3.1 - Aesthetics, Light, and Glare

3.1.1 - Introduction

This section describes the aesthetic qualities and visual resources of the proposed project that would be affected by implementation of the project. The following discussion describes existing environmental conditions in the affected area, identifies and analyzes impacts to visual resources and aesthetic qualities that would result from project implementation, and recommends measures to reduce or avoid significant adverse impacts. In addition, existing laws and regulations relevant to aesthetics and visual resources are described. Compliance with these laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the project.

Firsthand knowledge of the aesthetic qualities and visual resources of the sites were gathered through site visits on July 23, 2012. In addition, the following resources were consulted:

- Yolo County General Plan (Land Use Element and Conservation and Open Space Element)
- City of Woodland General Plan (Land Use Element)
- Yolo County Code 8-2.299.61
- Grasslands Park Master Plan
- California Environmental Quality Act Guidelines, Appendix G

3.1.2 - Environmental Setting

The geographic area relevant to the analysis of impacts on visual resources encompasses the landscapes directly affected by, and the surrounding areas that would be within view of, project-related facilities and activities (i.e., the project's viewshed).

Visual Distance Zones

The following distance zones (foreground, middle ground, and background) are used to characterize the dominant visual character from each vantage point and describe views in terms that can be analyzed and compared. As discussed below, sensitivity of views modified from the natural environment are defined in order to establish thresholds for analysis of potential visual impacts resulting from the implementation of the proposed project.

Foreground Views

These views include elements that can be seen at a close distance and that dominate the entire view. Impacted views at this distance are generally considered potentially adverse when viewed by a sensitive viewer group, such as surrounding residents, workers, pedestrians, or regular motorists.

Middle Ground Views

These views include elements that can be seen at a middle distance and that partially dominate the view. Impacted views at this distance are generally considered potentially adverse when viewed by a sensitive viewer group.

Background Views

These views include elements that are seen at a long distance and typically do not dominate the view but are part of the overall visual composition of the view. Impacted views at this distance are generally considered not to be an adverse impact when viewed by a sensitive viewer group.

Grasslands Site

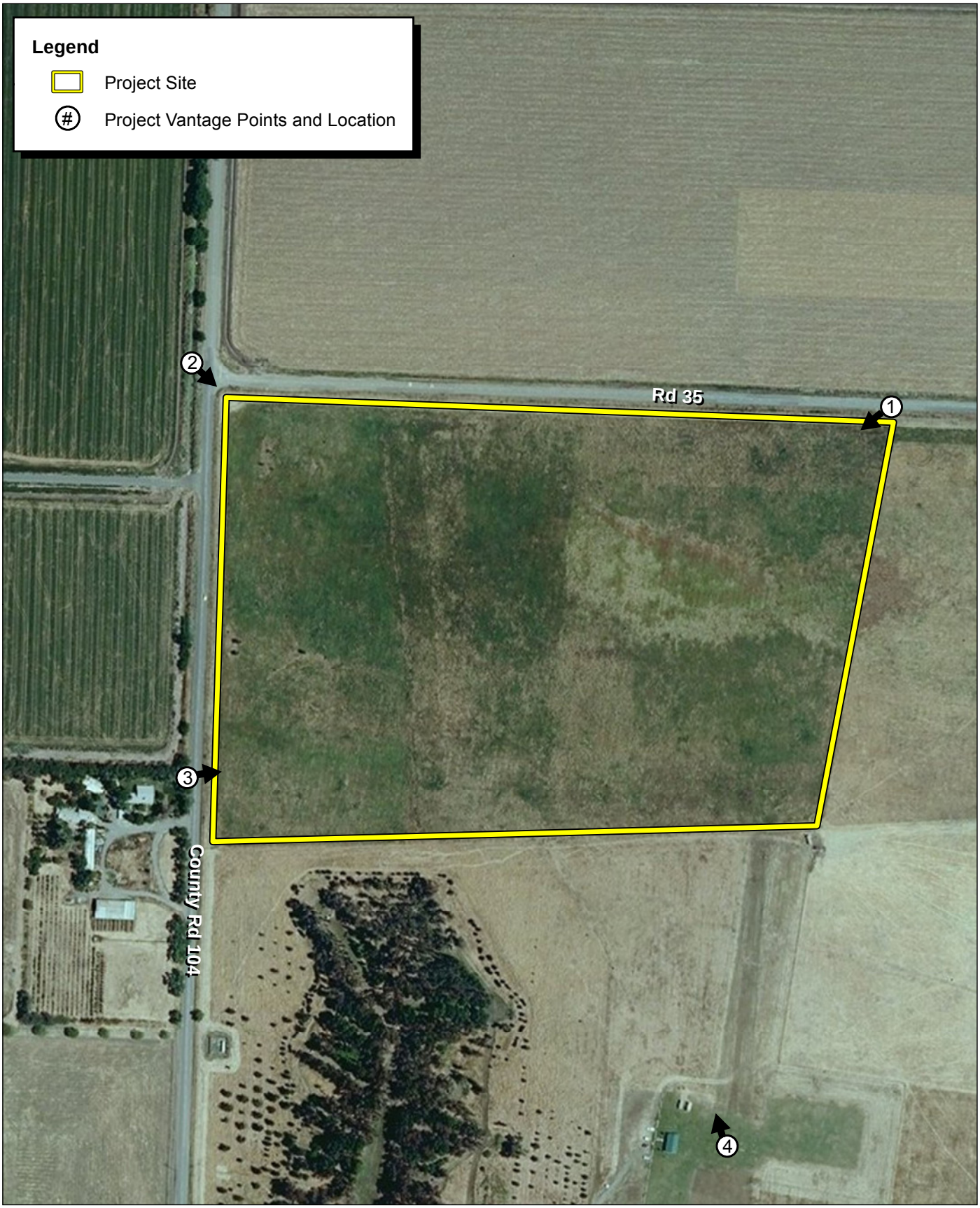
The Grasslands site is located in a rural, unincorporated area of Yolo County, south of the City of Davis. The project site itself is comprised of relatively flat land in the existing undeveloped corner of County Road 104, which runs north-south, and County Road 35, which runs east-west. The general aesthetic and visual character of this area consists of an expansive horizon and sparsely inhabited landscape consisting of mostly agriculture lands, with views of the surrounding Costal Range and the Sierra Nevada Mountain range in the distance. Grasslands Regional Park is located in an area dominated by agricultural land used for row crops, orchards, and cattle grazing. South of the Grasslands site are recreational components of the Grasslands Regional Park, including the Yolo Horseshoe Pitching Club and Sacramento Soaring Society. Undeveloped land that is designated a burrowing owl habitat preserve is located to the west of the project site. Two rural residences located to the west of the project site on the west side of County Road 104. A cluster of four rural residences is located south of Grasslands Regional Park on county Road 36 and Hyde Road. A migrant farmworker housing complex is located to the southeast of Grasslands Regional Park. Exhibit 3.1-1 indicates the location of key observation points at the Grasslands site, while Exhibit 3.1-3 and Exhibit 3.1-4 provide photographs taken from the observation points.

Light and Glare

The Grasslands site does not contain any structures or improvements (such as light fixtures) that emit sources of light or glare. Surrounding rural residences have exterior sources of lighting. In addition, security lighting is present within the Grasslands Regional Park.

Beamer/Cottonwood Site

The project site is located in an urban, incorporated area of the City of Woodland, 1.5 miles south of Interstate 5 and 1.6 miles to the west of State Route 113. The project site itself comprises flat, undeveloped land at the southeast corner of N. Ashley Drive, which runs north-south, and W. Woodland Avenue, which runs east-west. The Beamer/Cottonwood site is undeveloped with ruderal vegetation and some trees along the south border of the site. Areas immediately surrounding the site to the north and west are dominated by medium density residential family homes. Areas immediately to the south and east consist of several Yolo County office buildings and the Yolo County corporation yard. Exhibit 3.1-2 indicates the location of key observation points at the Beamer Cottonwood site, and Exhibit 3.1-5 and Exhibit 3.1-6 provide photographs taken from the observation points.



Source: Michael Brandman Associates 2012.

Michael Brandman Associates

NORTH

310 155 0 310

Feet

Exhibit 3.1-1
Photograph Vantage Points
Grasslands Site

17590007 • 07/2012 | 3.1-1_site_photos.mxd

YOLO COUNTY DEPARTMENT OF GENERAL SERVICES
ENVIRONMENTAL EDUCATION AND SUSTAINABILITY PARK PROJECT
DRAFT ENVIRONMENTAL IMAPCT REPORT

Source: Michael Brandman Associates 2012.

Michael Brandman Associates

NORTH

240 120 0 240

Feet

17590007 • 07/2012 | 3.1-2_site_photos.mxd

Exhibit 3.1-2
Photograph Vantage Points
Cottonwood-Beamer Site

YOLO COUNTY DEPARTMENT OF GENERAL SERVICES
ENVIRONMENTAL EDUCATION AND SUSTAINABILITY PARK PROJECT
DRAFT ENVIRONMENTAL IMAPCT REPORT

Photograph 1: View facing project site to the west, along County Road 35.

Photograph 2: View facing project site facing southeast, at the intersection of County Road 104 and County Road 35.

Source: Michael Brandman Associates 2012.

Exhibit 3.1-3
Key Observation Points 1-2
Grasslands Site

Photograph 3: View facing project from residence along County Road 104, facing east.

Photograph 4: View facing project site facing northwest, from the Sacramento Soaring Society Airfield.

Source: Michael Brandman Associates 2012.

Exhibit 3.1-4
Key Observation Points 3-4
Grasslands Site

Photograph 5: View facing southeast looking at the proposed project location located at the corner of Ashley Drive and Woodland Avenue.

Photograph 6: View facing along south border of project site facing north.

Source: Michael Brandman Associates 2012.

Exhibit 3.1-5
Key Observation Points 5-6
Beamer-Cottonwood Site

Michael Brandman Associates

Photograph 7: View facing northeast looking at the project site at the corner of Ashley Drive and Beamer Street.

Source: Michael Brandman Associates 2012.

Exhibit 3.1-6
Key Observation Point 7
Beamer-Cottonwood Site

Michael Brandman Associates

Light and Glare

The Beamer/Cottonwood site does not contain any structures or improvements (such as light fixtures) that emit sources of light or glare. Surrounding residences and County buildings have exterior sources of lighting (e.g., building-mounted and freestanding light fixtures). Street lighting is also present on N. Ashley Drive and W. Woodland Avenue.

3.1.3 - Regulatory Framework

Local

County of Yolo

General Plan

The General Plan establishes the following goals and policies associated with aesthetics, light, and glare that are applicable to the proposed project:

- **Goal CC-1:** Ensure that the rural character of the County is protected and enhanced, including the unique and distinct character of the unincorporated communities.
- **Policy CC-1.2:** Preserve and enhance the rural landscape as an important scenic feature of the County.
- **Policy CC-1.3:** Protect the rural night sky as an important scenic feature to the greatest feasible extent where lighting is needed.
- **Policy CC-1.5:** Significant site features, such as trees, water courses, rock outcroppings, historic structures and scenic views shall be used to guide site planning and design in new development. Where possible, these features shall become focal points of the development.
- **Policy CC-1.8:** Screen visually obtrusive activities and facilities such as infrastructure and utility facilities, storage yards, outdoor parking and display areas, along highways, freeways, roads and trails.
- **Policy CC-1.11:** Require the development of open space corridors, bicycle paths and trails integrating waterways, scenic areas and County parks where appropriate, in collaboration with affected land owners as a part of project approval. The intent is to connect each community and city and other special places and corridors, throughout the County.
- **Policy CC-1.15:** The following features shall be protected and preserved along designated scenic roadways and routes, except where there are health and safety concerns:
  - Trees and other natural or unique vegetation
  - Landforms and natural or unique features
  - Views and vistas
  - Historic structures (where feasible), including buildings, bridges and signs
- **Policy CC-1.18:** Electric towers, solar power facilities, wind power facilities, communication transmission facilities and/or above ground lines shall be avoided along scenic roadways and routes, to the maximum feasible extent.

- **Goal CO-1:** Protect and enhance biological resources through the conservation, maintenance, and restoration of key habitat areas and corresponding connections that represent the diverse geography, topography, biological communities, and ecological integrity of the landscape.
- **Policy CO-2.3:** Preserve and enhance those biological communities that contribute to the county's rich biodiversity including blue oak and mixed oak woodlands, native grassland prairies, wetlands, riparian areas, aquatic habitat, agricultural lands, heritage valley oak trees, remnant valley oak groves, and roadside tree rows.

City of Woodland

General Plan

The General Plan establishes the following goals and policies associated with aesthetics, light, and glare that are applicable to the proposed project:

- **Goal 1.A:** To grow in an orderly pattern consistent with economic, social and environmental needs, providing for continued small-town character and preservation of surrounding agricultural lands.
- **Policy 1.A.1:** The City shall strive to preserve Woodland's traditional small-town qualities and historic and agricultural heritage, while expanding its residential and employment base.
- **Goal 5.A:** To establish and maintain a public park system and recreational facilities suited to the needs of Woodland residents, employees, and visitors.
- **Policy 5.A.18:** The City shall ensure that recreation facilities are sited to minimize negative impacts (i.e., parking, night lighting, excessive noise) on surrounding neighborhoods.
- **Policy 5.A.23:** The City shall manage, enhance, and improve the city's urban forest as a valuable community resource.

3.1.4 - Methodology

The approach to assessing the impacts of a project on visual resources includes consideration of: (1) scenic quality of the project site and vicinity; (2) available visual access and visibility, frequency, and duration that the landscape is viewed; (3) viewing distance and degree to which project components would dominate the view of the observer; (4) resulting contrast of the proposed facilities or activities with existing landscape characteristics; (5) the extent to which project features or activities would block views of higher value landscape features; and (6) the level of public interest in the existing landscape characteristics and concern over potential changes.

As described above, the assessment of aesthetic impacts involves qualitative analysis that is inherently subjective, even when done in a consistent and rigorous manner. There are no absolute standards or quantifications of aesthetic values. However, following widely recognized professional practice, certain broad principles are applied in this analysis to characterize the visual resource baseline and potential project impacts.

First, visual impacts are a function of the existing visual quality of the project landscape setting. Impacts to landscapes of high visual quality are more likely than impacts to settings of poor quality.

Second, visual impacts are a function of the sensitivity and response of viewers to visual change. Where there are no viewers, no impacts can occur, and the intensity of impacts is partly a function of the sensitivity and concern of viewers to project caused visual changes. Viewer sensitivity is generally evaluated in terms of such measures as degree and duration of viewer exposure, viewer distance zone, number of viewers, viewer activity types, and corresponding viewer scenic expectations; public policies expressing special concern with particular scenic features or values, including designated scenic vistas or road corridors; and other factors reflecting viewer concern and response.

Lastly, the level of impact is determined by the degree of project caused visual change. This is generally described in terms of the anticipated level of visual contrast and dominance, as well as potential for blockage of scenic views. Visibility of a project feature *per se* is not typically identified as a significant impact. Rather, a substantial level of visual change, experienced by viewers with high levels of sensitivity to visual change, is normally recognized as a prerequisite to significant visual impact, except under unusual circumstances.

In addition, consistency with stated local policies is applied as a standard for impacts. Inconsistencies with such policies are identified as potentially significant impacts.

The information presented in this section is based on field reconnaissance, and review of aerial photographs, the City of Woodland General Plan, and the Yolo County General Plan.

3.1.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist of the CEQA Guidelines, aesthetics impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Have a substantial adverse effect on a scenic vista?

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway? (Refer to Section 7, Effects Found Not To Be Significant.)

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

3.1.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Scenic Vistas

Impact AES-1: The project would not create a substantial adverse effect on a scenic vista.

Impact Analysis

Grasslands Site

The proposed project would modify the existing character of the project site by installing solar panels and associated improvements. During the construction phase of the project, negative aesthetic elements such as construction vehicles, construction materials, site construction trailers, and other temporary construction elements would be located on the project site and the proposed tie-in route. These temporary elements would be removed upon completion of the construction phase. Upon completion, views of the project site would consist of the solar facility and the environmental education center.

Tie-in lines would be needed in order to supply power to the grid network. They would be installed along County Road 104 and Tremont Road. The County Road 104 tie-in lines would be 110 feet in length using existing overhead power lines while the Tremont Road tie-in line would be 3,705 feet in length and would utilize existing overhead power lines. It is assumed that no more than three power poles would be required onsite to support the interconnection. Power poles would be similar in structure and height to those that currently exist in the area. Since the tie-in lines would make use of existing power poles, possibly needing to install three more, they would have a less than significant impact visually.

The Grasslands site is located in a rural and relatively sparsely populated area of Yolo County within Grasslands Regional Park. The Grasslands site is not visible from any unique or locally significant scenic area, vista, or view designated by Yolo County or any other public entity. Views of the Grasslands site are limited almost exclusively to motorists along County Road 104 and County Road 35. These motorists would have fleeting views of the project site and a lower expectation of an aesthetically pleasing view, particularly given their perceived focus on the road ahead, as well as the general lack of scenic vistas or points-of-interest in the immediate project area.

In addition to the motorists, the rural farm residences located in the project vicinity would have views of the project site, which would vary depending on their individual orientations, the length of their setback from the roadway and site, and the presence of frontage trees and foliage that could obstruct views of the site. Specific views from these vantages point currently include both fallow and active agricultural fields. None of these vantages is considered to hold moderate to high aesthetic value, and none of these uses are identified by the Yolo County General Plan as containing aesthetic value.

Moreover, under the California Government Code Section 65850.5(a), "it is the policy of the state to promote and encourage the use of solar energy systems and to limit obstacles to their use." The project is consistent with and furthers the purpose of the California Government Code Section 65850.5, which also provides that it is the "intent of the Legislature that local agencies not adopt ordinances that create unreasonable barriers to the installation of solar energy systems, including, but not limited to, design review for aesthetic purposes, and not unreasonably restrict the ability of homeowners and agricultural and business concerns to install solar energy systems."

Since the photovoltaic (PV) facility would be located in a predominantly rural area, and because no aesthetic resources of substantial value currently exist on or surrounding the project site, implementation of the project at the Grasslands site would not create an adverse effect on a unique or locally significant scenic area, vista, or view. Impacts to scenic vistas would be less than significant.

Beamer/Cottonwood Site

During the construction phase of the project, negative aesthetic elements such as construction vehicles, construction materials, site construction trailers, and other temporary construction elements would be located on the project site. These temporary elements would be removed upon completion of the construction phase. The site is located in an urban and populated area of the City of Woodland, consisting of residential family homes to the immediate north and west. However, the site is not visible from any unique or locally significant scenic area, vista, or view designated by Yolo County or the City of Woodland. Therefore, construction of the project at the Beamer/Cottonwood site would not create an adverse effect on a unique or locally significant scenic area, vista, or view. Impacts to scenic vistas would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

Grasslands Site

No mitigation is necessary.

Beamer/Cottonwood Site

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Visual Character

Impact AES-2: The proposed project would not degrade the existing visual character or quality of the site and its surroundings.

Impact Analysis

This impact addresses the potential for the proposed project to substantially degrade the visual character of the project site and its surrounding area.

The project is considered to "substantially degrade" the visual character or quality of a site if it would have a strongly negative influence on the public's experience and appreciation of the visual environment. As such, visual changes are always considered in the context of a site or locale's visual sensitivity. Visual changes caused by the project are evaluated in terms of their visual contrast with the area's predominant landscape elements and features, their dominance in views relative to other existing features, and the degree to which they could block or obscure views of aesthetically pleasing landscape elements. The magnitude of visual change that would result in a significant impact is inversely related to the visual sensitivity of a site.

Grasslands Site

The Grasslands site consists of 41 acres of undeveloped land containing native and non-native grasses, wildflowers, and several small trees located at the northwest corner of the site. The Grasslands site is relatively flat and undeveloped, and periodically utilized for grazing. The site is located in the Grasslands Regional Park, which contains buildings and infrastructure for park uses. The general vicinity of the project site and Grasslands Regional Park consist primarily of agricultural lands and few rural residences.

The Grasslands portion of the project would consist of a 5-megawatt (MW) PV facility on approximately 21 acres, an adjacent environmental education center, and related recreational trails. The solar PV panels would be installed in a uniform manner that would provide a uniform appearance. The environmental education center would be constructed using materials and exhibiting characteristics that are consistent with the Grasslands Park Master Plan design guidelines. Ranch-style fencing would be constructed surrounding the site and would consist of pressure-treated lumber posts with welded wire grid fencing of 8 feet in height, as seen in a preliminary plan in Appendix B. Landscaping would be provided along the solar facility's frontages with County Road 104 and County Road 35. Plants would consist of evergreen hedgerows spaced 3 to 5 feet apart. Once mature, the landscaping would provide visual screen for the solar array. The landscaping would be consistent with existing landscaping and trees located within Grasslands Regional Park.

During road and building pad construction and during hauling of materials on unpaved roads, dust would be mobilized into the air. This would create visible clouds behind equipment and vehicles crossing the site. Dust may be mobilized by wind as well. This has the potential to be visible over great distances, creating a visual element that would detract from the quality of the aesthetic experience for viewers. Given the low-quality distant views, this is considered a less than significant

impact. However, the County will comply with the construction-related dust control measures discussed in Section 3.3, Air Quality.

The majority number of viewers of the project site is limited almost exclusively to motorists along County Road 104 and County Road 35. These motorists would have fleeting views of the proposed project and a lower expectation of an aesthetically pleasing view, particularly given their perceived focus on the road ahead, as well as the general lack of scenic vistas or points-of-interest in the immediate project area. Views of the PV facility from the roadways would be blocked by the ranch-style fencing and evergreen hedgerows.

In addition to the motorists, rural farm residences located in the project vicinity would have views of the project site, which would vary depending on their individual orientations, the length of their setback from the roadway and site, and the presence of frontage trees and foliage that could obstruct views of the site. Specific views from these vantage points currently include both fallow and active agricultural fields. None of these vantages is considered to hold moderate to high aesthetic value, and none of these uses are identified by the Yolo County General Plan as containing aesthetic value. Furthermore, views of the PV facility from the nearest residences located on County Road 35 would be blocked by the ranch-style fencing and evergreen hedgerows.

Views of the Grasslands site from existing uses at Grasslands Regional Park are limited by existing vegetation and berms used as windbreaks and protective elements by the existing archery range. The proposed trail connecting the existing uses to the environmental education center would include signage and interpretative information explaining the PV facility; therefore, its presence would not be an unexpected visual intrusion to park users.

Moreover, under the California Government Code Section 65850.5(a), "it is the policy of the state to promote and encourage the use of solar energy systems and to limit obstacles to their use." The project is consistent with and furthers the purpose of the California Government Code Section 65850.5, which also provides that it is the "intent of the Legislature that local agencies not adopt ordinances that create unreasonable barriers to the installation of solar energy systems, including, but not limited to, design review for aesthetic purposes, and not unreasonably restrict the ability of homeowners and agricultural and business concerns to install solar energy systems." In order to transmit energy into the existing grid network, the project will make use of existing power lines. However, the project may require the implementation of additional power poles onsite. These would be similar in size and spacing to existing power poles and lines currently surrounding the project site.

In summary, project components, including the environmental education center, park host site and fencing at the Grasslands site would be consistent with design guidelines of the Grasslands Park Master Plan and existing infrastructure located within Grasslands Regional Park. In addition, views of the project site from motorists passing by, rural residences, and patrons of Grasslands Regional Park would be screened from view by the ranch-style fencing and evergreen hedgerows. For these

reasons, the proposed project would not degrade the visual character of the site or its surroundings. Impacts would be less than significant.

Beamer/Cottonwood Site

The Beamer/Cottonwood Site consists of approximately 6.53 acres located at southeastern corner of Ashley Drive and Woodland Avenue in the City of Woodland. The site is undeveloped and consists of native and non-native grasses. Implementation of the project at the Beamer/Cottonwood site would include the construction of an 0.8-MW PV facility on approximately 2 acres and would be surrounded by diamond mesh fencing that may include vinyl privacy slats. Landscaping would be provided along the project's frontages with W. Woodland Avenue and N. Ashley Drive. Plants would consist of evergreen hedgerows spaced 3 to 5 feet apart. Once mature, the landscaping would provide visual screen for the solar array.

The proposed project would modify the existing character of the project site by installing solar panels and associated improvements. The majority number of viewers of the project site is limited to residents within the project area and motorists along Ashley Drive and Woodland Avenue. Because of the general lack of scenic vistas or points of interest in the immediate project area, the proposed solar farm would not substantially degrade the existing visual character or quality of the area and its surroundings.

Moreover, under the California Government Code Section 65850.5(a), "it is the policy of the state to promote and encourage the use of solar energy systems and to limit obstacles to their use." The project is consistent with and furthers the purpose of the California Government Code Section 65850.5, which also provides that it is the "intent of the Legislature that local agencies not adopt ordinances that create unreasonable barriers to the installation of solar energy systems, including, but not limited to, design review for aesthetic purposes, and not unreasonably restrict the ability of homeowners and agricultural and business concerns to install solar energy systems."

The PV facility would be located in a predominantly urban area and no aesthetic resources of substantial value currently exist on the project site. The PV facility would be consistent in visual character with the adjoining county buildings and facilities and would be primarily screened from view by fencing and landscaping. For these reasons, the proposed project would not degrade the visual character of the site or its surroundings. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

Grasslands Site

No mitigation is necessary.

Beamer/Cottonwood Site

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Light and Glare

Impact AES-3:	**The project may create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.**

Impact Analysis

Grasslands Site

Development of the Grasslands site would include temporary construction activities and equipment and the permanent installation of a PV facility, environmental education center, and park host site.

During the construction phase of the project, light and glare may be produced from construction vehicles, construction materials, site construction trailers, and other temporary construction elements on the project site. These temporary elements would be removed upon completion of the construction phase. The use of temporary lighting during project construction may be necessary in the early morning or during the winter, when the sun sets earlier. Project construction will occur between the hours of 6:00 a.m. and 8:00 p.m., Monday through Friday. Because of the temporary nature of project construction, less than significant impacts to light and glare would result and impacts would be less than significant during the construction phase.

Pole-mounted exterior security lighting would be installed at both project site entrances. Wall-mounted exterior security lighting would be installed at the environmental educational center and may also be present at the park host site. Lights would be downward facing and sensor controlled to reduce offsite illumination, and would remain on from dusk to dawn. Because the proposed project would use shielded and downward directed lighting, the proposed project would not create a new source of substantial light. The proposed project would not create a new source of substantial light that would adversely affect day or nighttime views in the area. Therefore, potential impacts associated with new sources of light would be less than significant.

The potential for glare from a PV panel's surface exists when the angle of the sun to the surface is such that light is reflected toward a viewer. The proposed trackers would change orientation during the course of a day, tracking the sun across a 90-degree arc. That is, the tracker would rotate from a 45-degree angle to the east in the morning to a 45-degree angle to the west in the afternoon. At midday, the tracker is horizontal and tilted south. At midday, all reflections from the surface of the panels would be toward or near the sun's position in the sky, except when the angle of the sun above the horizon is greater than 70 degrees. This occurs at midday hours between May and August, peaking at the summer solstice on June 21. The maximum angle of the sun above the horizon at the latitude of the Solar Generation Facility is 78 degrees. At angles between 70 to 78 degrees,

reflections off the panels would be directed into the sky as well, below the sun's position but above any potential viewpoint on the ground. Therefore, there would be no glare observed by viewers on the ground from midday reflections. Similarly, the angle of trackers during the morning and afternoon would direct reflections skyward. This impact is adverse, but less than significant and no mitigation is required for glare from the solar arrays.

As noted, the PV panels can reflect sunlight skyward, creating a potential glare impact for aircraft. The effect could be similar to what a motorist experiences when the sun is low in the sky and the car passes between the sun and a glass fronted building. If the motorist were heading directly toward the building, the glare would be in the motorist's eyes. Otherwise, the motorist would have to rotate his or her head to observe the glare off to the side. Water bodies have a similar glare effect when the incident sun angle is such that the reflected light strikes an aircraft on the opposite side of the water body from the sun.

Owing to the movement of the aircraft, the effect is momentary, lasting only as long as the angle between the sun, water body, and aircraft is maintained. Unless an aircraft were descending at an angle sloped directly at the solar array with the sun directly behind the aircraft, any glare that might occur from solar panels would be below the pilot's horizon. At the speed of an aircraft and the changing angles between the sun, panel, and aircraft, any glare effect would be momentary. In addition, the reflectance of the glass used in PV cells is about half that of standard residential and commercial glass. Therefore, glare impacts on aircraft would be less than significant and no mitigation is required to prevent or reduce glare.

The proposed project would also not create a new source of substantial glare that would adversely affect day or nighttime views in the area. The solar PV panels would be black in color and absorptive rather than reflective. By design, the solar PV panels would absorb sunlight to maximize electrical output and use anti-reflective glass, resulting in approximately half the reflectance of standard residential and commercial glass. As previously stated, the tracker would rotate from a 45-degree angle to the east in the morning to a 45-degree angle to the west in the afternoon, thereby directing reflections from the sun skyward away from any potential viewers on ground level. Because of the rotation angles, the solar PV panels have a less than significant impact potential for reflecting the sun's rays upon any ground-based observer offsite. In addition, the frame and other mounting components on which the solar PV panels would be attached are constructed of materials that have a low reflective property. Therefore, impacts associated with new sources of glare would be less than significant.

Beamer/Cottonwood Site

Development of the Beamer/Cottonwood site would include temporary construction activities and equipment and the permanent installation of a PV facility. Because of the momentary nature of glare created by the changing angles between the sun, panels, and aircraft, any such glare effect produced would have a less than significant impact on aircraft. During the construction phase of the project,

light and glare may be produced from construction vehicles, construction materials, site construction trailers, and other temporary construction elements on the project site. These temporary elements would be removed upon completion of the construction phase. The use of temporary lighting during project construction may be necessary in the early morning or during the winter, when the sun sets earlier. Project construction will occur between the hours of 6:00 a.m. and 8:00 p.m., Monday through Friday. Because of the temporary nature of project construction, less than significant impacts to light and glare would result and impacts would be less than significant during the construction phase.

Pole-mounted exterior security lighting would be installed at the project site entrance. Lights would be downward facing and sensor controlled to reduce offsite illumination, and would remain on from dusk to dawn. Because the proposed project would use shielded and downward directed lighting, the proposed project would not create a new source of substantial light. Furthermore, the Beamer/ Cottonwood site entrance is located near the center of the Beamer/Cottonwood campus, away from adjacent, potentially light sensitive residential areas. The security lighting would be consistent with existing security lighting at adjacent County buildings and facilities. In summary, the proposed project would not create a new source of substantial light that would adversely affect day or nighttime views in the area. Therefore, potential impacts associated with new sources of light would be less than significant.

The proposed project would also not create a new source of substantial glare that would adversely affect day or nighttime views in the area. The solar PV panels would be black in color and absorptive rather than reflective. By design, the solar PV panels would absorb sunlight to maximize electrical output and use anti-reflective glass, resulting in approximately half the reflectance of standard residential and commercial glass. Because of the limited rotation angles, the solar PV panels have no potential for reflecting the sun's rays upon any ground-based observer offsite. In addition, the frame and other mounting components on which the solar PV panels would be attached are constructed of materials that have a low reflective property. Furthermore, planned landscaping along Ashley Drive and Woodland Avenue would block views of the PV panels. While the perimeter landscaping may not shield the PV array for a few residents with second floor views, the glare would be half the reflectance of glass, and would be short-lived dependent upon the angle of the sun and tracking position of the PV panel. For these reasons, potential impacts from daylight glare would be a less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

Grasslands Site

No mitigation is necessary.

Beamer/Cottonwood Site

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.