

MEMORANDUM

DEPARTMENT OF AVIATION

TO: DISTRIBUTION Digitally signed by George C. Sims

FROM: GEORGE C. SIMS, PLANNER

SUBJECT: JULY THROUGH SEPTEMBER 2018 NOISE COMPLAINT REPORTS

DATE: OCTOBER 25, 2018

Attached for your review are the Clark County Department of Aviation's (CCDOA) Monthly Noise Complaint Reports for July through September 2018. 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. 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

July 2018: 77 total complaints - a 221% increase from 2017 and a 450% increase from 2016. On average, each caller (or household) issued 4.5 calls. The most calls received from one household totaled 48.

Calls by Community - (Exhibits 1 and 3)

Majority (more than 50%): The **Spring Valley** community issued 56 calls (73%). This community is typically impacted by aircraft departing to the west (from Runway 26R and Runway 26L). This community is also impacted by aircraft departing to the north (from Runway 01R and Runway 01L) that turn left (to the west and south).

Minority (between 10% and 50%): The **Summerlin South** community issued 9 calls (12%). This community is typically impacted by aircraft departing to the west (from Runway 26R and Runway 26L).

Repeat Caller Impact: One household issued 62% (48 calls) of all the calls received in July 2018.

Calls by Operation - (Exhibit 2)

- LAS:** 100% of the total calls were due to **LAS** fixed-wing operations.
- 84% were due to departures to the west from Runways 26L and 26R (74% from one household).
- VGT:** 0% of the total calls were due to **VGT** fixed-wing operations.
- HND:** 0% of the total calls were due to **HND** fixed-wing operations.
- Helos:** 0% of the total calls were due to **helicopter** operations.

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

- Overall:** 515 daily *departures*¹ – a 1% increase from 2017 and 3% increase from 2016.
- 51% of departures were to the west, 44% east, 3% south, and 2% north.
- 510 daily *arrivals* – a 1% increase from 2017 and 3% increase from 2016.
- 45% of arrivals were from the east, 34% north, 17% west, and 3% south.
- Daytime:** 405 daily *departures*² – no change from 2017 and a 1% increase from 2016.
- 53% of departures were to the east, 43% west, 2% south, and 1% north.
- 418 daily *arrivals* – a 1% decrease from 2017 and a 1% decrease from 2016.
- 41% of arrivals were from the east, 37% north, 21% west, and 1% south.

¹ Note: Runway use and traffic count totals for 2014 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 depart to the north from LAS are not captured until well north of Tropicana Avenue. Therefore, the EnvironmentalVue application, used to determine runway use and traffic counts, does not tag these operations as either occurring at LAS or as a departure. Thus, total departure counts may be 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 2016 departure data to 2015 and 2014 departure data.

² See footnote #1.

Nighttime: 110 daily *departures*³ – a 7% increase from 2017 and a 13% increase from 2016.
▪ 77% of departures were to the west, 12% east, 7% south, and 4% north.
92 daily *arrivals* – a 10% increase from 2017 and a 24% increase from 2016.
▪ 65% of arrivals were from the east, 23% north, 11% south, and 1% west.

Daytime vs. Nighttime: Approximately 79% of all *departures* and 82% of all *arrivals* occurred during the daytime hours.

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

Overall: 88 daily *departures*⁴ – a 3% increase from 2017 and 4% increase from 2016.
▪ 51% of departures were to the east, 40% south, 6% west, and 3% north.
85 daily *arrivals* – a 3% increase from 2017 and 5% increase from 2016.
▪ 66% of arrivals were from the north, 27% west, 4% east, and 2% south.

Daytime: 79 daily *departures*⁵ – a 5% increase from 2017 and 4% increase from 2016.
▪ 56% of departures were to the east, 36% south, 6% west, and 2% north.
79 daily *arrivals* – a 4% increase from 2017 and a 4% increase from 2016.
▪ 65% of arrivals were from the north, 29% west, 4% east, and 1% south.

Nighttime: 9 daily *departures*⁶ – a 7% decrease from 2017 and 3% increase from 2016.
▪ 73% of departures were to the south, 11% west, 9% east, and 7% north.
7 daily *arrivals* – a 3% decrease from 2017 and a 25% increase from 2016.
▪ 78% of arrivals were from the north, 11% south, and 10% east.

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: 95 daily *departures* - a 13% decrease from 2017 and a 21% decrease from 2016.

Charleston: 87 daily *arrivals* – a 20% decrease from 2017 and a 28% decrease from 2016.

Strip: 69 daily *touch and go's* - an 18% decrease from 2017 and a 12% decrease from 2016.

Daytime vs. Nighttime: Approximately 86% 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 4% 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 64% 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 2% 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 3% of the daily traffic.

Helos: *Touring helicopters* accounted for 21% of the daily traffic.

Noisier Aircraft Types: The hush-kitted Boeing 727 aircraft and Boeing 737 (100 & 200 series) aircraft accounted for virtually no operations per day.

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

Primary: In 2018, 51% departed to the *west* (from LAS's primary departure runways). This figure was 60% in 2017 and 76% in 2016.

Secondary: In 2018, 3% departed to the *south* (from LAS's secondary departure runways). This figure was 3% in 2017 and 3% in 2016

Alternate 1: In 2018, 2% departed to the *north* (from LAS's alternate departure runways). This figure was 3% in 2017 and 2% in 2016.

Alternate 2: In 2018, 44% departed to the *east* (from LAS's alternate departure runways). This figure was 35% in 2017 and 19% in 2016.

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

SVHS: In 2018, 98% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the west from Runway 26L or 26R and made a left-hand turn were within 0.3 NM of *Sierra Vista High School* (SVHS). This figure was 96% in 2017 and 96% in 2016.

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 26L and 26R. 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 2018, 97% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the west from Runway 26L or 26R 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 2017 and 94% in 2016.

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 26L and 26R. 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 2018, 99% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the south from Runway 19L or 19R were within 0.3 NM of the intersection of *Pebble Road & Arville Street*. This figure was 98% in 2017 and 95% in 2016.

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 2018, 92% of the large air carrier aircraft that departed to the north from Runway 01L or 01R were within 0.3 NM of the *UNLV sports complex*. This figure was 88% in 2017 and 93% in 2016.

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 2018, 98% of the large air carrier aircraft that departed to the north from Runway 08L or 08R were within 0.3 NM of the extended runway centerline, near *Boulder Highway*. This figure was 97% in 2017 and 96% in 2016.

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 08L and 08R. 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 2018, 72% of the large air carrier aircraft destined to the Nevada Test Site that departed to the west from Runway 26L or 26R were within 0.3 NM of the extended runway centerline, near *Hualapai Way*. This figure was 85% in 2017 and 91% in 2016.

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 26L and 26R. This gate was established in May 2011 along a new noise abatement flight track which requests pilots of aircraft destined to the Nevada Test 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 2018, 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 2017 and 90% in 2016.

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 2018, 98% 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 98% in 2017 and 97% in 2016.

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 2018, 89% 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 98% in 2017 and 88% in 2016.

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, (with the exception of increased calls from one resident), flight activity, (with the exception of increased departures to the east), fleet mix, and gate compliance. The eastbound departure increase, as expected, is a result of both consistent temperatures at or above 100 degrees and the 147-foot difference in elevation between the opposite ends of the east/west runways sloping downhill toward the east. Increased temperatures of this nature creates difficulty for larger, heavier aircraft to reach the necessary takeoff speed for a westbound departure on an uphill incline. As a result, the FAA typically modifies the runway configuration to address this challenge.

August 2018: 790 total complaints - a 1,979% increase from 2017 and a 3,060% increase from 2016. On average, each caller (or household) issued 87.8 calls. The most calls received from one household totaled 722.

Calls by Community - (Exhibits 1 and 3)

Majority (more than 50%): The **Summerlin South** community issued 722 calls (92%). (See July 2018 synopsis of typical aircraft overflight impacts on this community.)

Minority (between 10% and 50%): (Not applicable.)

Repeat Caller Impact: One household issued 91% (722 calls) of all the calls received in August 2018.

Calls by Operation - (Exhibit 2)

- LAS:** 99% of the total calls received were due to **LAS** fixed-wing operations.
- 99% were due to departures to the west from Runways 26L and 26R (92% from one household).
- 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:** 1% of the total calls received were due to **helicopter** operations.

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

- Overall:** 517 daily *departures*⁷ – a 2% increase from 2017 and 4% increase from 2016.
- 76% of departures were to the west, 21% east, and 3% south.
- 513 daily *arrivals* – a 1% increase from 2017 and 4% increase from 2016.
- 69% of arrivals were from the east, 21% north, 9% west, and 1% south.
- Daytime:** 417 daily *departures*⁸ – a 2% increase from 2017 and 2% increase from 2016.
- 72% of departures were to the west, 25% east, and 3% south.
- 434 daily *arrivals* – a 1% increase from 2017 and a 1% increase from 2016.
- 67% of arrivals were from the east, 22% north, and 10% west.
- Nighttime:** 99 daily *departures*⁹ – no change from 2017 and a 15% increase from 2016.
- 91% of departures were to the west, 5% east, 4% south, and 1% north.
- 79 daily *arrivals* – a 1% increase from 2017 and a 22% increase from 2016.
- 79% of arrivals were from the east, 16% north, 4% south, and 1% west.

Daytime vs. Nighttime: Approximately 81% of all *departures* and 85% of all *arrivals* occurred during the daytime hours.

⁷ See footnote #1.

⁸ See footnote #1.

⁹ See footnote #1.

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

- Overall:** 87 daily *departures*¹⁰ – a 6% decrease from 2017 and 3% increase from 2016.
▪ 66% of departures were to the south, 24% east, 10% west, and 1% north.
85 daily *arrivals* – a 4% decrease from 2017 and a 5% increase from 2016.
▪ 81% of arrivals were from the north, 13% west, 5% east, and 1% south.
- Daytime:** 77 daily *departures*¹¹ – a 5% decrease from 2017 and 3% increase from 2016.
▪ 65% of departures were to the south, 25% east, 9% west, and 1% north.
78 daily *arrivals* – a 5% decrease from 2017 and a 5% increase from 2016.
▪ 80% of arrivals were from the north, 14% west, and 5% east.
- Nighttime:** 9 daily *departures*¹² – a 15% decrease from 2017 and 2% decrease from 2016.
▪ 75% of departures were to the south, 14% west, 9% east, and 3% north.
7 daily *arrivals* – a 2% increase from 2017 and a 3% increase from 2016.
▪ 87% of arrivals were from the north, 8% east, 4% south, and 1% west.

Daytime vs. Nighttime: Approximately 89% 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 15% decrease from 2017 and a 26% decrease from 2016.

Charleston: 84 daily *arrivals* – a 25% decrease from 2017 and a 33% decrease from 2016.

Strip: 78 daily *touch and go's* - a 3% decrease from 2017 and a 13% increase from 2016.

Daytime vs. Nighttime: Approximately 88% 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 4% 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 63% of the daily traffic.
- Medium:** **Medium** turbine-driven aircraft (those weighing more than 41,000 lbs. and less than 75,000 lbs.) accounted for 2% 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 3% of the daily traffic.

¹⁰ See footnote #1.

¹¹ See footnote #1.

¹² See footnote #1.

Helos: *Touring helicopters* accounted for 21% 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 2018, 76% departed to the *west* (from LAS's primary departure runways). This figure was 60% in 2017 and 75% in 2016.

Secondary: In 2018, 3% departed to the *south* (from LAS's secondary departure runways). This figure was 4% in 2017 and 5% in 2016.

Alternate 1: In 2018, <1% departed to the *north* (from LAS's alternate departure runways). This figure was 7% in 2017, and 4% in 2016.

Alternate 2: In 2018, 21% departed to the *east* (from LAS's alternate departure runways). This figure was 30% in 2017 and 17% in 2016.

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

SVHS: In 2018, 98% of the large air carrier aircraft (excluding those destined to the Nevada Test Site) that departed to the west from Runway 26L or 26R and made a left-hand turn were within 0.3 NM of *Sierra Vista High School* (SVHS). This figure was 97% in 2017 and 97% in 2016. (See July 2018 synopsis for specific location of the SVHS gate.)

Peace: In 2018, 97% of the large air carrier aircraft (excluding those destined to the Nevada Test Site) that departed to the west from Runway 26L or 26R and made a right-hand turn were within 0.3 NM of the intersection of *Peace Way & Summers Shade Street*. This figure was 95% in 2017 and 94% in 2016. (See July 2018 synopsis for specific location of the Peace gate.)

Pebble: In 2018, 98% of the large air carrier aircraft (excluding those destined to the Nevada Test Site) that departed to the south from Runway 19L or 19R were within 0.3 NM of the intersection of *Pebble Road & Arville Street*. This figure was 98% in 2017 and 99% in 2016. (See July 2018 synopsis for specific location of the Pebble gate.)

UNLV: In 2018, 89% of the large air carrier aircraft that departed to the north from Runway 01L or 01R were within 0.3 NM of the *UNLV sports complex*. This figure was 91% in 2017, and 84% in 2016. (See July 2018 synopsis for specific location of the UNLV gate.)

Boulder: In 2018, 98% of the large air carrier aircraft that departed to the north from Runway 08L or 08R were within 0.3 NM of the extended runway centerline, near *Boulder Highway*. This figure was 98% in 2017 and 93% in 2016. (See July 2018 synopsis for specific location of the Boulder Hwy. gate.)

Hualapai: In 2018, 91% of the large air carrier aircraft destined to the Nevada Test Site that departed to the west from Runway 26L or 26R were within 0.3 NM of the extended runway centerline, near *Hualapai Way*. This figure was 79% in 2017, and 91% 2016. (See July 2018 synopsis for specific location of the Hualapai gate.)

Eastern: In 2018, 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 2017 and 95% in 2016. (See July 2018 synopsis for specific location of the Eastern gate.)

Hollywood: In 2018, 98% 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 2017 and 96% in 2016. (See July 2018 synopsis for specific location of the Hollywood gate.)

Stratosphere: In 2018, 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 98% in 2017 and 99% in 2016. (See July 2018 synopsis for specific location of the Stratosphere gate.)

The information denoted in this monthly summary represents **typical** residential complaints, (with the exception of increased calls from one resident), flight activity, (with the exception of increased departures to the east), fleet mix, and gate compliance. The eastbound departure increase, as expected, is a result of both consistent temperatures at or above 100 degrees and the 147-foot difference in elevation between the opposite ends of the east/west runways sloping downhill toward the east. Increased temperatures of this nature creates difficulty for larger, heavier aircraft to reach the necessary takeoff speed for a westbound departure on an uphill incline. As a result, the FAA typically modifies the runway configuration to address this challenge.

September 2018: 202 total complaints – a 162% increase from 2017 and a 597% increase from 2016. On average, each caller (or household) issued 13.5 calls. The most calls received from one household totaled 134.

Calls by Community - (Exhibits 1 and 3)

Majority (more than 50%): The *Summerlin South* community issued 134 calls (66%). (See July 2018 synopsis of typical aircraft overflight impacts on this community.)

Minority (between 10% and 50%): The *Spring Valley* community issued 53 calls (26%). (See July 2018 synopsis of typical aircraft overflight impacts on this community.)

Repeat Caller Impact: One household issued 66% (134 calls) of all the calls received in September 2018.

Calls by Operation - (Exhibit 2)

LAS: 99% of the total calls received were due to *LAS* fixed-wing operations.
▪ 95% were due to departures to the west from Runways 26L and 26R (96% from two households).

VGT: 0% of the total calls received were due to *VGT* fixed-wing operations.

HND: <1% of the total calls received were due to *HND* fixed-wing operations.

Helis: <1% of the total calls received were due to *helicopter* operations.

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

- Overall:** 510 daily *departures*¹³ – a 2% increase from 2017 and a 1% increase from 2016.
▪ 89% of departures were to the west, 5% east, 4% south, and 2% north.
506 daily *arrivals* – a 2% increase from 2017 and a 1% increase from 2016.
▪ 84% of arrivals were from the east, 12% north, 2% west and 1% south.
- Daytime:** 427 daily *departures*¹⁴ – a 2% increase from 2017 and no change from 2016.
▪ 88% of departures were to the west, 6% east, 4% south, and 2% north.
442 daily *arrivals* – a 2% increase from 2017 and 1% decrease from 2016.
▪ 84% of arrivals were from the east, 13% north, 2% west, and 1% south.
- Nighttime:** 83 daily *departures*¹⁵ – no change from 2017 and an 8% increase from 2016.
▪ 93% of departures were to the west, 4% south, and 2% east.
65 daily *arrivals* – no change from 2017 and 20% increase from 2016.
▪ 86% of arrivals were from the east, 10% north, and 4% south.

Daytime vs. Nighttime: Approximately 84% 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:** 104 daily *departures*¹⁶ – a 3% increase from 2017 and 4% increase from 2016.
▪ 82% of departures were to the south, 11% west, 5% east, and 3% north.
102 daily *arrivals* – a 3% decrease from 2017 and a 2% increase from 2016.
▪ 87% of arrivals were from the north, 7% east, 4% west, and 2% south.
- Daytime:** 93 daily *departures*¹⁷ – a 2% increase from 2017 and 3% increase from 2016.
▪ 82% of departures were to the south, 10% west, 5% east, and 3% north.
95 daily *arrivals* – a 3% increase from 2017 and a 3% increase from 2016.
▪ 87% of arrivals were from the north, 7% east, 4% west, and 2% south.
- Nighttime:** 11 daily *departures*¹⁸ – an 11% increase from 2017 and 12% increase from 2016.
▪ 82% of departures were to the south, 16% west, 2% east, and 1% north.
7 daily *arrivals* – a 4% decrease from 2017 and a 5% decrease from 2016.
▪ 85% of arrivals were from the north, 9% east, 5% south, and 1% west.

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

¹³ See footnote #1.

¹⁴ See footnote #1.

¹⁵ See footnote #1.

¹⁶ See footnote #1.

¹⁷ See footnote #1.

¹⁸ See footnote #1.

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

Tropicana: 87 daily *departures* – a 26% decrease from 2017 and a 36% decrease from 2016.

Charleston: 81 daily *arrivals* - a 31% decrease from 2017 and a 41% decrease from 2016.

Strip: 78 daily *touch and go's* - a 3% increase from 2017 and 2% decrease from 2016.

Daytime vs. Nighttime: Approximately 91% 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 4% 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.

Medium: **Medium** turbine-driven aircraft (those weighing more than 41,000 lbs. and less than 75,000 lbs.) accounted for 2% 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 21% of the daily traffic.

Noisier Aircraft Types: The hush-kitted Boeing 727 aircraft and Boeing 737 (100 & 200 series) aircraft accounted for almost no operations per day.

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

Primary: In 2018, 89% departed to the **west** (from LAS's primary departure runways). This figure was 63% in 2017 and 76% in 2016.

Secondary: In 2018, 4% departed to the **south** (from LAS's secondary departure runways). This figure was 3% in 2017 and 3% in 2016.

Alternate 1: In 2018, 2% departed to the **north** (from LAS's alternate departure runways). This figure was 24% in 2017 and 10% in 2016.

Alternate 2: In 2018, 5% departed to the **east** (from LAS's alternate departure runways). This figure was 10% in 2017 and 11% in 2016.

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

- SVHS:** In 2018, 98% of the large air carrier aircraft (excluding those destined to the Nevada Test Site) that departed to the west from Runway 26L or 26R and made a left-hand turn were within 0.3 NM of *Sierra Vista High School* (SVHS). This figure was 96% in 2017 and 97% in 2016. (See July 2018 synopsis for specific location of the SVHS gate.)
- Peace:** In 2018, 97% of the large air carrier aircraft (excluding those destined to the Nevada Test Site) that departed to the west from Runway 26L or 26R 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 2017 and 94% in 2016. (See July 2018 synopsis for specific location of the Peace gate.)
- Pebble:** In 2018, 98% of the large air carrier aircraft (excluding those destined to the Nevada Test Site) that departed to the south from Runway 19L or 19R were within 0.3 NM of the intersection of *Pebble Road & Arville Street*. This figure was 98% in 2017 and 97% in 2016. (See July 2018 synopsis for specific location of the Pebble gate.)
- UNLV:** In 2018, 95% of the large air carrier aircraft that departed to the north from Runway 01L or 01R were within 0.3 NM of the *UNLV sports complex*. This figure was 93% in 2017 and 90% in 2016. (See July 2018 synopsis for specific location of the UNLV gate.)
- Boulder:** In 2018, 99% of the large air carrier aircraft that departed to the north from Runway 08L or 08R were within 0.3 NM of the extended runway centerline, near *Boulder Highway*. This figure was 98% in 2017 and 97% in 2016. (See July 2018 synopsis for specific location of the Boulder Hwy. gate.)
- Hualapai:** In 2018, 90% of the large air carrier aircraft destined to the Nevada Test Site that departed to the west from Runway 26L or 26R were within 0.3 NM of the extended runway centerline, near *Hualapai Way*. This figure was 82% in 2017 and 91% in 2016. (See July 2018 synopsis for specific location of the Hualapai gate.)
- Eastern:** In 2018, 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 2017 and 99% in 2016. (See July 2018 synopsis for specific location of the Eastern gate.)
- Hollywood:** In 2018, 98% 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 2017 and 97% in 2016. (See July 2018 synopsis for specific location of the Hollywood gate.)
- Stratosphere:** In 2018, 100% 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 98% in 2017 and 99% in 2016. (See July 2018 synopsis for specific location of the Stratosphere gate.)

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

Other Notable Issues

Helicopter Operator Users Meeting: On September 20, 2018, DOA staff members met with FAA, Las Vegas Metropolitan Police, and local helicopter tour operators to discuss noise complaints tied to helicopter operations, route compliance, and operational growth. Operators were briefed on residential complaints tied to increased tour operations and reviewed route procedures for the Red Rock canyon area. Additionally, the FAA and Metropolitan Police provided information associated with the increased use of drones and the impact these operations pose to safety and security.

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

October 25, 2018

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Distribution:

Commissioner Sisolak, Chair	Sean Roebuck
Commissioner Giunchigliani, Vice-Chair	Bruce Daugherty
Commissioner Brager	Sam Ingalls
Commissioner Brown	Chris Jones
Commissioner Kirkpatrick	Christine Crews
Commissioner Gibson	Tina Frias
Commissioner Weekly	Jeff Jacquart
Donald G. Burnette	Charlie Hall
Rosemary Vassiliadis	Scott Kichline
James Chrisley	Stephanie Garcia-Vause (COH)
Joseph Piurkowski	Andrew Powell (COH)
Sandra Cikity	William Ruggiero (FAA TRACON)
Judy Villalta	Thomas Miller (Nellis AFB)
Ben Czyzewski	Michael Moorer (FAA ATCT)
Donna Bergstrom	James Erbeck (CLV)
Curtis Hedgepeth	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)
Elizabeth Fretwell (CLV)	Frank Iacovino (Mass Port Authority)
Mayor Carolyn Goodman (CLV)	Robert Butler (Papillon Helicopters)
Mayor Pro Tem Lois Tarkanian (CLV)	Christine Gerencher (American Airlines)
Councilman S. Anthony (CLV)	Bert Ganoung (SFO)
Councilman Bob Coffin (CLV)	San Diego Airport Noise Management
Councilman Steven S. Seroka (CLV)	Jeannie Denham (Citizen)
Councilwoman Michele Fiore (CLV)	Judge Bob Johnston (Citizen)
Councilman Cedric Crear (CLV)	Roy Fuhrmann (Metro Airports Commission)
Brok Armantrout (CBC)	Tom Schaus (Sundance Helicopters)
David Parks (Nevada State Assembly)	Brooke Satern (Port of Portland)
J. Gordon Arkin (Foley & Lardner)	Gary Brodt (Citizen)
John Williams (Ricondo)	James P. Callahan (Nellis AFB)
Douglas Pomeroy (FAA ADO)	Stan Shepherd (SEATAC)
La Nea M. Conner (Boeing)	Eric Sheng (Long Beach Airport)
Mike Jeck (Metro Wash. Air Auth.)	Jason Schwartz (Portland Airport)
Karen Everitt (Dallas City Hall)	Todd Lobato (Nellis AFB)
Samuel Carter (Harris)	Steven Peacock (Dallas City Hall)
Blanca Vazquez	John Dietz (FAA TRACON)
Susan Gersh	William Olivieri (Citizen)

Exhibit 1: Noise Complaint Calls by Community* - July 2018

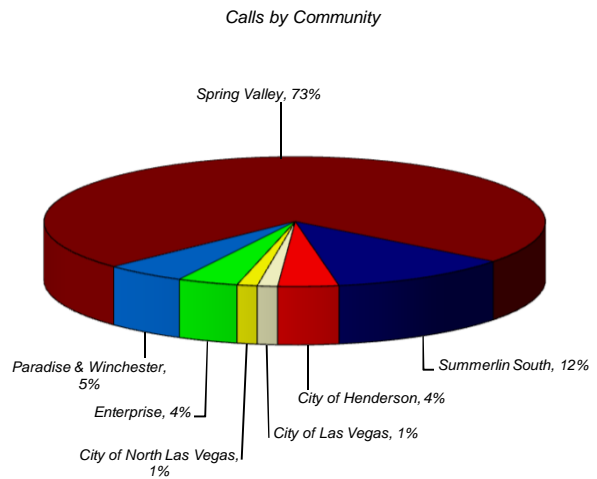
Community	No. of Calls in 2018	No. of Callers in 2018	No. of Calls in 2017	No. of Calls in 2016
City of Boulder City	3	2		1
City of Henderson			7	1
City of Las Vegas	1	1	2	
City of North Las Vegas	1	1	2	
Enterprise	3	3	2	2
Lone Mountain				
Paradise & Winchester	4	4	5	4
Spring Valley	56	5	8	6
Summerlin South	9	1		
Sunrise Manor				
Whitney				
Location unknown				
Overall Total	77	17	24	14

Difference between 2018 and 2017 Total Calls: 221%

Difference between 2018 and 2016 Total Calls: 450%

Average Number of Calls per Caller: 4.5

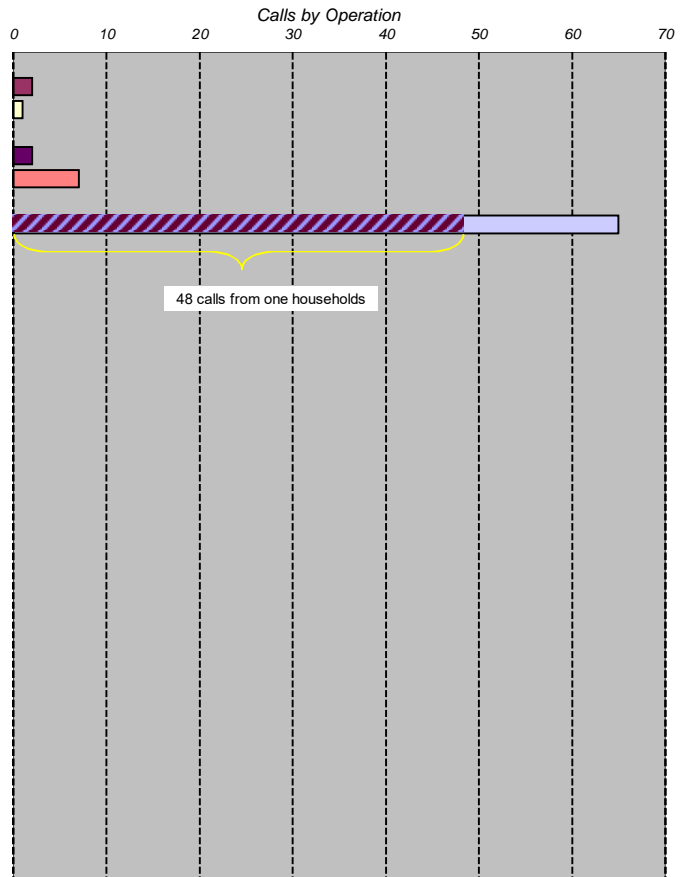
Most calls received from one household: 48



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

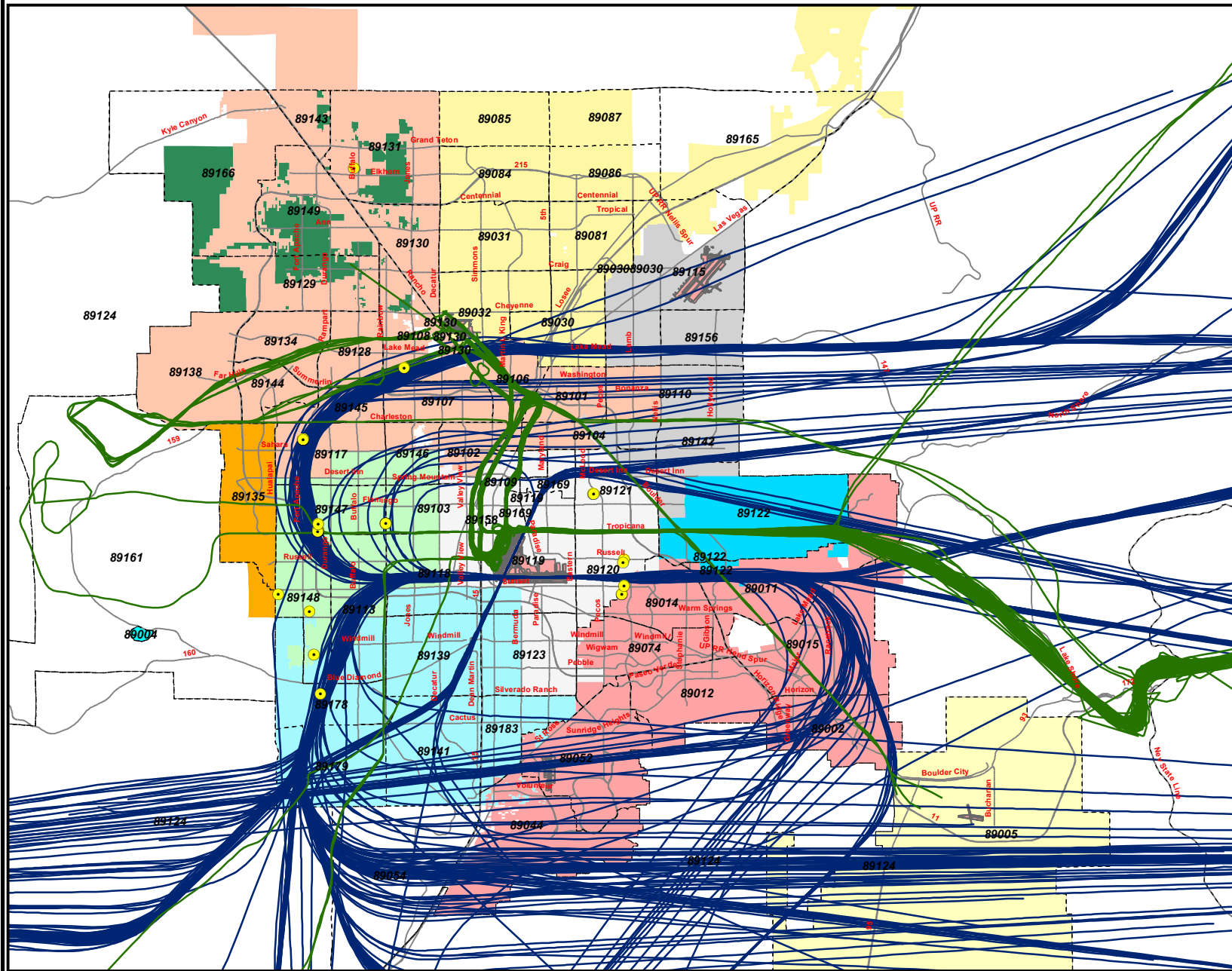
Exhibit 2: Noise Complaint Calls by Type of Operation - July 2018

Operation	No. of Calls in 2018	Percent of Overall Total	No. of Calls in 2017	No. of Calls in 2016
LAS 01R/L Arrivals	2	2.6%	1	
LAS 08R/L Arrivals	1	1.3%		
LAS 19R/L Arrivals				
LAS 26R/L Arrivals				
LAS 01R/L Departures	2	2.6%	3	3
LAS 08R/L Departures	7	9.1%	2	3
LAS 19R/L Departures				1
LAS 26R/L Departures	65	84.4%	9	4
LAS Run-ups			1	
LAS GA				
LAS Other				
LAS Total	77	100.0%	16	11
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	
VGT Other				
VGT Total	0	0.0%	2	0
HND 17R/L Arrivals				
HND 35R/L Arrivals				
HND 17R/L Departures				
HND 35R/L Departures				
HND Run-ups				
HND GA				1
HND Other				
HND Total	0	0.0%	0	1
Helicopters**			6	2
Overall Total	77	100%	24	14



** 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 - Jul 2018



Legend

Jul 2018
Total Complaints: 77

- Aircraft Complaints Received 77 Mapped 77
- ★ Helicopter Complaints Received 0 Mapped 0
- 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

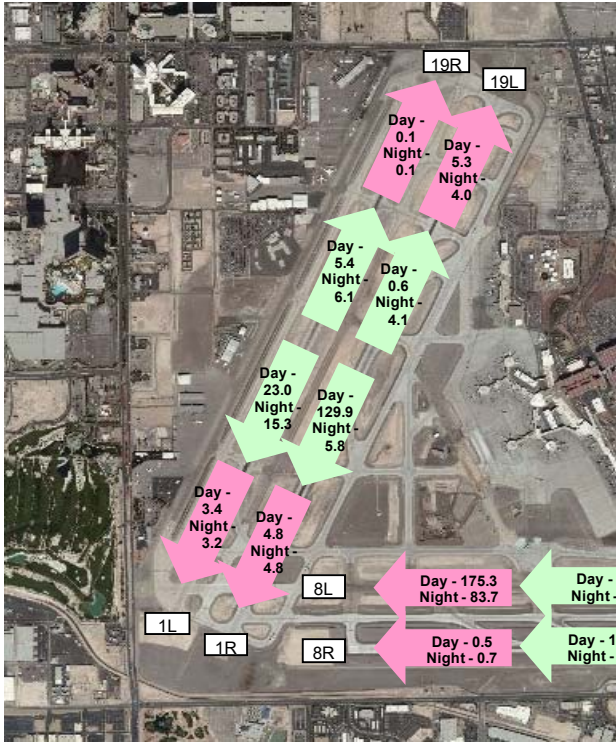
Department of Aviation
Geographic Information Systems

October 23, 2018

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* - July 2018



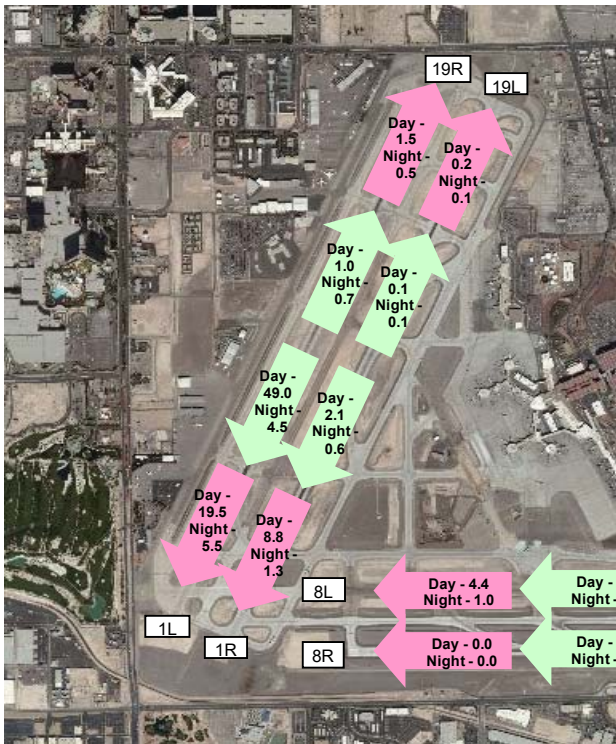
Year	2018		2017		2016	
Daytime Departures	405	79%	406	80%	402	81%
Nighttime Departures	110	21%	102	20%	97	19%
Total Departures	515	100%	509	100%	499	100%

Daytime Arrivals	418	82%	422	83%	421	85%
Nighttime Arrivals	92	18%	84	17%	74	15%
Total Arrivals	510	100%	505	100%	495	100%

Growth	Overall	Daytime	Nighttime
Depts. 2018 vs 2017	1%	0%	7%
Depts. 2018 vs 2016	3%	1%	13%
Arrivals 2018 vs 2017	1%	-1%	10%
Arrivals 2018 vs 2016	3%	-1%	24%

* 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** - July 2018



Year	2018		2017		2016	
Daytime Departures	79	90%	76	88%	76	90%
Nighttime Departures	9	10%	10	12%	9	10%
Total Departures	88	100%	85	100%	85	100%

Daytime Arrivals	79	92%	76	92%	76	93%
Nighttime Arrivals	7	8%	7	8%	5	7%
Total Arrivals	85	100%	82	100%	81	100%

Growth	Overall	Daytime	Nighttime
Depts. 2018 vs 2017	3%	5%	-7%
Depts. 2018 vs 2016	4%	4%	3%
Arrivals 2018 vs 2017	3%	4%	-3%
Arrivals 2018 vs 2016	5%	4%	25%

** 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* - July 2018

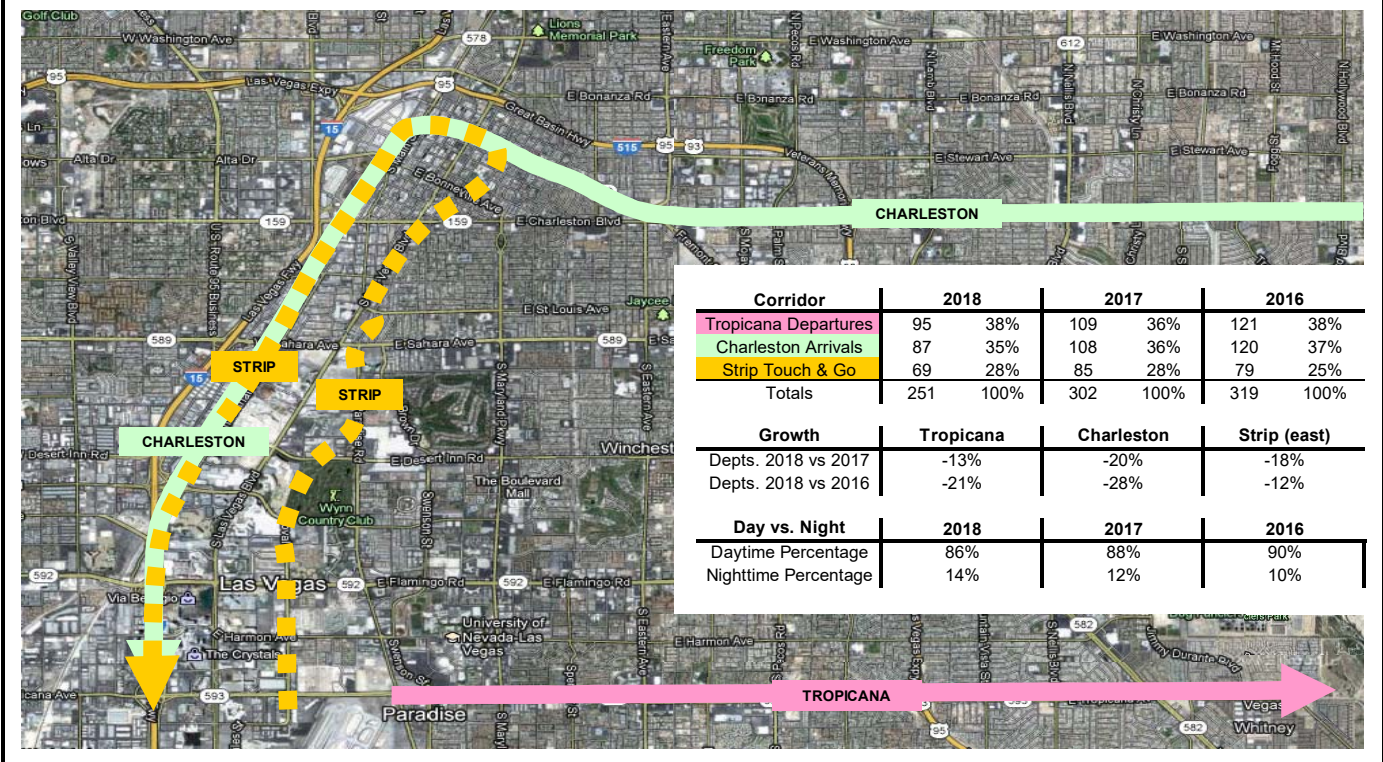
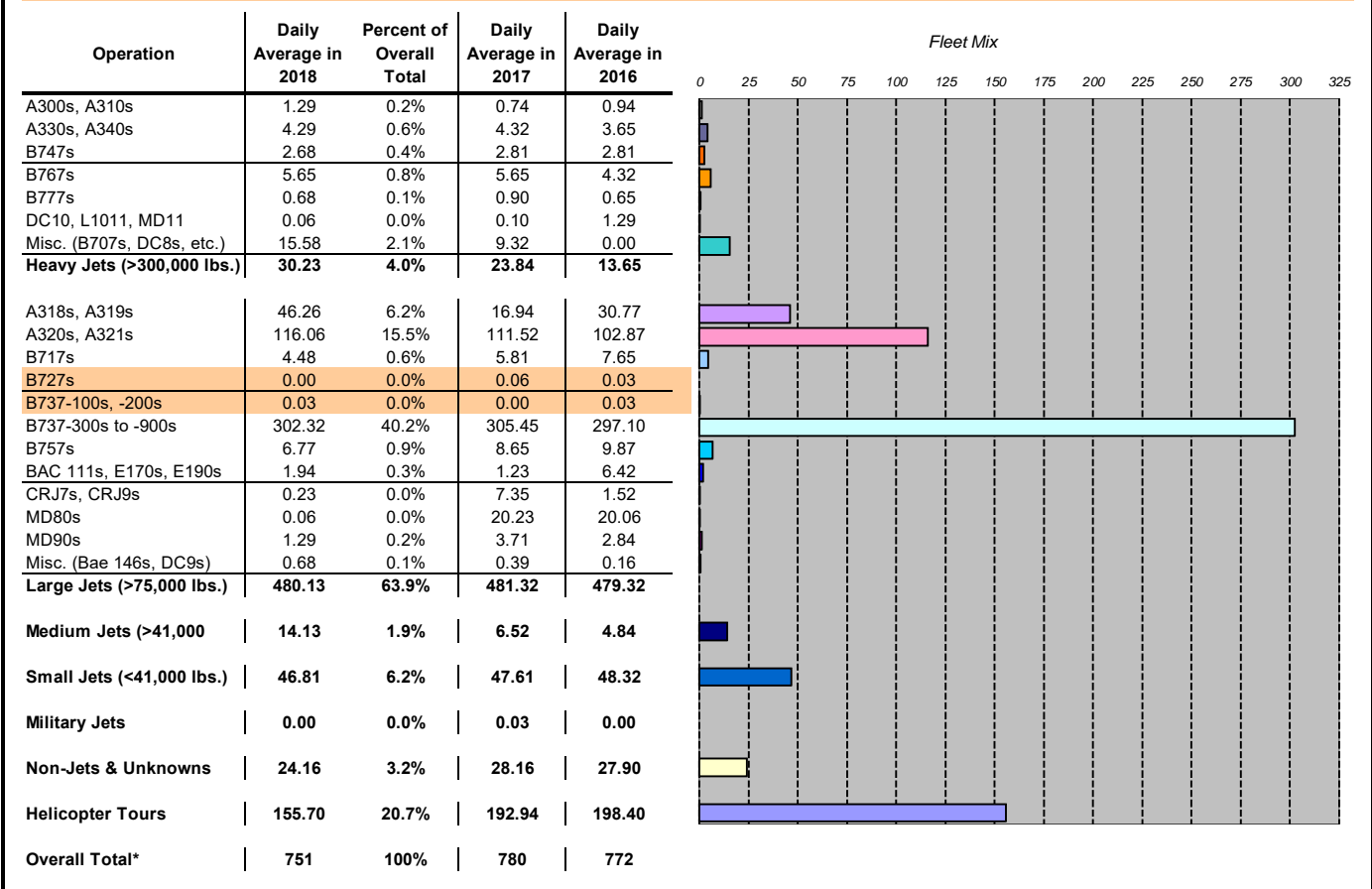


Exhibit 7: LAS Aircraft Arrival Fleet Mix** - July 2018



** 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* - July 2018 to 2016

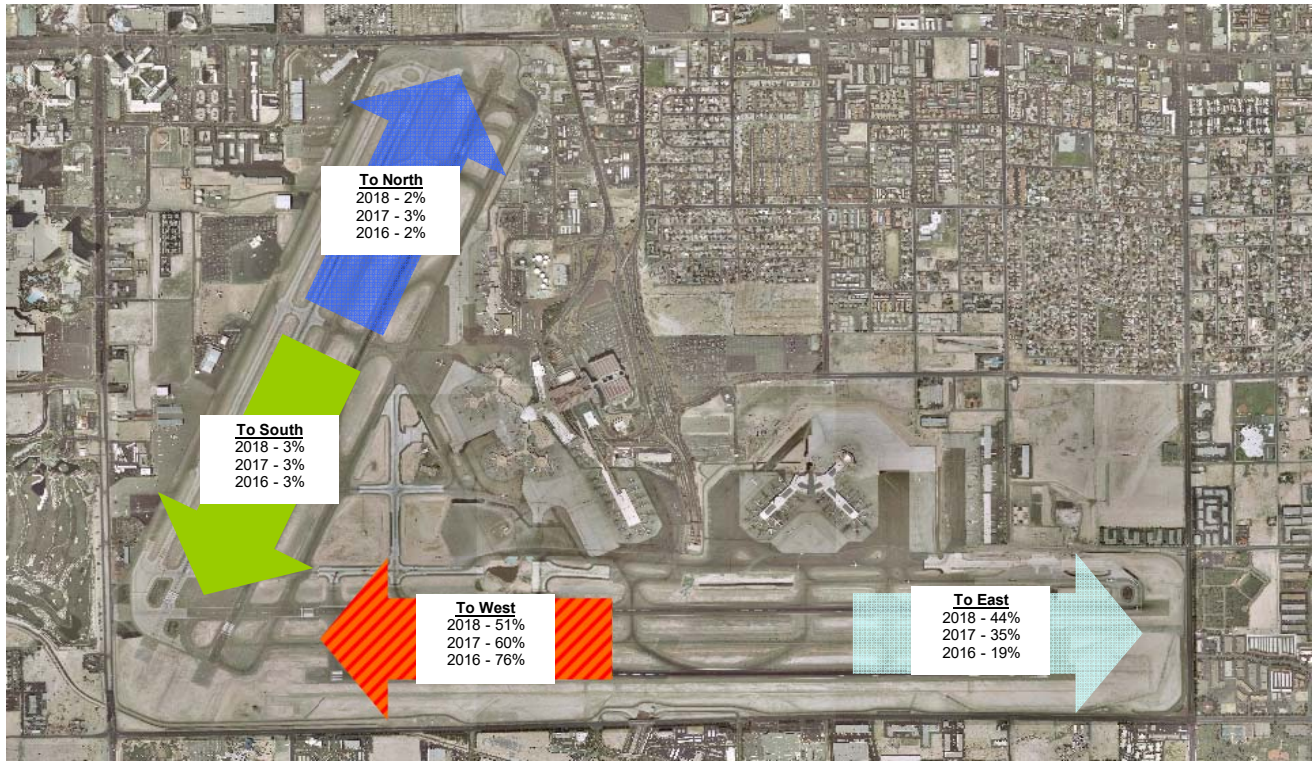
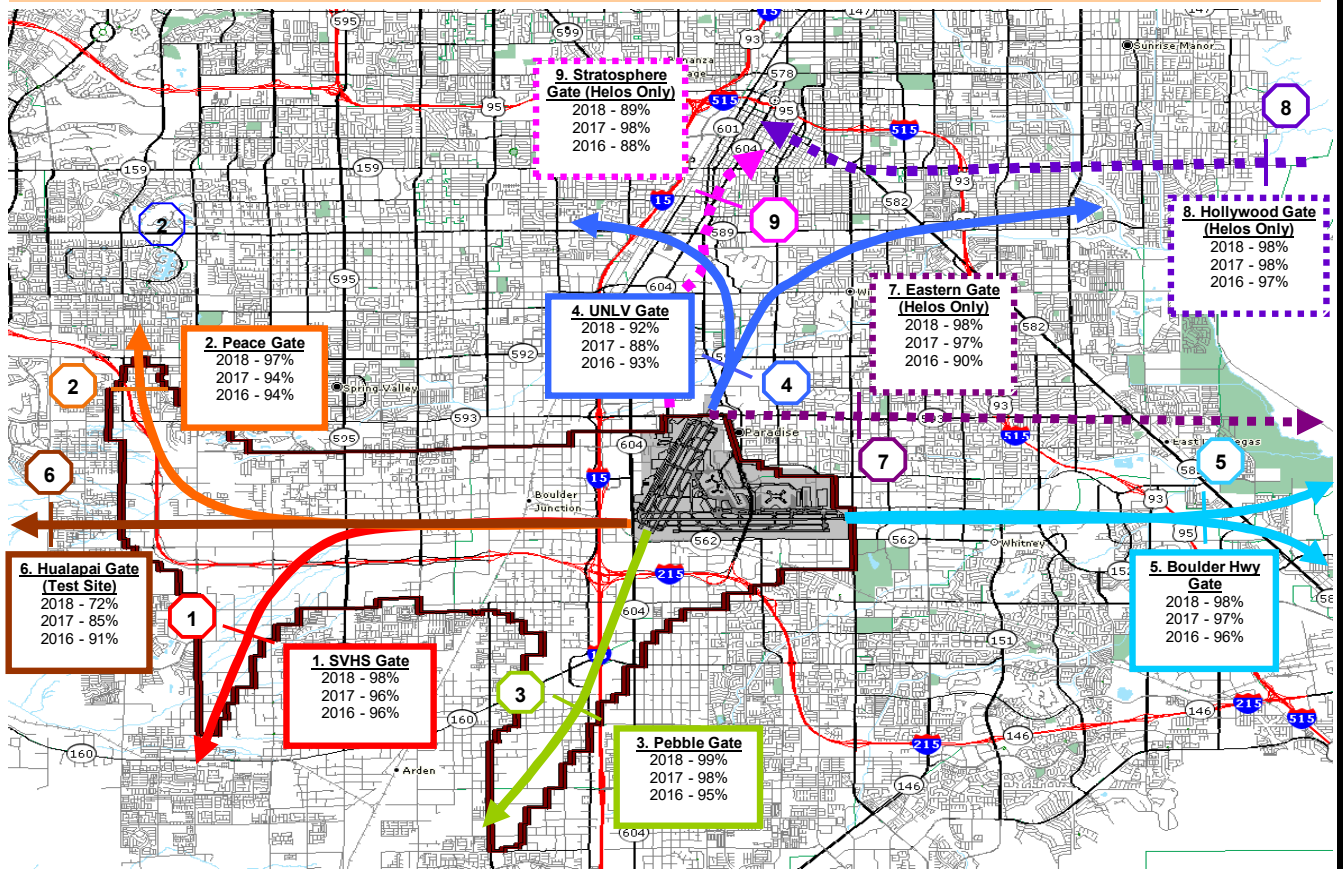


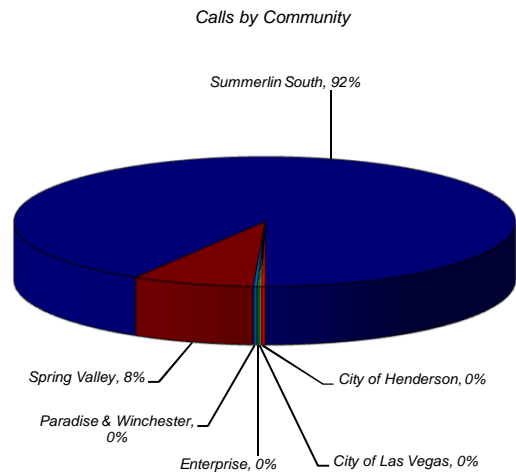
Exhibit 9: "Gate" Compliance for Large Aircraft* & Helicopter Tours - July 2018



* 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, 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* - August 2018

Community	No. of Calls in 2018	No. of Callers in 2018	No. of Calls in 2017	No. of Calls in 2016
City of Boulder City	2	1	7	1
City of Henderson	1	1	1	1
City of Las Vegas				
City of North Las Vegas				
Enterprise	1	1	3	5
Lone Mountain				
Paradise & Winchester	2	2	8	13
Spring Valley	62	3	18	3
Summerlin South	722	1		1
Sunrise Manor			1	1
Whitney				
Location unknown				
Overall Total	790	9	38	25



Difference between 2018 and 2017 Total Calls: 1,979%

Difference between 2018 and 2016 Total Calls: 3,060%

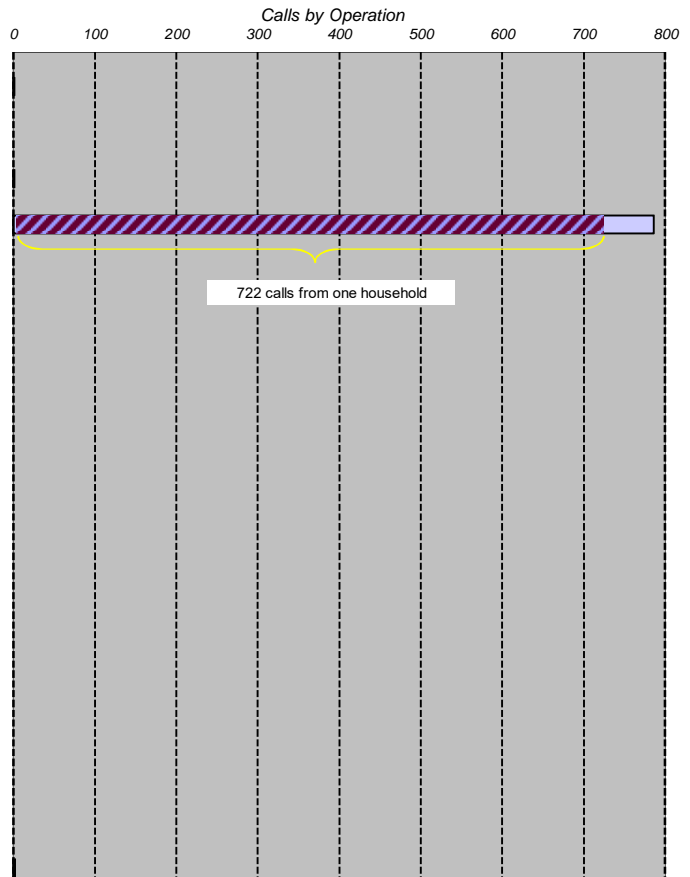
Average Number of Calls per Caller: 87.8

Most calls received from one household: 722

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

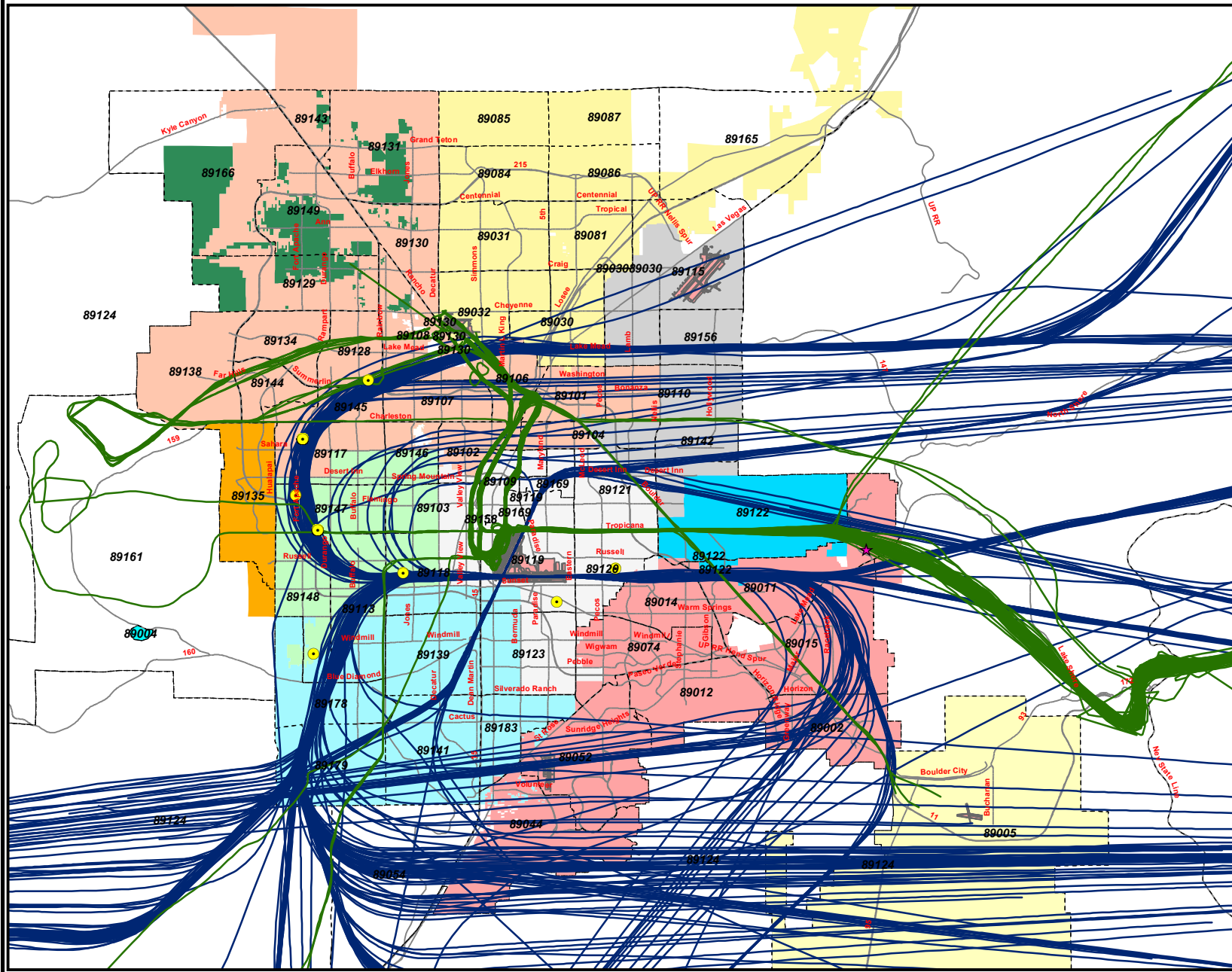
Exhibit 2: Noise Complaint Calls by Type of Operation - August 2018

Operation	No. of Calls in 2018	Percent of Overall Total	No. of Calls in 2017	No. of Calls in 2016
LAS 01R/L Arrivals			1	
LAS 08R/L Arrivals	1	0.1%	1	
LAS 19R/L Arrivals			1	
LAS 26R/L Arrivals			2	1
LAS 01R/L Departures			3	12
LAS 08R/L Departures	1	0.1%	7	5
LAS 19R/L Departures				
LAS 26R/L Departures	786	99.5%	20	5
LAS Run-ups				
LAS GA				
LAS Other				
LAS Total	788	99.7%	34	23
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	1
HND Other				
HND Total	0	0.0%	4	1
Helicopters**	2	0.3%		
Overall Total	790	100%	38	25



** 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 - Aug 2018



Legend

Aug 2018
Total Complaints: 790

- Aircraft Complaints Received 788 Mapped 788
- ★ Helicopter Complaints Received 2 Mapped 2
- 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

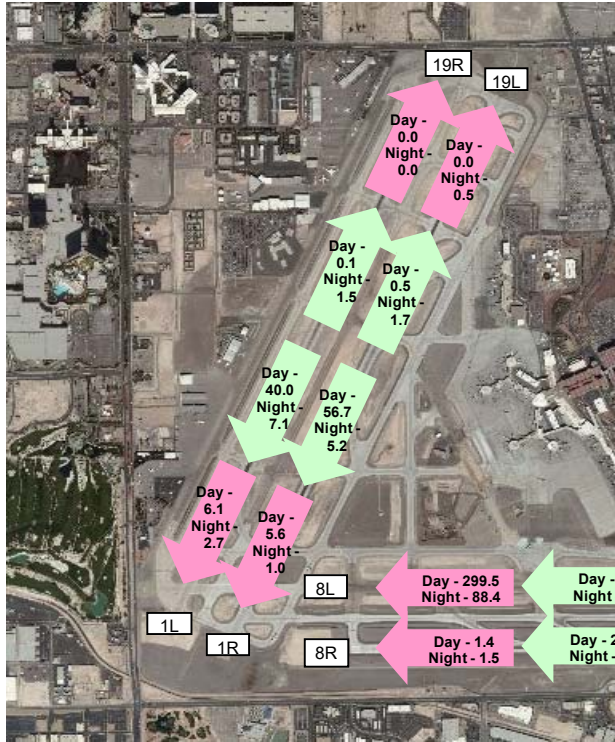
Department of Aviation
Geographic Information Systems

October 23, 2018

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* - August 2018



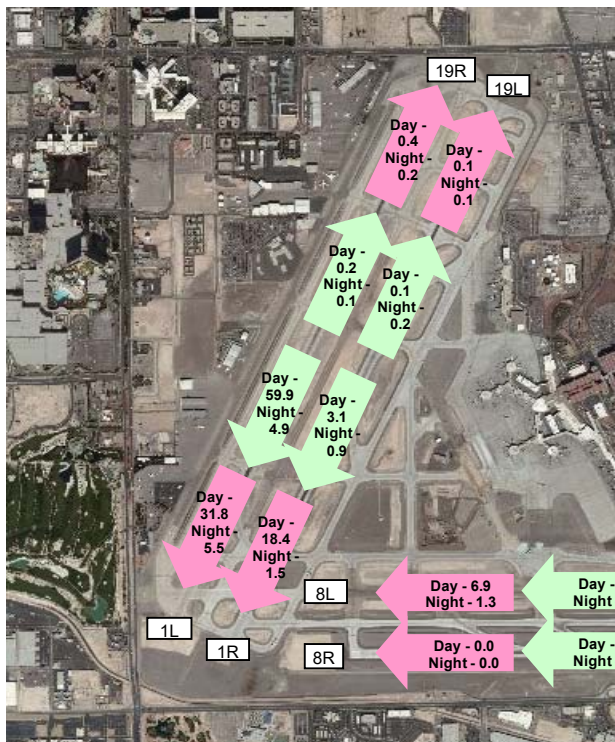
Year	2018		2017		2016	
Daytime Departures	417	81%	410	80%	410	83%
Nighttime Departures	99	19%	99	20%	86	17%
Total Departures	517	100%	509	100%	496	100%

Daytime Arrivals	434	85%	428	85%	430	87%
Nighttime Arrivals	79	15%	78	15%	65	13%
Total Arrivals	513	100%	506	100%	495	100%

Growth	Overall	Daytime	Nighttime
Depts. 2018 vs 2017	2%	2%	0%
Depts. 2018 vs 2016	4%	2%	15%
Arrivals 2018 vs 2017	1%	1%	1%
Arrivals 2018 vs 2016	4%	1%	22%

* 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** - August 2018



Year	2018		2017		2016	
Daytime Departures	77	89%	82	88%	75	89%
Nighttime Departures	9	11%	11	12%	10	11%
Total Departures	87	100%	93	100%	84	100%

Daytime Arrivals	78	92%	82	93%	75	92%
Nighttime Arrivals	7	8%	7	7%	7	8%
Total Arrivals	85	100%	89	100%	81	100%

Growth	Overall	Daytime	Nighttime
Depts. 2018 vs 2017	-6%	-5%	-15%
Depts. 2018 vs 2016	3%	3%	-2%
Arrivals 2018 vs 2017	-4%	-5%	2%
Arrivals 2018 vs 2016	5%	5%	3%

** 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* - August 2018

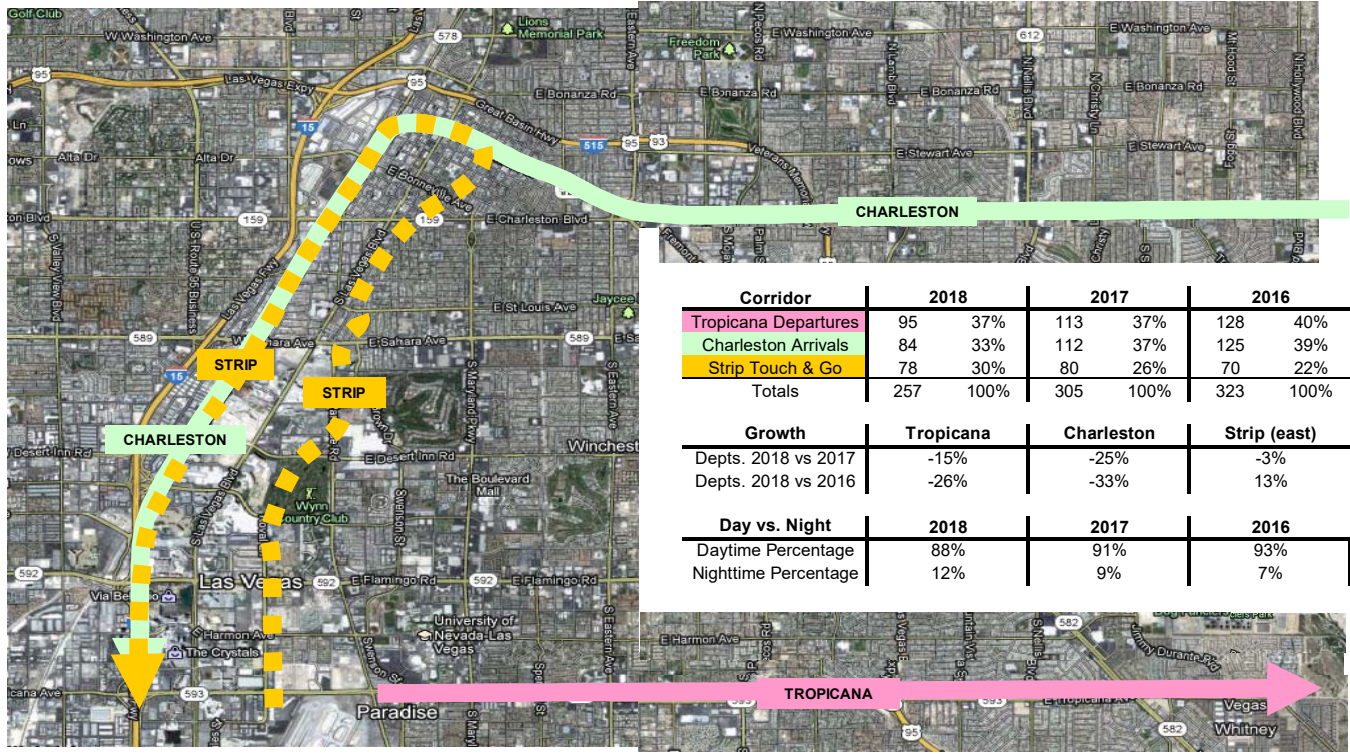
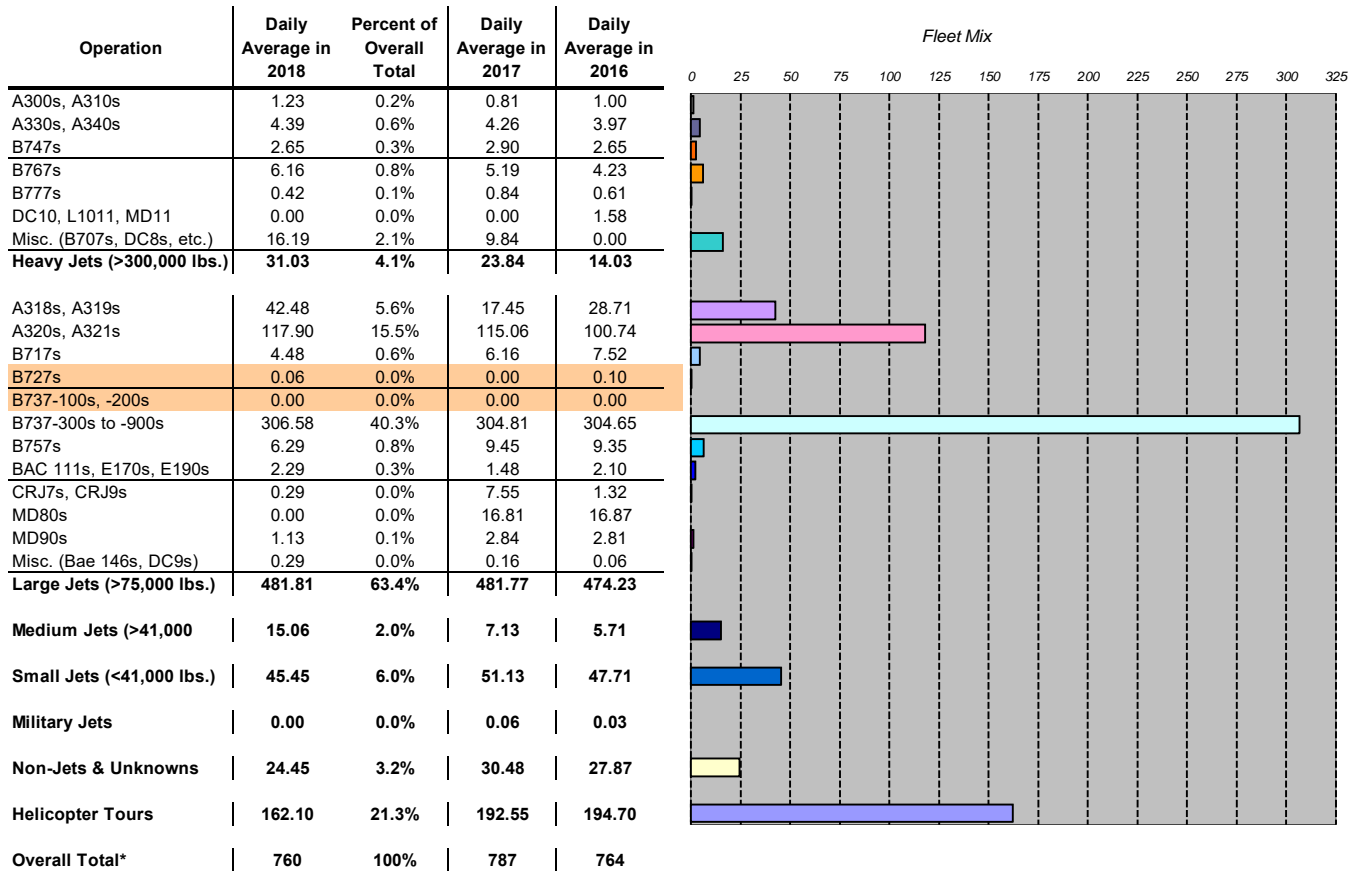


Exhibit 7: LAS Aircraft Arrival Fleet Mix** - August 2018



** 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* - August 2018 to 2016

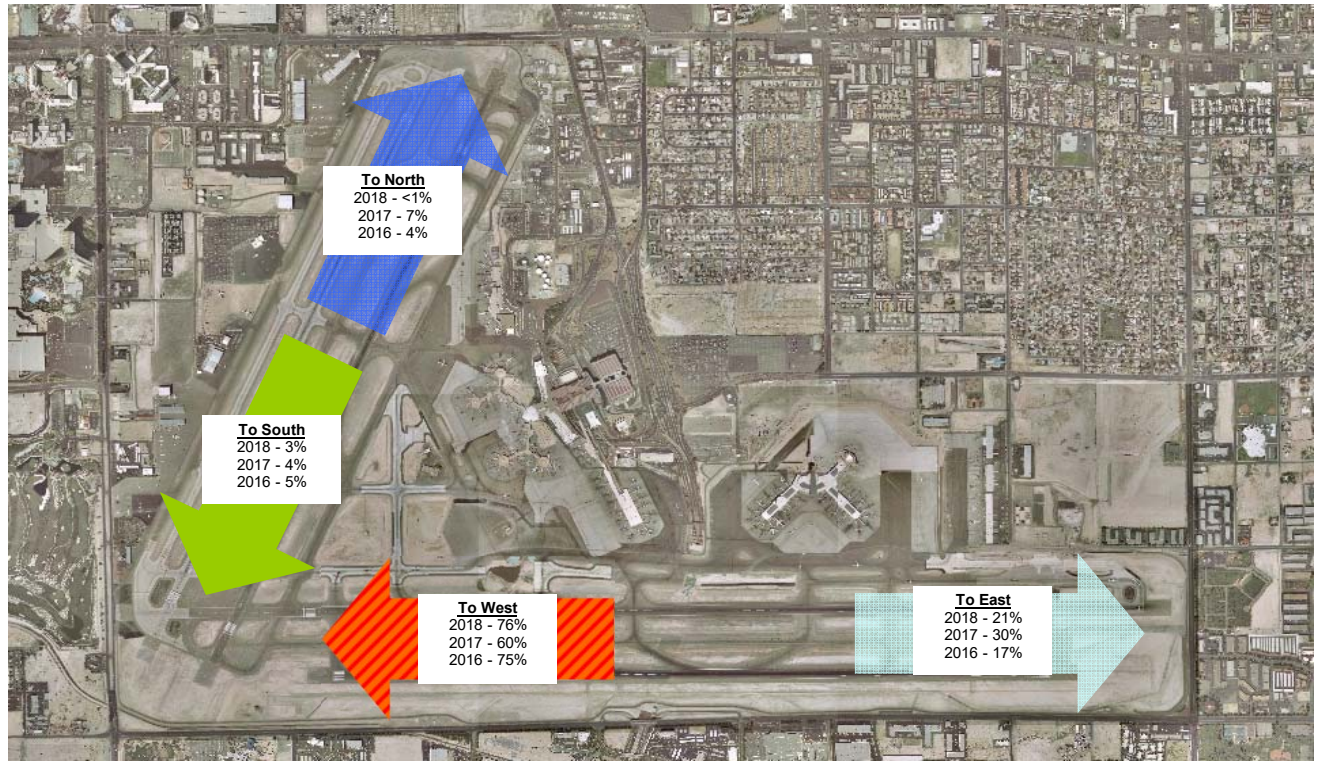
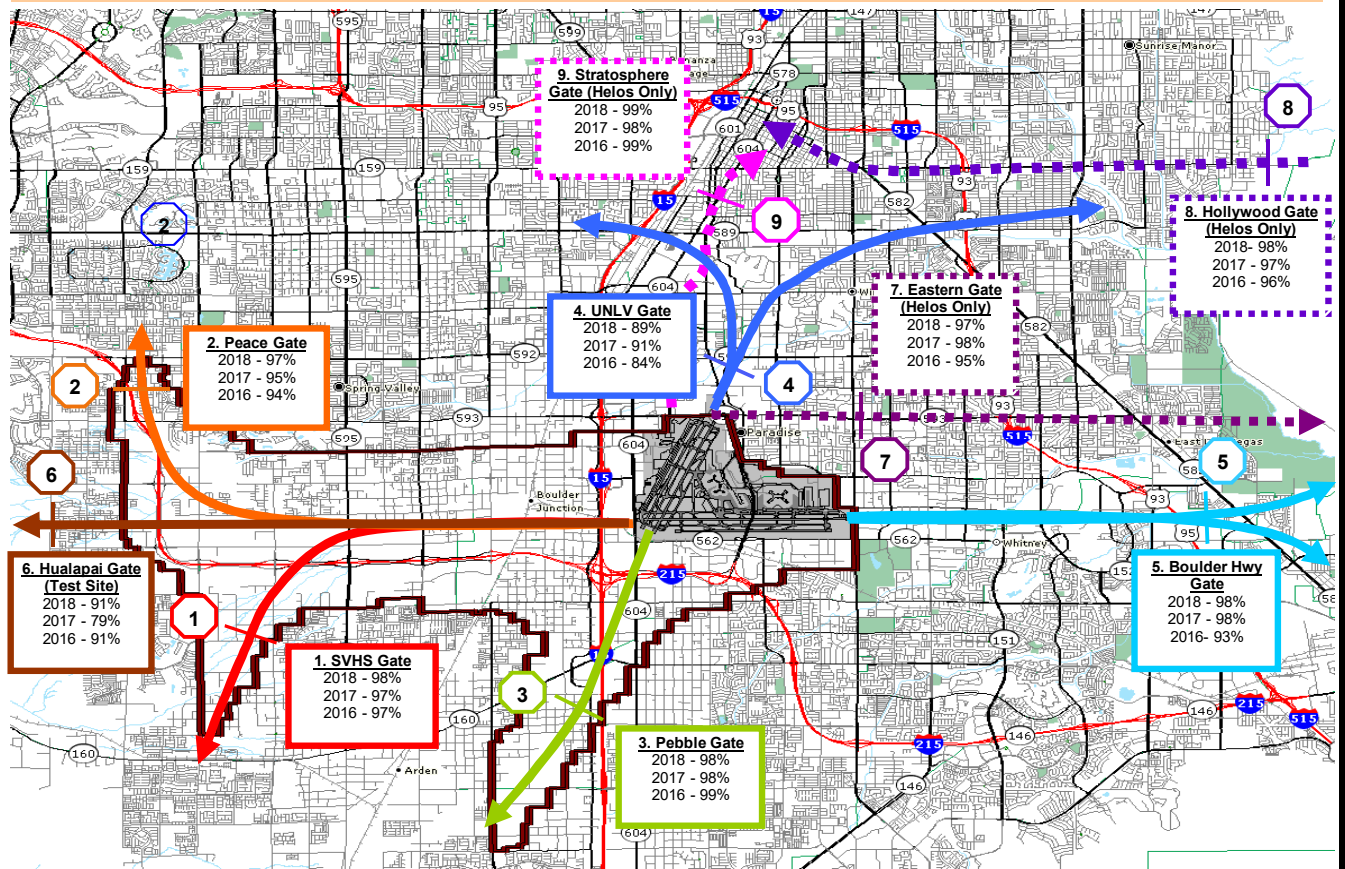


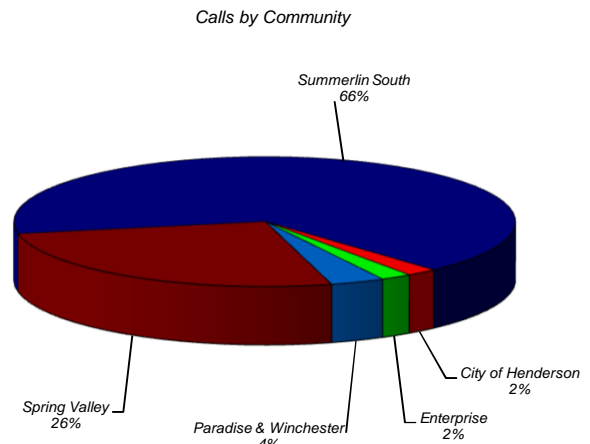
Exhibit 9: "Gate" Compliance for Large Aircraft* & Helicopter Tours - August 2018



* 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* - September 2018

Community	No. of Calls in 2018	No. of Callers in 2018	No. of Calls in 2017	No. of Calls in 2016
City of Boulder City	4	4	4	2
City of Henderson			3	5
City of Las Vegas				
City of North Las Vegas				
Enterprise	4	1	4	2
Lone Mountain				
Paradise & Winchester	7	5	26	9
Spring Valley	53	4	39	11
Summerlin South	134	1	1	
Sunrise Manor				
Whitney				
Location unknown				
Overall Total	202	15	77	29



Difference between 2018 and 2017 Total Calls: 162%

Difference between 2018 and 2016 Total Calls: 597%

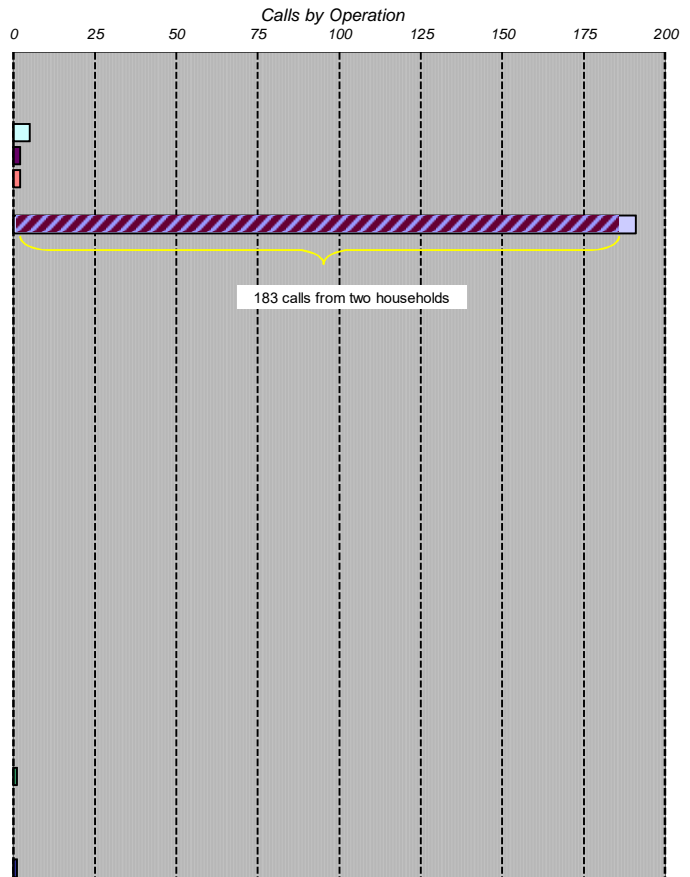
Average Number of Calls per Caller: 13.5

Most calls received from one household: 134

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

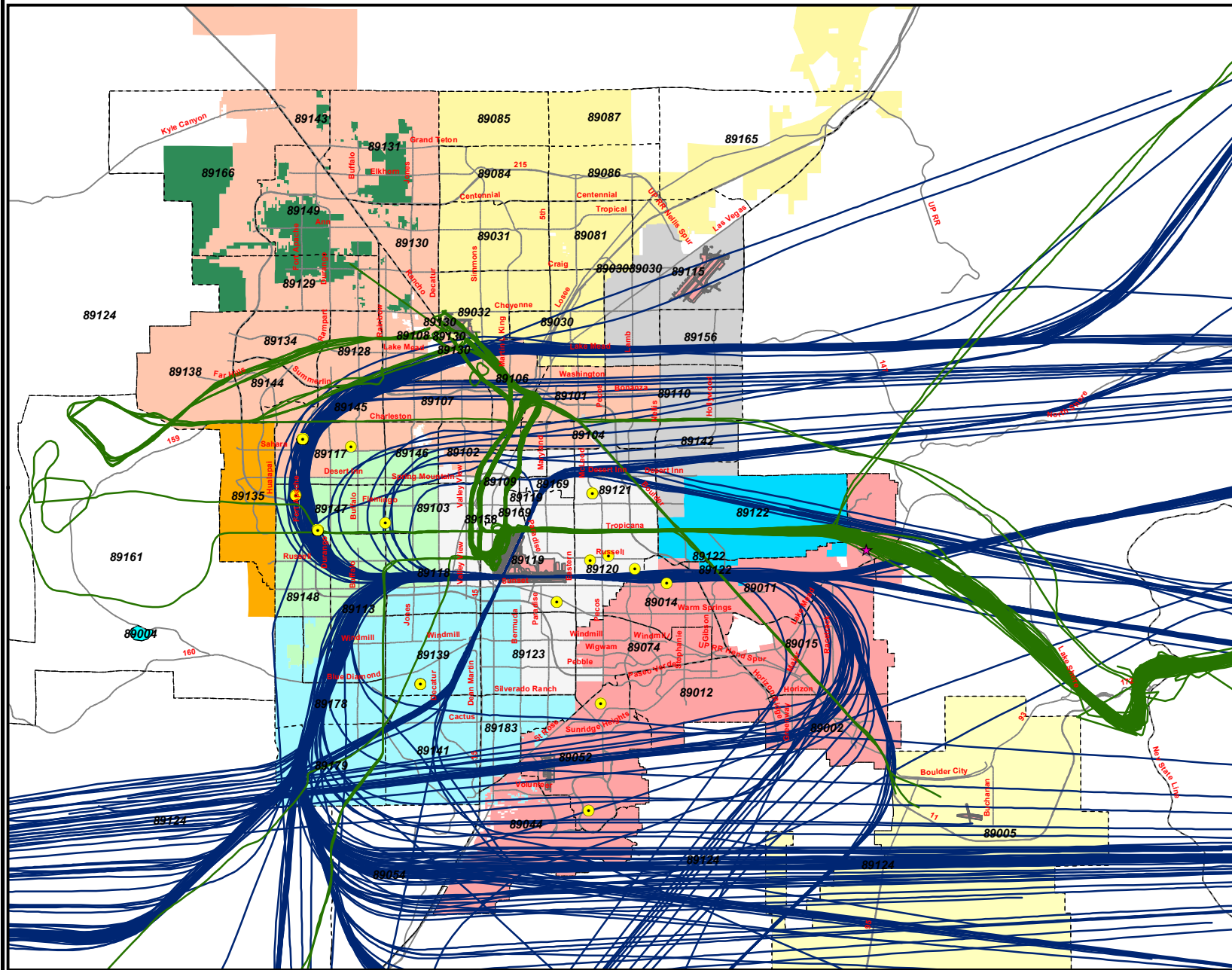
Exhibit 2: Noise Complaint Calls by Type of Operation - September 2018

Operation	No. of Calls in 2018	Percent of Overall Total	No. of Calls in 2017	No. of Calls in 2016
LAS 01R/L Arrivals			1	
LAS 08R/L Arrivals				
LAS 19R/L Arrivals				
LAS 26R/L Arrivals	5	2.5%	1	
LAS 01R/L Departures	2	1.0%	34	14
LAS 08R/L Departures	2	1.0%	7	3
LAS 19R/L Departures			1	1
LAS 26R/L Departures	191	94.6%	28	8
LAS Run-ups				
LAS GA				
LAS Other				
LAS Total	200	99.0%	72	26
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	1	0.5%	1	
HND Other				
HND Total	1	0.5%	1	0
Helicopters**	1	0.5%	4	2
Overall Total	202	100%	77	29



** 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 - Sep 2018



Legend

Sep 2018
Total Complaints: 202

- Aircraft Complaints Received 201 Mapped 201
- ★ Helicopter Complaints Received 1 Mapped 1
- 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

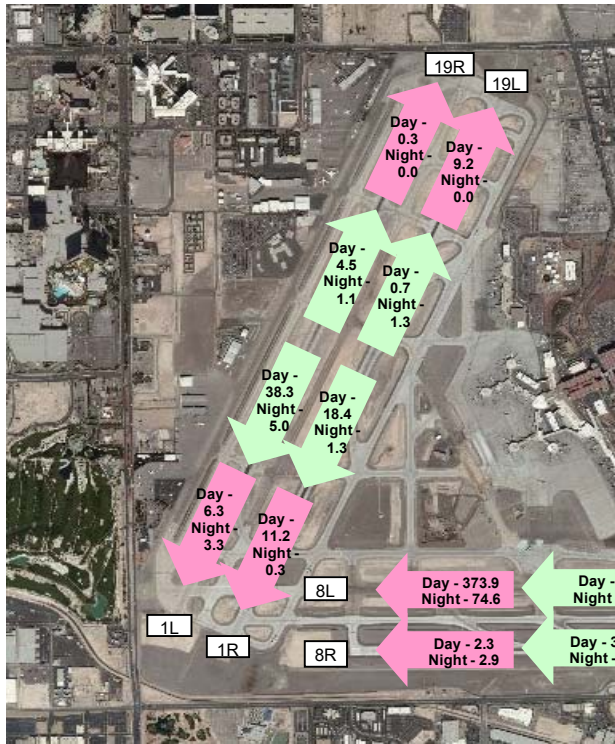
Department of Aviation
Geographic Information Systems

October 23, 2018

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

H:\GIS\Standard Projects\Noise\2018\2018_09_18.mxd

Exhibit 4: LAS Daily Average Operations Runway for Large Air Carrier Aircraft* - September 2018



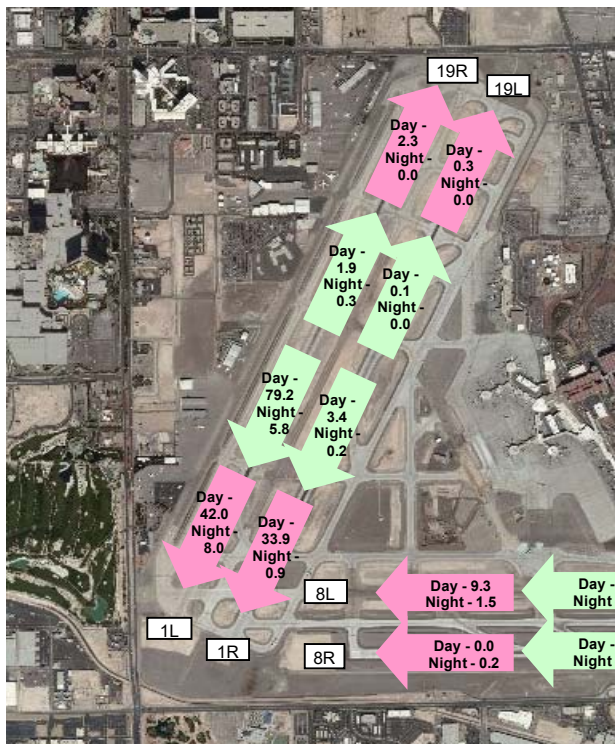
Year	2018		2017		2016	
Daytime Departures	427	84%	417	83%	427	85%
Nighttime Departures	83	16%	83	17%	77	15%
Total Departures	510	100%	500	100%	504	100%

Daytime Arrivals	442	87%	433	87%	446	89%
Nighttime Arrivals	65	13%	64	13%	54	11%
Total Arrivals	506	100%	498	100%	500	100%

Growth	Overall	Daytime	Nighttime
Depts. 2018 vs 2017	2%	2%	0%
Depts. 2018 vs 2016	1%	0%	8%
Arrivals 2018 vs 2017	2%	2%	0%
Arrivals 2018 vs 2016	1%	-1%	20%

* 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** - September 2018



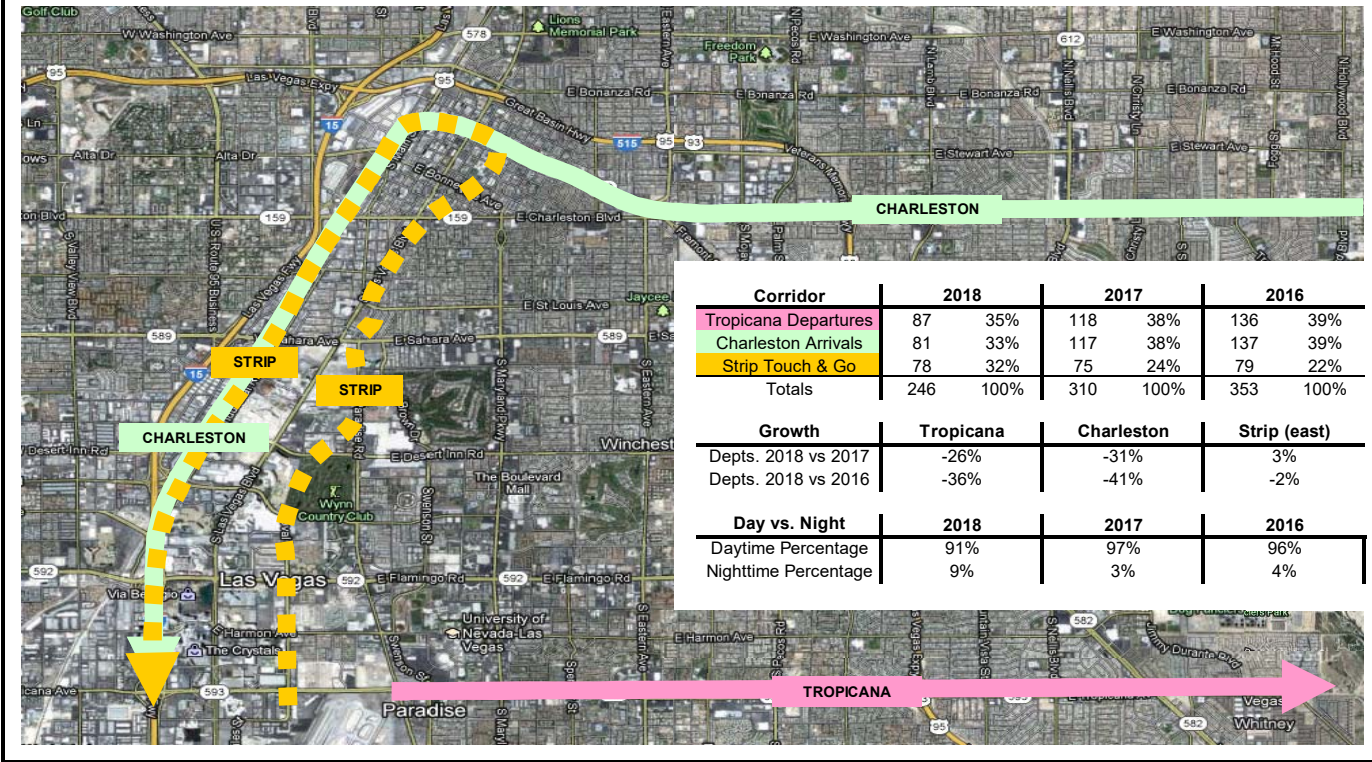
Year	2018		2017		2016	
Daytime Departures	93	89%	91	90%	90	90%
Nighttime Departures	11	11%	10	10%	10	10%
Total Departures	104	100%	101	100%	99	100%

Daytime Arrivals	95	93%	92	93%	92	93%
Nighttime Arrivals	7	7%	7	7%	7	7%
Total Arrivals	102	100%	99	100%	100	100%

Growth	Overall	Daytime	Nighttime
Depts. 2018 vs 2017	3%	2%	11%
Depts. 2018 vs 2016	4%	3%	12%
Arrivals 2018 vs 2017	3%	3%	-4%
Arrivals 2018 vs 2016	2%	3%	-5%

** 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* - September 2018

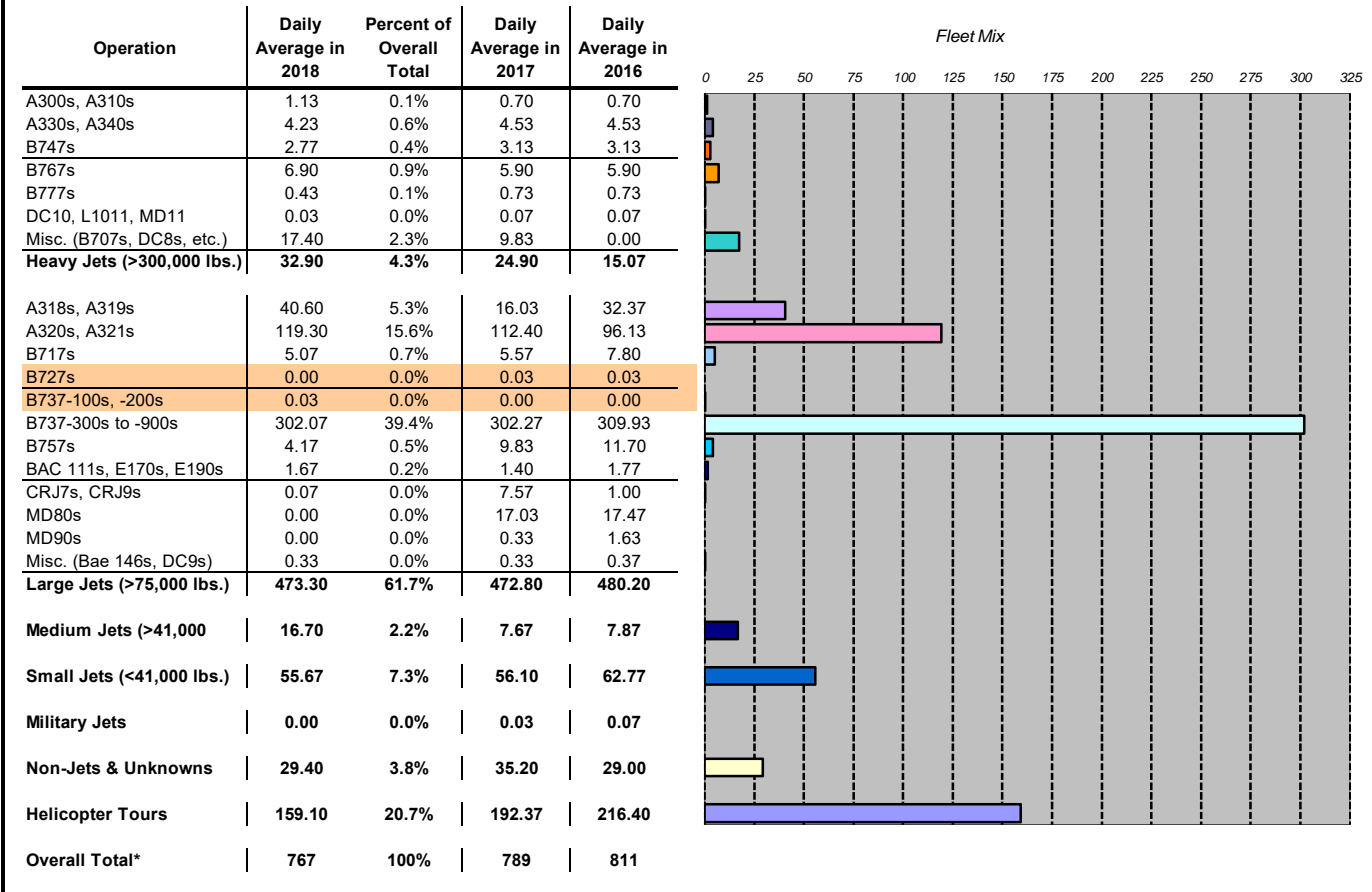


Corridor	2018	2017	2016
Tropicana Departures	87 35%	118 38%	136 39%
Charleston Arrivals	81 33%	117 38%	137 39%
Strip Touch & Go	78 32%	75 24%	79 22%
Totals	246 100%	310 100%	353 100%

Growth	Tropicana	Charleston	Strip (east)
Depts. 2018 vs 2017	-26%	-31%	3%
Depts. 2018 vs 2016	-36%	-41%	-2%

Day vs. Night	2018	2017	2016
Daytime Percentage	91%	97%	96%
Nighttime Percentage	9%	3%	4%

Exhibit 7: LAS Aircraft Arrival Fleet Mix** - September 2018



** 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* - September 2018 to 2016

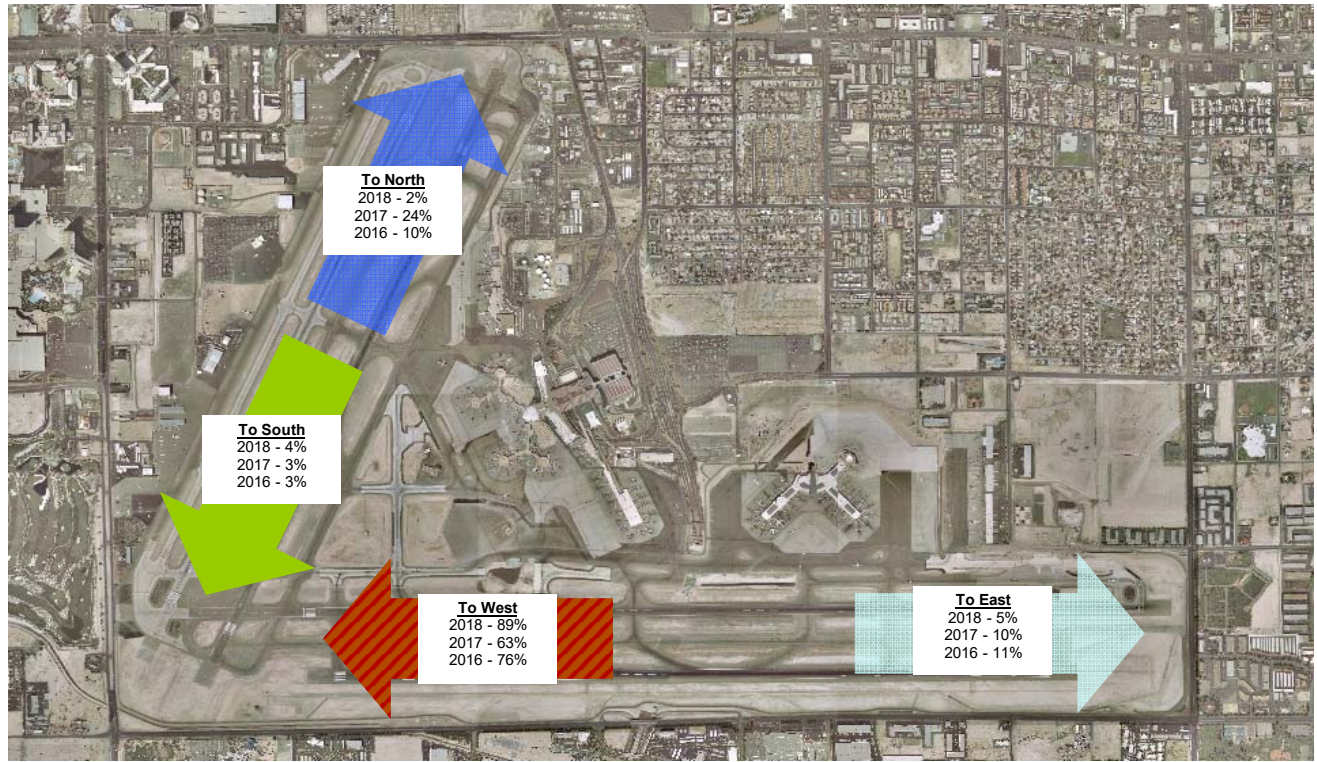
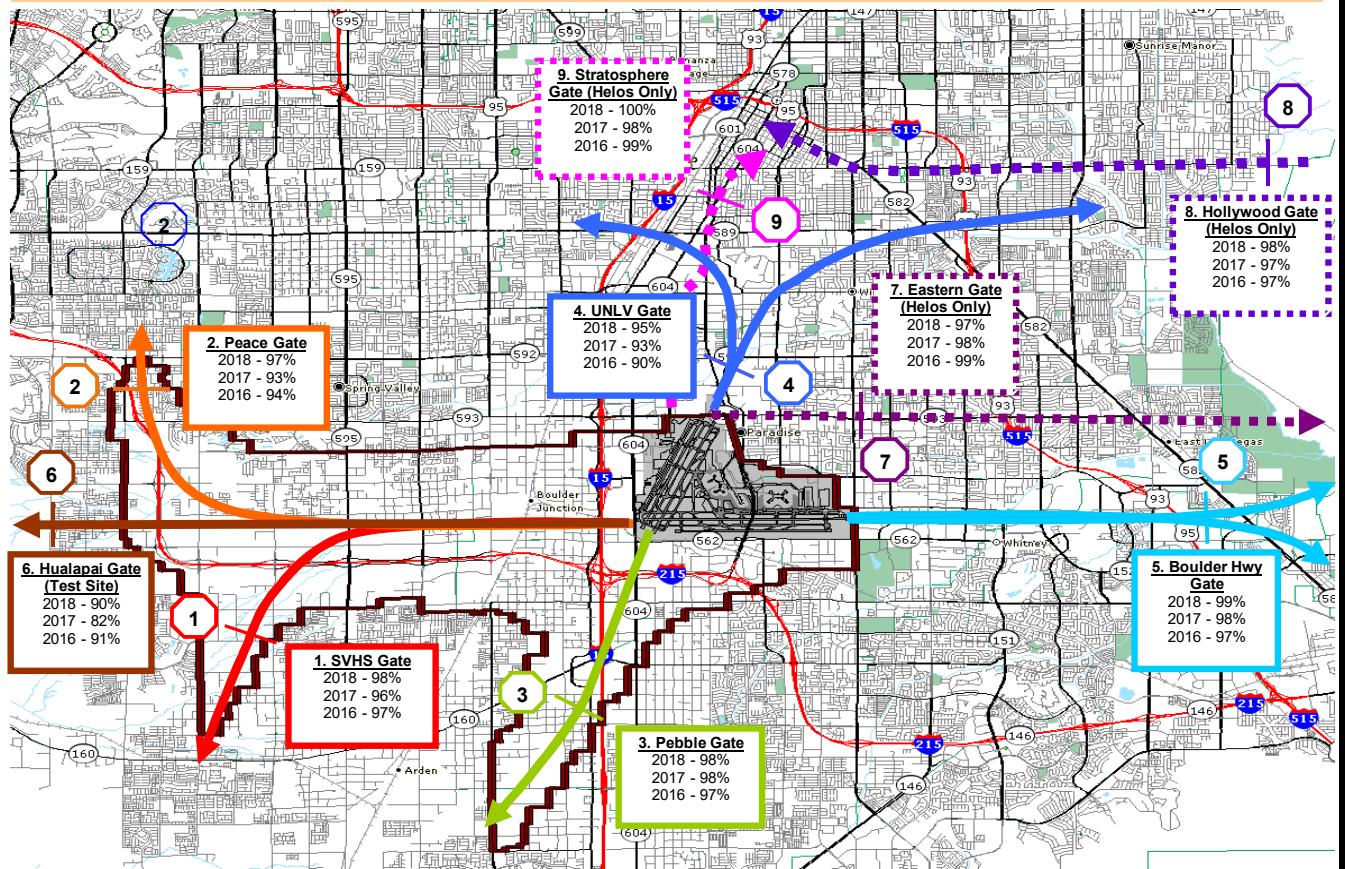


Exhibit 9: "Gate" Compliance for Large Aircraft* & Helicopter Tours - September 2018



* 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.