



San Francisco International Airport

September 30, 2022

TRANSMITTED VIA E-MAIL
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Michael Smith
Senior Planner
San Bruno Community & Economic Development Department | Planning Division
City of San Bruno
567 El Camino Real
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Subject: 2023-2031 Draft Housing Element, San Bruno, California

Thank you for notifying San Francisco International Airport (SFO or the Airport) regarding the preparation of the City of San Bruno's draft 2023-2031 Housing Element (draft Housing Element). We appreciate this opportunity to coordinate with the City of San Bruno (the City) in considering and evaluating potential land use compatibility issues from the draft Housing Element.

The draft Housing Element establishes goals, policies, and programs to help address the City's current and future housing needs and includes a list of recommended housing sites. It is the City's blueprint for housing-related decisions and sets an action plan for how to meet housing goals over the coming years. The City has been allocated 3,165 housing units through the Association of Bay Area Governments' application of the State of California's Regional Housing Needs Allocation (RHNA) process and the draft Housing Element includes a minimum of 1,000 housing units at the former Shops at Tanforan site. The Tanforan site has been identified by the City as a prime location for housing because of its designation within the City's Transit Corridor Plan.

The majority of the City, including the Tanforan site, is inside Airport Influence Area B as defined by the *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport* (SFO ALUCP). The Tanforan site is located within the 70 decibel (dBA) Community Noise Equivalent Level (CNEL) contour and Safety Compatibility Zone 4. Moreover, many airport departure procedures are designed to ascend over the Tanforan site, and residents would experience extreme and persistent noise from aircraft departures.

SFO remains deeply concerned about the City's plan for adding housing units at the Tanforan site. On July 27, 2021, the City released the Reimagining Tanforan Fact Sheet, which describes proposed development at the Tanforan site. On May 6, 2022, we sent a letter to the City stating our concerns for the redevelopment of the Tanforan Shopping Center, which is attached hereto as **Exhibit A** and incorporated by reference. A summary of the concerns outlined in that letter are as follows:

- All residential developments within 70 dBA CNEL contour are determined to be incompatible (i.e., entirety of Tanforan site);
- Redevelopment of the Tanforan site to include high-density residential units would undermine decades of scientifically informed land use planning and millions of dollars expended to safeguard public health and safety;

AIRPORT COMMISSION CITY AND COUNTY OF SAN FRANCISCO

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JANE NATOLI

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IVAR C. SATERO
AIRPORT DIRECTOR

- The Airport has spent hundreds of millions of dollars on insulating incompatible land uses. However, any future residences at the Tanforan site will not be eligible for Federal Aviation Administration/SFO grants for sound insulation or the subsequent repair or re-installation of insulation materials when they fail over time. (This is reiterated in a May 6, 2022 letter from FAA to the City attached hereto as **Exhibit B** and incorporated by reference.)
- The proposed redevelopment would result in the densest population per square mile under the departure flight path near a major international airport;
- Heights of buildings at the Tanforan site would need to be between 55 and 90 feet above ground level to be compatible with the Airspace Compatibility Policies of the SFO ALUCP. Otherwise, any penetrations of the critical aeronautical surfaces would result in real financial and economic impacts to air carriers, cargo operators, and SFO/City of County of San Francisco, and potentially reduce airlines' ability to transport high-value cargo (e.g., biotechnology and high-technology cargo);
- The Airport encourages the City to consider Safety Zone 4 compatibility policies during planning and site development to prevent development of incompatible uses (i.e., Biosafety Level 3 and 4 facilities, children's schools, large child day care centers, hospitals, nursing homes, stadiums, and arenas) and avoid development of critical public utilities and hazardous uses other than Biosafety Level 3 and 4 facilities.

The Airport has reviewed the recently issued draft Housing Element, which will be sent to the California Department of Housing and Community Development (HCD) on October 3, 2022. In addition to the comments presented in our May 6, 2022 letter (Exhibit A), we have the following comments regarding the draft Housing Element:

- In Chapter 3 (Housing Constraints and Resources), it states that, "local governments may take steps, provided by law, to overrule part or all of the ALUCP as it relates to their jurisdiction." This is not true. Local agencies cannot overrule any part of the ALUCP. Rather, local agencies may override an Airport Land Use Commission determination of proposed land use policy actions or development proposals based on the ALUCP. The process is described in Section 3.3.3 of the SFO ALUCP (Local Agency Override of an Airport Land Use Commission Determination). The local agency override process requires three steps: 1) holding a public hearing by the local agency of the proposed override action, 2) making specific findings by the governing body of the local agency that the proposed local action is consistent with the purposes of the airport land use commission statutes, and 3) approval of the override action by a two-thirds vote of the local agency's governing body.
- In Chapter 3 (Housing Constraints and Resources), Tables 3-2 and 3-3 present development regulations for residential and mixed-use districts, respectively. The Airport strongly encourages the City to also include maximum height restrictions reflective of the critical aeronautical surfaces as outlined in SFO ALUCP Exhibits IV-17 and IV-18 (see **Exhibit C**). The Airport also requests the following language be included in the draft Housing Element:

The City shall regulate land uses and building height within the Airport Influence Area of the San Francisco International Airport in compliance with SFO critical aeronautical surfaces (SFO ALUCP Exhibits IV-17 & IV-18), in accordance with Airport Land Use Commission guidelines to assure safety of aircraft, persons, and property near the Airport. Additionally, all proposed structures must receive a Determination of No Hazard from the

FAA. For avoidance of doubt, the lower of the two heights identified by the ALUCP and the FAA shall be the controlling maximum height.

- In the City's Application for Land Use Consistency Determination for the Housing Element update, the City presents the following proposed amendment to the General Plan, Health and Safety Policy HS-40:

General Plan Policy	Existing Language	Proposed Amendment
Health and Safety Policy HS-40:	Prohibit new residential development within the 70+ Airport CNEL areas, as dictated by Airport Land Use Commission infill criteria.	Prohibit new residential development within the 70+ Airport CNEL areas, as dictated by Airport Land Use Commission infill criteria, <u>with the exception of projects deemed appropriate by the City Council and to the extent necessary, approved through the Local Agency Override process, consistent with the Public Utilities Code Section 21675.1 (d).</u>

Presupposing an override of an ALUC determination for noise compatibility within the General Plan undermines the purpose of the SFO ALUCP to protect the public health, safety, and welfare of residents and occupants of future noise-sensitive development, and short-circuits the due process built into Public Utilities Code Section 21675.1(d). Placing this language into the General Plan would, in essence, render incompatible the entire General Plan. If overrides are pursued, they should be pursued on a per-project basis and the City must make determinations of fact specific to that project rather than assuming a blanket override. The Airport requests that this new language be stricken and overrides continue to be considered on a per-project basis to meet the intent of the Public Utilities Code and the SFO ALUCP.

As the largest employment site in San Mateo County, SFO recognizes the importance of increasing housing supply in California and in the San Francisco Bay Area. While the Airport believes that ABAG erred in excluding airport noise criteria from its RHNA methodology, it also acknowledges that the City's RHNA allocation requires it to plan for an additional 3,165 housing units. The Airport continues to urge the City to consider alternative locations to meet RHNA requirements, outside the 70 dBA CNEL noise contour, including the 2101 Sneath Lane Residential Project, the Bayhill Specific Plan area, and the transit-oriented development corridor along El Camino Real and San Mateo Avenue located outside of the CNEL 70 dBA contour.

Due to the proximity to the Airport, Airspace Protection Policies (AP1 through AP4) from the SFO ALUCP are enclosed (see Exhibit C) as reminders of incompatible site characteristics that pose threats to safe aircraft operations – especially as it pertains to wildlife attractants, particularly large flocks of birds – and building materials/features that reflect and create bright lights/glare.

* * *

Michael Smith
September 30, 2022
Page 4 of 4

The Airport appreciates the City's willingness to continue to have collaborative discussions, and your consideration of these concerns. If I can be of assistance, please do not hesitate to contact me at (650) 821-6678 or at nupur.sinha@flysfso.com.

Sincerely,

DocuSigned by:
Nupur Sinha
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Nupur Sinha
Director of Planning and Environmental Affairs
San Francisco International Airport

Attachments

cc: Tamara Swann, Western-Pacific Regional Administrator, Acting, FAA
Faviola Garcia, Western-Pacific Deputy Regional Administrator, Acting, FAA
Laurie Suttmeier, Manager, Western-Pacific Region, FAA San Francisco Airports District Office
Phillip Miller, Acting, Chief Division of Aeronautics, Caltrans
Airlines for America
San Francisco Airline Airport Affairs Committee
California Airports Council
United States Congresswoman Jackie Speier
San Mateo County Supervisor David Pine
San Mateo County Supervisor Dave Canepa
California State Assemblymember Kevin Mullin
California State Senator Josh Becker
Therese McMillan, Executive Director, Association of Bay Area Governments
Mark Shorett, Principal Regional Planner, Association of Bay Area Governments
Sam Hindi, Chairperson, SFO Airport/Community Roundtable
Marisa Prasse, California Department of Housing and Community Development
Hillary Prasad, California Department of Housing and Community Development
Sean Charpentier, Executive Director, City/County Association of Governments of San Mateo County
Susy Kalkin, C/CAG Airport Land Use Committee

May 6, 2022

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RE: Redevelopment of Tanforan Shopping Center ("Reimagining Tanforan"), City of San Bruno

The San Francisco Airport (SFO or the Airport) is deeply concerned about the City of San Bruno's (the City) adoption and issuance of the Reimagining Tanforan Fact Sheet in July 2021, to develop a mixed use (retail/office/residential) development at the 44-acre Tanforan shopping center. The City identified the project as adding a minimum of 1,000 housing units, and that the City would need to plan for as many as 3,165 housing units City-wide through 2031.¹ We appreciate this opportunity to continue to coordinate with the City regarding redevelopment of the Tanforan site and to seek practical alternatives for the development of additional housing stock.

As described in the City's Fact Sheet, the site currently contains commercial tenants, a movie theater, a Bay Area Rapid Transit (BART) station, a San Bruno police station, parking garages, and a surface parking lot. In December 2020, the Association of Bay Area Governments (ABAG) issued the San Bruno Regional Housing Needs Allocation (RHNA) that called the City to add 3,165 housing units City-wide by 2031. The RHNA called for these additional units based partially on the presence of the San Bruno BART and Caltrain stations and access to the U.S. 101, I-280, and I-380 freeways. The Airport and ALUC was never consulted during the RHNA allocation process. For such matters pertaining to housing within the Community Noise Equivalent Level (CNEL) 70 decibel (dBA) noise contour, the Airport urges the City to engage the Airport, SFO Airport/Community Roundtable, Caltrans Division of Aeronautics, and the Federal Aviation Administration (FAA).

As shown on **Attachment A**, the Tanforan shopping center is located entirely within the CNEL 70 dBA noise contour and located directly beneath the extended centerline of SFO's primary departure runway path for long-haul international air carriers and cargo operators. SFO and City staff have met several times in 2022 since issuance of the RHNA to discuss both the City's and Airport's concerns. These concerns are also consistent with the City's concerns expressed in a letter sent by the City to ABAG, dated July 8, 2021, including: (a) concerns over significant aircraft noise exposure to the future residents and height restrictions over the site; and (b) the City's RHNA requirement and lack of consideration to account for existing State land use compatibility laws.

¹ City of San Bruno, Reimagining Tanforan Fact Sheet, adopted by City Council July 27, 2021. Available online: https://sanbruno.ca.gov/DocumentCenter/View/2043/San-Bruno-Land-Use-Visioning_CC-Approved-7-28-2021?bidId=

NOISE COMPATIBILITY POLICIES

The Airport supports practical housing development in the Bay Area, especially low-income and transit-oriented developments. However, commercial and industrial areas, zoned and used as such for decades in the City, are now being identified for rezoning and redevelopment to include high density housing/transit oriented development because these areas are located adjacent to high-quality transit (i.e., the San Bruno BART and Caltrain stations and the El Camino Real bus corridor) as defined by the State of California.

The Airport appreciates that much of the City is contained within the CNEL 70 dBA noise contour. The commercial and industrial land uses that make up most of the existing land uses within the CNEL 65 dBA noise contour (which is defined as the significant noise impact area under federal and state regulations) have served the Airport and the community well for decades. The intent of these federal and state regulations is to prevent any new residential developments within the significant noise contour. The proposed redevelopment of Tanforan to include incompatible housing remains a serious concern for the Airport.

The Tanforan site is inside the Airport Influence Area B as defined in the *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport* (SFO ALUCP) adopted by the City/County Association of Governments of San Mateo as the designated Airport Land Use Committee. ***All residential development related actions within the CNEL 70 dBA contour are determined to be incompatible, including rezoning of a site to residential uses, under Noise Compatibility Policy (NP-4).*** Acoustical treatments could reduce interior noise levels and could be conditionally compatible residential developments within the CNEL 65 to 70 dBA contour. However, residential developments within the CNEL 70+ dBA noise contour would allow a significant impact to future residents and is identified under federal and state regulations as incompatible with sound insulation. Interior insulation would fail to address noise in outdoor amenity spaces often provided alongside housing. Further, the simple act of opening a window would compromise the efficacy of even the best noise insulation.

SFO was the first U.S. airport with an approved noise compatibility program from the Federal Aviation Administration (FAA) in 1983. Since then, the FAA and SFO have funded, implemented, and maintained a robust sound insulation program that has allowed SFO to be one of the few public use airports in the State of California to be fully compliant under Title 21 of the California Code of Regulations. Millions of federal and local funds have been expended to achieve land use compatibility within the CNEL 65 dBA noise contour — by sound insulating homes, places of worship, and schools, to be consistent with federal and state land use compatibility regulations. To date, the FAA and SFO have expended \$33.5 million dollars sound insulating 2,664 residential properties in San Bruno. In the current Noise Insulation Program (Second Chance Initiative and repair/re-installation of insulation that has not met performance expectations), an additional 77 residential properties in the City have been identified for sound insulation with FAA and SFO investments estimated at \$8.85 million dollars. ***Redevelopment of the Tanforan site to include high density residential units would undermine decades of scientifically-informed land use planning and millions of dollars expended to safeguard public health and safety.***

The materials and technology used for sound insulation have limited warranties and eventually fail over

time. **Residential development within the CNEL 70 dBA contour would render the Tanforan development ineligible for FAA/SFO grants for future sound insulation, including the subsequent repair or re-installation of insulation materials when they fail over time.** Similarly, Public Utilities Code section 21678 precludes the City and County of San Francisco/SFO from having any liability should the City proceed with the Reimagining Tanforan project in contravention of the SFO ALUCP noise compatibility policies. There would be no viable aircraft noise abatement or noise mitigation measures that could alleviate the significant and unmitigable noise these future residents may experience, especially from long-haul international air carriers and cargo operators that depart late night/early morning; and due to the weight of the cargo, the cargo freighter aircraft typically fly slow and low to the ground. Therefore, the Airport will be unable to address noise complaints that are sure to arise from these residents and will refer them to the City of San Bruno.

Airport staff conducted a search of comparable residential density in the United States based on the same parameters as the proposed housing development at the Tanforan site, including: (1) located within 1.2 miles from an extended imaginary runway centerline serving as primary departure runway for international operations; and (2) minimum of 7,000-foot long runway that allows for international aircraft operations. As shown in **Attachment B**, Airport analysis found that **there is no other housing of comparable density in the United States. The proposed Tanforan redevelopment would result in the densest population per square mile near a major international airport.** Future residents would be located directly beneath, not one, but two primary departure runways serving international operations at SFO. The baseline noise conditions for future residents would be significant but can be avoidable if the City identifies other locations for housing outside the CNEL 70 dBA contour.

AIRSPACE COMPATIBILITY POLICIES

As shown on Exhibit IV-17 of the ALUCP (see **Attachment C**), the critical aeronautical surfaces at the Tanforan site are at an elevation between approximately 125 and 145 feet above mean sea level (AMSL), as defined from the origin of the North American Vertical Datum of 1988 (NAVD88). Given that the ground elevation at the Tanforan is site approximately between 36 and 55 feet AMSL (NAVD88), the heights of the buildings would need to be between approximately 55 and 90 feet above ground level to be compatible with the Airspace Compatibility Policies of the SFO ALUCP, subject to the issuance of a Determination of No Hazard from the FAA (see below) for any proposed structures, and determinations from the City/County Association of Governments of San Mateo County as the designated Airport Land Use Commission.

This determination would not negate the requirement for the developer to also undergo FAA review as described in Title 14 Code of Federal Regulations Part 77 for both (1) the permanent structures and (2) any temporary cranes or other equipment taller than the permanent buildings which would be required to construct those structures.

Due to the proximity of the Tanforan site to the Airport and certain procedures from the two primary departure runways (Runways 10L-28R and 10R-28L), both the permanent building heights and temporary cranes or construction equipment must be considered. **Otherwise, any penetrations of the critical aeronautical surfaces adopted in the SFO ALUCP would result in real financial and economic impacts to air carriers, cargo operators, SFO/City and County of San Francisco, and**

potentially reduce airlines' ability to transport high-value cargo (e.g., biotechnology and high-technology cargo).

Also enclosed are with Attachment C, are Airspace Protection Policies (AP-1 through AP-4) from the SFO ALUCP as a reminder of incompatible site characteristics, especially as they pertain to solar panel building materials/features that reflect and create bright lights/glare.

Lastly, SFO is providing clarification to the Caltrans Division of Aeronautics' letter sent to your attention (dated January 25, 2022). On page 2 of their letter, the image referred to as the one engine inoperative (OEI) surface is superseded by the critical aeronautical surfaces adopted in the SFO ALUCP (which also includes the composite OEI surfaces). The clarification is provided as **Attachment D**.

SAFETY COMPATIBILITY POLICIES

The land use compatibility criteria for safety zones are provided in Table IV-2 of the SFO ALUCP and included as **Attachment E**. The safety compatibility criteria are generally based on the guidelines provided in the *California Airport Land Use Planning Handbook* (Caltrans Handbook),² although modifications have been made in recognition of the intense level of existing development in the vicinity of airports. Appendix E of the Caltrans Handbook contains a discussion of the factors that were considered in establishing the safety compatibility policies. The criteria include two categories: uses that are incompatible and uses that should be avoided in the respective zones.

The Tanforan site is inside Safety Zone 4; incompatible uses within Safety Zone 4 include large child day care centers, biosafety level 3 and 4 facilities, and children's schools. Uses to be avoided, such as critical public utilities, should not be allowed in the Safety Zone unless no feasible alternative is available, as determined by the City. Where these uses are allowed, habitable structures shall be provided with at least 50 percent more exits than required by applicable codes. *The Airport encourages the City to consider Safety Zone 4 compatibility policies during master planning and site development phases to prevent development of such incompatible uses.*

SUGGESTED ALTERNATIVE SOLUTIONS

SFO requests the City consider alternative locations to meet RHNA requirements, outside of the 70 dBA CNEL noise contour, including the Bayhill Specific Plan area and the transit oriented development corridor along El Camino Real and San Mateo Avenue located outside of the CNEL 70 dBA contour.

* * *

² Caltrans Division of Aeronautics, California Airport Land Use Planning Handbook. Available online: <https://dot.ca.gov/-/media/dot-media/programs/aeronautics/documents/californiaairportlanduseplanninghandbook-ally.pdf>

Jovan D. Grogan, San Bruno City Manager
May 6, 2022
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The Airport appreciates the City's willingness to continue to have collaborative discussions, and your consideration of these concerns. If I can be of assistance, please do not hesitate to contact Nupur Sinha, Director of Planning and Environmental Affairs at (650) 821-6678 or at nupur.sinha@flysfso.com.

Sincerely,



Ivar Satero
Airport Director

Attachments

cc: Tamara Swann, Western-Pacific Regional Administrator, Acting, FAA
Faviola Garcia, Western-Pacific Deputy Regional Administrator, Acting, FAA
Laurie Suttmeier, Manager, Western-Pacific Region, FAA San Francisco Airports District Office
Phillip Miller, Acting, Chief Division of Aeronautics, Caltrans
Airlines for America
San Francisco Airline Airport Affairs Committee
California Airports Council
United States Congresswoman Jackie Speier
San Mateo County Supervisor David Pine
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Susy Kalkin, C/CAG Airport Land Use Committee

ATTACHMENT A

City of San Bruno and SFO ALUCP Noise Compatibility Policies

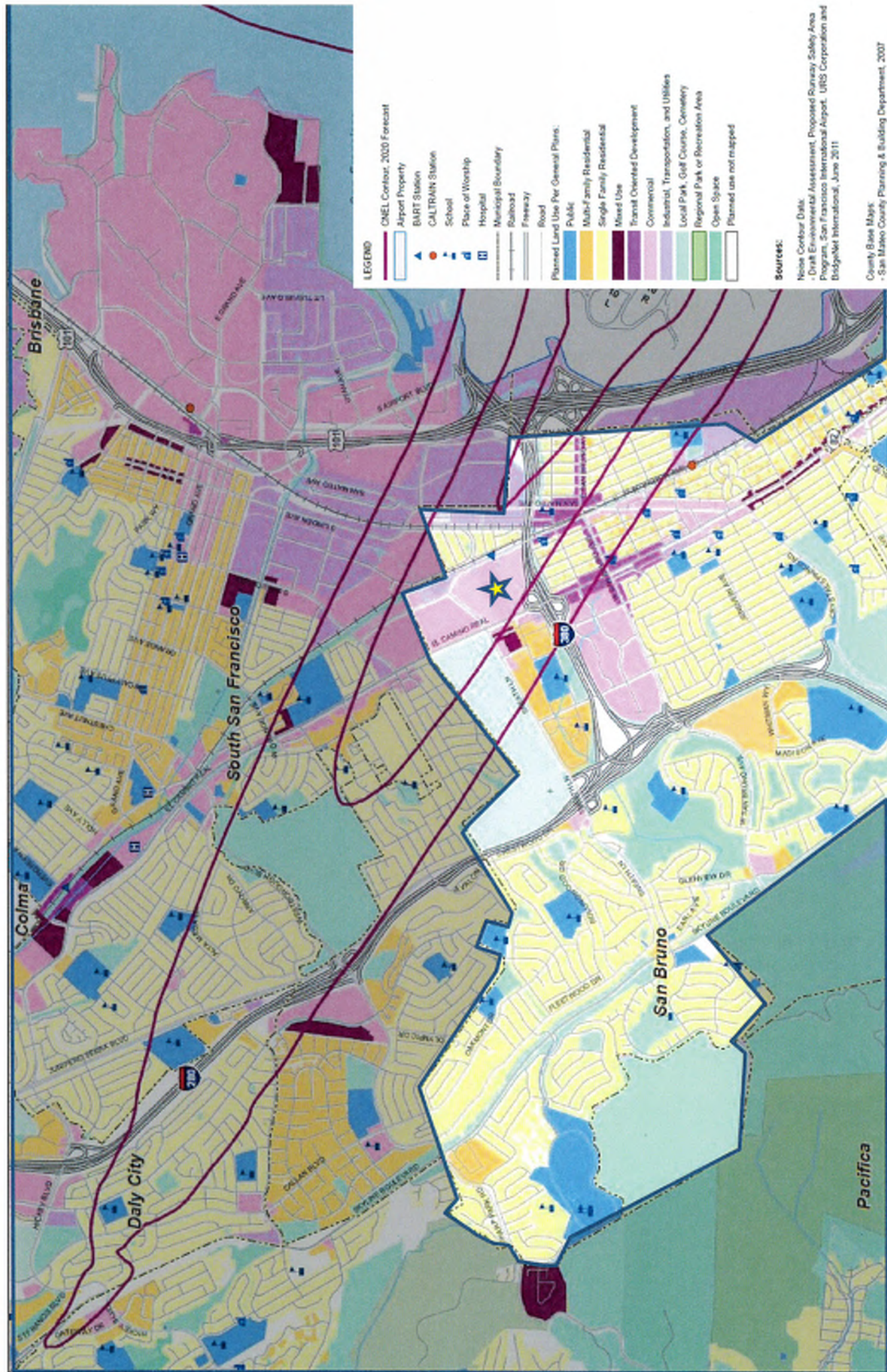


Table IV-1 Noise/Land Use Compatibility Criteria

LAND USE	COMMUNITY NOISE EQUIVALENT LEVEL (CNEL)			
	BELOW 65 dB	65-70 dB	70-75 dB	75 dB AND OVER
Residential				
Residential, single family detached	Y	C	N (a)	N
Residential, multi-family and single family attached	Y	C	N (a)	N
Transient lodgings	Y	C	C	N
Public/Institutional				
Public and Private Schools	Y	C	N	N
Hospitals and nursing homes	Y	C	N	N
Places of public assembly, including places of worship	Y	C	N	N
Auditoriums, and concert halls	Y	C	C	N
Libraries	Y	C	C	N
Outdoor music shells, amphitheaters	Y	N	N	N
Recreational				
Outdoor sports arenas and spectator sports	Y	Y	Y	N
Nature exhibits and zoos	Y	Y	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N
Golf courses, riding stables, and water recreation	Y	Y	Y	Y
Commercial				
Offices, business and professional, general retail	Y	Y	Y	Y
Wholesale; retail building materials, hardware, farm equipment	Y	Y	Y	Y
Industrial and Production				
Manufacturing	Y	Y	Y	Y
Utilities	Y	Y	Y	Y
Agriculture and forestry	Y	Y (b)	Y (c)	Y (c)
Mining and fishing, resource production and extraction	Y	Y	Y	Y

Notes:

CNEL = Community Noise Equivalent Level, in A-weighted decibels.

Y (Yes) = Land use and related structures compatible without restrictions.

C (conditionally compatible) = Land use and related structures are permitted, provided that sound insulation is provided to reduce interior noise levels from exterior sources to CNEL 45 dB or lower and that an avigation easement is granted to the City and County of San Francisco as operator of SFO. See Policy NP-3.

N (No) = Land use and related structures are not compatible.

(a) Use is conditionally compatible only on an existing lot of record zoned only for residential use as of the effective date of the ALUCP. Use must be sound-insulated to achieve an indoor noise level of CNEL 45 dB or less from exterior sources. The property owners shall grant an avigation easement to the City and County of San Francisco prior to issuance of a building permit for the proposed building or structure. If the proposed development is not built, then, upon notice by the local permitting authority, SFO shall record a notice of termination of the avigation easement.

(b) Residential buildings must be sound-insulated to achieve an indoor noise level of CNEL 45 dB or less from exterior sources.

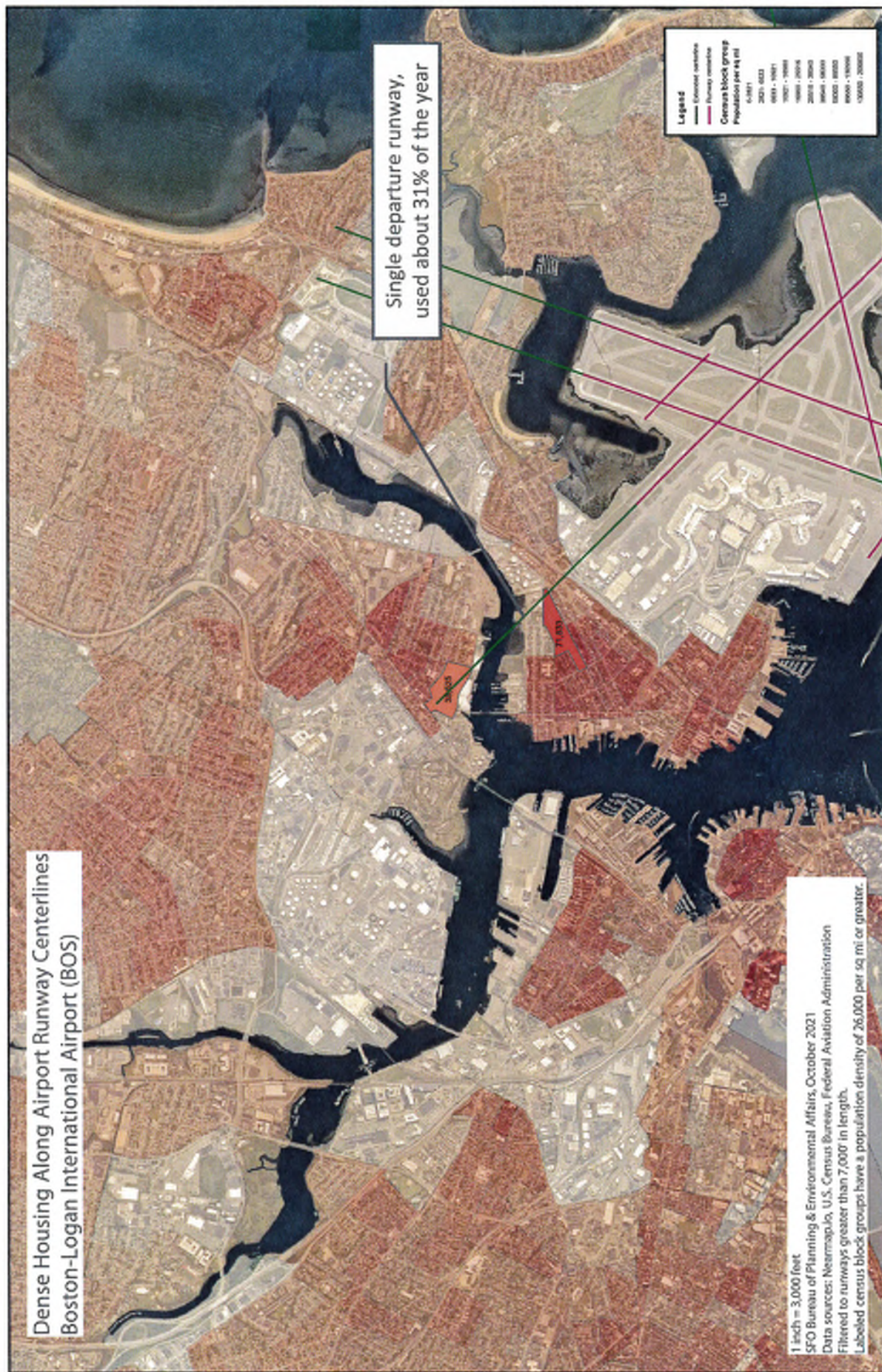
(c) Accessory dwelling units are not compatible.

SOURCES: Jacobs Consultancy Team 2010. Based on State of California General Plan Guidelines for noise elements of general plans; California Code of Regulations, Title 21, Division 2.5, Chapter 6, Section 5006; and 14 CFR Part 150, Appendix A, Table 1.

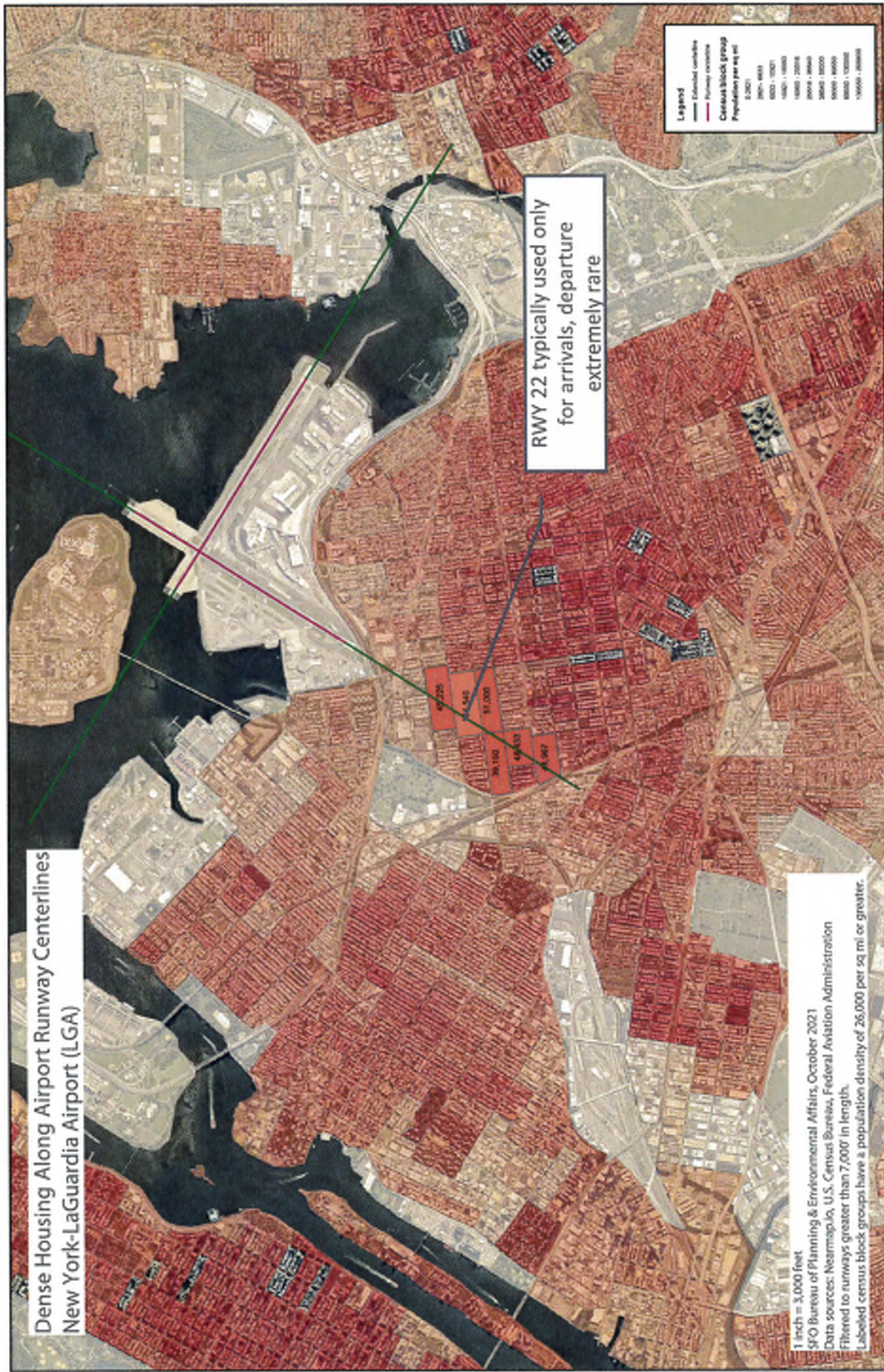
PREPARED BY: Ricondo & Associates, Inc., June 2012.

ATTACHMENT B

Density of Housing Along Runway Centerlines US Airports



Dense Housing Along Airport Runway Centerlines New York-LaGuardia Airport (LGA)



Dense Housing Along Airport Runway Centerlines
SFO with Proposed Tanforan Development

1.2 miles away from two primary
international departure runways

54,471.02

Legend

- Estimated centerline
- Runway centerline
- Census block group
- Population per sq mi

0-200
201-400
401-600
601-800
801-1,000
1,001-1,200
1,201-1,400
1,401-1,600
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ATTACHMENT C

SFO ALUCP Airspace Compatibility Policies

LEGEND

Critical airspace contours (ft. AMSL)

- Every 10 feet
- Every 100 feet
- Tanforan Hall parcels

Ground elevation (4' contours)

- Ground elevation (4' contours)



AREA OF DETAIL



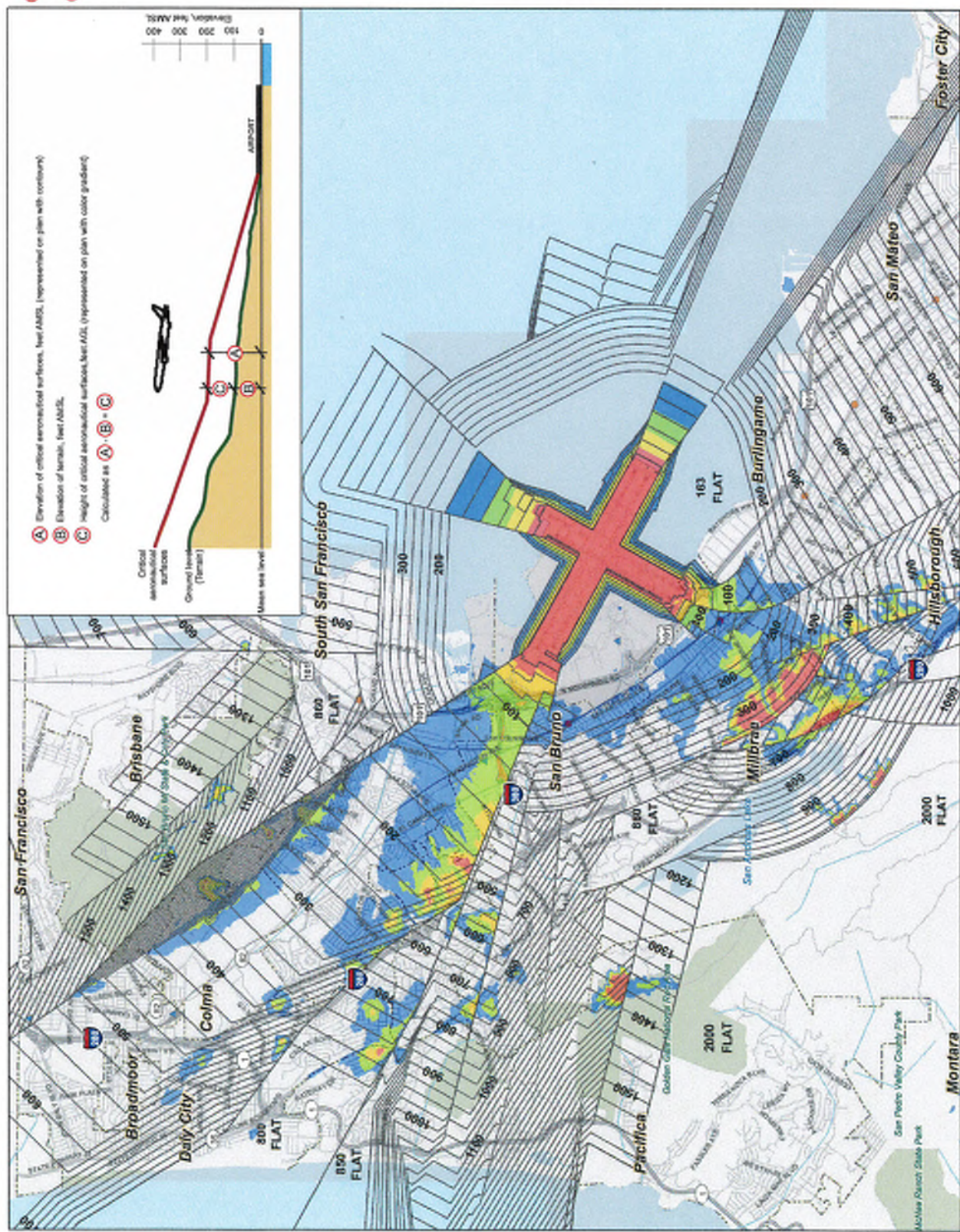
SOURCES: Hearmap 10; San Mateo County GIS; Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport, 2012; SFO Bureau of Planning and Environmental Affairs, August 2021.

NOTE 1: For discussion purposes only, not for design.

NOTE 2: Contour lines refer to feet AMSL relative to the origin of the North American Vertical Datum of 1988 (NAVD83). Ground elevations vary.

Critical Airspace Contours with Ground Elevations
Airport Land Use Compatibility Analysis
San Francisco International Airport

SFO



Notes:

1. This map is intended for informational and conceptual planning purposes, generally representing the aeronautical critical aeronautical surfaces shown on this map. It does not represent actual survey data, nor should it be used as the sole source of information regarding compatibility with airspace clearance requirements in the development of data for an FAA Form 7460-1, Notice of Proposed Construction or Alteration. SFO does not carry its accuracy, representation, or data to the extent of any road, express or implied, in fact or by law, with respect to boundaries, easements, restrictions, claims, easements, or other encumbrances affecting such properties.

2. This map does not replace the FAA's obstruction evaluation / airport analysis (CEMAA) review process. Proposing airport analysis (CEMAA) review process. Proposing critical aeronautical surfaces shown on this map. It does not replace the construction sponsor of the obligation to file an FAA Form 7460-1, and it does not ensure that the project will be acceptable to the FAA, SFO, air carriers, or other agencies or stakeholders. SFO, San Mateo County, and local authorities hearing jurisdiction reserve the right to re-assess, review, and make modifications to projects that may be submitted for the CEMAA process and found to have unexpected impacts to the safety or efficiency of operations at SFO.

Sources: San Francisco International Airport, Jacobs Consultancy, and Planning Technology Inc., 2009

Exhibit IV-19, which is provided for information purposes only, depicts a profile view of the lowest critical airspace surfaces along the extended centerline of Runway 10L-28R – the TERPS Obstacle Departure Procedure (ODP) surface, representing standard all-engines departures, and the approximate OEI surface developed by SFO through independent study in consultation with the airlines serving SFO. The exhibit also shows the terrain elevation beneath the airspace surfaces and various aircraft approach and departure profiles, based on varying operating assumptions. The exhibit illustrates a fundamental principle related to the design of airspace protection surfaces. The surfaces are always designed below the actual aircraft flight profile which they are designed to protect, thus providing a margin of safety. Note that the ODP climb profile is above the ODP airspace surface, and the OEI climb profile is above the OEI airspace surface.

4.5.4 AIRSPACE PROTECTION POLICIES

The following airspace protection policies (AP) shall apply to the ALUCP.

AP-1 COMPLIANCE WITH 14 CFR PART 77, SUBPART B, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

AP-1.1 Local Government Responsibility to Notify Project Sponsors

Local governments should notify sponsors of proposed projects at the earliest opportunity to file Form 7460-1, *Notice of Proposed Construction or Alteration*, with the FAA for any proposed project that would exceed the FAA notification heights, as shown approximately on Exhibit IV-10. Under Federal law, it is the responsibility of the project sponsor to comply with all notification and other requirements described in 14 CFR Part 77. This requirement applies independent of this ALUCP.

AP-1.2 FAA Aeronautical Study Findings Required Before Processing Development Application

The sponsor of a proposed project that would exceed the FAA notification heights, as shown approximately on Exhibit IV-10, shall present to the local government permitting agency with his or her application for a development permit, a copy of the findings of the FAA's aeronautical study, or evidence demonstrating that he or she is exempt from having to file an FAA Form 7460-1. It is the responsibility of the local agency to consider the FAA determination study findings as part of its review and decision on the proposed project.

AP-2 COMPLIANCE WITH FINDINGS OF FAA AERONAUTICAL STUDIES

Project sponsors shall be required to comply with the findings of FAA aeronautical studies with respect to any recommended alterations in the building design and height and any recommended marking and lighting of their structures for their proposed projects to be deemed consistent with this ALUCP.

AP-3 MAXIMUM COMPATIBLE BUILDING HEIGHT

In order to be deemed consistent with the ALUCP, the maximum height of a new building must be the lower of (1) the height shown on the SFO critical aeronautical surfaces map (Exhibits IV-17 and IV-18), or (2) the maximum height determined not to be a "hazard to air navigation" by the FAA in an aeronautical study prepared pursuant to the filing of Form 7460-1.

For the vast majority of parcels, the height limits established in local zoning ordinances are lower than the critical airspace surfaces. In those cases, the zoning district height regulations will control. Compliance with the zoning district height and the SFO critical aeronautical surfaces map, however, does not relieve the construction sponsor of the obligation to file a FAA Form 7460-1 *Notice of Proposed Construction or Alteration*, if required, and to comply with the determinations resulting from the FAA's aeronautical study.

For a project to be consistent with this ALUCP, no local agency development permits shall be issued for any proposed structure that would penetrate the aeronautical surfaces shown on Exhibits IV-17 and IV-18 or the construction of which **has not** received a Determination of No Hazard from the FAA, or which would cause the FAA to increase the minimum visibility requirements for any instrument approach or departure procedure at the Airport.

AP-4 OTHER FLIGHT HAZARDS ARE INCOMPATIBLE

Proposed land uses with characteristics that may cause visual, electronic, or wildlife hazards, particularly bird strike hazards, to aircraft taking off or landing at the Airport or in flight are incompatible in Area B of the Airport Influence Area. They may be permitted only if the uses are consistent with FAA rules and regulations. Proof of consistency with FAA rules and regulations and with any performance standards cited below must be provided to the Airport Land Use Commission (C/CAG Board) by the sponsor of the proposed land use action.

Specific characteristics that may create hazards to aircraft in flight and which are incompatible include:

- (a) Sources of glare, such as highly reflective buildings or building features, or bright lights, including search lights or laser displays, which would interfere with the vision of pilots making approaches to the Airport.
- (b) Distracting lights that could be mistaken by pilots on approach to the Airport for airport identification lighting, runway edge lighting, runway end identification lighting, or runway approach lighting.
- (c) Sources of dust, smoke, or water vapor that may impair the vision of pilots making approaches to the Airport.
- (d) Sources of electrical interference with aircraft or air traffic control communications or navigation equipment, including radar.
- (e) Land uses that, as a regular byproduct of their operations, produce thermal plumes with the potential to rise high enough and at sufficient velocities to interfere with the control of aircraft in

flight. Upward velocities of 4.3 meters (14.1 feet) per second at altitudes above 200 feet above the ground shall be considered as potentially interfering with the control of aircraft in flight.¹⁷

(f) Any use that creates an increased attraction for wildlife, particularly large flocks of birds, that is inconsistent with FAA rules and regulations, including, but not limited to, FAA Order 5200.5A, *Waste Disposal Sites On or Near Airports*, FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*, and any successor or replacement orders or advisory circulars. Exceptions to this policy are acceptable for wetlands or other environmental mitigation projects required by ordinance, statute, court order, or Record of Decision issued by a federal agency under the National Environmental Policy Act.

4.5.5 iALP AIRSPACE TOOL

In consultation with C/CAG, SFO developed the iALP Airspace Tool, a web-based, interactive tool to evaluate the relationship of proposed buildings with the Airport's critical airspace surfaces. The iALP Airspace Tool is designed to assist planners, developers, and other interested persons with the implementation of the airspace protection policies of the SFO ALUCP. The tool helps users determine: (1) the maximum allowable building height at a given site, and/or (2) whether a building penetrates a critical airspace surface, and by how much, given the proposed building height.

A more detailed description of the iALP Airspace Tool and a tutorial explaining how to use it is presented in **Appendix J**. Use of this tool, however, does not relieve a project sponsor of the duty to comply with all federal regulations, including the obligation to file Form 7460-1, Notice of Proposed Construction or Alteration, with the FAA.

¹⁷ This is a threshold established by the California Energy Commission in its review of power plant licensing applications. See *Blythe Solar Power Project: Supplemental Staff Assessment, Part 2*, CEC-700-2010-004-REVI-SUP-PT2, July 2010. California Energy Commission. Docket Number 09-AFC-6, p. 25. This criterion is based on guidance established by the Australian Government Civil Aviation Authority (Advisory Circular AC 139-05(0), June 2004). The FAA's Airport Obstructions Standards Committee (AOSC) is studying this matter but has not yet issued specific guidance.

ATTACHMENT D

Clarification to Caltrans Letter OEI Surfaces

Tanforan Redevelopment
SFO One Engine Inoperative (OEI) Horizontal Extent

 The Shops at Tanforan



ATTACHMENT E

SFO ALUCP Safety Compatibility Policies

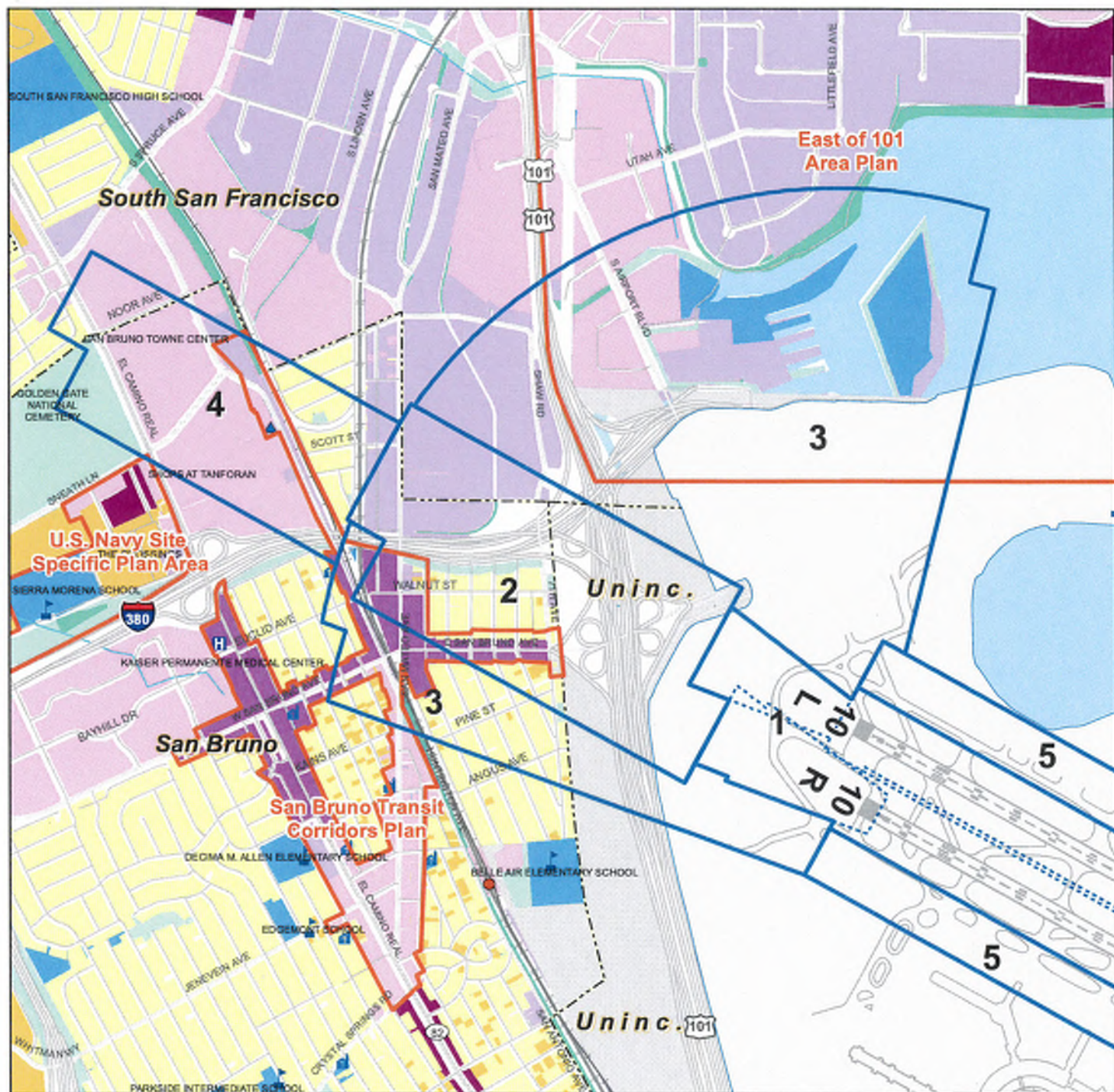


Exhibit IV-8
**SAFETY COMPATIBILITY ZONES
 IN THE CITIES OF SOUTH SAN FRANCISCO
 AND SAN BRUNO**

Comprehensive Airport Land Use Plan
 for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
 of San Mateo County, California

Table IV-2 (1 of 2) Safety Compatibility Criteria

ZONE	LAND USE CRITERIA	
	INCOMPATIBLE ^{1/}	AVOID ^{1/}
Zone 1: Runway Protection Zone and Object Free Area (RPZ-OFA)	All new structures ^{2/} Places of assembly not in structures Hazardous uses ^{2/} Critical public utilities ^{2/}	Nonresidential uses except very low intensity uses ^{4/} in the "controlled activity area." ^{2/}
Zone 2: Inner Approach/Departure Zone (IADZ)	Children's schools ^{2/} Large child day care centers and noncommercial employer-sponsored centers ancillary to a place of business ^{2/} Hospitals, nursing homes Hazardous uses ^{2/} Critical public utilities ^{2/} Theaters, meeting halls, places of assembly seating more than 300 people Stadiums, arenas	---
Zone 3: Inner Turning Zone (ITZ)	Biosafety Level 3 and 4 facilities ^{2/} Children's schools ^{2/} Large child day care centers ^{2/} Hospitals, nursing homes Stadiums, arenas	Hazardous uses other than Biosafety Level 3 and 4 facilities ^{2/} Critical public utilities ^{2/}
Zone 4: Outer Approach/Departure Zone (OADZ)	Biosafety Level 3 and 4 facilities ^{2/} Children's schools ^{2/} Large child day care centers ^{2/} Hospitals, nursing homes Stadiums, arenas	Hazardous uses other than Biosafety Level 3 and 4 facilities ^{2/} Critical public utilities ^{2/}
Zone 5: Sideline Zone (SZ)	Children's schools ^{2/} Large child day care facilities and noncommercial employer-sponsored centers ancillary to a place of business Hospitals, nursing homes Hazardous uses ^{2/} Critical public utilities ^{2/} Stadiums, arenas	---

Table IV-2 (2 of 2) Safety Compatibility Criteria**Notes:**

- 1/ **Avoid:** Use is not fully compatible and should not be permitted unless no feasible alternative is available. Where use is allowed, habitable structures shall be provided with at least 50 percent more exits than required by applicable codes. Where the 50-percent factor results in a fraction, the number of additional exits shall be rounded to the next highest whole number.
- Incompatible:** Use is not compatible in the indicated zones and cannot be permitted.
- 2/ **Definitions**
- **Biosafety Level 3 and 4 facilities:** Medical and biological research facilities involving the storage and processing of extremely toxic or infectious agents. See Policy SP-3 for additional detail.
 - **Children's schools:** Public and private schools serving preschool through grade 12, excluding commercial services.
 - **Controlled Activity Area:** The lateral edges of the RPZ, outside the Runway Safety Area (RSA) and the extension of the RSA, which extends to the outer edge of the RPZ. See FAA Advisory Circular 150/5300-13, Airport Design, Section 2/2a.(1)(b).
 - **Critical public utilities:** Facilities that, if disabled by an aircraft accident, could lead to public safety or health emergencies. They include the following: electrical power generation plants, electrical substations, wastewater treatment plants, and public water treatment facilities.
 - **Hazardous uses:** Uses involving the manufacture, storage, or processing of flammable, explosive, or toxic materials that would substantially aggravate the consequences of an aircraft accident. See Policy SP-3 for additional detail.
 - **Large child day care centers:** Commercial facilities defined in accordance with Health and Safety Code, Section 1596.70, et seq., and licensed to serve 15 or more children. Family day care homes and noncommercial employer-sponsored facilities ancillary to place of business are allowed.
- 3/ Structures serving specific aeronautical functions are allowed, in compliance with applicable FAA design standards.
- 4/ Examples include parking lots and outdoor equipment storage.

SOURCE: Ricondo & Associates, Inc., June 2012.

PREPARED BY: Ricondo & Associates, Inc., June 2012.

ZONE 2 -- INNER APPROACH/DEPARTURE ZONE (IADZ)

In Zone 2, the IADZ, a variety of uses that involve hazardous materials, critical public utilities, theaters, meeting halls, places of assembly seating more than 300 people, stadiums, arenas, and those accommodating potentially vulnerable populations – such as children's schools, child day care facilities, hospitals, and nursing homes – are incompatible.

ZONE 3 -- INNER TURNING ZONE (ITZ)

The compatibility criteria in Zone 3, the ITZ, are somewhat less restrictive than in Zone 2. This is because the area is subject to less accident risk by virtue of the lower density of overflights in this area. In Zone 3, stadiums, arenas, and uses accommodating potentially vulnerable populations are incompatible. Hazardous uses and critical public utilities are not incompatible in Zone 3, but are classified as uses to be avoided. This means that they should not be permitted unless no feasible alternative is available.

ZONE 4 - OUTER APPROACH/DEPARTURE ZONE (OADZ)

The compatibility criteria in Zone 4, the OADZ, are the same as in Zone 3.



U.S. Department
of Transportation
**Federal Aviation
Administration**

Western-Pacific Region
Office of the Regional Administrator

777 S. Aviation Blvd.
El Segundo, CA 90245

May 18, 2022

Mr. Jovan D. Grogan
City Manager
City of San Bruno
567 El Camino Real
San Bruno, CA 94066-4247

RE: Concerns regarding the Reimagining Tanforan Redevelopment Project

Dear Mr. Grogan:

The purpose of this letter is to advise the City of San Bruno that the Federal Aviation Administration (FAA) is concerned about potential impacts to San Francisco International Airport (SFO), land use changes, and the introduction of airport incompatible land use relating to the redevelopment of the Tanforan Shopping Mall (Tanforan Mall) in San Bruno, California. As currently planned, the proposed Reimagining Tanforan Redevelopment Project (Tanforan Project) would introduce new land use compatibility issues and increase noise incompatibility due to arrival and departure operations from SFO. The FAA's mission is to provide the safest and most efficient aerospace system in the world. Within the context of our mission, the FAA continues to seek ways to mitigate the effects of aviation-related noise by providing financial and technical assistance to airport sponsors on airport compatible land use, noise reduction planning and abatement activities.

The *Reimagining San Bruno Land Use Fact Sheet* (San Bruno Fact Sheet) states, "...the goal of this early engagement is to identify redevelopment solutions that are financially viable and provide long term benefits to the San Bruno community by streamlining the entitlement approval process to mitigate risks and accelerate the investments." While there are many benefits to living in a transit-oriented development that is closely connected to mass transit, the FAA is concerned about maintaining compatibility of the existing land use and introducing high-density residences within an area known to be adversely affected by aircraft noise within the Tanforan development. The FAA is aware that the California Department of Transportation (Caltrans) shares similar concerns, as detailed in their January 20, 2022, letter to the City of San Bruno. We are also aware that SFO has expressed concerns regarding the proposed redevelopment. The FAA is additionally concerned about the environmental justice implications of affordable housing provided in noise-incompatible land.

The City of San Bruno is directly responsible for ensuring proper planning in partnership with state, local, and private entities, and notifying purchasers of real estate and prospective residents of their exposure to direct overflight and extreme and persistent airport noise. In the past, the City of San Bruno directly received federal funding for residential sound insulation to mitigate land use compatibility issues. On May 14, 2008, the FAA reminded the City of San Bruno, via enclosure 1, of the importance of taking appropriate action to adopt zoning and further restrict the introduction of additional non-compatible land uses adjacent to or in the vicinity of SFO. The

enclosure to that letter provides Appendix A, Table 1- Land Use Compatibility Guidelines from 14 Code of Federal Regulations Part 150 – *Airport Noise Compatibility Planning* (Part 150). As shown in enclosure 2, the 2019 Noise Exposure Map from the SFO Noise Compatibility Program¹, a majority of the Tanforan Mall area is within the Community Noise Equivalent Level (CNEL) 70 decibel (dB) contour and is heavily affected by SFO departures from Runways 28L and 28R. The FAA continues to provide Airport Improvement Program (AIP) funding for qualified impacted City of San Bruno residences through the SFO Residential Sound Insulation Program. In accordance with FAA *Final Policy on Part 150 Approval of Noise Mitigation Measures: Effect on the Use of Federal Grants for Noise Mitigation Projects* (63 FR 16409), structures and new non-compatible development built after October 1, 1998, are not eligible for approval of remedial noise mitigation measures under Part 150 or AIP funding. In other words, residences in the Tanforan Project would not receive any AIP funding for residential sound insulation.

According to the San Bruno Fact Sheet, the city may add at least 1,000 and as many as 3,165 residential units. This plan would expose thousands of new residents to significant noise (above 65 dB CNEL), approximately 2,500 to 8,000 persons, using the average number of 2.62 persons per household according to the United States Census Bureau. Given that there are currently 440,000 persons nationwide exposed to significant noise, this development alone would increase the number of people exposed.

SFO primary operations use Runways 28L and 28R for landing and Runways 01R and 01L for departures. In this configuration, Runway 28R is also used for departures of heavy jets on long routes, which need the longest SFO runway (Runway 28R) due to the aircraft weight. The Tanforan Mall area aligns with the SFO Runways 28R and 28L. Use of Runway 28R for departures is not optional for these long-haul flights.

In 2019 there were an average of about 88 heavy jet departures per day; out of those heavy jet departures, 72% departed from Runway 28R or Runway 28L. On August 17, 2019, SFO's peak departure was 209 heavy jets. Heavy jets were departing Runways 28R and 28L, from 0.5 nautical miles before the proposed development to 0.5 nautical miles after the proposed development. The proposed development is approximately 1.1 nautical miles from the end of Runways 28R and 28L. Therefore, the average altitude of departing heavy jets over the Tanforan site is 1300 to 1800 feet mean sea level.

Also, Runways 28R and 28L are used for departures when winds are strong enough from the West Southwest to no longer allow for Runways 01R and 01L to be used due to unacceptably high tailwinds/crosswinds. Use of SFO Runways 28R and 28L for all departures is not a preferred configuration for SFO. Instead, it is required based on the weather (winds), specific needs of long-haul departures, or aircraft types which require the longest possible runway. In 2019, all aircraft departed only Runway 28L or Runway 28R 7.9% of the time, the second-most-frequent runway configuration at SFO. Additionally, there are occasions when weather forces the use of Runways 10R and 10L for SFO arrivals. Such an occurrence happened on January 22, 2022; enclosure 3 is a photo of an aircraft preparing to land at SFO directly over the Tanforan Mall area. Proposed Tanforan residential units would be exposed to the type, frequency, and severity of aviation activity described above.

¹ The San Francisco International Airport, Noise Compatibility Program (NCP) Update 2018 was prepared pursuant to 14 Code of Federal Regulations Part 150 requirements. The first FAA Record of Approval for a SFO NCP was issued on September 7, 1983.

As shown in enclosures 4 and 5, Tanforan Mall is located within the footprint for the Approach/Departure Obstruction Clearance Surface (OCS)² for existing Runway 10R/28L and Runway 10L/28R. Maintaining clearance and protection of the OCS is among critical safety factors for protecting the Nation's airspace and aviation operations to and from SFO. Proposed structures' heights must be below the OCS.

Noise and land use compatibility planning are complex issues that need active engagement by the City of San Bruno together in partnership with the City and County of San Francisco, Airport Commission; San Mateo County; aeronautical users such as United Airlines; the business community; and residences to establish a cohesive strategy for the health and well-being of the entire community. Please review the FAA [Airport Noise Compatibility Planning Toolkit \(Land Use Compatibility and Airports, A Guide for Effective Land Use Planning \[PDF\]\)](#). The City/County Association of Governments (C/CAG) also maintains an Airport Land Use Commission (ALUC) and Comprehensive Airport Land Use Compatibility Plan for the Environs of SFO. This government entity and legal document prepared under State of California Law may indicate further restrictions on the site to maintain airspace, noise, and safety compatibility. Compliance with FAA guidelines and federal law does not exempt a project sponsor from complying with local regulations.

Should the City of San Bruno, known to be a noise-sensitive community representative in the SFO Airport/Community Roundtable, proceed with the Tanforan Project, exposing as many as 8,000 residents to significant aviation noise, there will be little if any mitigation the FAA would be able to implement for these residents because of the Tanforan Project's proximity to SFO runways. Therefore, we strongly encourage the City of San Bruno and San Mateo County officials to consider the FAA's concerns and look to develop and maintain compatible land uses around SFO.

If you have any questions, please contact my office at (424) 405-7000.

Sincerely,

Tamara A. Swann

Tamara A. Swann
Regional Administrator (A)

Enclosures

cc:

Sam Hindi, Roundtable Chairperson, San Francisco
Tom Hamilton, Council member, City of San Bruno
Pamela Wu, Director, Community and Economic Development, City of San Bruno
Therese McMillan, Executive Director, Association of Bay Area Governments
United States Congresswoman Jackie Speier, CA – 14th District
Phillip Miller, Acting, Chief Division of Aeronautics, Caltrans

² Defined in FAA Advisory Circular (AC) 150/5300-13, Airport Design, and Engineering Brief 99A.



U.S Department
of Transportation

**Federal Aviation
Administration**

Western-Pacific Region
Airports Division

San Francisco ADO
831 Mitten Road, Suite 210
Burlingame, CA 94010

May 14, 2008

Aaron Aknin
Community Development Director
City of San Bruno
567 El Camino Real
San Bruno, CA 94066

Dear Mr. Aknin:

Subject: San Bruno General Plan 2025 and associated Draft
Environmental Impact Report

The Federal Aviation Administration (FAA) has completed a cursory review of the subject documents. As a result of that review the FAA is concerned that the San Bruno General Plan (General Plan) and Environmental Impact Report did not consider the City of San Bruno's (City) airport land use compatibility program obligations.

As noted in the General Plan on page 7-9, the City has accepted federal funds for insulation projects in areas impacted by noise from San Francisco International Airport (SFO). The federal funds were made available to the City as a result of the City and County of San Francisco's SFO Noise Compatibility Plan (NCP) prepared pursuant to 14 Code of Federal Regulations Part 150, *Airport Noise Compatibility Planning* (Part 150). The NCP identified noise impact areas and measures developed to achieve compatible land use with SFO operations.

When the City accepted the federal Airport Improvement Program (AIP) funds for the noise insulation projects, the City acknowledged its obligation to take appropriate action to adopt appropriate zoning and further restrict introduction of additional non-compatible land uses adjacent to or in the vicinity of the airport. The AIP grant obligations are identified in the Non-Airport Sponsors Grant Assurances. The most recent AIP grant is 3-06-0021-29.

The General Plan Guiding Policies encourage additional residential housing in areas that are impacted by airport noise. The majority of the area designated for redevelopment is in the Community Noise Equivalent Level (CNEL) 70 decibel (dB) contour. Proposed high density residential and mixed use developments are located within the CNEL 65 dB contour. Introduction of additional non-compatible development within the CNEL 65 dB through CNEL 70 dB is inconsistent with the NCP. Table 1 from Part 150 provides federal compatible and non-compatible land use guidelines (enclosed).

Development of local land use plans that are compatible with airport operations is key to ensuring consistency with the City's grant obligations. The FAA encourages the City to take appropriate action to

Enclosure (1)

maintain compliance with its certification that it will comply with all applicable Federal laws, regulations, executive orders, policies, guidelines and requirements as they relate to use of federal funds for land use compatibility.

If you have any questions or concerns regarding this matter, I am available at (650) 876-2778 extension 613.

Sincerely,

(Original Signed by:)

Camille Garibaldi
Environmental Protection Specialist

Enclosure

CC:
Danielle Rinsler, San Francisco International Airport
Nixon Lam, San Francisco International Airport
Sandy Hesnard, California Department of Transportation

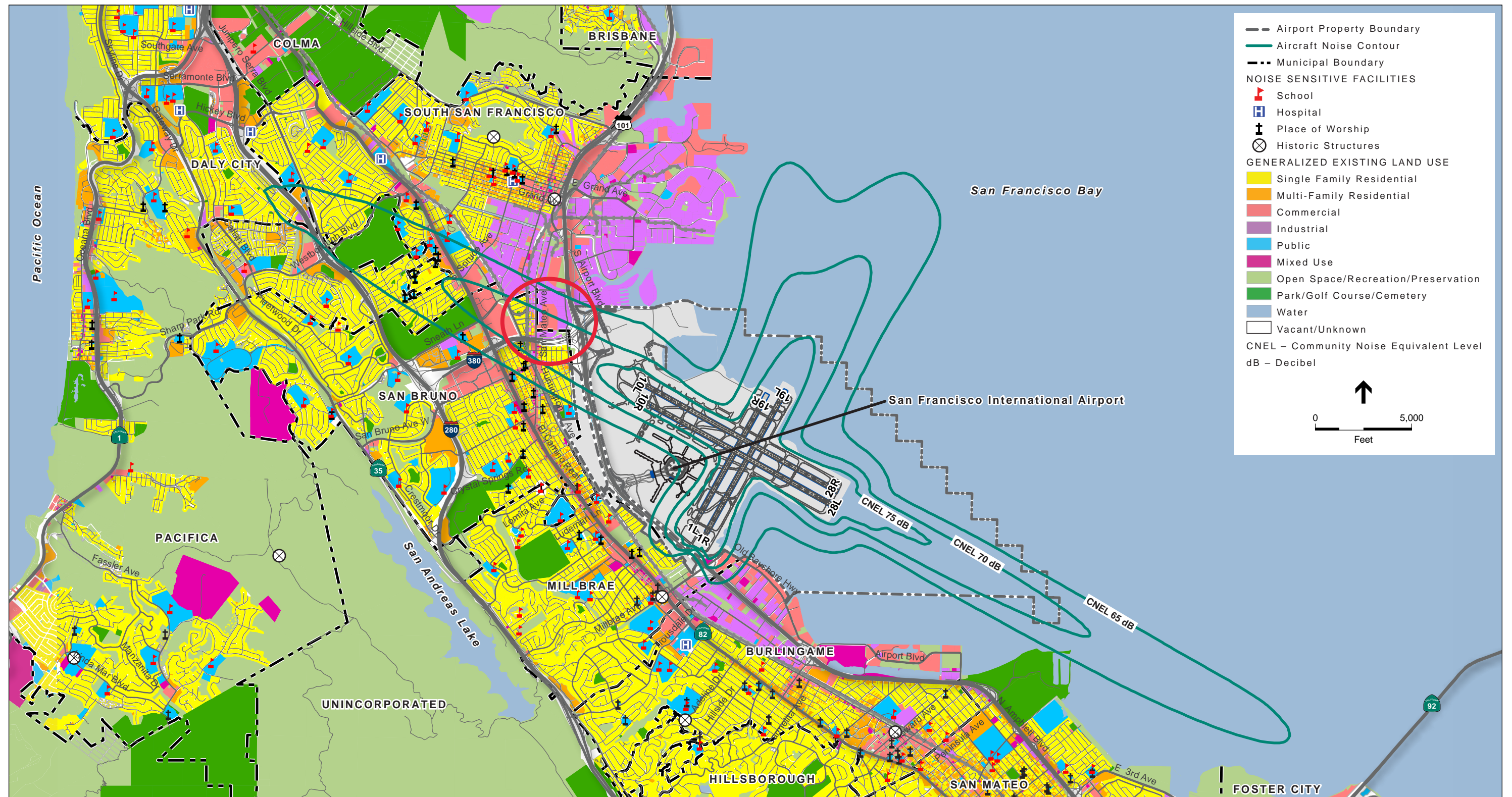
TABLE 1—LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND

Land Use	Yearly day-night average sound level (L_{dn}) in decibels					
	< 65	65-70	70-75	75-80	80-85	> 85
Residential						
Residential, other than mobile homes and transient lodgings	Y	N (1)	N (1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N (1)	N (1)	N (1)	N	N
Public Use						
Schools	Y	N (1)	N (1)	N	N	N
Hospitals, nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y (2)	Y (3)	Y (4)	Y (4)
Parking	Y	Y	Y (2)	Y (3)	Y (4)	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail- building materials, hardware and farm equipment	Y	Y	Y (2)	Y (3)	Y (4)	N
Retail trade-general	Y	Y	25	30	N	N
Utilities	Y	Y	Y (2)	Y (3)	Y (4)	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, general	Y	Y	Y (2)	Y (3)	Y (4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y (6)	Y (7)	Y (8)	Y (8)	Y (8)
Livestock farming and breeding	Y	Y (6)	Y (7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y (5)	Y (5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

(more)

TABLE 1—LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVELS (CONTINUED)

Key to Table 1	
Y (YES)	Land Use and related structures compatible without restrictions.
N (NO)	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30, or 35	Land use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.
Notes for Table 1	
(1)	Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
(2)	Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(3)	Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(4)	Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(5)	Land use compatible provided special sound reinforcement systems are installed.
(6)	Residential buildings require an NLR of 25.
(7)	Residential buildings require an NLR of 30.
(8)	Residential buildings not permitted.
(end of Table 1)	



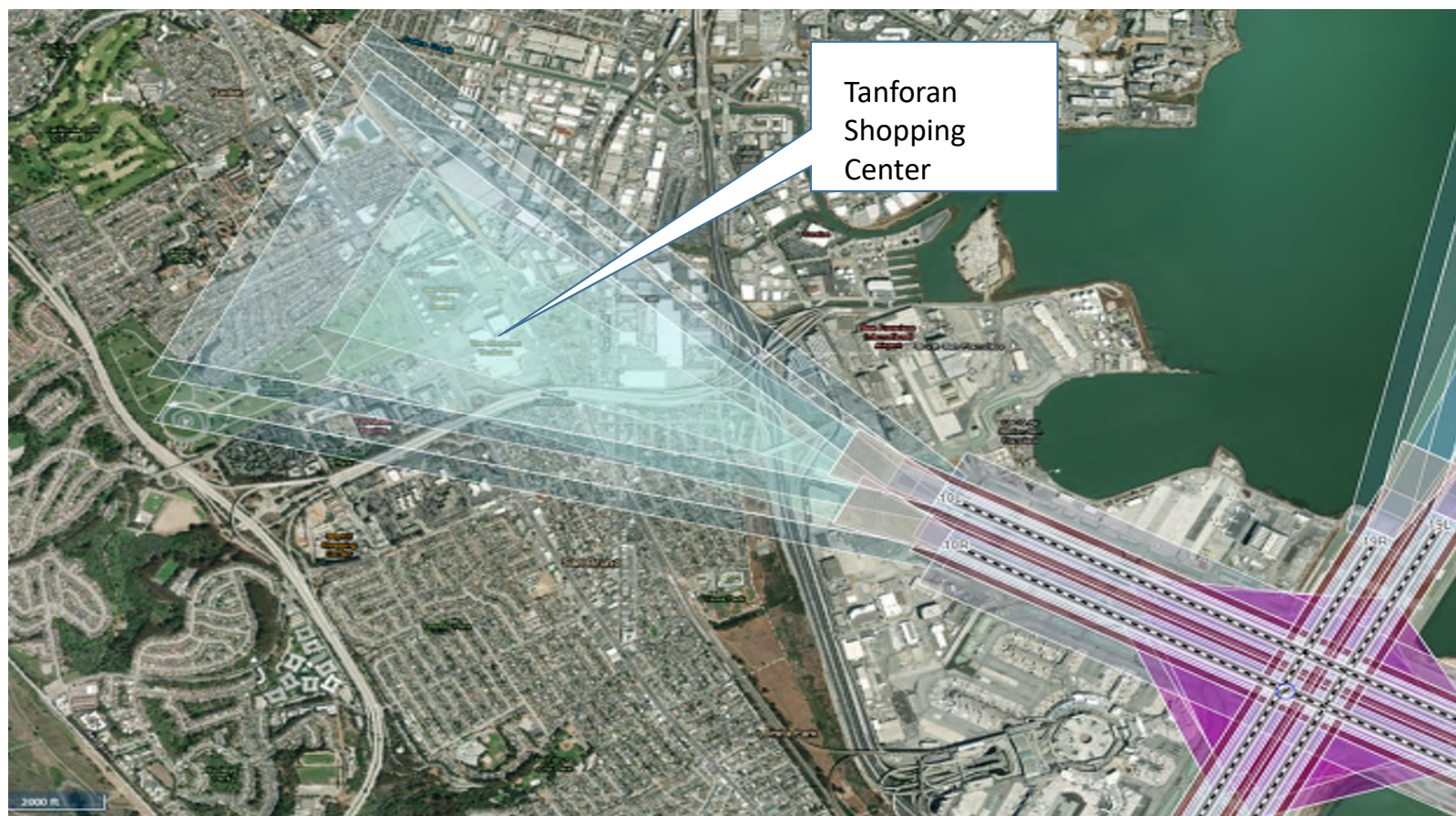
SOURCES: ESRI, 2014; San Mateo County Planning and Building Department, 2014; BridgeNet International, 2014; ESA Airports, 2014

San Francisco International Airport Arrival

Preparing for landing at SFO to Runway 10 end. Photo taken on January 22, 2022.



Airport Design Approach/Departure Obstruction Clearance Surface (OCS) for SFO Runway 10R/28L and Runway 10L/28R and Location of Current Tanforan Shopping Center



Enclosure {4}

Approach/Departure OCS Profiles



Enclosure {5}

and associated with human disease of varying severity.

- b. Biosafety Level 3 practices, safety equipment, and facility design and construction are applicable to clinical, diagnostic, teaching, research, or production facilities in which work is done with indigenous or exotic agents with a potential for respiratory transmission, and which may cause serious and potentially lethal infection.
- c. Biosafety Level 4 practices, safety equipment, and facility design and construction are applicable for work with dangerous and exotic agents that pose a high individual risk of life-threatening disease, which may be transmitted via the aerosol route and for which there is no available vaccine or therapy.

4.5 Airspace Protection

The compatibility of proposed land uses with respect to airspace protection shall be evaluated in accordance with the policies set forth in this section. These policies are established with a twofold purpose:

1. To protect the public health, safety, and welfare by minimizing the public's exposure to potential safety hazards that could be created through the construction of tall structures.
2. To protect the public interest in providing for the orderly development of SFO by ensuring that new development in the Airport environs avoids compromising the airspace in the Airport vicinity. This avoids the degradation in the safety, utility, efficiency, and air service capability of the Airport that could be caused by the attendant need to raise visibility minimums, increase minimum rates of climb, or cancel, restrict, or redesign flight procedures.

4.5.1 FEDERAL REGULATIONS REGARDING TALL STRUCTURES

14 Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use and Preservation of the Navigable Airspace*, governs the FAA's review of proposed construction exceeding certain height limits, defines airspace obstruction criteria, and provides for FAA aeronautical studies of proposed construction. **Appendix F** describes the FAA airspace review process and the extent of FAA authority related to airspace protection.

4.5.2 PART 77, SUBPART B, NOTIFICATION PROCESS

Federal regulations require any person proposing to build a new structure or alter an existing structure with a height that would exceed the elevations described in CFR Part 77, Subpart B, Section 77.9, to prepare an FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, and submit the notice to the FAA. The regulations apply to buildings and other structures or portions of structures, such as mechanical equipment, flag poles, and other projections that may exceed the aforementioned elevations.

Exhibit IV-10 depicts the approximate elevations at which the 14 CFR Part 77 notification requirements would be triggered; see **Exhibit IV-11** for a close-up view of the northern half and **Exhibit IV-12** for a close-up view of the southern half of the area. These exhibits are provided for informational purposes only. Official determinations of the areas and elevations within which the federal notification requirements apply are subject to the authority of the FAA. The FAA is empowered to require the filing of notices for proposed construction based on considerations other than height. For example, in some areas of complex airspace and high air traffic volumes, the FAA may be concerned about the potential for new construction of any height to interfere with electronic navigation aids. In these areas, the FAA will want to review all proposed construction projects.

The FAA has developed an on-line tool for project sponsors to use in determining whether they are required to file a Notice of Proposed Construction or Alteration. Sponsors of proposed projects are urged to refer to this website to determine whether they are required to file Form 7460-1 with the FAA:

<https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm>

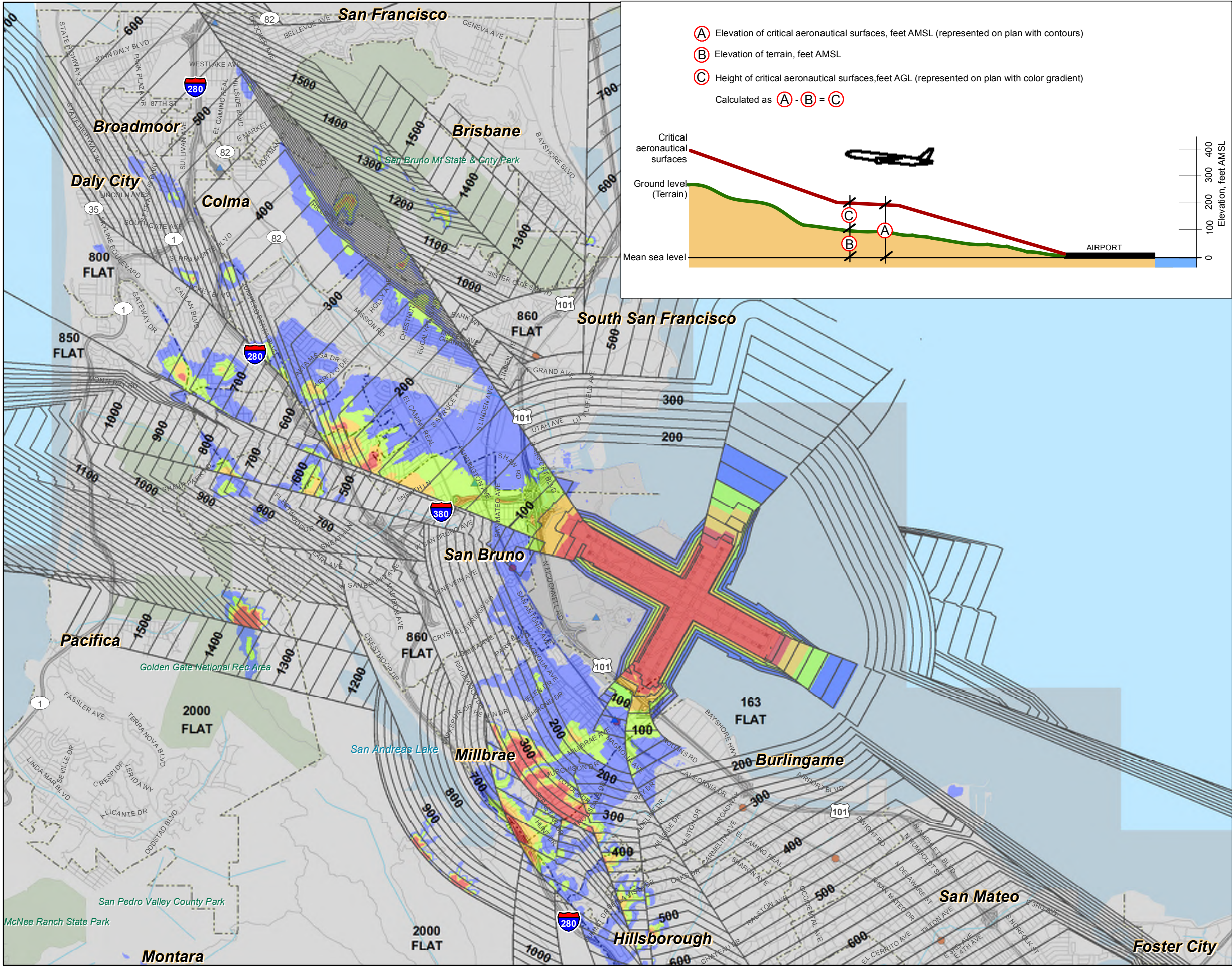
4.5.3 AIRSPACE MAPPING

Part 77, Subpart C, establishes obstruction standards for the airspace around airports including approach zones, conical zones, transitional zones, and horizontal zones known as “imaginary surfaces.” **Exhibit IV-13** depicts the Part 77 Civil Airport Imaginary Surfaces at SFO. The imaginary surfaces rise from the primary surface, which is at ground level immediately around the runways. The surfaces rise gradually along the approach slopes associated with each runway end and somewhat more steeply off the sides of the runways. The FAA considers any objects penetrating these surfaces, whether buildings, trees or vehicles travelling on roads and railroads, as obstructions to air navigation. Obstructions may occur without compromising safe air navigation, but they must be marked, lighted, and noted on aeronautical publications to ensure that pilots can see and avoid them.

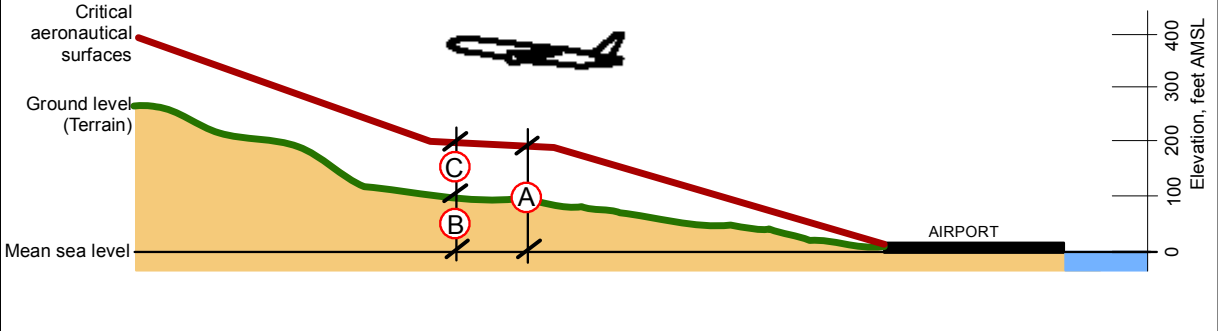
Close-up views of the north and south sides of the Part 77 surfaces are provided in **Exhibit IV-14** and **Exhibit IV-15**, respectively. Additionally, **Exhibit IV-16** provides an illustration of the outer approach and transitional surfaces located on the southeast side of the Part 77 surfaces.

Together with its tenant airlines, SFO has undertaken a mapping effort to illustrate the critical aeronautical surfaces that protect the airspace required for multiple types of flight procedures such as those typically factored into FAA aeronautical studies, as shown on **Exhibit IV-17** and **Exhibit IV-18**. These aeronautical surfaces include those established in accordance with FAA Order 8260.3B, *U.S. Standard for Terminal Instrument Procedures (TERPS)*, and a surface representing the airspace required for One-Engine Inoperative (OEI) departures from Runway 28L (to the west through the San Bruno Gap).¹⁶ The exhibits depict the lowest elevations from the combination of the OEI procedure surface and all TERPS surfaces. The surfaces are defined with Required Obstacle Clearance (ROC) criteria to ensure safe separation of aircraft using the procedures from the underlying obstacles. Any proposed structures penetrating these surfaces are likely to receive Determinations of Hazard (DOH) from the FAA through the 7460-1 aeronautical study process. These surfaces indicate the maximum height at which structures can be considered compatible with Airport operations.

¹⁶ See Appendix F, Section F.3.2 for a discussion of one-engine inoperative procedures.



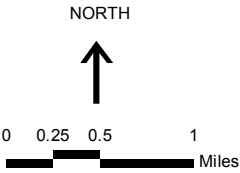
- (A) Elevation of critical aeronautical surfaces, feet AMSL (represented on plan with contours)
(B) Elevation of terrain, feet AMSL
(C) Height of critical aeronautical surfaces, feet AGL (represented on plan with color gradient)
Calculated as (A) - (B) = (C)

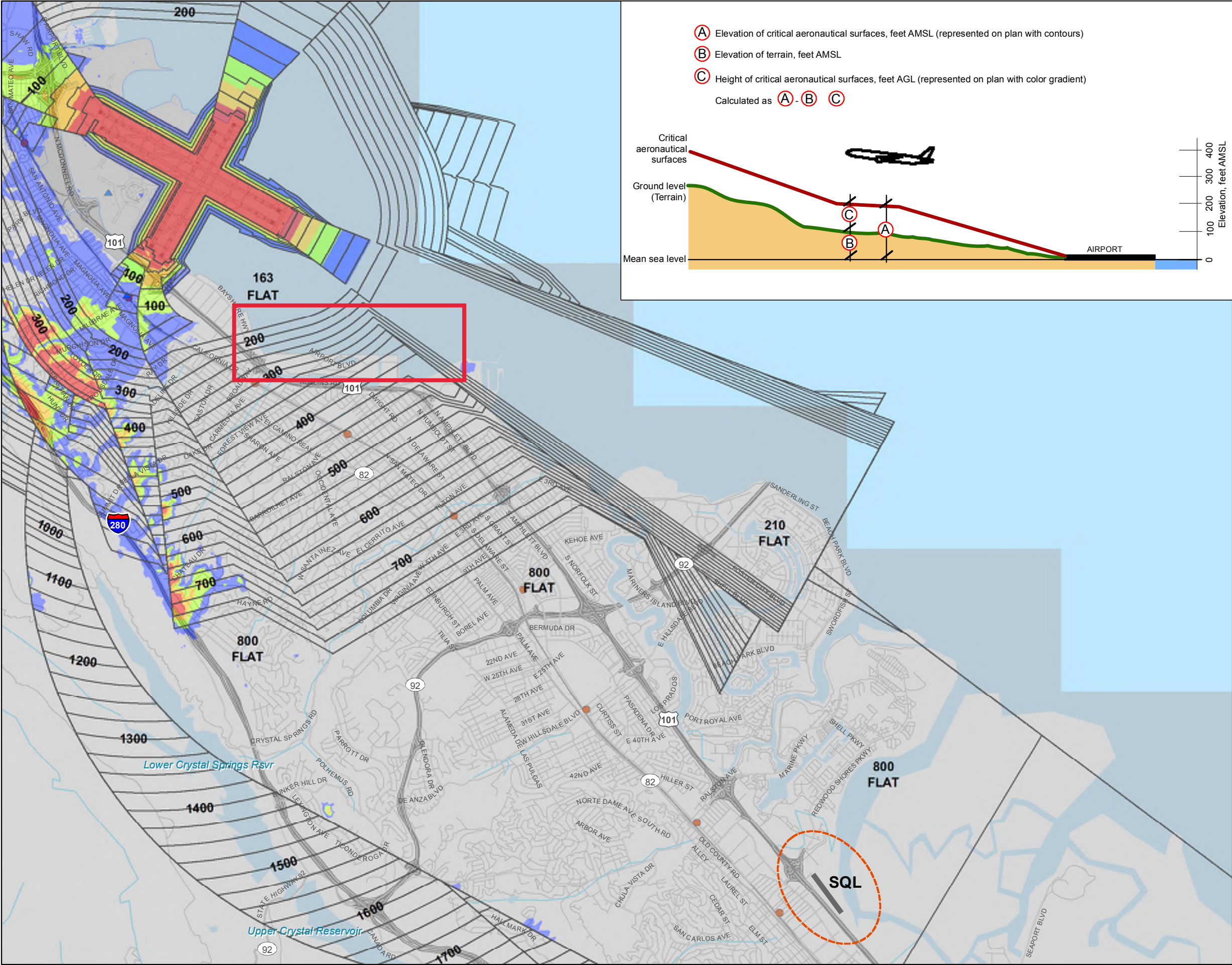


- LEGEND**
- (A) — 100 — Elevation of critical aeronautical surfaces, feet Above Mean Sea Level (AMSL), North American Vertical Datum of 1988 (NAVD88)
- (C) **Height of Critical Aeronautical Surfaces, Feet Above Ground Level (AGL)**
- 35 and lower
 - 35- 65
 - 65 - 100
 - 100 - 150
 - 150 and more
- Airport Property
- ▲ BART Station
- CALTRAIN Station
- Regional Park or Recreation Area
- Municipal Boundary
- Railroad
- Freeway
- Road

- Notes:**
1. This map is intended for informational and conceptual planning purposes, generally representing the aeronautical surfaces considered most critical by San Francisco International Airport (SFO) and its constituent airlines. It does not represent actual survey data, nor should it be used as the sole source of information regarding compatibility with airspace clearance requirements in the development of data for an FAA Form 7460-1, Notice of Proposed Construction or Alteration. SFO does not certify its accuracy, information, or title to the properties contained in this plan. SFO does make any warrants of any kind, express or implied, in fact or by law, with respect to boundaries, easements, restrictions, claims, overlaps, or other encumbrances affecting such properties.
2. This map does not replace the FAA's obstruction evaluation / airport airspace analysis (OE/AAA) review process. Proposing construction at elevations and heights that are lower than the critical aeronautical surfaces shown on this map, (a) does not relieve the construction sponsor of the obligation to file an FAA Form 7460-1, and (b) does not ensure that the proposal will be acceptable to the FAA, SFO, air carriers, or other agencies or stakeholders. SFO, San Mateo County, and local authorities having jurisdiction reserve the right to re-assess, review, and seek modifications to projects that may be consistent with this critical aeronautical surfaces map but that through the FAA OE/AAA process are found to have unexpected impacts to the safety or efficiency of operations at SFO.

Sources: San Francisco International Airport, Jacobs Consultancy, and Planning Technology Inc., 2009





LEGEND

(A) — 100 — Elevation of critical aeronautical surfaces, feet Above Mean Sea Level (AMSL), North American Vertical Datum of 1988 (NAVD88)

(C) **Height of Critical Aeronautical Surfaces, Feet Above Ground Level (AGL)**

- 35 and lower
- 35- 65
- 65 - 100
- 100 - 150
- 150 and more

Airport Property

BART Station

CALTRAIN Station

Regional Park or Recreation Area

Municipal Boundary

Railroad

Freeway

Road

- Notes:**
1. This map is intended for informational and conceptual planning purposes, generally representing the aeronautical surfaces considered most critical by San Francisco International Airport (SFO) and its constituent airlines. It does not represent actual survey data, nor should it be used as the sole source of information regarding compatibility with airspace clearance requirements in the development of data for an FAA Form 7460-1, Notice of Proposed Construction or Alteration. SFO does not certify its accuracy, information, or title to the properties contained in this plan. SFO does make any warrants of any kind, express or implied, in fact or by law, with respect to boundaries, easements, restrictions, claims, overlaps, or other encumbrances affecting such properties.
2. This map does not replace the FAA's obstruction evaluation / airport airspace analysis (OE/AAA) review process. Proposing construction at elevations and heights that are lower than the critical aeronautical surfaces shown on this map, (a) does not relieve the construction sponsor of the obligation to file an FAA Form 7460-1, and (b) does not ensure that the proposal will be acceptable to the FAA, SFO, air carriers, or other agencies or stakeholders. SFO, San Mateo County, and local authorities having jurisdiction reserve the right to re-assess, review, and seek modifications to projects that may be consistent with this critical aeronautical surfaces map but that through the FAA OE/AAA process are found to have unexpected impacts to the safety or efficiency of operations at SFO.

Sources: San Francisco International Airport, Jacobs Consultancy, and Planning Technology Inc., 2009

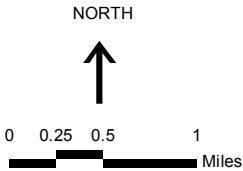


Exhibit IV-19, which is provided for information purposes only, depicts a profile view of the lowest critical airspace surfaces along the extended centerline of Runway 10L-28R – the TERPS Obstacle Departure Procedure (ODP) surface, representing standard all-engines departures, and the approximate OEI surface developed by SFO through independent study in consultation with the airlines serving SFO. The exhibit also shows the terrain elevation beneath the airspace surfaces and various aircraft approach and departure profiles, based on varying operating assumptions. The exhibit illustrates a fundamental principle related to the design of airspace protection surfaces. The surfaces are always designed below the actual aircraft flight profile which they are designed to protect, thus providing a margin of safety. Note that the ODP climb profile is above the ODP airspace surface, and the OEI climb profile is above the OEI airspace surface.

4.5.4 AIRSPACE PROTECTION POLICIES

The following airspace protection policies (AP) shall apply to the ALUCP.

AP-1 COMPLIANCE WITH 14 CFR PART 77, SUBPART B, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

AP-1.1 Local Government Responsibility to Notify Project Sponsors

Local governments should notify sponsors of proposed projects at the earliest opportunity to file Form 7460-1, *Notice of Proposed Construction or Alteration*, with the FAA for any proposed project that would exceed the FAA notification heights, as shown approximately on Exhibit IV-10. Under Federal law, it is the responsibility of the project sponsor to comply with all notification and other requirements described in 14 CFR Part 77. This requirement applies independent of this ALUCP.

AP-1.2 FAA Aeronautical Study Findings Required Before Processing Development Application

The sponsor of a proposed project that would exceed the FAA notification heights, as shown approximately on Exhibit IV-10, shall present to the local government permitting agency with his or her application for a development permit, a copy of the findings of the FAA's aeronautical study, or evidence demonstrating that he or she is exempt from having to file an FAA Form 7460-1. It is the responsibility of the local agency to consider the FAA determination study findings as part of its review and decision on the proposed project.

AP-2 COMPLIANCE WITH FINDINGS OF FAA AERONAUTICAL STUDIES

Project sponsors shall be required to comply with the findings of FAA aeronautical studies with respect to any recommended alterations in the building design and height and any recommended marking and lighting of their structures for their proposed projects to be deemed consistent with this ALUCP.

AP-3 MAXIMUM COMPATIBLE BUILDING HEIGHT

In order to be deemed consistent with the ALUCP, the maximum height of a new building must be the lower of (1) the height shown on the SFO critical aeronautical surfaces map (Exhibits IV-17 and IV-18), or (2) the maximum height determined not to be a “hazard to air navigation” by the FAA in an aeronautical study prepared pursuant to the filing of Form 7460-1.

For the vast majority of parcels, the height limits established in local zoning ordinances are lower than the critical airspace surfaces. In those cases, the zoning district height regulations will control. Compliance with the zoning district height and the SFO critical aeronautical surfaces map, however, does not relieve the construction sponsor of the obligation to file a FAA Form 7460-1 *Notice of Proposed Construction or Alteration*, if required, and to comply with the determinations resulting from the FAA’s aeronautical study.

For a project to be consistent with this ALUCP, no local agency development permits shall be issued for any proposed structure that would penetrate the aeronautical surfaces shown on Exhibits IV-17 and IV-18 or the construction of which **has not** received a Determination of No Hazard from the FAA, or which would cause the FAA to increase the minimum visibility requirements for any instrument approach or departure procedure at the Airport.

AP-4 OTHER FLIGHT HAZARDS ARE INCOMPATIBLE

Proposed land uses with characteristics that may cause visual, electronic, or wildlife hazards, particularly bird strike hazards, to aircraft taking off or landing at the Airport or in flight are incompatible in Area B of the Airport Influence Area. They may be permitted only if the uses are consistent with FAA rules and regulations. Proof of consistency with FAA rules and regulations and with any performance standards cited below must be provided to the Airport Land Use Commission (C/CAG Board) by the sponsor of the proposed land use action.

Specific characteristics that may create hazards to aircraft in flight and which are incompatible include:

- (a) Sources of glare, such as highly reflective buildings or building features, or bright lights, including search lights or laser displays, which would interfere with the vision of pilots making approaches to the Airport.
- (b) Distracting lights that that could be mistaken by pilots on approach to the Airport for airport identification lighting, runway edge lighting, runway end identification lighting, or runway approach lighting.
- (c) Sources of dust, smoke, or water vapor that may impair the vision of pilots making approaches to the Airport.
- (d) Sources of electrical interference with aircraft or air traffic control communications or navigation equipment, including radar.
- (e) Land uses that, as a regular byproduct of their operations, produce thermal plumes with the potential to rise high enough and at sufficient velocities to interfere with the control of aircraft in

flight. Upward velocities of 4.3 meters (14.1 feet) per second at altitudes above 200 feet above the ground shall be considered as potentially interfering with the control of aircraft in flight.¹⁷

(f) Any use that creates an increased attraction for wildlife, particularly large flocks of birds, that is inconsistent with FAA rules and regulations, including, but not limited to, FAA Order 5200.5A, *Waste Disposal Sites On or Near Airports*, FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*, and any successor or replacement orders or advisory circulars. Exceptions to this policy are acceptable for wetlands or other environmental mitigation projects required by ordinance, statute, court order, or Record of Decision issued by a federal agency under the National Environmental Policy Act.

4.5.5 iALP AIRSPACE TOOL

In consultation with C/CAG, SFO developed the iALP Airspace Tool, a web-based, interactive tool to evaluate the relationship of proposed buildings with the Airport's critical airspace surfaces. The iALP Airspace Tool is designed to assist planners, developers, and other interested persons with the implementation of the airspace protection policies of the SFO ALUCP. The tool helps users determine: (1) the maximum allowable building height at a given site, and/or (2) whether a building penetrates a critical airspace surface, and by how much, given the proposed building height.

A more detailed description of the iALP Airspace Tool and a tutorial explaining how to use it is presented in **Appendix J**. Use of this tool, however, does not relieve a project sponsor of the duty to comply with all federal regulations, including the obligation to file Form 7460-1, Notice of Proposed Construction or Alteration, with the FAA.

¹⁷ This is a threshold established by the California Energy Commission in its review of power plant licensing applications. See *Blythe Solar Power Project: Supplemental Staff Assessment, Part 2*, CEC-700-2010-004-REVI-SUP-PT2, July 2010. California Energy Commission. Docket Number 09-AFC-6, p. 25. This criterion is based on guidance established by the Australian Government Civil Aviation Authority (Advisory Circular AC 139-05(0), June 2004). The FAA's Airport Obstructions Standards Committee (AOSC) is studying this matter but has not yet issued specific guidance.