity, and/or containing "distinct" features, are generally considered to have higher scenic quality than landscapes that are more homogenous and/or with more common features (see Figure 7-1).

Figure 7-1 Scenic Quality Illustration



Under BLM's VRM system, the scenic quality of an area is categorized as "high," "medium," or "low," based on several key factors, including landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modifications (i.e., manmade additions to the landscape) (BLM 1986a).

- Landform
    - high vertical relief in prominent cliffs, spires, or massive rock outcrops, or severe surface variation or highly eroded formations including major badlands or dune systems; or dominant and exceptionally striking and intriguing features such as glaciers (high scenic quality);
    - steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or features that are interesting though not dominant or exceptional (medium scenic quality);
    - low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features (low scenic quality).
- Vegetation
    - a variety of vegetation types in interesting forms, textures, and patterns (high scenic quality);
    - some variety of vegetation, but only one or two major types (medium scenic quality);
    - little or no variety or contrast in vegetation (low scenic quality).
- Water
    - clear and clean appearing, still, or cascading white water that is dominant in the landscape (high scenic quality);
    - flowing, or still, but not dominant in the landscape (medium scenic quality);
    - absent, or present, but not noticeable (low scenic quality).
- Color
    - rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water or snow fields (high scenic quality);
    - some intensity or variety in colors and contrast of the soil, rock and vegetation, but not a dominant scenic element (medium scenic quality);
    - subtle color variations, contrast, or interest; generally mute tones (low scenic quality).
- Influence of Adjacent Scenery (beyond the landform being evaluated)
    - adjacent scenery greatly enhances visual quality (high scenic quality);
    - adjacent scenery moderately enhances overall visual quality (medium scenic quality);
    - adjacent scenery has little or no influence on overall visual quality (low scenic quality).
- Scarcity
    - one of a kind; or unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc. (high scenic quality);
    - distinctive, though somewhat similar to others within the region (medium scenic quality);

  - interesting within its setting, but fairly common within the region (low scenic quality).

- Cultural Modifications (changes to the visual landscape discernable as artificial, such as buildings or roads)
  - modifications add favorably to visual variety while promoting visual harmony (high scenic quality);
  - modifications add little or no visual variety to the area, and introduce no discordant elements (medium scenic quality);
  - modifications add variety but are very discordant and promote strong disharmony (low scenic quality).

7.1.1.2 Viewer Sensitivity levels

Sensitivity is an evaluation of the viewer and not the landscape, and is a way of ranking public concern for visual resources, based on the viewer. The type of user has an influence on visual sensitivity, as perceptions of the landscape tend to vary based on the intended use of the land and related expectations of the user. For example, hikers on a scenic trail may have a higher visual sensitivity than loggers or farm workers who are there as part of their job. Adjacent land use can also influence viewer sensitivity, based on the land use type and viewer expectations. Special places such as parks, natural areas, and designated scenic areas generally have a high level of viewer sensitivity, but sensitivity may depend on the management objectives for the area. Viewer sensitivity can also depend on distance.

The BLM VRM system categorizes sensitivity levels as “high,” “medium,” or “low.” Factors considered include the type of users, amount of use, public interest, adjacent land uses, and special areas. These measures of public concern are intended to be subjective, and have no standard definitions—the definitions are determined by what factors affect sensitivity on specific projects. Viewer sensitivities on this project were determined as follows:

- High viewer sensitivity—a large number of viewers, public use and exposure to the site or area; high public interest; typical viewers are nearby residents with an attachment to the landscape and long duration of their views, and recreational sightseers highly sensitive to changes in scenic quality and **viewsheds** (the visible landscape).
- Medium viewer sensitivity—intermediate viewer numbers, public uses, overall public interest, or adjacent land uses.
- Low viewer sensitivity—sparsely populated areas; few recreational or other public uses; most viewers are non-residents or workers traveling through or working in an area, or viewers from nearby commercial or industrial land uses.

The overall ranking does not necessarily represent an average of all individual factors, since it is possible for certain factors to outweigh others. For example, sensitivity can be affected by the amount of public use and exposure to the public, where a large number of viewers translates to high sensitivity. Sensitivity may also be high if public interest is very high. In such cases, the sensitivity rating may be high, despite other factors being low, indicating a generally high level of concern.

Because the project covers a large geographic area within both densely and sparsely populated areas, sparsely populated locations are generally given a low sensitivity level compared to

densely populated areas, if other factors are equal, because of a low number of viewers. The combination of an area's scenic quality and the sensitivity level of viewers in that area result in the visual resource landscape rating (see Table 7-1), and provide the baseline to determine the visual effects of the alternatives.

Table 7-1 Landscape Rating

Scenic Quality	Viewer Sensitivity		
	High	**Medium**	**Low**
High	High	High	High
Medium	High	Medium	Low
Low	Medium	Low	Low
Source: BLM 1986a (Illustration 11 – Determining Visual Resource Inventory Classes, Manual 8410a)			

7.1.2 Visual Resource Impact Determination

To evaluate the visual impacts from a project, the BLM VRM evaluates the visual attributes of a project compared against the visual resource landscape rating at the locations being described. The comparison is based on the visual contrast elements described below:

- Form—includes structures and movement, relates to the shape of disturbances in contrast to existing landscape shapes.
- Line—relates to the path the eye naturally follows when perceiving differences in landscape shape, color or texture.
- Color—relates to the degree that hue (e.g., red, blue, green), value (e.g., brightness), and chroma (e.g., saturation) contrast with existing landscape colors.
- Texture—relates to the patterns that exist within the larger landscape elements.
- Scale—relates to the proportional size of the object in relation to the field of view.

These elements are then combined into an overall contrast rating as follows: "none" where the element is not visible or perceived; "weak" where the element contrast can be seen but does not attract attention; "moderate" where the element contrast begins to attract attention and begins to dominate the characteristic landscape; or "strong" where the element contrast demands attention, will not be overlooked, and is dominant in the landscape (BLM 1986b).

The overall visual contrast is then combined with the landscape rating (see Table 7-1) to determine a visual impact rating for the area (see Table 7-2).

Table 7-2 Visual Impact Rating

Contrast	Landscape Rating		
	Low	Medium	High
None	Negligible	Negligible	Negligible
Weak	Low	Low	Moderate
Moderate	Low	Moderate	High
Strong	Moderate	High	High
Source: BLM 1986b			

More information about assessment and impact methodology, and a discussion of the landscape ratings assigned to the action alternatives by segment is in Appendix E.

7.2 Affected Environment

The action alternatives cross five regions with similar types, quality, and quantity of environmental resources: Willapa Hills, Cowlitz/Chehalis Foothills, Western Cascades Lowlands and Valleys, Valley Foothills, and Portland/Vancouver Basin (EPA 2007).

- Willapa Hills: The north end of the project is in the Willapa Hills. The action alternatives cross this region northwest of Castle Rock and parallel to the Cowlitz River, between the Monahan Creek and Baxter Road substation sites. Portions of the alternatives also cross this region between the Monahan Creek site and the Lexington area, and between Castle Rock and Silver Lake, north of Ostrander, Washington. The Willapa Hills are characterized by low, rolling hills and gently sloping mountains with fewer drainages than surrounding areas (EPA 2007). Water features are not prominent in the area. Given the fairly uniform textures and patterns of vegetation, color is also relatively uniform. The consistent vegetation and low rolling hills allow few **long-range views** and do not contribute greatly to scenic quality under BLM's VRM system. The region is relatively sparsely populated, with the neighborhood of Longview Heights to the south and scattered residential residences throughout other areas.
- Cowlitz/Chehalis Foothills: The project crosses the rolling to steeply sloping hills near Chehalis and the relatively flat Cowlitz River Valley. The action alternatives cross this region just east of Lexington, Washington, east of Longview, and north of the Lewis River. The urban areas of Longview/Kelso, Castle Rock and I-5 are in this region. The vegetation textures and patterns are fairly uniform, and visually limit views so that long-range viewing opportunities are rare. There are some color variations in the vegetation, although they do not dominate or create a strong scenic element. Water flows through this area, predominantly along the Cowlitz River, and contributes to scenic quality. The influence of scenery next to the Cowlitz/Chehalis Foothills region is limited due to the few long-range viewing opportunities. The visual characteristics of the Cowlitz/Chehalis Foothills are common in much of southwestern Washington and northwestern Oregon.
- Western Cascades Lowlands and Valleys: This region is characterized by large areas of lowlands and valleys that extend west from the Cascade Range. The action alternatives south of the Kalama River and north of the Washougal River, including most of the

Central and East alternatives, West Option 3, Central Options 2 and 3, and East Options 1, 2, and 3, cross this region. The moderate to steeply sloping hills are predominantly covered by western hemlock (*Tsuga heterophylla*) and Douglas-fir (*Pseudotsuga menziesii*) forests, and many areas have been, or will be, harvested for timber. The area is sparsely populated, but includes the communities of Ariel, Amboy, and Yacolt in the north; Venersborg and Hockinson in the southwest; and Camas and Washougal in the south.

The Western Cascades Lowlands and Valleys have more geographic relief than other regions. The vegetation is fairly consistent and tends to be most varied around rivers and lakes. Although not dominant through most of the area, water contributes to scenic quality around Merwin and Yale lakes and along the banks of rivers and creeks. Color contributes to scenic quality, primarily in autumn. Otherwise, the landscape is dominated by similar shades of green during most of the year.

- Valley Foothills: The action alternatives cross foothills in the Camas area, a transition zone between the Portland/Vancouver Basin to the west and the Western Cascades Lowlands and Valleys to the east. Portions of the action alternatives and options including West Options 1, 2 and 3, and Crossover Option 1 cross this region between Camas, Washington and the Sifton area. The Valley Foothills are drier than the neighboring mountains and have vegetation reflective of this, with Oregon oak (*Quercus garryana*) and Douglas-fir as the native vegetation. Non-native vegetation is more common than native vegetation in the Valley Foothills, as predominant land use is rural residential developments, woodlands, pastures, tree farms, vineyards, and orchards.

  The Valley Foothills region contains low rolling foothills with few dramatic features. There is some variety in the vegetation; however, it is rarely expressed in distinctive forms, textures or patterns. Visible water is rare throughout these foothills and, for the most part, does not contribute to scenic quality in the BLM's VRM system. There are some variations in color that contribute slightly to scenic quality; they are mostly shades of green and are not a dominant scenic element. Adjacent scenery to the Valley Foothills region has little effect on scenic quality, as most is blocked by the topography and vegetation. The scenery found in the Valley Foothills is similar to that found throughout much of southwestern Washington and northwestern Oregon.

- Portland/Vancouver Basin: The Portland/Vancouver Basin contains floodplains and undulating terraces. Portions of the action alternatives and options in Vancouver, Minnehaha, Camas, Washougal, and the Sifton area east of Minnehaha, Washington cross this region. All action alternatives cross this basin before ending at the Sundial substation site. The landforms of the region are dominated by low-relief floodplains with small rolling hills on the eastern edge that do not greatly contribute to scenic quality in the BLM's VRM system. Vegetation is moderately varied in the basin, as the change from rolling hills to floodplains creates more distinctive forms, patterns and textures. The vegetation patterns in the area moderately enhance scenic quality.

  Water in the Portland/Vancouver Basin also moderately enhances scenic quality at select locations surrounding the Columbia and Lewis rivers, and other small creeks. As a scenic element, although it is only visible in select locations, water is a distinctive feature to the viewers of this area. Color variations in the diverse vegetation moderately enhance scenic quality, but do not tend to be a dominant landscape element. Adjacent scenery to the Portland/Vancouver Basin region is generally not

highly visible or has little influence on scenic quality. This type of landscape is similar to other valley and basin areas in southwestern Washington and northwestern Oregon.

7.2.1 West Alternative and Options

The West Alternative originates in the Willapa Hills where the scenic quality is low because of the low topography of shallow, rolling hills with few prominent landscape features; little variation or contrast of vegetation types; color variations of vegetation that are present but not dominant; and limited visibility in most areas such that adjacent scenery does not influence or enhance the viewshed. Water is present, but in general is not cascading or entirely undisturbed by land development, and is not visible from most locations. The alternative continues south through the Cowlitz/Chehalis Foothills where the vegetation has some variety but does not form conspicuous textures or patterns over the rolling hills and meadows; these views of hills and vegetation are relatively uniform across the landscape. Rivers and riparian areas are present and contribute to scenic value, but they are generally obscured from most viewers due to forests and the low topography of the area. Views within the area are common to much of southwest Washington. The alternative passes through the rural and residential communities of West Side Highway and Kelso.

The hills become larger and the population less dense as the route passes into the Western Cascades Lowlands and Valleys. Scenic quality is rated low in this portion of the alternative due to the relatively low topography of the foothills, uniform textures, patterns of color and vegetation that are common to much of southwest Washington, water that is present but not dominant, and the lack of dominant features in the landscape. In most portions of this region, adjacent scenery is not visible or does not enhance the scenic quality due to limited long-range viewing or due to the numerous areas of timber harvest that contribute to disharmony in the landscape. Roads and transmission lines that exist along much of the West Alternative modify the view and can be dominant in areas where forest has been removed.

The alternative crosses the East Fork Lewis River and enters the Portland/Vancouver Basin ecoregion. This portion of the alternative is rated low due to flat terrain and relatively low rolling hills with few or no prominent features. Agricultural fields and rural development are common and modify the scenic quality. Water is present in some locations but is either not visible or not a dominant scenic element. An exception is the East Fork Lewis River system that does contribute to the scenic quality of that area. The river's riparian habitat offers some scenic contributions to the floodplain, meadows and open fields found in the basin. A limited number of parks such as the East Fork Lewis River Greenway also offer local natural landscapes of scenic value.

Dense population and commercial and industrial structures are prominent in the southern portion of the alternative. Scenic quality is generally low in the urban environment due to common views of buildings, bridges, and transportation corridors that are not harmonious with the natural landscape. Larger parks and greenways within the urban environment provide open space and contribute locally to scenic value. Undisturbed open space with native vegetation, such as the Lacamas Prairie Natural Area, add higher scenic value locally. As a major water course, the Columbia River offers scenic quality with islands formed by braided channels and riparian forests adding to the visual character of the metropolitan developed areas.

Local sites of higher scenic value are present along the route, but these are often small or have limited viewing opportunity due to surrounding low topography or tall vegetation. Scenic areas

near larger river systems, such as the complex of green space just north of the Columbia River crossing, including Lacamas Lake Park, the Washougal River Greenway, Lacamas Park Trail, and Goot and Oak parks contribute locally to scenic quality. Because of the limited number of these local sites of higher scenic quality, the overall scenic quality along the West Alternative is rated low.

West Options 1, 2, and 3 all pass through developed areas of Vancouver and Camas and each have a rating of low scenic quality as discussed above for this area. Although there are local sites with natural scenic value and some riparian systems with higher scenic quality, these sites are limited.

Viewer sensitivity along the West Alternative varies locally with land use, but viewer sensitivity is rated high along most of this route. The primary factor affecting viewer sensitivity is the viewer's proximity to the alternative. The West Alternative is relatively close to residential areas for most of its length, although population density varies. At the north end, it passes through rural residential areas northwest of the West Side Highway community where viewer sensitivity is rated medium. Rural residential areas have fewer users of the land, so the amount of use is lower than in more densely populated residential areas. However, public concern for the visual landscape in these areas may be higher because of rural residents' expectation of a less industrialized landscape. Public comments received during the scoping process for this EIS have indicated that residents along the West Alternative are highly sensitive to changes in scenic quality.

As the alternative crosses through the communities of West Side Highway and Kelso, it runs through or close to residential areas where viewer sensitivity is rated high. The alternative then crosses the Coweeman River and again through rural residential areas, with increased viewer sensitivity. As the alternative continues south across the Lewis River, it passes through agricultural land, which tends to have less-sensitive viewers than rural residential land. The density of residences increases south toward Hazel Dell. As the alternative crosses BPA's Ross Complex and shifts to a predominantly east–west direction, it passes through urban residential, commercial, and industrial land already affected by development, including transmission lines. Here, viewer sensitivity is lower because of existing similar development. Crossing Northeast 4th Plain Road and heading southeast toward Mill Plain and Camas, the alternative passes through open space and rural residential areas. Overall, the West Alternative and its options have viewers with a high sensitivity level for two reasons: a large amount of the route is in rural residential land use areas to the north where citizens are more sensitive to the addition of industrial structures; and residents to the south that are close to the right-of-way have expressed concern. The West Alternative and its options have a medium overall landscape rating based on having a low level of scenic quality and an average high viewer sensitivity level.

7.2.2 Central Alternative and Options

The area crossed in the north by the Central Alternative shares many visual characteristics with the West Alternative that result in a low scenic quality rating. Northwest of the Cowlitz River the alternatives are similar with only slight, localized differences. In general, the area has low rolling hills, and some variation in patterns, textures, and colors of vegetation between forested areas and rural residential development and agricultural pastures and cropland; these land uses modify the scenic quality of the area. Water is present but not always visible, except at Castle Rock and along trails on the Cowlitz River floodplain. East of the Cowlitz River, the Central Alternative crosses the Cowlitz/Chehalis Foothills area where numerous timber cuts and logging

roads along the route modify the landscape and contribute to the low scenic quality, except where the alternative crosses Spirit Lake Memorial Highway which adds some local scenic value for motorists. Riparian areas, also, are primary sites of local scenic value, such as at the Coweeman and Kalama river crossings.

The alternative crosses the Western Cascades Lowlands and Valleys where scenic quality is rated medium due to the distinctive nature of Merwin Dam and Lake Merwin, although such dams and reservoirs are not uncommon in the foothills of the Cascades. Texture and color of vegetation has some variety but is generally uniform across the landscape. Vegetation and topography limit views of adjacent scenery in this area. Rural residential and agricultural fields occur south of the lake and are scattered across the general landscape, and become more common farther south. The rolling hills often block adjacent scenery, but when visible these adjacent sites only contribute to a scenic quality rating of low because they are highly modified by timber harvest and logging roads.

Within the Portland/Vancouver Basin scenic quality is generally rated low due to the visual characteristics of the urban environment as described for the West Alternative. Local sites such as the Washougal River crossings do have higher scenic value.

Central Option 1 is in an area of low scenic quality on timber harvest land that has low rolling hills with little variation in texture, color, or pattern of vegetation. Central Option 2 is near Longview and Ostrander where scenic quality is low due to the commercial and industrial nature of the urban environment and development along the I-5 corridor. Most of the scenic quality along Central Option 3 is rated medium because of Merwin Dam and its reservoir and also the East Fork Lewis River at Lucia Falls and Moulton Falls Park; although these types of features are not uncommon in Washington foothills, and they do contribute to the scenery at local sites. The Central Alternative and its options have an overall low scenic quality.

The Central Alternative has generally low viewer sensitivity through the portion southeast of the Cowlitz River and north of the Lewis River. This area is sparsely populated and has limited use. Sensitivity and scenic quality are higher near the Lewis River just west of Lake Merwin through Ariel. West of Amboy and Yacolt, and east of Lewisville and Battle Ground, the alternative is located among rural residential homes and has medium sensitivity. East of Vancouver, the alternative turns east and away from rural residential areas until the alternative passes near the rural residential areas of Camas and into the suburban areas of Camas and Washougal near the Columbia River. The Central Alternative and its options have a low overall landscape rating based on having a low level of scenic quality and an average medium viewer sensitivity level.

7.2.3 East Alternative and Options

The area crossed by the East Alternative originates west of Castle Rock in the Willapa Hills and has visual characteristics similar to the Central Alternative. Scenic quality in this area is low because of the low topography of the shallow, rolling hills with few prominent landscape features; little variation in vegetation type, color, and patterns across the landscape; and in most areas adjacent scenery does not influence the view due to limited visibility except along the Spirit Lake Memorial Highway. The alternative crosses the Cowlitz and Coweeman rivers; at these locales which can be accessed by trails, these rivers contribute to the natural scenic quality. Where the alternative extends across the Cowlitz/Chehalis Foothills, the scenic quality remains low due to low topography with few prominent landscape features, and forest cover that is modified by timber harvest.

In the Western Cascades Lowlands and Valleys ecoregion, scenic quality for the alternative is rated medium. This is due to large areas of undisturbed landscape, especially in the vicinity of the upper Kalama River basin, and more topographic variation and steeper slopes where the alternative crosses between Lake Merwin and Yale Lake, near Canyon Creek, and where it crosses the Tarbell Trail. Adjacent scenery is visible in many areas, moderately enhancing the views.

In the Portland/Vancouver Basin ecoregion just east of Camas, the scenic quality is generally low due to flatter and less varied topography and uniform vegetation patterns. Although water is present, there are only limited and local views of Jones Creek and the Little Washougal River. Closer to Camas and the Columbia River, the scenic quality is the same as discussed for the West and Central alternatives. There are local sites of higher scenic value, but these are often limited and small in size or have limited viewing opportunity due to surrounding topography or vegetation.

East Option 1 is located in the Willapa Hills and Cowlitz/Chehalis Foothills ecoregions and has a low scenic quality rating as described for this area previously. The Cowlitz and Coweeman rivers and their tributaries offer higher scenic quality at local sites. East Option 2 is located in the Western Cascades Lowlands and Valleys ecoregion where scenic quality is rated low due to lower foothills and a landscape modified by timber harvest. East Option 3 crosses the Jones Creek Trail where scenic quality is enhanced locally where water is visible; overall, the scenic quality of this option is low due to the low topography of shallow hills, and vegetation that limits viewing opportunities. The East Alternative and its options have an overall low scenic quality.

At the north end of the East Alternative, viewer sensitivity is low because there are no homes, roads, or recreation areas. Near the north end of Castle Rock, sensitivity increases to medium because the amounts of use and types of users increase. The number of potential viewers increases near SR 504 and I-5. State Route 504 is a designated state scenic drive, and viewer sensitivity is high. East of Castle Rock, viewer sensitivity is low, because there are few residences, roads, or recreation areas. The northern portion of the alternative has low sensitivity for most of its length because there are few homes, few roads, and low levels of use, resulting in an overall viewer sensitivity of medium.

Sensitivity is greater where the alternative crosses Lewis River Road, and extends across the rural residential areas northeast of Ariel, and past the east end of Lake Merwin. South of Lake Merwin, sensitivity is lower, because there are fewer residences close to the alternative. Recreational land use becomes more influential on sensitivity; however, there is not a high amount of use, so sensitivity is low-to-medium. In the rural and residential areas of Camas and Washougal, sensitivity is medium-to-high, depending on the number of residences and their proximity to the East Alternative. The East Alternative and its options have a low overall landscape rating based on having a low level of scenic quality and an average medium viewer sensitivity level.

7.2.4 Crossover Alternative and Options

The area crossed by the Crossover Alternative shares its northern portion with the West Alternative where the overall scenic quality is rated low for the Longview area and along low rolling hills. The middle portion of the alternative is the same as the Central Alternative where scenic quality is rated medium because of the enhanced views in the Merwin Dam, Lake Merwin, Yale Dam, Yale Lake, and Canyon Creek areas. The Crossover Alternative also shares

the portion of its route south of Lake Merwin and Yale Lake with the East Alternative through low rolling foothills where timber harvest and logging roads are noticeable modifications to the landscape that contribute to the overall rating of low scenic quality, although the Tarbell and Jones Creek trails wind through unharvested areas that contribute some local scenic value. The physiographic characteristics and scenic quality of the areas for the overlapping portions of the West, Central and East alternatives are the same for the Crossover Alternative as more fully described for the other alternatives in Sections 7.2.1 through 7.2.3.

Crossover Option 1 is located in Camas where the scenic quality is rated low. Crossover Options 2 and 3 are located in the north near Castle Rock in areas rated as having low scenic value due to the low topography with few interesting landscape features; mostly uniform patterns and colors of vegetation; localized views of water; and development or land uses that modify the landscape. Based on the assessment of the landscape features, the Crossover Alternative and its options have an overall low scenic quality.

Sensitivity varies along the alternative, with land use influencing the level. Near Amboy and Ariel, there are residential users, motorists, and recreational users of the landscape. South of Lake Merwin, viewer sensitivity is lower, as there are fewer residences close to the alternative. Recreational land use becomes more influential on sensitivity; however, there is not a high amount of use, so sensitivity is low-to-medium. Entering the rural and residential areas of Camas and Washougal, sensitivity becomes medium-to-high, depending on the number of residences and their proximity to the alternative. The Crossover Alternative and its options have a low overall landscape rating based on a low level of scenic quality and an average medium viewer sensitivity level.

7.2.5 Substation Sites

The Sundial substation site(Lots 11 and 12) is in an area of low scenic quality, because of the flat relief floodplains; only somewhat varied vegetation (small patches of forest, shrubs, altered wetlands, and open pastures); some water influence; some color variations that are not a dominant scenic feature; no influence from adjacent scenery (due to limited visibility); somewhat distinctive scenery, but still common to floodplain landscape; and negative **cultural modifications** because of its location in an industrial park. The area has medium sensitivity because it is next to the Columbia River, has a high amount of use, there is low public interest in the site, adjacent land use (several existing substations and other industrial buildings) does not greatly influence the sensitivity, and it lacks any special areas or other considerations. The combined low scenic quality and medium sensitivity result in an overall low landscape rating.

The Casey Road substation site is in an area of low scenic quality, based on the low rolling foothills lacking dominant vertical relief or specific interesting landforms; a dense, uniform mixed wood vegetation that is currently partly logged; very little visible water; few color variations; and no influence of adjacent scenery (due to limited visibility). The site is a visual landscape common to the region, and includes negative cultural modifications such as logging activity and the existing transmission corridor. The area has low sensitivity, given the following factors: the type of use does not include residential use, parks, or other sensitive recreational uses; the amount of use is low; there is low public interest; the adjacent land uses do not increase the sensitivity; and there are no special areas. The low scenic quality and medium sensitivity result in an overall low landscape rating.

The Baxter Road substation site sits in a small topographical depression surrounded by vegetation. The site is not visible from sensitive viewpoints. The site is in the same remote area as the Casey Road substation site (about 2.5 miles away), and has the same negative cultural modifications. The scenic quality and sensitivity ratings for both sites are similar, with the same overall low landscape rating.

The Monahan Creek substation site is in an area of low scenic quality, based on the low foothills lacking dominant vertical relief or specific distinct landforms; largely uniform vegetation of mixed wood forest and small open pastures; very little visible influence of water on the landscape; few color variations in the vegetation; and no influence of adjacent scenery (due to limited visibility). The site is a commonly occurring landscape throughout the region, with cultural modifications (buildings and other structures) that have a negative effect on scenic quality. The area has medium sensitivity, given the rural residential usage (near existing residences and along a rural commuter road), amount of use, and public interest. The combined low scenic quality and medium sensitivity result in an overall low landscape rating.

7.3 Environmental Consequences

The evaluation of visual resource impacts is generally based on the BLM VRM system, which evaluates the existing visual landscape in the context of the project features, and how changes are likely to be perceived by viewers. The effect of a new feature on visual quality can be different when placed in remote locations as compared to being placed next to existing disturbances. Remote locations tend to have fewer potential viewers, but are often less disturbed and more natural in appearance, and viewers in remote locations may be more sensitive to potential changes. Sites close or next to existing disturbances tend to be of a lower scenic quality, but often have higher populations with more potential viewers.

To assist with the evaluation of potential visual resource impacts, a series of photographs were taken from viewpoints in the project area (see Map 7-1). Using visual simulations prepared from the photographs presented in this chapter, visual impact was then determined as a function of the landscape classification (based on scenic quality and viewer sensitivity) and the contrast rating, which evaluates how the project features would fit into the existing landscape (i.e., dominate it, attract attention, or would not attract attention).

General impacts that would occur for the action alternatives are discussed below, followed by impacts unique to each alternative.

7.3.1 Impact Levels

Impacts would be **high** where project activities would cause the following:

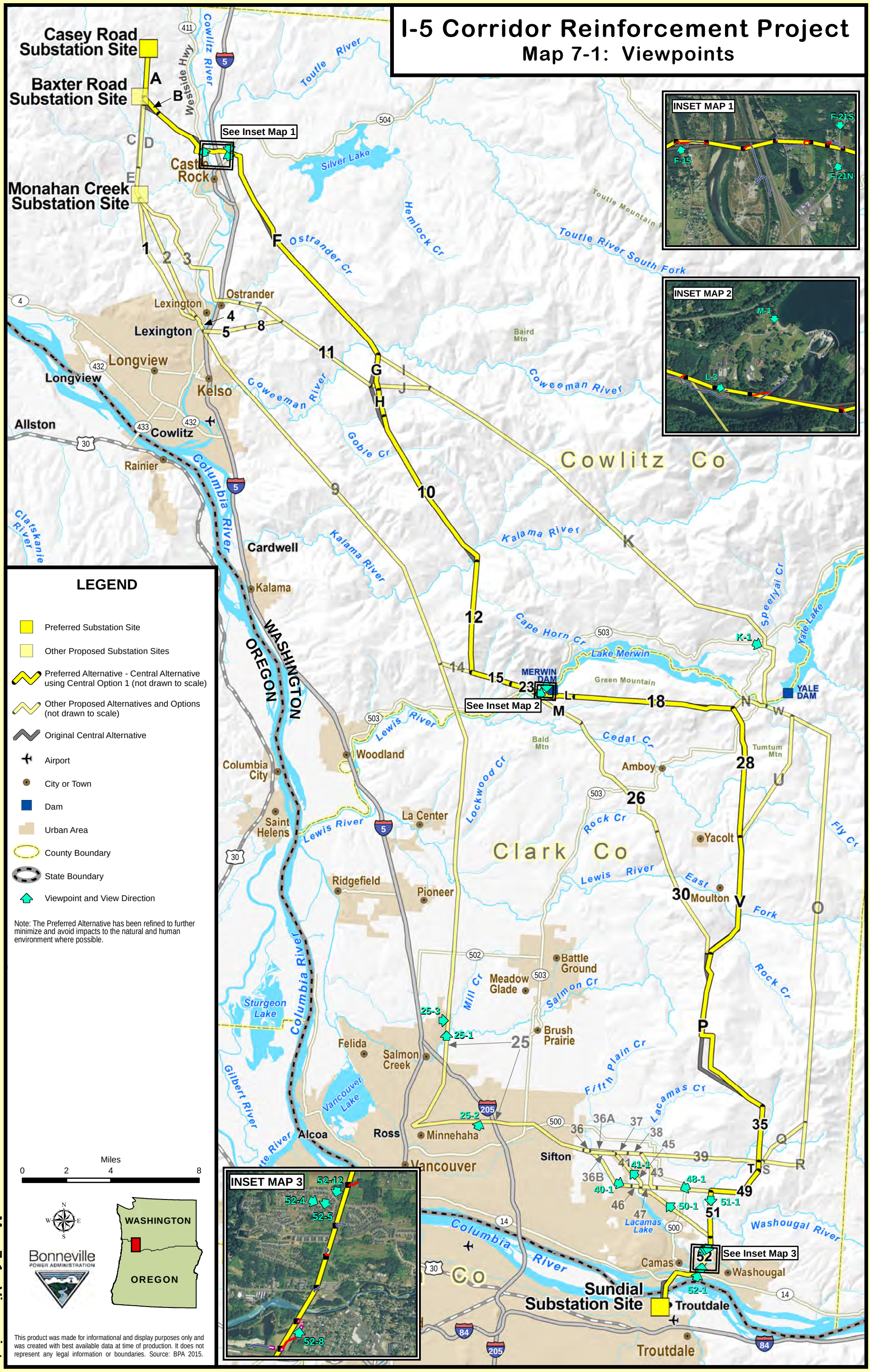
- Landscape rating is high or medium, and project features dominate the landscape.
- Landscape rating is high, and project features attract attention to the landscape.

Impacts would be **moderate** where project activities would cause the following:

- Landscape rating is high, and project features do not attract attention to the landscape.
- Landscape rating is medium, and project features attract attention to the landscape.
- Landscape rating is low, and project features dominate the landscape.

I-5 Corridor Reinforcement Project

Map 7-1: Viewpoints



Map 7-1: Viewpoints

Impacts would be **low** where project activities would cause the following:

- Landscape rating is medium or low, and project features do not attract attention to the landscape.
- Landscape rating is low, and project features attract attention to the landscape.
- Temporary visual changes from project construction.

No impact would occur where project features are visually negligible or not visible.

7.3.2 Impacts Common to Action Alternatives

7.3.2.1 Construction

Potential visual impacts include temporary visual changes during construction of the towers, conductors, access roads, and substations. Construction activities would create temporary changes in scenery by introducing helicopters, trucks, and heavy equipment such as cranes and bulldozers to the area. Construction activity in any one area would be brief (a few weeks), except at substation sites where construction would occur over many months. Construction crews would be working in localized areas of the transmission line right-of-way and at the substation sites, and would be visible primarily to nearby viewers or those with a direct line of sight to the activity. Installation of towers and stringing of the conductor by helicopter would be visible from a greater distance. The temporary helicopter fly yards on and off the right-of-way would be visible to those close by. The temporary staging areas that would be needed along or near the right-of-way to store materials, equipment, and vehicles would be visible to those in the immediate vicinity. The staging areas, ranging from 5 to 15 acres, would be located within existing developed sites or parking lots, where possible.

Construction activities would create a **low**, temporary visual impact because impacts would be short-term and temporary; right-of-way clearing, and towers and access road construction (a few weeks at a time for any one activity). At substation sites, construction activities would occur over a longer period but impacts would still be **low** since the Baxter and Casey sites are remote and the Sundial site is in an industrial complex. Impacts at the Monahan site may be higher for residents living adjacent or close to the site, or for motorists who use Delameter Road.

7.3.2.2 Operation and Maintenance

Permanent visual changes would be caused by the presence of the towers, conductors, access roads, cleared rights-of-way through forested areas, and from building substations on the landscape. Towers would create an obvious human made or industrial element to the **viewscape**. Where the new line would parallel other transmission lines, the line would not be out of context. In contrast, a new line within new right-of-way would degrade the natural visual quality of the area. While smaller transmission lines can be found in rural landscapes, the size of the towers required to support 500-kV lines are not typical in the project area. Most existing lines are 230-kV or below. Where there are fewer trees (primarily in the western segments), foreground views of the towers would be apparent because they could not be screened by vegetation (for example, in areas where there are no trees along roadsides to block views of towers). In distant views, towers would more readily blend into developed areas with existing rights-of-way.

Because lattice steel towers have spaces between their structural members through which the background can be seen (see Figure 3-1), the towers would blend in with the landscape from a distance where they have a backdrop of hills or vegetation. Weather conditions such as fog and rain further obscure visibility of the towers from a distance. However, towers would be more obvious on top of hills or ridges where they would break the skyline. The galvanized steel towers would appear shiny for 2 to 4 years before they dull from weathering, although conductors would be treated to reduce the shininess of the metal.

The proposed single-, double-, and triple-circuit 500-kV towers would be larger than the towers on existing rights-of-way. In general, new towers would range from 50 to 140 feet taller than existing BPA wood pole structures or lattice steel towers in the area. In some cases, the new towers would replace existing structures and towers, reducing the number of towers and sense of clutter in the landscape, though the new towers would be larger and more obvious. In forested areas, the right-of-way clearing would create additional visual impacts and would make the transmission lines more noticeable from a distance, especially where towers are higher than trees or where the cleared right-of-way can be seen. Where viewpoints allow viewers to see down a cleared right-of-way, the linear nature of the transmission line would be more noticeable than at other viewpoints.

Access roads would also create visual impacts both in the foreground and in the distance, with new roads producing a more evident visual change than the upgrade of existing roads, especially where new roads cut through forested areas or are cut into hillsides. Improving existing roads (widening, blading, or adding gravel) would brighten the roads, and would make them more visible from a distance than they may be currently. Unlike transmission lines, which form straight lines and angles, access roads can curve and follow terrain. In flat areas, roads are not easily seen from a distance, but on steep slopes, especially where cut and fill is needed, roads would likely appear more obvious, unless uneven terrain and surrounding vegetation and trees allows them to be hidden on the hillside.

Maintenance activities would occur on a regular or as needed basis and would be limited to viewers intermittently seeing helicopters, trucks, equipment, and maintenance workers along rights-of-way and access roads. Similar to construction, these activities would be temporary, and would have **no-to-low** temporary impacts on visual resources.

7.3.2.3 Sundial Substation Site

There are no sensitive viewpoints identified with views of the Sundial substation site (Lots 11 and 12). There are many existing transmission lines and two existing substations in the area. The existing industrial land use, with its many industrial operations surrounding the substation site, would provide a consistent visual landscape, and it would be unlikely that a new substation would draw viewer attention. Given the similar existing visual environment and a landscape rating of low, the overall visual impact would be **low**.

7.3.3 Castle Rock Substation Sites

7.3.3.1 Casey Road

Impacts common to action alternatives are in Section 7.3.2. The remaining sections discuss impacts unique to each alternative, and recommended mitigation measures.

The Casey Road substation site is in a remote area of low scenic quality. The site has limited visibility and includes an existing transmission corridor with four large transmission lines. The site has low viewer sensitivity, and is not visible from any sensitive viewpoints. The visual impact of Casey Road Substation would be **low**.

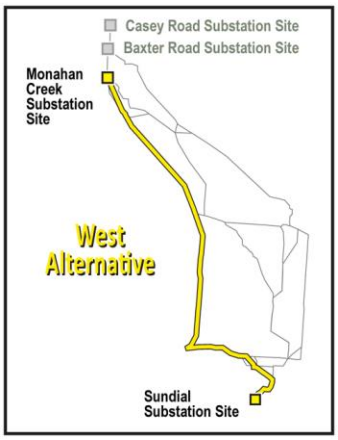
7.3.3.2 Baxter Road

The Baxter Road substation site sits in a small topographical depression in a remote area of low scenic quality. It is surrounded by vegetation, but also includes an existing transmission line corridor through the site. This contributes to low viewer sensitivity and no visibility from any sensitive viewpoints. The visual impact of Baxter Substation would be **low**.

7.3.3.3 Monahan Creek

The Monahan Creek substation site would be visible to surrounding residents and to motorists and commuters along Delameter and Monahan roads. The substation would be within some long-range views; however, the substation would likely dominate the attention of viewers that have a foreground view, including users of Delameter Road. From beyond the immediately adjacent area, foreground vegetation would likely block views of most of the substation depending on the location of the viewer. This site also includes an existing transmission line corridor on several sides. No scenic viewpoints or designated areas would be affected. The substation would likely be visible and attract viewer attention, but not completely dominate the visual character of the landscape. Given the limited visibility of the substation and a landscape rating of low, the visual impact of Monahan Creek Substation would be **low**.

7.3.4 West Alternative



The West Alternative begins at the Monahan Creek substation site (see Section 7.2.1, West Alternative and Options). The views of the West Alternative between the Monahan Creek site and Longview would be partially or fully obstructed by vegetation and some residences. Towers would blend more readily into background views and provide less contrast and a **low** impact, except where residences are close to the transmission line. The alternative would be visible near Delameter Road and from rural residences at several locations along Hazel Dell Road and in the area of Trout Lake Road. The alternative would also be highly visible near Longview, and residents within the residential area at the south end of the West Side Highway neighborhood and across I-5 would also be able to see towers. From residences along the right-of-way, the contrast would be high due to the large scale of the nearby towers.

A portion of the alternative between Longview/Kelso and just north of the Lewis River runs next to existing transmission lines on existing BPA right-of-way, which reduces scenic quality. The alternative crosses I-5 and runs through rural residential areas that decrease in density farther south along the alternative. Some residents would have a view dominated by the project, but most viewers in this area would experience a more distant view with many vegetative visual obstructions; the line would be visible, but would not completely dominate the view. Impacts to visual resources would be **moderate** because of the reduced scenic quality and the contrast of the line being visible but not totally dominant to most viewers. At local sites of higher scenic quality and viewer sensitivity such as at the Kalama, Lewis, and East Fork Lewis river crossings visual impacts would be **moderate-to-high**, especially where the removal of trees within riparian areas make towers more visible. Visual impacts would also be **high** at some local parks such as the East Fork Lewis River Greenway and Pleasant Valley Park where the alternative would have more contrast in a natural area.

Because the alternative would be located in the existing BPA right-of-way, the effect of vegetation clearing, where required, would be less than where a new right-of-way is necessary. However, in many cases where homes are near the existing right-of-way, trees within and just outside the right-of-way block any views of the existing towers. Once the right-of-way is cleared and danger trees are removed, there would be no vegetative buffer between those homes and the existing and new lines; because of their large scale and proximity to viewers, the towers would dominate the view of anyone next to the right-of-way. From slightly farther away, the view would be partially obscured by trees and other houses, which would reduce the visual impact of the project on viewers. Visual impacts would be **moderate** because most views would have many other existing visual alterations in the view, which would dilute viewer sensitivity.

Residents next to newly cleared existing right-of-way would see what appears to be an expanded right-of-way and taller towers, which would draw the attention of the viewer (see Figure 7-2). The typical view from neighborhoods surrounding the right-of-way would include taller, more visible towers above the houses and trees (see Figure 7-3). The typical view from Washington State University's Vancouver campus in Mt. Vista and some areas of Mt. Vista would also include new, taller towers (see Figure 7-4). Visual impacts would be **moderate** because the alternative follows an existing right-of-way that moderates the effect of vegetation clearing and the larger towers would not greatly change the character of the existing view.

The West Alternative continues on the existing right-of-way northeast of Vancouver. Viewers in this area would have an unobstructed view of the project. The project would be visible from the residences along NE Stoney Meadows Drive that back onto the open space and from NE 199th Avenue where some clearing of vegetation would be required and where the alternative crosses the road. Visual impacts would be **moderate** at these sites because of the existing right-of-way. The alternative would be on the south side of the existing right-of-way. The current vegetation buffer between the towers and the residential area around NE 48th Circle would be maintained and visibility from NE 48th Circle would likely be limited.

The project would be visible from the Green Mountain Golf Course, Camp Currie, and by a few residences and motorists along NE 28th Street (see Figure 7-5). The typical view from the golf course would be unobstructed; most residents in the area would have a partially obstructed view. The towers in this area would be about twice as tall as the existing towers, and would draw more attention from nearby viewers. The alternative passes through agricultural fields(on existing right-of-way) with open views but few viewers, and rural residential neighborhoods north of Camas. The project would be highly visible to homes next to the existing right-of-way

and would also be visible to more distant residences. The new, larger towers would begin to dominate the surroundings (see **Error! Reference source not found.**). There would be little change to vegetation in this area because little clearing would be required and the project would be near an existing transmission line. Although the towers would be larger in scale and prominent in some views, overall visual impacts in this area would be **moderate** due to an existing transmission line, little required clearing, and weak contrast in texture. At certain local sites, such as the Lacamas Prairie NAP/NRCA managed by WDNR , visual impacts could be **high** due to the scale of larger towers in a natural area (see Figure 7-7).

The views of the alternative in the Camas and Washougal areas include unobstructed and distant views across the open, rural landscape; close-up views from roads and residences along he existing right-of-way in Camas; and views from SR 14 (Lewis and Clark Highway) (see Figure 7-16 through 7-19). The rebuilt 230-kV lines and new 500-kV towers would be of a different shape and larger than existing towers. This would cause a **moderate** visual impact because the contrast of larger, different shaped towers would be more noticeable due to the proximity to some residential viewers and local sites of higher scenic quality such as parks and community greenspace.

From the Port of Camas – Washougal Marine Park parking lot and adjacent Parker's Landing Historical Park along SR 14 the greater size and shape of the towers would not dominate the view (see Figure 7-8). Although there would be noticeable changes, they would not become dominant when compared to existing conditions. Visual impacts would be **low** because much of this area is rural and agricultural with fewer viewers. Impacts would be **moderate** at local parks and recreational areas where the contrast of larger, different shaped towers in a natural setting would be more noticeable. The West Alternative ends at the Sundial substation site.

Figure 7-2 Viewpoint 25-1: Looking North from NE Salmon Creek Avenue, Salmon Creek (West Alternative)

Existing Conditions

Simulation

Figure 7-3 Viewpoint 25-2: Looking North-Northeast from NE 76th Avenue, Walnut Grove (West Alternative)

Existing Conditions

Simulation

Figure 7-4 Viewpoint 25-3: Looking East from WSU Campus, Vancouver (West Alternative)

Existing Conditions

Simulation

Figure 7-5 Viewpoint 41-1: Looking Northwest from NE 28th Street (West Alternative)

Existing Conditions

Simulation

Figure 7-6 Viewpoint 50-1: Looking Northwest from NE 3rd Street, North of Camas (West Alternative and Crossover Option 1)

Existing Conditions

Simulation

Figure 7-7 Viewpoint 40-1: Looking East-Southeast from Lacamas Heritage Trail Parking Area (West Option 1)

Existing Conditions

Simulation

Figure 7-8 Viewpoint 52-1: Looking North-Northeast from Lewis and Clark Highway, Camas (All Action Alternatives)

Existing Conditions

Simulation

The West Alternative has a uniform low scenic quality rating and high viewer sensitivity. The West Alternative would have a **moderate** impact on visual resources for most of its length with localized areas of **moderate-to-high** impacts near and/or through the Longview/Kelso, Vancouver, and Camas and Washougal areas. This alternative does not affect any recognized scenic areas or viewpoints, but has localized impacts on parks, areas of community greenspace, natural areas such as the Lacamas Prairie, and on a large number of residents. The overall impact of the West Alternative would be **moderate-to-high (**see Table 7-3).

Table 7-3 Visual Impact Summary

Alternatives and Options	Visual Impact
West Alternative	**moderate-to-high**
West Option 1	N/C
West Option 2	+
West Option 3	+
Central Alternative	**low-to-moderate**
Central Option 1	N/C
Central Option 2	+
Central Option 3	+
East Alternative	**low-to-moderate**
East Option 1	+
East Option 2	N/C
East Option 3	N/C
Crossover Alternative	**low-to-moderate**
Crossover Option 1	+
Crossover Option 2	-
Crossover Option 3	-

Notes:
N/C – No net change from the action alternative.
+ Overall impact of option is higher than the impact of segments the option replaces.
- Overall impact of option is lower than the impact of segments the option replaces.

7.3.4.1 West Option 1

West Option 1 would replace a portion of the alternative that follows existing right-of-way just east of Vancouver with an option that is farther west and closer to Vancouver. This portion of the alternative includes replacing one of the existing 230-kV lines with a new double-circuit 500-kV line. The existing 230-kV line and the new line would be placed on new 500-kV towers (see Figure 7-9). The new towers would be taller than the existing towers, but the need for additional right-of-way or clearing would be minimized. West Option 1 would reduce impacts on residents along NE 48th Circle and mitigate the impact on the Green Mountain Golf Course.

This option would also pass through rural fields where homes that back onto the open space along NE Stoney Meadows Drive would have a clear view of the project, since it passes over flat ground with little vegetation. West Option 1 would cross NE Goodwin Road, Camp Currie, and Camas Meadows Golf Course. The view of the project from several residential roads and homes southwest of this option would likely be unobstructed or only partially obstructed.

Impact levels on visual resources would be the same as the West Alternative (see Table 7-3).

7.3.4.2 West Option 2

West Option 2 would replace a portion of the alternative in the rural residential areas north of Camas with an option farther to the east in the same area. With no change in the right-of-way width, the visible changes would come from the larger double-circuit towers (see Figure 7-9). Near NE Zeek Road, larger towers and an increased right-of-way width is needed (see Figure 7-10). Visual impacts for West Option 2 range from low to high along its length depending on the segment. This option would increase the impact on residents along NE 48th Circle from a moderate level to high, avoid the impact on the Green Mountain Golf Course, and transfer the impact on residents along NE 28th Street farther east to Green Mountain Park and a new right-of-way.

This option would increase visual impacts, since the option would increase the amount of high impacts on several residents, would require new right-of-way, and would add line length (see Table 7-3).

Figure 7-9 Viewpoint 48-1: Looking West-Southwest from NE 267th Avenue (West Option 2, Crossover Option 2)

Existing Conditions

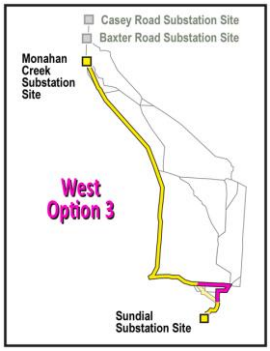
Simulation

Figure 7-10 Viewpoint 51-1: Looking South from NE Zeek Road, Washougal (Central, East, and Crossover Alternatives, and West Options 2 and 3)

Existing Conditions

Simulation

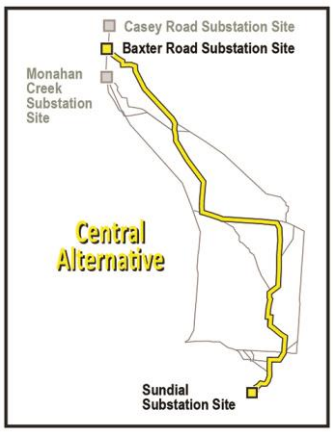
7.3.4.3 West Option 3



West Option 3 would replace a portion of the West Alternative in the rural residential areas north of Camas with a route crossing the rural residential and rural areas farther east. Visual impacts range from low to high along its length depending on the segment. West Option 3 would increase the impact on residents along NE 48th Circle from moderate to high, but avoid the impact on the Green Mountain Golf Course and to residents along NE 28th Street.

This option would increase visual impacts because it would create additional high impacts on several residents and users of Green Mountain Park, would require some new right-of-way, and would add a longer route (see Table 7-3).

7.3.5 Central Alternative



The Central Alternative begins at the Baxter Road substation site (see Section 7.2.2, Central Alternative and Options). The alternative extends southeast and crosses the Cowlitz River Valley north of Castle Rock. It would be visible to motorists and residences west of the Cowlitz River as it crosses West Side Highway (see Figure 7-11), and east of the Cowlitz River as it crosses I-5, and Spirit Lake Memorial Highway (SR 504) (see Figure 7-12 and Figure 7-13). It would be visible to residences surrounding Bond Road and on the east side of I-5 as it extends south along the slopes on the east side of the valley.

The alternative continues southeast through sparsely populated land with few potential viewers where visual impacts are **low** until it crosses the Lewis River near Ariel. The alternative would likely be visible from some residences in Ariel and along the Lewis River with few unobstructed and more distant views. The alternative runs east from Ariel, where potential views exist from some parts of Lake Merwin, which is popular for boating, swimming, and other types of water-based recreation, and the recreation areas near Merwin Dam (see Figure 7-14) and Merwin Hatchery (see Figure 7-15). There are also a few rural residences south of the lake. The combination of sensitive viewers, higher scenic resources, and sparse population causes a **moderate** impact in this area. At this point, the alternative turns south through sparsely populated land with few rural residences; visual impacts in this area would be **low**. In the vicinity of NE Zeek Road, the alternative enters the rural residential areas north of Camas and its larger towers would typically be viewed from residences or roads (see Figure 7-10). This area of sparse population and rural land use would have few potential viewers and visual impacts would be **low.**

The alternative crosses the towns of Camas and Washougal and over the Columbia River to its southern end at the Sundial substation site. Though there are residential viewers within Camas and Washougal, the alternative follows an existing right-of-way within the context of suburban and industrial land uses before crossing the Columbia River (see Figure 7-16, Figure 7-17, Figure 7-18, and Figure 7-19). This portion of the line has **moderate** visual impacts because the contrast of larger, different shaped towers would be more noticeable due to the proximity to

some residential viewers and local sites of higher scenic quality such as parks and community greenspace.

Because most of the Central Alternative runs generally through sparsely populated land with few sensitive viewers and low scenic quality, most impacts are **low**, with a few **moderate** impacts around Ariel, Lake Merwin, Camas and Washougal where natural areas and residents are close to the right-of-way. Residents near pulling and tensioning sites containing trees may also lose the vegetative buffer until it grows back over time. Of the 40 acres of pulling and tensioning sites identified along the entire route, about 8 acres are forested that are not in commercial private timber lands. The overall visual impact of the Central Alternative would be **low-to-moderate** (see Table 7-3).

Figure 7-11 Viewpoint F-15: Looking North along Westside Highway near Castle Rock (Central and East Alternatives)

Existing Conditions

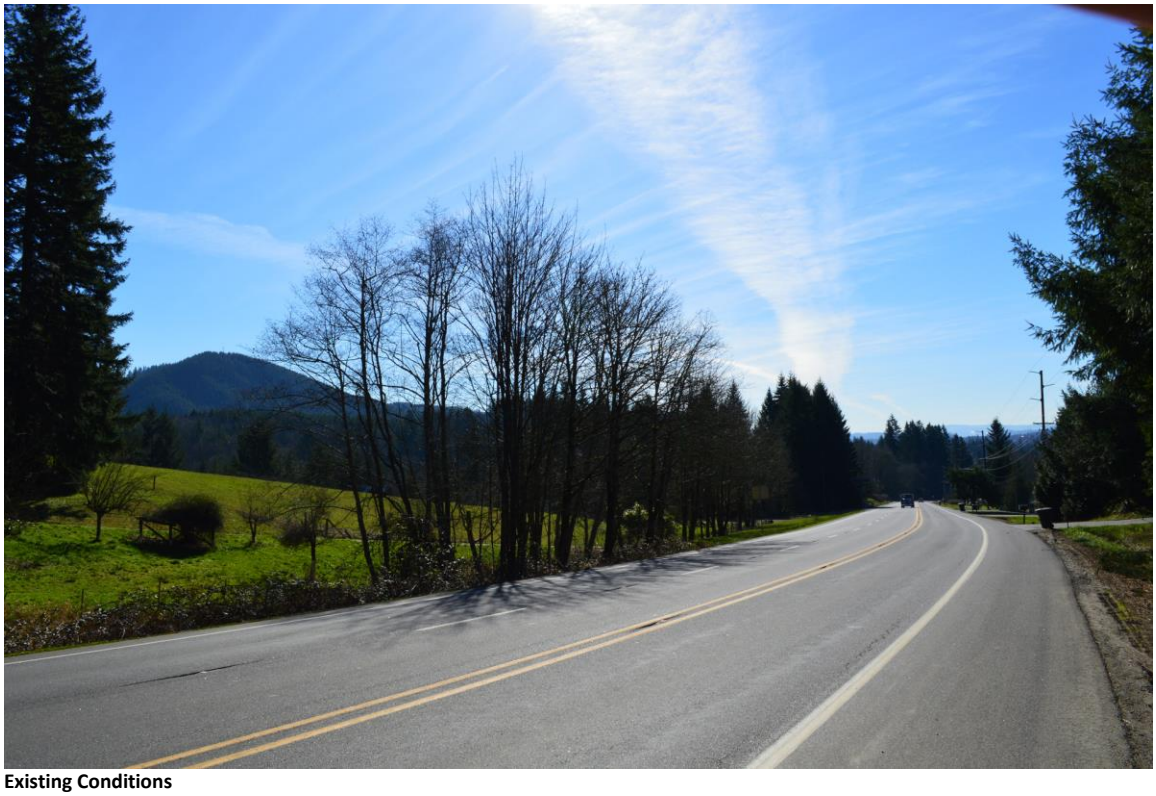
Simulation

Figure 7-12 Viewpoint F-21N: Looking North along Spirit Lake Memorial Highway near Castle Rock (Central and East Alternatives)

Existing Conditions

Simulation

Figure 7-13 Viewpoint F-21S: Looking South along Spirit Lake Memorial Highway near Castle Rock (Central and East Alternatives)



Existing Conditions

Simulation

Figure 7-14 Viewpoint M-1: Looking South near Swimming Beach at Lake Merwin, Ariel (Central and Crossover Alternatives)

Existing Conditions

Simulation

Figure 7-15 Viewpoint L-3: Looking East from Parking Area near Merwin Hatchery, Ariel (Central and Crossover Alternatives)

Existing Conditions

Simulation

Figure 7-16 Viewpoint 52-8: Looking North near SE 2nd Avenue, Camas (All Action Alternatives)

Existing Conditions

Simulation

Figure 7-17 Viewpoint 52-4: Looking Southeast on W 5th Street towards Mt. Hood near Lookout Ridge, Washougal (All Action Alternatives)

Existing Conditions

Simulation

Figure 7-18 Viewpoint 52-5: Looking South over Columbia River on W 5th Street near Lookout Ridge, Washougal (All Action Alternatives)

Existing Conditions

Simulation

Figure 7-19 Viewpoint 52-12: Looking South over Columbia River on W Empress Street near Lookout Ridge, Washougal (All Action Alternatives)

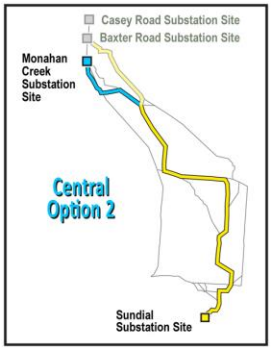
Existing Conditions

Simulation

7.3.5.1 Central Option 1

Central Option 1 would begin at the Casey Road substation site and the transmission line would cross unpopulated land with few distinctive viewpoints. Impact levels on visual resources would be the same as the Central Alternative (see Table 7-3).

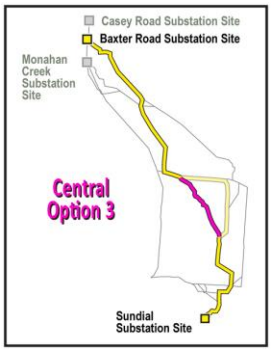
7.3.5.2 Central Option 2



Central Option 2 would begin at the Monahan Creek substation site and would remove the portion of the Central Alternative crossing the Cowlitz River north of Castle Rock and running farther to the southeast. This option would add a new route running southeast from the Monahan Creek site through sparsely populated land, crossing the unincorporated community of West Side Highway next to SR 411, the Cowlitz River and I-5, and running through largely unpopulated land toward the east. The option would remove visual impacts to the area north of Castle Rock, but would introduce **high** impacts in the West Side Highway area. Central Option 2 also replaces the Baxter Road substation site, which would create low impacts, with the Monahan Creek substation site, which would create **moderate** impacts.

Impact levels on visual resources would increase from levels for the Central Alternative (see Table 7-3).

7.3.5.3 Central Option 3



Central Option 3 would replace the Lewis River crossing near Ariel and a portion of the Central Alternative between Ariel and Venersborg, with a downstream river crossing and a new route running directly southeast from Ariel through rural residential areas toward Venersborg. The crossing of the Lewis River near Ariel is in a visually sensitive area. Both the river and nearby Lake Merwin attract recreational users who are likely more sensitive to potential changes to the visual landscape. From Ariel, the view across the river to the south side of the valley would likely be partially obstructed by foreground vegetation. Where views are possible, the towers and right-of-way clearing would be noticeable, but not dominant, as the option climbs the hill on the south side of the Lewis River.

Towers would be visible near a swimming beach within the recreational area at Lake Merwin (see Figure 7-14). The new Lewis River crossing and the crossing more to the east that it replaces have similar visual impacts. This option does introduce a new right-of-way through rural residential areas southeast of Ariel, which has a higher visual impact than the segments it replaces. Visual impact at local sites, such as Lucia Falls and Moulton Falls Park at the East Fork Lewis River, would be **moderate** due to higher scenic quality and viewer sensitivity because the alternative would have greater contrast against the existing view. Potential viewing locations in this area would include rural residential homes and SR 503.

Impact levels on visual resources would increase from the Central Alternative (see Table 7-3).

7.3.6 East Alternative

The East Alternative begins at the Baxter Road substation site. The alternative runs southeast and crosses the Cowlitz River valley north of Castle Rock. Where it crosses the river and travels south along the slopes on the east side of the valley, locations with potential views of the alternative include residences east of the Cowlitz River, I-5 and SR 504, and roads and residences surrounding Bond Road on the east side of I-5. Although sparsely populated, the alternative would cause **moderate** impacts at local sites due to the scenic quality of the river crossing and views from SR 504, and the sensitivity of nearby residences.

The alternative then runs farther southeast through unpopulated land toward Yale where it crosses SR 503. In this area, the alternative would likely be visible from some rural residences along the highway (see Figure 7-20). The alternative then runs south through unpopulated land and the Yacolt Burn State Forest until it enters rural residential areas north of Camas in the vicinity of NE Zeek Road. Typical views in this area would be from residences or roads (see Figure 7-10) with **low** impacts due to the lower scenic value, unpopulated areas, and existing transmission lines near Camas.

Within the Yacolt Burn State Forest, the East Alternative would pass near or over several trails popular with motorized trail users and hikers, bikers, and equestrians. These trails include the Jones Creek Trail, Jones Creek Connector A, Jones Creek Connector B, and Tarbell Trail. Impacts here are **moderate** overall, and range locally from **high** where cleared right-of-way crosses the trail (which is a location of high viewer sensitivity), to **moderate** where the line can be seen from some trail viewpoints, to **low** where trees along the trails obscure views of the line.

The alternative crosses the cities of Camas and Washougal, and the Columbia River, and ends at the Sundial substation site. Though there are residential viewers within Camas and Washougal, the alternative is in the existing BPA right-of-way within the context of suburban and industrial land uses before crossing the Columbia River (see Figure 7-16, Figure 7-17, Figure 7-18, and Figure 7-19). This portion of the line is rated as having **moderate** visual impacts where the contrast of larger, different shaped towers would be more noticeable due to the proximity to some residental viewers and local sites of higher scenic quality such as parks and community greenspace.

Because most of the East Alternative runs through sparsely populated or unpopulated land, most impacts are **low** (although residents in the area would be sensitive to the changes). A few **moderate** impacts occur to the north; in and around Camas and Washougal where there are nearby residents, parks and community greenspace; and through the Yacolt Burn area. The overall impact of the East Alternative would be **low-to-moderate** (see Table 7-3).

Figure 7-20 Viewpoint K-1: Looking East-Southeast from Yale Bridge Road, Ariel (East Alternative)

Existing Conditions

Simulation

7.3.6.2 East Option 1

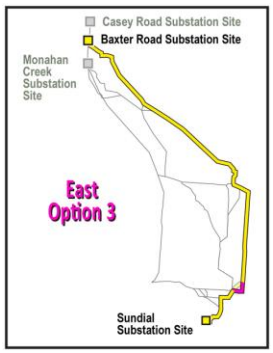
East Option 1 begins at the Monahan Creek substation site and would remove the portion of the East Alternative crossing the Cowlitz River north of Castle Rock. East Option 1 would use segments southeast of the Monahan Creek substation site that run through sparsely populated land, cross the Cowlitz River and I-5 and run through largely unpopulated land toward the east. The option would remove visual impacts in the area north of Castle Rock, but would introduce impacts where it crosses the Cowlitz River farther south, and would be visible from several residences. East Option 1 also replaces the Baxter Road substation site, which would create **low** impacts, with the Monahan Creek substation site, which would create **moderate** impacts.

East Option 1 would have a slightly higher impact on visual resources because of the substation site used (see Table 7-3).

7.3.6.3 East Option 2

East Option 2 would replace a portion of the East Alternative between Yale and the rural residential areas north of Camas with a similarly rated route farther to the west. This option could remove some visual impacts on outdoor and recreational users east of the East Alternative, but would also introduce additional impacts on rural residences along the option's route.

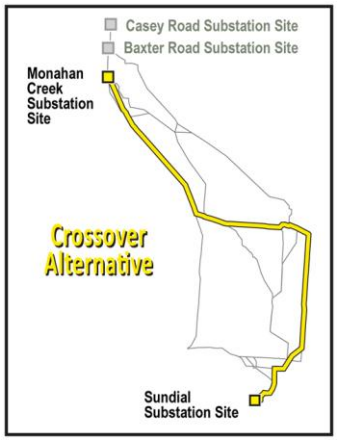
Impact levels on visual resources would be the same as the East Alternative (see Table 7-3).



7.3.6.4 East Option 3

East Option 3 would replace a short portion of the alternative in unpopulated land with a new route through unpopulated land. Impact levels on visual resources would be the same as the East Alternative (see Table 7-3).

7.3.7 Crossover Alternative



The Crossover Alternative begins at the Monahan Creek substation site, and follows the same path as the West Alternative to a point north of the Lewis River. Similar to the West Alternative (see Section 7.2.1, West Alternative and Options), most views between the Monahan Creek site and the Longview area would be partially or fully obstructed by vegetation and, in some cases, residences. The new transmission line would be visible near Delameter Road and from some rural residences in a few locations along Hazel Dell Road and rural residences near Trout Lake Road. The transmission line would run next to existing lines on existing BPA right-of-way, between Longview/Kelso and

just north of the Lewis River. East of I-5, the Crossover Alternative runs through rural residential areas decreasing in density farther south. Some residents would have a view dominated by the project, but the experience of most viewers in this area would be slightly more distant with many vegetative visual obstructions; the line would be visible, but would not completely dominate the view. In general, visual impacts would be **moderate** for the northern part of this alternative because of the reduced scenic quality and the contrast of the line being visible but not totally dominant to most viewers. At local sites of higher scenic quality and viewer sensitivity such as the Kalama River crossing, visual impacts would be **moderate-to-high**, especially where the removal of trees within riparian areas make towers more visible.

The Crossover Alternative crosses the Lewis River near Ariel, farther east than the West Alternative's crossing. The alternative would likely be visible from some residences in Ariel and along the Lewis River. However, there would be few unobstructed and more distant views. As the alternative runs east from Ariel, potential views exist from some parts of Lake Merwin, some rural residences south of the lake which is popular for boating, swimming, and other types of water-based recreation (see Figure 7-14), and Merwin Hatchery (see Figure 7-15). The combination of sensitive viewers, higher scenic resources, and sparse population causes a **moderate** impact in this area.

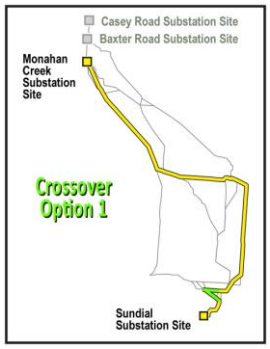
The alternative then runs south through unpopulated land and the Yacolt Burn State Forest. Within the Yacolt Burn State Forest, the Crossover Alternative would pass near or over several trails popular with motorized trail users and hikers, bikers, and equestrians. These trails include the Jones Creek Trail, Jones Creek Connector A, Jones Creek Connector B, and Tarbell Trail. Impacts here are **moderate** overall, and range locally from **high** where cleared right-of-way crosses the trail (which is a location of high viewer sensitivity), to **moderate** where the line can be seen from some trail viewpoints, to **low** where trees along the trails obscure views of the line.

In the vicinity of NE Zeek Road, the alternative enters the rural residential areas north of Camas where typical views would be from residences or roads, and larger towers are needed (see Figure 7-10). The alternative crosses the cities of Camas and Washougal, and the Columbia River and ends at the Sundial substation site. Though there are residential viewers within Camas and Washougal, the alternative follows an existing right-of-way within the context of suburban and industrial land uses before crossing the Columbia River (see Figure 7-16, Figure 7-17, Figure 7-18, and Figure 7-19). This portion of the line is rated as having **moderate** visual impacts where the contrast of larger, different shaped towers would be more noticeable due to the proximity to some residental viewers and local sites of higher scenic quality such as parks and community greenspace.

This portion of the alternative south of the Lewis River has somewhat greater (**moderate**) effects because of the sensitive viewers from the Lewis River area and Lake Merwin, although the final portion through Camas and the Columbia River crossing follow existing lines and rights-of-way.

The Crossover Alternative would have a **low-to-moderate** visual impact for most of its length. Localized visual impacts to a limited number of residences would likely be found in the community of West Side Highway. This alternative does not impact any recognized scenic areas or viewpoints, but has localized impacts on parks and areas of community greenspace. The overall impact of the Crossover Alternative would be **low-to-moderate** (see Table 7-3).

7.3.7.1 Crossover Option 1



Crossover Option 1 would remove a portion of the alternative crossing north–south through rural residential areas north of Camas between NE Zeek Road and SE 23rd Street, and replace it with a route running west along an existing right-of-way until about NE 232nd Avenue, then southeast through more natural areas of the Lacamas area, open fields and more rural residential areas (see Figure 7-7). The option would remove visual impacts in the areas around NE Zeek Road and NE Blair Road; however, it would introduce additional impacts on the residences in the area around NE 267th Avenue (see Figure 7-9). With no change in the right-of-way width, visible changes would result from the larger double-circuit towers. The new, larger towers would dominate the surroundings. There would be little change to vegetation in this area because little clearing would be required and the project would be near an existing transmission line.

Crossover Option 1 would have a higher impact on visual resources because it adds a new route that, while rated the same as the route it replaces, is longer (see Table 7-3).

7.3.7.2 Crossover Options 2 and 3

Crossover Option 2 would begin at the Baxter Road substation site and the new transmission line would cross sparsely populated land. The option does add additional segments, but would use a substation site with potentially lower visual impacts than the Monahan Creek substation site. Crossover Option 3 is similar, except that parts of the route would require additional right-of-way parallel to the existing line instead of within the right-of-way.

Crossover Options 2 and 3 would have lower impacts on visual resources than the alternative because of the different substation location (see Table 7-3).

7.3.8 Recommended Mitigation Measures

Mitigation measures are included as part of the project (see Table 3-2). BPA is considering the following additional mitigation measures to further reduce or eliminate adverse impacts on visual resources by the action alternatives. If implemented, these measures would be completed before, during, or immediately after project construction unless otherwise noted.

- Site new towers next to or near existing towers and use a similar tower type. This would lessen visual clutter that can occur when different types of towers are visible in a vast open landscape.
- Site new towers to take advantage of existing screening offered by topography or vegetation, e.g., avoid ridgetops where practicable.

- Set towers back from road crossings, to minimize intrusion on views along road corridors.
- Preserve existing vegetation along the roadway to screen transmission lines and towers. Allow dense masses of shrubs to grow parallel to the roadway where the transmission line right-of-way crosses.
- Revegetate cleared areas as soon as possible after construction.
- Minimize access road placement in highly sensitive areas.
- Follow FAA safety requirements for tower lighting and marker balls.

7.3.9 Unavoidable Impacts

After mitigation, vegetation clearing, transmission towers, access roads and substations would still be visible to residents, motorists, and recreationists from many locations.

7.3.10 No Action Alternative

Under the No Action Alternative, existing visual resource conditions would continue (see Section 7.2, Affected Environment). Transmission lines in existing rights-of-way, substations, and access roads would continue to be visible to surrounding viewers. In areas without existing transmission lines, other existing and future alterations would continue to occur, such as commercial forest harvest, urban development, and road and rail operation and expansion.