



**SAN DIEGO COUNTY
REGIONAL AIRPORT AUTHORITY
Airport Land Use Commission
STAFF REPORT**

Item No.
5

Meeting Date: **SEPTEMBER 1, 2011**

Subject:

Presentation and Request for Policy Direction on Airspace Factor – San Diego International Airport - Airport Land Use Compatibility Plan

Recommendation:

Receive the report and provide policy guidance on the airspace protection compatibility factor.

Background/Justification:

SDIA ALUCP Steering Committee meetings were held on June 16 and July 21, 2011 to focus on the airspace protection factor. Airspace protection is one of four compatibility factors (along with noise contours, safety zones, and overflight notification) that comprise an Airport Land Use Compatibility Plan (ALUCP).

Airspace Protection Definition

Airspace compatibility refers to the limitations and restrictions on the height of new structures, as well as new uses featuring characteristics such as hazardous wildlife attractants and sources of visual and electronic interference, which may pose a hazard to aircraft moving through SDIA's navigable airspace.

Airspace Protection Compatibility Factor Purpose

The airspace protection compatibility factor defines appropriate heights for future structures near the airport within a specified vicinity boundary. The ultimate goal is to protect the operational capability of SDIA, including critical approach surfaces, and prevent further relocations of the SDIA displaced runway thresholds.

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Airspace Protection Guidance*Federal Aviation Administration (FAA) Guidance*

FAR Part 77, Objects Affecting Navigable Airspace, (14 C.F.R. §§77.1, et seq.) establishes imaginary surfaces for airports and runways as a means to identify objects that are obstructions to air navigation. Each surface is defined as a slope ratio or at a certain altitude above the airport elevation. The FAA uses FAR Part 77 obstruction standards as elevations above which structures may constitute a safety problem. The regulations require that anyone proposing to construct an object/structure which could affect the navigable airspace around an airport submit information about the proposed construction to the FAA. The FAA then conducts an aeronautical study, the outcome of which is a determination as to whether the object would be a potential hazard to air navigation.

If the proposed object is determined to pose a hazard, the FAA may object to its construction and issue a determination of a hazard to air navigation, examine possible revisions of the proposal to eliminate the problem, require that the project be appropriately marked and lighted as an airspace obstruction, and/or initiate changes to the aircraft flight procedures for the airport to account for the object. FAA does not have the authority to prevent the encroachment; however, California law can prevent the encroachment if the FAA has made a determination of a hazard to air navigation. The State Aeronautics Act recognizes the Part 77 obstruction and hazard standards and provides the basis for local agencies and the State Department of Transportation (Caltrans) to enforce their protection.

Caltrans Handbook Guidance

The 2002 edition of the California Airport Land Use Compatibility Planning Handbook (the Handbook) defers largely to FAA guidance concerning airspace protection. Delineation of an airspace boundary is recommended to adhere to the Part 77 imaginary surfaces, with additional consideration given to U.S. Standard for Terminal Instrument Procedures (TERPS) surfaces at airports where those surfaces are lower than the Part 77 surfaces (as is the case with SDIA). The Handbook advises that the compatibility strategy should be to limit the height of structures so as not to cause hazards to flight. The Handbook also advises Airport Land Use Commissions (ALUCs) to consider the potential for certain land uses to include characteristics that may create hazards to flight, such as bird attractants, interfere with visibility (distracting lights, smoke, or glare), and electromagnetic interference with aircraft and air traffic control communications and navigation instruments.

Current SDIA ALUCP Airspace Policy

The current SDIA ALUCP, adopted in 1992 and amended in 1994 and 2004, contains two airspace protection policies. The ALUCP requires the ALUC to use Part 77 criteria in determining land use compatibility for projects proposed in areas underlying common flight paths associated with SDIA.

Additionally, the ALUCP requires the ALUC to use the City of San Diego's Airport Approach Overlay Zone (AAOZ) to determine appropriate building heights in SDIA approach corridors. The AAOZ requires that "No structure shall be constructed or altered and no use shall be established that results in any permanent encroachment within 50 feet of the FAA-established approach paths as set forth in [AAOZ Map] Drawing No. C-926. Proposed structures or uses that are 40 feet in height or less, measured from the grade of the property as established by Map No. C-926 or by the City Manager, shall not be limited by this section."

City of San Diego Airport Approach Overlay Zone

The existing AAOZ boundaries are depicted on Exhibit 1. The boundaries were developed based on studies undertaken by the San Diego Unified Port District (then the Airport operator) in the early 1980s, 1989, and 1990. The boundaries are three-dimensional surfaces sloping upward from the runway to an elevation of 500 feet MSL off the sides and ends of the runway, except for the approach to Runway 27, where the surface rises to 450 feet MSL. The vertical boundaries of the AAOZ establish maximum allowable building heights. The boundaries were set to limit the heights of structures to avoid becoming obstacles within the approaches to each runway end. (The development of new obstacles within the approaches would require additional displacement of the approach ends of the runways, reducing the runway length available for landing.)

Under the approach to Runway 27 from the east, the AAOZ rises at a slope of 20 to 1, based on the slope of the applicable runway end/threshold siting surface. A 1990 amendment to the AAOZ ordinance shifted the starting point of the AAOZ eastward (affecting Runway 27 only) an additional 1,000 feet to a point 610 feet west of the runway end. This was done to establish a 50-foot buffer between the maximum allowable building height and the threshold siting surface (TSS). The result is that for Runway 9, the AAOZ and the TSS are the same (see Exhibit 2). The 50-foot buffer between the TSS and the AAOZ for Runway 27 is illustrated on Exhibit 3.

Exhibit 1: City of San Diego AAOZ Boundaries

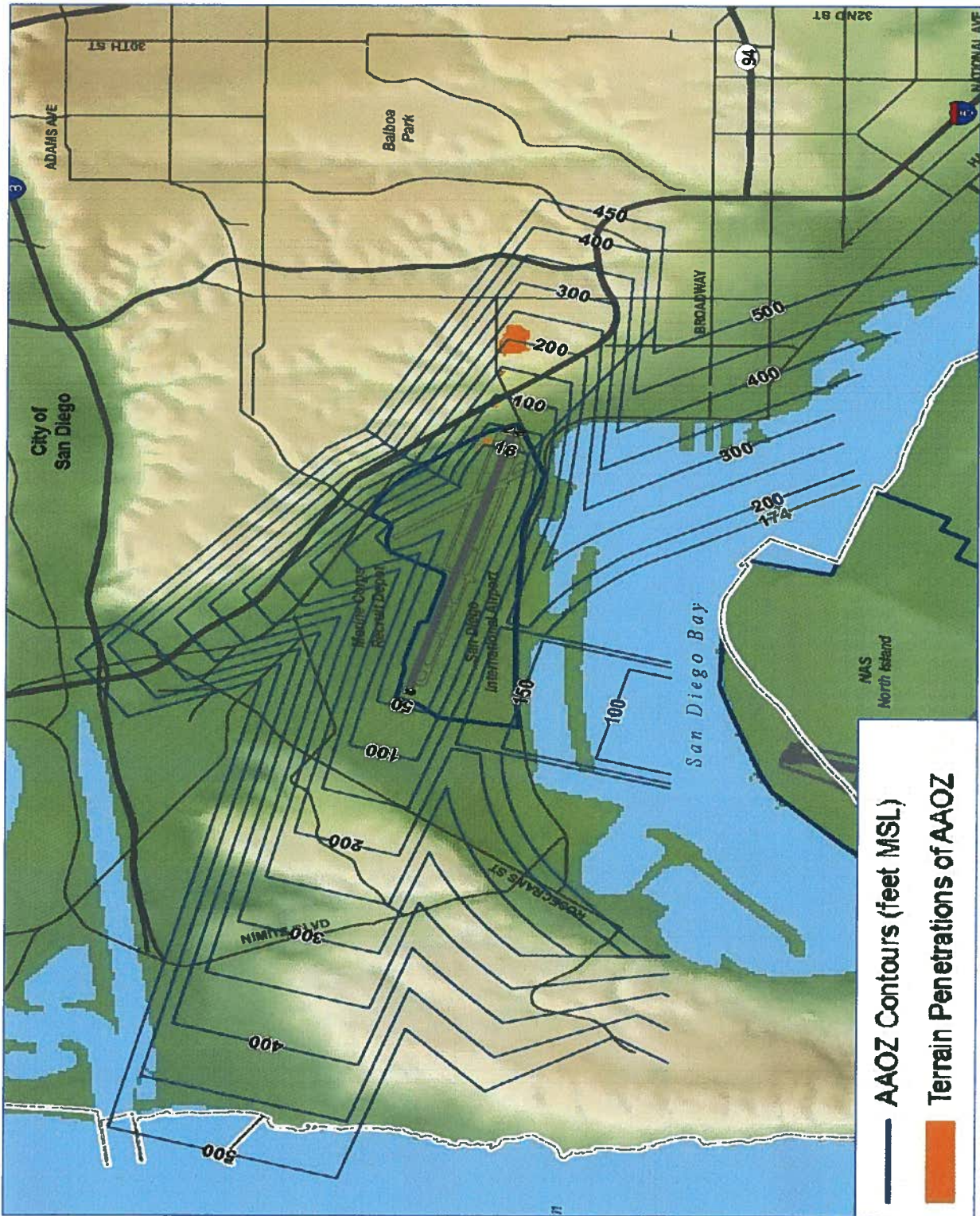


Exhibit 2: AAOZ and Runway 9 Profile

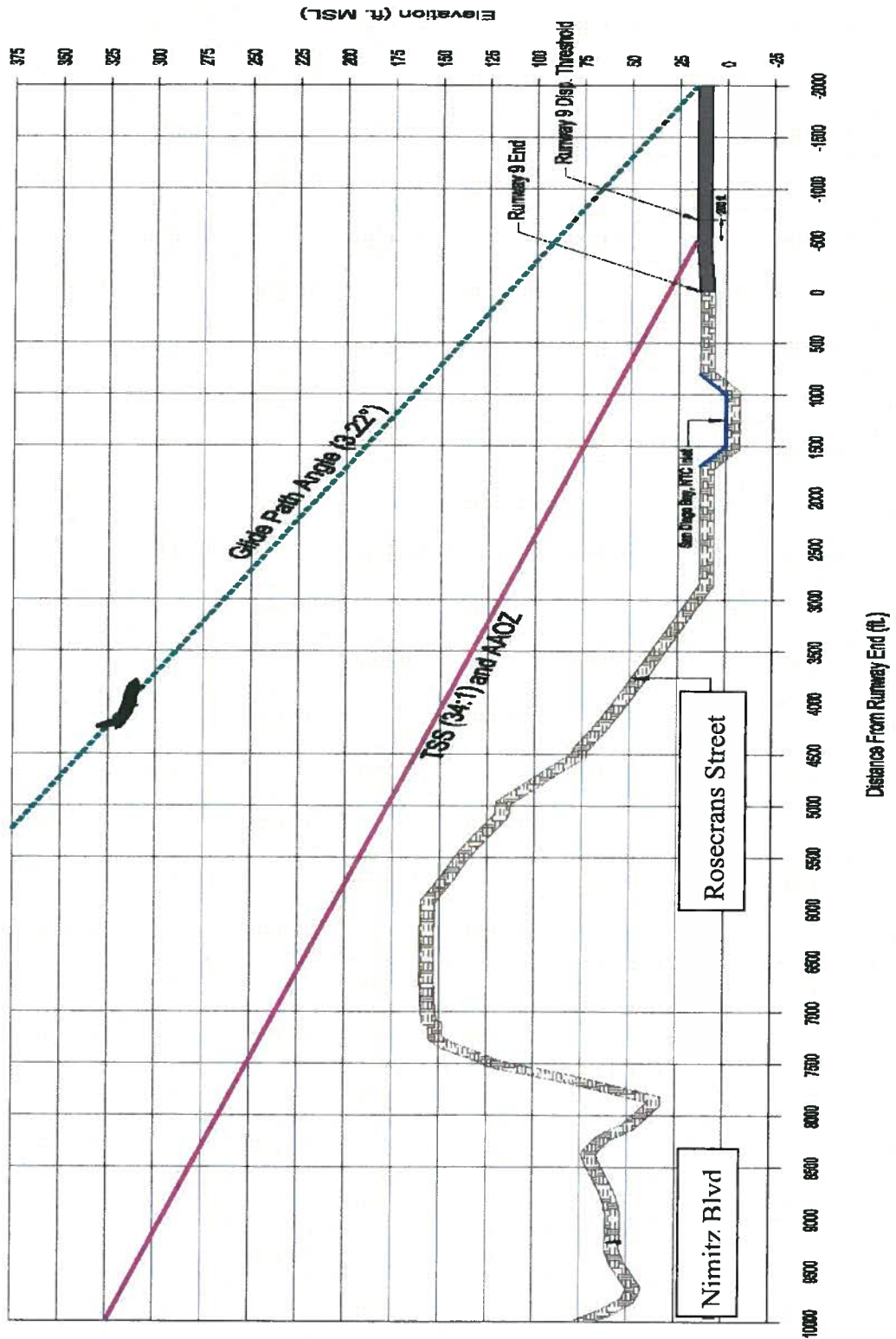
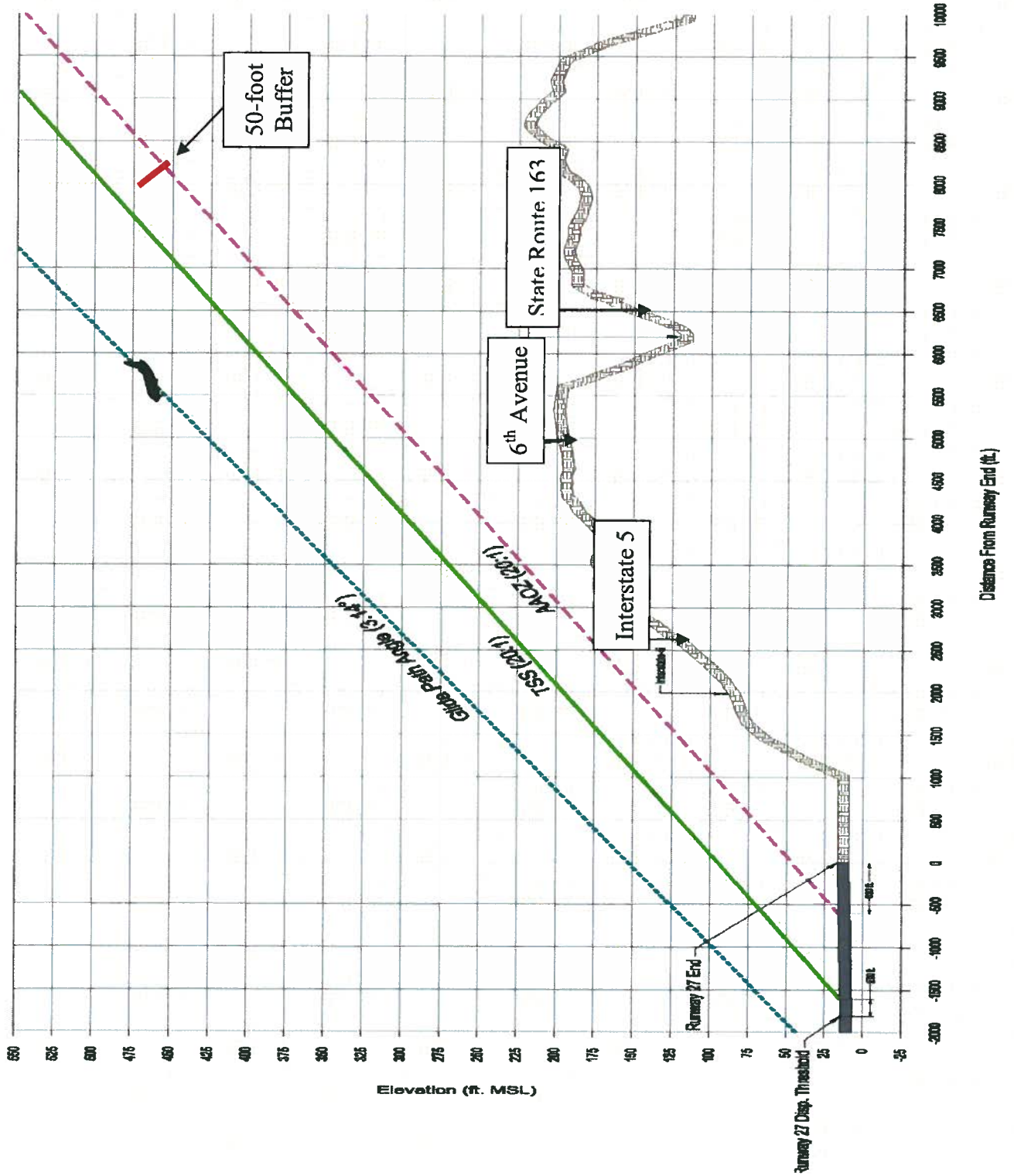


Exhibit 3: AAOZ and Runway 27 Profile



Previous ATAG/SDIA Subcommittee Work

The SDIA Subcommittee of the ALUCP Technical Advisory Group (ATAG) met from 2006-2007 to consider potential policies for the updated SDIA ALUCP. At the end of 2007, work on the SDIA ALUCP was suspended so that the ATAG could focus on completion of the five urban airport ALUCPs.

The SDIA Subcommittee had discussions related to airspace compatibility policies for the SDIA ALUCP, but no final recommendations to the ALUC were made. The issues discussed included the following:

- Keeping structure heights below Part 77 surfaces is not practical due to terrain penetrations
- Use TERPS surfaces to define critical airspace
- Consider 50-foot buffer below TERPS airspace

Current Technical Analysis – Airspace Protection

As suggested by the guidance in the Caltrans Handbook, the Part 77 airspace surfaces and the TERPS approach surfaces provide a good basis for the delineation of airspace protection boundaries for use in ALUCPs (this was the approach utilized in the adopted Urban Airport ALUCPs). In addition, the FAA's TSS criteria, which were used in the design of the City's AAOZ, merit consideration in the development of airspace protection boundaries and policies at SDIA. Thus, four sets of airspace-related boundaries are considered:

- Part 77, Subparts B and C, 100:1 notification surface boundary and imaginary airspace surfaces
- The TERPS approach surfaces for both runway ends
- The FAA's TSS criteria (see Exhibit 4)

Proposed Airspace Factor Boundary

Exhibit 5 presents the proposed airspace factor boundary. It represents the outer boundary of the combined Part 77 Subpart B notification boundary, the Part 77 imaginary airspace surfaces, and the TERPS approach surfaces. The exhibit also depicts the TSS boundaries off each runway end, within which specific height limitations would apply.

Exhibit 4: Threshold Siting Surfaces Applied to SDIA

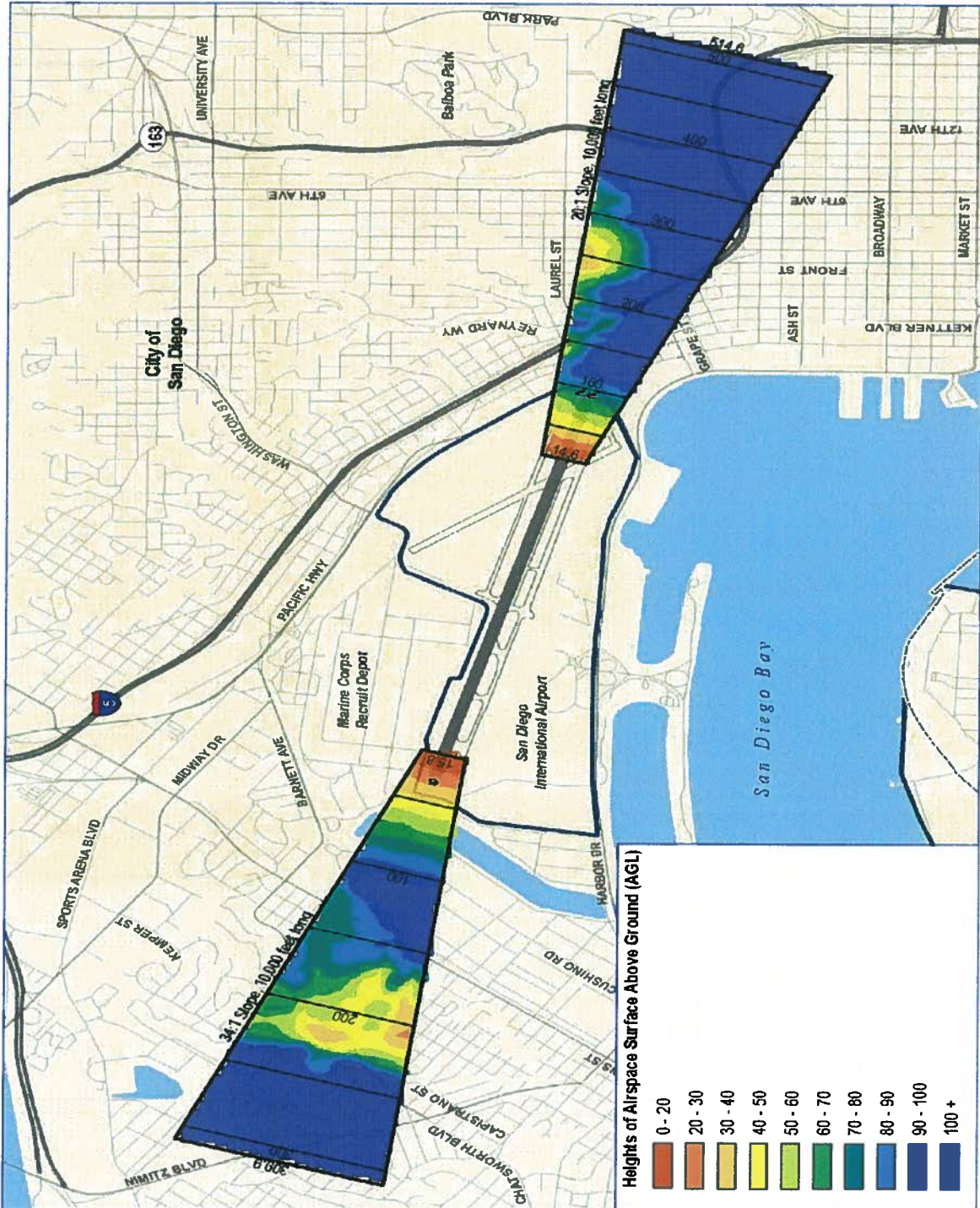
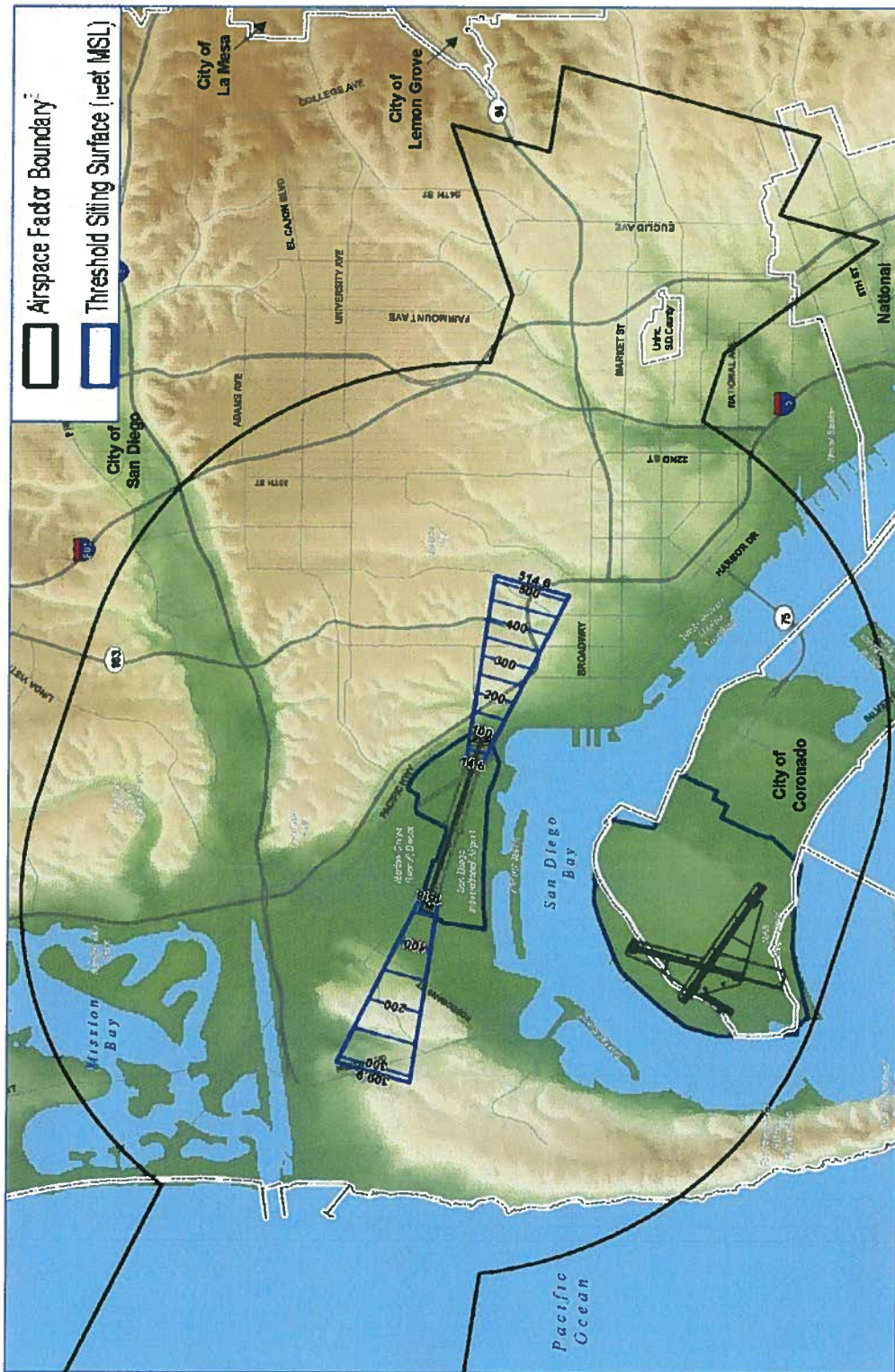


Exhibit 5: Proposed Airspace Protection Boundary



Key Components in Potential Policy Development

The Caltrans Handbook advises that ALUCs establish airspace protection policies that would limit the height of new structures to ensure that hazards to air navigation are not built in the airport vicinity. In San Diego County, the ALUC has applied this guidance in the adopted ALUCPs for the Urban Airports by ensuring that the FAA hazard and obstruction determinations are enforced as ALUCP policy. This approach has the following advantages:

- It ensures that structures tall enough to potentially become obstructions or hazards are studied by FAA experts before being permitted by local agencies;
- It ensures that recommendations of the FAA regarding marking and lighting are recognized by local agencies issuing the development permits;
- It provides builders and developers with maximum flexibility, consistent with airspace protection imperatives; and
- It ensures that hazards to air navigation are not constructed.

The airspace protection policy for SDIA also should provide an extra margin of protection for the approaches to each runway end. Maximum height limits should be established beneath the TSS for each runway to ensure that no obstacles are erected in those areas. The protection of those approach surfaces is vital to ensure that further relocations of the displaced runway thresholds are not necessary.

Proposed Airspace Protection Policies

This section provides the proposed airspace protection policies that would be incorporated in the draft ALUCP.

1. Introduction to Airspace Protection Policies

The airspace protection policies described in this section are based on regulations and guidelines adopted by the FAA and the State of California. These policies are intended to help implement the federal and state regulations and guidance. Specific regulations are referenced in subsequent policies of this section. The FAA has well-defined standards by which airspace obstructions and potential hazards to flight are assessed. However, the FAA has no authority to prevent the creation of obstructions or hazards. That authority rests with state and local agencies.

State airspace protection standards generally mirror those of the FAA. A key difference, though, is that state law gives the Division of Aeronautics and local agencies the authority to enforce the standards (see California Public Utilities Code Sections 21658 and 21659).

The compatibility of proposed land uses within the AIA of the Airport shall be evaluated in accordance with the policies in this section.

2. FAA Notification Requirements

Local agencies shall inform project sponsors of the FAA notification requirements. Federal law requires sponsors of proposed projects containing structures or other objects that exceed the height criteria defined in Part 77, Subpart B, to submit to the FAA a Notice of Proposed Construction or Alteration (FAA Form 7460-1).

Within the boundary depicted on **Exhibit 5**, the sponsor of a proposed structure less than 200 feet in height may be required to notify the FAA based upon the requirements of Part 77 Section 77.9. These requirements apply to all proposed objects including structures, antennas, trees, mobile objects, and temporary objects, such as construction cranes.

Regardless of the location, sponsors of proposed projects shall notify the FAA of proposed structures exceeding 200 feet above ground level.

3. Project Sponsor to Include FAA Determination with Development and Consistency Determination Applications

A copy of the completed Notice of Proposed Construction and Alteration and a copy of the FAA findings from its aeronautical study (i.e., a notice of determination letter) shall be included with a project sponsor's consistency application to the ALUC, and with the project sponsor's development application to the applicable land use agency, if it meets the FAA notice criteria.

4. Runway Approach Protection Criteria

Proposed structures penetrating the Threshold Siting Surfaces depicted on **Exhibit 5** shall not be allowed and shall be deemed incompatible with the airspace protection policies.

5. Obstruction Compatibility Criteria

Except as provided by Policy 4 above, a proposed project shall be deemed compatible with respect to height if it does not constitute an obstruction to air navigation.

Proposed structures determined to be obstructions shall be deemed compatible or conditionally compatible if all the following apply:

- a. The proposed project does not penetrate the Threshold Siting Surfaces;
- b. As a result of an aeronautical study, the FAA determines that the obstruction would not be a hazard to air navigation;
- c. FAA or other expert analysis conducted under the auspices of the ALUC or the Airport operator concludes that, despite being an airspace obstruction (but not a hazard), the object would not cause any of the following:

1. An increase in the ceiling or visibility minimums of the Airport for an existing or planned instrument procedure (a planned procedure is one that is formally on file with the FAA or that is consistent with the FAA-approved Airport Layout Plan);
 2. A diminution of the established operational efficiency and capacity of the Airport, such as by causing the usable length of the runway to be reduced; or
 3. Conflict with the visual flight rules (VFR) airspace used for the airport traffic pattern or en-route navigation to and from the Airport.
- d. Marking and lighting of the object shall be installed as directed by the FAA aeronautical study in a manner consistent with FAA standards in effect at the time of proposed construction (Advisory Circular 70/7460-1J, Obstruction Marking and Lighting, or any later guidance); and
 - e. An aviation easement as described in Policy 6 below is dedicated to the Airport operator.

6. Additional Airspace Protection Considerations

Future land uses within the Airspace Protection Boundary depicted in **Exhibit 5** with characteristics that may cause hazards for aircraft in flight, taking off, or landing at the Airport shall be deemed compatible only if the uses are consistent with *FAA* rules and regulations and are not in conflict with the specifics below.

a. Sources of Glare

Highly reflective materials, including reflective glass, polished light-colored stone, and mirrors (including solar mirror heat collectors) large enough to pose the risk of causing visual after-images or flash blindness in pilots and compromise flight safety shall be deemed incompatible unless the ALUC or the local agency finds that the following conditions apply:

1. The project sponsor prepares a technical study, certified by a lighting engineer, demonstrating that the proposed building materials would not create reflections intense enough to cause flash blindness in pilots on approach to either runway at any time of day during any season of the year.
2. The FAA has been requested to comment on the proposed project and offers no objections to the potential glare impacts of the project.

b. Lighting

Distracting or confusing lighting shall be considered incompatible with the Airport. The following are examples of incompatible lighting systems:

1. Searchlights casting light into the sky and towards the approach paths of aircraft using either runway;
2. Laser light displays casting light into the sky and towards the approach paths of aircraft using either runway;
3. Sequenced flashing lights casting either direct or reflected light upward into the sky and towards the approach paths of aircraft using either runway;

4. Stroboscopic lights casting either direct or reflected light into the sky and towards the approach paths of aircraft using either runway; and
5. Any other lighting systems, including future lighting technologies, that produce effects that mimic airport identification lighting and runway approach lighting.

c. Sources of Dust, Water Vapor, and Smoke

Proposed land uses creating columns of dust, steam, water vapor, or smoke dense enough to impair pilot visibility and compromise flight safety shall be considered incompatible.

d. Electromagnetic Interference

Sources of electromagnetic interference with aircraft instrumentation and ground-based radar and navigational aids shall be considered incompatible. If a proposed project may result in electromagnetic interference, the ALUC or local agency shall consult with the FAA to ensure that the FAA is aware of the potential for electronic interference and has no objection.

The ALUC and local agency shall require the project sponsor to modify the proposed project to be in compliance with any recommendations and conditions described by the FAA after it reviews the project proposal.

e. Bird Attractants

The following uses, which have the potential to attract flocking birds, shall be deemed incompatible with the ALUCP.¹

1. Agricultural, Recreational, Open Space Activities and Facilities

- Aquaculture activities conducted outside of fully enclosed buildings
- Golf courses with water hazards
- Water features incorporated into landscaping or open space areas
 - Water features with less than 2,500 square feet of surface area are acceptable, provided that measures are taken to control hazardous wildlife, including the use of steep-sided or rip-rap lined basins and the avoidance of vegetation providing food or cover for hazardous wildlife in the immediate vicinity of the water feature, or the placement of the water feature in areas of pedestrian or vehicular activity (such as pedestrian plazas, traffic circles, building entrances, etc.).

2. Waste Disposal Operations²

- Municipal solid waste landfills

¹ The list of restricted uses is derived from FAA Order 5200.5A, Waste Disposal Sites on or Near Airports, and Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants On or Near Airports.

² Construction and demolition waste facilities, fly ash disposal sites, recycling centers, and composting operations that accept only yard waste, wood chips, and sewage sludge as a bulking agent are generally acceptable.

- Trash transfer stations that handle putrescible waste and that are not fully enclosed or that lack ventilation and air filtration systems adequate to control odors escaping to the outdoors. (Odor masking is not acceptable.)
- Commercial or institutional composting operations that accept food waste.

3. Water Management Facilities

- Storm water management facilities that create above-ground standing water, unless required by other provisions of municipal, county, or state law.
 - Where storm water detention ponds are necessary and must be allowed, measures should be taken to minimize the risks of attracting potentially hazardous wildlife.³
- Wastewater treatment facilities and associated settling ponds, including any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes and including artificial marshes designed for wastewater treatment.
- Wetlands mitigation projects, unless they provide unique functions that must remain onsite or are otherwise directed by state or federal law, state or federal regulatory decision, or court order.
- Dredge spoil containment areas (also known as confined disposal facilities) if the spoils contain material that would attract hazardous wildlife.

f. Sources of Thermal Plumes

Land uses creating thermal plumes with the potential to rise 200 feet or more above the ground at upward velocities of 4.3 meters per second or greater shall be considered incompatible with the ALUCP.⁴

7. Avigation Easement Dedication

An avigation easement shall be dedicated to the Airport operator as a condition for approval of the types of projects listed below:

³ Guidance is provided in FAA Advisory Circular (AC) 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*, p. 2-3. The guidance advises that detention basins should be designed, engineered, constructed, and maintained for a maximum 48-hour detention period after the design storm and remain completely dry between storms. To facilitate the control of hazardous wildlife, the FAA recommends the use of steep-sided, rip-rap lined, narrow, linearly shaped water detention basins. All vegetation in or around detention basins that provide food or cover for hazardous wildlife should be eliminated. If soil conditions and other requirements allow, the FAA encourages the use of underground storm water infiltration systems, such as French drains or buried rock fields, because they are less attractive to wildlife.

⁴ The California Energy Commission has used this criterion to assess potential impacts on aircraft in flight in its review of electrical power plant licensing applications (see Section 5.2.2.4, above).

1. Where proposed structures, trees, or other objects would constitute an obstruction as defined by the FAA; or
2. Located on a site where the ground level penetrates a Part 77 surface.

The aviation easement shall:

1. Provide the right of flight in the airspace above the property;
2. Allow the generation of noise and other impacts associated with aircraft overflight;
3. Restrict the height of structures, trees, and other objects;
4. Permit access to the property for the removal or aeronautical marking of objects exceeding the established height limit; and
5. Prohibit electrical interference, glare, and other potential hazards to flight from being created on the property.

Coordination Efforts/Range of Thinking

ALUC staff met with the potentially affected local agencies (CCDC, City of San Diego, and the Unified Port of San Diego) on June 1, 2011 to discuss the draft airspace protection map and policies in preparation for the June 16, 2011 Steering Committee meeting.

The Steering Committee meeting for Airspace was held on June 16, 2011. Comments made at that meeting focused on the concept of incorporating the City's AAOZ as it is in the current ALUCP and concerns that proposed limitations on specific use characteristics were too restrictive. Based on those comments, revisions were made to the proposed airspace protection boundary and policies, and it was decided that a second Steering Committee meeting was needed in order to fully explain the changes.

A second local agency coordination meeting was held on July 6, 2011 to discuss the changes made to the draft airspace protection map and policies through the addition of the TSS to the overall approach rather than using the City's AAOZ. A few more changes in the airspace boundary map and policies included in this report were emailed to the Steering Committee and posted on the Authority website.

A second Steering Committee meeting was held July 21, 2011. Comments made at that meeting included using the TSS as the boundary to limit potentially hazardous use characteristics rather than the overall airspace protection boundary and incorporating the hazardous use restrictions into the safety compatibility factor rather than airspace. ALUC staff believes that limiting hazardous use characteristics to just the TSS could be detrimental to the future operations at SDIA and associating the hazard limitations with safety would be contrary to how the Caltrans Handbook treats airspace protection.

Staff Recommendation

Staff recommends that the ALUC authorize staff to proceed with the proposed airspace protection map and policies as presented in this report for incorporation into the SDIA ALUCP. The draft SDIA ALUCP and associated environmental documentation are expected to be completed for ALUC consideration in early 2013.

List of Attendees Who Signed In for the June 16th and July 21st Meetings

SDIA ALUCP Steering Committee

PLEASE WRITE LEGIBLY
June 16, 2011

Name	Affiliation	Email Address (If you want to be placed on distribution list)
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Paul Weitz	Peninsula Planning Board	pcpb pcpb paul@cox.net
Amanda Lee	City of SD	ajohnsonlee@sandiego.gov

SDIA ALUCP Steering Committee

PLEASE WRITE LEGIBLY

June 16, 2011

Name	Affiliation	Email Address (If you want to be placed on distribution list)
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Jim McCollum	Solar Turbines	on file
Michael Patton	City Council	on file
BRANDON NICHOLS	CCDC	
RICK BEACH	CAASD	on file

SDIA ALUCP Steering Committee

PLEASE WRITE LEGIBLY

June 16, 2011

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SDIA ALUCP Steering Committee

PLEASE WRITE LEGIBLY

June 16, 2011

Name	Affiliation	Email Address (If you want to be placed on distribution list)
Michael Seidel	Uptown Planners	seidel@cox.net

SDIA ALUCP Steering Committee

PLEASE WRITE LEGIBLY

July 21, 2011

Name	Affiliation	Email Address (If you want to be placed on distribution list)
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LOYD HUBBS	Authority Board	
Ted Shaw	NAIUP San Diego	
Amanda Lee	City of San Diego	ajohnsonlee@sandiego.gov
TAM CRANWELL	CITY OF SAN DIEGO	tcranwell@sandiego.gov
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JOHN HECMA	Port	jhehmen@portofsan-diego.org

SDIA ALUCP Steering Committee

PLEASE WRITE LEGIBLY

July 21, 2011

Name	Affiliation	Email Address (If you want to be placed on distribution list)
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Jim McCollum	SOLAR TRADING BUSINESSES	McCollum_Jim_h@SolarTradingBusiness.com

Fiscal Impact:

The SDIA ALUCP update program is funded through the Airport Planning FY12 operating budget.

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Environmental Review:

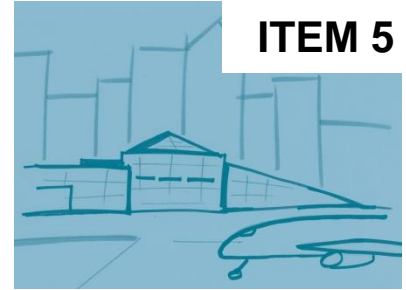
- A. This ALUC presentation is not a project that would have a significant effect on the environment as defined by the California Environmental Quality Act (CEQA), as amended. 14 Cal. Code Regs. §15378. This ALUC presentation is not a "project" subject to CEQA, Cal. Pub. Res. Code §21065.
- B. This ALUC presentation is not a "development" as defined by the California Coastal Act. Cal. Pub. Res. Code §30106.

Equal Opportunity Program:

Not applicable.

Prepared by:

KEITH WILSCHETZ
DIRECTOR, AIRPORT PLANNING



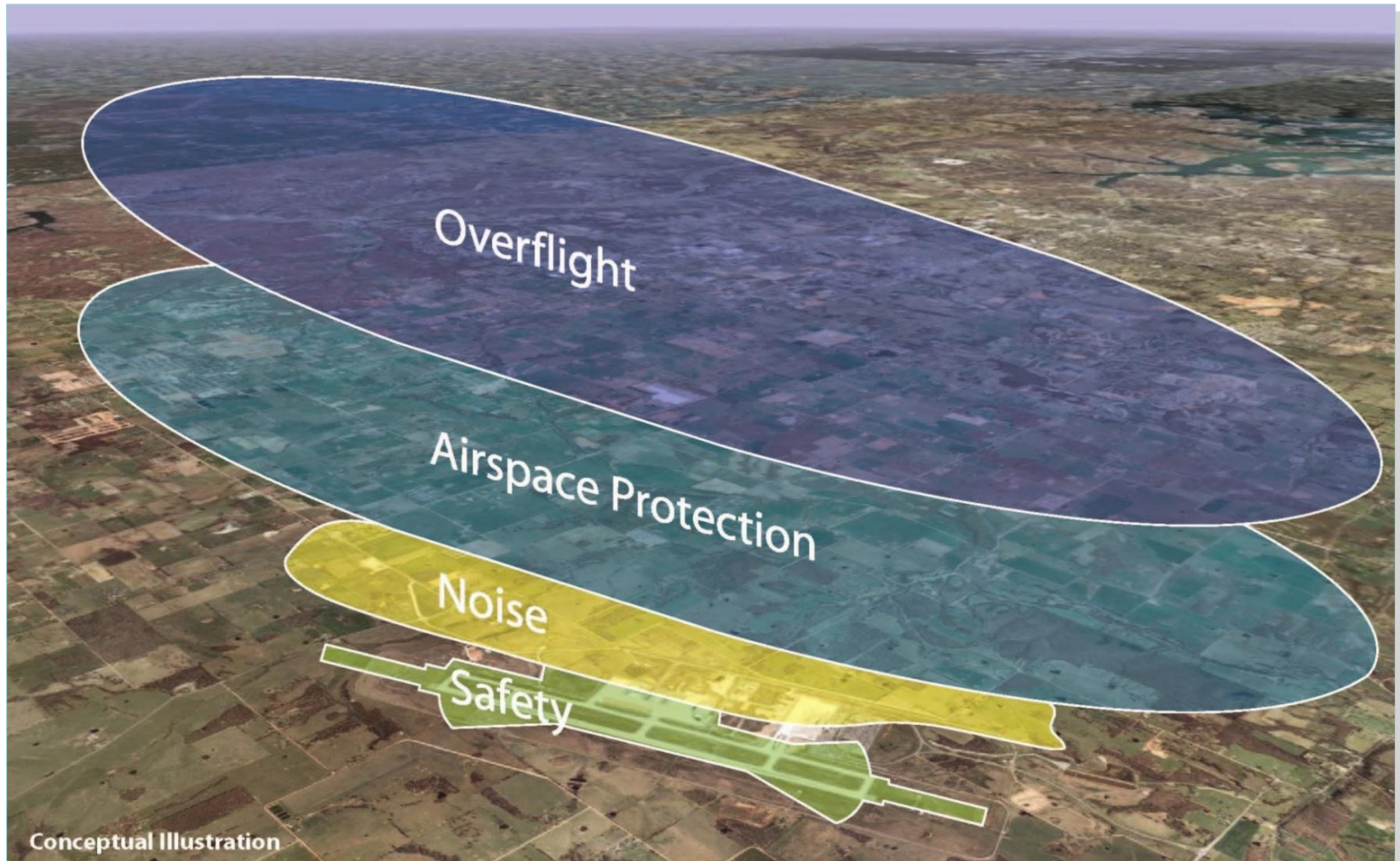
Presentation and Request for Policy Direction on Airspace Factor – San Diego International Airport – Airport Land Use Compatibility Plan

Angela Jamison, Manager, Airport Planning

September 1, 2011



Compatibility Factors



Conceptual Illustration

Steering Committee Meeting



- June 16 2011- Steering Committee meeting
 - Steering Committee meeting attendance = 24
- July 21, 2011 – Steering Committee meeting
 - Steering Committee meeting attendance = 12

Coordination Efforts



- Local agency (CCDC, City of San Diego, County of San Diego, and the Port of San Diego) meeting held on June 1 and June 16, 2011
- Revisions were made based upon comments received by local agency staff and Steering Committee members

Purposes of Airspace Protection Policies



- Preserve airspace required for established approach and departure procedures
- Avoid hazards to air navigation (wildlife attractants, visual/electronic interference)



Current SDIA ALUCP Airspace Policy



SAN DIEGO COUNTY
REGIONAL AIRPORT AUTHORITY

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SAN DIEGO COUNTY

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Airspace Protection Terms



- Part 77 (14 CFR Part 77)
 - Federal regulations describing airspace protection processes and criteria
- TERPS (U.S. Standard for Terminal Instrument Procedures)
 - Criteria defining airspace and obstacle clearance requirements for instrument flight procedures
- Threshold Siting Surfaces (TSS)
 - Used to determine where a runway approach threshold must be established

Airspace Policy – Current ALUCP



- Apply City of San Diego's Airport Approach Overlay Zone (AAOZ) to determine acceptable building heights
- Use Part 77 criteria to determine compatibility of proposed projects



ATAG Discussions



SAN DIEGO COUNTY
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ATAG SDIA Subcommittee



- Met from 2006 through 2007
- Previous consultant suggestions for consideration:
 - Keeping structure heights below Part 77 surfaces is not practical due to terrain penetrations
 - Use TERPS surfaces to define critical airspace
 - Consider 50-foot buffer below TERPS airspace



Technical Analysis



SAN DIEGO COUNTY
REGIONAL AIRPORT AUTHORITY

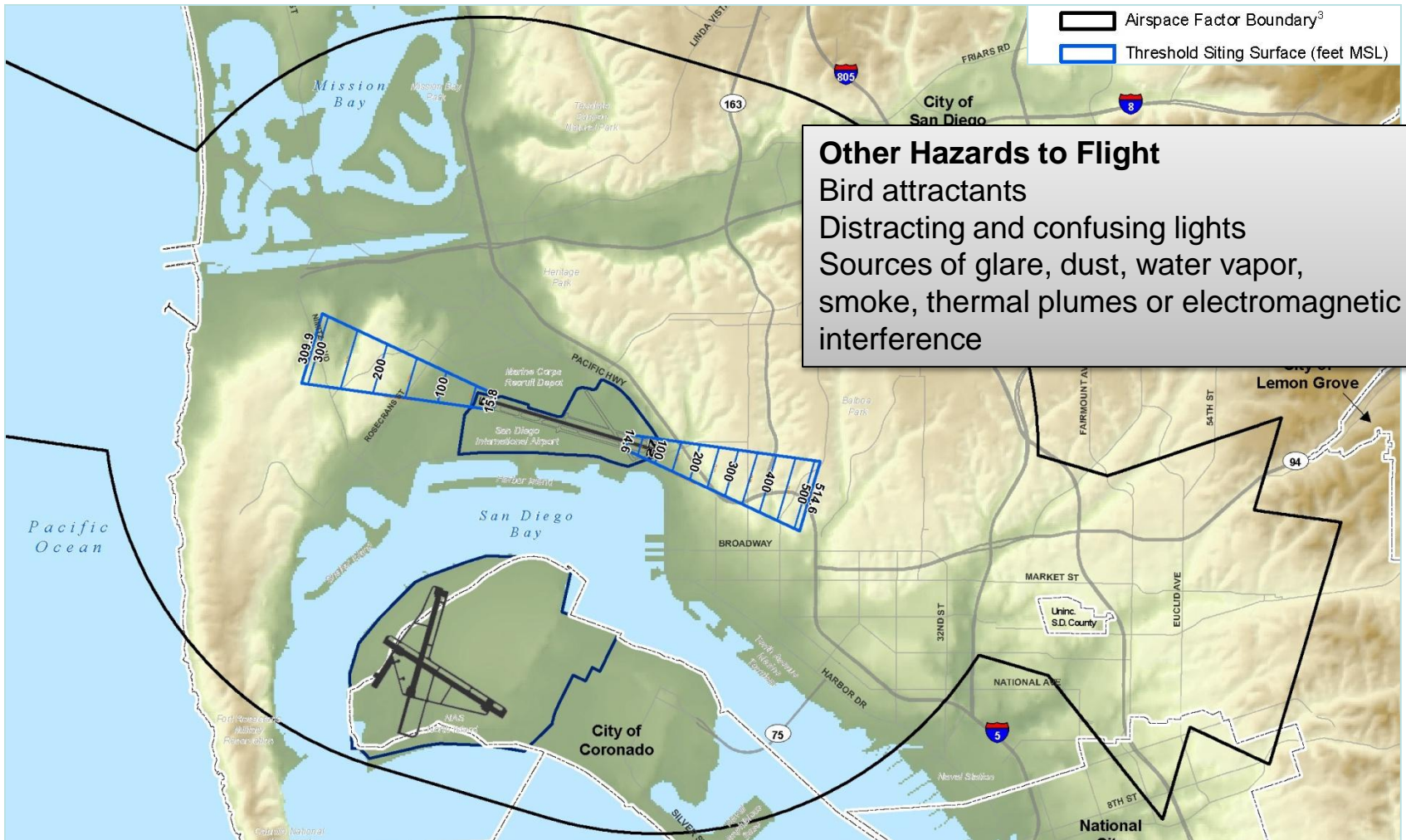
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SAN DIEGO COUNTY

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Proposed Airspace Factor Boundary - Revised



Proposed Airspace Factor Boundary - Revised



Airspace Protection Boundary Considerations



- Part 77 100:1 Notification Boundary
- Part 77 Imaginary Surfaces
- TERPS Approach Surfaces
- Critical Areas for Other Potential Hazards to Flight
 - Wildlife Attractants, Visual Hazards, Sources of Electromagnetic Interference, Thermal Plumes, etc.

Proposed Airspace Factor Boundary

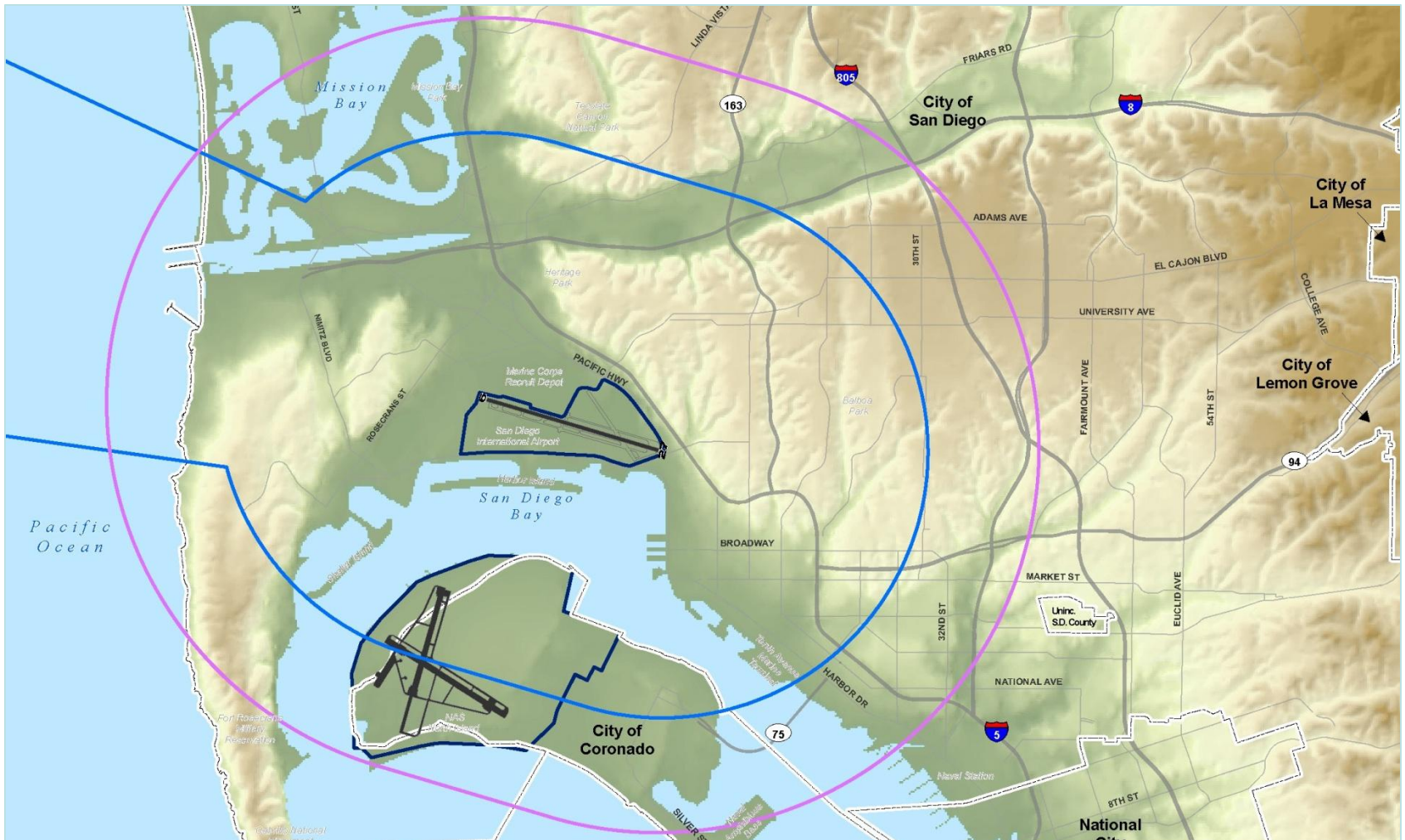


- Boundary should cover the area within which FAA airspace protection policies that are most critical to the operation of SDIA apply:
 - Part 77, Subparts B and C, 100:1 notification surface boundary and imaginary airspace surfaces
 - The TERPS approach surfaces for both runway ends
 - The FAA's Threshold Siting Surfaces (TSS) criteria
 - Critical Areas for Other Potential Hazards to Flight

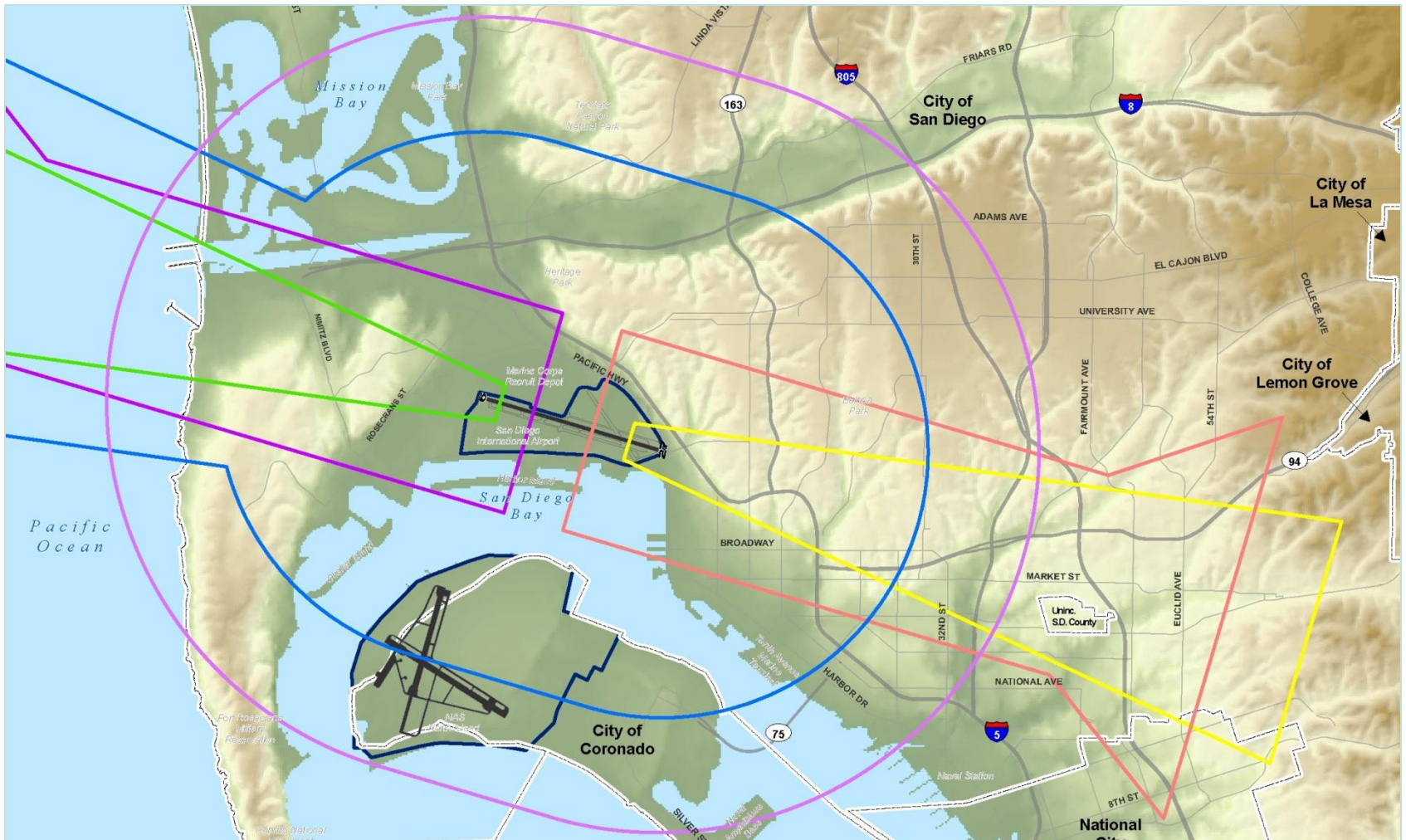
Proposed Airspace Factor Boundary



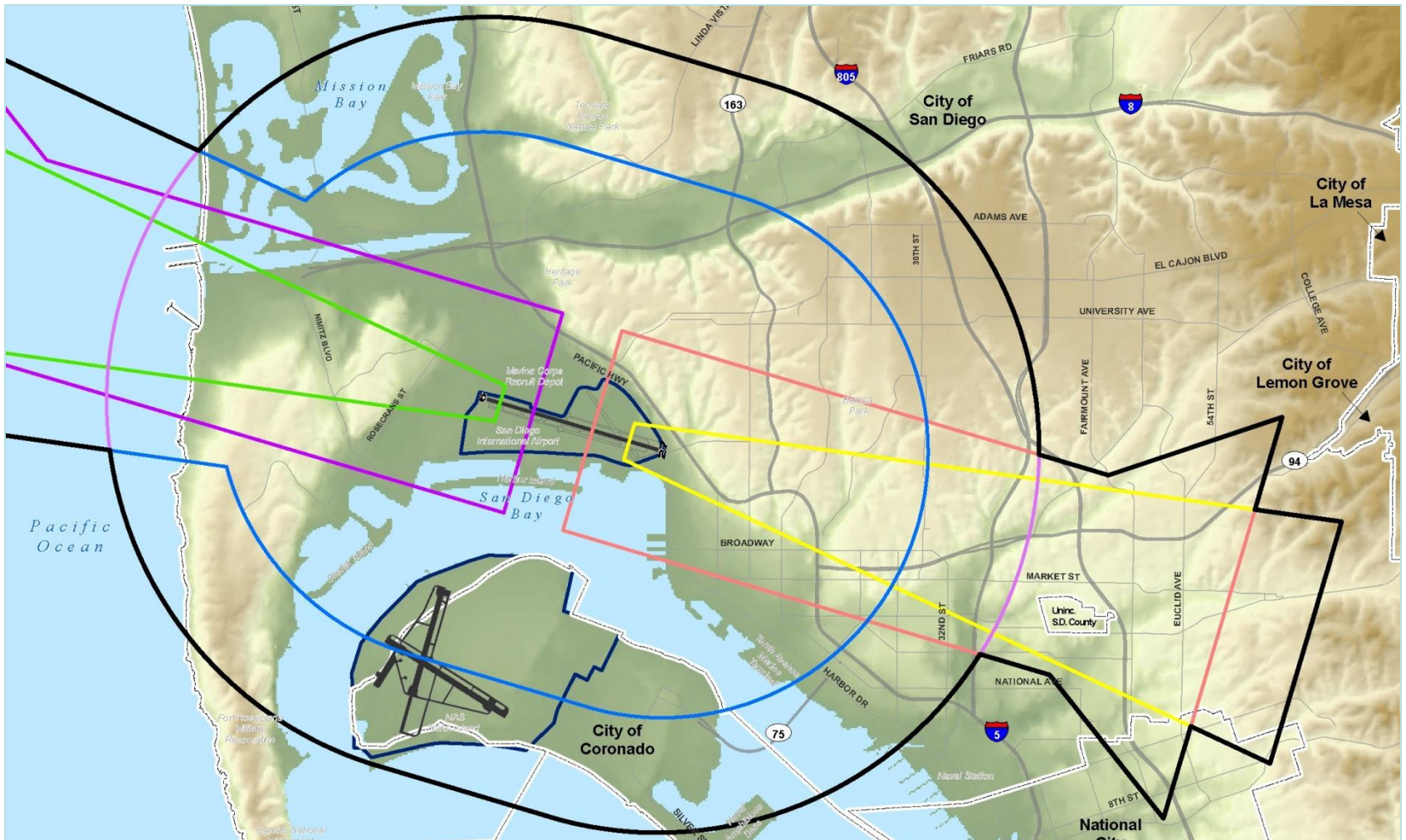
Proposed Airspace Factor Boundary



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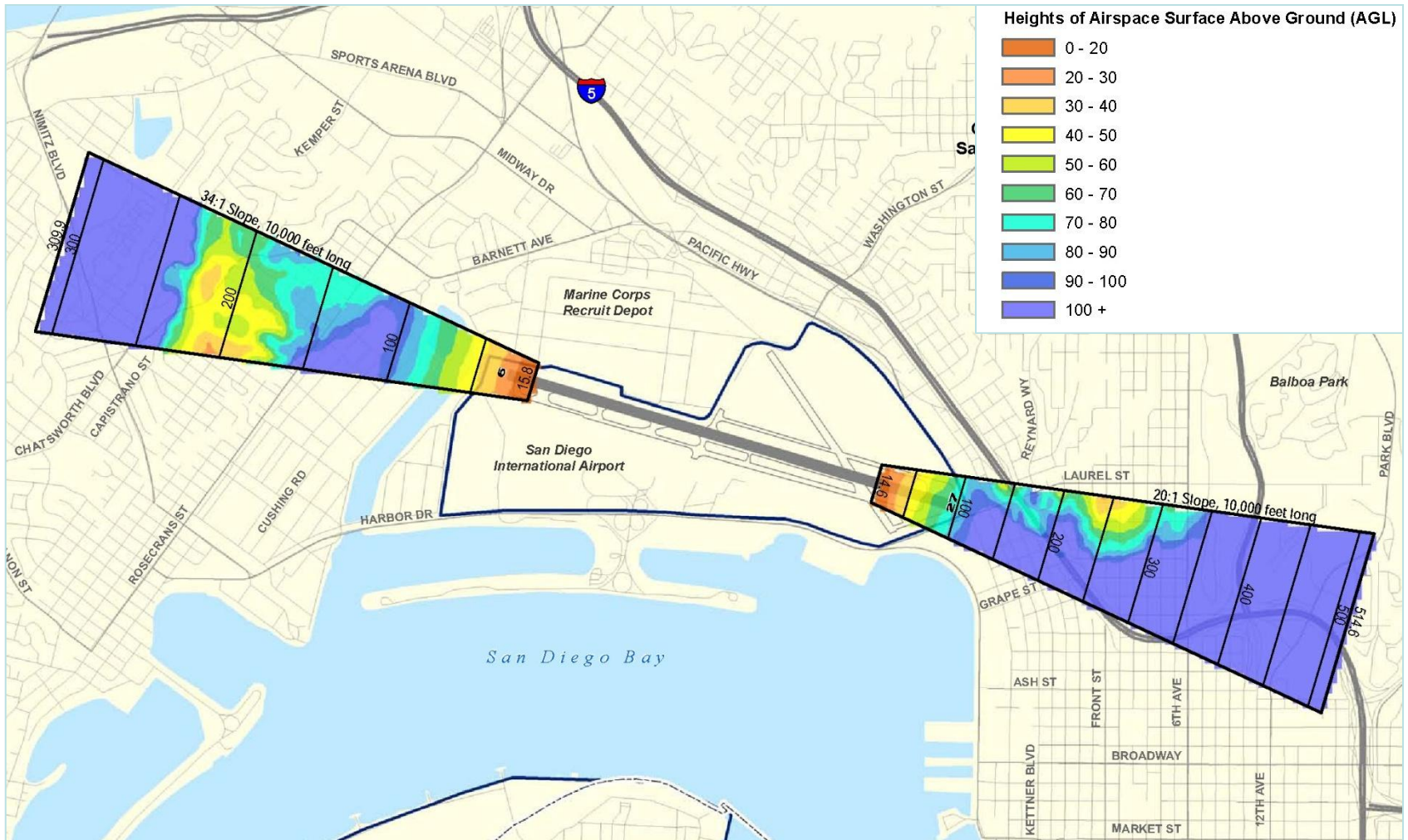
Proposed Airspace Factor Boundary



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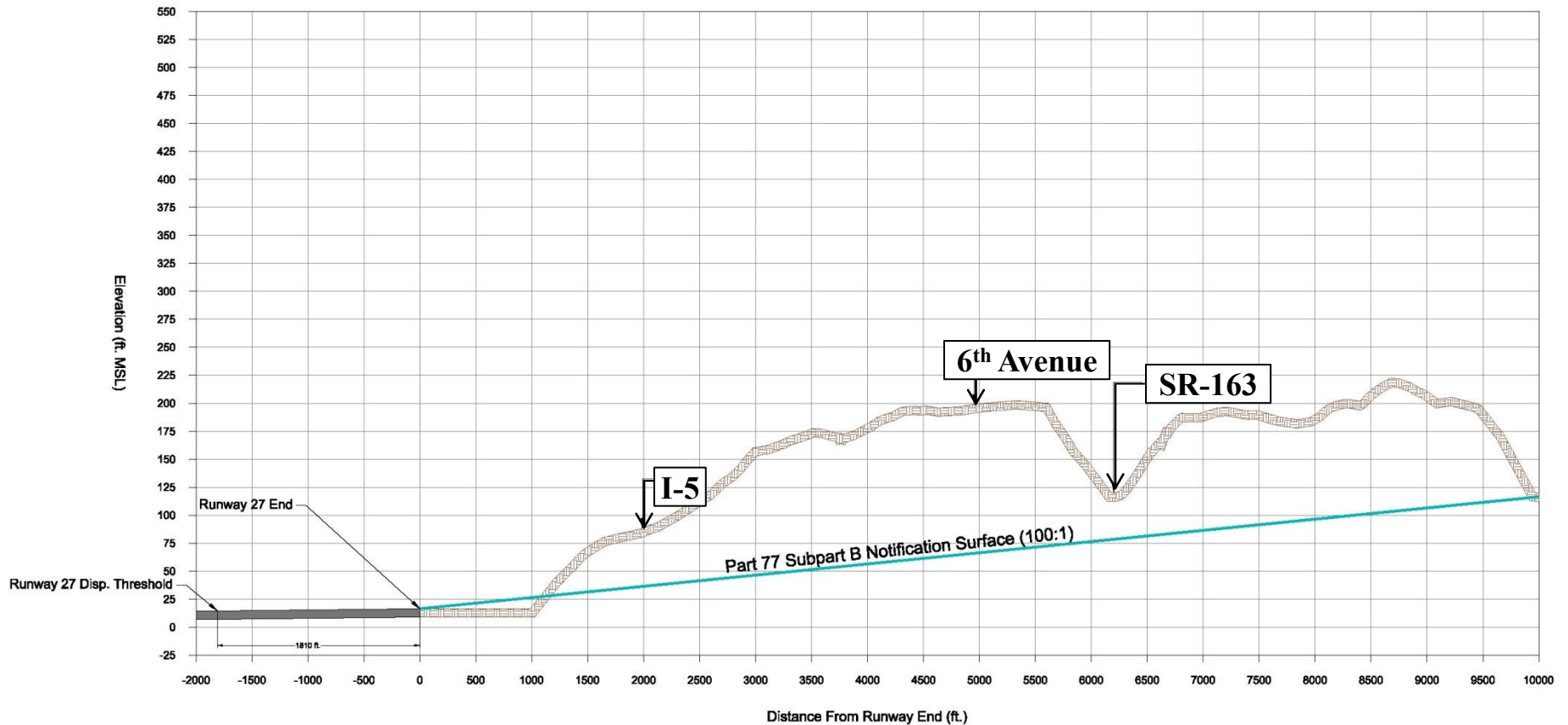
Threshold Siting Surfaces



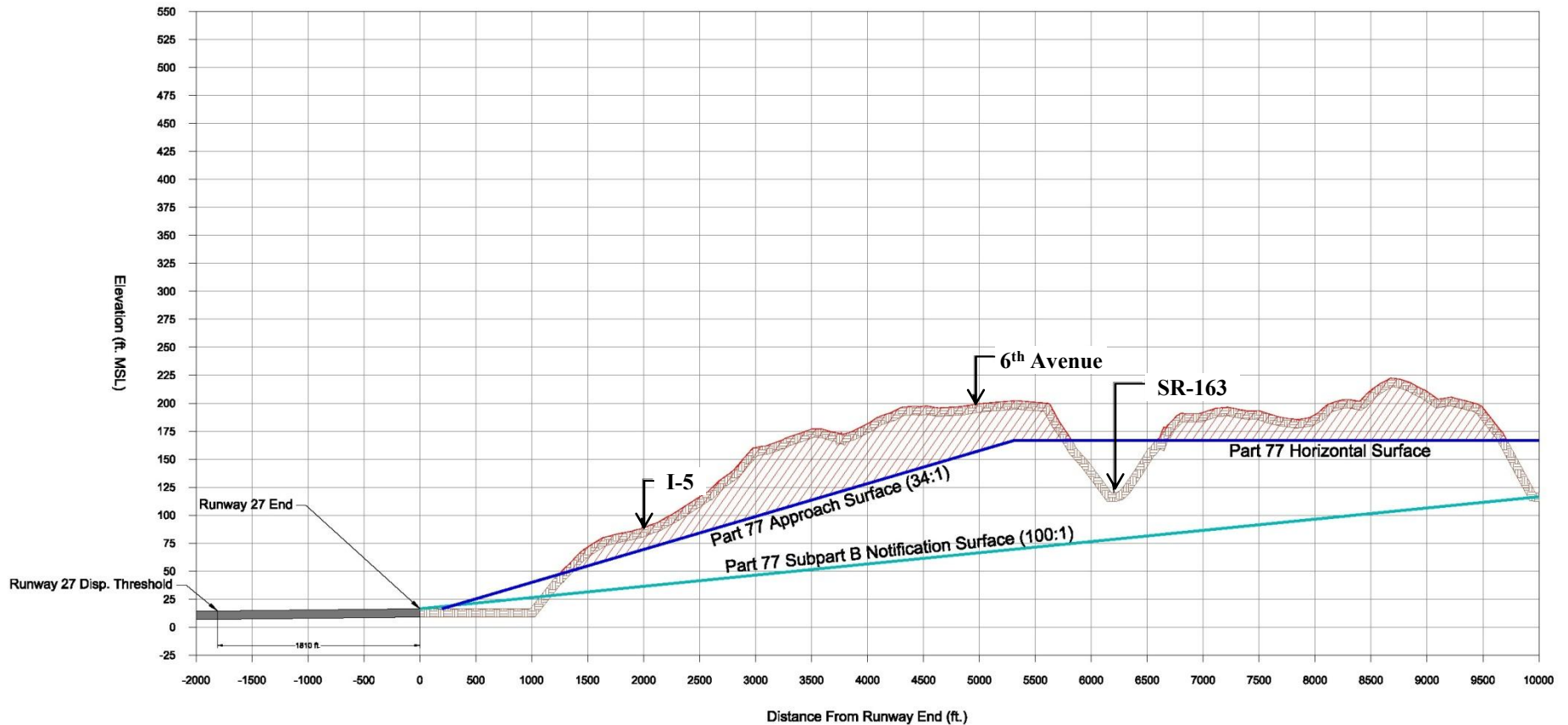
Proposed Airspace Factor Boundary - Revised



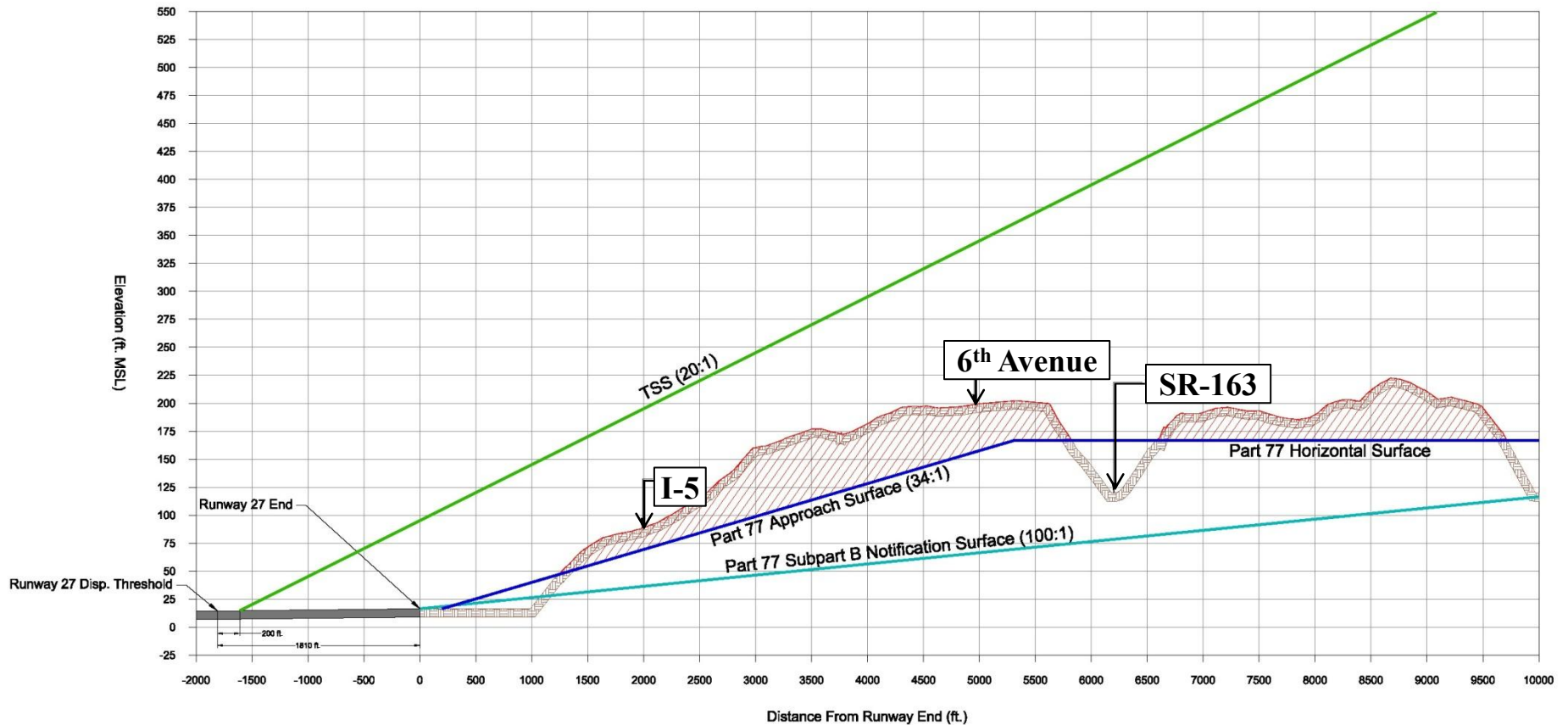
Cross-section of Runway 27 Approach Airspace



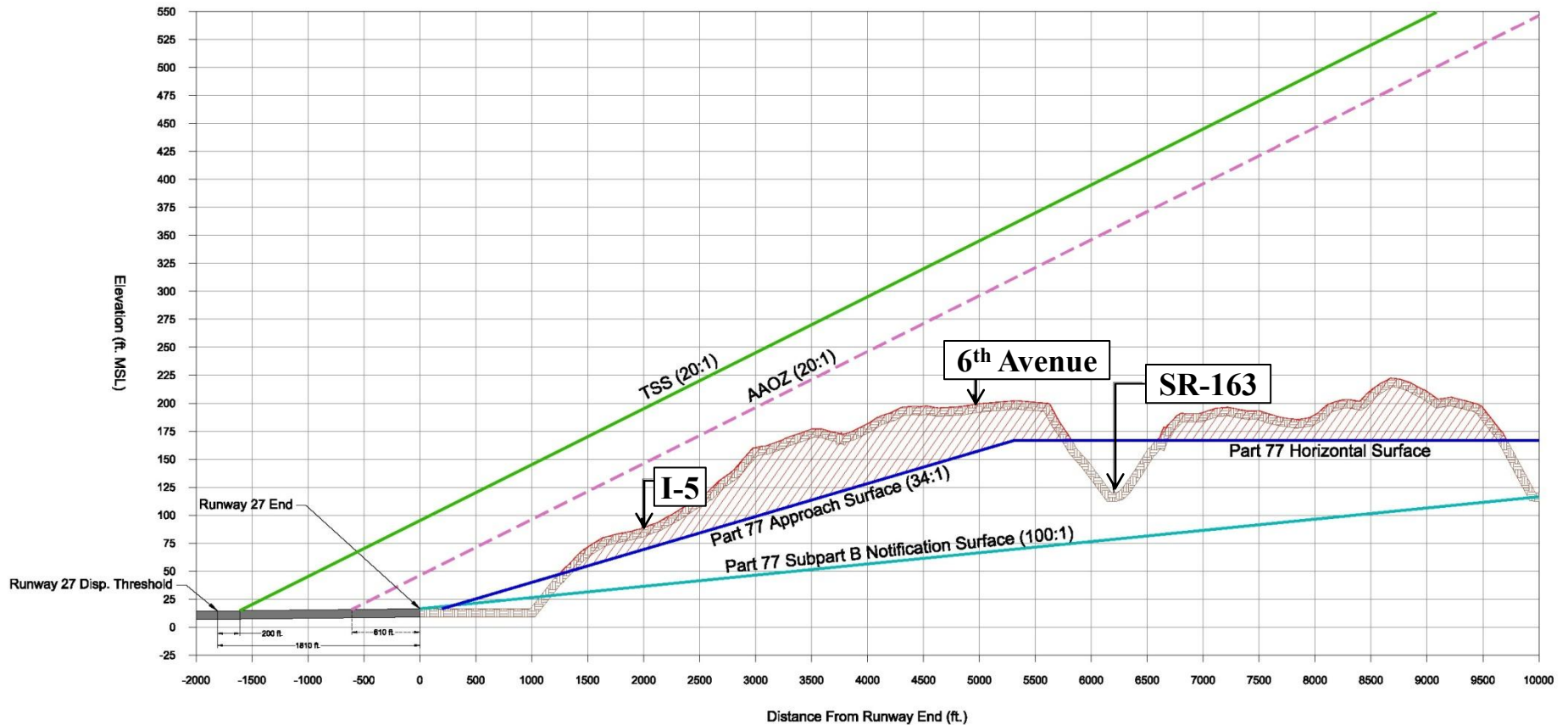
Cross-section of Runway 27 Approach Airspace



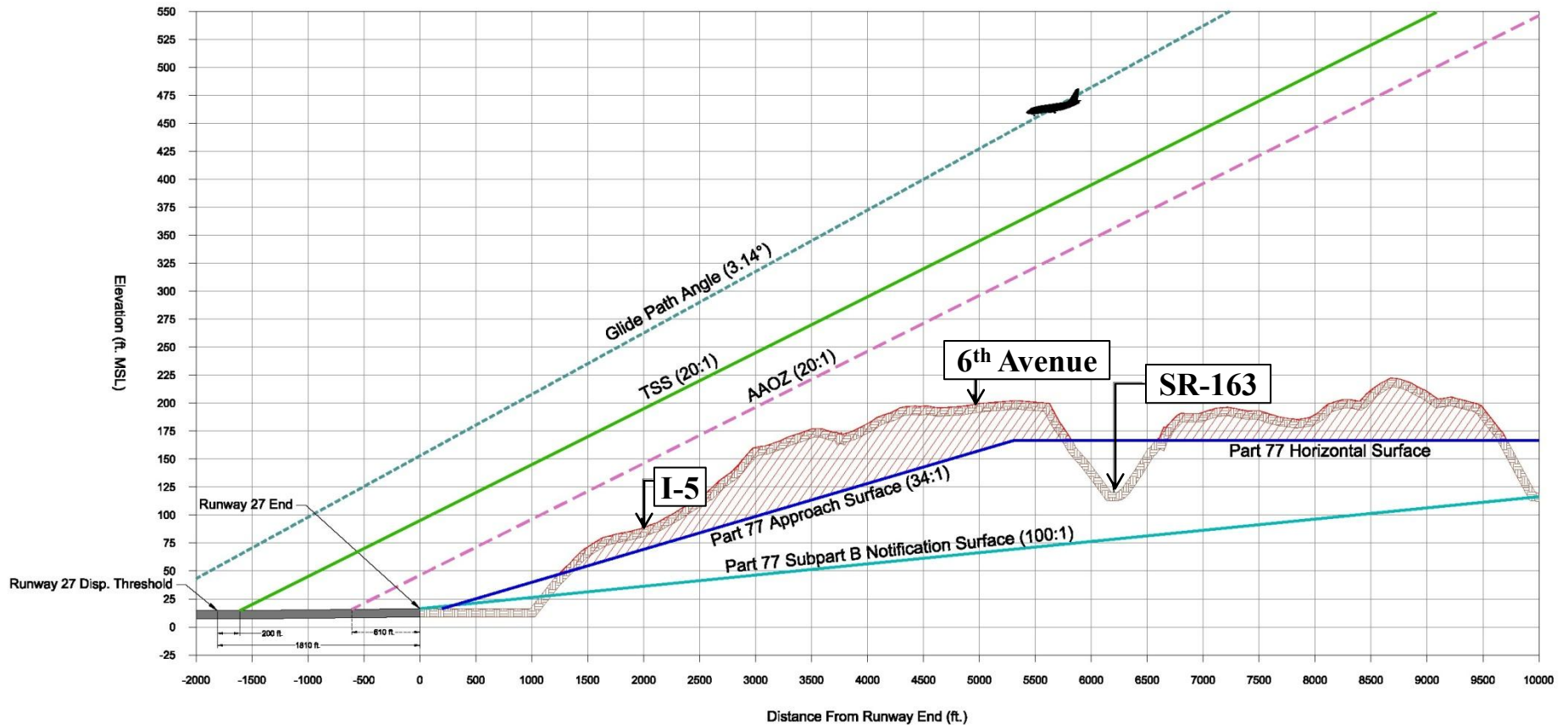
Cross-section of Runway 27 Approach Airspace



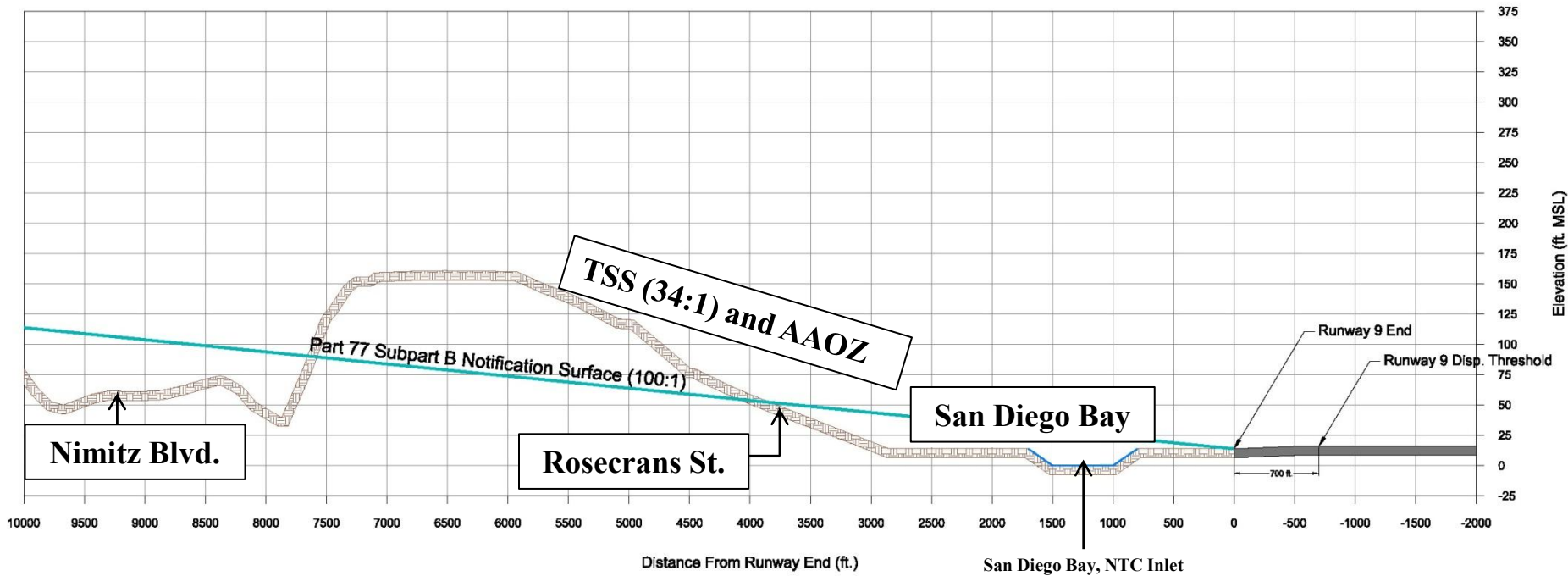
Cross-section of Runway 27 Approach Airspace



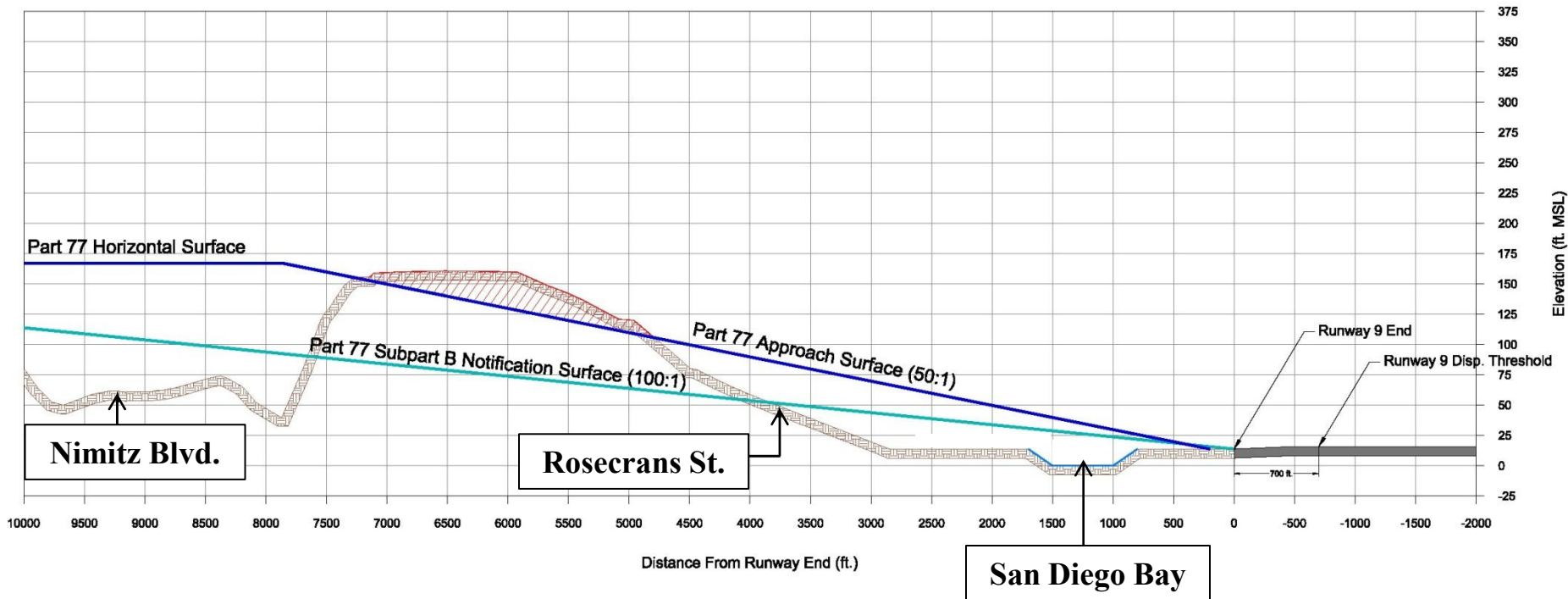
Cross-section of Runway 27 Approach Airspace



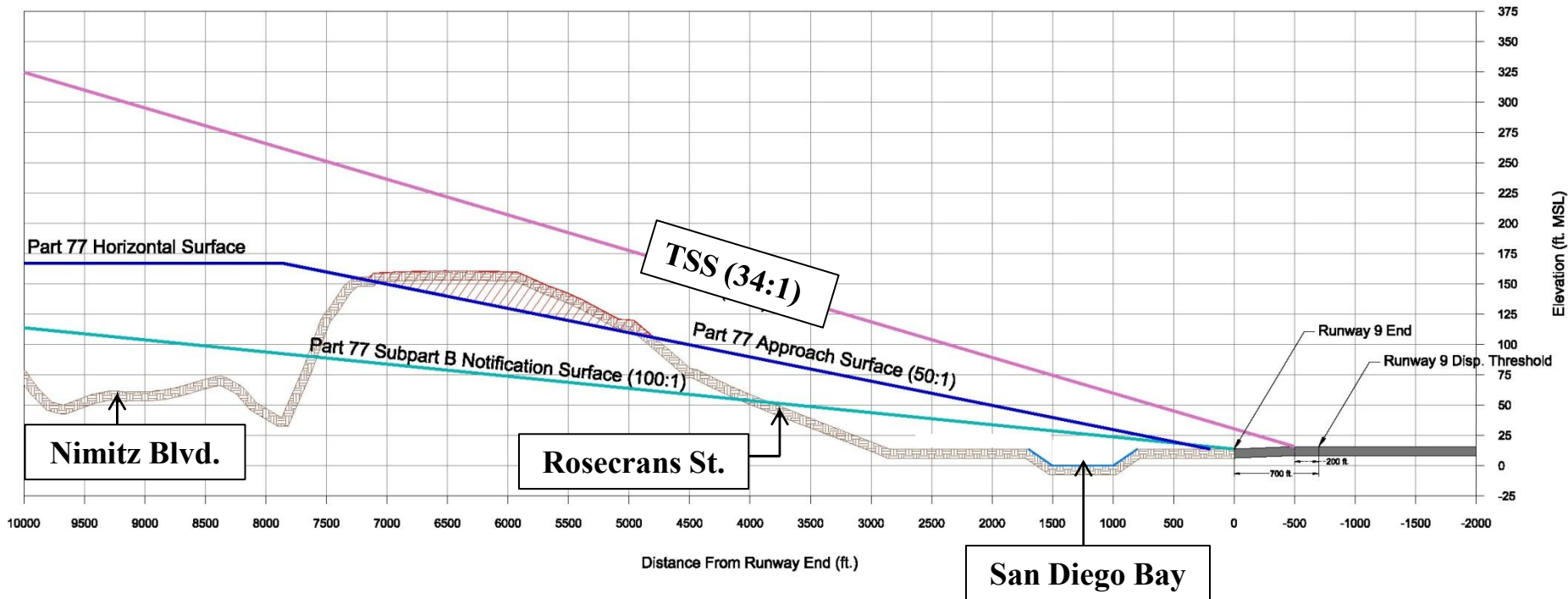
Cross-section of Runway 9 Approach Airspace



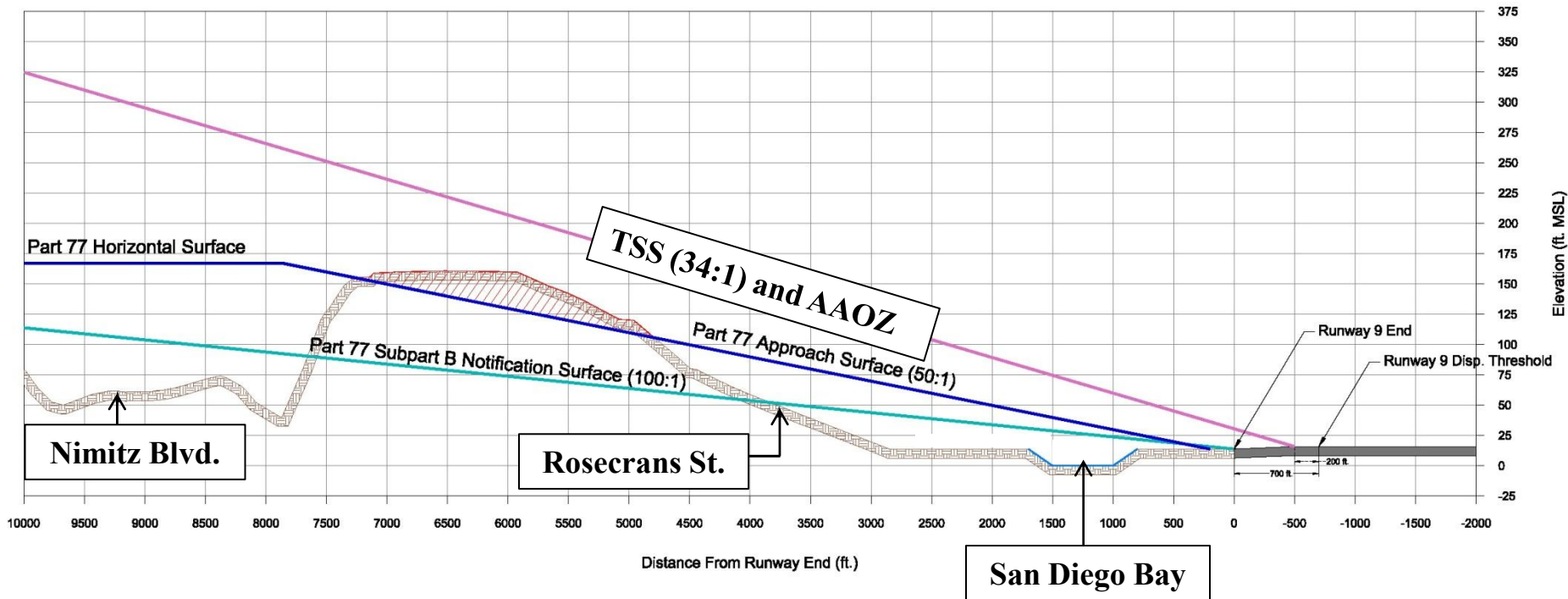
Cross-section of Runway 9 Approach Airspace



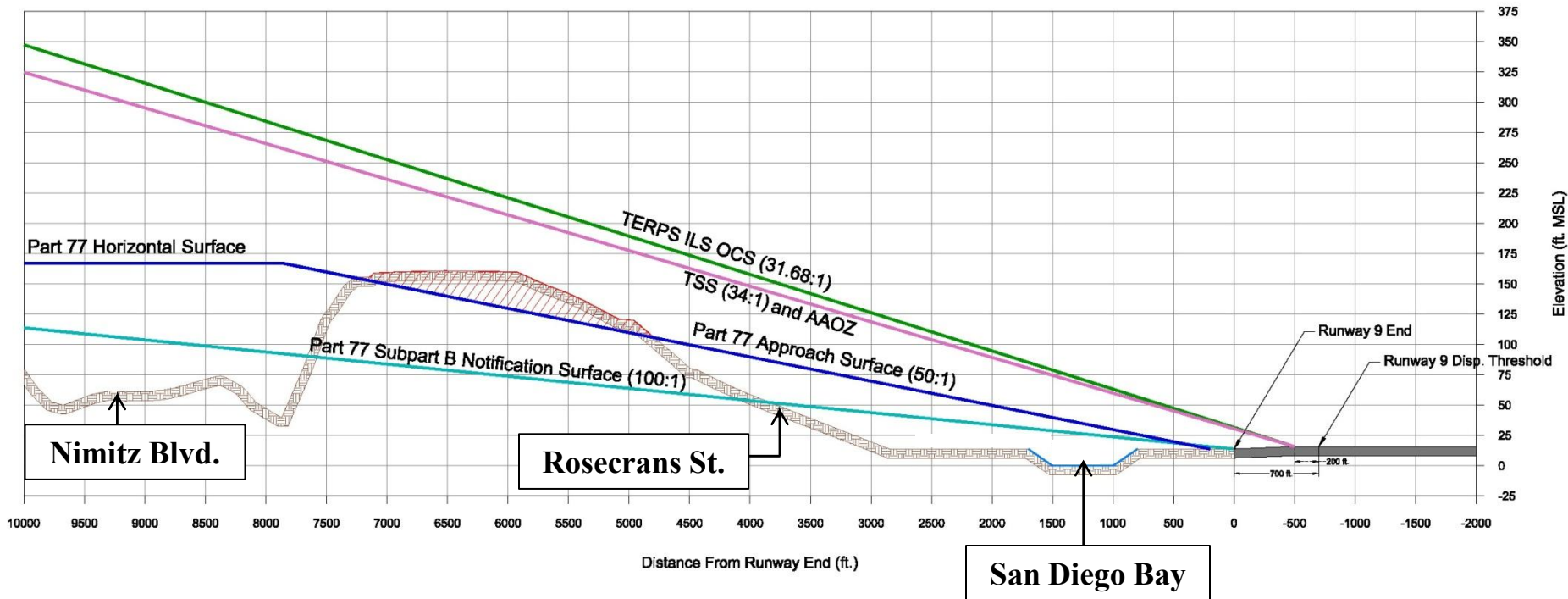
Cross-section of Runway 9 Approach Airspace



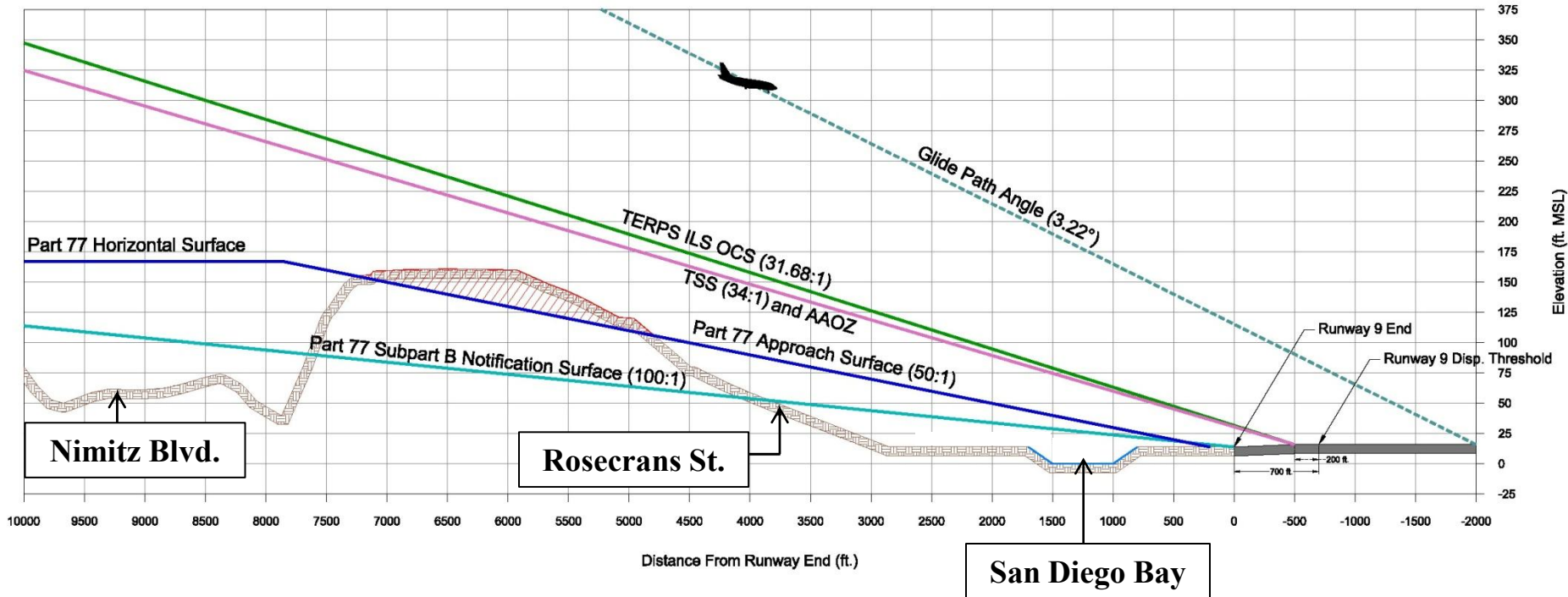
Cross-section of Runway 9 Approach Airspace



Cross-section of Runway 9 Approach Airspace



Cross-section of Runway 9 Approach Airspace





Potential Airspace Policies



SAN DIEGO COUNTY
REGIONAL AIRPORT AUTHORITY

AIRPORT LAND USE COMMISSION
SAN DIEGO COUNTY

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Purposes of Airspace Protection Policies



- Preserve airspace required for established approach and departure procedures
- Avoid hazards to air navigation (wildlife attractants, visual/electronic interference)

Proposed Airspace Policies



- **Notification to FAA of Proposed Construction**
 - Sponsors of proposed projects that exceed the FAA height criteria must submit to the FAA a Notice of Proposed Construction or Alteration
 - Project sponsor shall include FAA Determination with development application

Proposed Airspace Policies



- **Runway Approach Protection Criteria**
 - Proposed structures penetrating the Threshold Siting Surfaces (TSSs) for each runway shall not be allowed

Proposed Airspace Policies



- **Obstruction Compatibility Criteria**
 - Proposed project is compatible if it is not an obstruction
 - Obstructions may be conditionally compatible if:
 - Object would not penetrate TSS; and
 - FAA determines that the object would not be a hazard; and
 - Object would not:
 - Increase the ceiling or visibility minimums
 - Diminish operational efficiency and capacity of SDIA
 - Conflict with the visual flight rules (VFR) airspace

Proposed Airspace Policies



- **Obstruction Compatibility Criteria**
 - Sponsors of proposed obstructions deemed conditionally compatible shall:
 - Install marking and lighting as advised by FAA
 - Dedicate aviation easement to SDIA

Proposed Airspace Policies



- **Other Hazards to Flight**
 - Incompatible within Airspace Factor Boundary
 - Bird attractants
 - Distracting and confusing lights
 - Sources of glare, dust, water vapor, smoke
 - Sources of thermal plumes
 - Sources of electromagnetic interference



- Extra Slides



Background: Federal Airspace Protection Process



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The FAA Role in Airspace Protection



- Federal law requires the FAA to manage and ensure the safe use of the navigable airspace
- The FAA has established regulations (Part 77) relating to those requirements
- The FAA has no authority to regulate land use and development

Federal Notice Requirements



- FAA must be notified of proposed structures or alterations to existing structures:
 - Taller than 200 feet AGL anywhere
 - Taller than an imaginary surface rising from the runway at a slope of 100:1 outward 20,000 feet (just under 4 miles)
- This is a Federal law that applies whether or not it is acknowledged in state law or local ordinances.



Background: State Law and Guidance



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State Law



- Prohibits construction that would be a hazard to air navigation
- Requires Caltrans approval of proposed structures exceeding a height of 500 feet AGL

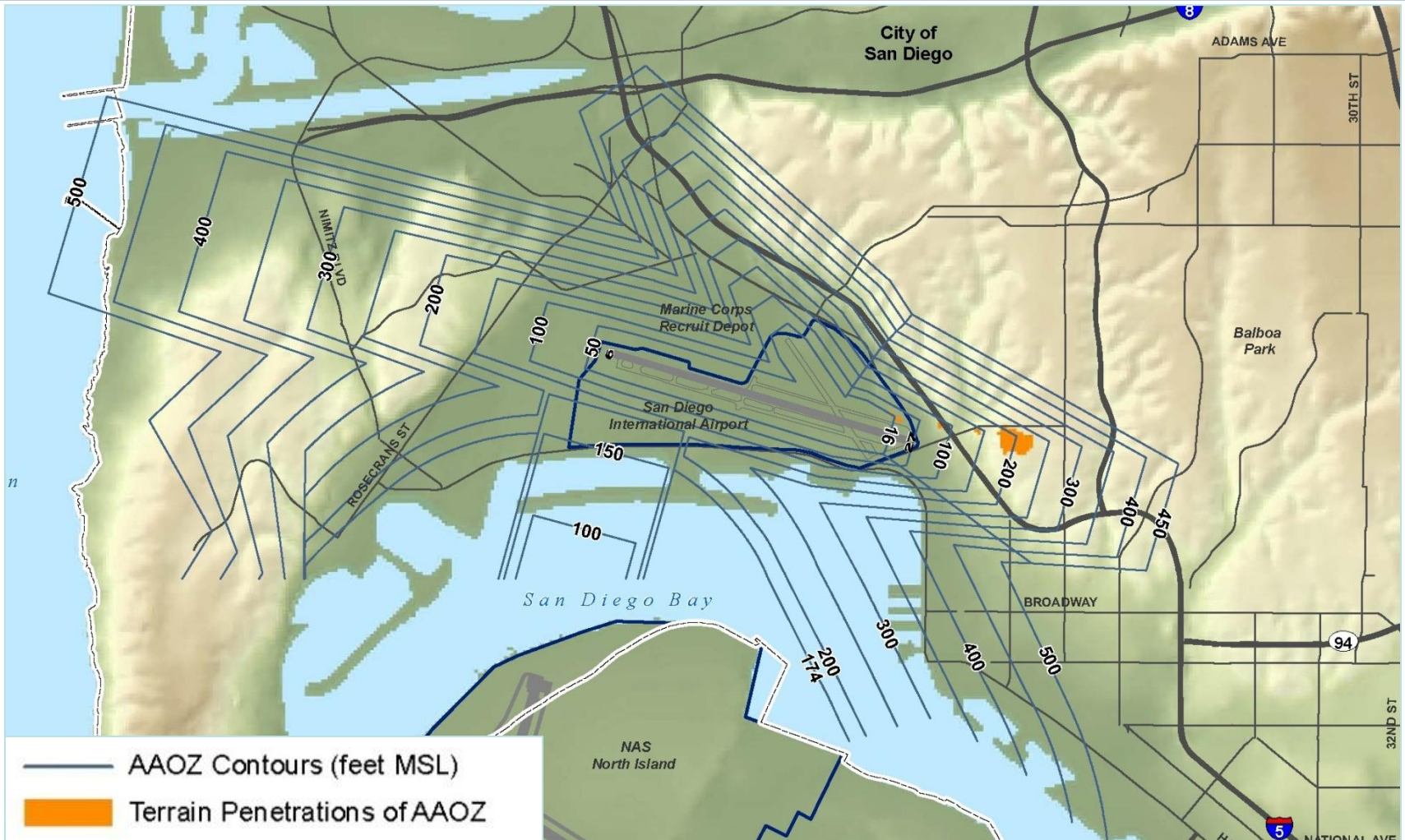
* PUC Sections 21659 and 21657

Caltrans Handbook Guidance



- Limit structure heights to no higher than the Part 77 imaginary surfaces
- Supplement Part 77 surfaces with TERPS surfaces where TERPS are lower than Part 77
- Avoid all hazards to flight, including:
 - Hazardous wildlife attractants
 - Visual and electronic hazards

City of San Diego AAOZ



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