

Technical Consultant Presentation

6th Meeting of the Southern San Fernando Valley Airplane
Noise Task Force

February 19, 2020

Presentation Outline

- Federal Regulations
- Roles and Responsibilities
- Responses to Task Force Member Questions
- Aircraft Operations Data Analysis Results
- Air Traffic Control Procedural Analysis
- Preliminary Assessment of Community Groups Proposals
- Current Environment for Making Changes to Aircraft Procedures
- Examples of Hypothetical Flight Procedure Changes
- Questions for Task Force Members to Ponder
- Process for Preparing Task Force Recommendations
- Types of Recommendations Presented to Date

Federal Regulations

Major Noise-Related Federal Legislation

Statute	Aircraft Noise Related Purpose	Most Relevant FAA Regulation(s)
National Environmental Policy Act of 1969 (NEPA)	Directs all federal executive agencies to assess <i>all</i> environmental effects of proposed federal agency actions	FAA Orders 1050.1F, 5050.4B
Aircraft Noise and Sonic Boom Act of 1968	Authorizes FAA to prescribe standards for measurement of aircraft noise and establish regulations to abate noise	49 CFR Parts 36 and 91
The Noise Control Act of 1972 (Noise Act)	Amends 1968 act to add consideration of public health and welfare and to add EPA to the rulemaking process for aircraft noise and sonic boom standards	None directly; EPA responsibility
Aviation Safety and Noise Abatement Act of 1979 (ASNA)	Directs FAA to establish single system to measure noise and determine exposure of people to noise, and identify land uses normally compatible with various noise levels	14 CFR Part 150
Airport and Airway Improvement Act of 1982	Authorizes FAA funding for noise mitigation/compatibility planning and projects, and establishes noise compatibility requirements for FAA-funded airport development	FAA Airport Improvement Program (AIP)
Airport Noise and Capacity Act of 1990 (ANCA)	Mandates phase out of Stage 2 jet aircraft over 75,000 pounds, and established requirements regarding airport noise and access restrictions for Stage 2 and 3 aircraft, which places strict limits on airport proprietor's right to or ability to impose noise restrictions	14 CFR Part 161
Section 506 of the FAA Modernization and Reform Act of 2012	Prohibition after 12/31/2015 of operation of civil subsonic jet airplanes with maximum weights of 75,000 pounds or less that do not meet stage 3 noise standards	14 CFR Part 91
FAA Reauthorization, 2018	Reauthorizes FAA through 2023	None Yet

Airport Noise and Capacity Act of 1990 (ANCA)

- Required FAA to establish phase-out of Stage 2 aircraft over 75,000 pounds
 - FAA promulgated Part 91 amendment (1991)
- Required FAA to establish regulations regarding analysis, notice, and approval of airport noise and access restrictions
 - FAA implemented through Title 14 of the Code of Federal Regulations Part 161 (1991)
- Required FAA to develop “national aviation noise policy” by July 1, 1991
 - FAA published draft “Aviation Noise Abatement Policy 2000” on July 14, 2000
 - Yet to be finalized
 - 1976 Federal Noise Abatement Policy essentially still in effect

Airport Noise and Access Restrictions (Part 161)

- Establishes the federal program for reviewing noise and access restrictions on the use of Stage 2 and 3 aircraft
- Requires extensive benefit cost analyses
 - *Must* follow Part 150 noise and land use analysis procedures
- Requires extensive notice process
 - *May* follow Part 150 notice procedures
- Requires different level of analysis for Stage 2 and 3 aircraft
 - Stage 3 restriction benefits must exceed costs
- Requires separate analysis of effects on aircraft less than 75,000 pounds
- Encourages voluntary agreements

Airport Noise and Access Restrictions (Part 161)

- Stage 2 restrictions are moot as of January 1, 2016
- Restricting noisier Stage 3 aircraft face stiff FAA opposition
- Many potential roadblocks
 - No guidance for benefit cost analysis
 - FAA has made its opposition clear
- Study of last resort
 - No airports currently pursuing restrictions
 - Perhaps a dozen airports have pursued, including Hollywood Burbank Airport
 - Some abandoned, some disapproved by FAA, some resulted in voluntary agreements
 - Two restrictions approved since the adoption of ANCA
 - Naples ban of Stage 2 aircraft
 - Van Nuys phaseout of Stage 2 aircraft

Roles and Responsibilities

FAA Noise Abatement Policy, November 1976

- Established roles and responsibilities for:
 - **federal government** – source emissions, *air traffic control*, funding, and safety oversight
 - **state and local governments** – compatible land use planning and control
 - **aircraft operators** – noise-sensitive schedules, cockpit procedures, and fleet improvements
 - **air travelers and shippers** – bear the costs
 - **current and prospective residents** – seek to understand and act accordingly
 - **airport operators** – primary responsibility for planning and implementing all noise abatement and compatible land use measures

Responses to Task Force Questions

Responses to Task Force Member Questions

- All task force member questions from the September 11, 2019 meeting have been answered from the FAA, HMMH, Hollywood Burbank Airport and Van Nuys Airport
 - Refer to the HMMH memorandum dated January 31, 2020 and titled, “Task Force Member Questions – September 2019 – Status of Responses to Date”
 - Included in today’s meeting packet

Data Analysis Results

Topics Covered

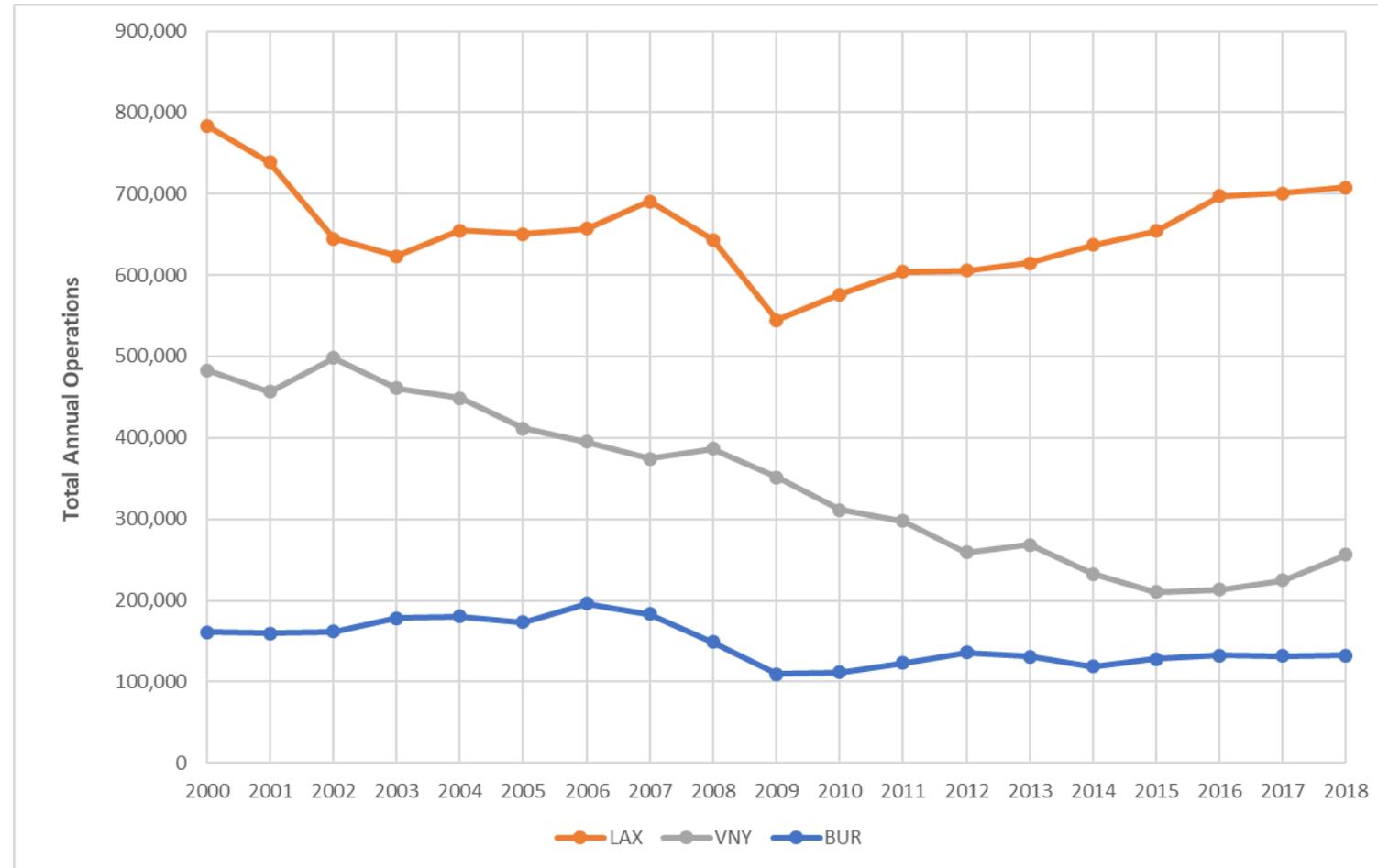
- Number of Aircraft Operations by Year
- Annual Runway Use
- Prevailing Wind Analysis
- Annual Number of Complaints and Complainants
- Historical Flight Track Data Analysis

Data Analysis Results

Number of Aircraft Operations by Year

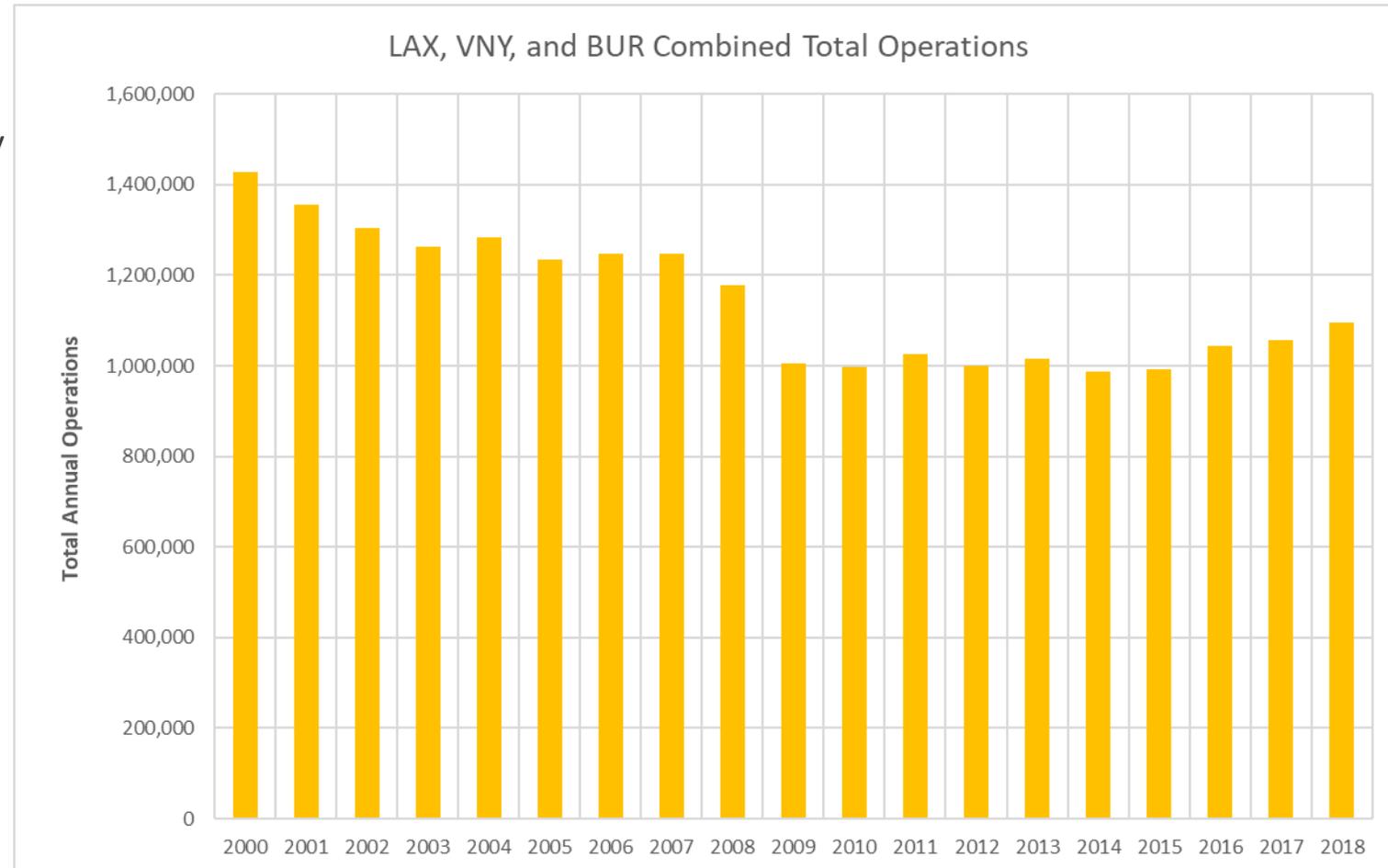
Annual Aircraft Operations

- Data obtained in January 2020 from the FAA's Air Traffic Activity System (ATADS)
- Trends:
 - All three airports had more operations back in 2000
 - LAX and BUR operations decreased after 2007 with a low in 2009
 - VNY operations show a steady decrease from 2002 through 2015
 - LAX operations show a steady increase since 2009
 - BUR operations decreased after 2007 and slight increases since 2009



Annual Aircraft Operations

- Data obtained in January 2020 from the FAA's Air Traffic Activity System (ATADS)
- Trends in the area:
 - Higher number of operations back in 2000
 - Low number of operations in 2009 and 2014
 - Steady increase in the number of operations began in 2016
- Lower number of operations today than prior to 2001



Data Analysis Results

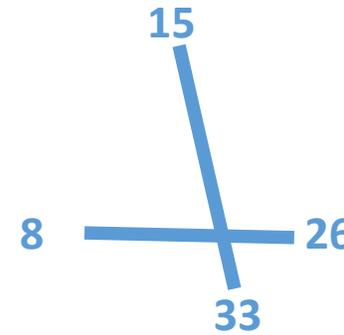
Annual Runway Use

Annual Runway Use

■ Hollywood Burbank Airport

- Almost 90% jet aircraft arrive Runway 8
- Over 90% jet aircraft depart Runway 15

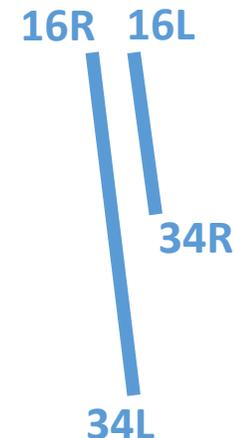
Runway	2007		2010		2015		2019	
	Arrival Total	Departure Total						
8	85.4%	0.1%	86.9%	0.4%	89.9%	0.6%	89.4%	0.2%
15	9.7%	92.8%	6.6%	90.2%	5.5%	93.6%	5.2%	91.8%
26	0.6%	1.7%	0.4%	5.9%	0.0%	2.4%	0.0%	1.0%
33	4.3%	5.5%	6.0%	3.5%	4.6%	3.3%	5.4%	7.1%



■ Van Nuys Airport

- Around 80% jet aircraft arrive and depart Runway 16R

Runway	2010		2015		2019	
	Arrival Total	Departure Total	Arrival Total	Departure Total	Arrival Total	Departure Total
16L	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%
16R	82.7%	82.3%	82.4%	80.1%	82.0%	82.5%
34L	17.2%	17.6%	17.5%	19.8%	18.0%	17.5%
34R	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



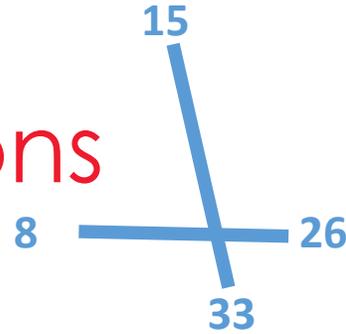
Data Analysis Results

Prevailing Wind Analysis

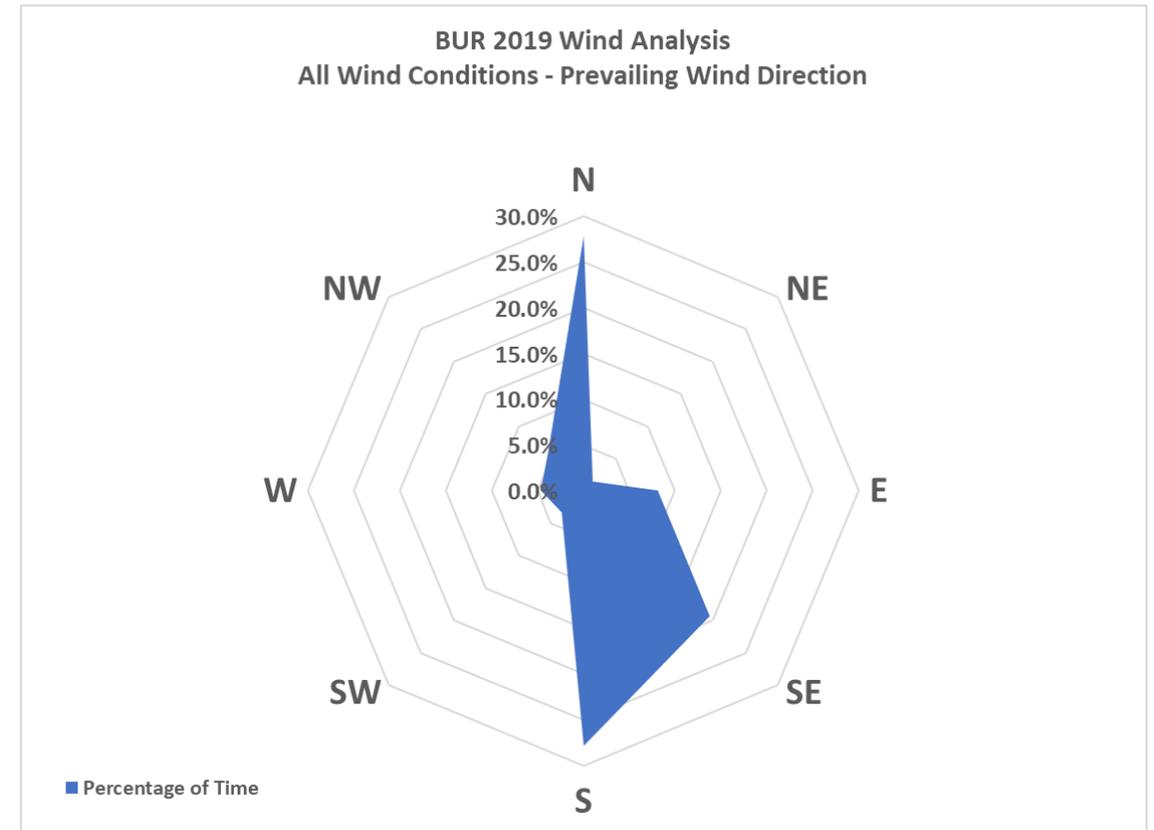
Prevailing Wind Analysis - Overview

- Analyzed prevailing surface winds at Hollywood Burbank Airport for calendar year 2019 based on automated observation data from National Oceanic and Atmospheric Administration (NOAA)
- Reviewed percentage of time wind originated from cardinal and intercardinal compass directions based on magnetic heading
- Although winds were not analyzed for Van Nuys Airport, proximity of both airports would yield similar results
- Directions (Magnetic Headings):
 - North: 340-020°
 - East: 070-110°
 - South: 160-200°
 - West: 250-290°
 - Northeast: 030-060°
 - Southeast: 120-150°
 - Southwest: 210-240°
 - Northwest: 300-330°

Prevailing Wind Analysis – All Wind Conditions

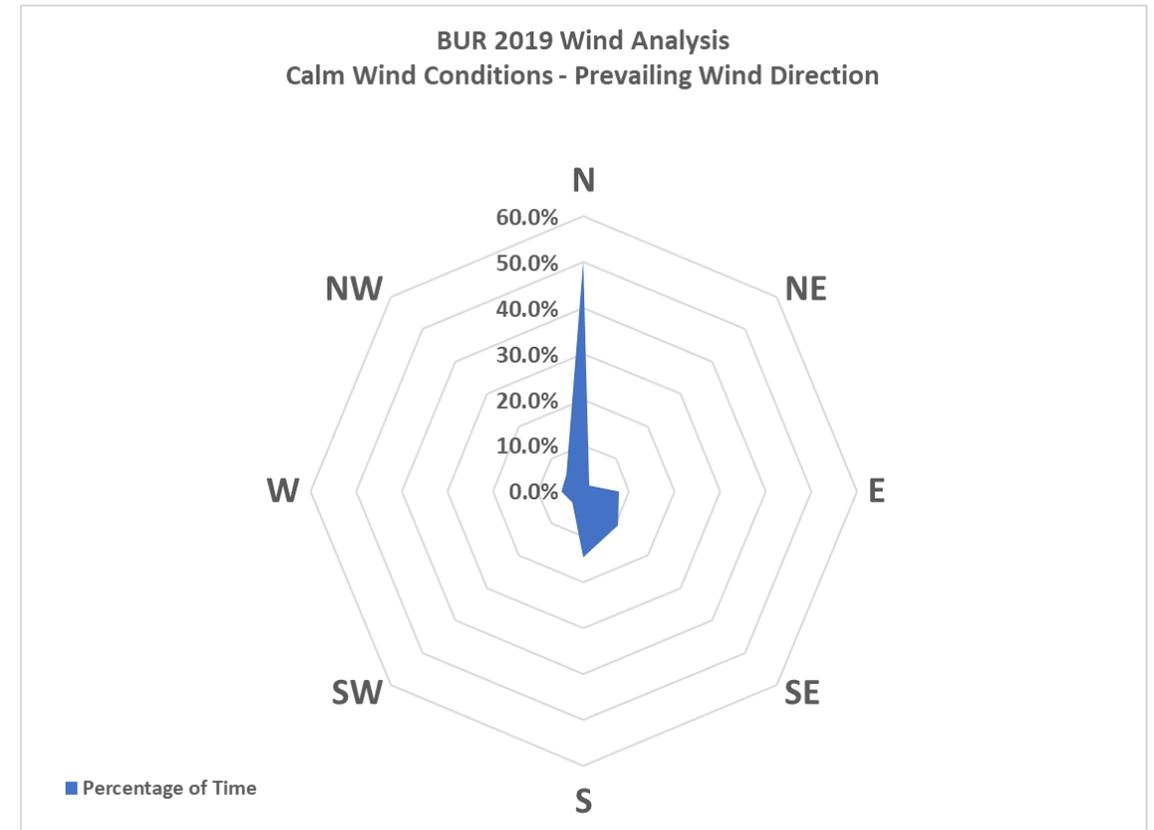
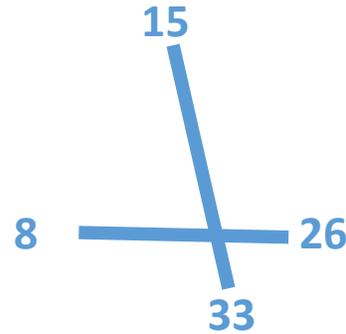


- Wind favored a southerly or easterly component for Runways 8 and 15 (East, Southeast, South, Southwest) 58.8% of the time
- Wind favored a westerly or northerly component for Runways 26 or 33 (West, Northwest, North, Northeast) 39.7% of the time
- Wind was from variable/multiple directions remaining 1.5% of the time

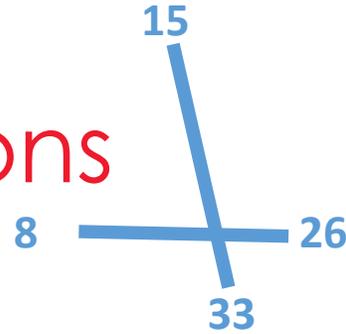


Prevailing Wind Analysis – “Calm” Wind Conditions

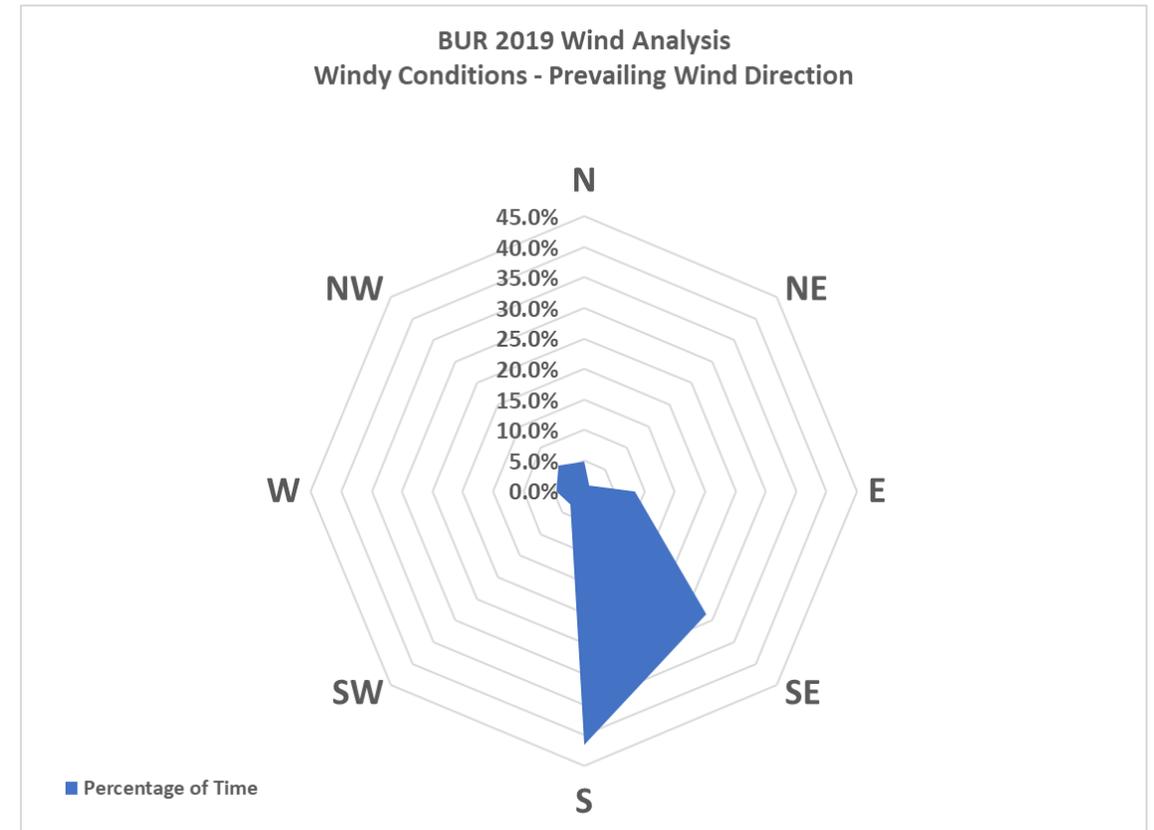
- Winds defined as “Calm” by the FAA for runway selection purposes as being reported less than 5 knots existed 50.7 % of the time
- Wind favored a southerly or easterly component for Runways 8 and 15 (East, Southeast, South, Southwest) 36.6% of the time
- Wind favored a westerly or northerly component for Runways 26 or 33 (West, Northwest, North, Northeast) 62.2% of the time
- Wind was from variable/multiple directions remaining 1.2% of the time



Prevailing Wind Analysis – “Windy” Conditions

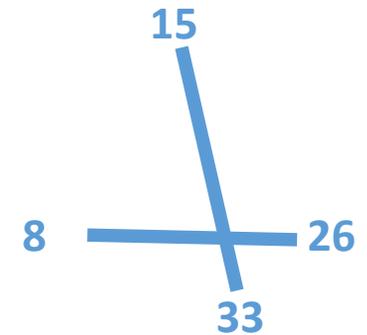


- Windy conditions were those conditions where wind was 5 knots or greater existed 49.3% of the time
- Wind favored a southerly or easterly component for Runways 8 and 15 (East, Southeast, South, Southwest) 81.7% of the time
- Wind favored a westerly or northerly component for Runways 26 or 33 (West, Northwest, North, Northeast) 16.4% of the time
- Wind was from variable/multiple directions remaining 1.9% of the time

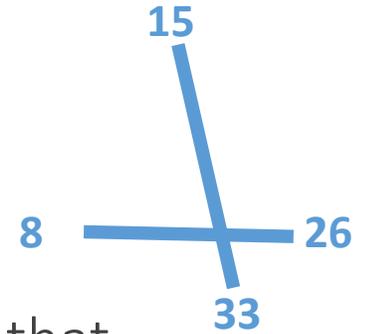


Prevailing Wind Analysis - Summary

- Overall prevailing winds favored use of Runways 8 and 15
 - 58.8% of the time Runways 8 and 15 favored
 - 39.7% of the time Runways 26 and 33 favored
- “Calm” winds (occurred 50.7 % of the time) favored use of Runways 26 and 33
 - 36.6% of the time Runways 8 and 15 favored
 - 62.2% of the time Runways 26 and 33 favored
- “Windy” conditions (occurred 49.3% of the time favored use of Runways 8 and 15
 - 81% of the time Runways 8 and 15 favored
 - 16.4% of the time Runways 26 and 33 favored



Prevailing Wind Analysis - Summary



- During “Calm” wind conditions, FAA rules dictate a runway different than that most aligned with the prevailing wind direction may be used if an operational benefit exists
- Operational benefits result from the use of Runways 8 and 15 during calm wind conditions including:
 - Availability of published instrument approaches only for Runway 8
 - Deconfliction with LAX arrivals on northern downwind
 - Terrain and obstructions south and east of Hollywood Burbank Airport that would interfere with the final approach courses for Runways 26 and 33
- Similar operational benefits exist at Van Nuys Airport

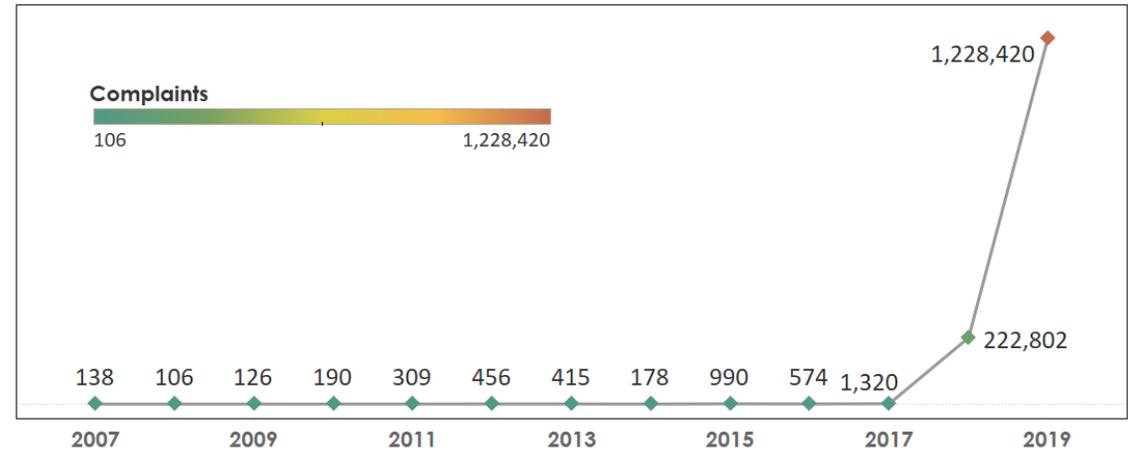
Data Analysis Results

Annual Number of Complaints and Complainants

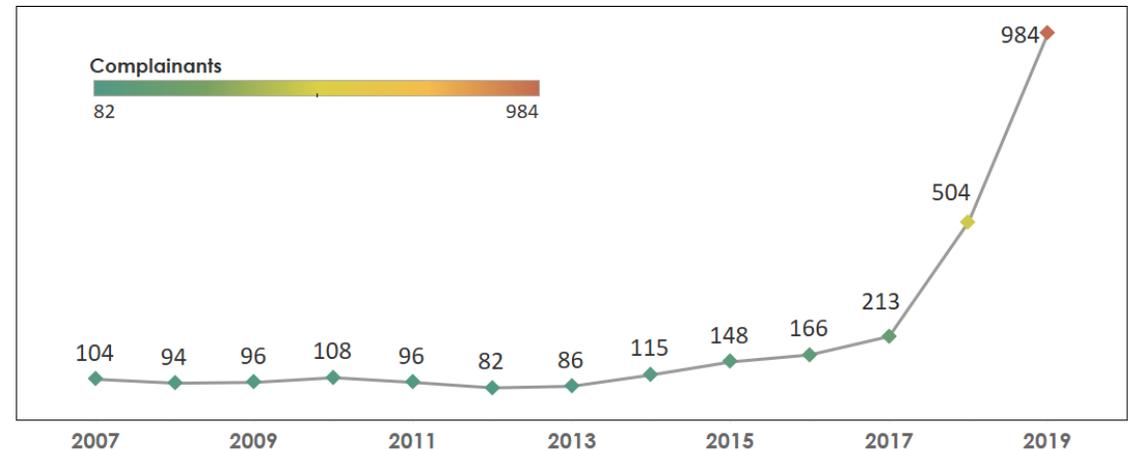
Annual Complaints – Hollywood Burbank Airport

- Less than 1,000 complaints per year prior to 2017 from less than 200 complainants
- Over 1 million complaints in 2019 from less than 1,000 complainants
 - Number of complaints increased by a factor of 1,000
 - Number of complainants increased by a factor of 5
- Rise in number of complaints began in the fall of 2017
- “Noise button” use began in earnest around summer of 2018
 - Approximately 90% of complaints are coming from the noise button (AirNoise.io)

Complaints



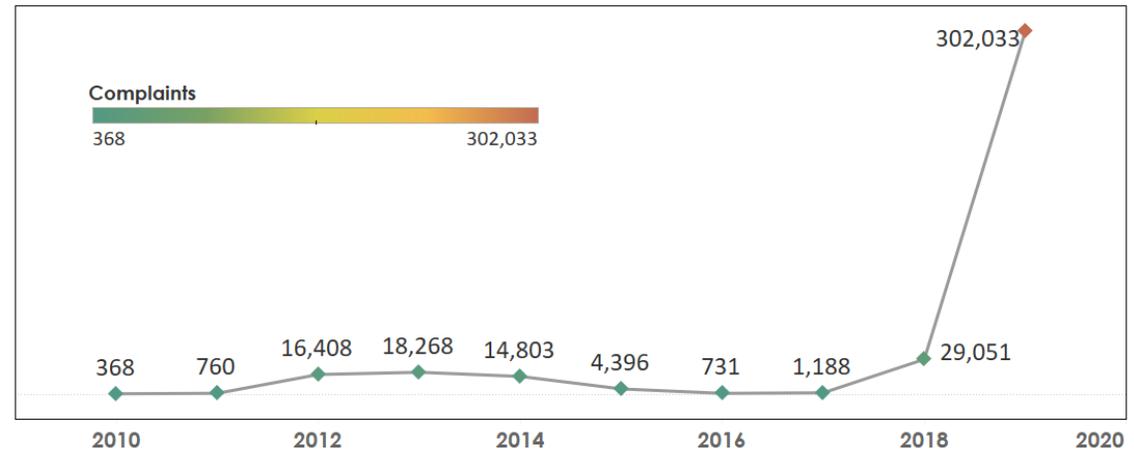
Complainants



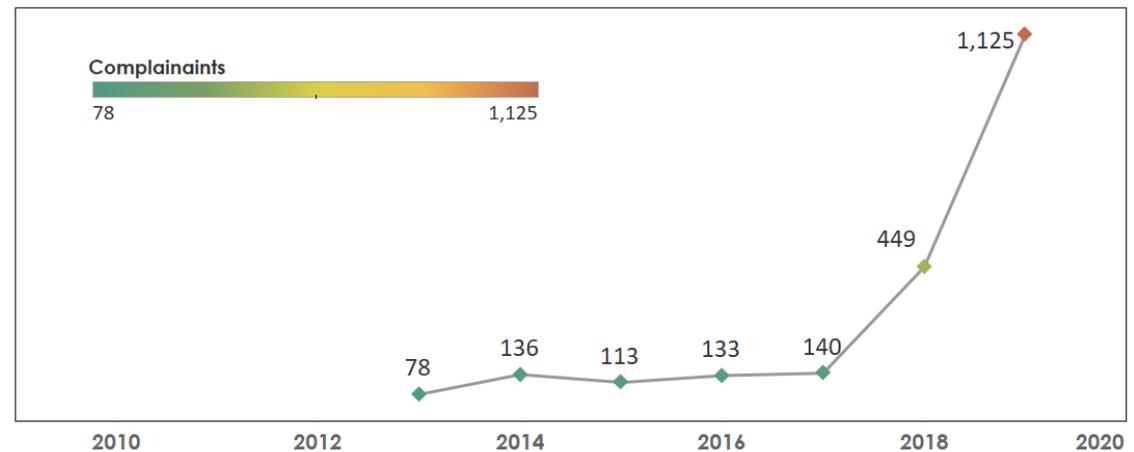
Annual Complaints – Van Nuys Airport

- Less than 1,000 complaints per year in 2010, 2011 and 2016; 15-20,000 per year in 2012, 2013 and 2014; and less than 5,000 in 2015 from less than 150 complainants
- Over 300,000 complaints in 2019 from 1,125 complainants
 - Number of complaints increased by a factor of 15 from the previous high in 2013 or a factor a 300 from the lower years
 - Number of complainants increased by a factor of 7 from years prior to 2018
- Rise in number of complaints began in 2018
- “Noise button” use began in earnest around summer of 2018
 - Approximately 90% of complaints are coming from the noise button (AirNoise.io)

Complaints



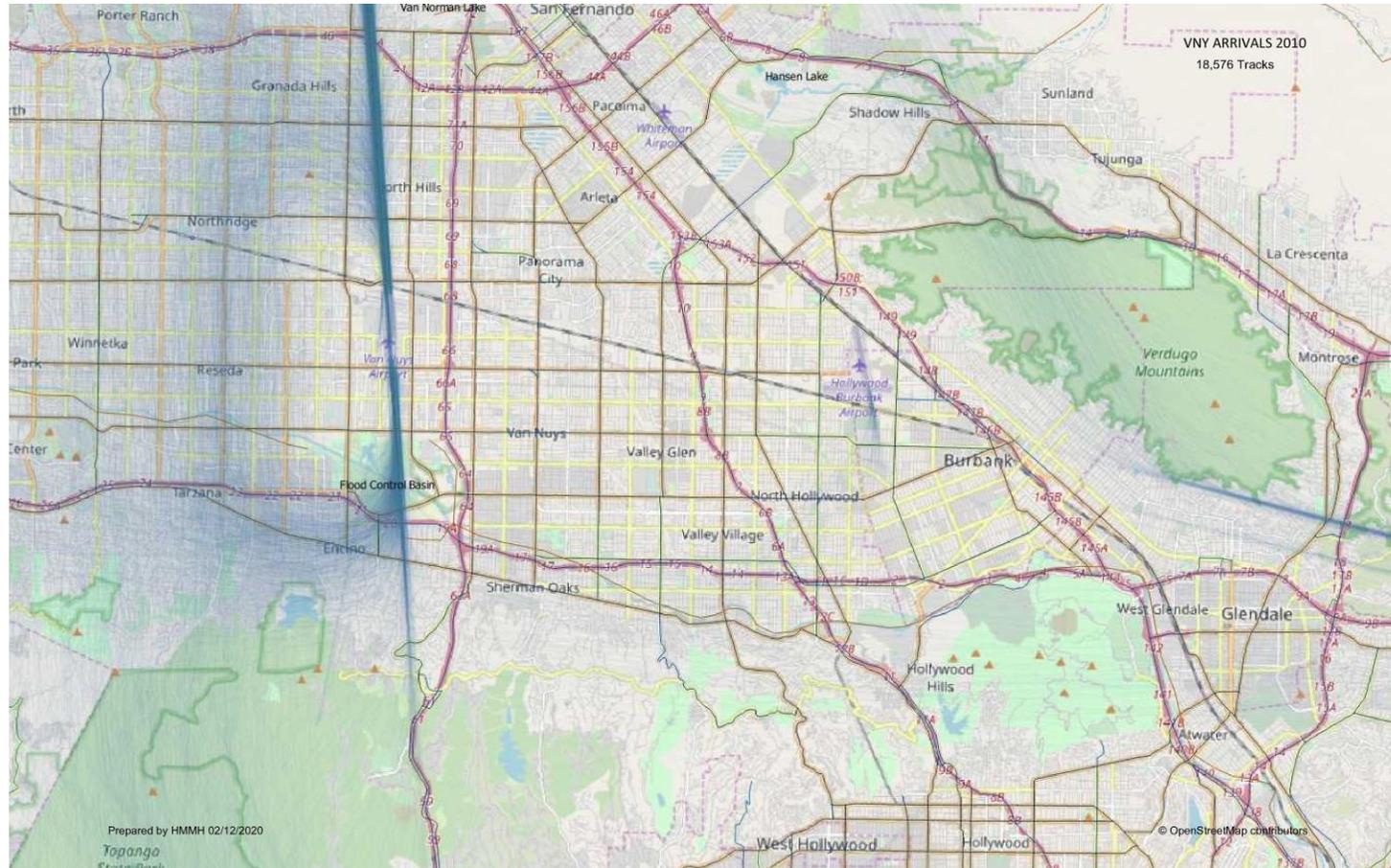
Complainants



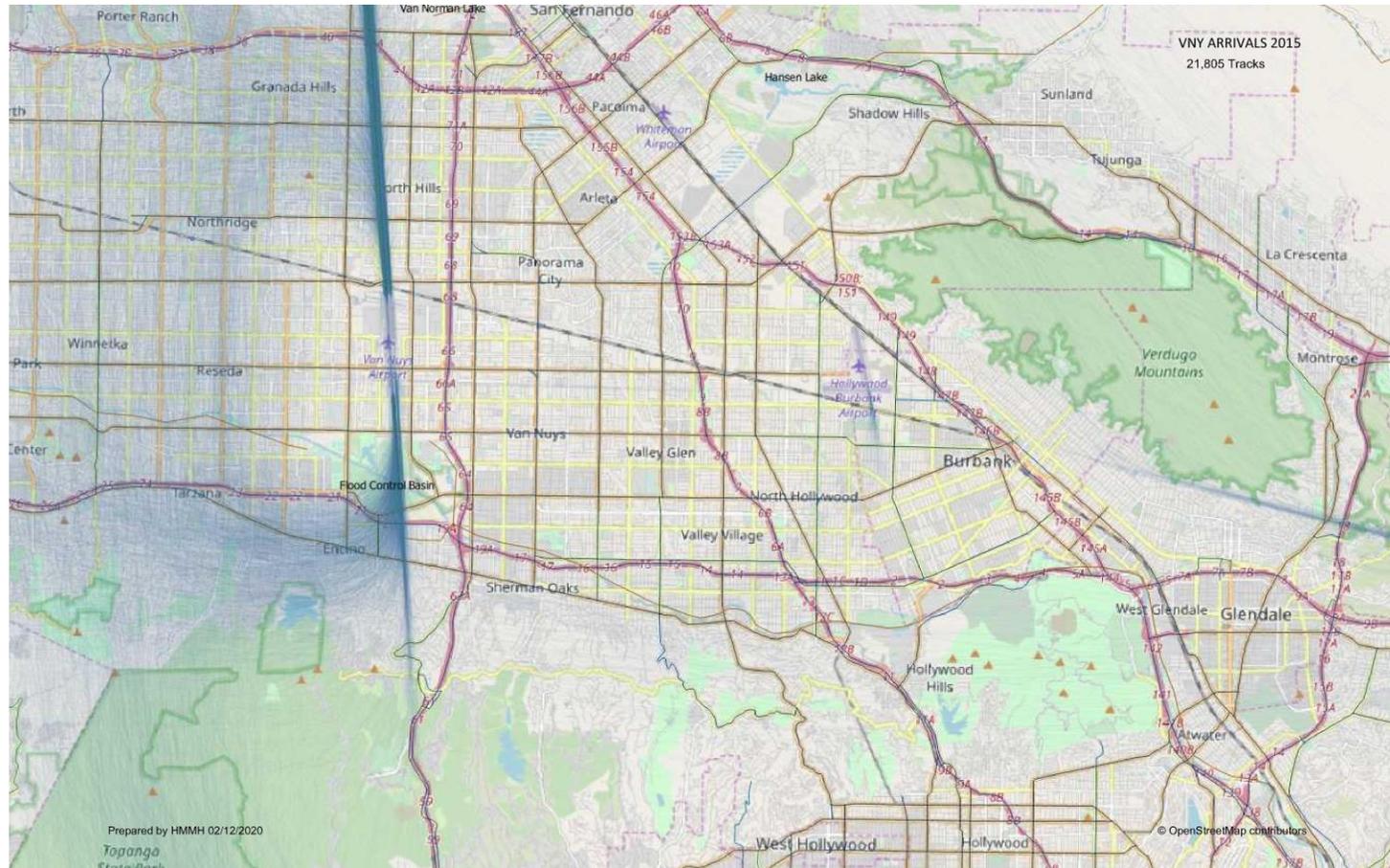
Data Analysis Results

Historical Flight Tracks – Van Nuys Airport

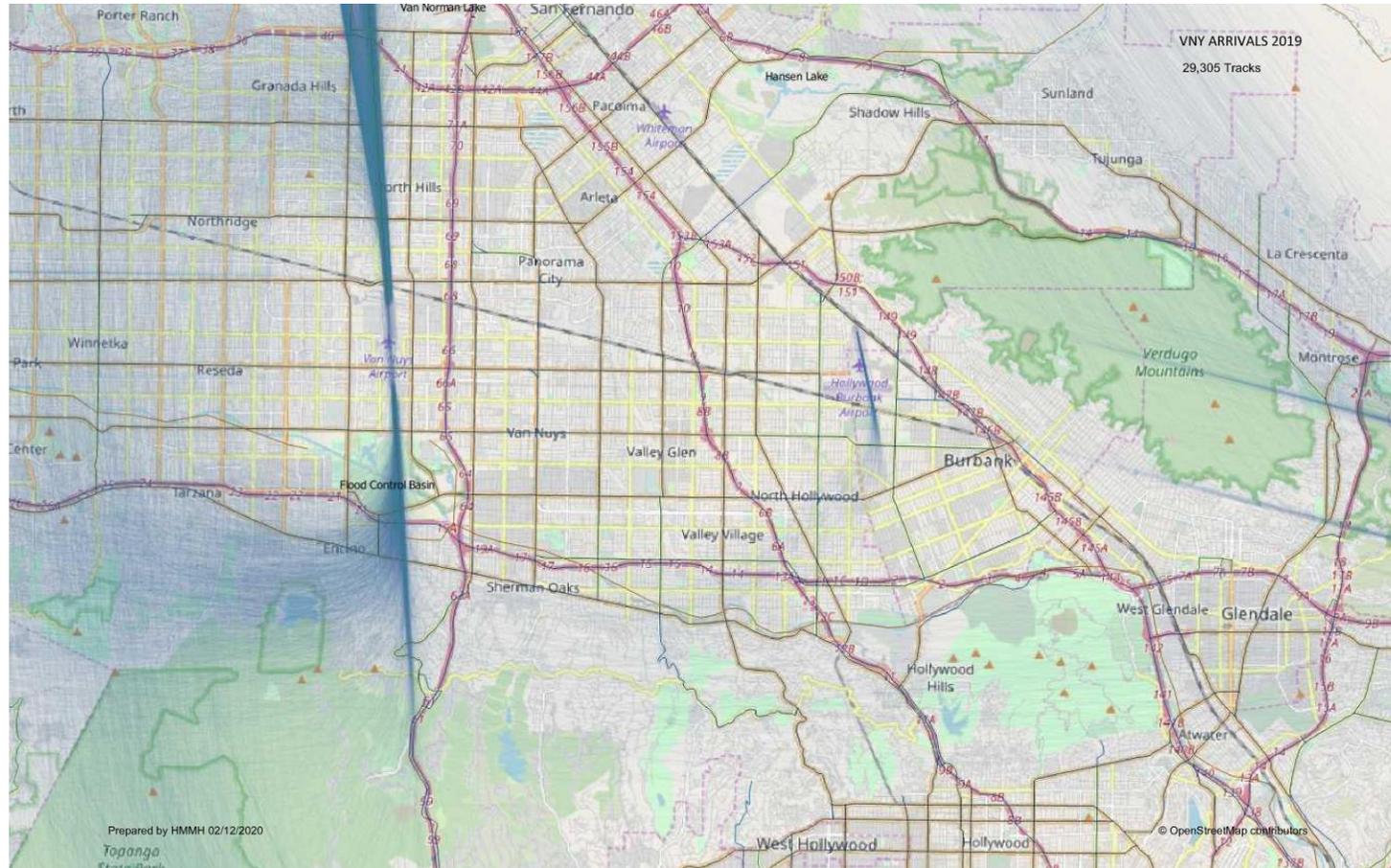
Van Nuys Airport Jet Arrivals 2010



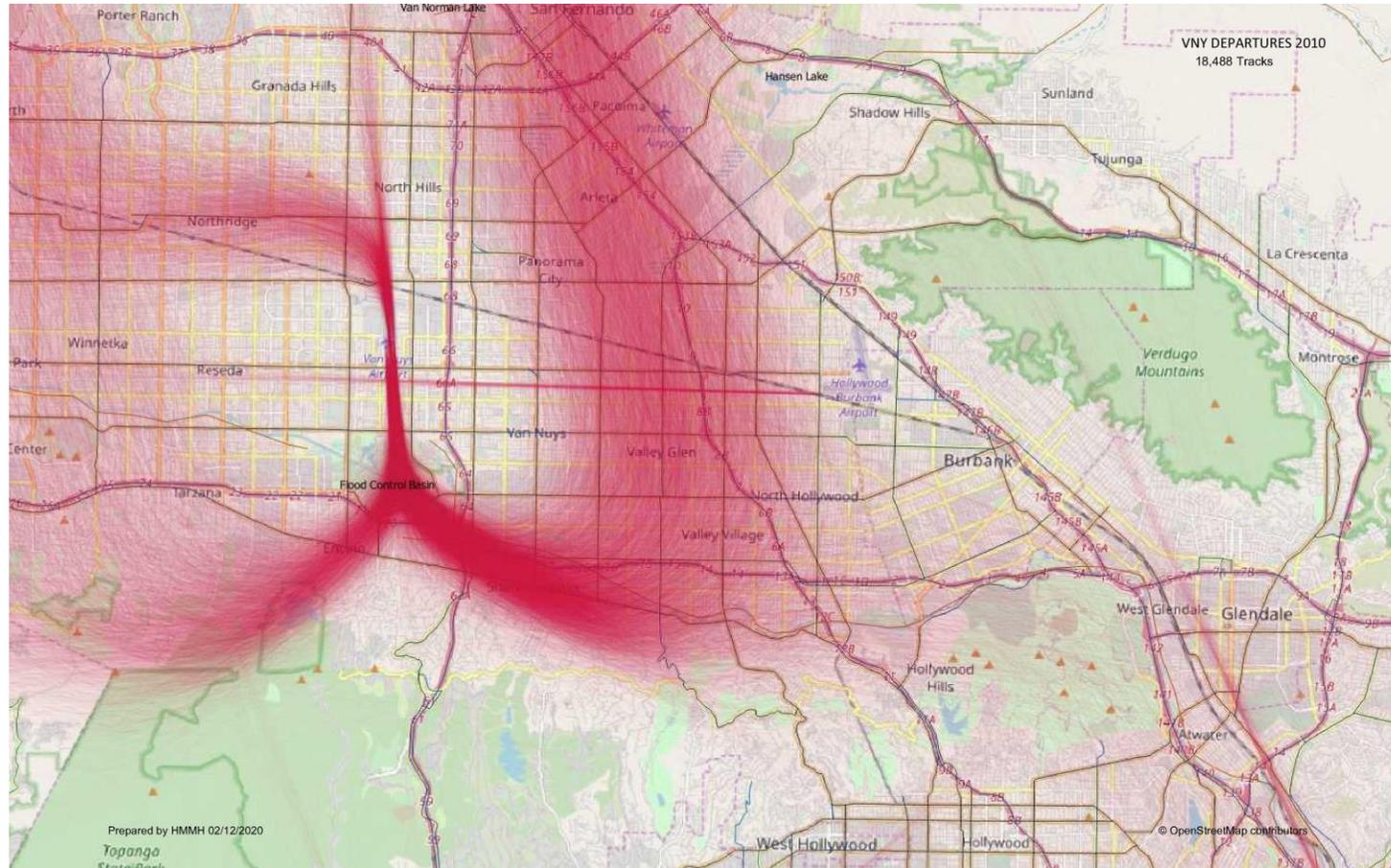
Van Nuys Airport Jet Arrivals 2015



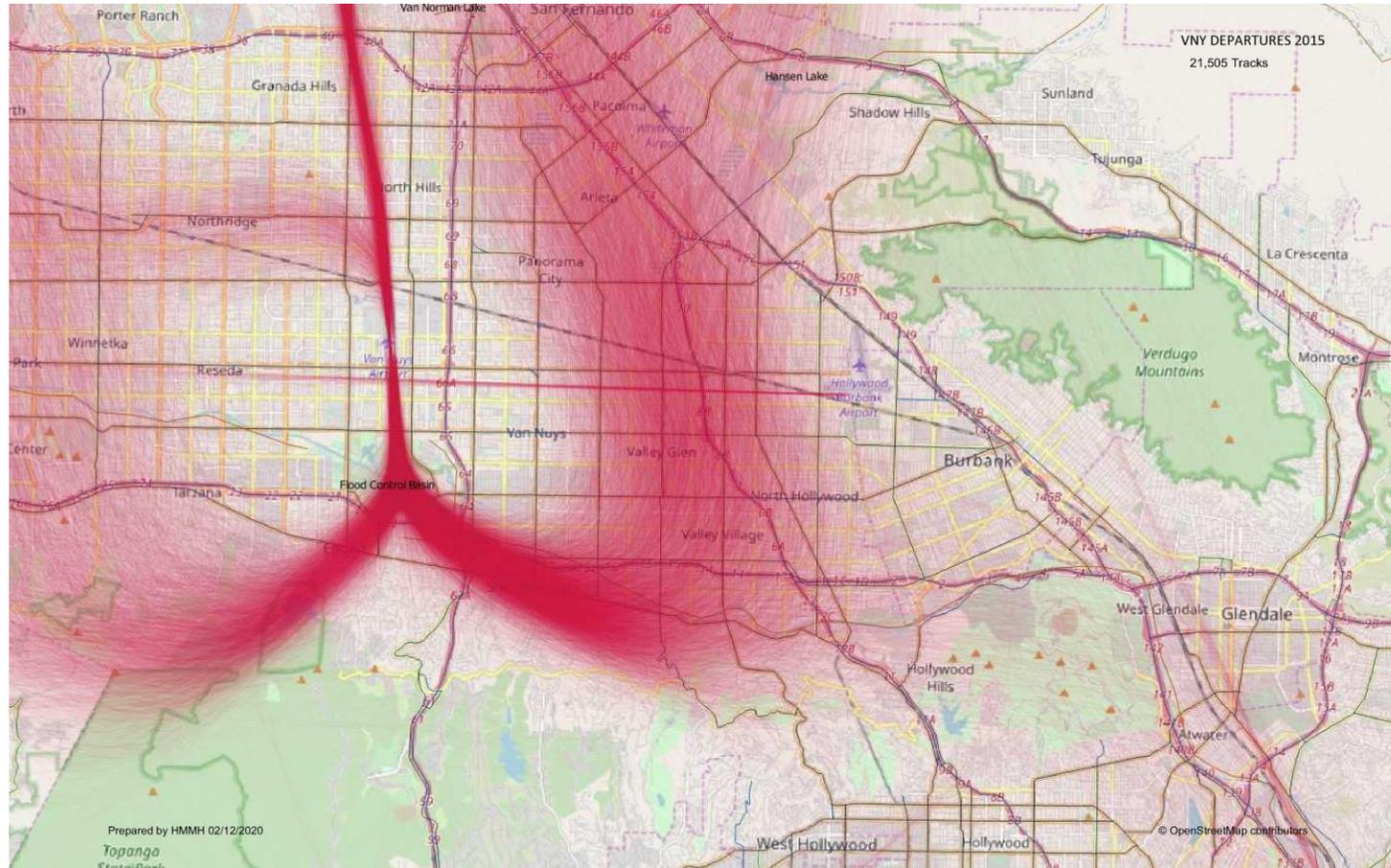
Van Nuys Airport Jet Arrivals 2019



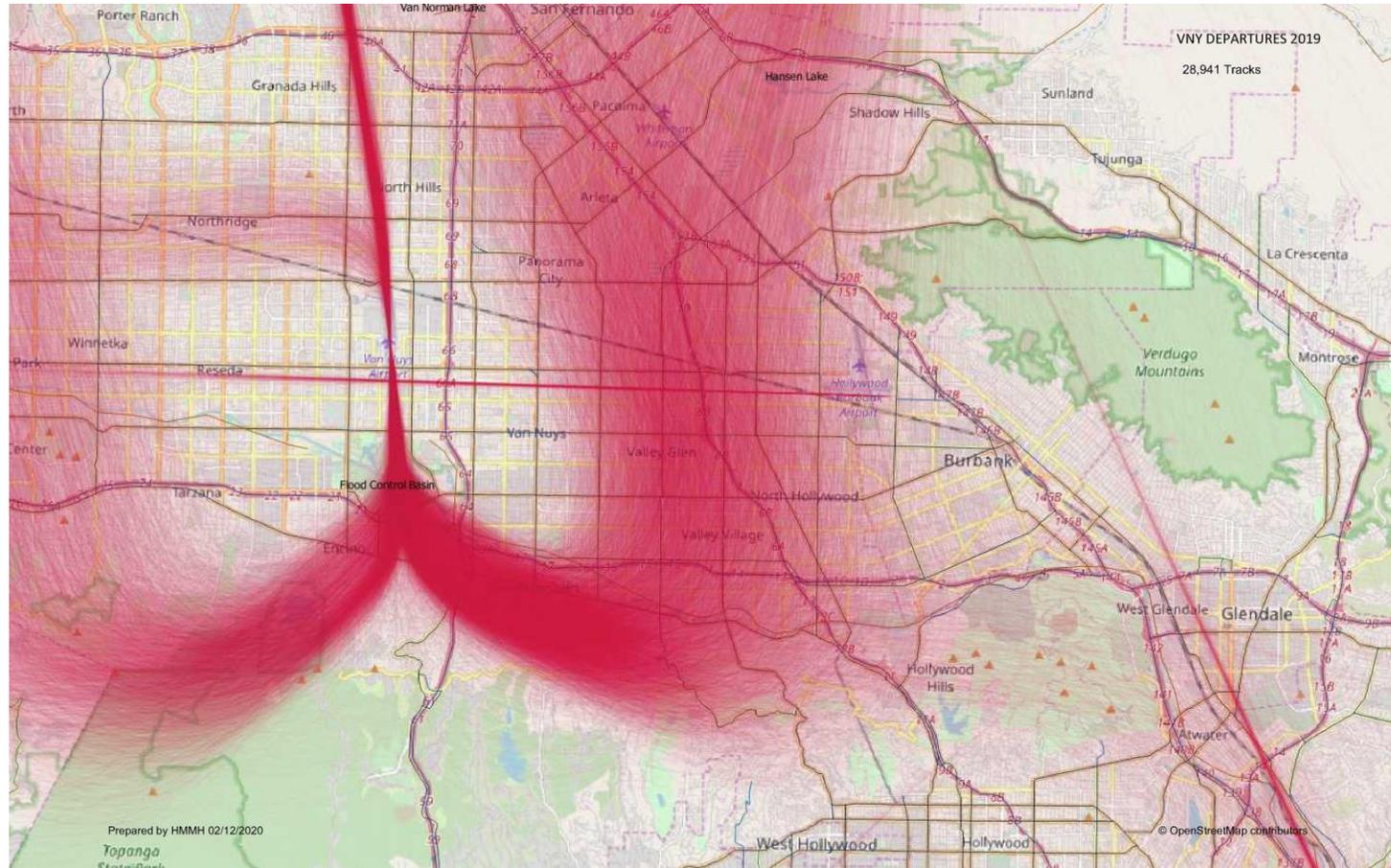
Van Nuys Airport Jet Departures 2010



Van Nuys Airport Jet Departures 2015



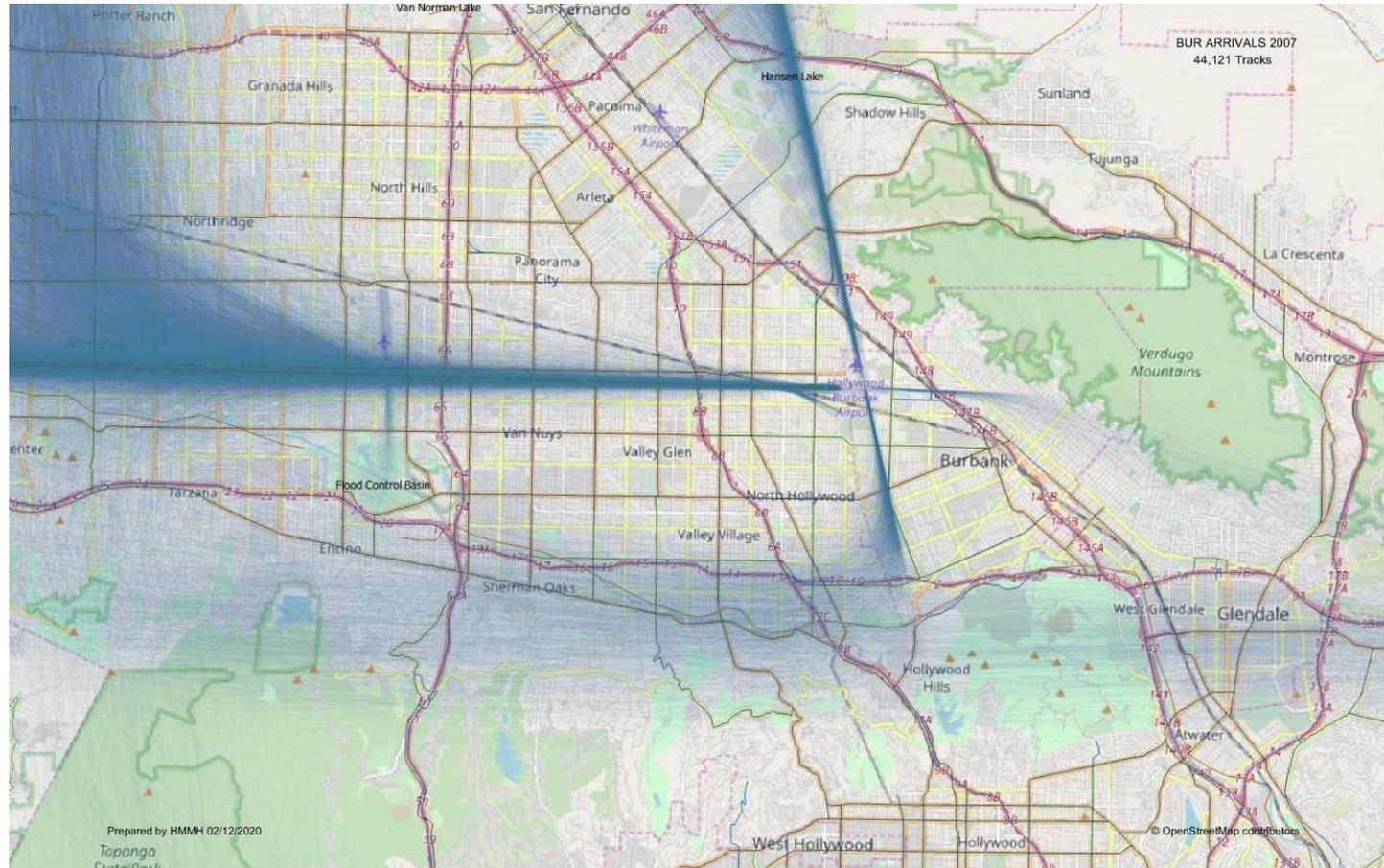
Van Nuys Airport Jet Departures 2019



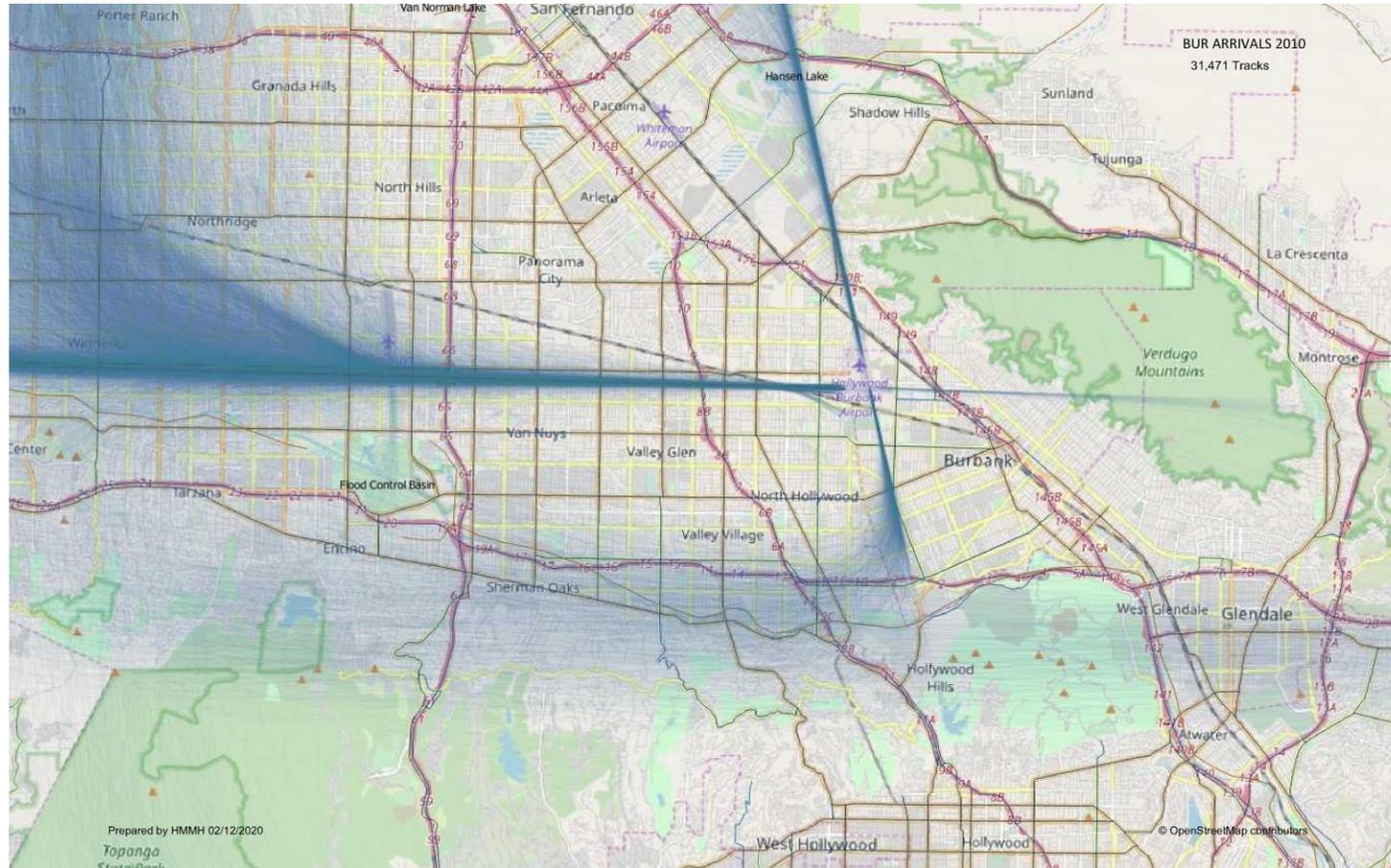
Data Analysis Results

Historical Flight Tracks – Hollywood Burbank Airport

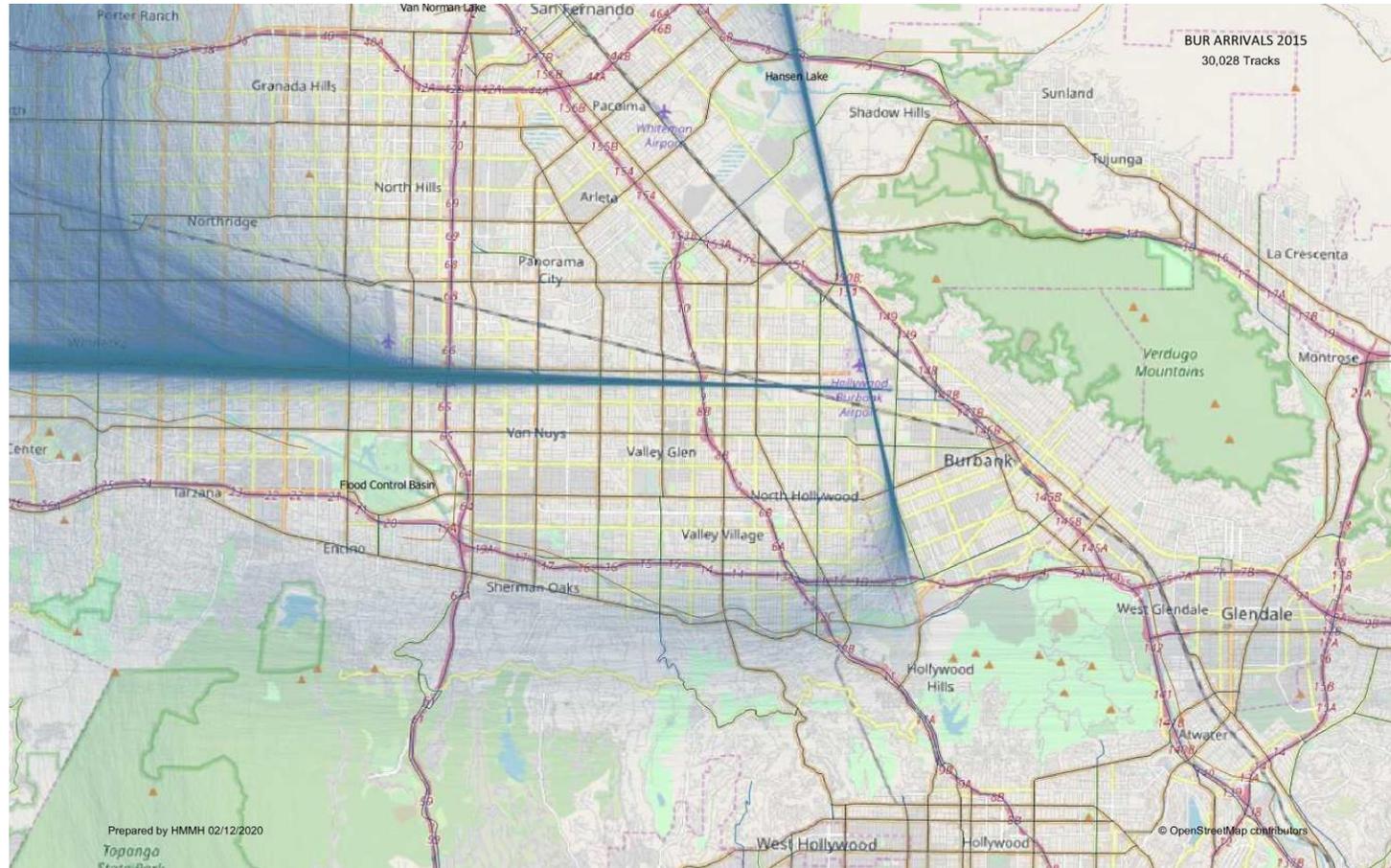
Hollywood Burbank Airport Jet Arrivals 2007



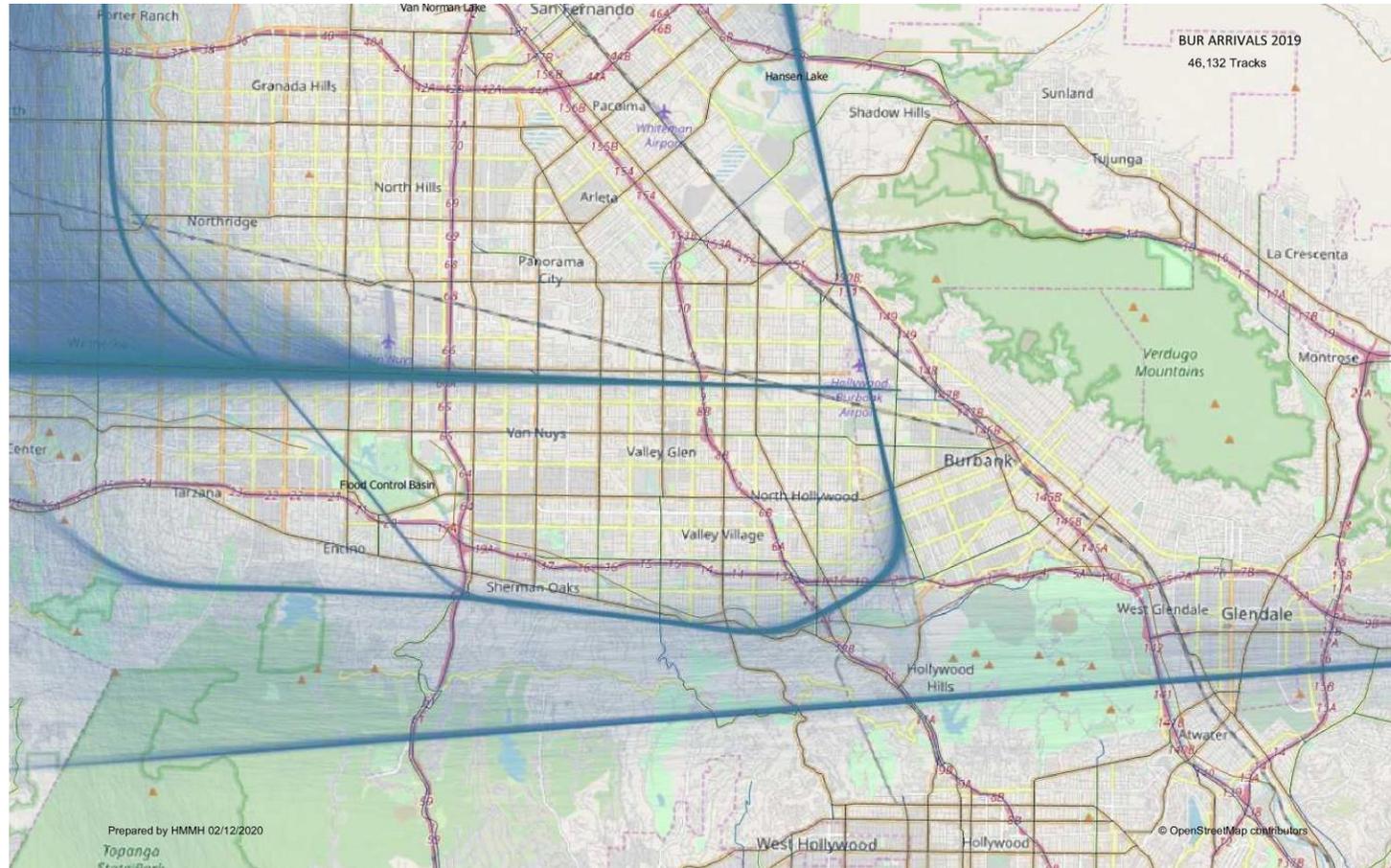
Hollywood Burbank Airport Jet Arrivals 2010



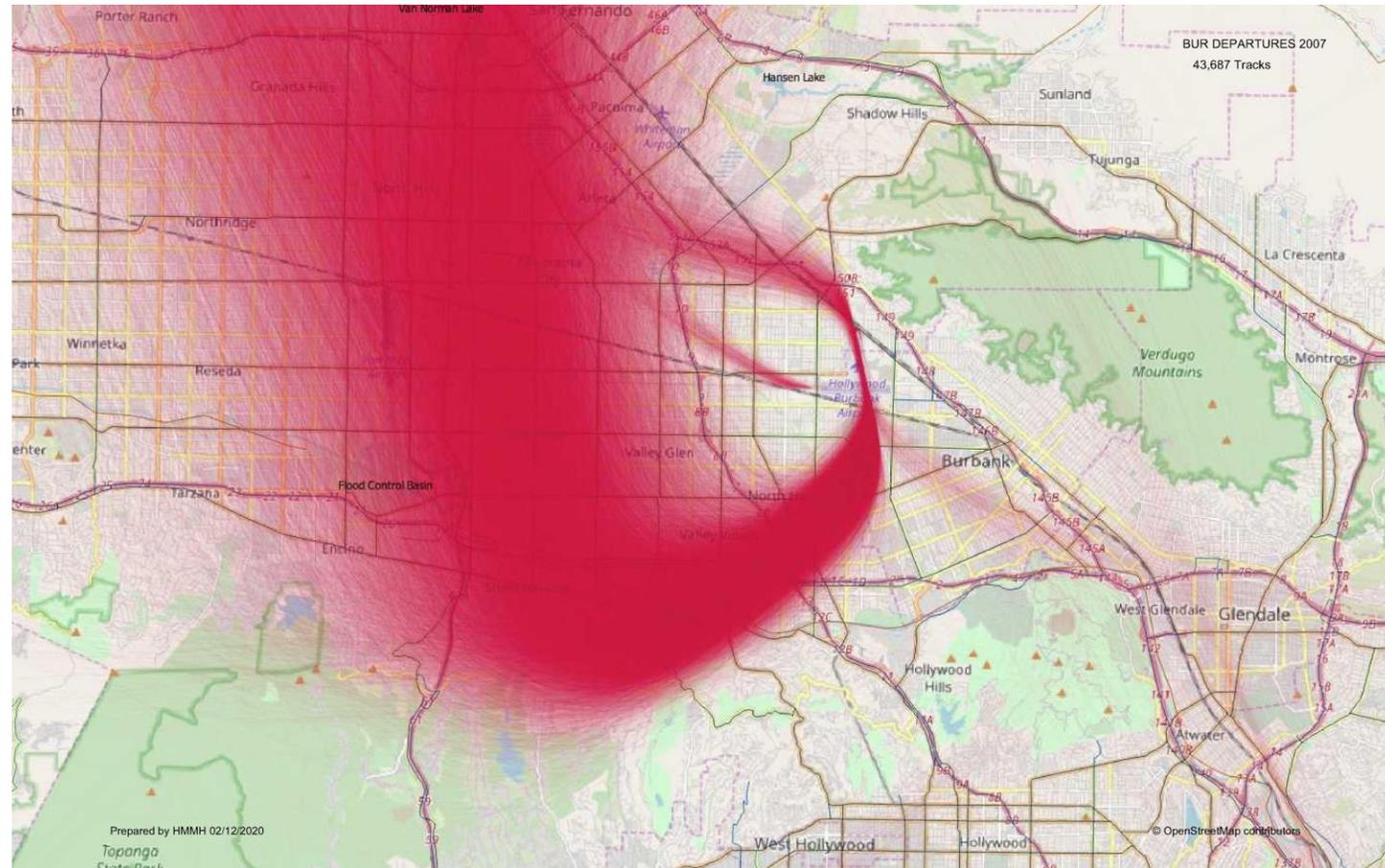
Hollywood Burbank Airport Jet Arrivals 2015



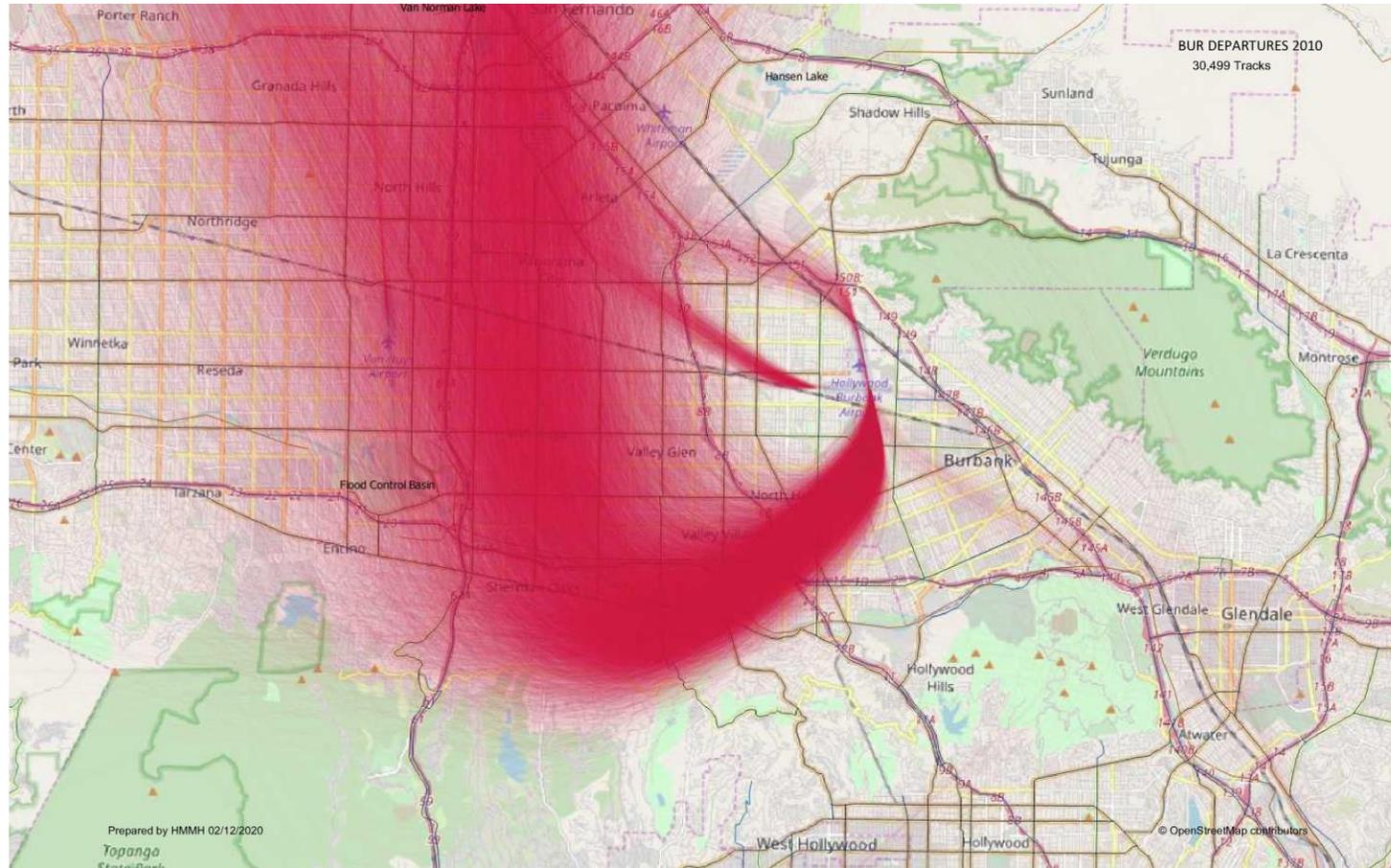
Hollywood Burbank Airport Jet Arrivals 2019



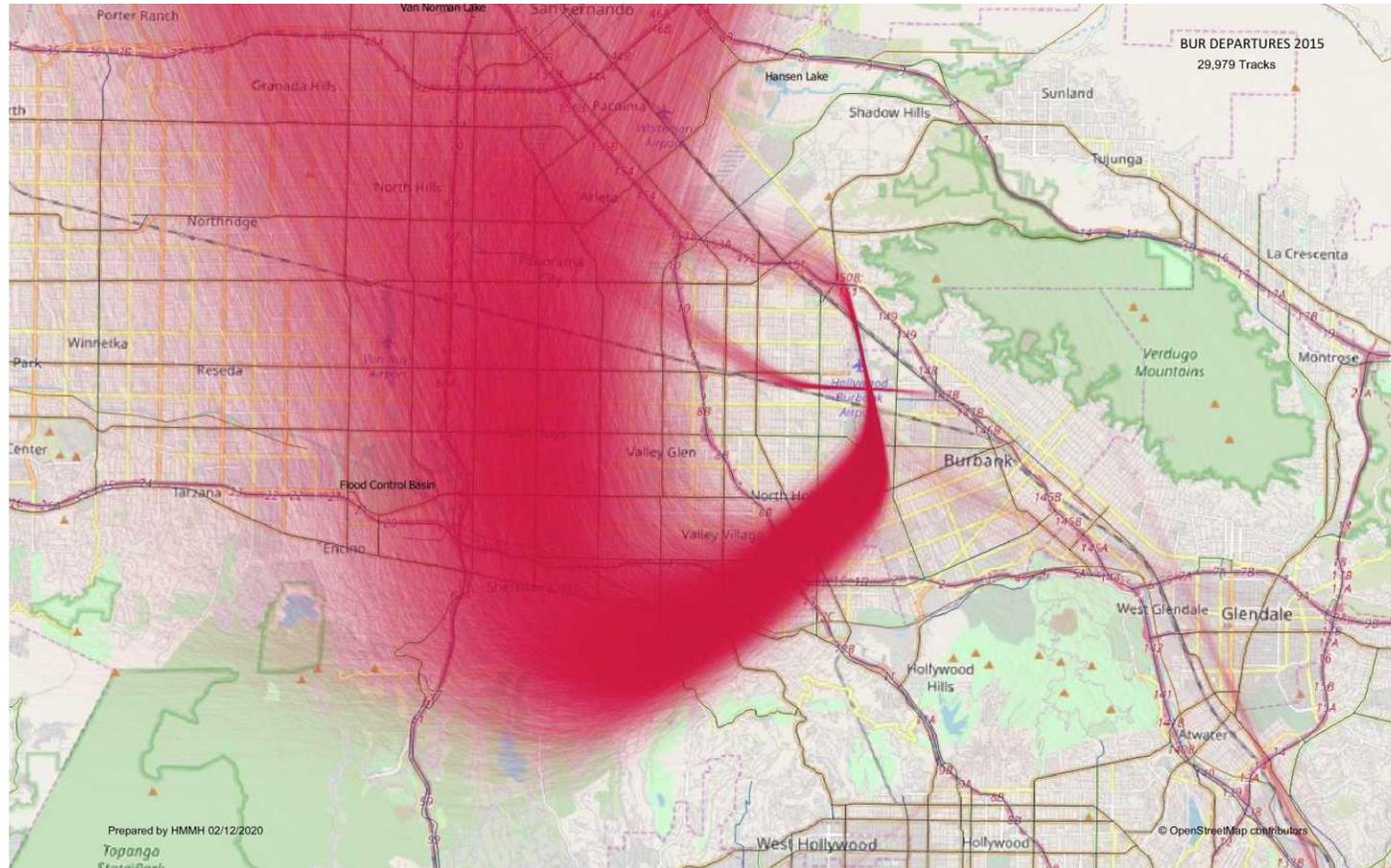
Hollywood Burbank Airport Jet Departures 2007



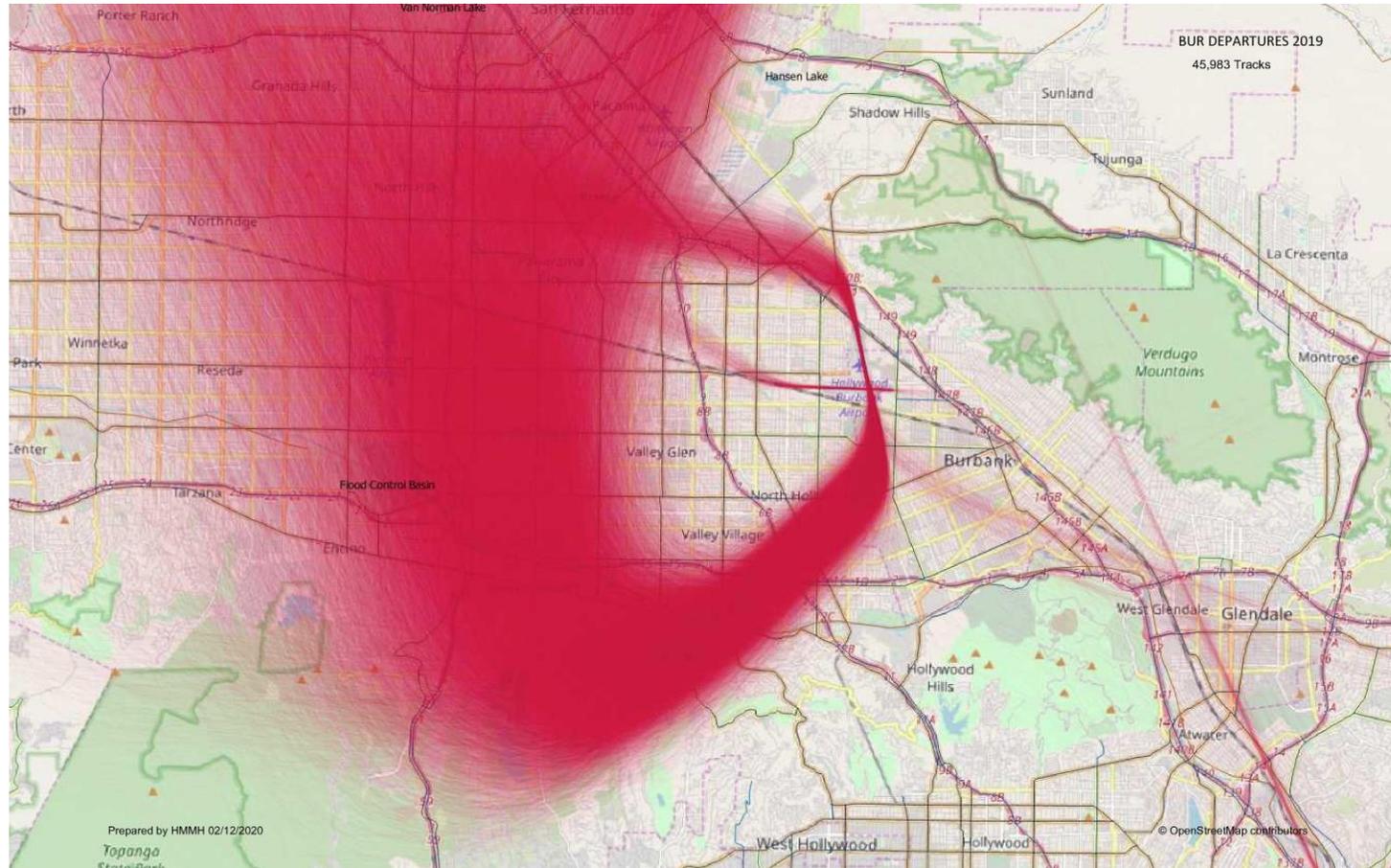
Hollywood Burbank Airport Jet Departures 2010



Hollywood Burbank Airport Jet Departures 2015



Hollywood Burbank Airport Jet Departures 2019

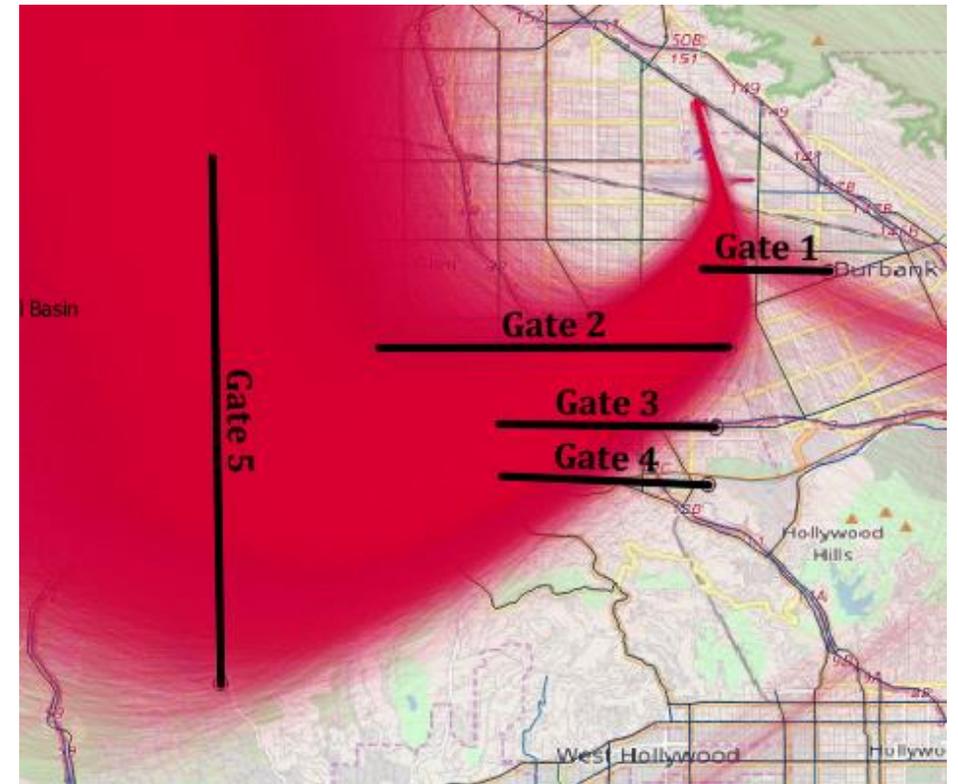


Altitude Analysis: Hollywood Burbank Airport Runway 15 Jet Departures

Gate	2007		2010		2015		2019	
	Total Tracks	Avg. Altitude (Ft. MSL)						
1	28,937	1,773	19,629	1,782	24,467	1,884	40,544	1,868
2	41,176	2,752	28,822	2,887	29,718	2,758	42,413	2,618
3	25,766	3,364	16,806	3,492	22,428	3,384	39,492	3,298
4	5,302	3,659	3,469	3,680	7,572	3,748	20,514	3,704
5	28,390	6,093	17,908	6,413	20,739	6,247	35,706	6,202

Gate Placement:

- Gate 1: Jeffries Ave/Luther Burbank Middle School (east/west)
- Gate 2: W. Magnolia Blvd (east/west)
- Gate 3: Highway 101 (east/west)
- Gate 4: Ventura Blvd (east/west)
- Gate 5: Van Nuys Blvd to Stone Canyon Reservoir (north/south)



ATC Procedural Analysis

Southerly Departures from BUR and VNY

Kevin Karpe
Diverse Vector Aviation Consulting LLC

Kevin Karpe Biography



- As owner of Diverse Vector Aviation Consulting LLC (DVAC), Kevin Karpe provides aviation expertise in air traffic control, airspace design, procedure design, unmanned vehicle operations, and litigation support
- Prior to DVAC, Kevin Karpe:
 - Retired US NAVY Air Traffic Controller after serving for 7 years
 - Retired FAA Air Traffic Controller where he worked at the Burbank Tower, Burbank Airport Approach Control and finished his career at the FAA Southern California TRACON
- During his career with the FAA Air Traffic Organization he participated in NextGen initiatives including airspace redesign and implementation of new standards in the National Airspace System

Procedural Analysis Overview

- DVAC reviewed one (1) week of data each January from 2016 to 2020 and an additional week in March 2017 near Metroplex implementation using the following data sources:
 - EMS Bruel & Kjaer ANOMS™ (noise monitoring systems data)
 - FlightRadar24
 - LiveATC data

Current Procedures and Responsibilities

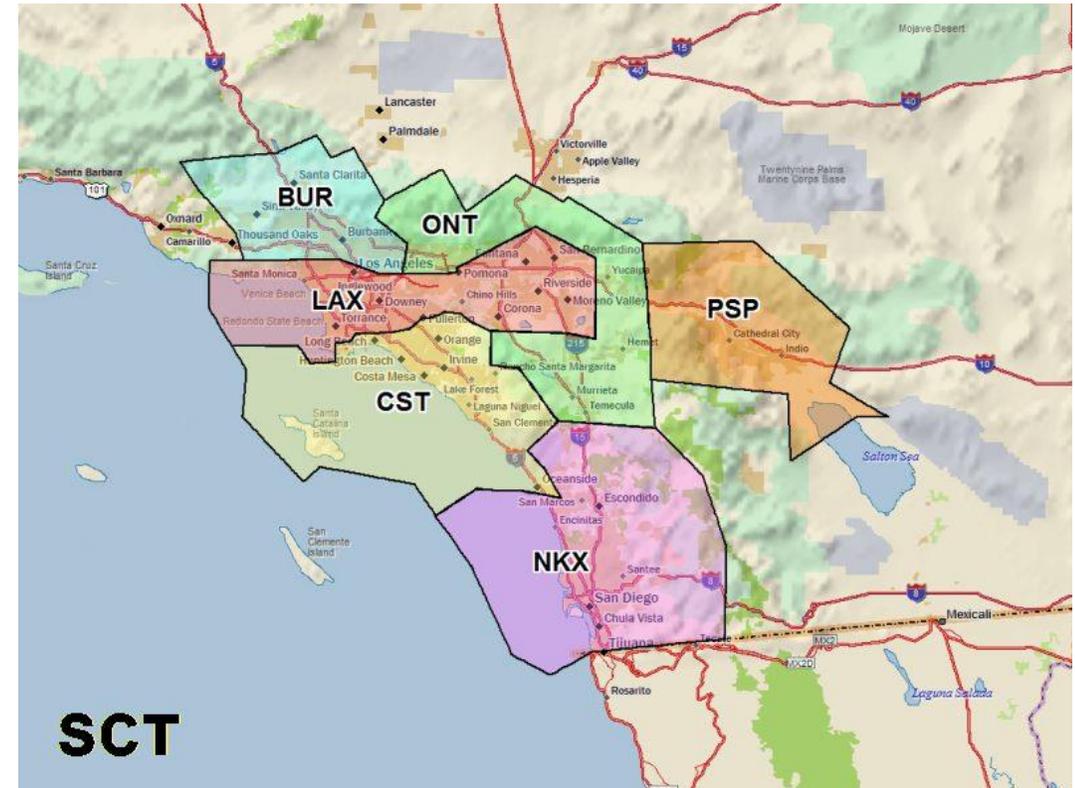
ATC Airspace and Positions

- San Fernando Valley area served by:
 - Hollywood Burbank Airport Tower
 - Van Nuys Airport Tower
 - Southern California Terminal Radar Approach Control Facility (TRACON) or “SCT”
- Tower controllers handle surface operations, runway operations and flight operations immediately surrounding the airports
- SCT handles flight operations within 40 to 60 nautical miles from the airports
 - For example, on departure SCT handles aircraft upon transfer from Tower controllers and until aircraft reach 15,000' altitude
 - Communications transfer from Tower to SCT should occur approximately ½ nautical mile from runway departure end
 - Note: DVAC observed that several times the handoff did not occur within this guideline

Current Procedures and Responsibilities

ATC Airspace and Positions

- SCT includes Six (6) Sectors
- BUR Sector handles the San Fernando Valley traffic and is divided into six (6) Sectors:
 - Valley Sector handles southwest BUR departures and eastbound VNY departures
 - Other relevant sectors: Glendale, Woodland, Pasadena, Moorpark
- LAX Sector boundary is approximately 6 nautical miles south of BUR and VNY
 - Essentially over the Santa Monica Mountains
- BUR, VNY aircraft departures must remain 1.5 nautical miles from the LAX Sector boundary
 - BUR departures must turn by 5.7 nmi from Airport
 - VNY departures must turn by 6.0 nmi from Airport



Contrast and Comparison of Metroplex Operations An Air Traffic Management Study of Atlanta, Los Angeles, New York, and Miami - Scientific Figure on ResearchGate.
https://www.researchgate.net/figure/A80-N90-SCT-and-MIA-TRACON-boundary-and-operational-areas-with-same-scale_fig2_235354854 [accessed 11 Feb, 2020]

San Fernando Valley ATC Challenges

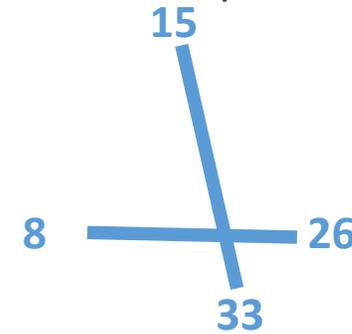
Combined ATC Sectors

- The six sectors within the BUR Sector may be combined into each other
 - Valley Sector often includes Palmdale Sector and Glendale Sector
- Combining sectors:
 - Can result in disregard of SOPs and other agreements to ease workload and expedite traffic out of sector
 - Requires much more communication, data entry, and coordination
 - More complicated environment
 - Results in Valley Sector controllers vectoring departure traffic further south
 - Aircraft departures often climb on extended southerly headings instead of turning northwards earlier
- **Recommendations**
 - Conduct System Service Review (SSR) on resource management at both SCT and BUR Sector
 - Review how to manage workload at positions to maintain efficiency

San Fernando Valley ATC Challenges

Traffic Management

- Instrument Flight Rules (IFR) approaches are available only for Runway 8 at BUR
- Northbound aircraft departing on Runway 15 must wait for sufficient separation with IFR arrivals to Runway 8 before turning northbound
- Demand for routes or destinations may exceed capacity
 - Results in application of Traffic Management Initiatives (TMIs) and flow restrictions
 - Requires controllers to increase spacing between aircraft, either on the ground or in the air
- Southern California TRACON required to hand off traffic to LA Center with specific spacing
 - Usually 5 nautical miles between aircraft



San Fernando Valley ATC Recommendations

Traffic Management (continued)

- When aircraft capacity on a route or destination exceeds its capacity, Traffic Management Initiatives (TMIs) are issued
 - Results in greater spacing needs—often 15 nautical mile separation, or as determined by the responsible Traffic Management Unit
- Spacing achieved through ground holds and/or vectoring
- **Recommendations**
 - Conduct Traffic Management Reviews in the San Fernando Valley area to provide detailed analysis of impact of Traffic Management Initiatives
 - Provide refresher training on applying and administering TMIs for SCT and BUR Sector controllers
 - Conduct Operational Skills Assessments (OSAs) on how traffic restrictions are applied and communicated in the SCT and BUR Sector areas

San Fernando Valley ATC Recommendations

Extended Southerly Flight Paths

- Departures from Hollywood Burbank and Van Nuys Airports proceed several miles further south than necessary prior to receiving FAA instruction for northbound turn
 - Likely to deconflict airway traffic and Hollywood Burbank aircraft arrivals
- DVAC monitoring indicates vertical and visual separation could be used to allow earlier northbound turn
 - As per FAA Joint Orders 7110.65 and 7210.634
- **Recommendations**
 - Provide additional training on minimum requirements of radar separation
 - Focus on vectoring, radar separation minima, aircraft characteristics
 - Conduct post-training Operational Skills Assessments (OSAs) on radar separation

San Fernando Valley ATC Recommendations

Use and Adherence to SOP

- Controller actions do not always adhere to Airport Traffic Control Standard Operating Procedures – even when conflicting traffic not present
 - SOP states that aircraft departing on SLAPP or PMD departures should be vectored over or west of LANGE intersection
 - If Pasadena and Valley Sectors are combined, controllers prefer to send aircraft direct to SLAPP or other nearby fix
 - OROSZ departures directed to climb out to southwest and handed off in large turn
- **Recommendations**
 - Instruct Tower Supervisors to not combine sectors at peak traffic periods
 - Monitor Valley Sector for SOP compliance
 - Conduct training on using northerly airspace between BUR and VNY to gain altitude
 - Conduct System Service Review (SSR) on SOP compliance and resource management

San Fernando Valley ATC Recommendations

Departure Handoffs

- DVAC monitoring found the handoff to departure control often did not take place within ½ nautical mile guideline
- Departure control cannot issue northbound turns until the handoff takes place
- **Recommendations:**
 - Provide refresher training to Tower controllers on proper handoff procedures and impacts of non-compliance
 - Conduct post-training System Service Review (SSR) on handoff procedures

Community Groups Proposals

Preliminary Assessment

Note: FAA is ultimately responsible for the assessment, design and implementation for any Task Force-proposed changes to aircraft flight procedures.

Uproar LA

Proposals:

Uproar LA

- Moratorium on Flight Management System (FMS) Usage
- Operation TWIST (Turn West Immediately and Spread Tracks)
 - Ask FAA to conform to Minimum Vectoring Altitude (MVA)
 - Revise MVA as necessary
 - ATC: Expedite vector issuance at Minimum Vectoring Altitude (MVA)
 - Pilots: Immediate compliance with vectors
 - Request that FAA issue NOTAMS
 - Turn west from 210° heading before crossing the 101 Freeway
 - Increase minimum climb rate to reach Minimum Vectoring Altitude (MVA) faster
 - Request that airlines use higher climb rates

Review: Flight Management System Moratorium

Uproar LA

- Flight Management Systems are integral to modern aircraft
 - Disabling a Flight Management System may compromise safe and efficient navigation and other safety features
 - Many air carriers mandate the use of Flight Management System capabilities and data as part of standard operating procedures for safety reasons
 - Flight Management Systems provide the most current and accurate flight data to flight crews

Review: Operation TWIST (1)

Uproar LA

- Ask FAA to conform to Minimum Vectoring Altitude (MVA)
 - BUR/VNY area Minimum Vectoring Altitude (MVA) is about 3,000'
 - FAA follows standards for Minimum Vectoring Altitude (MVA)
 - MVAs change only if area obstructions change OR if FAA revises MVA standards
- ATC: Expedite vector issuance at Minimum Vectoring Altitude (MVA)
 - Controllers issue vectors as workload and traffic conflicts permit
 - Vectors will not be issued if conflicts exist or will result, or if workload is too high
 - Phraseology of “immediately” and “expedite” used for emergency circumstances only and cannot be employed for this situation
- Pilots: Immediate compliance with vectors
 - Pilots must initiate turn as soon as received
 - Standard turn rate:
 - 3 degrees per second (°/s) for small, low speed aircraft
 - 1.5°/s for large, high speed aircraft
 - May use steeper turn in good weather conditions, but often limited by operator policy due to safety and passenger comfort

Review: Operation TWIST (2)

Uproar LA

- Request that FAA issue NOTAMs
 - Turn west from 210° before crossing the 101
 - ATC cannot issue vectors when aircraft are below Minimum Vectoring Altitude (MVA)
 - Such a request could result in conflicting information to flight crews due to incorrect interpretation
 - May cause flight crews to turn without ATC instructions, resulting in possible loss of aircraft separation
 - Increase minimum climb rate
- Request that airlines use a higher climb rate
 - Not all aircraft may be able to attain higher rates
 - Airlines may choose not to comply if not procedurally required

Studio City for Quiet Skies

Proposals: TWIST/General Requests

Studio City for Quiet Skies

- Turn aircraft sooner and return to historic, dispersed flight paths
 - Make TWIST permanent
 - Fan out departures prior to turn
- Increase minimum climb rate
- Turn as soon as at safe altitude
- Use Runway 33 for northern departure
 - More efficient path to OROSZ and SLAPP
 - No headwind required
- Rotate runway use to depart jets in all directions for sharing noise

Proposal: Operation JETNOISE

Studio City for Quiet Skies

- Relocate JAYTE and TEAGN north of the 101 Freeway
- Create new Initial Fix MLLGN south of BUR if RNAV departure is required
- Use open SID (Standard Instrument Departure) to disperse departure tracks



Green: JETNOISE - most closely represents historic flight tracks with RNAV dispersal

Red: BUR Proposed Procedures flight track that would impact "New Community"

Review: TWIST/General Requests

Studio City for Quiet Skies

- Turn aircraft sooner over historical flight paths north of the 101
 - Controllers issue vectors as workload and traffic conflicts permit
 - Vectors will not be issued if conflicts exist or will result, or if workload is too high
 - Handing off to Southern California TRACON sooner and emphasize importance of turning north sooner to controllers may help
- Increase minimum climb rate
 - Potentially feasible depending on the climb rate
 - Not all aircraft may be able to attain the higher rate
- Turn as soon as at safe altitude
 - Minimum Vectoring Altitude (MVA) is about 3,000'
 - FAA follows standards for Minimum Vectoring Altitude (MVA)
 - MVA will not change unless obstacles change OR FAA changes MVA criteria

Review: TWIST/General Requests

Studio City for Quiet Skies

- Favor Runway 33 for northern departures and rotate runway usage for better distribution of noise
 - Runway usage governed primarily by wind direction
 - Wind analysis shows some promise to increase northern departures...however...
 - Runway usage is also dependent on aircraft flow at the surrounding airports – Hollywood Burbank Airport cannot operate in isolation

Review: Operation JETNOISE

Studio City for Quiet Skies

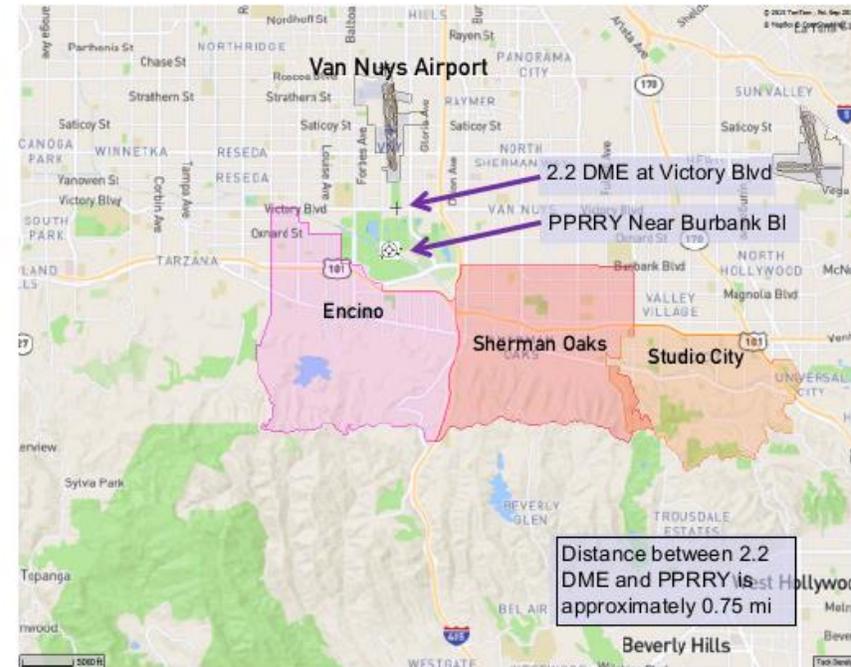
- Relocate JAYTE to TEAGN
 - Segment is too close to final approach for Runway 8
 - Segment does not provide 1,000 foot vertical or 3 nautical mile lateral separation from BUR Runway 8 arrivals
- Flyby initial fix MLLGN does not meet FAA procedure design criteria and would require procedural design waiver
- Unconventional climb gradients to MLLGN and JAYTE
 - Procedures usually specified with single gradient
 - Rates (575 feet per nautical mile, 628 feet per nautical) may be problematic for certain aircraft and/or seasons
 - Rates over 500 feet per nautical mile require FAA procedural design waiver
 - Not all aircraft may be able to attain higher rates

Advocates for Viable Airport Solutions

Proposal: VNY

Advocates for Viable Airport Solutions

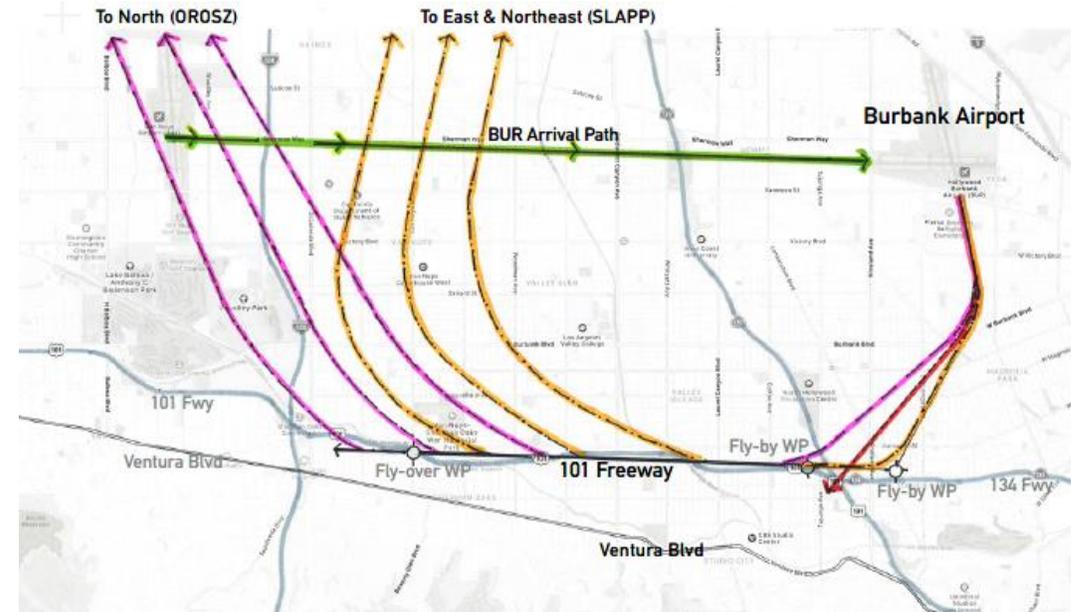
- New waypoint prior to the 101 Freeway to facilitate earlier turn
 - Interim solution: Replace PPRRY with 2.2 Distance Measuring Equipment (DME)
 - Long term solution: New waypoint before the 101 Freeway
- Increase minimum climb gradient
- Applies to east and west departures



Proposal: BUR

Advocates for Viable Airport Solutions

- Interim solution
 - Use different departure headings for
 - OROSZ RNAV
 - SLAPP RNAV
 - Conventional departures
 - Increase minimum climb gradients
- Long term solution
 - Adjust OROSZ and SLAPP to provide 2,000' separation between them and BUR arrival path
 - Dispersed departure paths



Review: VNY Proposal

Advocates for Viable Airport Solutions

- Adding waypoints along the 101 Freeway places VNY Runway 16L/R departures too close to BUR Runway 8 arrivals
 - Segment is too close to final approach for Runway 8
 - Segment does not provide 1,000 foot vertical or 3 nautical mile lateral separation from BUR arrivals
- Waypoint at 2.2 Distant Measuring Equipment (DME) instead of PPRRY does not meet FAA procedure design criteria
 - Would require procedural design waiver
- Increase minimum climb gradients
 - Potentially feasible depending on the climb rate
 - Not all aircraft may be able to attain higher rates

Review: BUR Proposal

Advocates for Viable Airport Solutions

- Increased climb gradients
 - Potentially feasible depending on the climb rate
 - Not all aircraft may be able to attain higher rates
- Different headings for OROSZ, SLAPP, conventional departures
 - Would potentially better distribute overflights close to the airport
- Adding waypoints along the 101 Freeway places BUR Runway 15 departures too close to BUR Runway 8 arrivals
 - Segment is too close to final approach for Runway 8
 - Segment does not provide 1,000 foot vertical or 3 nautical mile lateral separation from BUR arrivals

Sherman Oaks & Encino for Quiet Skies

Proposal: VNY

Sherman Oaks & Encino for Quiet Skies

- Return to conventional, non-Performance Based Navigation (PBN) Standard Arrival Routes (STARs) and Standard Instrument Departures (SIDs)
- Waive Performance Based Navigation mandate for BUR and VNY airspace
- Increase minimum climb rates
- Favor historical north flow for better dispersion
 - Favor NEWHALL, CANOGA, HAYEZ, VVERA, GLENDALE procedures
 - Suspend HARYS, ROSCO, WLKKR, PPRRY procedures
- In south flow, turn aircraft over Sepulveda Basin at 2.2 DME
- Avoid Santa Monica foothills and mountains

Review: Non-PBN Procedures

Sherman Oaks & Encino for Quiet Skies

- Return to conventional, non-Performance Based Navigation
 - Implementation of NextGen, including PBN, is a Congressional mandate
 - FAA working to decommission ground-based NAVAIDS, on which conventional procedures rely
 - FAA categorically states it will not return to conventional procedures
- Favor historical north flow procedures
 - Recommendation includes suspension of PBN procedures
 - FAA will not return to conventional procedures as part of mandate
- Waive PBN mandate for BUR and VNY
 - Requires extensive safety studies and consideration by FAA and Industry to ensure that a waiver would not negatively impact safety and efficiency

Review: Preferential Routing

Sherman Oaks & Encino for Quiet Skies

- Favor historical north flow procedures
 - Runway usage governed primarily by wind direction and aircraft flow at the other area airports
- In south flow, climb over Sepulveda Basin
 - Relocates PPRRY waypoint to 2.2 Distance Measuring Equipment (DME)
 - As previously noted, relocated waypoint does not meet FAA procedure design criteria and would require procedural design waiver
- Avoid Santa Monica foothills and mountains
 - Would shift VNY Runway 16L/R departures to locations that do not allow divergent paths or adequate vertical (1,000 feet) or lateral separation (3 nautical miles) from BUR Runway 8 arrivals

Review: Climb Rates

Sherman Oaks & Encino for Quiet Skies

- Increase minimum climb rates
 - Requested rate is 600 feet per nautical mile
 - Rates greater than 500 feet per nautical mile require FAA waiver
 - Not all aircraft may be able to attain higher rates

Burbank for Quiet Skies

Proposal: Burbank for Quiet Skies

- Request that FAA establish an altitude gate of 1,800' at Jeffries Ave
- Require aircraft to turn sooner after takeoff
- Establish and enforce more stringent rules regarding after-hours operations

Review: Burbank for Quiet Skies

- Altitude gate of 1,800' at Jeffries Ave
 - Jeffries Ave located 4,878' from departure end of Runway 15
 - Would require departure climb rate of 900 feet per nautical mile for Runway 15
- Require aircraft to turn sooner after takeoff
 - Aircraft cannot turn prior to reaching Minimum Vectoring Altitude (MVA)
 - BUR/VNY area Minimum Vectoring Altitude (MVA) is about 3,000'
 - FAA follows standards for Minimum Vectoring Altitude (MVA)
- Establish and enforce more stringent after-hours operations rules
 - Airport Noise and Capacity Act of 1990 (ANCA) and 14 CFR Part 161 limit airport authority to impose and enforce noise restrictions
 - Part 161 encourages use of voluntary restrictions over mandatory restrictions

Save Coldwater Canyon

Proposal: Save Coldwater Canyon

- Implement TWIST as specified in proposals from Uproar LA and Studio City for Quiet Skies
- See Uproar LA and Studio City for Quiet Skies for our analysis results of TWIST

Valley Village

Proposal: Valley Village

- Engage all community stakeholders, including those to the north
- Conduct an independent Strategic Environmental Assessment (SEA)
- Request technical analysis of tower controller/pilot communications

- Note: no technical review completed for these recommendations, but pilot/ATC communications were reviewed as part of the DVAC analysis

Changes to Aircraft Procedures

FAA Implementation of Proposed Aircraft Procedures

Current FAA Focus – NextGen Procedures

- NextGen is the FAA-led modernization of our nation's air transportation system
- Goal of NextGen is to increase:
 - Safety
 - Efficiency
 - Capacity
 - Predictability
 - Resiliency of American Aviation
- NextGen brings together dozens of *innovative technologies, capabilities and procedures* that improve how we fly

Current FAA Focus – NextGen Procedures

- NextGen aircraft procedures provide the opportunity for:
 - **FAA**
Reduced air traffic control workload & more efficient use of airspace
 - **Airlines**
Reduced cockpit workload & more efficient operation of aircraft
 - **Airport**
Improved access & more efficient operations
 - **Environment**
Reduced emissions & noise

Current FAA Focus – NextGen Procedures

- FAA's Air Traffic Organization (ATO) is responsible for the implementation of aircraft flight procedures
- FAA's goal for implementation of aircraft flight procedures is:
 - To enhance the way aircraft navigate this complex airspace to improve airport access and make flight routes more efficient
- FAA has provided a roadmap for communities to propose aircraft procedure changes
 - Set up a community roundtable-type forum to:
 - Define the problem(s)
 - Determine and evaluate potential solution(s)
 - Recommend aircraft procedure change(s) for FAA review, assessment, design and implementation if proposed change(s) is(are) feasible

Current FAA Focus – NextGen Procedures

- NextGen provides *innovative technologies, capabilities and procedures* that the FAA can use to implement Task Force-proposed aircraft procedure changes
 - Many of the tools available today were not available prior to NextGen
 - This may provide more opportunity for the FAA to implement Task Force recommendations
 - However, currently the implementation of such procedures often result in the concentration of flight tracks
 - FAA is studying how they might be able to better disperse flight tracks, but this technology does not currently exist in NextGen procedures

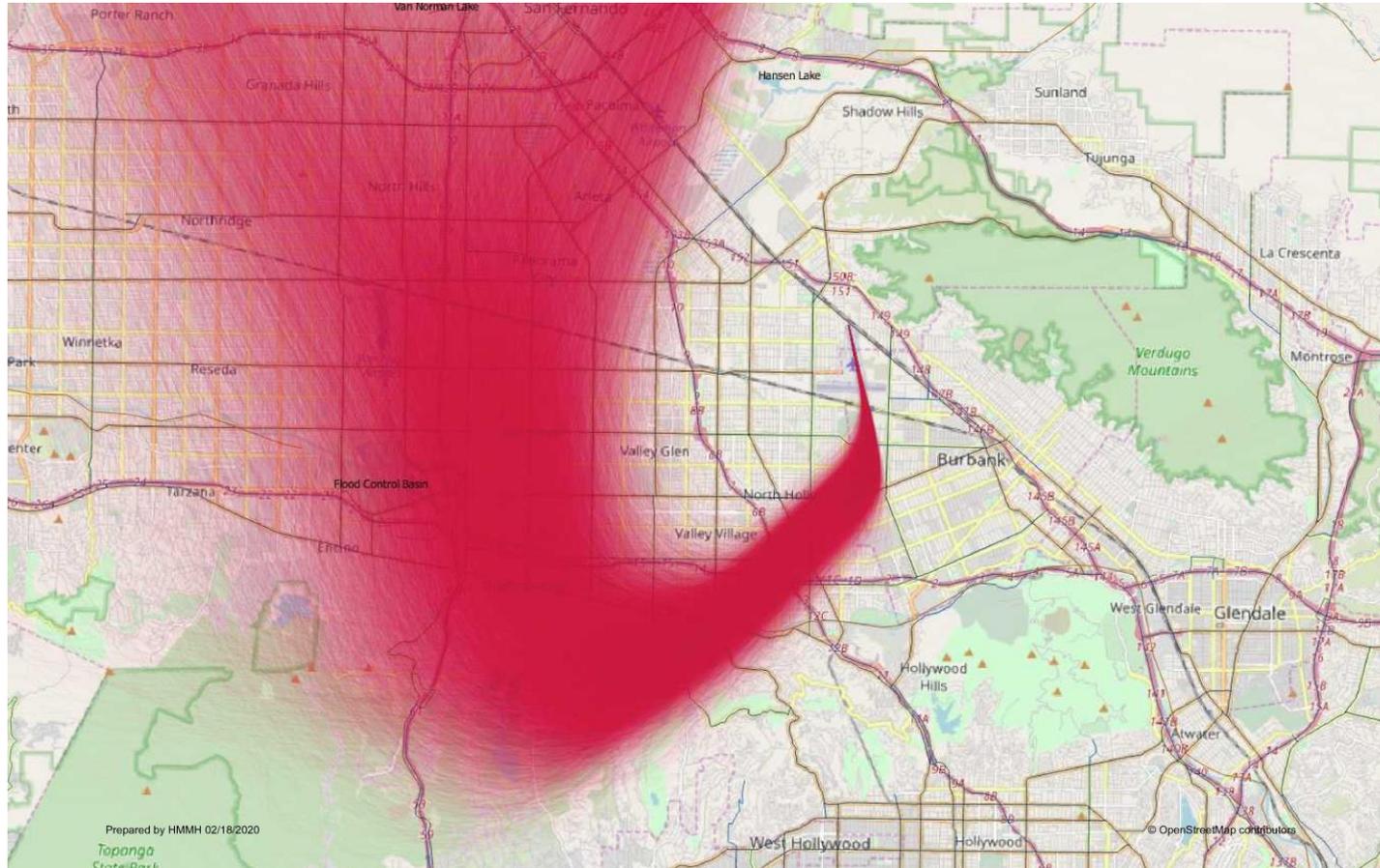
Example Flight Procedure Changes

The following are examples of hypothetical changes for the Task Force to better understand the types of changes that may be possible as they prepare their recommendation to the FAA for review, assessment and implementation.

Examples of Aircraft Procedure Changes

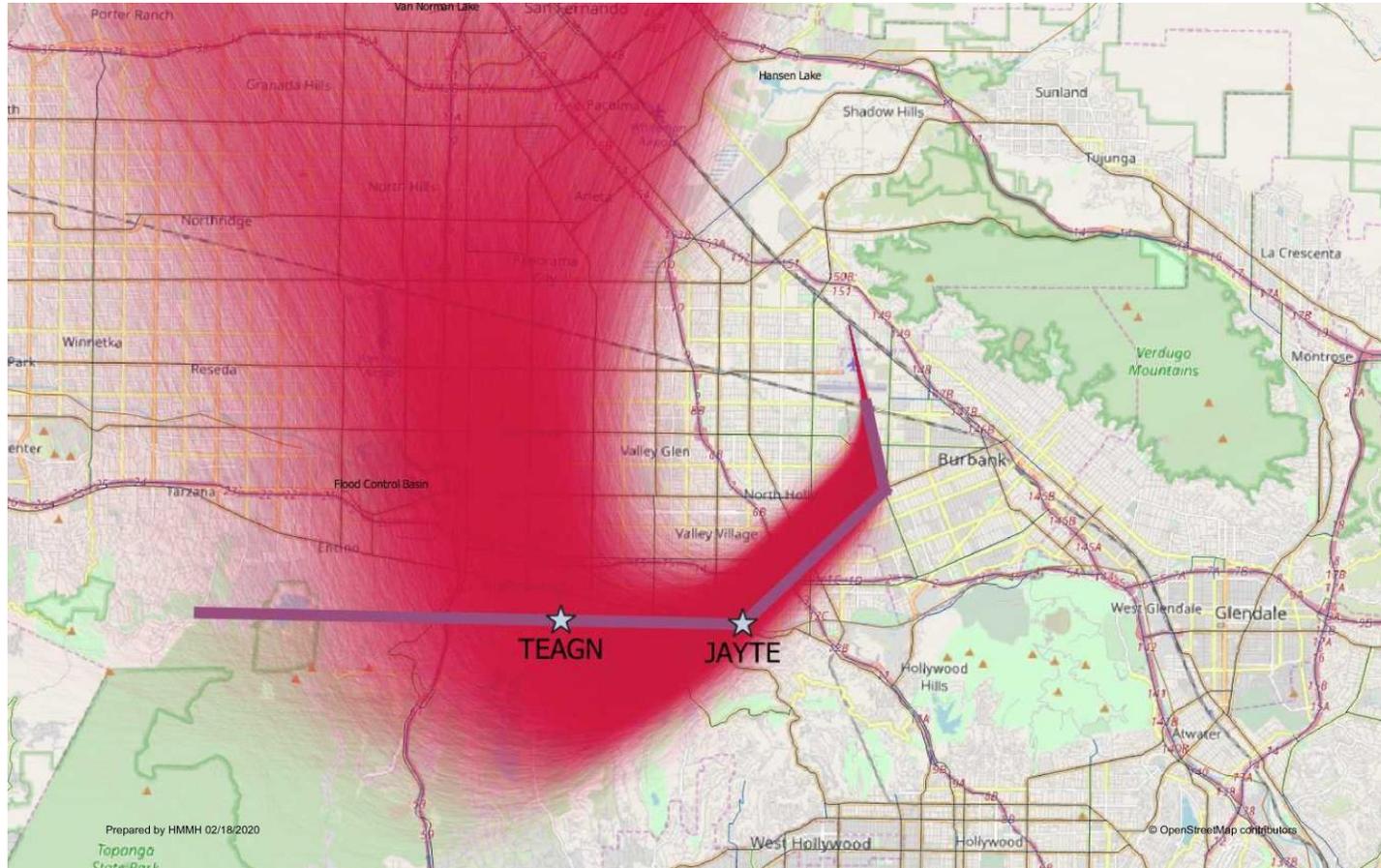
- HMMH used 2019 flight track data as the basis for evaluating the potential changes provided in the following slides.
- The hypothetical changes include:
 - FAA-proposed RNAV departure procedure for Hollywood Burbank Airport
 - As presented in the October 2018 Categorical Exclusion (CATEX) under the National Environmental Policy Act
 - FAA-proposed RNAV departure procedure for Van Nuys Airport
 - As presented at the August 2019 Van Nuys Airport Citizens Advisory Council (CAC) meeting
 - Increased dispersion at Hollywood Burbank Airport
 - Replication of historical conventional flight paths at Van Nuys Airport

FAA-Proposed RNAV Departure Hollywood Burbank Airport



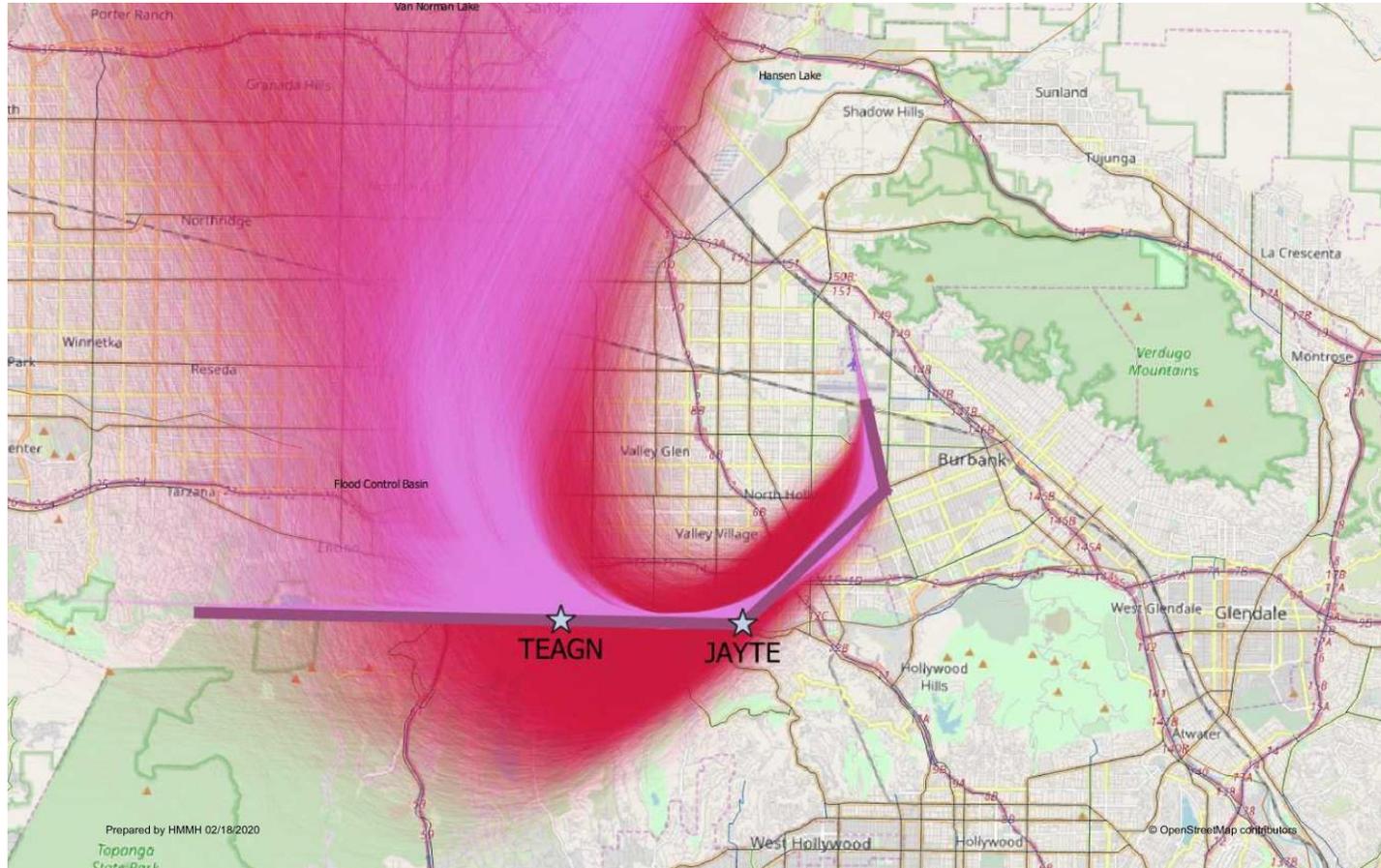
- Existing jet departure tracks from Runway 15

FAA-Proposed RNAV Departure Hollywood Burbank Airport



- Existing jet departure tracks from Runway 15 along with the FAA-proposed procedure from the October 2018 CatEx

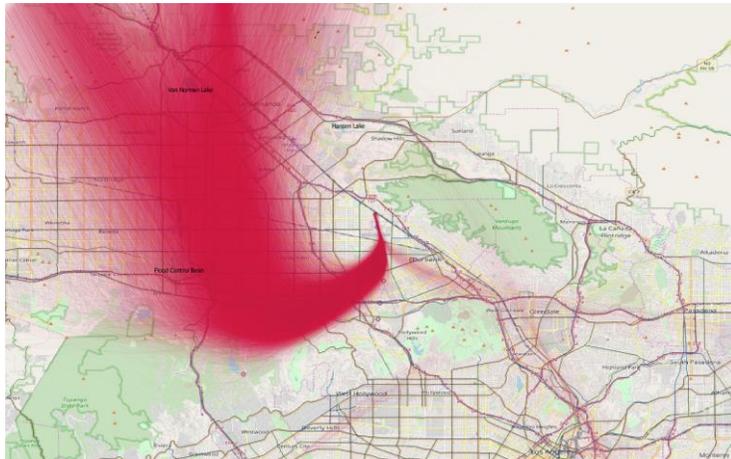
FAA-Proposed RNAV Departure Hollywood Burbank Airport



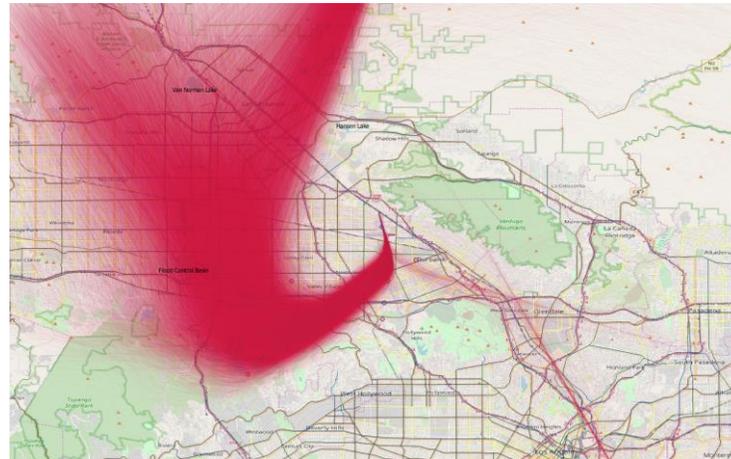
- Existing jet departure tracks from Runway 15 along with the FAA-proposed procedure from the October 2018 CatEx
- Showing approximation of aircraft flight tracks (purple) on the FAA's proposed procedure

Increased Dispersion for Runway 15 Departures Hollywood Burbank Airport

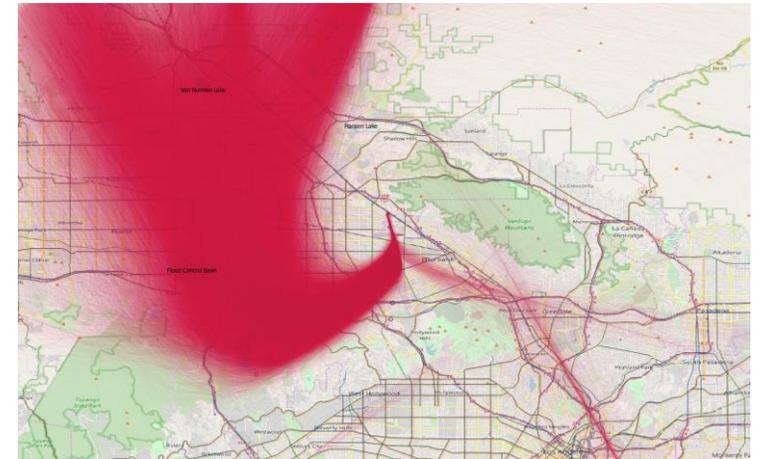
■ 2007



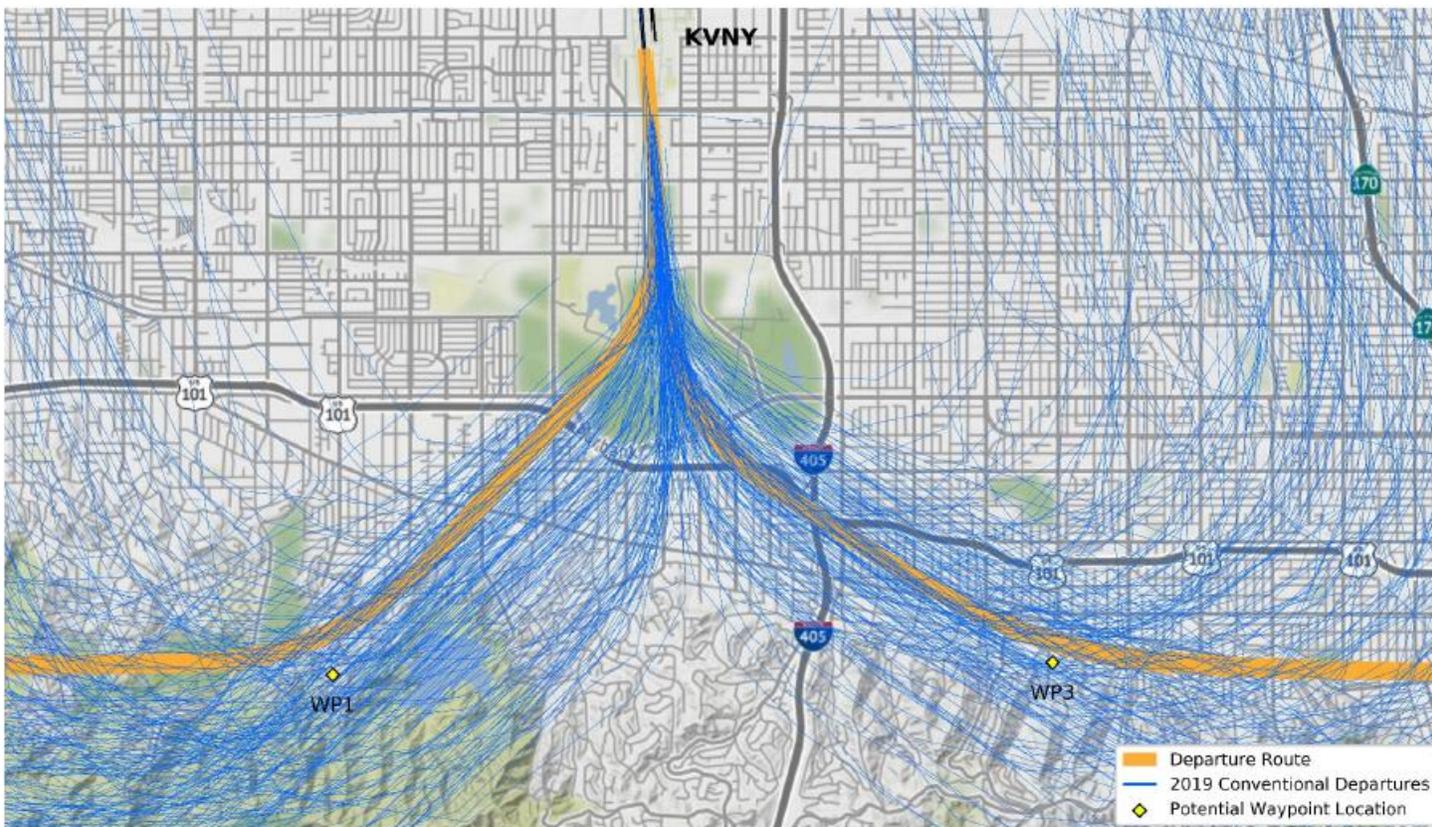
■ 2019



■ 2007 and 2019

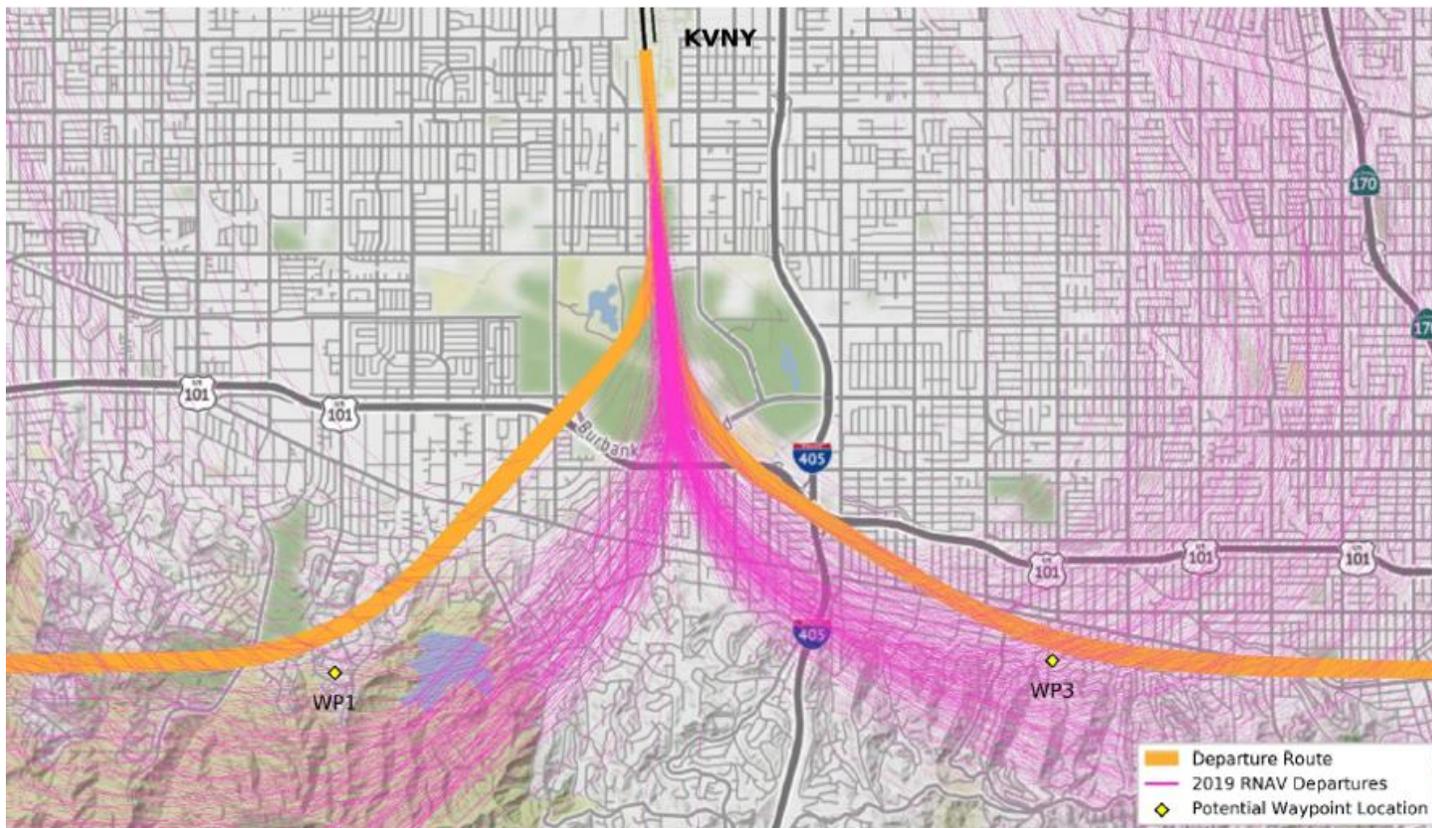


FAA-Proposed RNAV Departure Van Nuys Airport



- Historical 2019 conventional departure tracks from Runway 16R along with FAA's proposed procedure from the 2019 CAC meeting
- FAA proposed departure procedure designed to replicate conventional departures as closely as possible
- We anticipate aircraft flight tracks will largely follow FAA's proposed departure route as presented

FAA-Proposed RNAV Departure Van Nuys Airport



- Historical 2019 RNAV departure tracks from Runway 16R along with FAA's proposed procedure from the 2019 CAC meeting
- We anticipate aircraft flight tracks will largely follow FAA's proposed departure route as presented
- FAA proposed departure procedure would shift flight paths north of current RNAV departures and have aircraft turn sooner/closer to the airport

Questions

For Task Force Members to consider by the next meeting

Questions for the Task Force

1. If the FAA could return the departure flight tracks for both airports to pre-2016 conditions, would the Task Force recommend they do so?
2. If the FAA could implement NextGen procedures that result in the concentration of flight tracks over some communities and eliminate flight tracks over others, would the Task Force recommend they do so?
3. If the FAA could implement procedures that result in a greater dispersion, such as shown by combining the 2007 and 2019 departure flight tracks, would the Task Force recommend they do so?
4. Will the Task Force limit their recommendations to those that do not require a change in legislation? If not, will the Task Force make recommendations to the U.S. legislators to implement new regulations?
5. What does success look like to the Task Force?

Process

For submitting the recommendations to the FAA

Process for Preparing Recommendations

- According to the Task Force By-laws:
 - The Task Force has been created to provide a forum for representatives of communities that are currently being affected, and those that could potentially be affected, by aircraft procedural and operational changes related to aircraft noise in the southern San Fernando Valley
 - The final work product will be a set of recommendations to address the community noise concerns related to aircraft from Hollywood Burbank and Van Nuys Airports flying over the southern San Fernando Valley
 - Any action taken, including the determination of changes to submit to the FAA by the Task Force shall require the affirmative vote of the majority of voting members present at the meeting

Process for Preparing Recommendations

1. Task Force Members come to the next meeting with discussion items and/or potential recommendations for the Task Force to consider for the slate of recommendations
2. The Chair and Facilitator facilitate the discussions
3. The Facilitator draft recommendations for further discussion
4. Task Force coming to consensus on the wording of each recommendation
5. Task Force vote on each finalize recommendation with majority vote of members present required to include each recommendation on the slate of recommendations
6. The Facilitator assist in finalizing the slate of recommendations and providing the slate to the entities responsible for implementation

Types of Recommendations Presented

- Flight Path Changes
 - Turn from the 210° heading sooner like prior to 2016
 - Implement RNAV departures to avoid areas south of the 101
 - Disperse flight tracks to be more equitable across neighborhoods
 - Take off to the east (preferential runway use)
- Cockpit Changes
 - Gain altitude quicker
 - Increase the minimum departure gradients
- Noise Mitigation
 - Provide sound insulation to noise-sensitive structures outside the CNEL 65
- Restrictions
 - Replace existing voluntary curfews with mandatory curfews
 - Limit the number of operations at the airports
 - Restrict growth at the airports