

Appendix 5.12A
Obstacle Evaluation Study



**Hidden Hills Solar Project
Pahrump, Nevada
Obstacle Evaluation Study
August 16, 2010**

Summary

Capitol Airspace Group conducted an airspace and obstacle evaluation screening for the Hidden Hills Solar Project. The purpose for this study was to identify obstacle clearance surfaces established by the Federal Aviation Administration (FAA) that would limit the height or location of proposed solar towers within the defined study area. At the time of this study, the location of individual solar towers had not been determined. Therefore, this study assessed the height limitations over an approximately 16 square mile study area to aid in locating optimal tower sites.

14 CFR Part 77 requires that all structures that exceed 200 feet above ground level (AGL) be submitted to the FAA so that an aeronautical study can be conducted. The FAA's objective in conducting aeronautical studies is to ensure that proposed structures do not have an effect on the safety of air navigation and the efficient utilization of navigable airspace by aircraft. The end result of an aeronautical study is the issuance of a determination of 'hazard' or 'no hazard' that can be used by the proponent to obtain necessary local construction permits. It should be noted that the FAA has no control over land use in the United States and cannot enforce the findings of its studies.

Based on the findings of this study, Capitol Airspace determined that there are no obstacle clearance surface heights over the study area that would limit tower heights below 1,000 feet above ground level. It should be noted that this study did not consider electromagnetic interference on communications, navigation or surveillance systems.

Methodology

Capitol Airspace studied the proposed solar towers based upon location information provided by BrightSource Energy for the planned study area. Using the approximate latitudinal and longitudinal coordinates for the outer boundaries of the study area, Capitol Airspace generated graphical overlays of the study area to determine proximity to public and military airports, published instrument procedures, military operational areas, en-route airways and military training routes.



Capitol Airspace evaluated all 14 CFR Part 77 imaginary surfaces, published instrument approach and departure procedures, visual flight rules and en-route operations. All formulas, headings, altitudes, bearings and coordinates used during this study were derived from the following documents and data sources:

- 14 CFR Part 77 “Object Affecting Navigable Airspace”
- FAA Order 8260.3B (Change 21) “United States Standard for Terminal Radar Procedures (TERPS)”
- FAA Order 7400.2G “Procedures for Handling Airspace Matters”
- United States Government Flight Information Publication, US Terminal Procedures
- National Airspace System Resource Aeronautical Data

Study Findings

14 CFR Part 77 Imaginary Surfaces

The FAA uses imaginary slopes and level surfaces to determine if a proposed structure is an obstruction to air navigation. Structures that are designated as obstructions are then subject to a full aeronautical study and increased scrutiny. Structures that are not deemed obstructions are, in most cases, automatically issued favorable determinations. Capitol Airspace determined that the study area is located outside of the imaginary surfaces established under 14 CFR Part 77.25. However, planned towers that exceed 14 CFR Part 77.23(a)(1) “A height of 500 feet above ground level at the site of the object” will be determined to be an obstruction and are subject to greater scrutiny during the aeronautical study process. It should be noted that a penetration of this surface alone will not likely result in a determination of hazard and should not be used as a sole discriminator for tower placement or height.

Departure Procedures

In order to ensure that aircraft departing during marginal weather conditions do not fly into terrain or obstacles, the FAA has established an obstacle clearance surface that extends upward and outward from the end of all runways at public use airports to a distance of 25 nautical miles. Based on the coordinates provided for the study area, Capitol Airspace determined that the closest public use airport is located 14.54 nautical miles west (Shoshone Airport – L61) of the study area. Since the study area does fall within the 25 nautical mile departure area, Capitol Airspace assessed the height of the departure surfaces from this airport and found that the obstacle clearance surface height over the study area will not limit tower development.

Instrument Approaches

Pilots operating during periods of reduced visibility and low cloud ceilings rely on terrestrial and satellite based navigational aids (navaids) in order to navigate from one point to another and to



locate runways. The FAA has established published instrument approach procedures that provide horizontal guidance to on-board avionics that aid the pilot in locating the runway. Capitol Airspace determined that there are no instrument approach procedures in proximity to the study area that would limit tower development.

Visual Flight Rules Operations

In addition to assessing obstacle identification surfaces, Capitol Airspace also considered the impact of the proposed towers on civil Visual Flight Rules (VFR) operations. The FAA has established guidelines for determining impact on VFR operations that include the assessment of VFR routes and VFR traffic patterns at airports. Capitol Airspace found no VFR routes or VFR traffic patterns in proximity to the study area that would limit tower development.

Long Range and NEXRAD Radar

Capitol Airspace utilized the FAA/DOD preliminary screening tool to determine likely electromagnetic interference on long range and NEXRAD radars. According to the Long Range Radar tool, the study area is located in an area designated as 'Green'. The FAA defines this area as having "no anticipated impact to Air Defense and Homeland Security radars." Further, the tool showed that tower development within the study area would have "minimal to no impact to Weather Surveillance Radar-1988 Doppler (WSR-88D) weather radar operations. National Telecommunications & Information Administration (NTIA) notification advised." It should be noted that the preliminary screening tool does not take into consideration tower height nor does it consider the cumulative impact of existing or approved towers in proximity to the area studied. Also, the primary focus of this tool is the assessment of proposed wind turbine development. Since solar towers do not generate Doppler interference like a wind turbine generator, it is unlikely that the FAA or DOD will object to a solar tower based on long range radar interference.

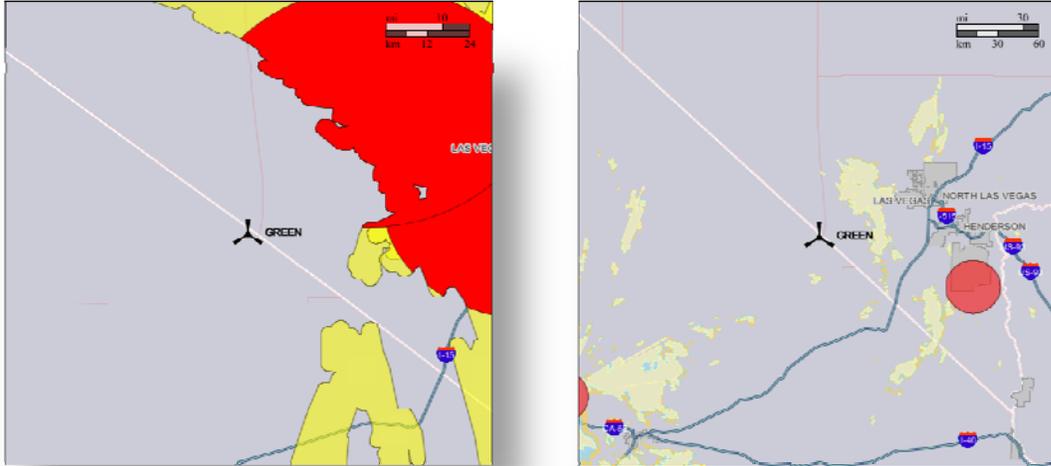


Figure 1: Long Range (left)/NEXRAD (Right) radar preliminary screening tool results

En-Route Airways

Capitol Airspace assessed potential height limitations due to the obstacle clearance requirements for en-route airways. These airways provide pilots a means of navigation when flying from airport to airport and are defined by radials between Very High Omni-directional Radio Beacons (VOR). The FAA publishes minimum en-route altitudes for airways to ensure clearance from obstacles and terrain. The FAA requires that each airway have a minimum of 1,000 feet of obstacle clearance in non-mountainous areas and 2,000 feet in mountainous areas.

The Hidden Hills study area is located inside of the obstacle evaluation area for V135 which has a minimum obstacle clearance altitude of 8,500 feet above mean sea level. As a result, this airway will not restrict development height within the study area.

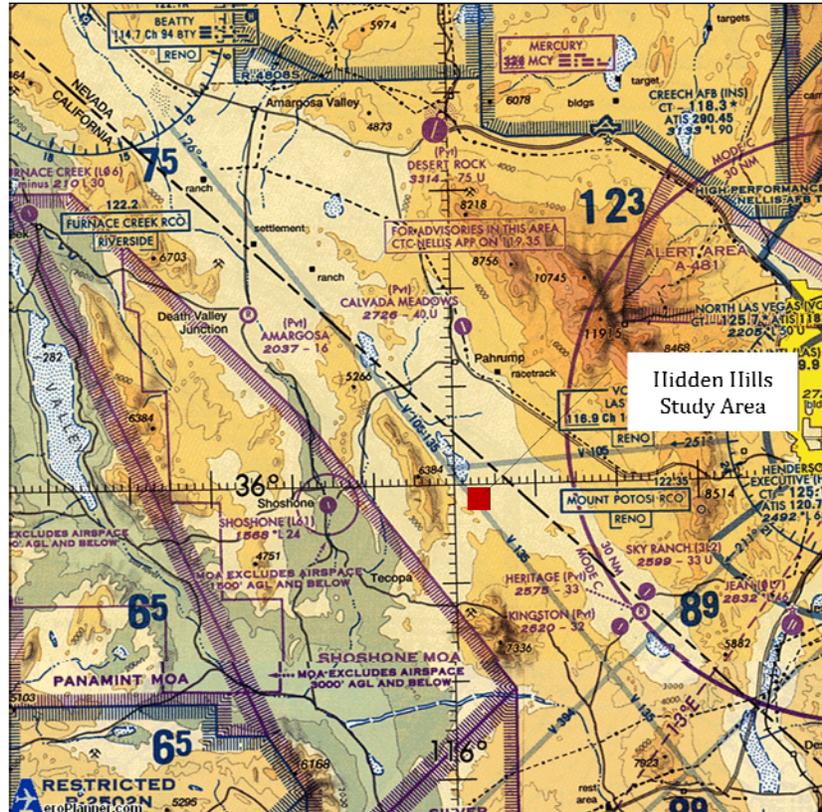


Figure 3: Proximity of Hidden Hills Study area to Shoshone MOA and Military Training Routes

Pahrump Airport

When the FAA assesses the impact of planned structures on navigable airspace, consideration is made of existing and planned airports and associated instrument procedures. The city of Pahrump is planning to build a new airport 8.35 nautical miles northwest of the study area. In order to determine the potential impact of solar development on this planned airport, Capitol Airspace contacted three FAA offices responsible for airports and obstruction evaluation. After contact with the airport planner in the San Francisco Airports District Office, the procedures specialist in the Seattle Flight Procedures Office, and the obstruction evaluation specialist, in the Seattle Obstruction Evaluation Office, it was confirmed that an airport plan has been submitted but not approved by the FAA.

The timeline identified in the Pahrump Valley Airport Master Plan (July 2008) calls for construction of the airport in 2012. This schedule was based on the completion of an



Environmental Assessment (EA) and acceptance of the Airport Layout Plan (ALP) by the FAA. Recently, it was decided that an EA would not be adequate and a full Environment Impact Statement (EIS) will be required. FAA is in the process of selecting a contractor to perform the EIS for Pahrump. This will likely add 1 to 3 years to the planned timeline. FAA will not accept and approve an ALP until the environmental approval (in this case, the EIS) is completed. Until the EIS is complete, there is a possibility that this airport will never be built.

Under the assumption that the airport will be built at some time in the future, Capitol Airspace developed instrument approach and departure procedures for the airport to determine if solar development would impact the airport's ability to obtain these types of procedures. Based on an assessment of the surrounding terrain and the proximity of en-route airways, Capitol Airspace developed non-precision RNAV (GPS) LNAV procedures to both ends of the planned runway. Transitions were then considered and it was found that, at a distance of 8.35 nautical miles, the obstacle clearance surface for such an approach would be well above the height of 1,000 foot or shorter solar towers located anywhere within the study area. Further, Capitol Airspace considered a 200 foot per nautical mile climb gradient for departures and found that the obstacle clearance surfaces would be in excess of 1,000 feet over the study area. As a result, it is unlikely that development within the study area would hinder the future airport's ability to obtain standard instrument procedures.

Conclusion

The results of this study show that tower development at or below 1,000 feet above ground level within the study area would not likely result in a hazard determination assuming the FAA finds no substantial electromagnetic interference with communications, navigation or surveillance systems. Given the proximity of the tower to military training routes, the DOD may opt to object to tower development in this area even though the initial review by Mr. Parisi showed otherwise. However, the FAA will not likely issue a hazard determination based on DOD objections.

Over the past year, the DOD has been objecting to renewable energy projects via the environmental review and local permitting processes. For planned structures located on land owned by the Bureau of Land Management, objections by the DOD can result in a denial of the issuance of a notice to proceed. It is therefore paramount that BrightSource enter into discussions with the FAA and DOD as early as possible in the development process to identify and overcome potential objections from the military regarding impact to long range radar systems and military operations.

Finally, based on a comprehensive review of the planning documents for Pahrump Airport and based on discussions with various offices within the FAA, Capitol Airspace was able to



determine that the planned airport is yet to be approved the FAA and that no plans for instrument procedures have been submitted. Therefore, the FAA will not likely consider Pahrump Airport in its review of planned solar towers within the study area. Further, even if the FAA considered the Pahrump airport in their review, it is not likely that they would find that proposed towers would limit the airport from obtaining instrument approach or departure procedures. Therefore, Capitol Airspace has determined that it is highly likely that a solar tower of 1,000 feet or fewer would receive a favorable determination of no hazard by the FAA.

Any questions regarding this report should be directed to Ben Doyle of Capitol Airspace Group at (703) 243-1001 or via email at ben.doyle@capitolairspace.com.