

**Lake Herman Solar  
Discussion of Views from the Bay Area Ridge Trail**



### Introduction

At the February 13, 2020 City of Benicia Planning Commission meeting, Commissioner Macenski expressed concern regarding the potential for the project to adversely affect or impact views from the Bay Area Ridge Trail (Trail). In response to this concern Renewable Properties, LLC (RP) engaged a third-party independent consultant (Faulk and Foster (F&F)) to prepare a viewshed analysis (Figure 1). The viewshed analysis identifies areas potentially visible from the (i.e., green overlay layer).

### Methodology

This assessment and viewshed analysis was performed using principles from the U.S. Department of Transportation, Federal Highway Administration (FHWA), “Guidelines for Visual Impact Assessment” (2015). Using Geographic Information Systems (GIS) and a Digital Elevation Model (DEM), F&F performed an analysis of visible / non-visible areas from the trail<sup>1</sup>. The modeled viewshed depicted in Figure 1 is a conservative representation of potential views from the Trail. Visible areas (areas shown in green) vs. non-visible areas (areas shown in white) are based on their elevation and topography in relation to that of the trail. As such, the resulting “visible areas” do not account for structural or vegetative features that would obstruct a given view along the trail.

### Discussion

As shown in Figure 1, the viewshed model suggests the Lake Herman project site is visible from the Trail. However, as stated, this does not account for intervening structures or vegetation. It also does not consider the degree of impact or perceptibility when distance between the Trail and the project is considered.

The distance between two objects or features is critical component of visual impact assessment. Using FHWA measures for “Distance Zones,” Figure 1 identifies 0.25-mile, 0.5-mile, 1-mile, and 3-mile buffer intervals from the centerline alignment of the Trail. The FHWA defines “Distance Zones,” as follows:

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<sup>1</sup> “The ability of a DEM to create accurate viewsheds is limited by the digital information available to construct the model. If the model accounts for terrain but not vegetation, the built environment, or the presence of typical atmospheric conditions, it will not generate a [viewshed based on existing ground conditions]...” (U.S. Department of Transportation, 2015).



**Distance Zones:** “Distance zones are based on the position of the viewer in relations to the landscape. They are measured from one static point, such as the location of a key view. There are three defined distance zones:

- **Foreground:** 0.25-0.5 mile from the viewer
- **Middleground:** Extends from the foreground zone to 3-5 miles from the viewer
- **Background:** Extends from the middleground zone to infinity (Litton 1968).”

The concept of distance is an important indicator for understanding how the viewer may perceive the mass and visibility of the proposed project. In general, a person’s perception of object mass, color, and scale, in relation to surrounding features decreases as distance increases. At distances of more than a mile, elements of the landscape begin to blend in scale and color, such that only broad forms, large-scale patterns, and muted colors are perceptible (U.S. Department of Transportation, 2015).

### Conclusion

At their closest points, the Lake Herman Solar Project and Bay Area Ridge Trail are approximately 1.98 miles apart. Using FHWA concepts for distance and visibility, it is reasonable to conclude the project would have a negligible effect or change to the existing visual character of views from the Bay Area Ridge Trail toward the project site.



## References

U.S. Department of Transportation, F. H. (2015, January). *Guidelines for the Visual Impact Assessment of Highway Projects*. Retrieved from Environmental Review Toolkit:  
[https://www.environment.fhwa.dot.gov/env\\_topics/other\\_topics/VIA\\_Guidelines\\_for\\_Highway\\_Projects.aspx#appa](https://www.environment.fhwa.dot.gov/env_topics/other_topics/VIA_Guidelines_for_Highway_Projects.aspx#appa)



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