

MEMORANDUM

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Director

DEPARTMENT OF AVIATION

TO: DISTRIBUTION

FROM: GEORGE C. SIMS, PLANNER

SUBJECT: APRIL THROUGH JUNE 2017 NOISE COMPLAINT REPORTS

DATE: JULY 26, 2017

Attached for your review are the Clark County Department of Aviation's (CCDOA) Monthly Noise Complaint Reports for April through June 2017. Please note the following airport abbreviations: **McCarran International Airport (LAS)**, **North Las Vegas Airport (VGT)**, and **Henderson Executive Airport (HND)**.

The following reports describe noise complaints and operational data regarding helicopter and fixed-wing aircraft operations at LAS, VGT, and HND. Aircraft noise complaints are received either through the CCDOA's Noise Hotline (702-261-3694), the Noise Office (702-261-5600), or calls forwarded from LAS's toll free number (1-800-261-5704). Nellis Air Force Base noise complaints are forwarded to the Nellis Public Affairs Office (702-652-2750), and noise complaints regarding aircraft operations from the Boulder City Airport are forwarded to the Boulder City Airport Coordinator (702-293-9405). Individuals who express concerns regarding aircraft operations originating from private facilities (i.e., Valley Hospital or the private helipad located near Las Vegas Blvd. and Larson Lane are asked to contact the individual property owner directly.

Exhibit 1 of each Monthly Noise Complaint Report illustrates the number of calls received by community as well as the number of individual callers or households. **Exhibit 2** illustrates the primary nature of the disturbance as identified by the caller. The second page of each monthly report (**Exhibit 3**) graphically illustrates all known origins of the calls received that month. **Exhibits 4 and 5** summarize arrival and departure runway use for large and non-large air carrier aircraft. (Note that with the change from an FAA-direct feed to an independent radar feed in October 2015 used by CCDOA's analysis application, the data capture rate for departing aircraft has increased significantly. Therefore, it is inappropriate to compare 2017 and 2016 data to 2015 data.) Arrival and departure corridor use for helicopters are summarized in **Exhibit 6**. **Exhibit 7** provides a complete arrival fleet mix of all aircraft landing at LAS and highlights the two noisier aircraft types, the Boeing 727 series and Boeing 737-100 and 737-200 series. **Exhibit 8** illustrates the general departure direction for large aircraft.

Lastly, **Exhibit 9** summarizes how well large aircraft and helicopters adhered to the preferred, non-regulated departure corridors. Adherence to preferred departure corridors is voluntary, and neither Clark County nor the State of Nevada regulates aircraft in flight. The FAA, through the discretion of Congress, has sole authority over the safe and efficient utilization of the nation's navigable airspace. Therefore, local and state authorities cannot legally enforce the use of these corridors, or impose penalties to pilots who opt not to comply with preferred procedures. "Compliance gates" are located along historical/fly-quietly routes. If all aircraft flew with advanced navigational technologies and operated under Required Navigational Precision (RNP) procedures, then it could be expected that up to 95% of all aircraft would be within 0.3 nautical miles (NM) of a fly-over point. Therefore, 0.3 NM is the threshold for compliance for large air carrier aircraft. The compliance threshold for helicopters is 500 feet.

The following provides a synopsis of each monthly noise complaint report and additional noise-related issues addressed during the reporting period. Please refer to each noise complaint report for more detailed information.

Monthly Noise Complaint Summaries

April 2017: 46 total complaints - a 46% decrease from 2016 and an 83% decrease from 2015. On average, each caller (or household) issued 1.6 calls. The most calls received from one household totaled 5.

Calls by Community - (Exhibits 1 and 3)

Majority (more than 50%): The **Paradise and Winchester** communities issued 26 calls (57%). These communities are typically impacted by aircraft departing to the north (from Runway 01R and Runway 01L) and aircraft arriving from the north (into Runways 19R and 19L).

Minority (between 10% and 50%): The **Spring Valley** community issued 6 calls (13%). This community is typically impacted by aircraft departing to the west (from Runway 25R and Runway 25L) and by aircraft departing to the north (from Runway 01R and Runway 01L) that turn left (to the west and south).

The **Enterprise** community issued 5 calls (11%). This community is typically impacted by aircraft departing to the south (from Runway 19L and Runway 19R).

Repeat Caller Impact: One household issued 11% of the total calls.

Calls by Operation - (Exhibit 2)

LAS: 85% of the total calls were due to **LAS** fixed-wing operations.

- 65% were due to departures to the north from Runways 01L and 01R (13% from one household).

VGT: 4% of the total calls were due to **VGT** fixed-wing operations.

HND: 2% of the total calls were due to **HND** fixed-wing operations.

Helos: 9% of the total calls were due to **helicopter** operations.

LAS Operations & Runway Use by Large Air Carriers - (Exhibit 4)

Overall: 499 daily *departures*¹ – no change from 2016. (See footnote for 2015.)

- 62% of departures were to the west, 25% north, 8% east, and 5% south.

503 daily *arrivals* – a 1% increase from 2016 and 3% increase from 2015.

- 77% of arrivals were from the east, 17% from the south, and 5% from the north.

Daytime: 411 daily *departures*² – a 3% increase from 2016. (See footnote for 2015.)

- 62% of departures were to the west, 26% north, 8% east, and 4% south.

434 daily *arrivals* – a 1% increase from 2016 and a 4% increase from 2015.

- 76% of arrivals were from the east, 18% south, 5% from the north, and 1% west.

¹ Note: Runway use and traffic counts totals through September 2015 were compiled by the EnvironmentalVue application using a FAA-direct radar feed. Due to the location of the radar south of Sunset Road, and the angle of the radar signal to avoid ground clutter, some aircraft that departed to the north from LAS were not captured until well north of Tropicana Avenue. Therefore, the EnvironmentalVue application, used to determine runway use and traffic counts, did not tag these operations as either occurring at LAS or as a departure. Thus, total departure counts were less than what likely occurred. Runway use and traffic count totals for October 2015 and later were compiled by the EnvironmentalVue application using an independent NextGen radar feed and the departure capture rate increased significantly. Therefore, it is inappropriate to compare 2017 and 2016 departure data to 2015 departure data.

² See footnote #1.

Nighttime: 88 daily *departures*³ – an 11% decrease from 2016. (See footnote for 2015.)
▪ 64% of departures were to the west, 25% north, 7% south, and 4% east.
69 daily *arrivals* – a 3% increase from 2016 and a 2% decrease from 2015.
▪ 82% of arrivals were from the east, 12% south, and 6% from the north.

Daytime vs. Nighttime: Approximately 82% of all *departures* and 86% of all *arrivals* occurred during the daytime hours.

LAS Operations & Runway Use by **Non-Large Air Carriers** - (Exhibit 5)

Overall: 93 daily *departures*⁴ – a 4% decrease from 2016. (See footnote for 2015.)
▪ 55% of departures were to the south, 30% north, 9% east, and 6% west.
87 daily *arrivals* – a 7% decrease from 2016 and 9% decrease from 2015.
▪ 56% of arrivals were from the north, 33% from the south, 10% east, and 1% west.

Daytime: 84 daily *departures*⁵ – a 4% decrease from 2016. (See footnote for 2015.)
▪ 55% of departures were to the south, 30% north, 10% east, and 5% west.
81 daily *arrivals* – a 7% decrease from 2016 and an 8% decrease from 2015.
▪ 56% of arrivals were from the north, 33% south, 11% east, and 1% west.

Nighttime: 10 daily *departures*⁶ – a 5% decrease from 2016. (See footnote for 2015.)
▪ 55% of departures were to the south, 30% north, 12% west, and 2% east.
7 daily *arrivals* – a 2% decrease from 2016 and a 16% decrease from 2015.
▪ 57% of arrivals were from the north, 31% south, 7% east, and 5% west.

Daytime vs. Nighttime: Approximately 90% of all *departures* and 93% of all *arrivals* occurred during the daytime hours.

Operations by Corridor for **Helicopter Tours** - (Exhibit 6)

Tropicana: 112 daily *departures* - a 22% increase from 2016 and no change from 2015.

Charleston: 113 daily *arrivals* - a 26% increase from 2016 and a 2% decrease from 2015.

Strip: 70 daily *touch and go's* - a 38% increase from 2016 and a 55% increase from 2015.

Daytime vs. Nighttime: Approximately 94% of all helicopter tour operations occurred during the daytime hours.

LAS Fleet Mix for All Aircraft Types - (Exhibit 7)

Heavies: **Very large** air carrier turbine-driven aircraft (those weighing 300,000 lbs. or more) accounted for 3% of the daily traffic.

Large: **Large** air carrier turbine-driven aircraft (those weighing more than 75,000 lbs. and less than 300,000 lbs.) accounted for 62% of the daily traffic.

³ See footnote #1.

⁴ See footnote #1.

⁵ See footnote #1.

⁶ See footnote #1.

Medium: *Medium* turbine-driven aircraft (those weighing more than 41,000 lbs. and less than 75,000 lbs.) accounted for 1% of the daily traffic.

Small: *Small* turbine-driven aircraft (those weighing 41,000 lbs. or less) accounted for 7% of the daily traffic.

Military: *Military* turbine-driven aircraft accounted for 0% of the daily traffic.

Non-Jet: *Piston-driven* aircraft and unassigned aircraft types accounted for 4% of the daily traffic.

Helos: *Touring helicopters* accounted for 24% of the daily traffic.

Noisier Aircraft Types: The hush-kitted Boeing 727 aircraft and Boeing 737 (100 & 200 series) aircraft accounted for 0% of the daily traffic.

LAS General Departure Direction for Large Aircraft - (Exhibit 8)

Primary: In 2017, 62% departed to the *west* (from LAS's primary departure runways). This figure was 15% in 2016 and 26% in 2015. (2016 and 2015 percentages were lower than normal due to the Runway 25R rehabilitation project.)

Secondary: In 2017, 4% departed to the *south* (from LAS's secondary departure runways). This figure was 19% in 2016 and 27% in 2015.

Alternate 1: In 2017, due to increased winds from the north, 26% departed to the *north* (from LAS's alternate departure runways). This figure was 58% in 2016 and 41% in 2015. (2016 and 2015 percentages were higher than normal due to the Runway 25R rehabilitation project.)

Alternate 2: In 2017, 8% departed to the *east* (from LAS's alternate departure runways). This figure was 8% in 2016 and 6% in 2015.

Gate Compliance for Large Aircraft and Helicopters - (Exhibit 9)

SVHS: In 2017, 97% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the west from Runways 25L or 25R and made a left-hand turn were within 0.3 NM of *Sierra Vista High School* (SVHS). This figure was 96% in 2016 and 97% in 2015.

The SVHS "compliance gate" is located southwest of Warm Springs Rd. and Buffalo Dr., approximately 5 miles due west and 1.5 miles due south of the extended runway centerline of Runways 25L and 25R. This gate was established along an existing noise abatement flight track which requests pilots to proceed runway heading to 3 nautical miles from the Las Vegas very-high frequency omnidirectional range tactical air navigation (VORTAC) facility before turning left (or towards the south) - where large air carrier aircraft have historically been encouraged to operate. This noise abatement flight track avoids communities impacted by aircraft turning early along this corridor (like the Nevada Trails community) and aircraft turning late along this corridor (like the Rhodes Ranch community).

Peace: In 2017, 94% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the west from Runways 25L or 25R and made a right-hand turn were within 0.3 NM of the intersection of *Peace Way & Summers Shade Street*. This figure was 92% in 2016 and 94% in 2015.

The Peace “compliance gate” is located northeast of Tropicana Ave. and I-215, approximately 6 miles due west and 2 miles due north of the extended runway centerline of Runways 25L and 25R. This gate was also established along an existing noise abatement flight track which requests pilots to proceed runway heading to 4 nautical miles from the Las Vegas VORTAC before turning right (or towards the north) - where large air carrier aircraft have historically been encouraged to operate. This noise abatement flight track avoids communities impacted by aircraft turning early along this corridor (like the Spanish Trail community) and aircraft turning late along this corridor (like the Summerlin South community).

Pebble: In 2017 97% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the south from Runways 19L or 19R were within 0.3 NM of the intersection of *Pebble Road & Arville Street*. This figure was 98% in 2016 and 97% in 2015.

The Pebble “compliance gate” is located southeast of Blue Diamond Rd. and Decatur Blvd., approximately 4 miles due south by southwest of the extended runway centerline of Runways 19L and 19R. This gate was also established along an existing noise abatement flight track which requests pilots to proceed runway heading to 3 nautical miles from the Las Vegas VORTAC before turning - where large air carrier aircraft have historically been encouraged to operate. This noise abatement flight track avoids communities impacted by aircraft turning early along this corridor (like the Warm Spring Estates community) and aircraft turning late along this corridor (like the Southern Highlands community).

UNLV: In 2017, 87% of the large air carrier aircraft that departed to the north from Runways 01L or 01R were within 0.3 NM of the *UNLV sports complex*. This figure was 91% in 2016 and 82% in 2015.

The UNLV “compliance gate” is located southeast of Flamingo Rd. and Paradise Rd., approximately 1 mile due north by northeast of the extended runway centerline of Runways 01L and 01R. This gate was also established along an existing noise abatement flight track which requests pilots to proceed runway heading to 2 nautical miles from the Las Vegas VORTAC before turning - where large air carrier aircraft have historically been encouraged to operate. This noise abatement flight track avoids communities impacted by aircraft turning early along this corridor, located due east and due west of UNLV.

Boulder: In 2017, 98% of the large air carrier aircraft that departed to the north from Runways 07L or 07R were within 0.3 NM of the extended runway centerline, near *Boulder Highway*. This figure was 97% in 2016 and 95% in 2015.

The Boulder Hwy. “compliance gate” is located southeast of Russell Rd. and I-93/95, approximately 7 miles due east of the extended runway centerline of Runways 07L and 07R. This gate was also established along an existing noise abatement flight track which requests pilots to proceed runway heading to 7 nautical miles from the Las Vegas VORTAC before turning - where large air carrier aircraft have historically been encouraged to operate. This noise abatement flight track avoids communities impacted by aircraft turning early along this corridor (like the Green Valley community, located in the City of Henderson, and older neighborhoods located north of Patrick Ln.).

Hualapai: In 2017, 83% of the large air carrier aircraft destined to the Nevada National Security Site that departed to the west were within 0.3 NM of the extended runway centerline, near *Hualapai Way*. This figure was 88% in 2016 and 78% in 2015.

The Hualapai Way “compliance gate” is located northeast of Sunset Rd. and Hualapai Way, approximately 7 miles due west of the extended runway centerline of Runways 25L and 25R. This gate was established in May 2011 along a new noise abatement flight track which requests pilots of aircraft destined to the Nevada National Security Site to proceed runway heading to 7 nautical miles from the Las Vegas VORTAC before turning. This noise abatement flight track avoids communities impacted by aircraft turning early along this corridor (like the Spanish Trail community and the Summerlin South community).

Eastern: In 2017, 98% of the touring helicopters destined east of the Las Vegas Valley were within 500 feet of the intersection of *Tropicana Avenue & Eastern Avenue*. This figure was 97% in 2016 and 96% in 2015.

The Eastern Ave. “compliance gate” is located at Tropicana Ave. and Eastern Ave, approximately 2 miles due west of their initial departure route. This gate was also established along an existing noise abatement flight track which requests helicopter pilots to proceed along the centerline of Tropicana Ave. until 10 nautical miles from the Las Vegas VORTAC before turning. This noise abatement flight track avoids communities impacted by helicopters located north and south of the corridor.

Hollywood: In 2017, 97% of the touring helicopters returning from areas east of the Las Vegas Valley were within 500 feet of the intersection of *Charleston Boulevard & Hollywood Boulevard*. This figure was 97% in 2016 and 99% in 2015.

The Hollywood Blvd. “compliance gate” is located at Charleston Blvd. and Los Feliz St., where their initial arrival route begins over the urbanized area of the Las Vegas Valley. This gate was also established along an existing noise abatement flight track which requests helicopter pilots to proceed along the centerline of Charleston Blvd. This noise abatement flight track avoids communities impacted by helicopters located north and south of the corridor.

Stratosphere: In 2017, 99% of the north-bound helicopters providing tours of the Las Vegas Strip were within 500 feet of the intersection of Oakey Boulevard & Las Vegas Boulevard, *northeast of the Stratosphere Tower*. This figure was 56% in 2016 and 99% in 2015.

The Stratosphere Tower “compliance gate” is located northeast of Sahara Avenue and Las Vegas Blvd., where an important turn in their fly-quietly routing structure begins near a historic portion of the urbanized area of the Las Vegas Valley.

The information denoted in this monthly summary represents **typical** residential complaints, flight activity, (with the exception of increased departures to the north), fleet mix, and gate compliance.

May 2016: 62 total complaints - a 37% decrease from 2016 and a 76% decrease from 2015. On average, each caller (or household) issued 2.0 calls. The most calls received from one household totaled 11.

Calls by Community - (Exhibits 1 and 3)

Majority (more than 50%): (Not applicable.)

Minority (between 10% and 50%): The **Paradise and Winchester** communities issued 15 calls (24%). (See April 2017 synopsis of typical aircraft overflight impacts on this community.)

The **Spring Valley** community issued 12 calls (19%). (See April 2017 synopsis of typical aircraft overflight impacts on this community.)

The **Lone Mountain** community issued 11 calls (18%). This community is typically impacted by aircraft operating at the North Las Vegas Airport.

The **City of Henderson** community issued 9 calls (15%). This community is typically impacted by aircraft departing to the east (from Runway 07R and Runway 07L), and helicopter tour operations.

The **Enterprise** community issued 7 calls (11%). (See April 2017 synopsis of typical aircraft overflight impacts on this community.)

The **City of Las Vegas** community issued 7 calls (11%). This community is typically impacted by aircraft departing to the west (from Runway 25R and Runway 25L).

Repeat Caller Impact: One household issued 18% of the total calls, from a resident who resides near the North Las Vegas Airport.

Calls by Operation - (Exhibit 2)

LAS: 65% of the total calls were due to **LAS** fixed-wing operations.

- 34% were due to departures to the north from Runways 01L and 01R (24% from one household).

VGT: 19% of the total calls received were due to **VGT** fixed-wing operations (92% from one household).

HND: 10% of the total calls received were due to **HND** fixed-wing operations.

Helis: 6% of the total calls received were due to **helicopter** operations.

LAS Operations & Runway Use by Large Air Carriers - (Exhibit 4)

Overall: 506 daily *departures*⁷ – a 1% increase from 2016. (See footnote for 2015.)

- 65% of departures were to the west, 18% north, 14% east, and 4% south.

512 daily *arrivals* – a 3% increase from 2016 and 4% increase from 2015.

- 74% of arrivals were from the east, 14% south, 9% north, and 3% west.

⁷ See footnote #1.

Daytime: 417 daily *departures*⁸ – a 2% increase from 2016. (See footnote for 2015.)
▪ 61% of departures were to the west, 18% north, 16% east, and 4% south.
443 daily *arrivals* – a 2% increase from 2016 and a 6% increase from 2015.
▪ 72% of arrivals were from the east, 16% south, 9% north, and 3% west.

Nighttime: 89 daily *departures*⁹ – a 2% decrease from 2016. (See footnote for 2015.)
▪ 80% of departures were to the west, 14% north, 4% south, and 3% east.
69 daily *arrivals* – a 10% increase from 2016 and a 9% decrease from 2015.
▪ 87% of arrivals were from the east, 7% north, 4% south, and 1% west.

Daytime vs. Nighttime: Approximately 82% of all *departures* and 87% of all *arrivals* occurred during the daytime hours.

LAS Operations & Runway Use by **Non-Large Air Carriers** - (Exhibit 5)

Overall: 114 daily *departures*¹⁰ – a 10% increase from 2016. (See footnote for 2015.)
▪ 57% of departures were to the south, 19% north, 15% east, and 10% west.
105 daily *arrivals* – a 6% increase from 2016 and 3% decrease from 2015.
▪ 63% of arrivals were from the north, 22% south, 11% east, and 5% west.

Daytime: 102 daily *departures*¹¹ – a 9% increase from 2016. (See footnote for 2015.)
▪ 55% of departures were to the south, 20% north, 16% east, and 9% west.
97 daily *arrivals* – a 6% increase from 2016 and a 3% decrease from 2015.
▪ 61% of arrivals were from the north, 23% south, 11% east, and 5% west.

Nighttime: 12 daily *departures*¹² – a 16% increase from 2016. (See footnote for 2015.)
▪ 69% of departures were to the south, 15% north, 14% west, and 1% east.
9 daily *arrivals* – a 10% increase from 2016 and a 2% increase from 2015.
▪ 79% of arrivals were from the north, 11% south, 8% east, and 2% west.

Daytime vs. Nighttime: Approximately 90% of all *departures* and 92% of all *arrivals* occurred during the daytime hours.

Operations by Corridor for **Helicopter Tours** - (Exhibit 6)

Tropicana: 107 daily *departures* – a 3% decrease from 2016 and an 11% decrease from 2015.

Charleston: 107 daily *arrivals* - a 1% decrease from 2016 and a 12% decrease from 2015.

Strip: 81 daily *touch and go's* - a 17% increase from 2016 and a 22% increase from 2015.

Daytime vs. Nighttime: Approximately 89% of all helicopter tour operations occurred during the daytime hours.

⁸ See footnote #1.

⁹ See footnote #1.

¹⁰ See footnote #1.

¹¹ See footnote #1.

¹² See footnote #1.

LAS Fleet Mix for All Aircraft Types - (Exhibit 7)

- Heavies:** *Very large* air carrier turbine-driven aircraft (those weighing 300,000 lbs. or more) accounted for 3% of the daily traffic.
- Large:** *Large* air carrier turbine-driven aircraft (those weighing more than 75,000 lbs. and less than 300,000 lbs.) accounted for 61% of the daily traffic.
- Medium:** *Medium* turbine-driven aircraft (those weighing more than 41,000 lbs. and less than 75,000 lbs.) accounted for 1% of the daily traffic.
- Small:** *Small* turbine-driven aircraft (those weighing 41,000 lbs. or less) accounted for 8% of the daily traffic.
- Military:** *Military* turbine-driven aircraft accounted for less than 0% of the daily traffic.
- Non-Jet:** *Piston-driven* aircraft and unassigned aircraft types accounted for 4% of the daily traffic.
- Helos:** *Touring helicopters* accounted for 23% of the daily traffic.
- Noisier Aircraft Types:** The hush-kitted Boeing 727 aircraft and Boeing 737 (100 & 200 series) aircraft accounted for less than one operation per day.

LAS General Departure Direction for Large Aircraft - (Exhibit 8)

- Primary:** In 2017, 65% departed to the *west* (from LAS's primary departure runways). This figure was 71% in 2016 and 77% in 2015.
- Secondary:** In 2017, 4% departed to the *south* (from LAS's secondary departure runways). This figure was 3% in 2016 and 4% in 2015.
- Alternate 1:** In 2017, due to increased winds from the north, 18% departed to the *north* (from LAS's alternate departure runways). This figure was 20% in 2016 and 2% in 2015.
- Alternate 2:** In 2017, 14% departed to the *east* (from LAS's alternate departure runways). This figure was 5% in 2016 and 17% in 2015.

Gate Compliance for Large Aircraft and Helicopters - (Exhibit 9)

- SVHS:** In 2017, 97% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the west from Runways 25L or 25R and made a left-hand turn were within 0.3 NM of *Sierra Vista High School* (SVHS). This figure was 96% in 2016 and 97% in 2015. (See April 2017 synopsis for specific location of the SVHS gate.)
- Peace:** In 2017, 94% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the west from Runways 25L or 25R and made a right-hand turn were within 0.3 NM of the intersection of *Peace Way & Summers Shade Street*. This figure was 93% in 2016 and 96% in 2015. (See April 2017 synopsis for specific location of the Peace gate.)

- Pebble:** In 2017, 97% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the south from Runways 19L or 19R were within 0.3 NM of the intersection of *Pebble Road & Arville Street*. This figure was 97% in 2016 and 98% in 2015. (See April 2017 synopsis for specific location of the Pebble gate.)
- UNLV:** In 2017, 91% of the large air carrier aircraft that departed to the north from Runways 01L or 01R were within 0.3 NM of the *UNLV sports complex*. This figure was 91% in 2016 and 84% in 2015. (See April 2017 synopsis for specific location of the UNLV gate.)
- Boulder:** In 2017, 98% of the large air carrier aircraft that departed to the north from Runways 07L or 07R were within 0.3 NM of the extended runway centerline, near *Boulder Highway*. This figure was 97% in 2016 and 94% in 2015. (See April 2017 synopsis for specific location of the Boulder Hwy. gate.)
- Hualapai:** In 2017, 83% of the large air carrier aircraft destined to the Nevada National Security Site that departed to the west were within 0.3 NM of the extended runway centerline, near *Hualapai Way*. This figure was 93% in 2016 and 95% in 2015. (See April 2017 synopsis for specific location of the Hualapai gate.)
- Eastern:** In 2017, 97% of the touring helicopters destined east of the Las Vegas Valley were within 500 feet of the intersection of *Tropicana Avenue & Eastern Avenue*. This figure was 98% in 2016 and 93% in 2015. (See April 2017 synopsis for specific location of the Eastern gate.)
- Hollywood:** In 2017, 97% of the touring helicopters returning from areas east of the Las Vegas Valley were within 500 feet of the intersection of *Charleston Boulevard & Hollywood Boulevard*. This figure was 97% in 2016 and 99% in 2015. (See April 2017 synopsis for specific location of the Hollywood gate.)
- Stratosphere:** In 2017, 98% of the north-bound helicopters providing tours of the Las Vegas Strip were within 500 feet of the intersection of Oakey Boulevard & Las Vegas Boulevard, *northeast of the Stratosphere Tower*. This figure was 55% in 2016 and 98% in 2015. (See April 2017 synopsis for specific location of the Stratosphere gate.)

The information denoted in this monthly summary represents **typical** residential complaints, (with the exception of the number of complaints tied to one household), flight activity, (with the exception of increased departures to the north), fleet mix, and gate compliance.

June 2017: 26 total complaints – a 53% increase from 2016 and a 77% decrease from 2015. On average, each caller (or household) issued 2.6 calls. The most calls received from one household totaled 17, and were tied to helicopter operations.

Calls by Community - (Exhibits 1 and 3)

Majority (more than 50%): The *City of Las Vegas* community issued 18 calls (69%). (See April 2017 synopsis of typical aircraft overflight impacts on this community.)

Minority (between 10% and 50%): The *Enterprise* community issued 4 calls (15%). (See April 2017 synopsis of typical aircraft overflight impacts on this community.)

Repeat Caller Impact: One household issued 65% of the total calls.

Calls by Operation - (Exhibit 2)

- LAS:** 27% of the total calls received were due to **LAS** fixed-wing operations.
- VGT:** 0% of the total calls received were due to **VGT** fixed-wing operations.
- HND:** 0% of the total calls received were due to **HND** fixed-wing operations.
- Helis:** 73% of the total calls received were due to **helicopter** operations (89% from one household).

LAS Operations & Runway Use by Large Air Carriers - (Exhibits 4)

- Overall:** 516 daily *departures*¹³ – a 1% increase from 2016. (See footnote for 2015.)
▪ 71% of departures were to the west, 26% east, and 3% south.
521 daily *arrivals* – a 3% increase from 2016 and 5% increase from 2015.
▪ 69% of arrivals were from the east, 16% north, 8% south, and 7% west.
- Daytime:** 415 daily *departures*¹⁴ – a 2% increase from 2016. (See footnote for 2015.)
▪ 65% of departures were to the west, 32% east, and 3% south.
436 daily *arrivals* – a 1% increase from 2016 and 5% increase from 2015.
▪ 64% of arrivals were from the east, 17% north, 10% south, and 9% west.
- Nighttime:** 102 daily *departures*¹⁵ – a 1% decrease from 2016. (See footnote for 2015.)
▪ 95% of departures were to the west, 4% south, and 1% east.
85 daily *arrivals* – a 13% increase from 2016 and 3% increase from 2015.
▪ 92% of arrivals were from the east and 8% north.

Daytime vs. Nighttime: Approximately 80% of all *departures* and 84% of all *arrivals* occurred during the daytime hours.

LAS Operations & Runway Use by Non-Large Air Carriers - (Exhibit 5)

- Overall:** 92 daily *departures*¹⁶ – a 6% increase from 2016. (See footnote for 2015.)
▪ 56% of departures were to the south, 28% east, 12% west, and 4% north.
86 daily *arrivals* – an 8% increase from 2016 and a 14% increase from 2015.
▪ 72% of arrivals were from the north, 11% west, 10% south, and 7% east.
- Daytime:** 81 daily *departures*¹⁷ – a 5% increase from 2016. (See footnote for 2015.)
▪ 55% of departures were to the south, 32% east, 10% west, and 4% north.
79 daily *arrivals* – a 10% increase from 2016 and a 13% increase from 2015.
▪ 70% of arrivals were from the north, 12% west, 10% south, and 7% east.

¹³ See footnote #1.

¹⁴ See footnote #1.

¹⁵ See footnote #1.

¹⁶ See footnote #1.

¹⁷ See footnote #1.

Nighttime: 11 daily *departures*¹⁸ – a 14% increase from 2016. (See footnote for 2015.)

- 68% of departures were to the south, 27% west, 4% north, and 2% east.

7 daily *arrivals* – an 11% decrease from 2016 and 21% increase from 2015.

- 92% of arrivals were from the north, 5% east, 2% south, and 1% west.

Daytime vs. Nighttime: Approximately 88% of all *departures* and 92% of all *arrivals* occurred during the daytime hours.

Operations by Corridor for **Helicopter Tours** - (Exhibit 6)

Tropicana: 95 daily *departures* – a 12% decrease from 2016 and a 12% decrease from 2015.

Charleston: 96 daily *arrivals* - an 11% decrease from 2016 and a 13% decrease from 2015.

Strip: 109 daily *touch and go's* - a 9% increase from 2016 and a 29% increase from 2015.

Daytime vs. Nighttime: Approximately 82% of all helicopter tour operations occurred during the daytime hours.

LAS Fleet Mix for All Aircraft Types - (Exhibit 7)

Heavies: **Very large** air carrier turbine-driven aircraft (those weighing 300,000 lbs. or more) accounted for 3% of the daily traffic.

Large: **Large** air carrier turbine-driven aircraft (those weighing more than 75,000 lbs. and less than 300,000 lbs.) accounted for 61% of the daily traffic.

Medium: **Medium** turbine-driven aircraft (those weighing more than 41,000 lbs. and less than 75,000 lbs.) accounted for 1% of the daily traffic.

Small: **Small** turbine-driven aircraft (those weighing 41,000 lbs. or less) accounted for 6% of the daily traffic.

Military: **Military** turbine-driven aircraft accounted for 0% of the daily traffic.

Non-Jet: **Piston-driven** aircraft and unassigned aircraft types accounted for 4% of the daily traffic.

Helos: **Touring helicopters** accounted for 25% of the daily traffic.

Noisier Aircraft Types: The hush-kitted Boeing 727 aircraft and Boeing 737 (100 & 200 series) aircraft accounted for zero operations per day.

LAS General Departure Direction for Large Aircraft - (Exhibit 8)

Primary: In 2017, 71% departed to the **west** (from LAS's primary departure runways). This figure was 78% in 2016 and 76% in 2015.

Secondary: In 2017, 3% departed to the **south** (from LAS's secondary departure runways). This figure was 3% in 2016 and 3% in 2015.

¹⁸ See footnote #1.

Alternate 1: In 2017, 1% departed to the *north* (from LAS's alternate departure runways). This figure was 2% in 2016 and 3% in 2015.

Alternate 2: In 2017, due to temperatures exceeding 100 degrees 22 out of 30 days, 25% departed to the *east* (from LAS's alternate departure runways). This figure was 17% in 2016 and 17% in 2015.

Gate Compliance for Large Aircraft and Helicopters - (Exhibit 9)

SVHS: In 2017, 97% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the west from Runways 25L or 25R and made a left-hand turn were within 0.3 NM of *Sierra Vista High School* (SVHS). This figure was 96% in 2016 and 96% in 2015. (See April 2017 synopsis for specific location of the SVHS gate.)

Peace: In 2017, 95% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the west from Runways 25L or 25R and made a right-hand turn were within 0.3 NM of the intersection of *Peace Way & Summers Shade Street*. This figure was 94% in 2016 and 96% in 2015. (See April 2017 synopsis for specific location of the Peace gate.)

Pebble: In 2017, 100% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the south from Runways 19L or 19R were within 0.3 NM of the intersection of *Pebble Road & Arville Street*. This figure was 96% in 2016 and 98% in 2015. (See April 2017 synopsis for specific location of the Pebble gate.)

UNLV: In 2017, due to an unusually low number of northbound departures resulting from high temperatures, only 40% of the large air carrier aircraft that departed to the north from Runways 01L or 01R were within 0.3 NM of the *UNLV sports complex*. One operator who typically flies a unique procedure caused the low compliance percentage. This figure was 83% in 2016 and 80% in 2015. (See April 2017 synopsis for specific location of the UNLV gate.)

Boulder: In 2017, 99% of the large air carrier aircraft that departed to the north from Runways 07L or 07R were within 0.3 NM of the extended runway centerline, near *Boulder Highway*. This figure was 97% in 2016 and 93% in 2015. (See April 2017 synopsis for specific location of the Boulder Hwy. gate.)

Hualapai: In 2017, 84% of the large air carrier aircraft destined to the Nevada National Security Site that departed to the west were within 0.3 NM of the extended runway centerline, near *Hualapai Way*. This figure was 91% in 2016 and 94% in 2015. (See April 2017 synopsis for specific location of the Hualapai gate.)

Eastern: In 2017, 97% of the touring helicopters destined east of the Las Vegas Valley were within 500 feet of the intersection of *Tropicana Avenue & Eastern Avenue*. This figure was 88% in 2016 and 90% in 2015. (See April 2017 synopsis for specific location of the Eastern gate.)

Hollywood: In 2017, 97% of the touring helicopters returning from areas east of the Las Vegas Valley were within 500 feet of the intersection of *Charleston Boulevard & Hollywood Boulevard*. This figure was 97% in 2016 and 100% in 2015. (See April 2017 synopsis for specific location of the Hollywood gate.)

Stratosphere: In 2017, 99% of the north-bound helicopters providing tours of the Las Vegas Strip were within 500 feet of the intersection of Oakey Boulevard & Las Vegas Boulevard, *northeast of the Stratosphere Tower*. This figure was 99% in 2016 and 99% in 2015. (See April 2017 synopsis for specific location of the Stratosphere gate.)

The information denoted in this monthly summary represents **typical** residential complaints, (with the exception of complaints tied to helicopter operations), flight activity, (with the exception of increased departures to the east), fleet mix, and gate compliance.

Other Notable Issues

Electric Daisy Carnival: On June 16 through 18, 2017, this concert event was held at the Las Vegas Motor Speedway, with a total attendance in excess of 405,000 people. Helicopter tour operators provided almost 1,700 passenger flights, ferrying approximately 5,500 passengers to and from the event over the three day period, resulting in zero noise complaints issued.

Northbound Departure Increase: Weather data compiled for April and May reflected increased winds from the north resulting in the FAA utilizing Runway 01R for departures. Wind speed and direction typically determine runway use safety and efficiency.

Eastbound Departure Increase: With temperatures averaging and exceeding 100 degrees on a consistent basis, the FAA has increased use of Runway 07L for departures. Extreme temperatures and low humidity impact performance of larger aircraft, requiring additional runway distance for a safe departure. With an elevation difference of 142 feet between the opposite ends of LAS Runway 25R/07L, aircraft departing Runway 07L are placed on a downhill roll enabling a more efficient and safe departure roll.

Safety and Security Threats: Any threats to DOA staff or an aircraft in flight are taken seriously, and such threats will be forwarded to the appropriate law enforcement agencies.

GCS:jj

Attachments

Airport Noise Report

July 26, 2017

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Distribution:

Commissioner Sisolak, Chair	Sean Roebuck
Commissioner Giunchigliani, Vice-Chair	Bruce Daugherty
Commissioner Brager	Kelly Burns
Commissioner Brown	Sam Ingalls
Commissioner Kirkpatrick	Chris Jones
Commissioner Gibson	Linda Healey
Commissioner Weekly	Christine Crews
Donald G. Burnette	Tina Frias
Rosemary Vassiliadis	Jeff Jacquart
Scott Kichline	Charlie Hall
James Chrisley	Tucker Field
Sandra Cikity	Stephanie Garcia-Vause (COH)
Judy Villalta	Andrew Powell (COH)
Dennis Anderson	William Ruggiero (FAA TRACON)
Ben Czyzewski	Thomas Miller (Nellis AFB)
Donna Bergstrom	Michael Moorer (FAA ATCT)
Curtis Hedgepeth	James Erbeck (CLV)
John Howard (FAA TRACON)	Paul Alukonis (FAA FSDO)
Jon Holman (FAA ATC)	Sydney Lowe (University Libraries)
Charlie Halterman (HND Tower)	Lisa Butterfield (Reno-Tahoe Airport)
Richard Falcon (FAA FSDO)	Andrea Christensen (Denver Airport)
Bristol Ellington (COH)	Jennifer Lewis (Scottsdale Airport)
Josh Reid (COH)	Frank Iacovino (Mass Port Authority)
Elizabeth Fretwell (CLV)	Robert Butler (Papillon Helicopters)
Mayor Carolyn Goodman (CLV)	Christine Gerencher (American Airlines)
Councilman Bob Beers (CLV)	Bert Ganoung (SFO)
Councilman Bob Coffin (CLV)	San Diego Airport Noise Management
Councilwoman L. Tarkanian (CLV)	Jeannie Denham (Citizen)
Councilman S. Anthony (CLV)	Judge Bob Johnston (Citizen)
Councilman Ricki Barlow (CLV)	Roy Fuhrmann (Metro Airports Commission)
Mayor Pro Tem Steven Ross (CLV)	Tom Schaus (Sundance Helicopters)
Bradford Jerbic, (CLV)	Brooke Satern (Port of Portland)
Brok Armantrout (CBC)	Gary Brodt (Citizen)
David Parks (Nevada State Assembly)	James P. Callahan (Nellis AFB)
J. Gordon Arkin (Foley & Lardner)	Stan Shepherd (SEATAC)
John Williams (Ricondo)	Eric Sheng (Long Beach Airport)
Douglas Pomeroy (FAA ADO)	Jason Schwartz (Portland Airport)
La Nea M. Conner (Boeing)	Todd Lobato (Nellis AFB)
Mike Jeck (Metro Wash. Air Auth.)	Steven Peacock (Dallas City Hall)
Karen Everitt (Dallas City Hall)	John Dietz (FAA TRACON)
Samuel Carter (ITT)	William Olivieri (Citizen)

Exhibit 1: Noise Complaint Calls by Community* - April 2017

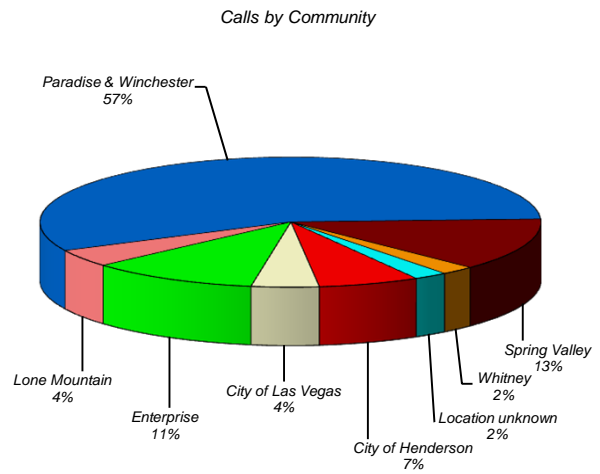
Community	No. of Calls in 2017	No. of Callers in 2017	No. of Calls in 2016	No. of Calls in 2015
City of Boulder City	3	3	7	2
City of Henderson	2	1	13	
City of Las Vegas			1	
City of North Las Vegas				
Enterprise	5	4	10	7
Lone Mountain	2	1		
Paradise & Winchester	26	15	40	256
Spring Valley	6	2	6	3
Summerlin South				1
Sunrise Manor			7	
Whitney	1	1	1	
Location unknown	1	1		
Overall Total	46	28	85	269

Difference between 2017 and 2016 Total Calls: -46%

Difference between 2017 and 2015 Total Calls: -83%

Average Number of Calls per Caller: 1.6

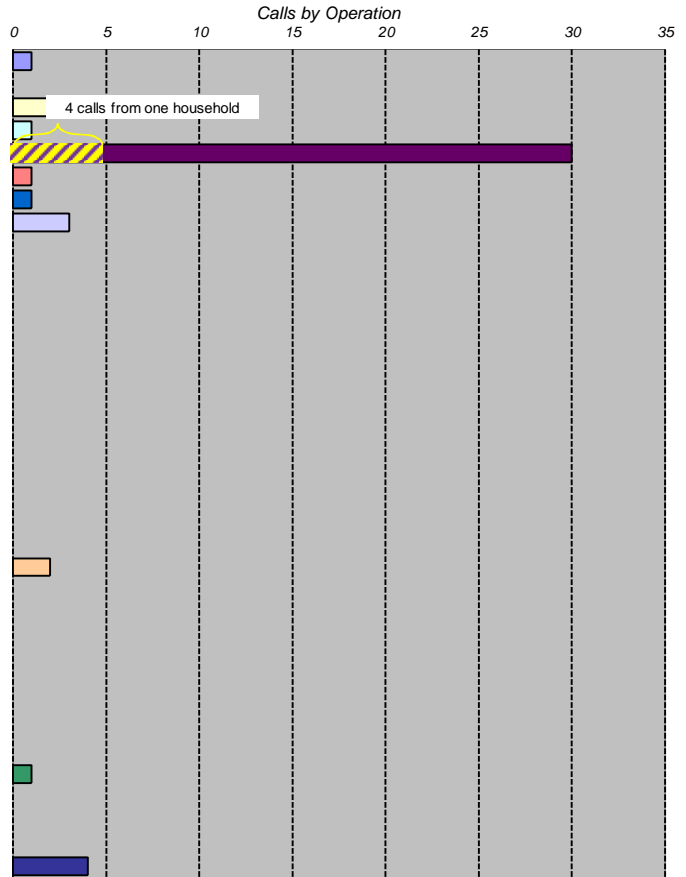
Most calls received from one household: 5



* See map on reverse side for community boundaries and location of known noise complaints.

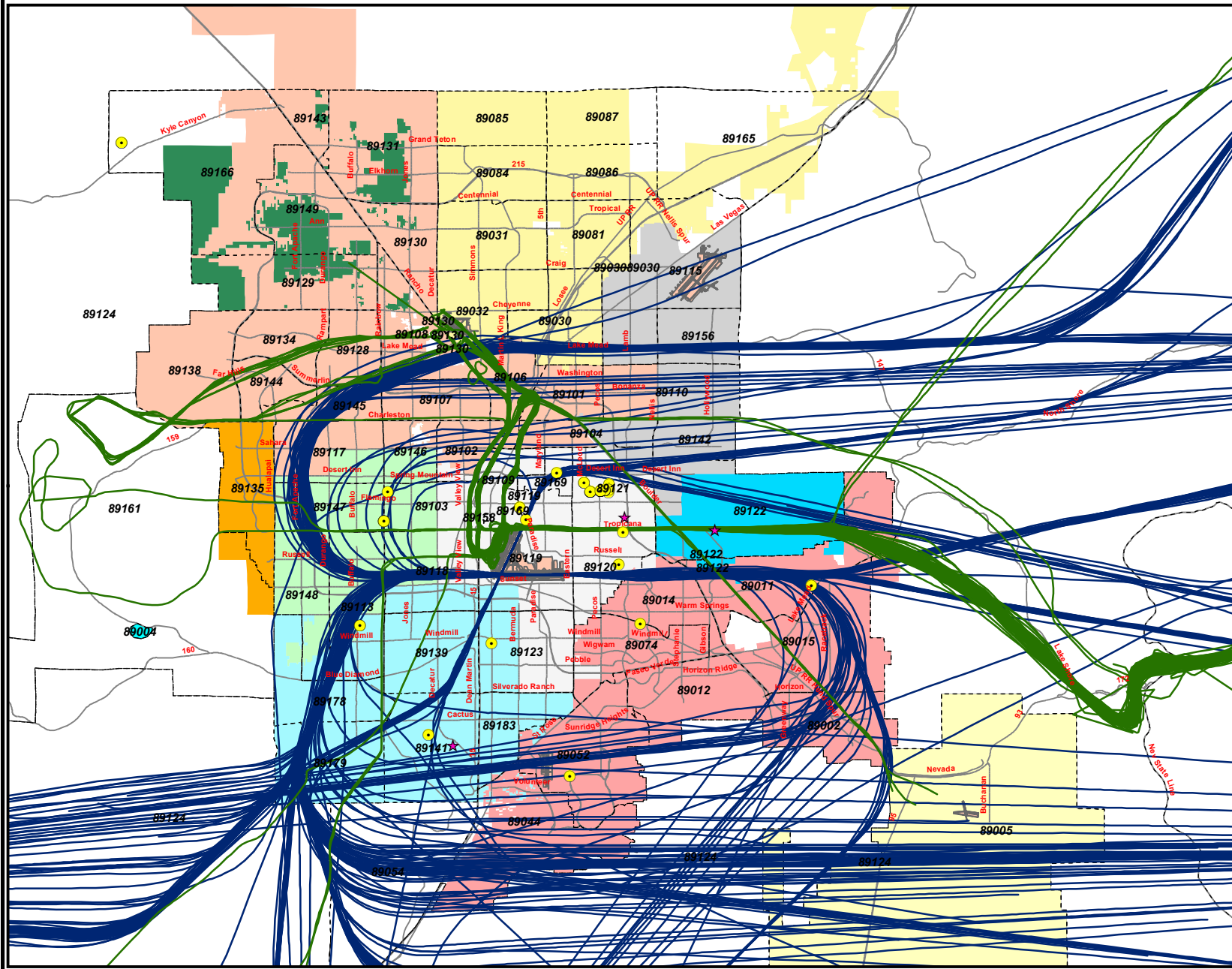
Exhibit 2: Noise Complaint Calls by Type of Operation - April 2017

Operation	No. of Calls in 2017	Percent of Overall Total	No. of Calls in 2016	No. of Calls in 2015
LAS 01R/L Arrivals	1	2.2%	1	1
LAS 07R/L Arrivals				
LAS 19R/L Arrivals	2	4.3%	1	
LAS 25R/L Arrivals	1	2.2%		
LAS 01R/L Departures	30	65.2%	54	104
LAS 07R/L Departures	1	2.2%	2	
LAS 19R/L Departures	1	2.2%	8	160
LAS 25R/L Departures	3	6.5%	9	4
LAS Run-ups				
LAS GA				
LAS Other				
LAS Total	39	84.8%	75	269
VGT 07 Arrivals				
VGT 12R/L Arrivals				
VGT 25 Arrivals				
VGT 30R/L Arrivals				
VGT 07 Departures				
VGT 12R/L Departures				
VGT 25 Departures				
VGT 30R/L Departures				
VGT Run-ups				
VGT GA	2	4.3%	2	
VGT Other				
VGT Total	2	4.3%	2	0
HND 17R/L Arrivals				
HND 35R/L Arrivals				
HND 17R/L Departures				
HND 35R/L Departures				
HND Run-ups				
HND GA	1	2.2%	4	
HND Other				
HND Total	1	2.2%	4	0
Helicopters**	4	8.7%	4	0
Overall Total	46	100%	85	269



** Note that helicopter noise complaints are not tied to a specific facility since the operation cannot always be associated to a specific airport. Additionally, helicopter calls do not include those associated with operations conducted by the Metropolitan Police Department or those associated with operations conducted at non-DOA facilities.

Exhibit 3: Aircraft Noise Complaints by Community - Apr 2017



Legend

Apr 2017
Total Complaints: 46

- Aircraft Complaints Received 42 Mapped 42
- ★ Helicopter Complaints Received 4 Mapped 3
- Major Streets
- Airports
- - - Zip Code Boundaries
- Typical Large Air Carrier Departure Tracks
- Typical Touring Helicopter Tracks
- Unincorporated Clark County
- Boulder City
- Whitney
- Henderson
- Las Vegas
- North Las Vegas
- Paradise/Winchester
- Summerlin
- Spring Valley
- Sunrise Manor
- Winchester
- Enterprise
- Lone Mountain

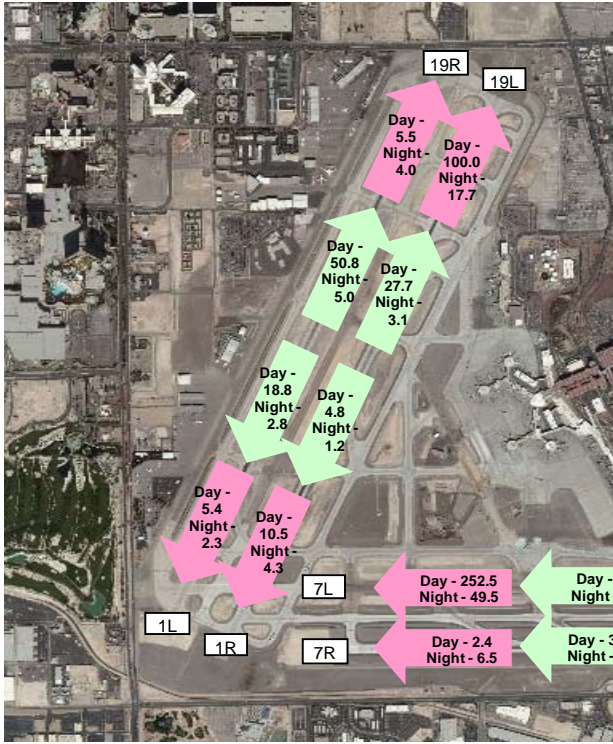
Department of Aviation
Geographic Information Systems

July 13, 2017

Note: This information is for display purposes only. No liability is assumed as to the accuracy of the data delineated hereon.

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Exhibit 4: LAS Daily Average Operations Runway for Large Air Carrier Aircraft* - April 2017

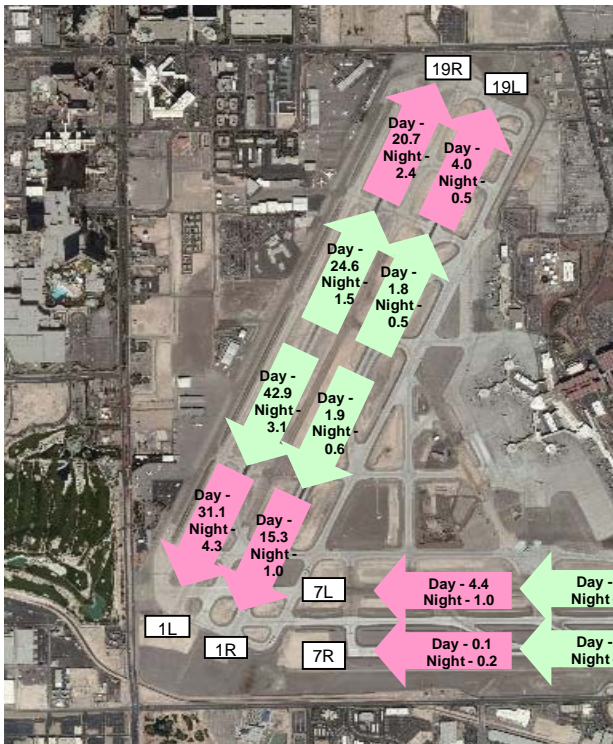


Year	2017		2016		2015	
Daytime Departures	411	82%	400	80%	N/A	N/A
Nighttime Departures	88	18%	99	20%	N/A	N/A
Total Departures	499	100%	499	100%	N/A	N/A
Daytime Arrivals	434	86%	429	87%	417	86%
Nighttime Arrivals	69	14%	67	13%	70	14%
Total Arrivals	503	100%	496	100%	487	100%

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	0%	3%	-11%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	1%	1%	3%
Arrivals 2017 vs 2015	3%	4%	-2%

* Aircraft types: All aircraft with a maximum gross take of weight of at least 75,000 pounds, including but not limited to, A306, A310, A311, A318, A319, A320, A330, A340, B707, B717, B727, B737, B747, B757, B767, B777, CRJ7, CRJ9, DC8, DC9, DC10, E170, E190, HA4T, L1011, MD80, MD90, MD10, MD11, VC10.

Exhibit 5: LAS Daily Average Operations by Runway for Non-Large Air Carrier Aircraft** - April 2017

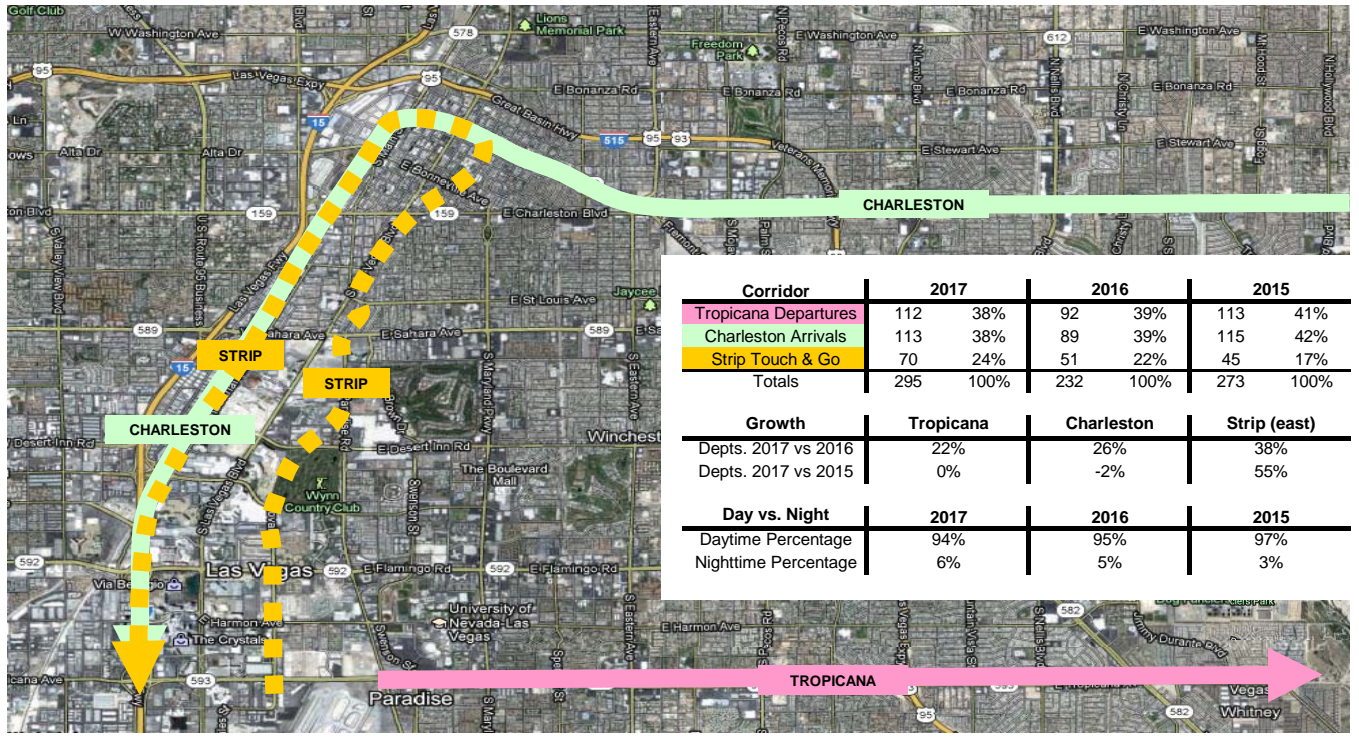


Year	2017		2016		2015	
Daytime Departures	84	90%	87	90%	N/A	N/A
Nighttime Departures	10	10%	10	10%	N/A	N/A
Total Departures	93	100%	97	100%	N/A	N/A
Daytime Arrivals	81	93%	87	93%	88	92%
Nighttime Arrivals	7	7%	7	7%	8	8%
Total Arrivals	87	100%	93	100%	96	100%

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	-4%	-4%	-5%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	-7%	-7%	-2%
Arrivals 2017 vs 2015	-9%	-8%	-16%

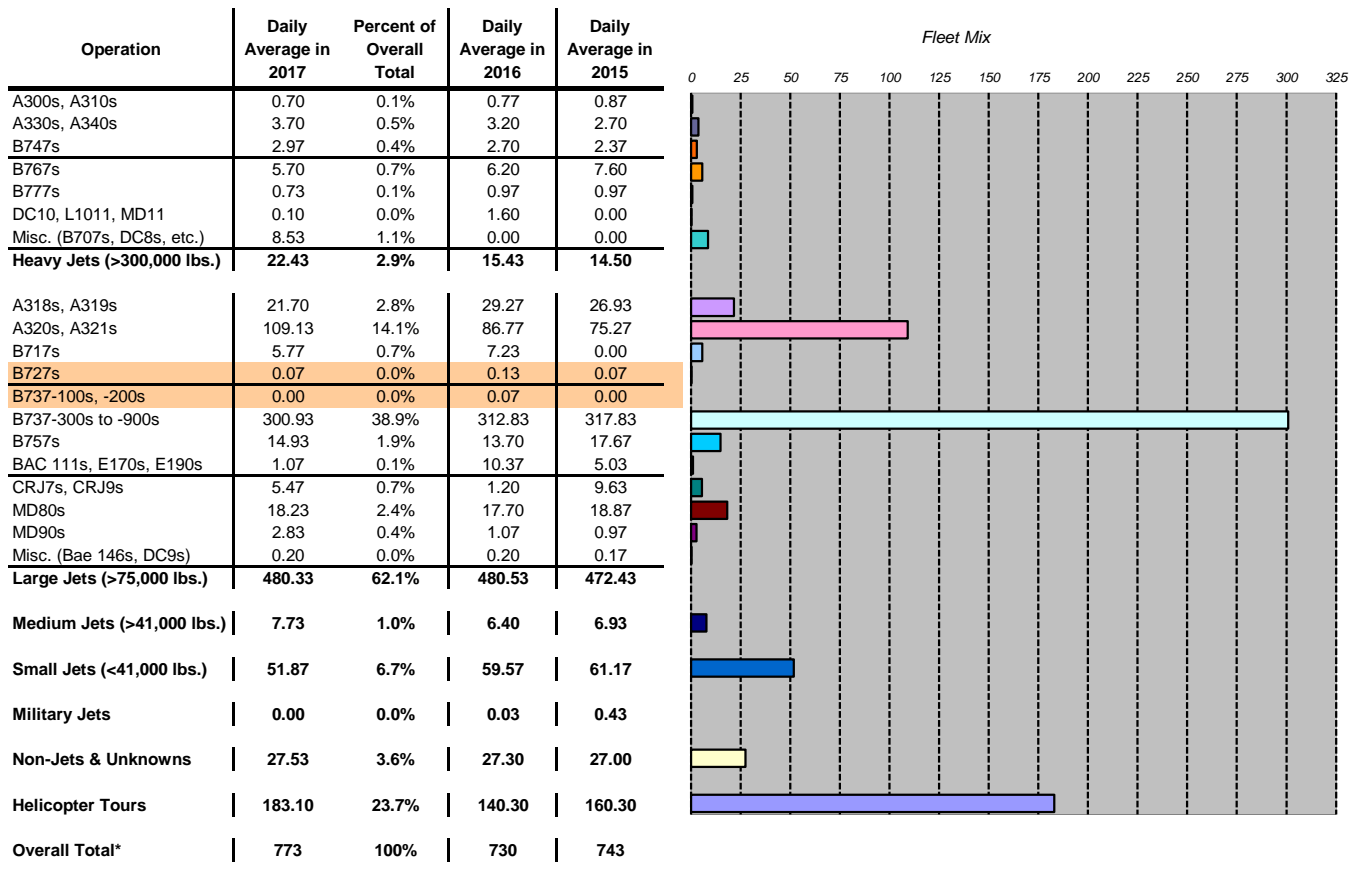
** Aircraft types: All aircraft with a maximum gross take of weight less than 75,000 pounds, excluding helicopters.

Exhibit 6: LAS Daily Average Operations by Corridor for Helicopter Tours* - April 2017



* Helicopter Tours: Note that some operations may originate from facilities besides LAS.

Exhibit 7: LAS Aircraft Arrival Fleet Mix** - April 2017



** Overall Total: Note that operation type and runway use counts are estimated by Harris Corp. Environmental/Vue Noise and Monitoring Operations system based on radar data. Due to limitations of radar data, information for aircraft weighing less than 75,000 lbs is inexact.

Exhibit 8: LAS General Departure Direction for Large Air Carrier Aircraft* - April 2017 to 2015

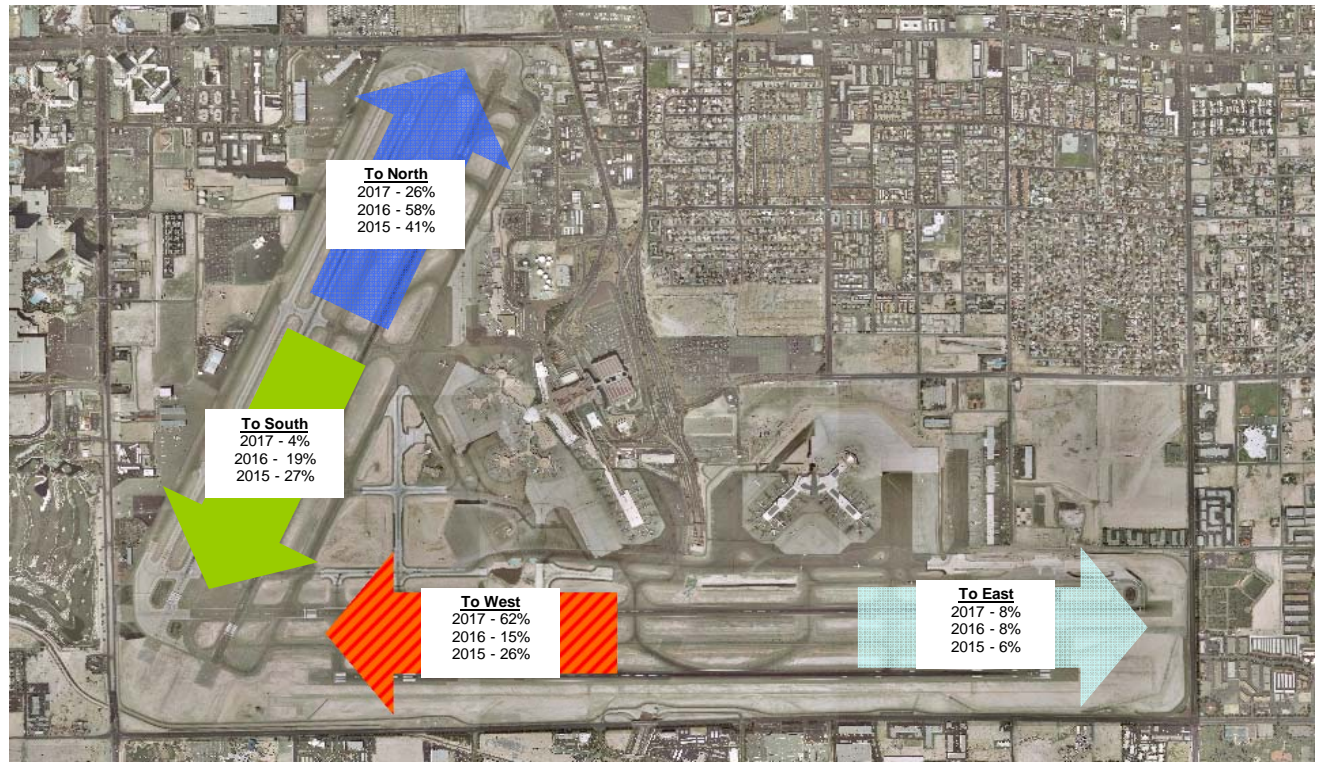
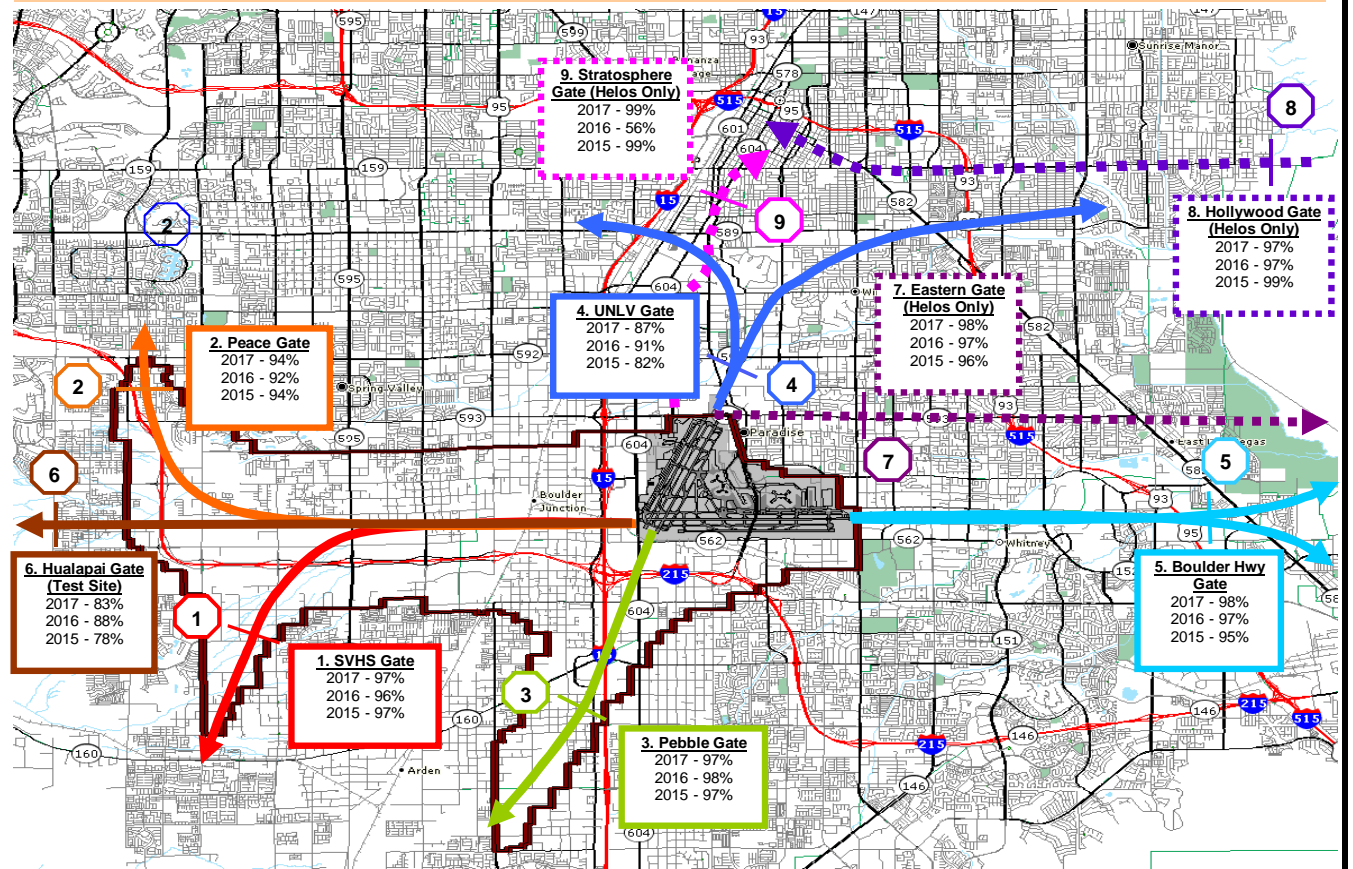


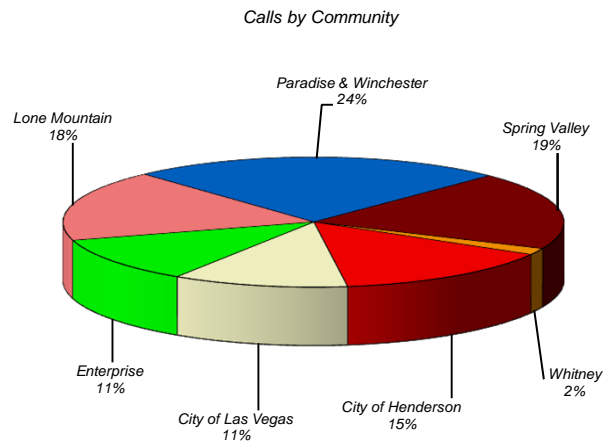
Exhibit 9: "Gate" Compliance for Large Aircraft* & LAS Helicopter Tours - April 2017



* Aircraft types: All aircraft with a maximum gross take of weight of at least 75,000 pounds, including but not limited to, A306, A310, A311, A318, A319, A320, A330, A370, B707, B717, B727, B737, B747, B757, B767, B777, CRJ7, CRJ9, DC8, DC9, DC10, E170, E190, HA4T, L1011, MD80, MD90, MD10, MD11, VC10.

Exhibit 1: Noise Complaint Calls by Community* - May 2017

Community	No. of Calls in 2017	No. of Callers in 2017	No. of Calls in 2016	No. of Calls in 2015
City of Boulder City	9	6	5	5
City of Henderson	7	5	30	5
City of Las Vegas	7	5	30	5
City of North Las Vegas				1
Enterprise	7	5	9	7
Lone Mountain	11	1		
Paradise & Winchester	15	8	41	235
Spring Valley	12	5	8	2
Summerlin South				1
Sunrise Manor			5	
Whitney	1	1		
Location unknown				
Overall Total	62	31	98	256



Difference between 2017 and 2016 Total Calls: -37%

Difference between 2017 and 2015 Total Calls: -76%

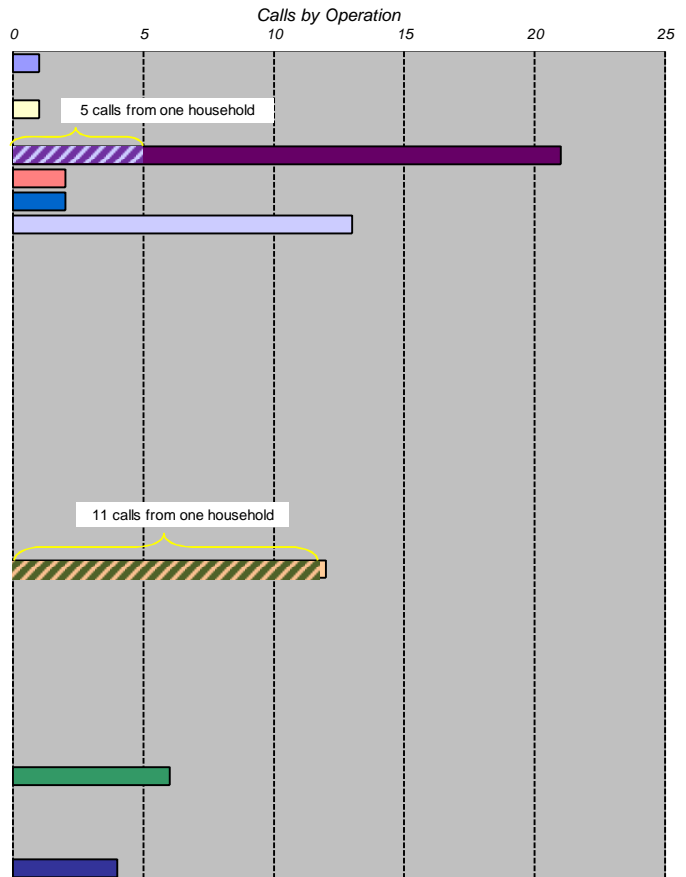
Average Number of Calls per Caller: 2.0

Most calls received from one household: 11

* See map on reverse side for community boundaries and location of known noise complaints.

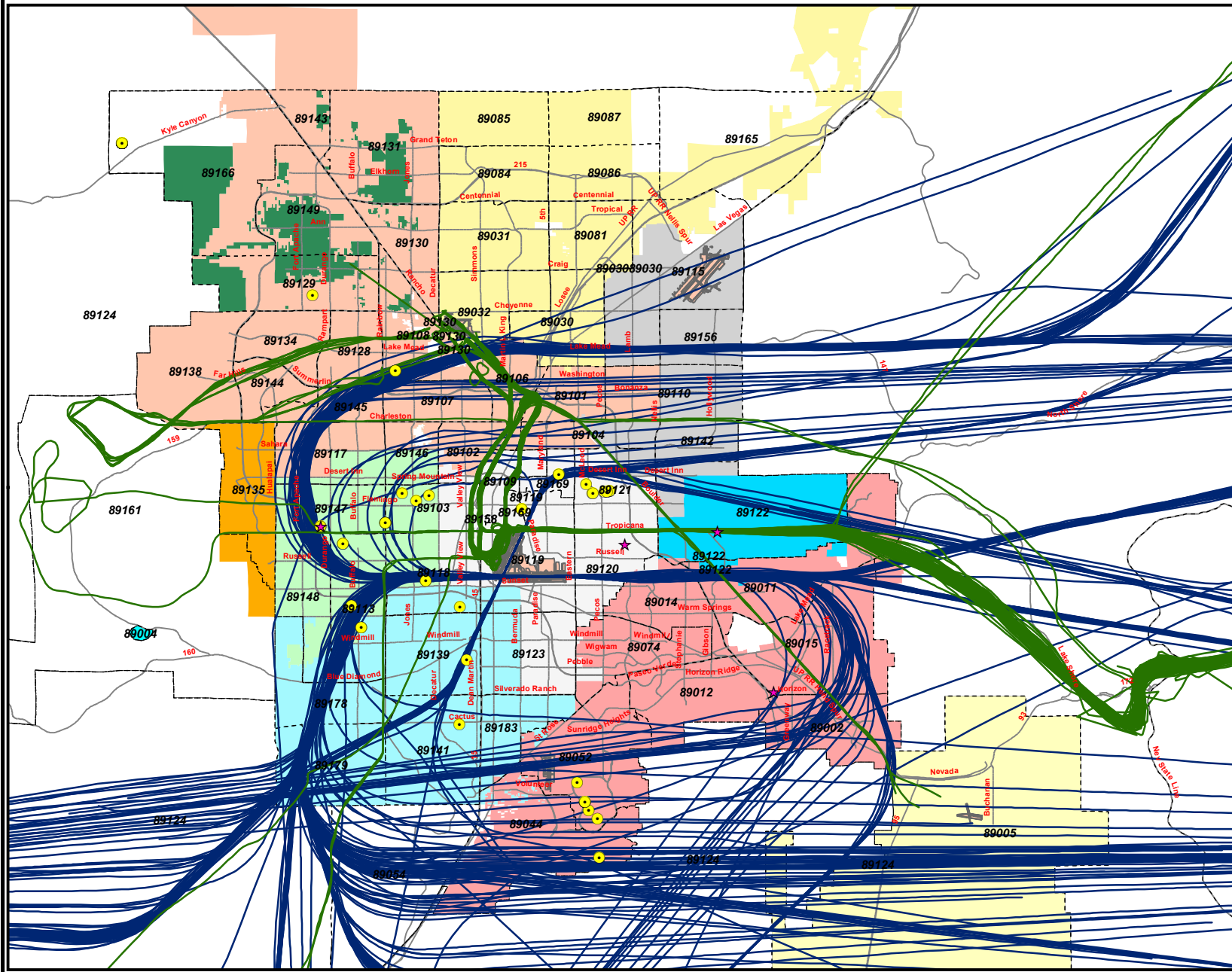
Exhibit 2: Noise Complaint Calls by Type of Operation - May 2017

Operation	No. of Calls in 2017	Percent of Overall Total	No. of Calls in 2016	No. of Calls in 2015
LAS 01R/L Arrivals	1	1.6%	1	
LAS 07R/L Arrivals				1
LAS 19R/L Arrivals	1	1.6%		
LAS 25R/L Arrivals			5	
LAS 01R/L Departures	21	33.9%	43	2
LAS 07R/L Departures	2	3.2%		13
LAS 19R/L Departures	2	3.2%	5	221
LAS 25R/L Departures	13	21.0%	38	10
LAS Run-ups				
LAS GA				
LAS Other				
LAS Total	40	64.5%	92	247
VGT 07 Arrivals				
VGT 12R/L Arrivals				
VGT 25 Arrivals				
VGT 30R/L Arrivals				
VGT 07 Departures				
VGT 12R/L Departures				
VGT 25 Departures				
VGT 30R/L Departures				
VGT Run-ups				
VGT GA	12	19.4%		2
VGT Other				
VGT Total	12	19.4%	0	2
HND 17R/L Arrivals				
HND 35R/L Arrivals				
HND 17R/L Departures				
HND 35R/L Departures				
HND Run-ups				
HND GA	6	9.7%		5
HND Other				
HND Total	6	9.7%	0	5
Helicopters**	4	6.5%	6	2
Overall Total	62	100%	98	256



** Note that helicopter noise complaints are not tied to a specific facility since the operation cannot always be associated to a specific airport. Additionally, helicopter calls do not include those associated with operations conducted by the Metropolitan Police Department or those associated with operations conducted at non-DOA facilities.

Exhibit 3: Aircraft Noise Complaints by Community - May 2017



Legend

May 2017
Total Complaints: 62

- Aircraft Complaints Received 58 Mapped 58
- ★ Helicopter Complaints Received 4 Mapped 4
- Major Streets
- Airports
- - - Zip Code Boundaries
- Typical Large Air Carrier Departure Tracks
- Typical Touring Helicopter Tracks
- Unincorporated Clark County
- Boulder City
- Whitney
- Henderson
- Las Vegas
- North Las Vegas
- Paradise/Winchester
- Summerlin
- Spring Valley
- Sunrise Manor
- Winchester
- Enterprise
- Lone Mountain

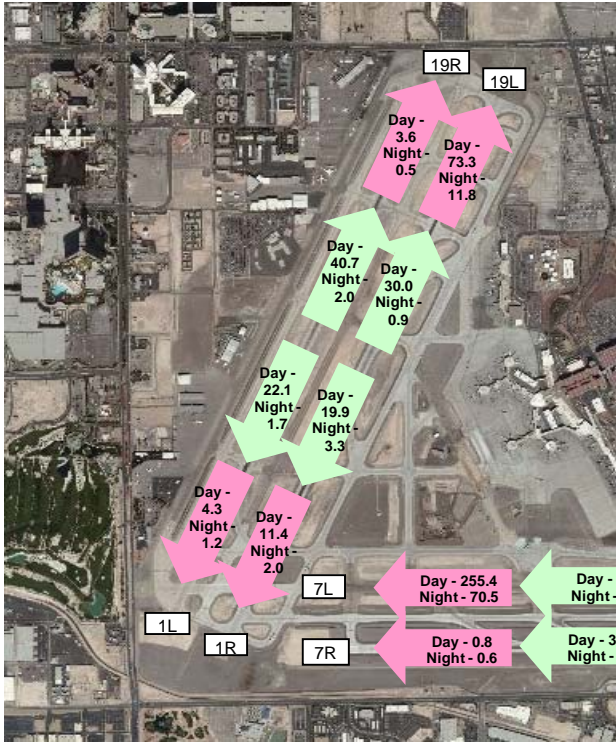
Department of Aviation
Geographic Information Systems

July 13, 2017

Note: This information is for display purposes only. No liability is assumed as to the accuracy of the data delineated hereon.

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Exhibit 4: LAS Daily Average Operations Runway for Large Air Carrier Aircraft* - May 2017

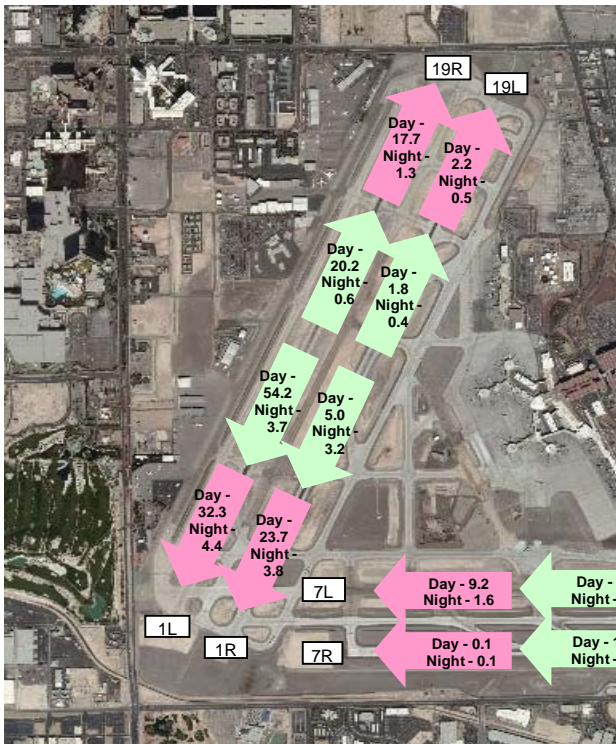


Year	2017		2016		2015	
Daytime Departures	417	82%	409	82%	N/A	N/A
Nighttime Departures	89	18%	91	18%	N/A	N/A
Total Departures	506	100%	500	100%	N/A	N/A
Daytime Arrivals	443	87%	435	87%	416	85%
Nighttime Arrivals	69	13%	62	13%	75	15%
Total Arrivals	512	100%	497	100%	492	100%

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	1%	2%	-2%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	3%	2%	10%
Arrivals 2017 vs 2015	4%	6%	-9%

* Aircraft types: All aircraft with a maximum gross take of weight of at least 75,000 pounds, including but not limited to, A306, A310, A311, A318, A319, A320, A330, A340, B707, B717, B727, B737, B747, B757, B767, B777, CRJ7, CRJ9, DC8, DC9, DC10, E170, E190, HA4T, L1011, MD80, MD90, MD10, MD11, VC10.

Exhibit 5: LAS Daily Average Operations by Runway for Non-Large Air Carrier Aircraft** - May 2017

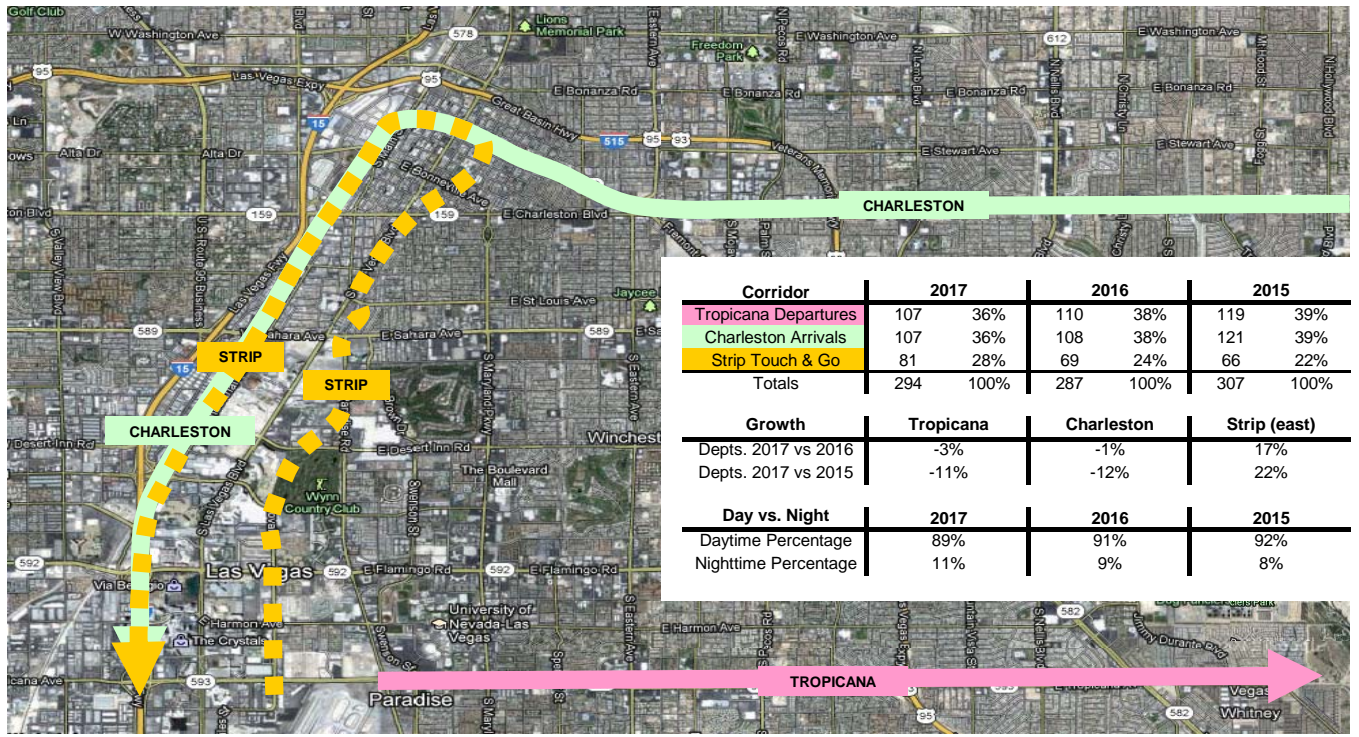


Year	2017		2016		2015	
Daytime Departures	102	90%	93	90%	N/A	N/A
Nighttime Departures	12	10%	10	10%	N/A	N/A
Total Departures	114	100%	103	100%	N/A	N/A
Daytime Arrivals	97	92%	92	92%	100	92%
Nighttime Arrivals	9	8%	8	8%	9	8%
Total Arrivals	105	100%	100	100%	109	100%

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	10%	9%	16%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	6%	6%	10%
Arrivals 2017 vs 2015	-3%	-3%	2%

** Aircraft types: All aircraft with a maximum gross take of weight less than 75,000 pounds, excluding helicopters.

Exhibit 6: LAS Daily Average Operations by Corridor for Helicopter Tours* - May 2017



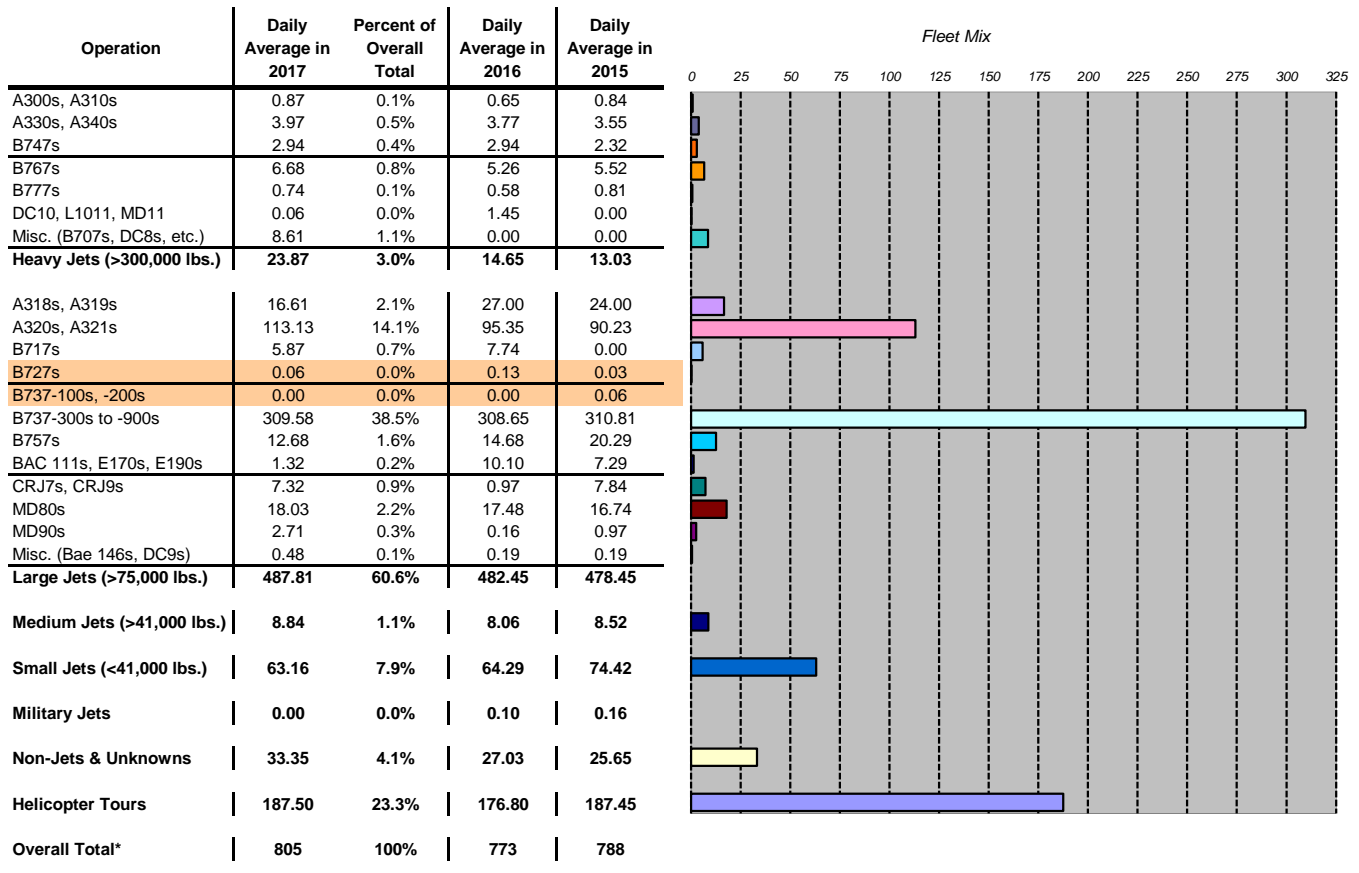
Corridor	2017		2016		2015	
Tropicana Departures	107	36%	110	38%	119	39%
Charleston Arrivals	107	36%	108	38%	121	39%
Strip Touch & Go	81	28%	69	24%	66	22%
Totals	294	100%	287	100%	307	100%

Growth	Tropicana	Charleston	Strip (east)
Depts. 2017 vs 2016	-3%	-1%	17%
Depts. 2017 vs 2015	-11%	-12%	22%

Day vs. Night	2017	2016	2015
Daytime Percentage	89%	91%	92%
Nighttime Percentage	11%	9%	8%

* Helicopter Tours: Note that some operations may originate from facilities besides LAS.

Exhibit 7: LAS Aircraft Arrival Fleet Mix - May 2017**



** Overall Total: Note that operation type and runway use counts are estimated by Harris Corp. Environmental/Vue Noise and Monitoring Operations system based on radar data. Due to limitations of radar data, information for aircraft weighing less than 75,000 lbs is inexact.

Exhibit 8: LAS General Departure Direction for Large Air Carrier Aircraft* - May 2017 to 2015

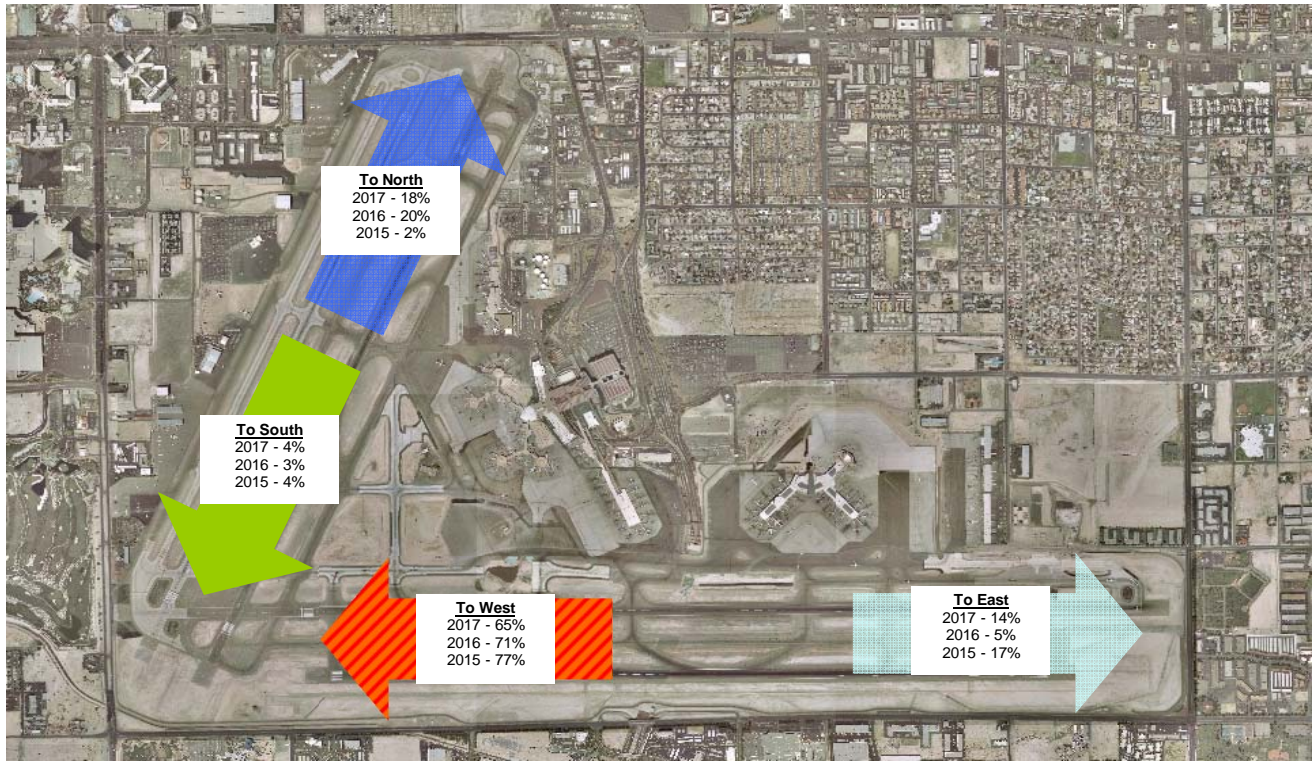
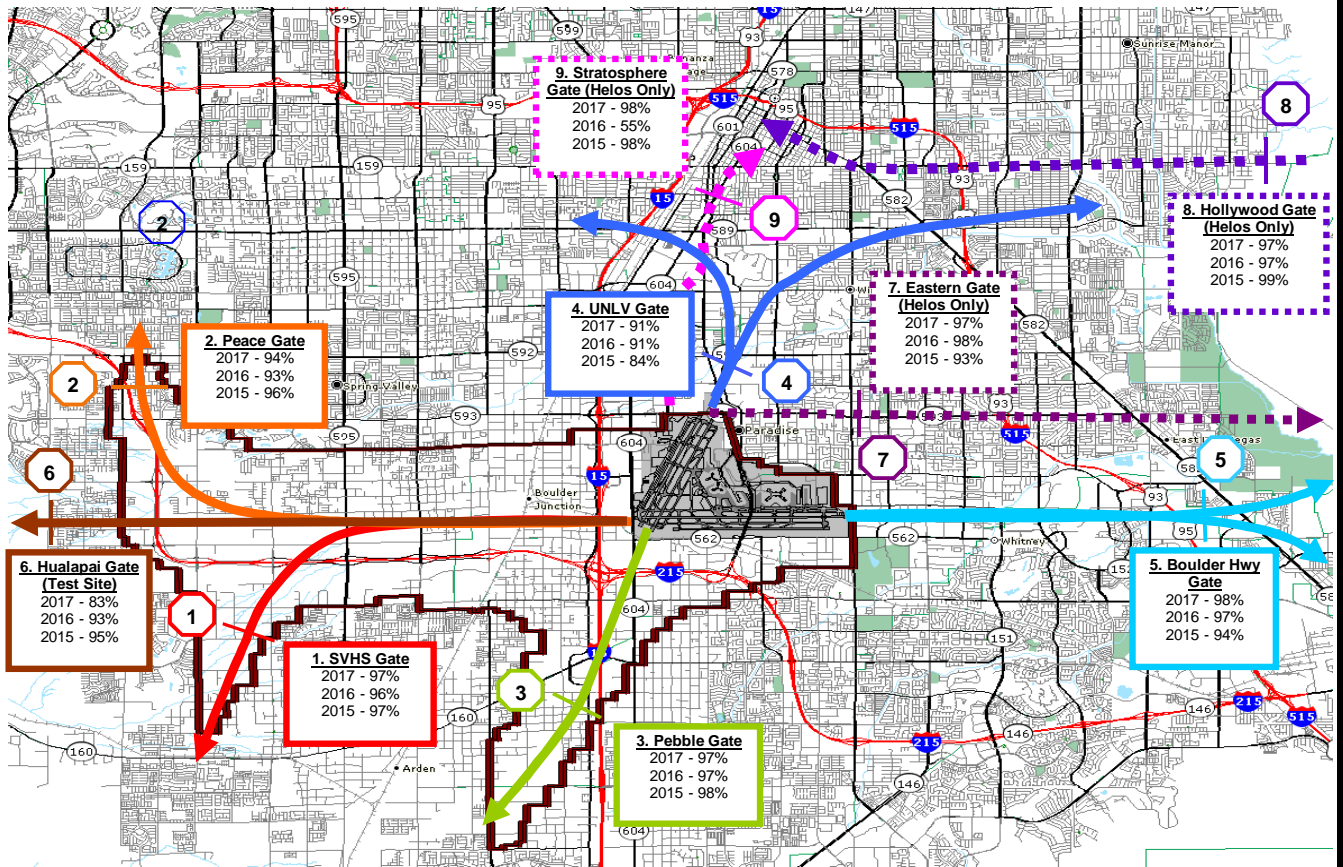


Exhibit 9: "Gate" Compliance for Large Aircraft* & LAS Helicopter Tours - May 2017



* Aircraft types: All aircraft with a maximum gross take of weight of at least 75,000 pounds, including but not limited to, A306, A310, A311, A318, A319, A320, A330, A370, B707, B717, B727, B737, B747, B757, B767, B777, CRJ7, CRJ9, DC8, DC9, DC10, E170, E190, HA4T, L1011, MD80, MD90, MD10, MD11, VC10.

Exhibit 1: Noise Complaint Calls by Community* - June 2017

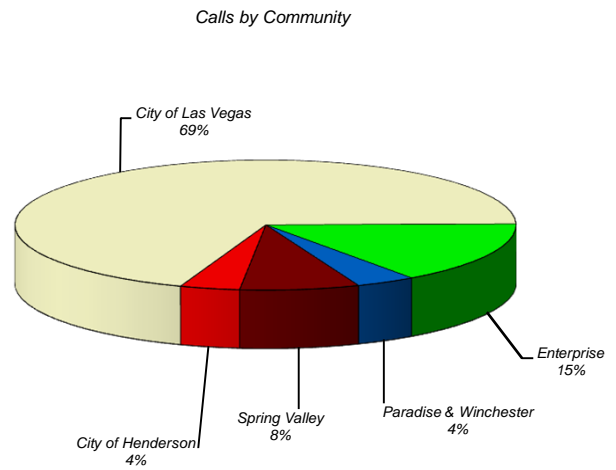
Community	No. of Calls in 2017	No. of Callers in 2017	No. of Calls in 2016	No. of Calls in 2015
City of Boulder City	1	1	1	5
City of Henderson	18	3	1	
City of Las Vegas				1
City of North Las Vegas				
Enterprise	4	3		10
Lone Mountain				
Paradise & Winchester	1	1	13	90
Spring Valley	2	2		3
Summerlin South				1
Sunrise Manor				
Whitney				1
Location unknown				
Overall Total	26	10	17	111

Difference between 2017 and 2016 Total Calls: 53%

Difference between 2017 and 2015 Total Calls: -77%

Average Number of Calls per Caller: 2.6

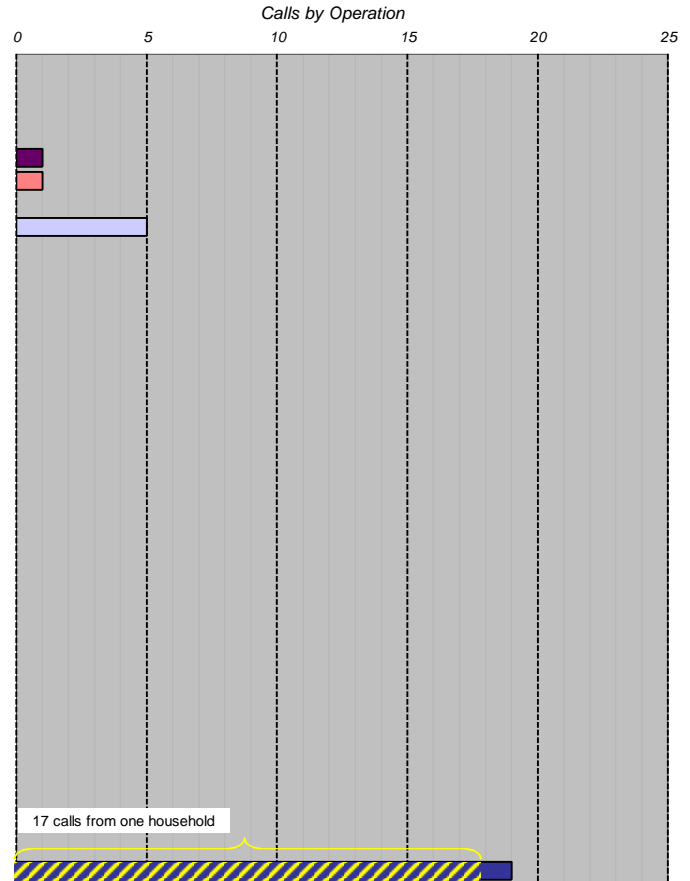
Most calls received from one household: 17



* See map on reverse side for community boundaries and location of known noise complaints.

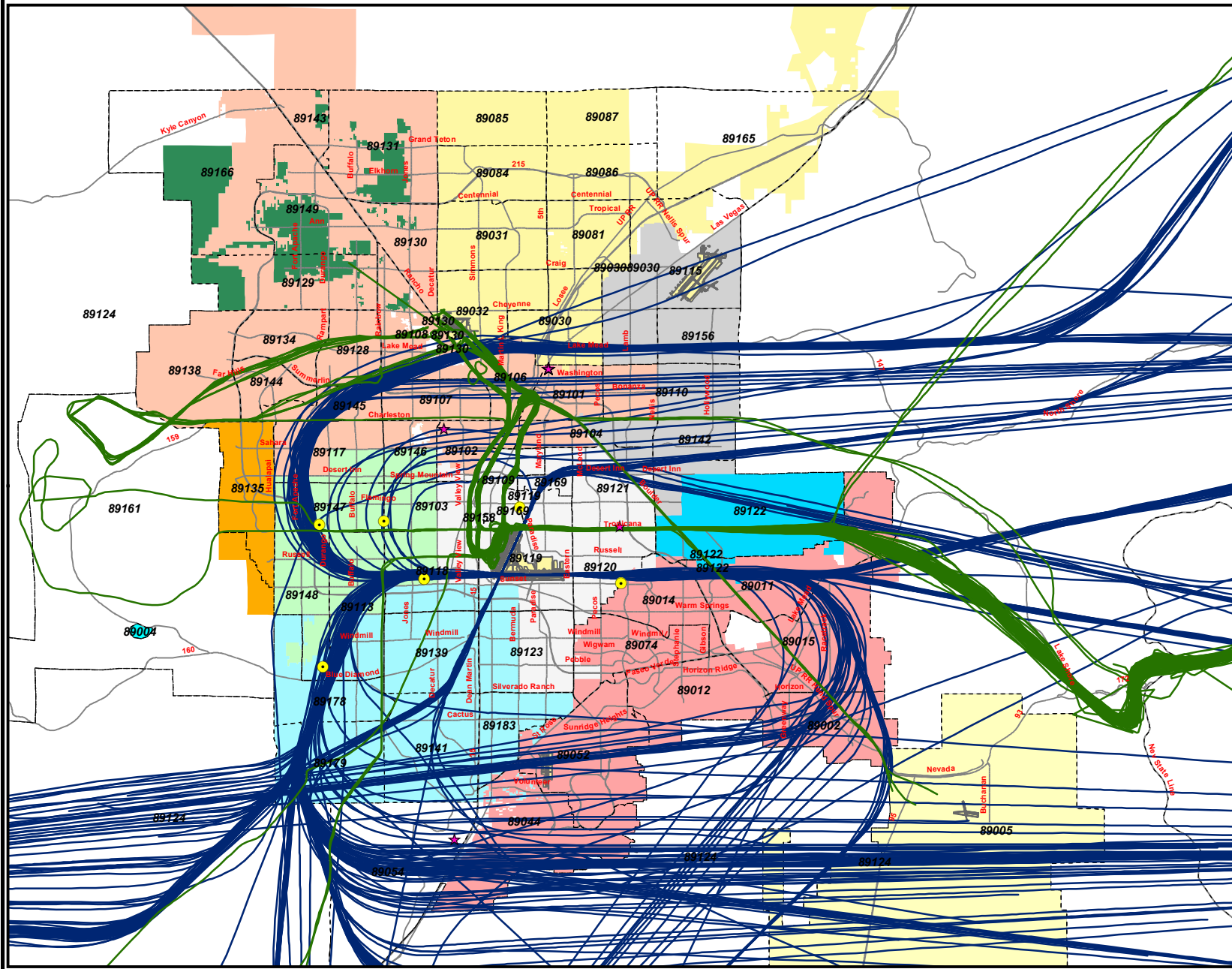
Exhibit 2: Noise Complaint Calls by Type of Operation - June 2017

Operation	No. of Calls in 2017	Percent of Overall Total	No. of Calls in 2016	No. of Calls in 2015
LAS 01R/L Arrivals			1	
LAS 07R/L Arrivals			1	
LAS 19R/L Arrivals			1	
LAS 25R/L Arrivals			1	1
LAS 01R/L Departures	1	3.8%		1
LAS 07R/L Departures	1	3.8%	5	6
LAS 19R/L Departures				76
LAS 25R/L Departures	5	19.2%	3	12
LAS Run-ups				
LAS GA				
LAS Other				
LAS Total	7	26.9%	11	96
VGT 07 Arrivals				
VGT 12R/L Arrivals				
VGT 25 Arrivals				
VGT 30R/L Arrivals				
VGT 07 Departures				
VGT 12R/L Departures				
VGT 25 Departures				
VGT 30R/L Departures				
VGT Run-ups				
VGT GA				1
VGT Other				
VGT Total	0	0.0%	0	1
HND 17R/L Arrivals				
HND 35R/L Arrivals				
HND 17R/L Departures				
HND 35R/L Departures				
HND Run-ups				
HND GA				4
HND Other				
HND Total	0	0.0%	0	4
Helicopters**	19	73.1%	6	10
Overall Total	26	100%	17	111



** Note that helicopter noise complaints are not tied to a specific facility since the operation cannot always be associated to a specific airport. Additionally, helicopter calls do not include those associated with operations conducted by the Metropolitan Police Department or those associated with operations conducted at non-DOA facilities.

Exhibit 3: Aircraft Noise Complaints by Community - Jun 2017



Legend

Jun 2017
Total Complaints: 26

- Aircraft Complaints Received 7 Mapped 7
- ★ Helicopter Complaints Received 19 Mapped 19
- Major Streets
- Airports
- - - Zip Code Boundaries
- Typical Large Air Carrier Departure Tracks
- Typical Touring Helicopter Tracks
- Unincorporated Clark County
- Boulder City
- Whitney
- Henderson
- Las Vegas
- North Las Vegas
- Paradise/Winchester
- Summerlin
- Spring Valley
- Sunrise Manor
- Winchester
- Enterprise
- Lone Mountain

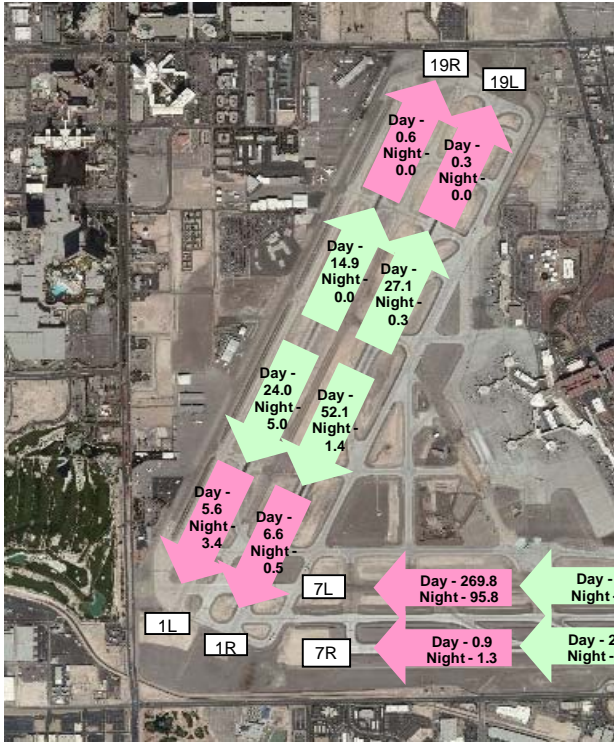
Department of Aviation
Geographic Information Systems

July 13, 2017

Note: This information is for display purposes only. No liability is assumed as to the accuracy of the data delineated hereon.

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Exhibit 4: LAS Daily Average Operations Runway for Large Air Carrier Aircraft* - June 2017



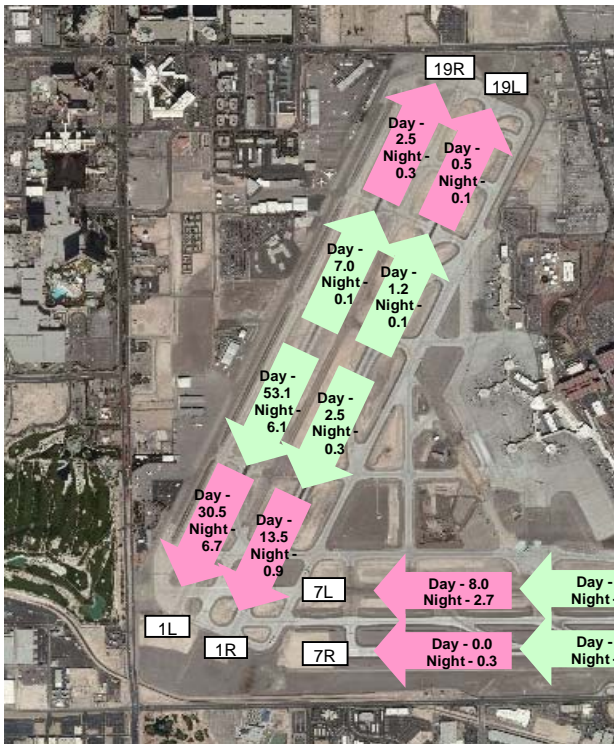
Year	2017		2016		2015	
Daytime Departures	415	80%	407	80%	N/A	N/A
Nighttime Departures	102	20%	103	20%	N/A	N/A
Total Departures	516	100%	510	100%	N/A	N/A

Daytime Arrivals	436	84%	430	85%	416	84%
Nighttime Arrivals	85	16%	75	15%	82	16%
Total Arrivals	521	100%	505	100%	498	100%

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	1%	2%	-1%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	3%	1%	13%
Arrivals 2017 vs 2015	5%	5%	3%

* Aircraft types: All aircraft with a maximum gross take of weight of at least 75,000 pounds, including but not limited to, A306, A310, A311, A318, A319, A320, A330, A340, B707, B717, B727, B737, B747, B757, B767, B777, CRJ7, CRJ9, DC8, DC9, DC10, E170, E190, HA4T, L1011, MD80, MD90, MD10, MD11, VC10.

Exhibit 5: LAS Daily Average Operations by Runway for Non-Large Air Carrier Aircraft** - June 2017



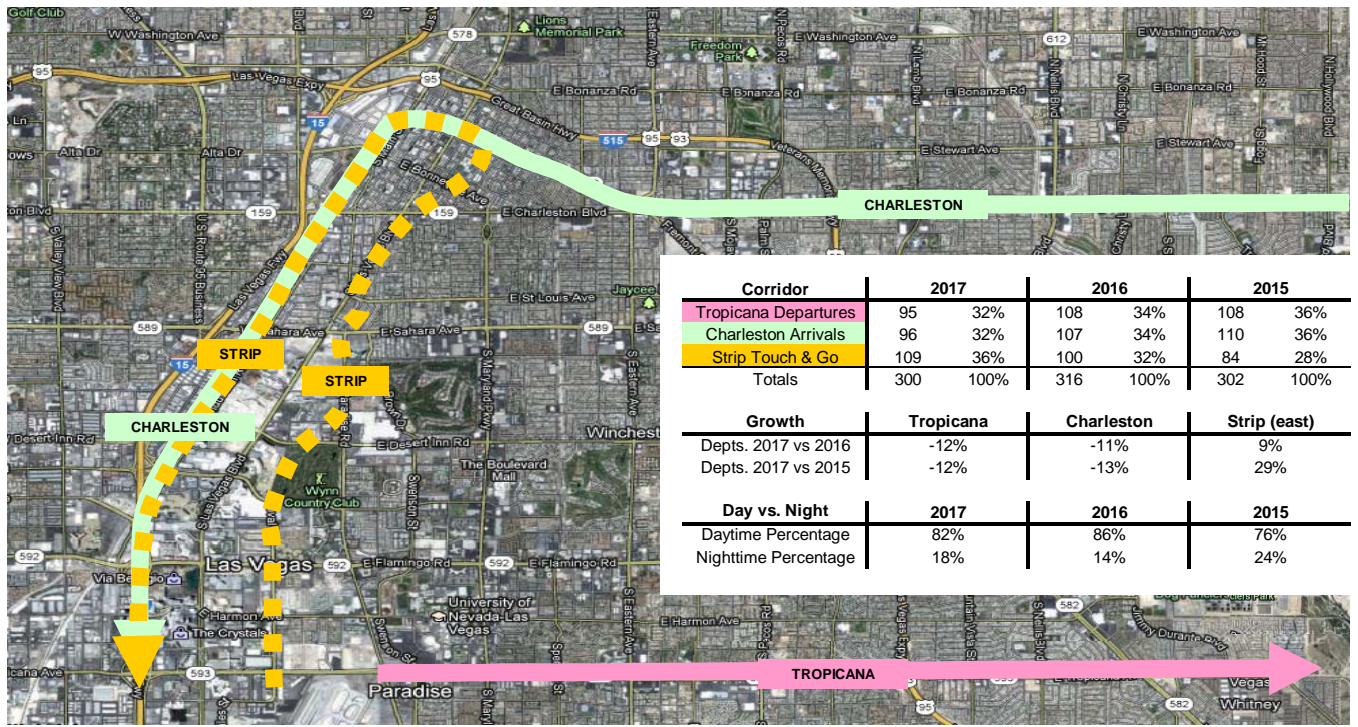
Year	2017		2016		2015	
Daytime Departures	81	88%	77	89%	N/A	N/A
Nighttime Departures	11	12%	10	11%	N/A	N/A
Total Departures	92	100%	87	100%	N/A	N/A

Daytime Arrivals	79	92%	72	90%	70	92%
Nighttime Arrivals	7	8%	8	10%	6	8%
Total Arrivals	86	100%	80	100%	75	100%

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	6%	5%	14%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	8%	10%	-11%
Arrivals 2017 vs 2015	14%	13%	21%

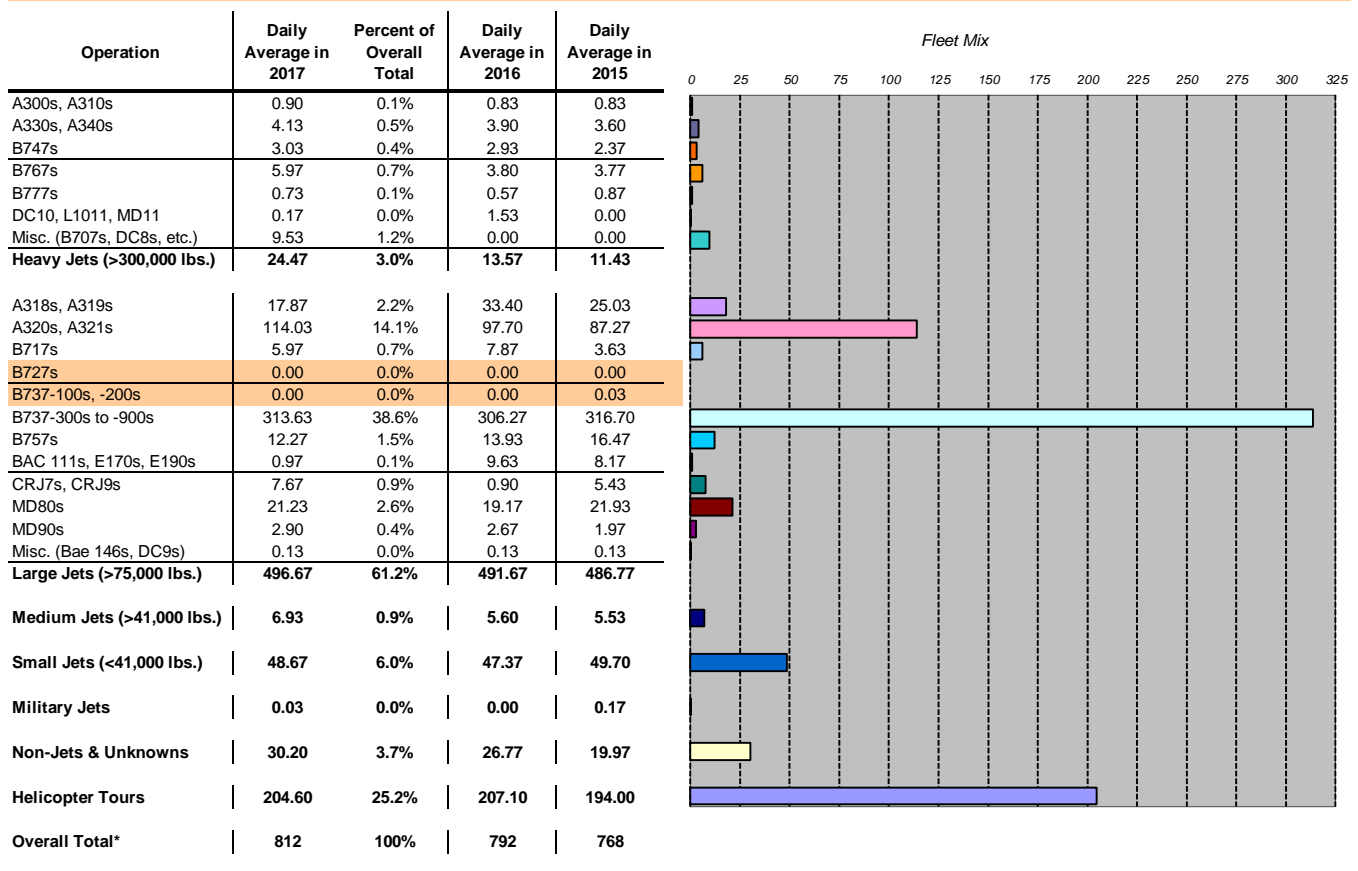
** Aircraft types: All aircraft with a maximum gross take of weight less than 75,000 pounds, excluding helicopters.

Exhibit 6: LAS Daily Average Operations by Corridor for Helicopter Tours* - June 2017



* Helicopter Tours: Note that some operations may originate from facilities besides LAS.

Exhibit 7: LAS Aircraft Arrival Fleet Mix** - June 2017



** Overall Total: Note that operation type and runway use counts are estimated by Harris Corp. EnvironmentalVue Noise and Monitoring Operations system based on radar data. Due to limitations of radar data, information for aircraft weighing less than 75,000 lbs is inexact.

Exhibit 8: LAS General Departure Direction for Large Air Carrier Aircraft* - June 2017 to 2015

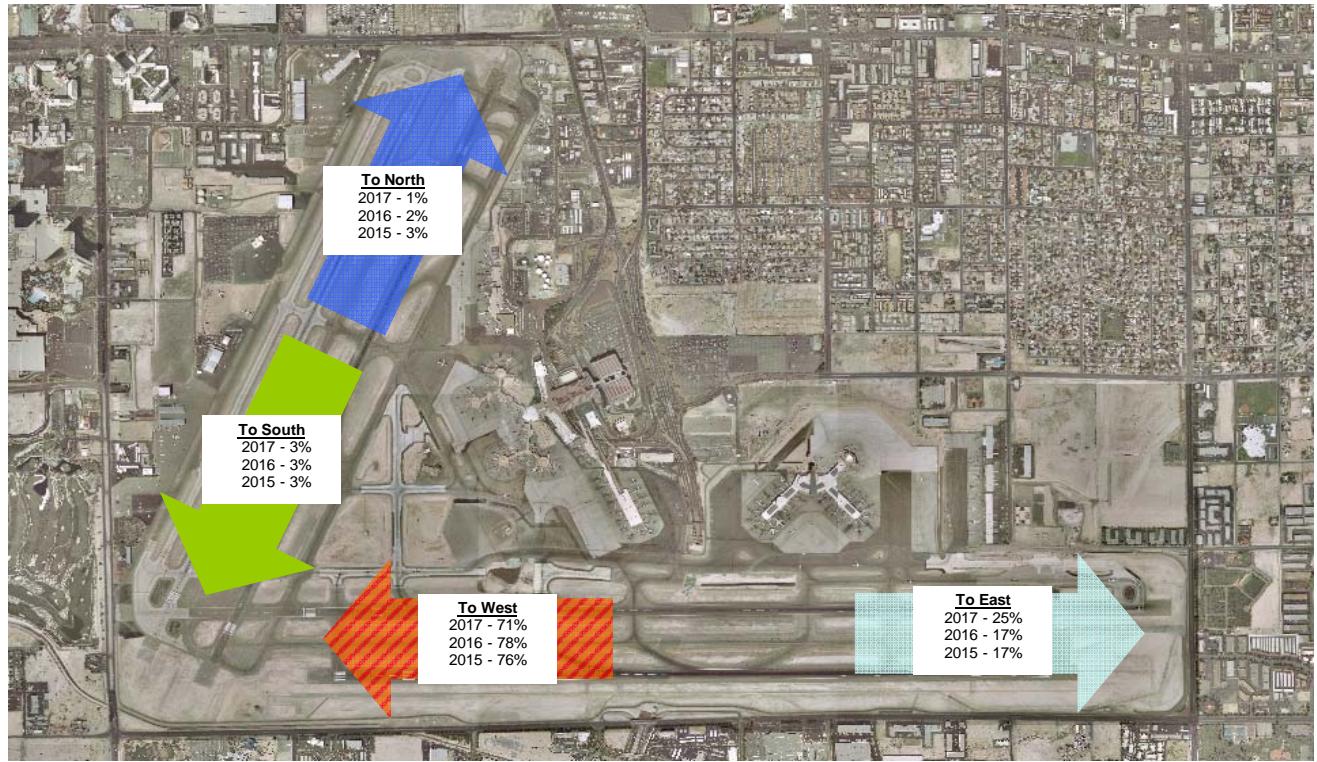
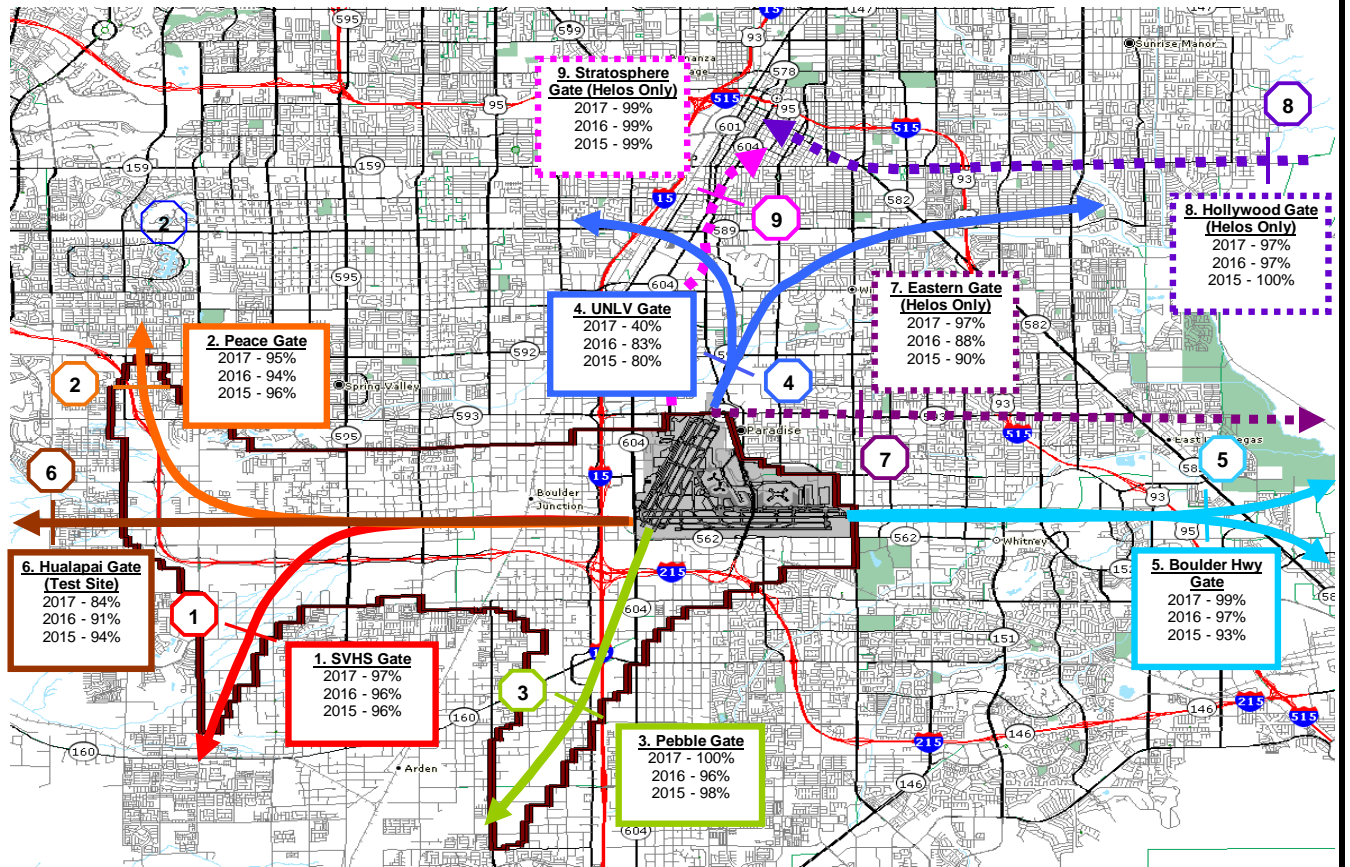


Exhibit 9: "Gate" Compliance for Large Aircraft* & LAS Helicopter Tours - June 2017



* Aircraft types: All aircraft with a maximum gross take of weight of at least 75,000 pounds, including but not limited to, A306, A310, A311, A318, A319, A320, A330, A370, B707, B717, B727, B737, B747, B757, B767, B777, CRJ7, CRJ9, DC8, DC9, DC10, E170, E190, HA4T, L1011, MD80, MD90, MD10, MD11, VC10.