APPENDIX 3.11-C: AIRPORT OBSTRUCTIONS

3.11-C.1 Introduction

Under the California Environmental Quality Act Guidelines, Appendix G (California Code of Regulations Title 14, Chapter 3, Sections 15000–15837), the following significance criterion applies to Shared Passenger Track Alternatives A and B:

> *For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?*

Safety hazards can include the development of land uses that are incompatible with airport operations, the exposure of noise-sensitive receivers to noise levels in excess of established thresholds, or the imposition of airspace obstacles that represent hazards to aviation, and subsequently to people on the ground in areas exposed to aircraft overflight. The purpose of this appendix is to evaluate whether the project impinges on the imaginary airspace surface of any public-service airport in the resource study area, which could potentially be considered an impact under the California Environmental Quality Act.

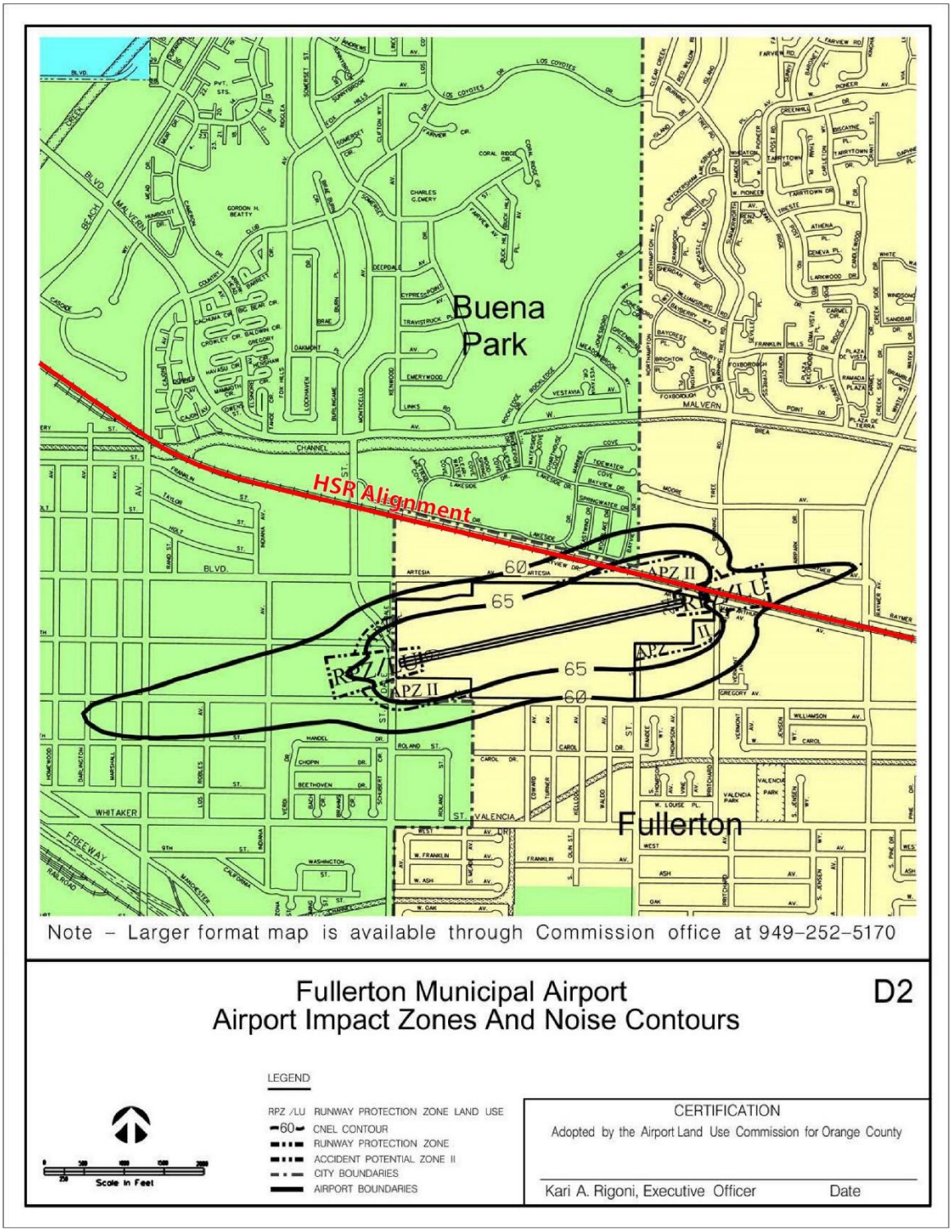
Fullerton Municipal Airport (Federal Aviation Administration [FAA] Identifier KFUL) is the one public-service airport in the resource study area and is described in greater detail below. There are no other public airports within 2 miles of the airport resource study area in Los Angeles or Orange Counties.

3.11-C.2 Fullerton Municipal Airport

Fullerton Municipal Airport is a general aviation facility owned and operated by the City of Fullerton. The airport is approximately 2.9 miles from downtown Fullerton and approximately 0.1 mile from the existing Fullerton Station. The airport operates one 3,121-foot-long runway and has an aircraft capacity of 600 planes. The airport elevation is 96 feet above sea level. The existing Critical Aircraft category at Fullerton is identified as “B-I,” which indicates that only small general aviation type aircraft can operate at the airport. Large/heavy commercial service aircraft do not operate at Fullerton Municipal Airport. Runway 6-24 is capable of accommodating a visual approach to the 6-end and nonprecision approach to the 24-end. Both runway ends have a 20:1 approach surface slope. Airport runway protection zones (RPZ) are trapezoidal areas at the end of the runway that serve to enhance the protection of people and property on the ground in the event an aircraft lands or crashes beyond the runway end (FAA 2020). Fullerton Municipal Airport RPZs are described in Appendix D of the Airport Environs Land Use Plan for Fullerton Municipal Airport (Orange County Airport Land Use Commission 2019). Figure 3.11-C-1 is a map of the FAA notification area for Fullerton Municipal Airport. Figure 3.11-C-2 is a map of the airport impact zones and noise contours. Figure 3.11-C-3 is a map illustrating the Federal Aviation Regulation Part 77 Fullerton Municipal Airport obstruction imaginary surfaces.

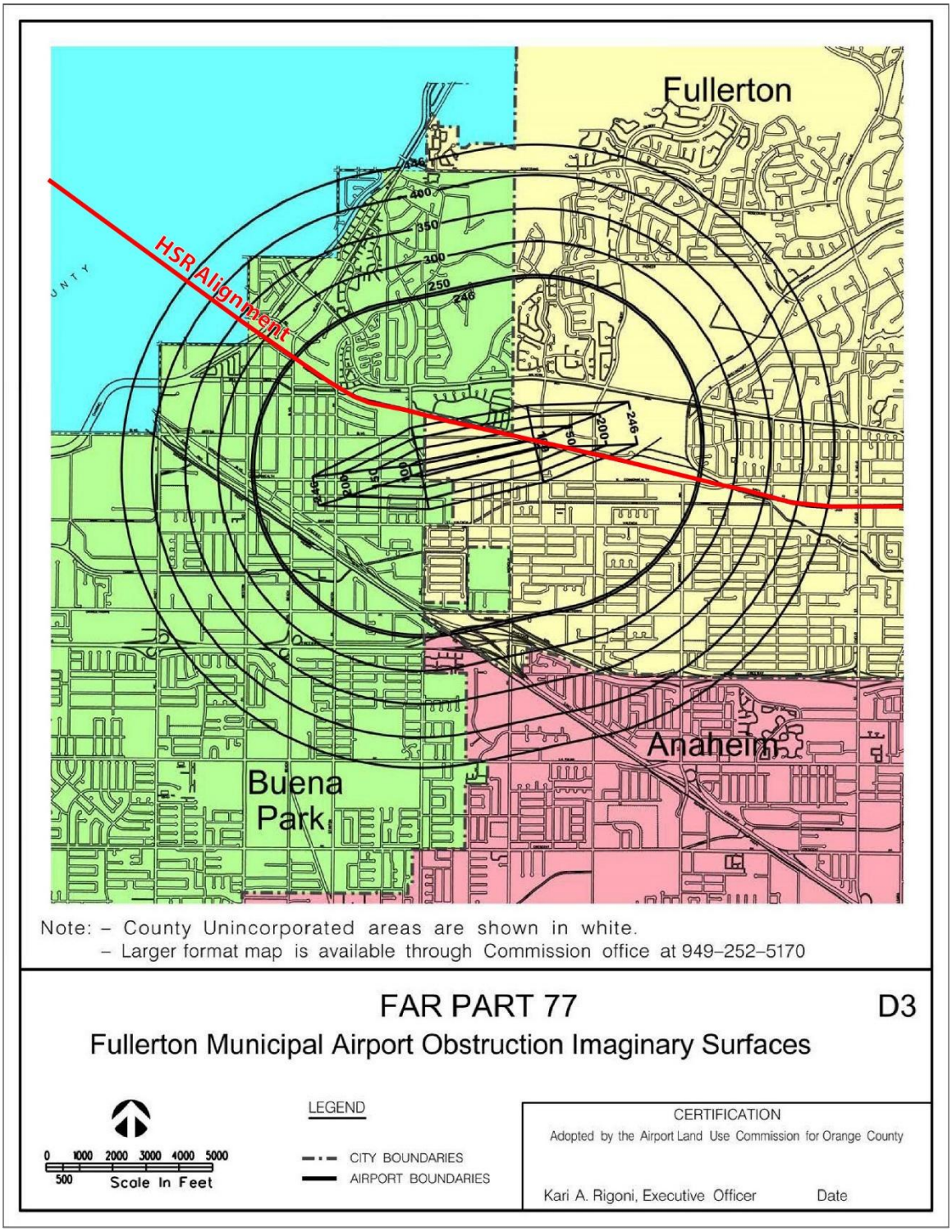
Source: Orange County Airport Land Use Commission 2019

Figure 3.11-C-1 Federal Aviation Administration Notification Area for Fullerton Municipal Airport



Source: Orange County Airport Land Use Commission 2019

Figure 3.11-C-2 Airport Impact Zones and Noise Contours



Source: Orange County Airport Land Use Commission 2019

Figure 3.11-C-3 Federal Aviation Regulation Part 77 Fullerton Municipal Airport Obstruction Imaginary Surfaces

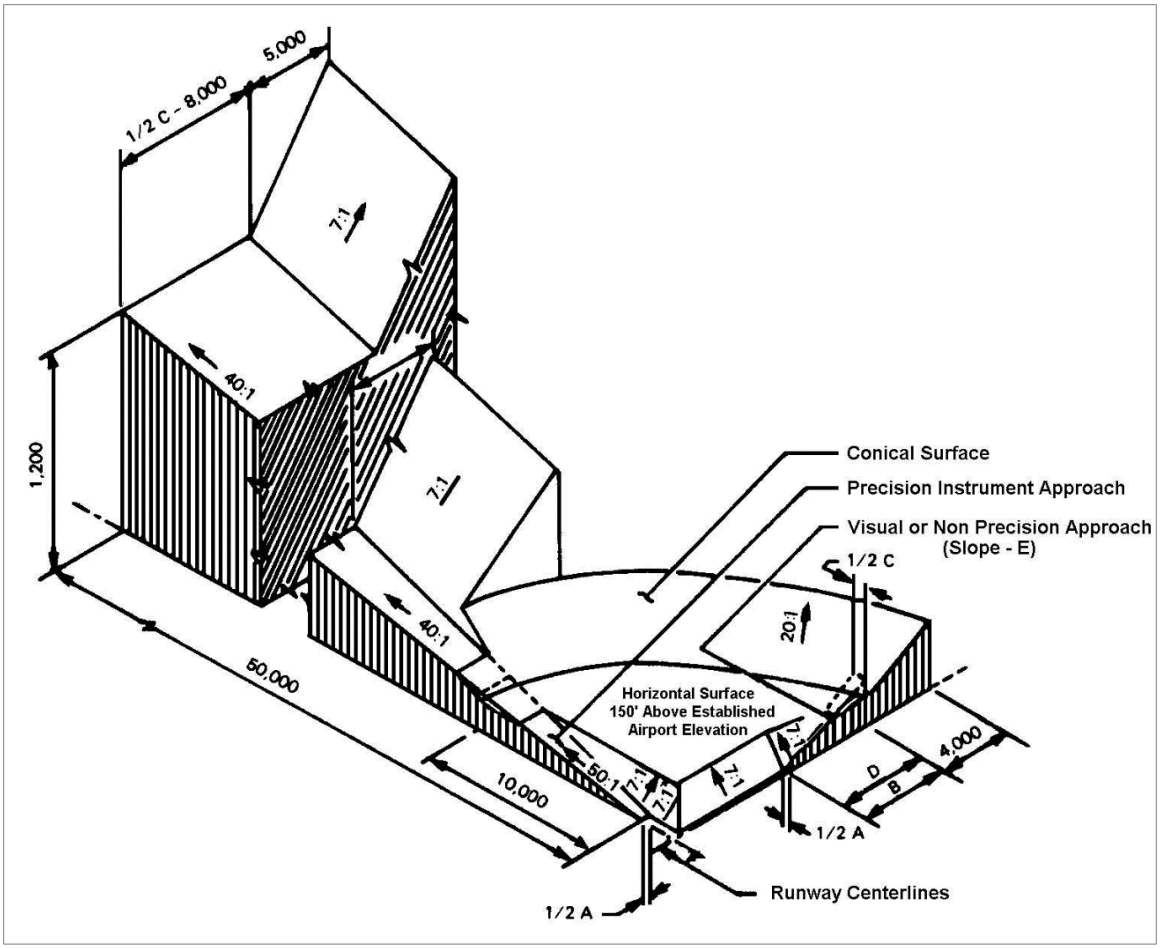
3.11-C.3 Airport Imaginary Airspace Surfaces

For purposes of identifying airspace obstacles for airports, the most commonly identified imaginary surfaces include those surfaces for civil aviation facilities defined under 14 Code of Federal Regulations Part 77 (Part 77 surfaces) and the U.S. Standard for Terminal Instrument Procedure as defined in FAA Order 8260.3F. Proposed development that penetrates these surfaces requires project developers to submit an FAA Form 7460-1, Notice of Proposed Construction or Alteration, application for the project. Upon submittal of FAA Form 7460-1, FAA conducts an intradepartmental review (with the participation of the Department of Defense) to ensure that the proposed obstacle would not present a hazard to air navigation. The FAA review process includes review of potential airspace-related hazards of the project and potential impacts on communication and navigation equipment performance that may be in the vicinity of the project, review of the Airport Traffic Control Tower line of sight (if applicable), and review of the airport's latest FAA-approved Airport Layout Plan document to ensure consistency with potential future projects that the airport may have planned. The Part 77 and U.S. Standard for Terminal Instrument Procedure airspace surfaces are described in more detail below.

Under Part 77 standards for determining obstructions to airspace, an existing object, including mobile objects using a traverseway (such as a car, train, or boat), would be an obstruction to air navigation if it penetrates the surface of a takeoff and landing area of an airport or any imaginary surface established for the airport (14 Code of Federal Regulations Part 77.19, Civil airport imaginary surfaces). Imaginary surfaces for civil airports fall into five standard categories: primary, approach, transitional, horizontal, and conical. The size and shape of these surfaces can vary based on runway category and type of operating procedures available or planned for that runway. Examples of these surfaces are shown on Figure 3.11-C-4. The existing Part 77 surfaces for Runway 6-24 at Fullerton Municipal Airport are shown on Figure 3.11-C-3.

U.S. Standard for Terminal Instrument Procedure surfaces are instrument approach, missed approach, and departure procedures for both civilian and military airports. U.S. Standard for Terminal Instrument Procedure imaginary surfaces are used to help develop instrument procedures and conduct obstacle analysis for instrument operations. Penetrations to U.S. Standard for Terminal Instrument Procedure airspace surfaces require FAA to adjust or modify approach or departure procedures.

In addition to airspace criteria, there are other runway design criteria that must be considered, which include the runway object-free area, the runway safety area, and the RPZ. The runway safety area and runway object-free area are rectangular surfaces bounding the runway environment on the sides and beyond the ends of the runway to establish grading and object clearing requirements for operational safety. The RPZ is a trapezoidal surface located beyond the ends of the runway to protect people and property on the ground. The RPZ is a land-use control that limits objects and activities within the RPZ that are not deemed compatible with airport operations. All new projects and proposed development within an RPZ must be vetted and approved by FAA; such is the case for the HSR alignment at Fullerton Municipal Airport. The 7460-1 process will trigger this review. The existing approach and departure RPZs for Fullerton Municipal Airport are illustrated on Figure 3.11-C-5.



Source: National Oceanic and Atmospheric Administration n.d.

Figure 3.11-C-4 Graphical Depiction of Part 77 Airspace Surfaces

3.11-C.4 Analysis

This analysis considers the potential for the project to create hazards and airspace obstacles at the Fullerton Municipal Airport.

3.11-C.5 Results

A portion of the project alignment would be adjacent to Fullerton Municipal Airport. In this area of the alignment, the proposed tracks would enter a short below-grade section after crossing Dale Street in Fullerton. The crossing of the Fullerton Municipal Airport RPZ by the Los Angeles to Anaheim Project Section (project section) alignment is illustrated on Figure 3.11-C-5. This area would require a below-grade braced trench configuration to cross to the southern side of the railroad right-of-way before the existing Fullerton Station and, by being below grade, would avoid conflicts from the project section track and high-speed rail operations with the surface-level Fullerton Municipal Airport RPZ and the height restrictions established by FAA regulations Part 77 as depicted on Figure 3.11-C-5 and Figure 3.11-C-6. The new tracks would return to at grade just before Gilbert Street and remain at grade through the existing Fullerton Metrolink Station or, if selected, the Fullerton High-Speed Rail Station Option. By positioning below grade near the Fullerton Municipal Airport, the project section would not conflict with areas that have surface-related height restrictions associated with the *Airport Environs Land Use Plan for Fullerton Municipal Airport* (Orange County Airport Land Use Commission 2019).

The project section is incompatible with the *Airport Environs Land Use Plan for Fullerton Municipal Airport*, because the project section would place new passenger rail within the Fullerton Municipal Airport RPZ. The inconsistency is related to the potential placement of people in areas susceptible to aircraft accidents within the RPZ during construction and operation. This issue would be subject to review during FAA review of the project section.

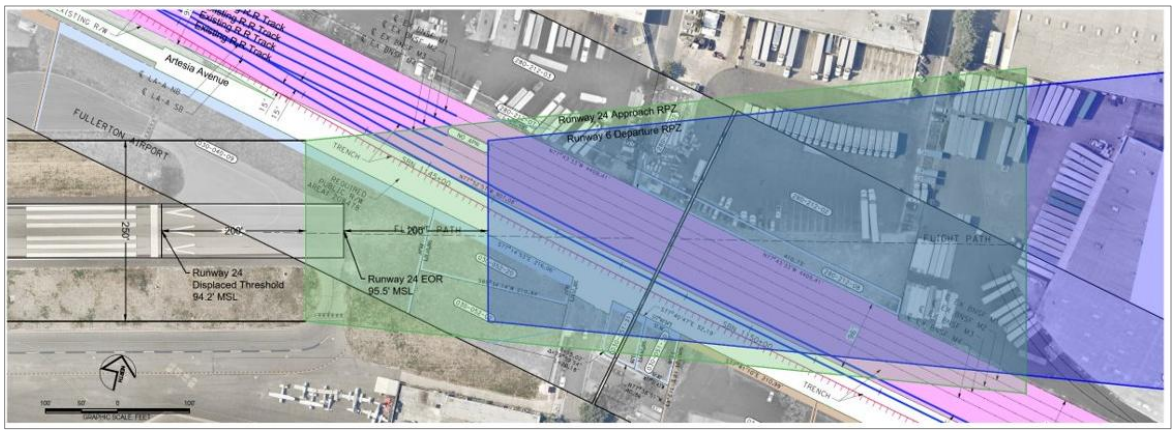


Figure 3.11-C-5 Fullerton Municipal Airport: Existing Runway Protection Zones for Runway 6-24

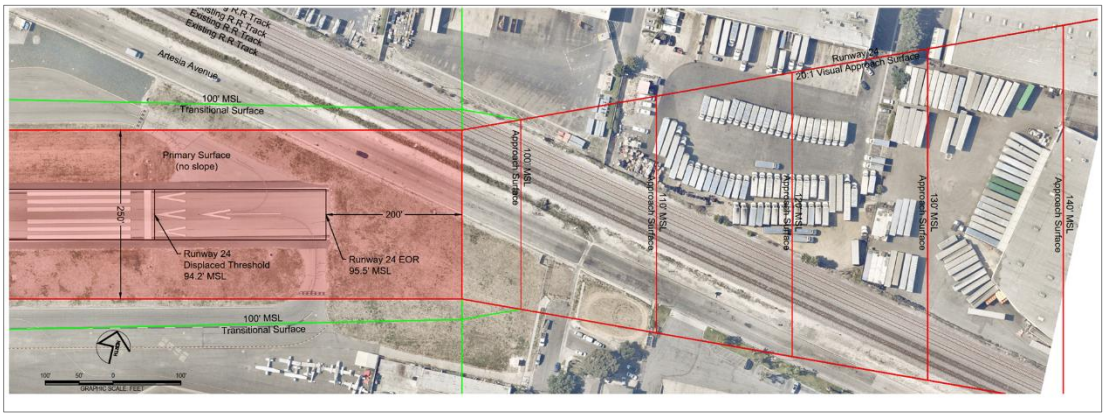


Figure 3.11-C-6 Fullerton Municipal Airport: Existing Part 77 Surfaces for Runway 6-24

In addition, the project section would require construction activities to take place adjacent to the Fullerton Municipal Airport where construction equipment such as cranes and drill rigs may affect the National Airspace System. As a result, the project would be subject to FAA regulations for flagging and lighting as well as filing an FAA Form 7460-1 with FAA. **SS-IAMF#5, Aviation Safety**, requires the California High-Speed Rail Authority to ensure FAA requirements are met. In accordance with **SS-IAMF#5**, the project would identify construction activities to be conducted in the vicinity of Fullerton Municipal Airport and would review proposed construction activities to ensure conformance with FAA requirements.

REFERENCES

Federal Aviation Administration (FAA). 2020. 550 runway protection zones. Federal Aviation Administration, Central Region Airports Division. AIP Sponsor Guide, September 1, 2020. https://www.faa.gov/sites/faa.gov/files/airports/central/planning_capacity/0500.pdf (accessed April 2024).

National Oceanic and Atmospheric Administration. No date. www.ngs.noaa.gov/AERO/3dfar77.html (accessed July 2017).

Orange County Airport Land Use Commission. 2019. *Airport Environs Land Use Plan for Fullerton Municipal Airport*. https://files.ocair.com/media/2021-02/AELUP%20for%20FMA%2005092019.pdf (accessed March 2024).