Appendix C

Correspondence with California Department of Transportation (Caltrans)

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DEPARTMENT OF TRANSPORTATION
AERONAUTICS Program– M.S. #40
1120 N STREET
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 654-4959
FAX (916) 653-9531
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

October 26, 2023

Ralph Redman, Manager,
Planning & Environmental Affairs
San Diego International Airport

Electronically Sent
rredman@san.org

Dear Mr. Redman:

On April 14, 2023, the California Department of Transportation, Aeronautics Program received your letter requesting the review and acceptance of the updated San Diego International Airport (SDIA) Airport Layout Plan (ALP). Currently, the Airport Land Use Compatibility Plan (ALUCP) for the SDIA is being updated, and per Public Utilities Code section 21675(a), the ALUCP must be based on the most recent ALP.

Per your findings, the updated ALP has no effect on the draft ALUCP, as it proposes no changes to the runway, runway thresholds, or runway protection zones. The approved ALP and draft ALUCP document must be consistent with one another.

This letter serves as the Aeronautics Program review and acceptance of the submitted SDIA ALP, for the inclusion into the draft ALUCP. Please note that any proposed changes must be reviewed and approved by the Aeronautics Program to ensure the State's participation.

If you have any questions, please contact me at (916) 879-6528 or by email at jonathan.huff@dot.ca.gov.

Sincerely,

Original signed by:

Jonathan Huff
Associate Transportation Planner

Mark Johnson

From: Redman Ralph <rredman@san.org>
Sent: Thursday, September 28, 2023 10:20 AM
To: Friedman, Matthew L@DOT
Cc: Miles, Patrick J@DOT; Huff, Jonathan P@DOT; Mark Johnson; Smith, Michael D@DOT; Gowens Ed
Subject: RE: SDIA ALUCP Update - Caltrans review and acceptance of ALP/Forecast

Thanks Matt. If you have any questions regarding the SAN ALP and Forecast acceptance letter please let me know.

Ralph Redman
Manager, Planning & Environmental Affairs
Office 619.400.2464 | **Mobile** 619.380.7792
rredman@san.org
SAN.ORG

SAN DIEGO INTERNATIONAL AIRPORT LET'S GO.

From: Friedman, Matthew L@DOT <matthew.friedman@dot.ca.gov>
Sent: Thursday, September 28, 2023 5:19 AM
To: Redman Ralph <rredman@san.org>
Cc: Miles, Patrick J@DOT <patrick.miles@dot.ca.gov>; Huff, Jonathan P@DOT <Jonathan.Huff@dot.ca.gov>; Mark Johnson <mjohnson@ricondo.com>; Smith, Michael D@DOT <michael.smith@dot.ca.gov>; Gowens Ed <egowens@san.org>
Subject: RE: SDIA ALUCP Update - Caltrans review and acceptance of ALP/Forecast

Hi Ralph,

The Caltrans Aeronautics Program does not take official positions regarding laws passed by the CA State Legislature. However, the Caltrans Aeronautics Program does review proposed local land use plans by local agencies/entities that impact airports, and the review of those proposed plans/actions are based on the specific facts/plans of the proposals. Local Agencies must still follow the density requirements and land use compatibility near airports under the State Aeronautics Act and guidelines of the Airport Land Use Planning Handbook.

Comments regarding the ALP are forthcoming.

Matt Friedman, MRP, MAHL, DDiv (Hon)
Chief, Office of Aviation Planning
Aeronautics Program
Caltrans

1120 N St.
Sacramento, CA 95814
(916)521-4743

From: Redman Ralph <rredman@san.org>
Sent: Thursday, August 10, 2023 4:37 PM
To: Friedman, Matthew L@DOT <matthew.friedman@dot.ca.gov>
Cc: Miles, Patrick J@DOT <patrick.miles@dot.ca.gov>; Huff, Jonathan P@DOT <Jonathan.Huff@dot.ca.gov>; Mark Johnson <mjohnson@ricondo.com>; Smith, Michael D@DOT <michael.smith@dot.ca.gov>; Gowens Ed <egowens@san.org>
Subject: RE: SDIA ALUCP Update - Caltrans review and acceptance of ALP/Forecast

EXTERNAL EMAIL. Links/attachments may not be safe.

Thank you. I look forward to hearing from you and if you need any additional information, please let me know.

Ralph Redman
Manager, Planning & Environmental Affairs
Office 619.400.2464 | **Mobile** 619.380.7792
rredman@san.org
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From: Friedman, Matthew L@DOT <matthew.friedman@dot.ca.gov>
Sent: Thursday, August 10, 2023 4:22 PM
To: Redman Ralph <rredman@san.org>
Cc: Miles, Patrick J@DOT <patrick.miles@dot.ca.gov>; Huff, Jonathan P@DOT <Jonathan.Huff@dot.ca.gov>; Mark Johnson <mjohnson@ricondo.com>; Smith, Michael D@DOT <michael.smith@dot.ca.gov>; Gowens Ed <egowens@san.org>
Subject: RE: SDIA ALUCP Update - Caltrans review and acceptance of ALP/Forecast

Hi Ralph,

Thanks for your important questions. The interpretation for San Diego would also be relevant for other urban areas. I am sharing your concerns with other Caltrans colleagues in search of a useful response.

I will also check on the status of the ALP review.

Matt Friedman, MRP, MAHL, DDiv (Hon)
Chief, Office of Aviation Planning

Aeronautics Program
Caltrans
1120 N St.
Sacramento, CA 95814
(916)521-4743

From: Redman Ralph <rredman@san.org>
Sent: Thursday, August 10, 2023 4:05 PM
To: Friedman, Matthew L@DOT <matthew.friedman@dot.ca.gov>
Cc: Miles, Patrick J@DOT <patrick.miles@dot.ca.gov>; Huff, Jonathan P@DOT <Jonathan.Huff@dot.ca.gov>; Mark Johnson <mjohnson@ricondo.com>; Smith, Michael D@DOT <michael.smith@dot.ca.gov>; Gowens Ed <egowens@san.org>
Subject: RE: SDIA ALUCP Update - Caltrans review and acceptance of ALP/Forecast

Matt – I wanted to follow up on my earlier correspondence to see if you had any questions or need additional information as it relates to our requested letter of concurrence.

In addition, we have another issue on which our agency leadership has asked that we solicit Caltrans input, as this is a more recent development not addressed by Handbook guidance.

As you are likely aware, the enactment of Senate Bills 9 and 10 require local agencies to ministerially permit minor subdivisions with the policy goal of increasing opportunities for more housing units. This has potential for conflict with Handbook guidance to limit densities within airport vicinities, particularly dense urban settings such as that in which San Diego International Airport is situated.

Because the Handbook provides that dense urban densities are to be based upon the average of existing uses, we had a technical consultant that computed the densities in place at the time of the 2014 ALUCP adoption and codified those averages as the density limits for ALUCP consistency.

That ALUCP made provision for accessory dwelling units (ADUs) NOT to be counted against safety zone density limits, but concurrently provides that any housing density bonuses permissible under local agency code DO count against the same density limits.

Given the new laws, what is the position of Caltrans with respect to what policy our updated ALUCP should take: should we continue to regard any new density beyond ADUs as subject to ALUCP density limits as potential encroachment upon the airport that creates additional risks, or must we expand the ADU exemption from density limits to include any new units permitted under the new laws?

This will be a central issue in our ALUCP update, and the input of our State governing agency is critical in administering our ALUC mandate. Your guidance is kindly requested.

Regards,
Ralph

Ralph Redman

Manager, Planning & Environmental Affairs
Office 619.400.2464 | **Mobile** 619.380.7792
rredman@san.org
SAN.ORG

From: Redman Ralph
Sent: Tuesday, July 11, 2023 11:28 AM
To: Friedman, Matthew L@DOT <matthew.friedman@dot.ca.gov>
Cc: Miles, Patrick J@DOT <patrick.miles@dot.ca.gov>; Huff, Jonathan P@DOT <Jonathan.Huff@dot.ca.gov>; Mark Johnson <mjohnson@ricondo.com>; Smith, Michael D@DOT <michael.smith@dot.ca.gov>; Gowens Ed <egowens@san.org>
Subject: RE: SDIA ALUCP Update - Caltrans review and acceptance of ALP/Forecast

Matt – I'm following up to see if any additional information is needed for the issuance of the SAN ALP and Forecast acceptance letter. As directed under California Public Utilities Code Section 21675(a), we'll need demonstrate that Caltrans has provided its acceptance and include the letter in the appendices of the updated ALUCP. I've attached the letter that was previously provided for the 2014 SAN ALUCP.

The update is progressing and once we have more information to share on the proposed plan revisions, I'll be reaching out to coordinate a discussion. If you have any questions or need additional information, please let me know.

Sincerely,
Ralph

Ralph Redman
Manager, Planning & Environmental Affairs
Office 619.400.2464 | **Mobile** 619.380.7792
rredman@san.org
SAN.ORG

From: Smith, Michael D@DOT <michael.smith@dot.ca.gov>
Sent: Thursday, June 1, 2023 12:14 PM
To: Friedman, Matthew L@DOT <matthew.friedman@dot.ca.gov>

Cc: Miles, Patrick J@DOT <patrick.miles@dot.ca.gov>; Redman Ralph <rredman@san.org>; Huff, Jonathan P@DOT <Jonathan.Huff@dot.ca.gov>
Subject: RE: SDIA ALUCP Update - Caltrans review and acceptance of ALP/Forecast

Matt,
Our office has reviewed the SAN ALP and Forecast and have no comments.
Thanks,
Mike

Michael Smith
Aviation Safety Officer
Caltrans/Div of Aeronautics
916-879-6431 (Note new work phone)
https://dot.ca.gov/programs/aeronautics

From: Miles, Patrick J@DOT <patrick.miles@dot.ca.gov>
Sent: Thursday, May 25, 2023 12:01 PM
To: Smith, Michael D@DOT <michael.smith@dot.ca.gov>
Subject: FW: SDIA ALUCP Update - Caltrans review and acceptance of ALP/Forecast

FYI

From: Redman Ralph <rredman@san.org>
Sent: Thursday, May 25, 2023 11:50 AM
To: Huff, Jonathan P@DOT <Jonathan.Huff@dot.ca.gov>
Cc: Friedman, Matthew L@DOT <matthew.friedman@dot.ca.gov>; Tabshouri, Tarek I@DOT <tarek.tabshouri@dot.ca.gov>; Miles, Patrick J@DOT <patrick.miles@dot.ca.gov>; Mark Johnson <mjohnson@ricondo.com>
Subject: RE: SDIA ALUCP Update - Caltrans review and acceptance of ALP/Forecast

Jonathan – I wanted to follow up to see if Caltrans had any questions or need for additional information regarding our request for ALP and forecast acceptance for use in the SDIA ALUCP update. If you have any questions or would like to further discuss, please let me know.

Thanks,
Ralph

Ralph Redman
Manager, Planning & Environmental Affairs
Office 619.400.2464 | **Mobile** 619.380.7792
rredman@san.org
SAN.ORG

From: Huff, Jonathan P@DOT <Jonathan.Huff@dot.ca.gov>
Sent: Friday, April 14, 2023 1:26 PM
To: Redman Ralph <rredman@san.org>
Cc: Friedman, Matthew L@DOT <matthew.friedman@dot.ca.gov>; Tabshouri, Tarek I@DOT <tarek.tabshouri@dot.ca.gov>; Miles, Patrick J@DOT <patrick.miles@dot.ca.gov>
Subject: RE: SDIA ALUCP Update - Caltrans review and acceptance of ALP/Forecast

Good afternoon Ralph,

The ALP will be evaluated by the Technical Services group and the Airport Safety group. I've copied the respective office chiefs, Tarek, and Pat in this response.

They may be able to provide a timeframe for evaluation.

Thanks,

JONATHAN HUFF
Office of Aviation Planning
Division of Aeronautics
Caltrans
1120 N St.
Sacramento, CA
Jonathan.Huff@dot.ca.gov
(916) 879-6528

From: Redman Ralph <rredman@san.org>
Sent: Friday, April 14, 2023 8:27 AM
To: Friedman, Matthew L@DOT <matthew.friedman@dot.ca.gov>
Cc: Gonzalez Amy <agonzale@san.org>; Mark Johnson <mjohnson@ricondo.com>; Gowens Ed <egowens@san.org>; Hollarn Garret <ghollarn@san.org>; Noyce Sidney <snoyce@san.org>; Huff, Jonathan P@DOT <Jonathan.Huff@dot.ca.gov>; Knack Sjohnna <sknack@san.org>
Subject: SDIA ALUCP Update - Caltrans review and acceptance of ALP/Forecast

Dear Mr. Friedman:

The San Diego County Regional Airport Authority (SDCRAA), acting in its capacity as the Airport Land Use Commission (ALUC) for San Diego County, has begun technical studies leading to the update of the Airport Land Use Compatibility Plan (ALUCP) for San Diego International Airport (SDIA).

As required, an ALUCP must be based upon a long-range airport master plan or an airport layout plan (ALP), with the approval of the California Department of Transportation, Division of Aeronautics. At this time, we are seeking written acceptance by the Caltrans Division of Aeronautics of the ALP and related Airport activity forecasts for use in our update of the SDIA ALUCP. Please see attachment for further information.

If you have any questions or need additional information, please let me know.

Sincerely,
Ralph

Ralph Redman
Manager, Planning & Environmental Affairs
Office 619.400.2464 | **Mobile** 619.380.7792
rredman@san.org
SAN.ORG

SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY

April 14, 2023

Mr. Matthew Friedman
Chief, Office of Aviation Planning
California Department of Transportation
Division of Aeronautics, MS 40
P. O. Box 942874
Sacramento, CA 94274-0001
matthew.friedman@dot.ca.gov

VIA EMAIL

RE: San Diego International Airport Land Use Compatibility Plan Update

Dear Mr. Friedman:

The San Diego County Regional Airport Authority (SDCRAA), acting in its capacity as the Airport Land Use Commission (ALUC) for San Diego County, has begun technical studies leading to the update of the Airport Land Use Compatibility Plan (ALUCP) for San Diego International Airport (SDIA), adopted in 2014.

California Public Utilities Code Section 21675(a) requires an ALUCP to be based upon a long-range airport master plan or an airport layout plan (ALP), with the approval of the California Department of Transportation, Division of Aeronautics. By this letter, and consistent with the requirements of Section 21675(a), the SDCRAA ALUC is seeking written acceptance by the Caltrans Division of Aeronautics of the enclosed 2021 ALP (Exhibit E-1) and related Airport activity forecasts (Table E-1) for use in our update of the SDIA ALUCP.

Enclosed is a draft technical appendix prepared for the updated ALUCP, which includes a copy of the ALP and summary discussions of the runway system and Airport operations and forecasts.

Please contact me if you have any questions regarding the enclosed information or would like to discuss any of the materials at rredman@san.org or (619) 400-2464. Thank you for your assistance.

PO Box 82776
San Diego, CA 92138-2776
www.san.org/aluc

AIRPORT LAND USE COMMISSION

SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY

Sincerely,

Mr. Ralph Redman
Planning Manager

Enclosures:
Appendix E, San Diego International Airport

cc: Ms. Amy Gonzalez, Director, Counsel Services, San Diego County Regional Airport Authority (with enclosures)
Mr. Mark R. Johnson, Associate Director, Ricondo & Associates, Inc. (with enclosures)

SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY

AIRPORT LAND USE COMMISSION

Appendix E

Airport Facilities and Operations

Prepared for

Airport Land Use Commission
San Diego County Regional Airport Authority

Prepared by

Ricondo

March 2023 | DRAFT

Table of Contents

List of Tables

List of Exhibits

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APPENDIX E
Airport Facilities and Operations

San Diego International Airport (SDIA or the Airport) is the primary air carrier airport in the San Diego region. The Airport is situated on 661 acres (some of which are State of California tidelands) and is surrounded by varying existing urban land uses. SDIA is operated by the San Diego County Regional Airport Authority (SDCRAA or the Airport Authority).

E.1 AIRPORT LAYOUT PLAN

The current Airport Layout Plan (ALP),[1] approved by the Federal Aviation Administration (FAA) in August 2021, is presented on **Exhibit E-1**. The ALP depicts all existing and planned Airport facilities, runway and taxiway safety areas, and the property boundary. It also includes data tables describing various components of the Airport.

Runway 9-27 is 9,401 feet in length and 200 feet in width. Displaced thresholds are required on each end of Runway 9-27, as depicted on **Exhibit E-2**, to ensure obstacle clearance by aircraft on approach to landing. This is needed because of the rising terrain and associated development to the east and to the west of the Airport. The Runway 9 threshold is displaced by 1,000 feet and Runway 27 threshold is displaced by 1,810 feet.

While the full runway length of 9,401 feet is available for takeoffs to the west on Runway 27, this is not the case for takeoffs on Runway 9. The primary reason is the absence of sufficient vacant land to provide the required Runway Safety Area (RSA) and Object Free Area (OFA) off the runway end. The required RSA and OFA must be provided along and adjacent to the east end of the active runway, shortening the runway length available for takeoff. Thus, the declared Takeoff Run Available (TORA) for Runway 9 is 8,280 feet.[2] This is illustrated in **Exhibit E-2**.

E.2 AIRPORT OPERATIONS

This section discusses instrument flight procedures, runway use, existing operations, and aircraft activity forecasts for SDIA. The activity forecast includes projections for enplaned passengers as well as aircraft activity. The use of the runway system and the airspace in the immediate Airport vicinity is a key consideration in airport land use compatibility planning. FAA Air Traffic Control (ATC) procedures directly influence the patterns of airport noise exposure, airspace protection areas, aircraft overflights, and the location and configuration of safety zones. The instrument procedures at SDIA are directly relevant to the airspace protection factor of the ALUCP as airspace surfaces are defined according to FAA criteria to meet obstacle clearance requirements.

[1] San Diego County Regional Airport Authority, *San Diego International Airport, Airport Layout Plan*, August 3, 2021, p. 5 of 12, Future Airport Layout Plan Drawing.
[2] San Diego County Regional Airport Authority, *San Diego International Airport, Airport Layout Plan*, August 3, 2021, p. 2 of 12, Airport Data Sheet.

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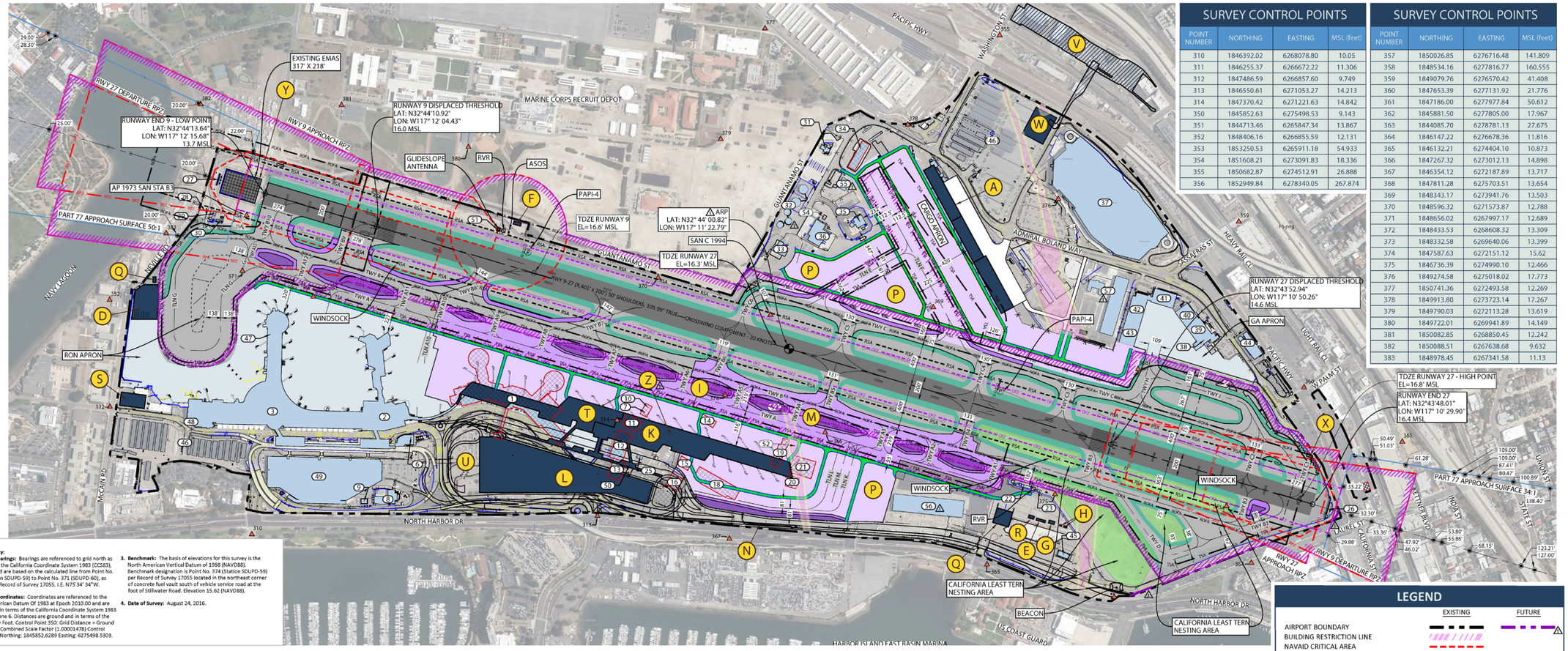

Basis of Survey:

1. **Basis of Bearings:** Bearings are referenced to grid north as defined by the California Coordinate System 1983 (CCS83), Zone 6, and are based on the calculated line from Point No. 374 (Station SDUPD-59) to Point No. 371 (SDUPD-60), as shown on Record of Survey 17055. I.E. N75°34' 34"W.
2. **Basis of Coordinates:** Coordinates are referenced to the North American Datum Of 1983 at Epoch 2010.00 and are expressed in terms of the California Coordinate System 1983 (CCS83), Zone 6. Distances are ground and in terms of the U.S. Survey Foot. Control Point 350: Grid Distance = Ground Distance X Combined Scale Factor (1.00001478) Control Point 350: Northing: 1845852.6289 Easting: 6275498.5303.
3. **Benchmark:** The basis of elevations for this survey is the North American Vertical Datum of 1988 (NAVD88). Benchmark designation is Point No. 374 (Station SDUPD-59) per Record of Survey 17055 located in the northeast corner of concrete fuel vault south of vehicle service road at the foot of Stillwater Road. Elevation 15.62 (NAVD88).
4. **Date of Survey:** August 24, 2016.

SURVEY CONTROL POINTS

POINT NUMBER	NORTHING	EASTING	MSL (feet)
310	1846392.02	6268078.80	10.05
311	1846255.37	6266672.22	11.306
312	1847486.59	6266857.60	9.749
313	1846550.61	6271053.27	14.213
314	1847370.42	6271221.63	14.842
350	1845852.63	6275498.53	9.143
351	1844713.46	6265847.34	13.867
352	1848406.16	6266855.59	12.131
353	1853250.53	6265911.18	54.933
354	1851608.21	6273091.83	18.336
355	1850682.87	6274512.91	26.888
356	1852949.84	6278340.05	267.874

SURVEY CONTROL POINTS

POINT NUMBER	NORTHING	EASTING	MSL (feet)
357	1850026.85	6276716.48	141.809
358	1848534.16	6277816.77	160.555
359	1849079.76	6276570.42	41.408
360	1847653.39	6277131.92	21.776
361	1847186.00	6277977.84	50.612
362	1845881.50	6277805.00	17.967
363	1844085.70	6278781.13	27.675
364	1846147.22	6276678.36	11.816
365	1846132.21	6274404.10	10.873
366	1847267.32	6273012.13	14.898
367	1846354.12	6272187.89	13.717
368	1847811.28	6275703.51	13.654
369	1848343.17	6273941.76	13.503
370	1848596.32	6271573.87	12.788
371	1848656.02	6267997.17	12.689
372	1848433.53	6268608.32	13.309
373	1848332.58	6269640.06	13.399
374	1847587.63	6272151.12	15.62
375	1846736.39	6274990.10	12.466
376	1849274.58	6275018.02	17.773
377	1850741.36	6272493.58	12.269
378	1849913.80	6273723.14	17.267
379	1849790.03	6272113.28	13.619
380	1849722.01	6269941.89	14.149
381	1850082.85	6268850.45	12.242
382	1850088.51	6267638.68	9.632
383	1848978.45	6267341.58	11.13

EXISTING BUILDING AND FACILITIES TABLE

BUILDING NUMBER	TOP ELEV MSL	DESCRIPTION
1	48'	TERMINAL ONE (T1)
2	55'	TERMINAL TWO (T2) EAST
3	90'	T2 WEST
6	47'	USO AND PARKING OPERATIONS BUILDING
7	26'	TRITURATOR
8	44'	HVAC PLANT
9	32'	SWITCHGEAR BUILDING
10	35'	WASH BAY
11	50'	AIR CARGO BUILDING
12	41'	SOUTHWEST AIRLINES PROVISRAY AIR CARGO BUILDING
13	41'	AIR CARGO BUILDING
14	N/A	FUEL DISPENSING FACILITY
15	47'	AIRLINE SUPPORT
16	45'	AIRLINE SUPPORT
18	65'	SDCRAA ADMINISTRATION OFFICE
19	38'	SDCRAA MAINTENANCE SHOPS
20	28'	SDCRAA FACILITIES MANAGEMENT OFFICE
21	40'	SDCRAA SHIPPING AND RECEIVING
22	N/A	ELECTRIC VAULT & EMERGENCY GENERATOR
23	22'	FAA COMMUNICATIONS
25	TBD	SWA CARGO
26	34'	RUNWAY 9 LOCALIZER SHELTER, LOCALIZER ANTENNA, & DME ANTENNA
27	19'	RUNWAY 27 LOCALIZER ANTENNA
28	N/A	ELECTRICAL UTILITY AREA
29	22'	RUNWAY 27 LOCALIZER TRANSMITTER BUILDING (INSIDE ROFA)
30	20'	RUNWAY 27 DME AND LOCALIZER ANTENNAS (INSIDE ROFA)

EXISTING BUILDING AND FACILITIES TABLE

BUILDING NUMBER	TOP ELEV MSL	DESCRIPTION
31	14'	FUEL DISPENSING FACILITY ADMINISTRATION BUILDING
32	46'	FUEL STORAGE TANKS
33	35'	ARFF STATION
34	48'	FEDEX SORT FACILITY
35	152'	AIRPORT TRAFFIC CONTROL TOWER
36	44'	CENTRAL RECEIVING AND DISTRIBUTION CENTER
37	92'	RENTAL CAR FACILITY
38	55'	SIGNATURE FLIGHT SUPPORT TERMINAL
39	55'	SIGNATURE FLIGHT SUPPORT HANGAR 1
40	61'	SIGNATURE FLIGHT SUPPORT HANGAR 2
41	55'	SIGNATURE FLIGHT SUPPORT HANGAR 3
42	55'	SIGNATURE FLIGHT SUPPORT HANGAR 4
43	55'	SIGNATURE FLIGHT SUPPORT HANGAR 5
44	TBD	SAN DIEGO WIND TUNNEL
45	25'	RCC BUS / TAXI HOLD LOT BUILDING
46	TBD	SOLAR CAR PORT
47	TBD	RAMP CONTROL TOWER
48	TBD	T2 WEST FIS
49	TBD	T2 PARKING PLAZA
50	TBD	SWA PROVISIONING
51	TBD	GLIDESLOPE EQUIPMENT SHELTER
52	TBD	GUARD SHACK
53	TBD	ELECTRICAL BUILDING
54	TBD	ENVIRONMENTAL HAZMAT STORAGE TRAILER
55	TBD	AIRCRAFT FUEL STORAGE OPERATIONS FACILITY ⚠
56	TBD	AIRLINE SUPPORT BUILDING ⚠
57	TBD	FACILITIES MANAGEMENT DEPARTMENT CAMPUS ⚠

FUTURE FEATURES

FEATURE ID	DESCRIPTION
	AIRPORT SUPPORT FACILITIES
A	AIR CARGO DEVELOPMENT
D	WEST FUEL RACK
E	AIRFIELD LIGHTING VAULT
F	AUTOMATED SURFACE OBSERVATION SYSTEM (ASOS)
G	RUNWAY VISUAL RANGE (RVR)
H	RUNWAY STATUS LIGHTS (RWSL) SHELTER & MALS PAD
I	VEHICLE SERVICE ROAD (VSR)
	PHASE 1A
K	T1 REPLACEMENT TERMINAL - 19 GATES
L	T1 PARKING PLAZA
M	TAXIWAY B RELOCATION & TAXIWAY A CONSTRUCTION
N	ON-AIRPORT ACCESS ROADS
P	RON APRON
Q	SOLID WASTE FACILITY
R	TRITURATOR/WASH BAY
S	AIRPORT ADMINISTRATION BUILDING
	PHASE 1B
T	T1 REPLACEMENT TERMINAL - ADDITIONAL 11 GATES
U	RESERVED FOR FUTURE TRANSIT USE
	OTHER PROJECTS
V	INTERMODAL TRANSPORTATION CENTER
W	NORTH SIDE PASSENGER PROCESSING FACILITY
X	BLAST FENCE
Y	ENGINEERED MATERIALS ARRESTING SYSTEMS (EMAS)
Z	SOLAR PANELS ON ROOF OF T1 REPLACEMENT ⚠

FUTURE TAXIWAY/TAXILANE DATA TABLE

NAME	DIMENSIONS						SEPARATION FROM TWY CL TO FIXED/MOVABLE OBJECT	LIGHTING
	TWY WIDTH ACTUAL-STANDARD	SHOULDER WIDTH ACTUAL-STANDARD	TWY SAFETY AREA	OBJECT FREE AREA	TWY EDGE SAFETY MARGIN	TWY DESIGN GROUP		
A	50'-50'	20'-20'	118'	186'	10'	4	93'	MITL
A1	125'-50'	20'-20'	118'	186'	10'	4	93'	MITL
A2	125'-50'	20'-20'	118'	186'	10'	4	93'	MITL
A3	271'-50'	20'-20'	214'	320'	15'	6	160'	MITL
A4	137'-50'	20'-20'	118'	186'	10'	4	93'	MITL
A5	137'-50'	20'-20'	118'	186'	10'	4	93'	MITL
A6	108'-50'	20'-20'	118'	186'	10'	4	93'	MITL
A7	124'-50'	20'-20'	118'	186'	10'	4	93'	MITL
A8	160'-75'	20'-20'	214'	320'	15'	6	160'	MITL
A9	182'-75'	20'-20'	214'	320'	15'	6	160'	MITL
A10	182'-75'	20'-20'	214'	320'	15'	6	160'	MITL
A11	136'-75'	20'-20'	214'	320'	15'	6	160'	MITL
A12	136'-75'	20'-20'	214'	320'	15'	6	160'	MITL
A13	136'-75'	20'-20'	214'	320'	15'	6	160'	MITL
B2	75'-75'	20'-20'	214'	320'	15'	6	160'	MITL
B3	94'-75'	20'-20'	214'	320'	15'	6	160'	MITL
A3 (TLN)	306'-320'	0'-0'	214'	320'	15'	6	160'	MITL
A10 (TLN)	50'-50'	0'-0'	118'	186'	10'	4	93'	MITL
E (TLN)	50'-50'	0'-0'	118'	162'	10'	3	81'	MITL
G (TLN)	276'-75'	0'-0'	214'	276'	15'	5	160'	MITL
K (TLN)	162'-50'	0'-0'	118'	162'	10'	3	81'	MITL
L (TLN)	162'-50'	0'-0'	118'	162'	10'	3	81'	MITL
M (TLN)	271'-50'	20'-20'	214'	320'	15'	6	160'	MITL

PACS/SACS LOCATIONS

DESIGNATION	TYPE	LATITUDE	LONGITUDE	ELEVATION
AP 1973SAN STA B3	PACS	32°-44'-11.75616" N	117°-12'-17.53779" W	9.5'
SAN C 1994	SACS	32°-44'-03.69278" N	117°-11'-24.68196" W	14.6'
SAN AP 1966 STA A3	SACS	32°-43'-47.77451" N	117°-10'-38.57462" W	11.8'

0' 400' 800'
GRAPHIC SCALE: 1" = 400'

LEGEND

	EXISTING	FUTURE
AIRPORT BOUNDARY		⚠
BUILDING RESTRICTION LINE		
NAVAID CRITICAL AREA		
RUNWAY THRESHOLD LIGHTS		
GLIDESLOPE ANTENNA		
RVR		
ROTATING BEACON		
ASOS		
PAPI-4		
WINDSOCK		
SURVEY MONUMENT	150	
TRAVERSE WAY POINT WITH ADJUSTED MSL ELEV.		
AIRPORT REFERENCE POINT (ARP)		
RUNWAY SAFETY AREA (RSA)	RSA	
RUNWAY OBJECT FREE AREA (ROFA)	ROFA	
RUNWAY OBSTACLE FREE ZONE (OFZ)	OFZ	
RUNWAY PROTECTION ZONE (RPZ)	RPZ	
TAXIWAY OBJECT FREE AREA (TOFA)		TOFA
TAXIWAY SAFETY AREA (TSA)		TSA
PRECISION OBSTACLE FREE ZONE (POFZ)	P O F Z	
FENCE	X X X	
BLAST FENCE		
ROADWAY		
FUTURE SERVICE ROADWAY		
BUILDING NUMBER	55	
FEATURE NUMBER		G
BUILDINGS TO BE DEMOLISHED		
BUILDING		
OFF AIRPORT BUILDING		
RUNWAY		
TAXIWAY		
SHOULDER		
APRON		
FAULT ZONE		
FAULT ZONE BUFFER		
CALIFORNIA LEAST TERN NESTING AREA		

SOURCES: San Diego County Regional Airport Authority, *San Diego International Airport*, *Airport Layout Plan*, August 3, 2021, p. 5, *Future Airport Layout Plan Drawing*.

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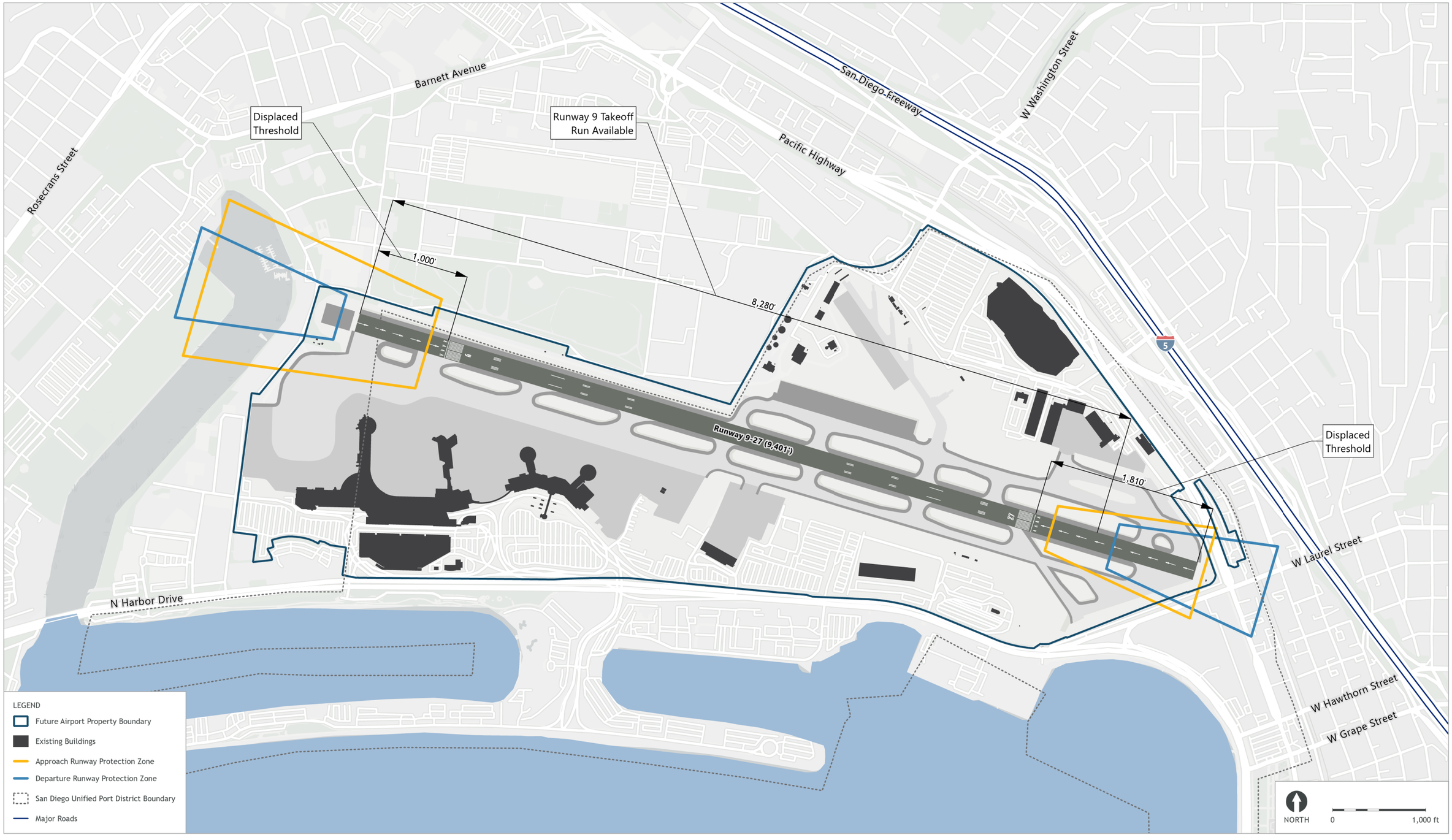

AIRPORT LAND USE COMMISSION

SOURCES: Esri, HERE, Garmin, FAO, NOAA, USGS, OpenStreetMap contributors, and the GIS User Community, February 2023 (basemap); Jacobsen|Daniels, *San Diego International Airport, Airport Layout Plan*, June 2021 (airport layout components).

EXHIBIT E-2

RUNWAY PROTECTION ZONES AND DISPLACED THRESHOLDS

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E.3 STANDARD TERMINAL ARRIVAL PROCEDURES

Standard Terminal Arrival Route (STAR) procedures apply to aircraft operating under Instrument Flight Rules (IFR).[3] STARs simplify communications between pilots and ATC and facilitate the transition from en route (an assigned federal airway route where the aircraft is level prior to starting decent to a destination) to instrument approach procedures (the final approach procedure to the runway that starts at an initial approach fix or point in space). FAA ATC will instruct pilots to divert from the standard procedure when necessary to safely separate aircraft or for other safety reasons. Seven STARs are published for SDIA that apply to IFR aircraft en route from all directions to join final approaches for Runway 9-27.

- BARET FIVE – A non-Area Navigation (RNAV)[4] procedure for arrivals coming from the northeast to Runway 9 and Runway 27. This is for turbojet aircraft only.
- COMIX TWO (RNAV) – An RNAV procedure for arrivals coming from the north and northwest.
- HUBRD ONE – A non-RNAV procedure for arrivals coming from the north and northwest.
- LUCKI ONE (RNAV) – An RNAV procedure for arrivals coming from the east and northeast.
- PLYYA ONE (RNAV) – An RNAV procedure for arrivals coming from the north and northwest.
- SHAMU ONE – A non-RNAV procedure for arrivals coming from the north and northwest to Runway 9.
- TOPGN TWO (RNAV) – An RNAV procedure for arrivals coming from the east and northeast.

E.4 INSTRUMENT APPROACH PROCEDURES

Instrument approaches provide lateral and vertical guidance to the runway during a descent using ground-based equipment and the navigational instrumentation available on the aircraft. They also provide guidance for missed approaches when pilots are unable to see the runway at the minimum decision altitude (the point where a pilot decides to continue descending to the runway or cancel the approach and begin to climb). The following published instrument approach procedures are available at SDIA:

[3] IFRs are rules governing the procedures for conducting instrument flight. IFR is also a term used by pilots and controllers to indicate type of flight plan. US Department of Transportation, Federal Aviation Administration, https://www.faa.gov/air_traffic/publications/atpubs/pcg_html/glossary-i.html#:~:text=INSTRUMENT%20FLIGHT%20RULES%20(IFR)%2D,(See%20VISUAL%20FLIGHT%20RULES.) (accessed February 24, 2023).

[4] RNAV is a method of navigation which permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these. US Department of Transportation, Federal Aviation Administration, Advisory Circular 90-100A, *US Terminal and En Route Area Navigation (RNAV) Operations*, April 14, 2015.

- Runway 9
  - Instrument Landing System (ILS)[5]
  - Localizer (LOC)[6]
  - RNAV (Global Positioning System [GPS])
- Runway 27
  - LOC
  - RNAV (GPS)
  - RNAV (Required Navigational Performance [RNP][7])

In addition to the instrument approaches, a visual approach is published for Runway 27. A visual approach provides ground references for the pilot as a means to navigate along a specified flight path. The Sweetwater Visual Approach is defined with respect to large-scale landmarks and supplemented with navigational fixes. The procedure is intended for aircraft arriving from the north to enter a downwind pattern to Runway 27 staying north of Snapdragon Stadium, turn right on a base turn after passing State Route 125 near Mount Helix toward the final approach and then turn left again over the southern portion of the Sweetwater Reservoir to join the final approach to Runway 27. It also includes GPS waypoints that pilots may load on the navigation system to provide additional guidance to stay along the proposed path.

E.5 DEPARTURE PROCEDURES

FAA publishes Standard Instrument Departure procedures (SIDs), which facilitate standard maneuvers that departing aircraft follow to aid in providing efficient use of a busy airspace. SIDs simplify communication between pilots and ATC by eliminating the need for ATC to relate a detailed series of instructions verbally to pilots. FAA ATC will instruct pilots to divert from the standard procedure when necessary to safely separate aircraft or for other safety reasons.

Currently, there are nine SIDs for SDIA.

- BORDER SEVEN – A non-RNAV procedure using ground-based navigational aids or FAA ATC radar vectors for departures from Runway 9 and Runway 27 destined to the east and northeast.
- CWARD TWO (RNAV) – An RNAV procedure for departures from Runway 27 destined to local airports to the north (termed as tower en route traffic).
- ECHHO TWO (RNAV) – An RNAV procedure for departures from Runway 9 and Runway 27 destined to the

[5] ILS is a precision radio navigation system that provides short-range guidance to aircraft to allow them to approach a runway at night or in bad weather. US Department of Transportation, Federal Aviation Administration, Ground-Based Navigation – Instrument Landing System (ILS), https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/navservices/gbng/ils#:~:text=The%20Localizer%20generates%20and%20radiates,and%20right%20of%20the%20centerline. (accessed February 24, 2023).

[6] The localizer generates and radiates signals to provide final approach azimuth navigation information to landing aircraft. US Department of Transportation, Federal Aviation Administration, Ground-Based Navigation – Instrument Landing System (ILS), https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/navservices/gbng/ils#:~:text=The%20Localizer%20generates%20and%20radiates,and%20right%20of%20the%20centerline. (accessed February 24, 2023).

[7] RNP is RNAV with the addition of onboard performance monitoring and alerting capability. US Department of Transportation, Federal Aviation Administration, Flight Operations Group, Performance Based Navigation (PBN) Guidance & Approval, https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afx/afs/afs400/afs410/pbn (accessed February 24, 2023).

north and northwest. Used for Runway 27 departures only when FAA ATC is assigning Runway 9 for landings.

- FALCC ONE – A non-RNAV procedure for departures from Runway 9 and Runway 27 destined to the north, northwest, and west. Used for Runway 27 departures only when FAA ATC is assigning Runway 9 for landings.
- MMOTO TWO (RNAV) – An RNAV procedure for departures from Runway 9 and Runway 27 destined to the west. Used for Runway 27 departures only when FAA ATC is assigning Runway 9 for landings.
- PADRZ TWO (RNAV) – An RNAV procedure for departures from Runway 27 destined to the north, northwest, and west when FAA ATC assigns arrivals to Runway 27.
- PEBLE SIX – A non-RNAV procedure for departures from Runway 27 destined to the north, northwest, and west when FAA ATC assigns arrivals to Runway 27.
- SAYOW TWO (RNAV) – An RNAV procedure for departures from Runway 9 destined to the east and northeast.
- ZZOOO THREE (RNAV) – An RNAV procedure for departures from Runway 27 destined to the east and northeast.

E.6 RUNWAY USE

The primary factor affecting runway use at airports is weather, in particular, the wind direction and wind speed. Cloud ceiling height and visibility also plays a major role for SDIA related to runway use because Runway 9 is the only runway that has a precision instrument approach procedure. Additional factors that may affect runway use include the position of the terminal and aircraft parking ramps relative to the runways and obstacles requiring higher take-off climb gradients off one runway than the other.

West flow, with arrivals from the east and departures to the west on Runway 27, is the preferred operating configuration at SDIA because of prevailing winds, the relatively steep climb requirements for departures to the east, and the airfield layout. A west-flow operation optimizes aircraft ground movement given the terminal location and taxiway system. On rare occasions when weather conditions do not favor operations on Runway 27, the Airport operates in an east flow configuration with arrivals and departures on Runway 9. Under certain cloud ceiling and/or visibility conditions, the Airport operates in a contra-flow configuration with arrivals from the west to Runway 9 and departures to the west on Runway 27.[8]

Based on analysis undertaken for the most recent Title 14 Code of Federal Regulations Part 150, *Airport Noise Compatibility Planning*, study for SDIA, average annual runway use, accounting for all runway operating configurations, was as follows:

- Arrivals and departures on Runway 27 – approximately 98.02 percent of annual operations
- Arrivals and departures on Runway 9 – approximately 1.98 percent of annual operations[9]

[8] For example, during foggy conditions with winds from the west, arrivals need to use the Runway 9 ILS since Runway 27 lacks a precision approach. Many departures prefer to depart to the west on Runway 27 either because of the wind direction or because of the steeper climb gradient required for Runway 9 departures.

[9] San Diego County Regional Airport Authority, *14 CFR Part 150 Update, Noise Exposure Maps and Noise Compatibility Program, Final Report*, May 2022, p. 4.12.

Runway use percentages can vary somewhat from year to year, just as weather varies from year to year, but the overwhelmingly dominant use at SDIA involves arrivals and departures on Runway 27.

E.7 AIRPORT ACTIVITY FORECAST

The most recent aviation demand forecasts for SDIA were prepared in 2019.[10] Forecasts and demand scenarios were presented for enplaned passengers, air cargo tonnage, and aircraft operations, including operations for passenger and all-cargo airlines, general aviation, and military aircraft. Using calendar year 2018 as the base year, annual forecasts and demand scenarios were prepared for four future demand years—2023, 2028, 2033, and 2050.

Two series of forecasts, unconstrained and constrained, were prepared. The unconstrained forecast represents market-driven demand for air service, which is the level of activity the Airport could expect if it had no facility or operational constraints. However, SDIA is subject to various constraints that will remain throughout the foreseeable future, including the single runway, the limited land available for Airport expansion, and a nighttime departure curfew.[11] Thus, the unconstrained forecasts are theoretical and are not realistic projections of actual future airport activity. For that reason, a constrained forecast was developed to evaluate the potential for the Airport to meet as much of the unconstrained forecast demand as possible given the actual facility and operational constraints.

In developing a constrained forecast, it is necessary to determine the capacity of the existing airport facilities. At SDIA, the single runway is the major facility constraint. Runways have finite capacity, and runway demand and capacity is a fundamental driver of airport facility requirements. The capacity of a runway is measured in terms of hourly, daily, and annual aircraft operations at an acceptable level of delay. As the demand (the number of landings and takeoffs) increases, congestion (delay) increases. As described in the 2019 forecast, SDIA has a limit of 50 operations per hour,[12] and SDIA's Annual Service Volume (ASV)[13] ranges between 262,000 and 292,000 operations. For SDIA to operate at a sustained rate of 50 operations per hour, one landing or takeoff would need to occur approximately every 72 seconds.[14]

As operations near the capacity limits, delays due to congestion become more frequent and of longer duration. Airports experiencing severe delays due to congestion are not able to fully accommodate rising demand for air service. According to FAA, average delay per operation of 15 minutes or more may be considered excessive at a hub airport; and sustained delays in excess of 20 minutes are rarely observed. As delays approach these levels, airlines generally make adjustments as possible, such as switching to larger aircraft to accommodate more passengers per flight, adjusting schedules to shift flights to less congested periods, and canceling or consolidating flights during peak delay periods. Passengers would also make

[10] LeighFisher, *Draft Final Technical Memorandum, Aviation Activity Forecast Update, San Diego International Airport*, April 2019.
[11] SDIA's Airport Use Regulation restricts departures by any aircraft between the hours of 11:30 pm and 6:30 am and gate departures between the hours of 11:15 pm and 6:15 am.
[12] LeighFisher, *Draft Final Technical Memorandum, Aviation Activity Forecast Update, San Diego International Airport*, April 2019, p. 28.
[13] ASV is a reasonable estimate of an airport's annual capacity. It accounts for differences in runway use, aircraft mix, weather conditions, etc., that would be encountered over a year's time. US Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5060-6, *Airport Capacity and Delay*, September 23, 1983.
[14] LeighFisher, *Draft Final Technical Memorandum, Aviation Activity Forecast Update, San Diego International Airport*, April 2019, p. D-4.

adjustments, which could include using alternative airports, seeking other means of transportation (e.g., automobile or train), or simply avoiding some trips.[15]

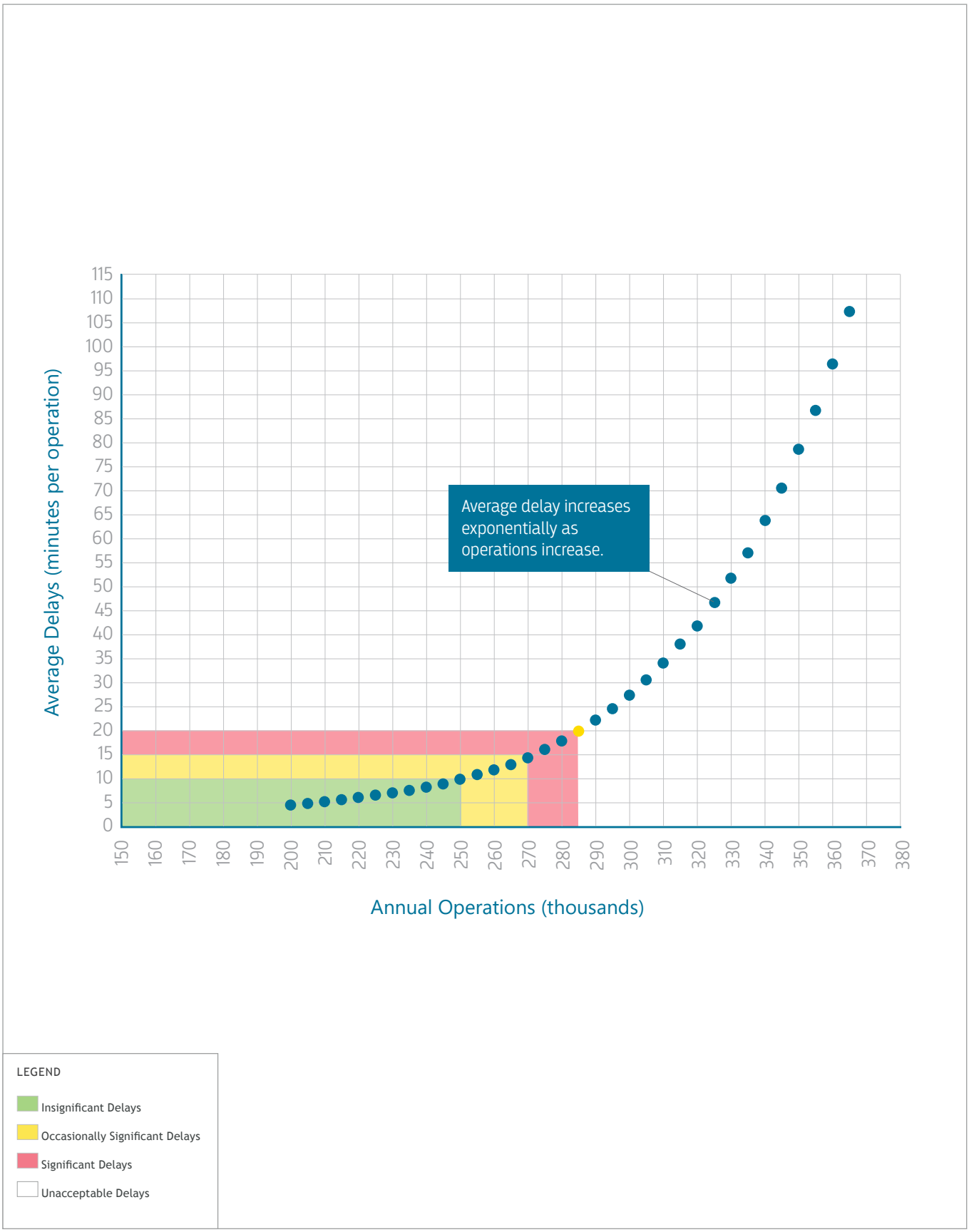
The results of a 2004 forecast modeling and capacity analysis[16] showed that SDIA operates with relatively moderate delay levels up to 250,000 annual operations where average annual all-weather delays reach 10 minutes per operation. Delays of 20 minutes per operation occur at 285,000 annual operations. Above that level of operations, average delays increase at an accelerating rate, reaching 22 minutes at 290,000 operations and 28 minutes at 300,000 operations. The relationship of annual operations with delay is graphically illustrated in **Exhibit E-3**.

The constrained forecast for SDIA was based on an analysis of capacity and operational limits and the likely adjustments by airlines to continue serving as many passengers as possible. The constrained forecast is the "preferred" forecast recommended for airport planning and is the forecast scenario used for all analyses in the ALUCP.

Table E-1 presents historical data through 2022 and constrained demand forecasts through 2050. The forecast indicates that by 2028, the 266,000 operations would be nearing annual Airport capacity. By 2050, the projected 290,100 operations would be at the practical annual capacity limit.

[15] US Department of Transportation, Federal Aviation Administration, Office of Aviation Policy and Plans, *FAA Airport Benefit-Cost Analysis Guidance*, September 16, 2020, p. 45. Note that average delays per operation reflect the averaging of minimal delays in non-peak hours with very long delays at peak hours.

[16] SH&E, Inc., *Final San Diego International Airport Aviation Activity Forecasts*, San Diego County Regional Airport Authority, June 2004.



SOURCES: SH&E, Inc., *Final San Diego International Airport Aviation Activity Forecasts, San Diego County Regional Airport Authority,* June 2004; reproduced in LeighFisher, *Draft Final Technical Memorandum, Aviation Activity Forecast Update, San Diego International Airport,* April 2019, p. D-7.

EXHIBIT E-3

AVERAGE DELAY PER OPERATION RELATED TO ANNUAL AIRCRAFT OPERATIONS UNDER ALL WEATHER CONDITIONS

Table E-1 Constrained Aviation Demand Forecast Summary

Year	Enplaned Passengers	Aircraft Operations	Cargo & US Mail (tons)
Historical			
1980	2,561,678	146,691	27,590
1985	3,968,903	162,412	31,857
1990	5,609,104	212,553	68,127
1995	6,686,144	245,280	97,667
2000	7,915,899	207,644	153,370
2005	8,692,694	225,423	187,705
2010	8,456,176	190,137	127,261
2015	10,053,201	194,215	178,921
2020[2]	4,629,628	132,566	143,940
2021	7,820,933	162,828	146,547
2022	11,125,342	210,250	136,644
Forecast			
2028	16,919,000	266,000	257,400
2033	18,927,000	277,230	279,800
2050	20,321,000	290,100	335,400

Notes:

1 Enplaned passengers are those boarding aircraft at San Diego International Airport.

2 The marked decline in activity in 2020 reflects the first year of the COVID-19 pandemic. Activity began recovering in 2021.

Sources: LeighFisher, *Draft Final Technical Memorandum, Aviation Activity Forecast Update, San Diego International Airport*, Table 5-1, April 2019 (forecast and historical data through 2010); San Diego County Regional Airport Authority, *Air Traffic Report, December 2015*, n.d., https://www.san.org/Portals/0/Documents/Air%20Traffic%20Reports/2015_Comp_AT_Report.pdf (accessed January 24, 2023) (2015 data); San Diego County Regional Airport Authority, *Air Traffic Report Summary, Calendar Year 2021*, n.d., https://www.san.org/DesktopModules/Bring2mind/DMX/API/Entries/Download?Command=Core_Download&EntryId=15134&language=en-US&PortalId=0&TabId=225 (accessed January 24, 2023) (2020 and 2021 data); San Diego County Regional Airport Authority, *Air Traffic Report Summary, Dec 2022*, n.d., https://www.san.org/DesktopModules/Bring2mind/DMX/API/Entries/Download?EntryId=16174&Command=Core_Download&language=en-US&PortalId=0&TabId=403 (accessed February 13, 2023) (2022 data).

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