ROSEMARY A. VASSILIADIS
Director

MEMORANDUM

DEPARTMENT OF AVIATION

TO: DISTRIBUTION

Digitally signed by George C. Sims

FROM: GEORGE C. SIMS, PLANNER

SUBJECT: JULY THROUGH SEPTEMBER 2017 NOISE COMPLAINT REPORTS

DATE: OCTOBER 23, 2017

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

July 2017: 24 total complaints - a 71% increase from 2016 and a 74% decrease from 2015. On average, each caller (or household) issued 1.8 calls. The most calls received from one household totaled 6.

Calls by Community - (Exhibits 1 and 3)

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

Minority (between 10% and 50%): The ***Spring Valley*** community issued 8 calls (34%). This community is typically impacted by aircraft departing to the west (from Runway 25R and Runway 25L). 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).

The ***City of Las Vegas*** community issued 7 calls (29%). This community is typically impacted by aircraft departing to the west (from Runway 25R and Runway 25L).

The ***Paradise and Winchester*** communities issued 5 calls (21%). 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).

Repeat Caller Impact: One household issued 25% (6 calls) of all the calls received in July 2017.

Calls by Operation - (Exhibit 2)

LAS: 67% of the total calls were due to ***LAS*** fixed-wing operations.
- 38% were due to departures to the west from Runways 26L and 26R (89% from two households).

VGT: 8% 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: 25% of the total calls were due to ***helicopter*** operations (83% from one household).

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

Overall: 509 daily *departures*[1] – a 2% increase from 2016. (See footnote).
- 60% of departures were to the west, 35% east, 3% south, and 2% north.

505 daily *arrivals* – a 2% increase from 2016 and 2% increase from 2015.
- 58% of arrivals were from the east, 26% north, 15% west, and 2% 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.

Daytime: 406 daily *departures*[2] – a 1% increase from 2016. (See footnote).
- 54% of departures were to the west, 42% east, 3% south, and 2% north.

422 daily *arrivals* – no change from 2016 and a 1% increase from 2015.
- 53% of arrivals were from the east, 29% north, 17% west, and 1% south.

Nighttime: 102 daily *departures*[3] – a 5% increase from 2016. (See footnote).
- 85% of departures were to the west, 7% east, 5% north, and 3% south.

84 daily *arrivals* – a 13% increase from 2016 and a 4% increase from 2015.
- 83% of arrivals were from the east, 11% north, 3% south, and 2% west.

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: 85 daily *departures*[4] – a 1% increase from 2016. (See footnote).
- 49% of departures were to the south, 41% east, 7% west, and 4% north.

82 daily *arrivals* – a 1% increase from 2016 and 7% increase from 2015.
- 72% of arrivals were from the north, 21% west, 4% east, and 3% south.

Daytime: 76 daily *departures*[5] – a 1% decrease from 2016. (See footnote).
- 47% of departures were to the south, 45% east, 5% west, and 3% north.

76 daily *arrivals* – no change from 2016 and a 7% increase from 2015.
- 72% of arrivals were from the north, 23% west, 4% east, and 2% south.

Nighttime: 10 daily *departures*[6] – an 11% increase from 2016. (See footnote).
- 67% of departures were to the south, 17% west, 11% north, and 5% east.

7 daily *arrivals* – a 28% increase from 2016 and a 10% increase from 2015.
- 81% of arrivals were from the north, 12% south, 5% east, 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: 109 daily *departures* - a 10% decrease from 2016 and a 12% decrease from 2015.

Charleston: 108 daily *arrivals* – a 9% decrease from 2016 and a 14% decrease from 2015.

Strip: 85 daily *touch and go's* - a 7% increase from 2016 and a 38% increase from 2015.

Daytime vs. Nighttime: Approximately 88% of all helicopter tour operations occurred during the daytime hours.

[2] See footnote #1.
[3] See footnote #1.
[4] See footnote #1.
[5] See footnote #1.
[6] 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 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 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 virtually no operations per day.

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

Primary: In 2017, 60% departed to the ***west*** (from LAS's primary departure runways). This figure was 76% in 2016 and 78% 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

Alternate 1: In 2017, 3% departed to the ***north*** (from LAS's alternate departure runways). This figure was 2% in 2016 and 5% in 2015.

Alternate 2: In 2017, 35% departed to the ***east*** (from LAS's alternate departure runways). This figure was 19% in 2016 and 14% in 2015.

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

SVHS: In 2017, 96% of the large air carrier aircraft (excluding those destined to the Nevada National Security Site) that departed to the west from Runway 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 95% 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 Runway 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.

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, 98% 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 95% 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, 88% 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 2016 and 80% 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, 97% of the large air carrier aircraft that departed to the north from Runway 07L or 07R were within 0.3 NM of the extended runway centerline, near ***Boulder Highway***. This figure was 96% in 2016 and 93% 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, 85% of the large air carrier aircraft destined to the Nevada Test Site that departed to the west from Runway 25L or 25R were within 0.3 NM of the extended runway centerline, near ***Hualapai Way***. This figure was 91% in 2016 and 89% 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 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 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 90% in 2016 and 89% in 2015.

The Eastern Ave. "compliance gate" is located at Tropicana Ave. and Eastern Ave., approximately 2 miles due west of the 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, 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 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, 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 88% in 2016 and 87% 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 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 2017: 38 total complaints - a 52% increase from 2016 and a 30% decrease from 2015. On average, each caller (or household) issued 1.8 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 ***Spring Valley*** community issued 18 calls (47%). (See July 2017 synopsis of typical aircraft overflight impacts on this community.)

The ***Paradise and Winchester*** communities issued 8 calls (21%). (See July 2017 synopsis of typical aircraft overflight impacts on this community.)

The ***City of Henderson*** community issued 7 calls (18%). This community is typically impacted by aircraft departing to the east (from Runway 07R and Runway 07L), and helicopter tour operations.

Repeat Caller Impact: One household issued 29% (11 calls) of all the calls received in August 2017.

Calls by Operation - (Exhibit 2)

LAS: 90% of the total calls received were due to ***LAS*** fixed-wing operations.
- 53% were due to departures to the west from Runways 26L and 26R (50% from one household).

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

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

Helis: 0% of the total calls received were due to ***helicopter*** operations.

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

Overall: 509 daily *departures*[7] – a 3% increase from 2016. (See footnote).
- 60% of departures were to the west, 30% east, 7% north, and 4% south.

506 daily *arrivals* – a 2% increase from 2016 and a 3% increase from 2015.
- 59% of arrivals were from the east, 25% north, 12% west, and 5% south.

Daytime: 410 daily *departures*[8] – no change from 2016. (See footnote).
- 54% of departures were to the west, 35% east, 7% north, and 3% south.

428 daily *arrivals* – a 1% decrease from 2016 and a 2% increase from 2015.
- 55% of arrivals were from the east, 26% north, 13% west, and 5% south.

Nighttime: 99 daily *departures*[9] – a 15% increase from 2016. (See footnote).
- 83% of departures were to the west, 7% east, 5% south, and 5% north.

78 daily *arrivals* – a 21% increase from 2016 and an 8% increase from 2015.
- 79% of arrivals were from the east, 15% north, 4% south, and 2% west.

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

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

Overall: 93 daily *departures*[10] – a 10% increase from 2016. (See footnote).
- 50% of departures were to the south, 36% east, 8% north, and 6% west.

89 daily *arrivals* – a 9% increase from 2016 and a 14% increase from 2015.
- 71% of arrivals were from the north, 15% west, 8% south, and 6% east.

Daytime: 82 daily *departures*[11] – a 9% increase from 2016. (See footnote).
- 47% of departures were to the south, 40% east, 8% north, and 5% west.

82 daily *arrivals* – a 10% increase from 2016 and a 16% increase from 2015.
- 70% of arrivals were from the north, 16% west, 8% south, and 6% east.

Nighttime: 11 daily *departures*[12] – a 15% increase from 2016. (See footnote).
- 72% of departures were to the south, 12% west, 9% north, and 7% east.

7 daily *arrivals* – a 2% increase from 2016 and a 3% decrease from 2015.
- 82% of arrivals were from the north, 9% south, 7% east, and 2% west.

Daytime vs. Nighttime: Approximately 88% of all *departures* and 93% of all *arrivals* occurred during the daytime hours.

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

Tropicana: 113 daily *departures* – a 12% decrease from 2016 and a 9% decrease from 2015.

Charleston: 112 daily *arrivals* – a 10% decrease from 2016 and a 10% decrease from 2015.

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[7] See footnote #1.
[8] See footnote #1.
[9] See footnote #1.
[10] See footnote #1.
[11] See footnote #1.
[12] See footnote #1.

Strip: 80 daily *touch and go's* - a 16% increase from 2016 and a 30% increase from 2015.

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 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 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 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, 60% departed to the ***west*** (from LAS's primary departure runways). This figure was 75% in 2016 and 69% in 2015.

Secondary: In 2017, 4% departed to the ***south*** (from LAS's secondary departure runways). This figure was 5% in 2016 and 2% in 2015.

Alternate 1: In 2017, 7% departed to the ***north*** (from LAS's alternate departure runways). This figure was 4% in 2016, and 3% in 2015.

Alternate 2: In 2017, 30% departed to the ***east*** (from LAS's alternate departure runways). This figure was 17% in 2016 and 26% 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 Test Site) that departed to the west from Runway 25L or 25R and made a left-hand turn were within 0.3 NM of ***Sierra Vista High School*** (SVHS). This figure was 97% in 2016 and 96% in 2015. (See July 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 Test Site) that departed to the west from Runway 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 97% in 2015. (See July 2017 synopsis for specific location of the Peace gate.)

Pebble: In 2017, 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 99% in 2016 and 96% in 2015. (See July 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 Runway 01L or 01R were within 0.3 NM of the ***UNLV sports complex***. This figure was 84% in 2016, and 80% in 2015. (See July 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 Runway 07L or 07R were within 0.3 NM of the extended runway centerline, near ***Boulder Highway***. This figure was 93% in 2016 and 96% in 2015. (See July 2017 synopsis for specific location of the Boulder Hwy. gate.)

Hualapai: In 2017, 79% of the large air carrier aircraft destined to the Nevada Test Site that departed to the west from Runway 25L or 25R were within 0.3 NM of the extended runway centerline, near ***Hualapai Way***. This figure was 91% in 2016, and 86% 2015. (See July 2017 synopsis for specific location of the Hualapai gate.)

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 95% in 2016 and 97% in 2015. (See July 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 96% in 2016 and 99% in 2015. (See July 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 99% in 2016 and 88% in 2015. (See July 2017 synopsis for specific location of the Stratosphere gate.)

The information denoted in this monthly summary represents **typical** residential complaints, 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 2017: 77 total complaints – a 94% decrease from 2015 and an 83% decrease from 2014. On average, each caller (or household) issued 1.7 calls. The most calls received from one household totaled 7.

Calls by Community - (Exhibits 1 and 3)

Majority (more than 50%): The ***Spring Valley*** community issued 39 calls (51%). (See July 2017 synopsis of typical aircraft overflight impacts on this community.)

Minority (between 10% and 50%): The ***Paradise and Winchester*** communities issued 26 calls (34%). (See July 2017 synopsis of typical aircraft overflight impacts on this community.)

Repeat Caller Impact: One household issued 27% (21 calls) of all the calls received in September 2017.

Calls by Operation - (Exhibit 2)

LAS: 94% of the total calls received were due to ***LAS*** fixed-wing operations.
- 44% were due to departures to the north from Runways 01L and 01R (26% from one household).
- 36% were due to departures to the west from Runways 26L and 26R (82% from two households, 43% of which is from the same household that issued 26% of the calls from LAS Runways 01L and 01R)

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: 5% of the total calls received were due to ***helicopter*** operations (100% from one household).

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

Overall: 500 daily *departures*[13] – a 1% decrease from 2016. (See footnote).
- 63% of departures were to the west, 24% north, 10% east, and 2% south.

498 daily *arrivals* – no change from 2016 and a 4% increase from 2015.
- 74% of arrivals were from the east, 13% south, 9% north and 3% west.

Daytime: 417 daily *departures*[14] – a 2% decrease from 2016. (See footnote).
- 61% of departures were to the west, 25% north, 12% east, and 2% south.

433 daily *arrivals* – a 3% decrease from 2016 and 2% increase from 2015.
- 73% of arrivals were from the east, 14% south, 9% north, and 4% west.

Nighttime: 83 daily *departures*[15] – a 9% increase from 2016. (See footnote).
- 77% of departures were to the west, 19% north, 3% south, and 1% east.

64 daily *arrivals* – a 20% increase from 2016 and 18% increase from 2015.
- 84% of arrivals were from the east, 9% north, and 7% south.

Daytime vs. Nighttime: Approximately 83% of all *departures* and 87% of all *arrivals* occurred during the daytime hours.

[13] See footnote #1.
[14] See footnote #1.
[15] See footnote #1.

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

Overall: 101 daily *departures*[16] – a 1% increase from 2016. (See footnote).
- 53% of departures were to the south, 27% north, 14% east, and 6% west.

99 daily *arrivals* – a 1% decrease from 2016 and an 11% increase from 2015.
- 60% of arrivals were from the north, 22% south, 12% east, and 5% west.

Daytime: 91 daily *departures*[17] – a 1% increase from 2016. (See footnote).
- 51% of departures were to the south, 28% north, 15% east, and 5% west.

92 daily *arrivals* – a 1% decrease from 2016 and a 12% increase from 2015.
- 59% of arrivals were from the north, 22% south, 13% east, and 5% west.

Nighttime: 10 daily *departures*[18] – a 1% increase from 2016. (See footnote).
- 66% of departures were to the south, 20% north, 12% west, and 3% east.

7 daily *arrivals* – a 1% decrease from 2016 and a 9% increase from 2015.
- 73% of arrivals were from the north, 19% south, 7% east, and 1% 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: 118 daily *departures* – a 14% decrease from 2016 and a 7% decrease from 2015.

Charleston: 117 daily *arrivals* - a 15% decrease from 2016 and an 11% decrease from 2015.

Strip: 75 daily *touch and go's* - a 5% decrease from 2016 and 22% increase from 2015.

Daytime vs. Nighttime: Approximately 97% 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 60% 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 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 5% of the daily traffic.

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[16] See footnote #1.
[17] See footnote #1.
[18] See footnote #1.

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 almost no operations per day.

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

Primary: In 2017, 63% departed to the ***west*** (from LAS's primary departure runways). This figure was 76% in 2016 and 83% in 2015.

Secondary: In 2017, 3% departed to the ***south*** (from LAS's secondary departure runways). This figure was 3% in 2016 and 4% in 2015.

Alternate 1: In 2017, 24% departed to the ***north*** (from LAS's alternate departure runways). This figure was 10% in 2016 and 1% in 2015.

Alternate 2: In 2017, 10% departed to the ***east*** (from LAS's alternate departure runways). This figure was 11% in 2016 and 12% in 2015.

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

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

Peace: In 2017, 93% of the large air carrier aircraft (excluding those destined to the Nevada Test Site) that departed to the west from Runway 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 97% in 2015. (See July 2017 synopsis for specific location of the Peace gate.)

Pebble: In 2017, 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 97% in 2016 and 91% in 2015. (See July 2017 synopsis for specific location of the Pebble gate.)

UNLV: In 2017, 93% 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 90% in 2016 and 71% in 2015. (See July 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 Runway 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 July 2017 synopsis for specific location of the Boulder Hwy. gate.)

Hualapai: In 2017, 82% of the large air carrier aircraft destined to the Nevada Test Site that departed to the west from Runway 25L or 25R were within 0.3 NM of the extended runway centerline, near ***Hualapai Way***. This figure was 91% in 2016 and 90% in 2015. (See July 2017 synopsis for specific location of the Hualapai gate.)

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 99% in 2016 and 94% in 2015. (See July 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 July 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 99% in 2016 and 81% in 2015. (See July 2017 synopsis for specific location of the Stratosphere gate.)

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. The northbound departure increase was a result of increase capacity associated with the Life is Beautiful Festival, and the iHeart Music Festival occurring together between September 22nd and 24th. The next four days following the conclusion of these events, LAS experienced significant winds and a direction change of winds from the north between September 25th and 28th, necessitating increased use of the north/south runways for departures.

Other Notable Issues

Helicopter Operator Users Meeting: On September 21, 2017, 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.

Runway Numbering Change: On August 16, 2017 LAS renumbered runways 7L/25R and 7R/25L due to a magnetic variation change (MAGVAR). The airport's two longest runways were re-designated to Runway 8L/26R and Runway 8R/26L. Runway numbering, navigational aids and flight procedures are based on magnetic headings. True magnetic headings change over time, so every five years the FAA reevaluates shifts in the poles, which is known as magnetic variation. If the true heading changes more than 3 degrees at any airport, it has to renumber its runways. The FAA also takes a number of actions when the magnetic headings change, including but not limited to updating airport directories and charts used by pilots, and alerting pilots to the planned changes so a pilot looking to land on Runway 25 isn't surprised to see a "26" painted on the runway, for example. The FAA has standard procedures and checklists it goes through when making these changes which McCarran staff utilized for the transition. In the last few years, magnetic variation has required renumbering runways at several other U.S. airports, including in Tampa, Fla., and Orange County, Calif.

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

Distribution:

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

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

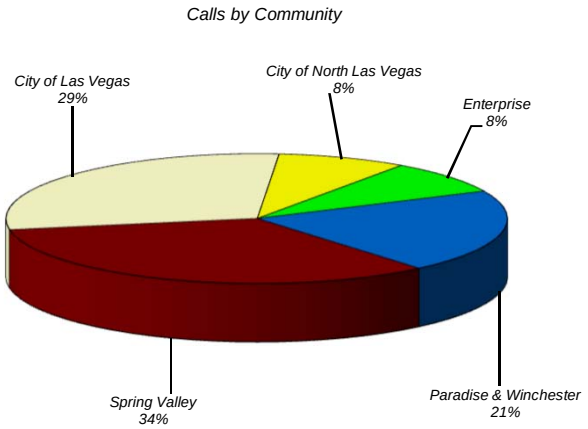
Community	No. of Calls in 2017	No. of Callers in 2017	No. of Calls in 2016	No. of Calls in 2015
City of Boulder City			1	
City of Henderson			1	1
City of Las Vegas	7	2		2
City of North Las Vegas	2	2		
Enterprise	2	2	2	8
Lone Mountain				
Paradise & Winchester	5	5	4	79
Spring Valley	8	2	6	
Summerlin South				1
Sunrise Manor				1
Whitney				
Location unknown				
Overall Total	**24**	**13**	**14**	**92**

Difference between 2017 and 2016 Total Calls: 71%

Difference between 2017 and 2015 Total Calls: -74%

Average Number of Calls per Caller: 1.8

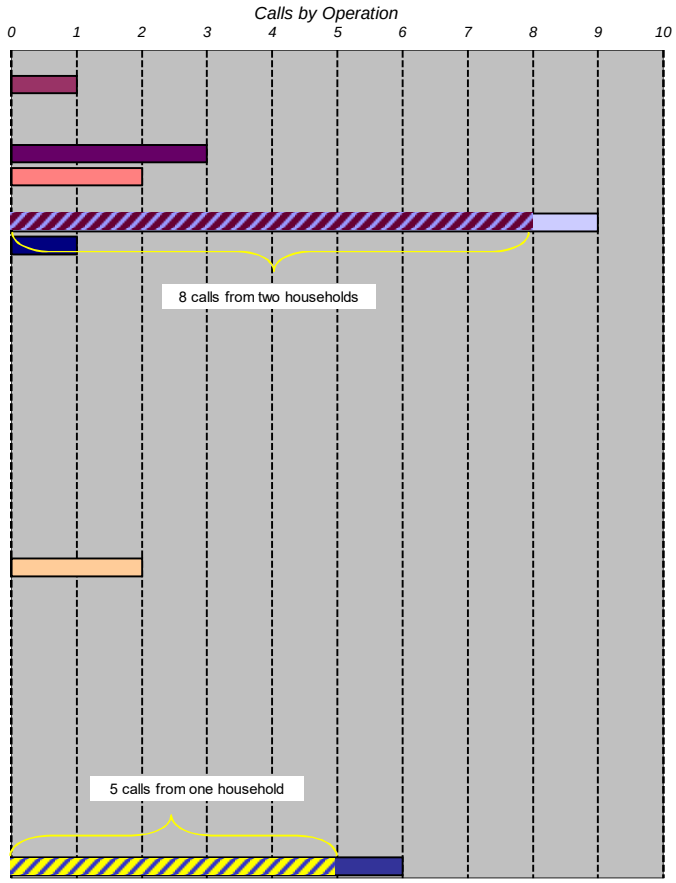
Most calls received from one household: 6



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

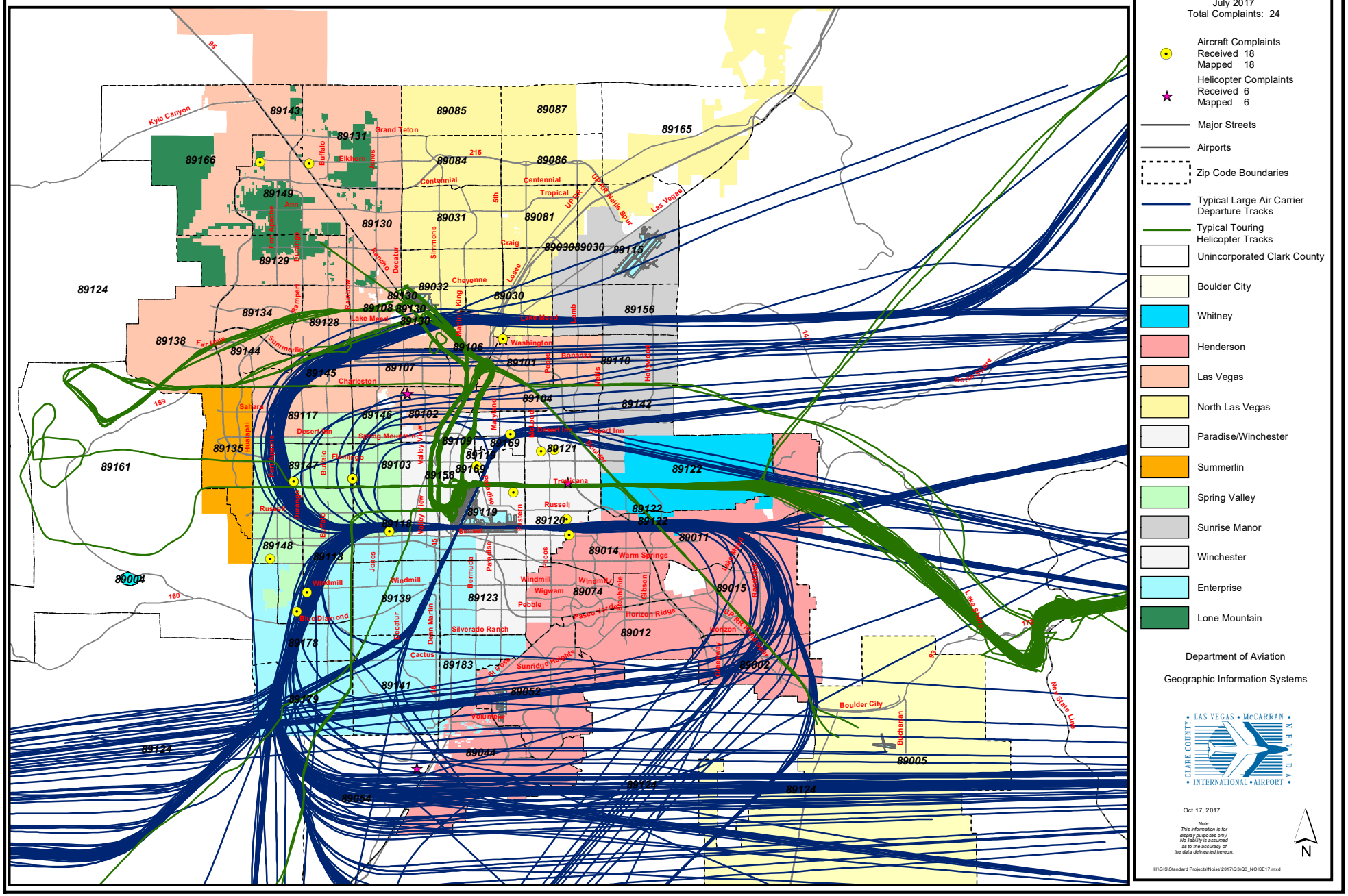
Exhibit 2: Noise Complaint Calls by Type of Operation - July 2017

Operation	No. of Calls in 2017	Percent of Overall Total	No. of Calls in 2016	No. of Calls in 2015
LAS 01R/L Arrivals				
LAS 08R/L Arrivals	1	4.2%		
LAS 19R/L Arrivals				
LAS 26R/L Arrivals				
LAS 01R/L Departures	3	12.5%	3	1
LAS 08R/L Departures	2	8.3%	3	8
LAS 19R/L Departures			1	65
LAS 26R/L Departures	9	37.5%	4	8
LAS Run-ups	1	4.2%		1
LAS GA				
LAS Other				
LAS Total	**16**	**66.7%**	**11**	**83**
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	8.3%		1
VGT Other				
VGT Total	**2**	**8.3%**	**0**	**1**
HND 17R/L Arrivals				
HND 35R/L Arrivals				
HND 17R/L Departures				
HND 35R/L Departures				
HND Run-ups				
HND GA			1	1
HND Other				
HND Total	**0**	**0.0%**	**1**	**1**
Helicopters**	**6**	**25.0%**	**2**	**7**
Overall Total	**24**	**100%**	**14**	**92**



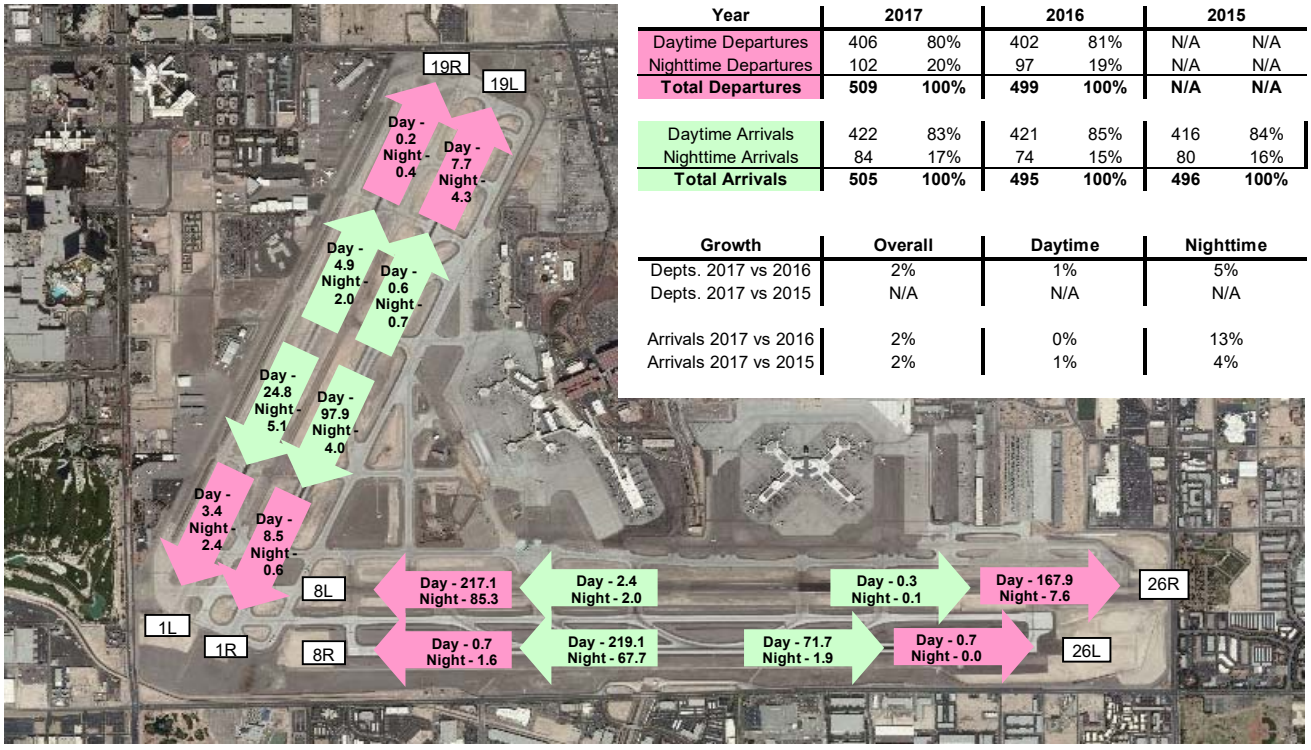
** Note that helicopter noise complaints are not tied to a specific facility since the operation cannot always be associated to a specific airport. Additionally, helicopter calls do nc include those associated with operations conducted by the Metropolitan Police Department or those associated with operations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

Exhibit 3: Aircraft Noise Complaints by Community - July 2017



2017 Noise Complaint Report

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

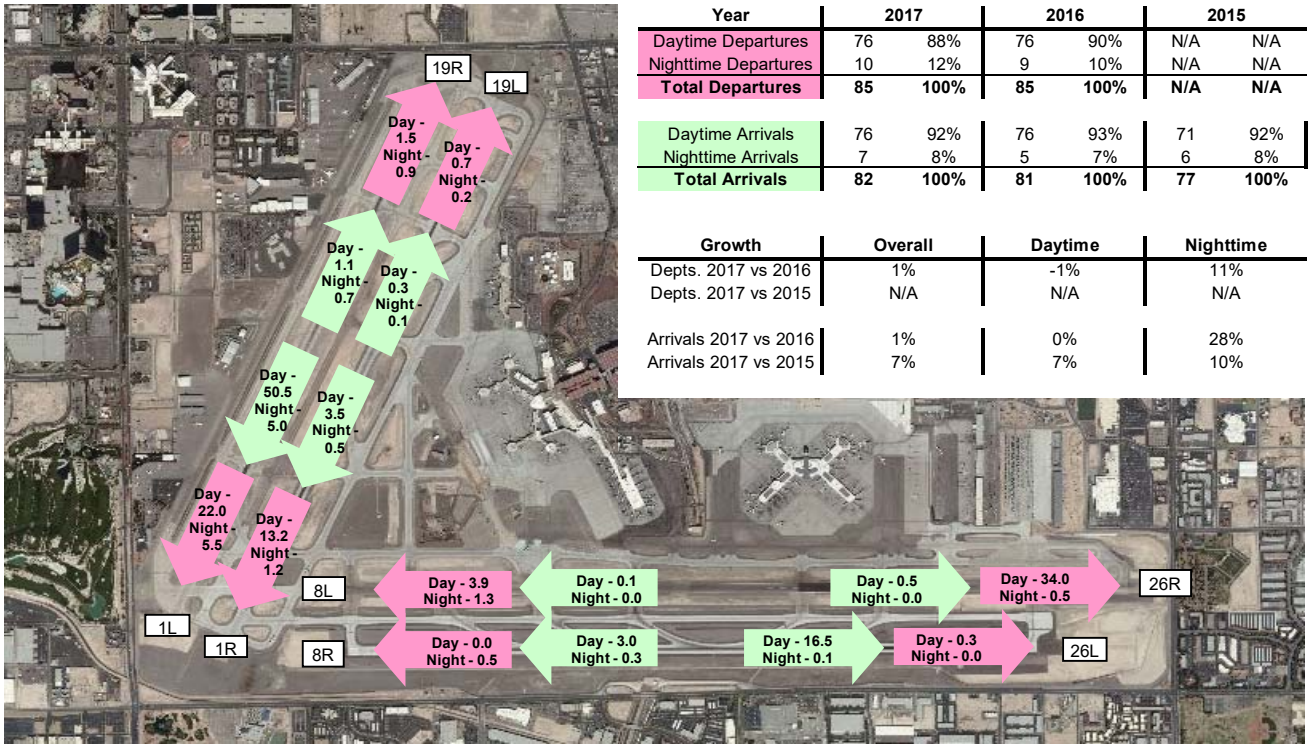


Year	2017		2016		2015	
Daytime Departures	406	80%	402	81%	N/A	N/A
Nighttime Departures	102	20%	97	19%	N/A	N/A
Total Departures	**509**	**100%**	**499**	**100%**	**N/A**	**N/A**
Daytime Arrivals	422	83%	421	85%	416	84%
Nighttime Arrivals	84	17%	74	15%	80	16%
Total Arrivals	**505**	**100%**	**495**	**100%**	**496**	**100%**

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	2%	1%	5%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	2%	0%	13%
Arrivals 2017 vs 2015	2%	1%	4%

* 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 2017

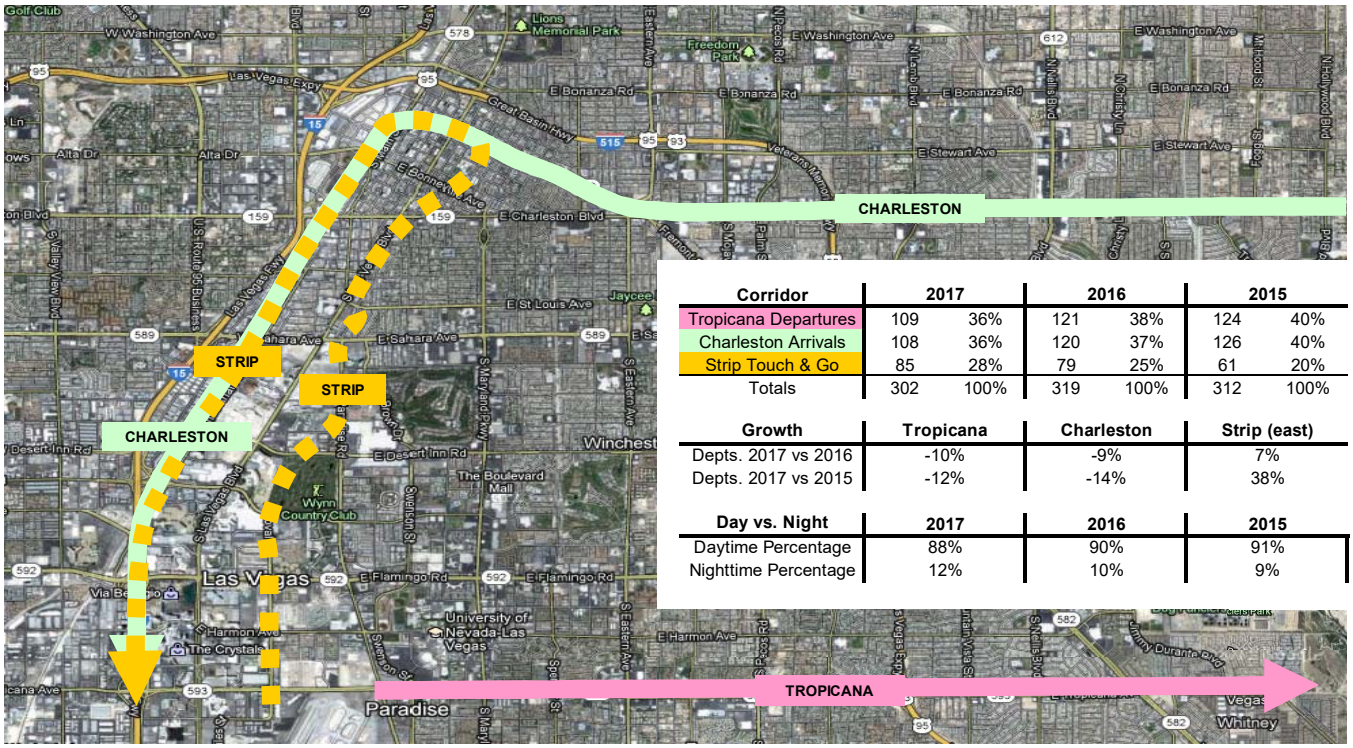


Year	2017		2016		2015	
Daytime Departures	76	88%	76	90%	N/A	N/A
Nighttime Departures	10	12%	9	10%	N/A	N/A
Total Departures	**85**	**100%**	**85**	**100%**	**N/A**	**N/A**
Daytime Arrivals	76	92%	76	93%	71	92%
Nighttime Arrivals	7	8%	5	7%	6	8%
Total Arrivals	**82**	**100%**	**81**	**100%**	**77**	**100%**

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	1%	-1%	11%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	1%	0%	28%
Arrivals 2017 vs 2015	7%	7%	10%

** 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 2017



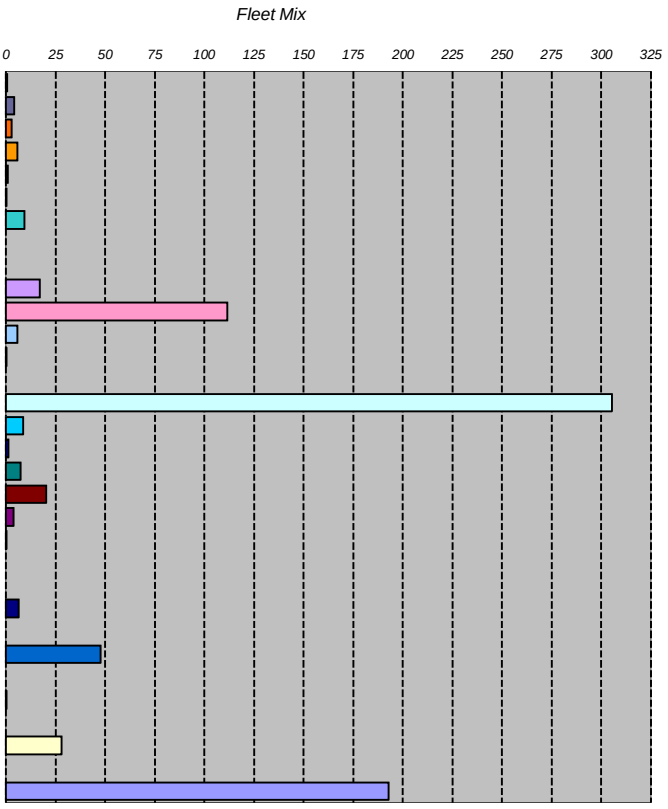
Corridor	2017		2016		2015	
Tropicana Departures	109	36%	121	38%	124	40%
Charleston Arrivals	108	36%	120	37%	126	40%
Strip Touch & Go	85	28%	79	25%	61	20%
Totals	302	100%	319	100%	312	100%

Growth	Tropicana	Charleston	Strip (east)
Depts. 2017 vs 2016	-10%	-9%	7%
Depts. 2017 vs 2015	-12%	-14%	38%

Day vs. Night	2017	2016	2015
Daytime Percentage	88%	90%	91%
Nighttime Percentage	12%	10%	9%

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

Operation	Daily Average in 2017	Percent of Overall Total	Daily Average in 2016	Daily Average in 2015
A300s, A310s	0.74	0.1%	0.94	0.81
A330s, A340s	4.32	0.6%	3.65	3.42
B747s	2.81	0.4%	2.81	2.35
B767s	5.65	0.7%	4.32	3.39
B777s	0.90	0.1%	0.65	1.06
DC10, L1011, MD11	0.10	0.0%	1.29	0.03
Misc. (B707s, DC8s, etc.)	9.32	1.2%	0.00	0.00
Heavy Jets (>300,000 lbs.)	**23.84**	**3.1%**	**13.65**	**11.06**
A318s, A319s	16.94	2.2%	30.77	26.58
A320s, A321s	111.52	14.3%	102.87	86.10
B717s	5.81	0.7%	7.65	4.10
B727s	0.06	0.0%	0.03	0.00
B737-100s, -200s	0.00	0.0%	0.03	0.00
B737-300s to -900s	305.45	39.1%	297.10	313.26
B757s	8.65	1.1%	9.87	17.16
BAC 111s, E170s, E190s	1.23	0.2%	6.42	8.65
CRJ7s, CRJ9s	7.35	0.9%	1.52	4.39
MD80s	20.23	2.6%	20.06	22.58
MD90s	3.71	0.5%	2.84	2.03
Misc. (Bae 146s, DC9s)	0.39	0.0%	0.16	0.16
Large Jets (>75,000 lbs.)	**481.32**	**61.7%**	**479.32**	**485.00**
Medium Jets (>41,000	**6.52**	**0.8%**	**4.84**	**5.29**
Small Jets (<41,000 lbs.)	**47.61**	**6.1%**	**48.32**	**52.55**
Military Jets	**0.03**	**0.0%**	**0.00**	**0.35**
Non-Jets & Unknowns	**28.16**	**3.6%**	**27.90**	**18.55**
Helicopter Tours	**192.94**	**24.7%**	**198.40**	**187.52**
Overall Total*	**780**	**100%**	**772**	**760**



** 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 2017 to 2015

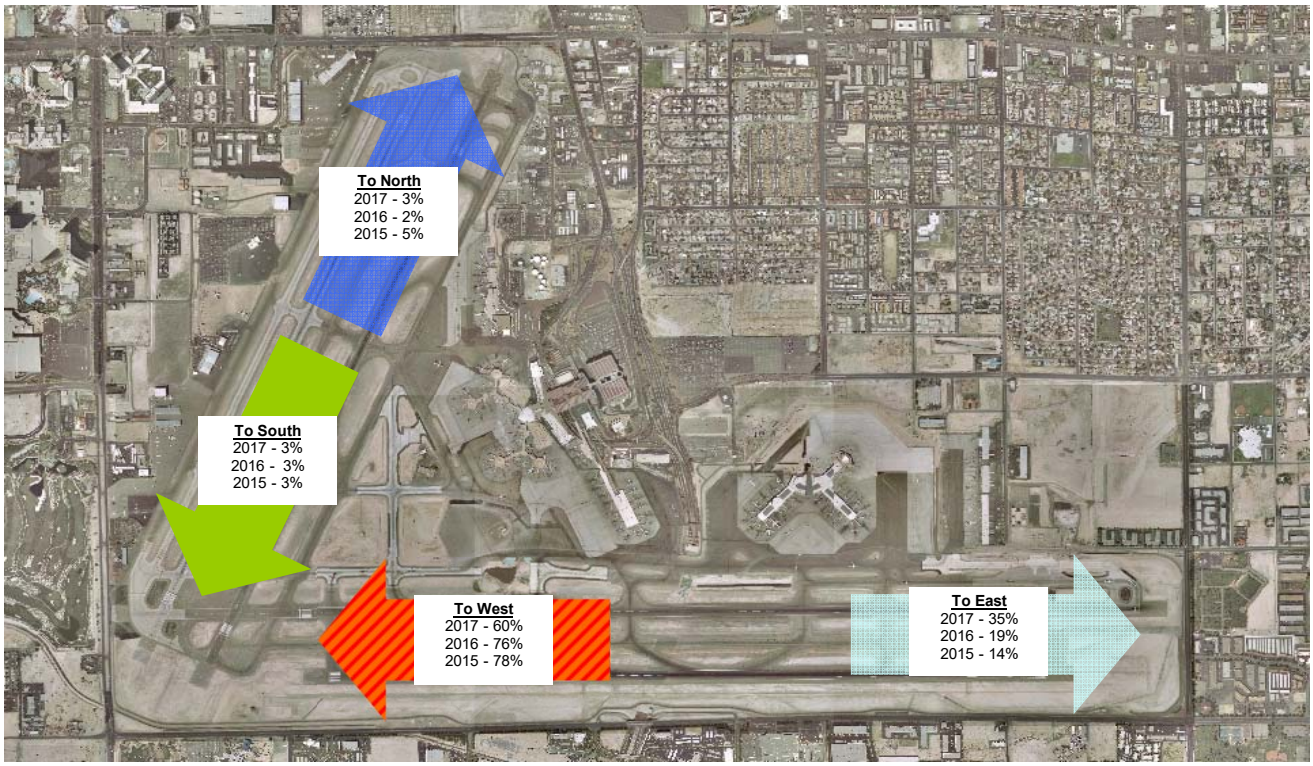
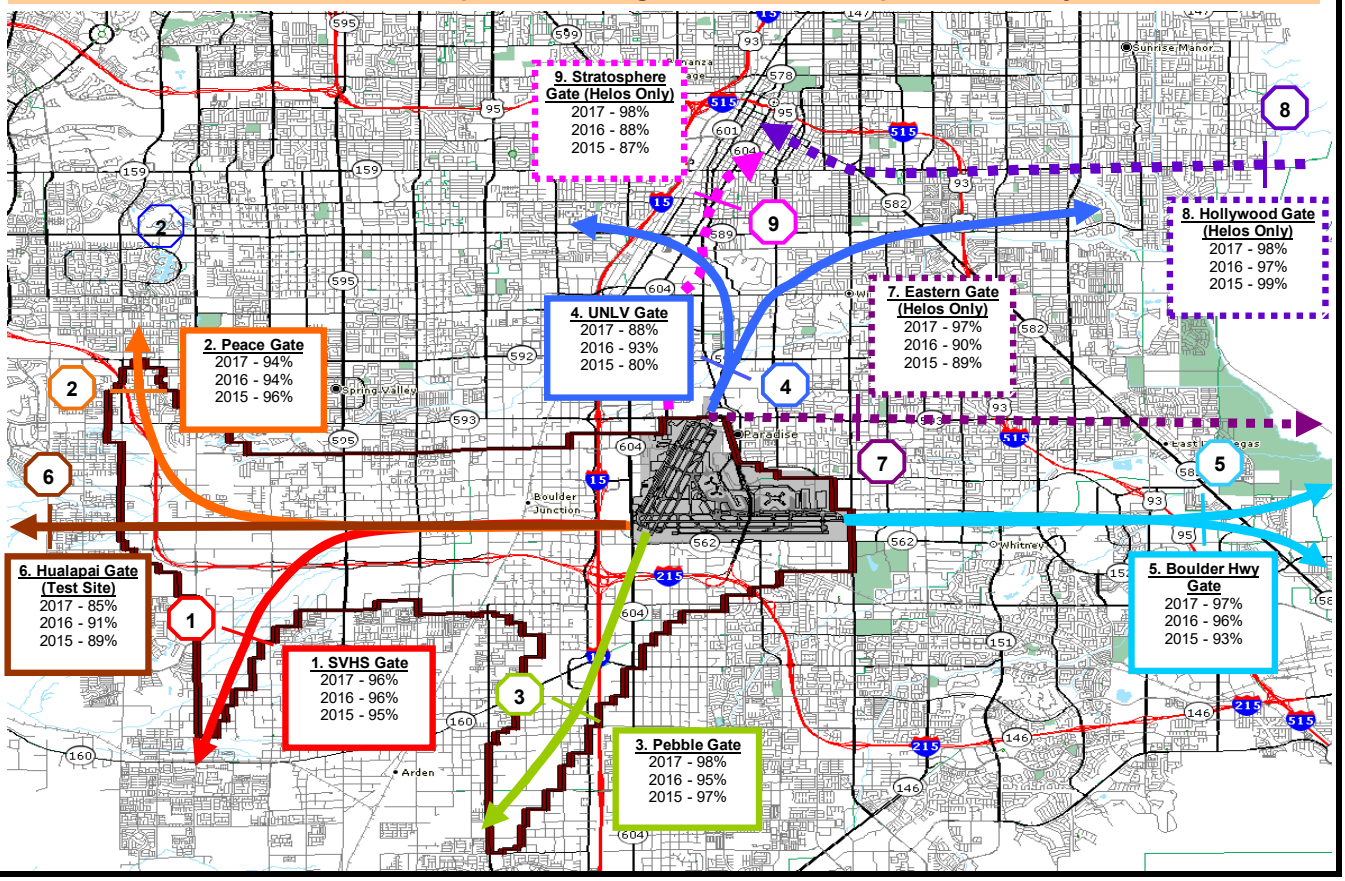


Exhibit 9: "Gate" Compliance for Large Aircraft* & Helicopter Tours - July 2017

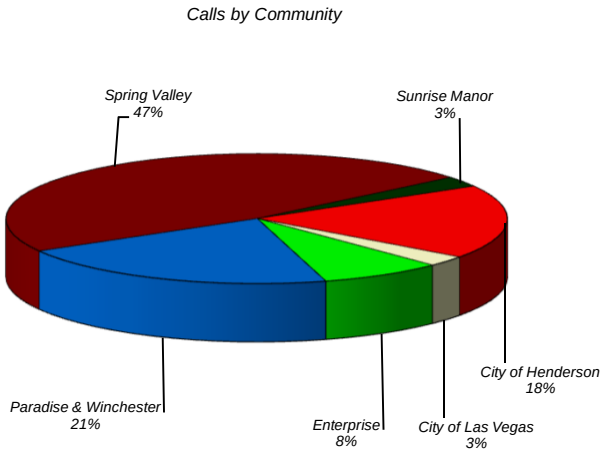


* Aircraft types: All aircraft with a maximum gross take of weight of at least 75,000 pounds, including but not limited to, A306, A310, A311, A318, A319, A320, A330, A
B707, B717, B727, B737, B747, B757, B767, B777, CRJ7, CRJ9, DC8, DC9, DC10, E170, E190, HA4T, L1011, MD80, MD90, MD10, MD11, VC10.

Exhibit 1: Noise Complaint Calls by Community* - August 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				
City of Henderson	7	5	1	1
City of Las Vegas	1	1	1	2
City of North Las Vegas				
Enterprise	3	2	5	2
Lone Mountain				
Paradise & Winchester	8	7	13	43
Spring Valley	18	5	3	5
Summerlin South			1	
Sunrise Manor	1	1	1	
Whitney				1
Location unknown				
Overall Total	**38**	**21**	**25**	**54**

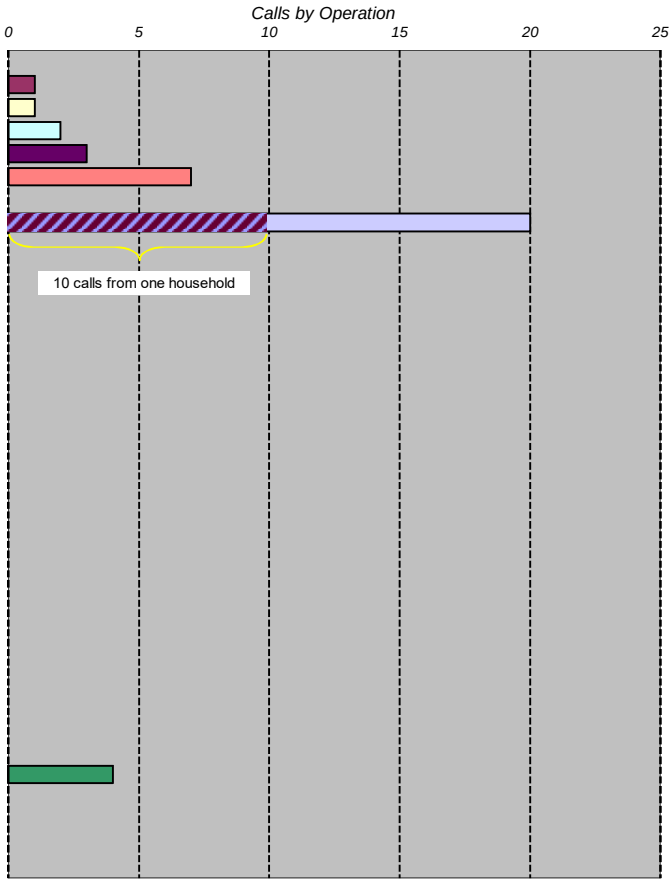
Difference between 2017 and 2016 Total Calls:	**52%**
Difference between 2017 and 2015 Total Calls:	**-30%**
Average Number of Calls per Caller:	**1.8**
Most calls received from one household:	**11**



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

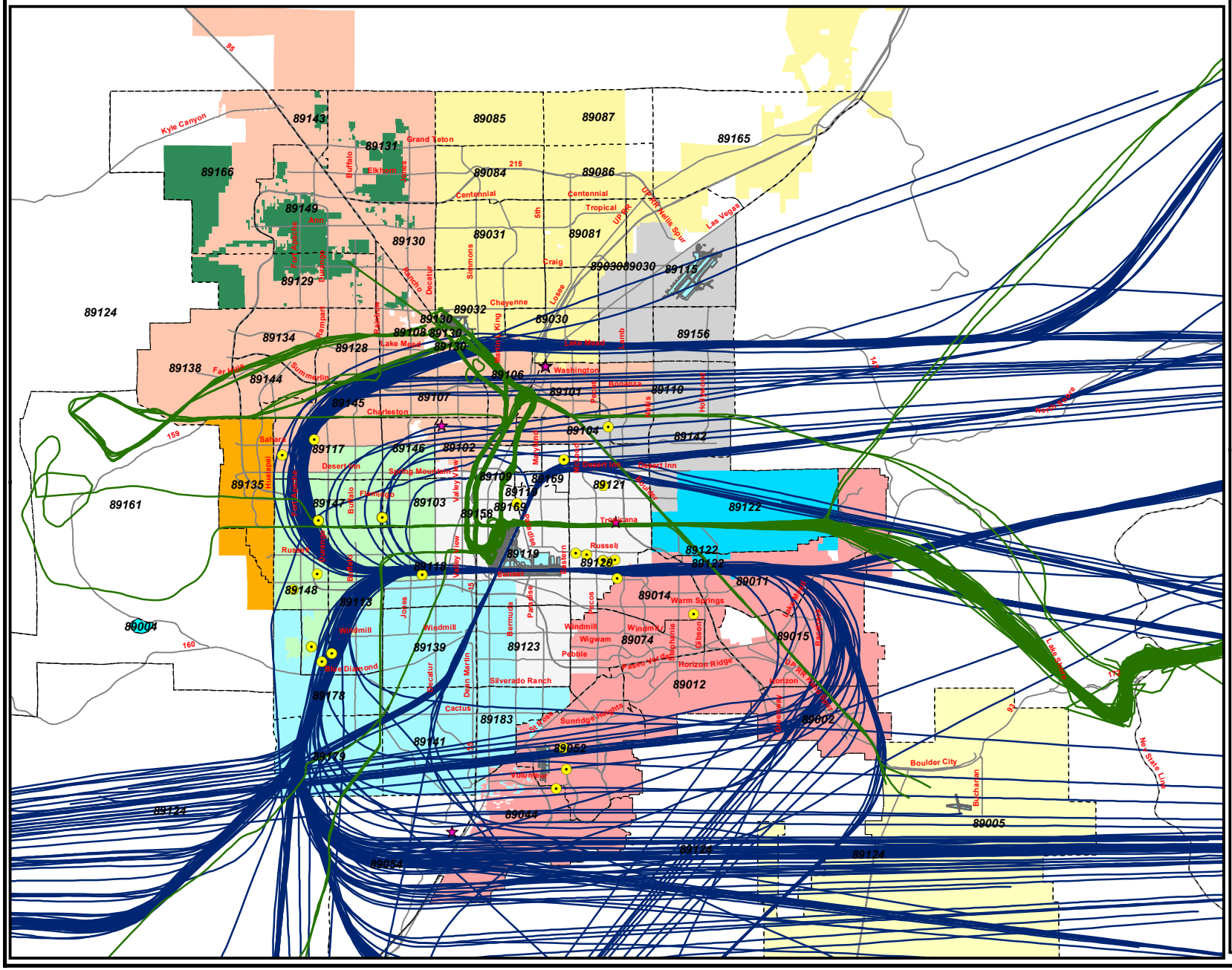
Exhibit 2: Noise Complaint Calls by Type of Operation - August 2017

Operation	No. of Calls in 2017	Percent of Overall Total	No. of Calls in 2016	No. of Calls in 2015
LAS 01R/L Arrivals				2
LAS 08R/L Arrivals	1	2.6%		
LAS 19R/L Arrivals	1	2.6%		
LAS 26R/L Arrivals	2	5.3%	1	1
LAS 01R/L Departures	3	7.9%	12	5
LAS 08R/L Departures	7	18.4%	5	11
LAS 19R/L Departures				30
LAS 26R/L Departures	20	52.6%	5	4
LAS Run-ups				
LAS GA				
LAS Other				
LAS Total	**34**	**89.5%**	**23**	**53**
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%**	**1**	**0**
HND 17R/L Arrivals				
HND 35R/L Arrivals				
HND 17R/L Departures				
HND 35R/L Departures				
HND Run-ups				
HND GA	4	10.5%	1	
HND Other				
HND Total	**4**	**10.5%**	**1**	**0**
Helicopters**				**1**
Overall Total	**38**	**100%**	**25**	**54**



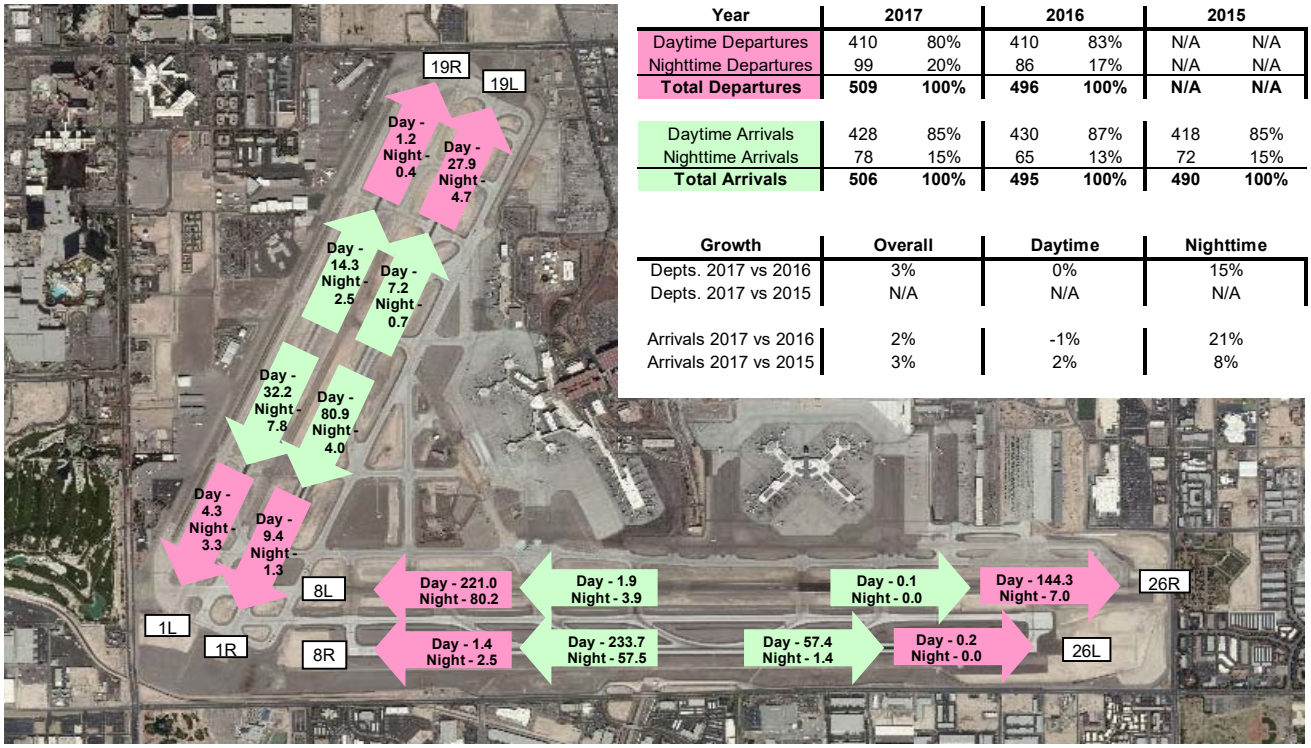
** Note that helicopter noise complaints are not tied to a specific facility since the operation cannot always be associated to a specific airport. Additionally, helicopter calls do nc include those associated with operations conducted by the Metropolitan Police Department or those associated with operations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

Exhibit 3: Aircraft Noise Complaints by Community - Aug 2017



2017 Noise Complaint Report

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

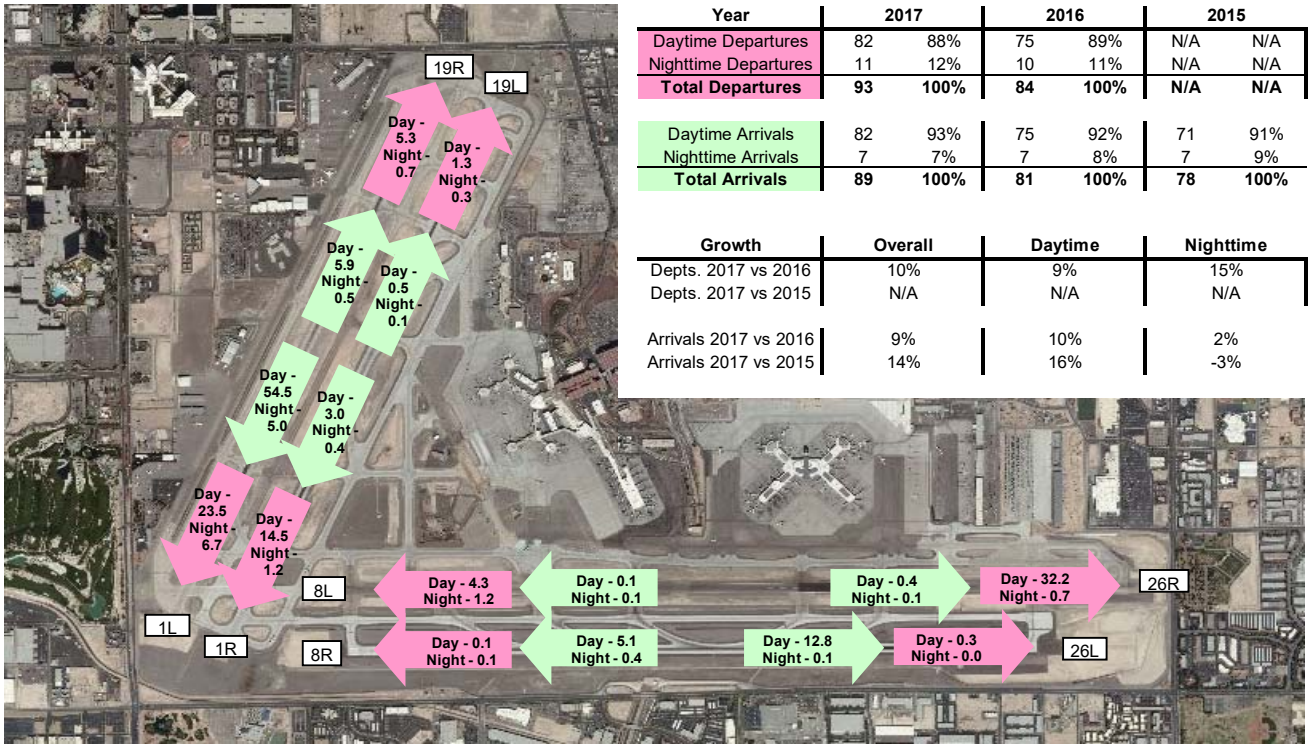


Year	2017		2016		2015	
Daytime Departures	410	80%	410	83%	N/A	N/A
Nighttime Departures	99	20%	86	17%	N/A	N/A
Total Departures	**509**	**100%**	**496**	**100%**	**N/A**	**N/A**
Daytime Arrivals	428	85%	430	87%	418	85%
Nighttime Arrivals	78	15%	65	13%	72	15%
Total Arrivals	**506**	**100%**	**495**	**100%**	**490**	**100%**

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	3%	0%	15%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	2%	-1%	21%
Arrivals 2017 vs 2015	3%	2%	8%

* 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 2017

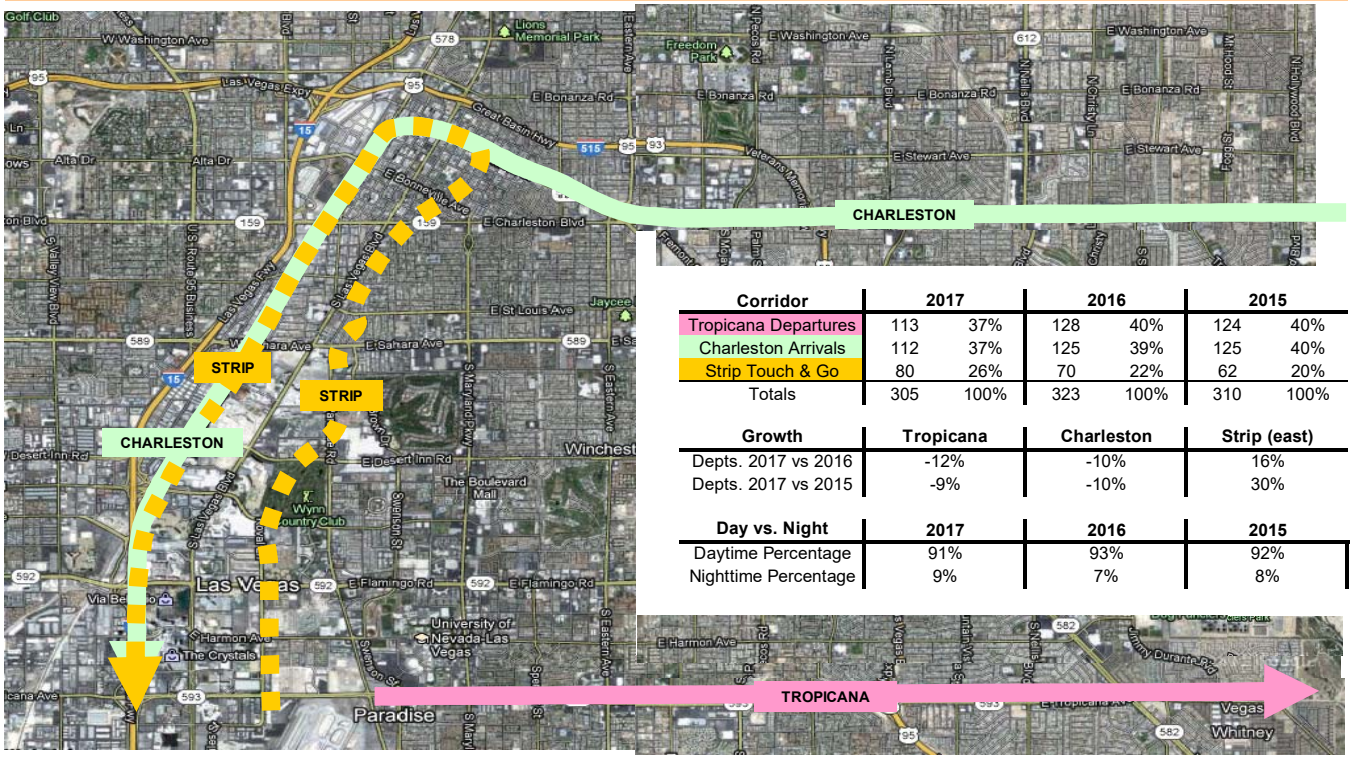


Year	2017		2016		2015	
Daytime Departures	82	88%	75	89%	N/A	N/A
Nighttime Departures	11	12%	10	11%	N/A	N/A
Total Departures	**93**	**100%**	**84**	**100%**	**N/A**	**N/A**
Daytime Arrivals	82	93%	75	92%	71	91%
Nighttime Arrivals	7	7%	7	8%	7	9%
Total Arrivals	**89**	**100%**	**81**	**100%**	**78**	**100%**

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	10%	9%	15%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	9%	10%	2%
Arrivals 2017 vs 2015	14%	16%	-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 2017



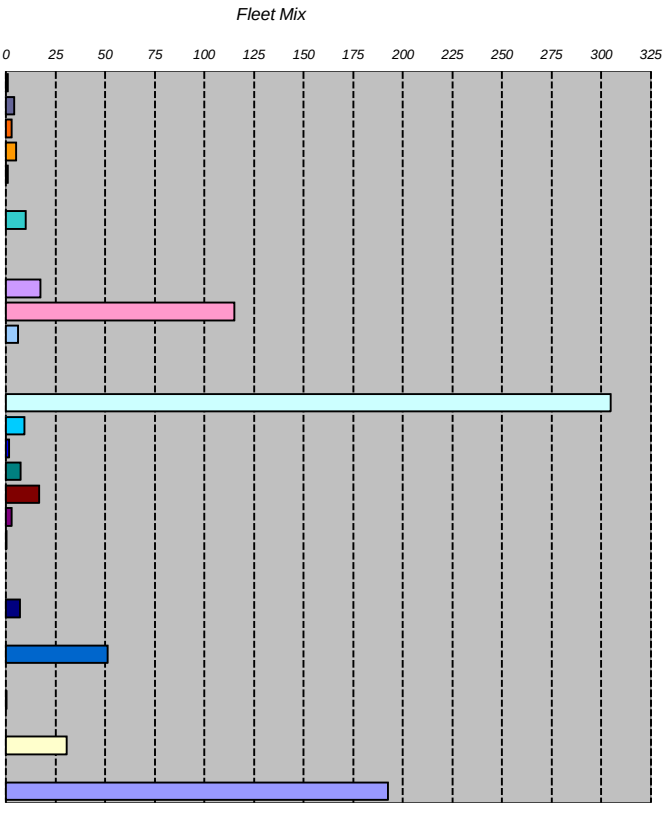
Corridor	2017		2016		2015	
Tropicana Departures	113	37%	128	40%	124	40%
Charleston Arrivals	112	37%	125	39%	125	40%
Strip Touch & Go	80	26%	70	22%	62	20%
Totals	305	100%	323	100%	310	100%

Growth	Tropicana	Charleston	Strip (east)
Depts. 2017 vs 2016	-12%	-10%	16%
Depts. 2017 vs 2015	-9%	-10%	30%

Day vs. Night	2017	2016	2015
Daytime Percentage	91%	93%	92%
Nighttime Percentage	9%	7%	8%

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

Operation	Daily Average in 2017	Percent of Overall Total	Daily Average in 2016	Daily Average in 2015
A300s, A310s	0.81	0.1%	1.00	0.71
A330s, A340s	4.26	0.5%	3.97	3.58
B747s	2.90	0.4%	2.65	2.06
B767s	5.19	0.7%	4.23	3.74
B777s	0.84	0.1%	0.61	1.06
DC10, L1011, MD11	0.00	0.0%	1.58	0.06
Misc. (B707s, DC8s, etc.)	9.84	1.3%	0.00	0.00
Heavy Jets (>300,000 lbs.)	**23.84**	**3.0%**	**14.03**	**11.23**
A318s, A319s	17.45	2.2%	28.71	26.03
A320s, A321s	115.06	14.6%	100.74	89.84
B717s	6.16	0.8%	7.52	4.35
B727s	0.00	0.0%	0.10	0.03
B737-100s, -200s	0.00	0.0%	0.00	0.03
B737-300s to -900s	304.81	38.7%	304.65	306.81
B757s	9.45	1.2%	9.35	17.52
BAC 111s, E170s, E190s	1.48	0.2%	2.10	7.94
CRJ7s, CRJ9s	7.55	1.0%	1.32	3.52
MD80s	16.81	2.1%	16.87	20.26
MD90s	2.84	0.4%	2.81	1.61
Misc. (Bae 146s, DC9s)	0.16	0.0%	0.06	0.26
Large Jets (>75,000 lbs.)	**481.77**	**61.2%**	**474.23**	**478.19**
Medium Jets (>41,000	**7.13**	**0.9%**	**5.71**	**5.71**
Small Jets (<41,000 lbs.)	**51.13**	**6.5%**	**47.71**	**50.97**
Military Jets	**0.06**	**0.0%**	**0.03**	**0.52**
Non-Jets & Unknowns	**30.48**	**3.9%**	**27.87**	**20.87**
Helicopter Tours	**192.55**	**24.5%**	**194.70**	**186.60**
Overall Total*	**787**	**100%**	**764**	**754**



** 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 2017 to 2015

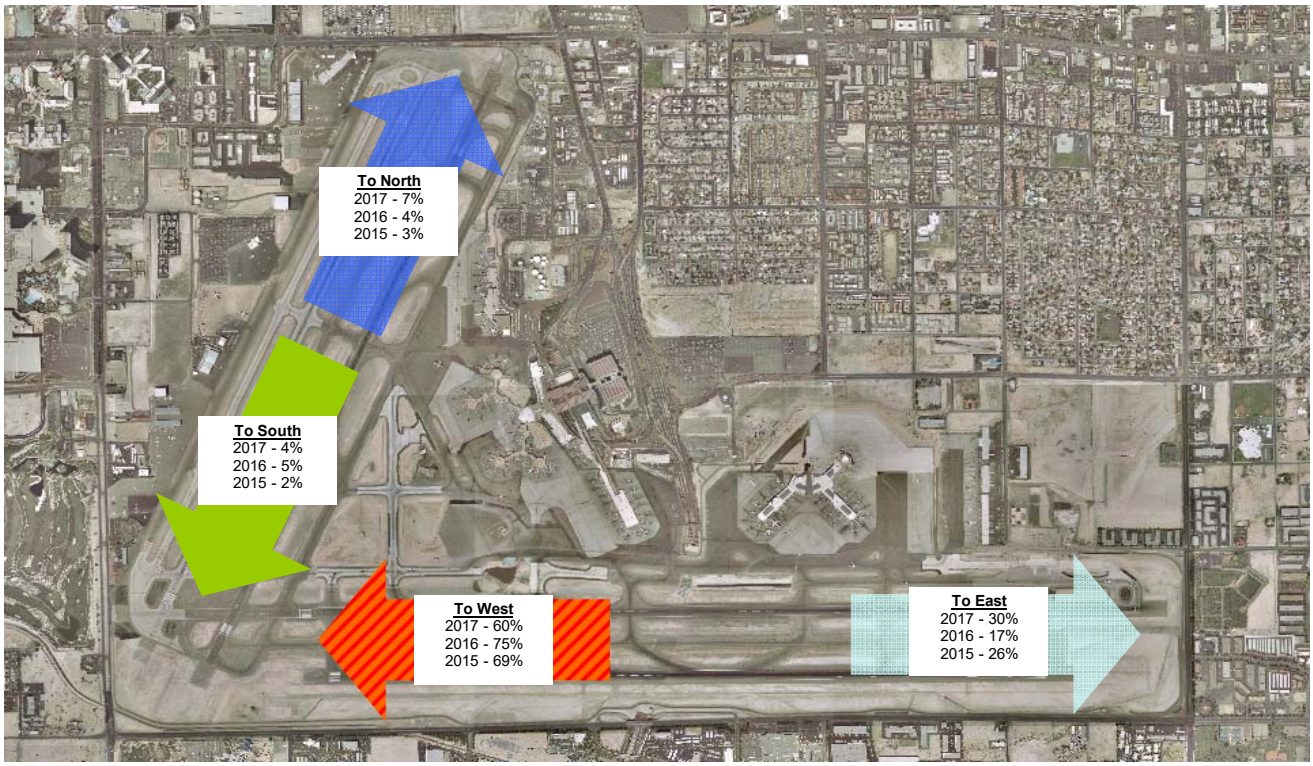
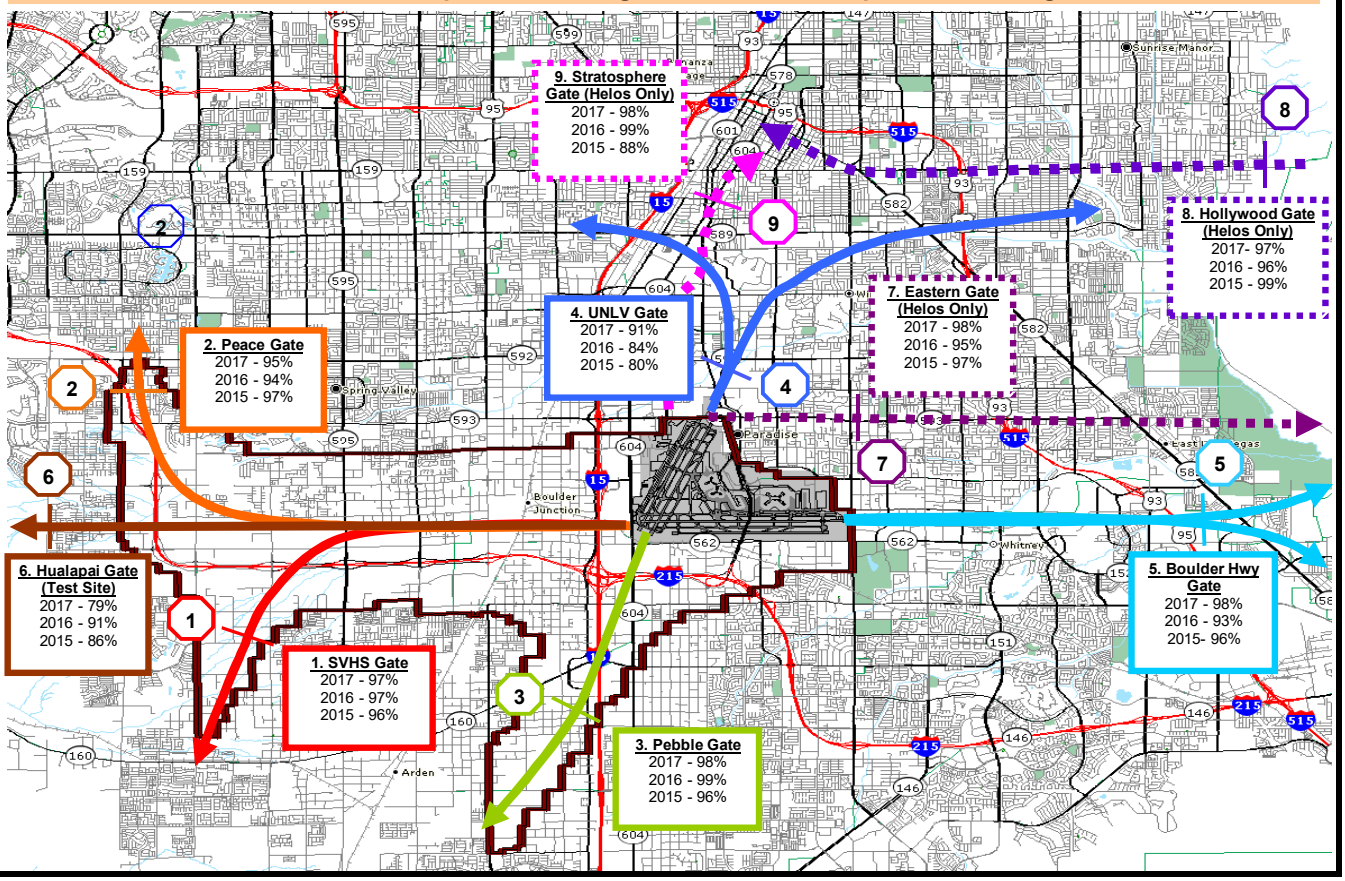


Exhibit 9: "Gate" Compliance for Large Aircraft* & Helicopter Tours - August 2017



* 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, A
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 2017

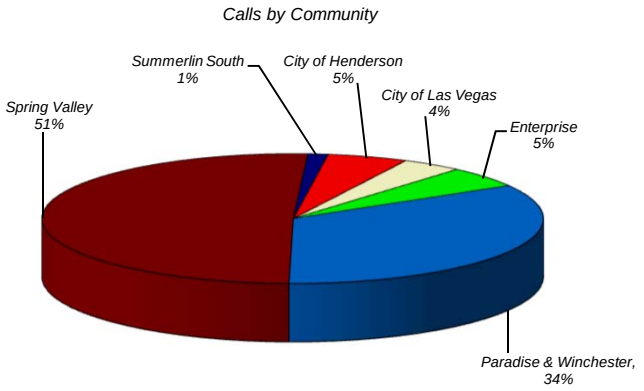
Community	No. of Calls in 2017	No. of Callers in 2017	No. of Calls in 2016	No. of Calls in 2015
City of Boulder City				
City of Henderson	4	4	2	10
City of Las Vegas	3	3	5	5
City of North Las Vegas				
Enterprise	4	4	2	1
Lone Mountain				
Paradise & Winchester	26	21	9	461
Spring Valley	39	6	11	3
Summerlin South	1	1		
Sunrise Manor				1
Whitney				
Location unknown				
Overall Total	**77**	**39**	**29**	**481**

Difference between 2017 and 2016 Total Calls: **166%**

Difference between 2017 and 2015 Total Calls: **-84%**

Average Number of Calls per Caller: **2.0**

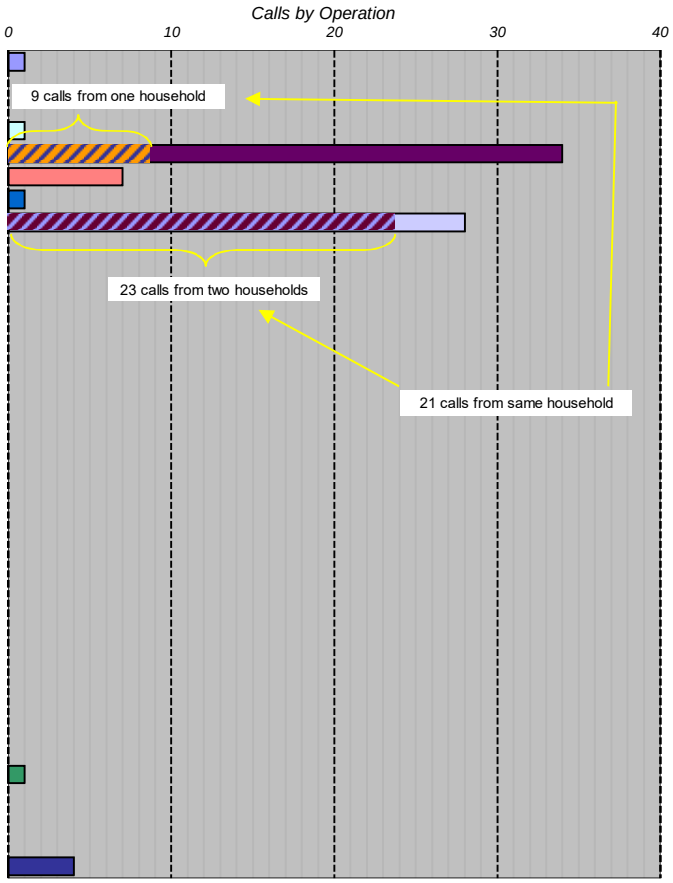
Most calls received from one household: **21**



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

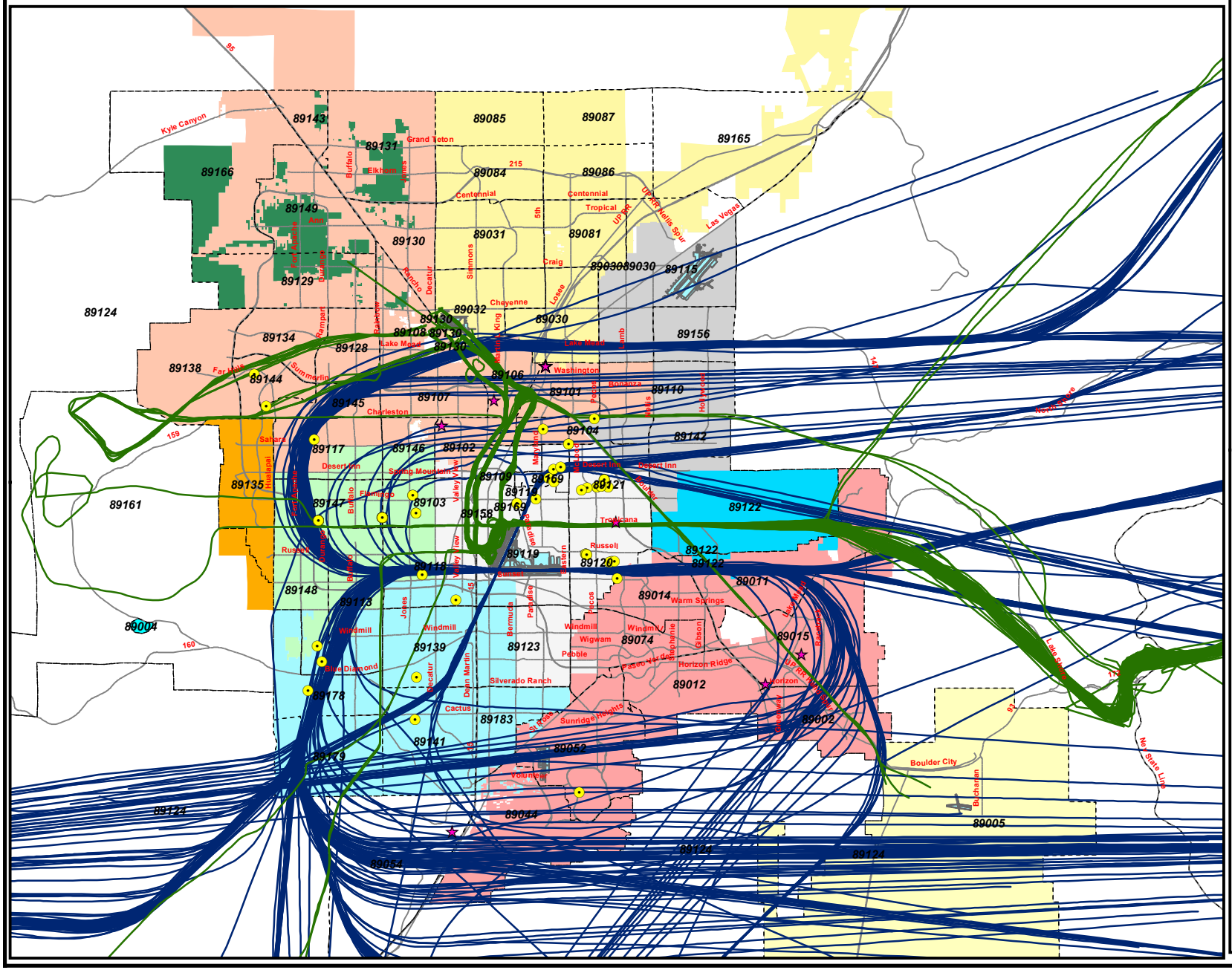
Exhibit 2: Noise Complaint Calls by Type of Operation - September 2017

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	1.3%		
LAS 08R/L Arrivals				
LAS 19R/L Arrivals				3
LAS 26R/L Arrivals	1	1.3%		4
LAS 01R/L Departures	34	44.2%	14	1
LAS 08R/L Departures	7	9.1%	3	10
LAS 19R/L Departures	1	1.3%	1	445
LAS 26R/L Departures	28	36.4%	8	4
LAS Run-ups				
LAS GA				
LAS Other				
LAS Total	**72**	**93.5%**	**26**	**467**
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	1
VGT Other				
VGT Total	**0**	**0.0%**	**1**	**1**
HND 17R/L Arrivals				
HND 35R/L Arrivals				
HND 17R/L Departures				
HND 35R/L Departures				
HND Run-ups				
HND GA	1	1.3%		6
HND Other				
HND Total	**1**	**1.3%**	**0**	**6**
Helicopters**	**4**	**5.2%**	**2**	**7**
Overall Total	**77**	**100%**	**29**	**481**



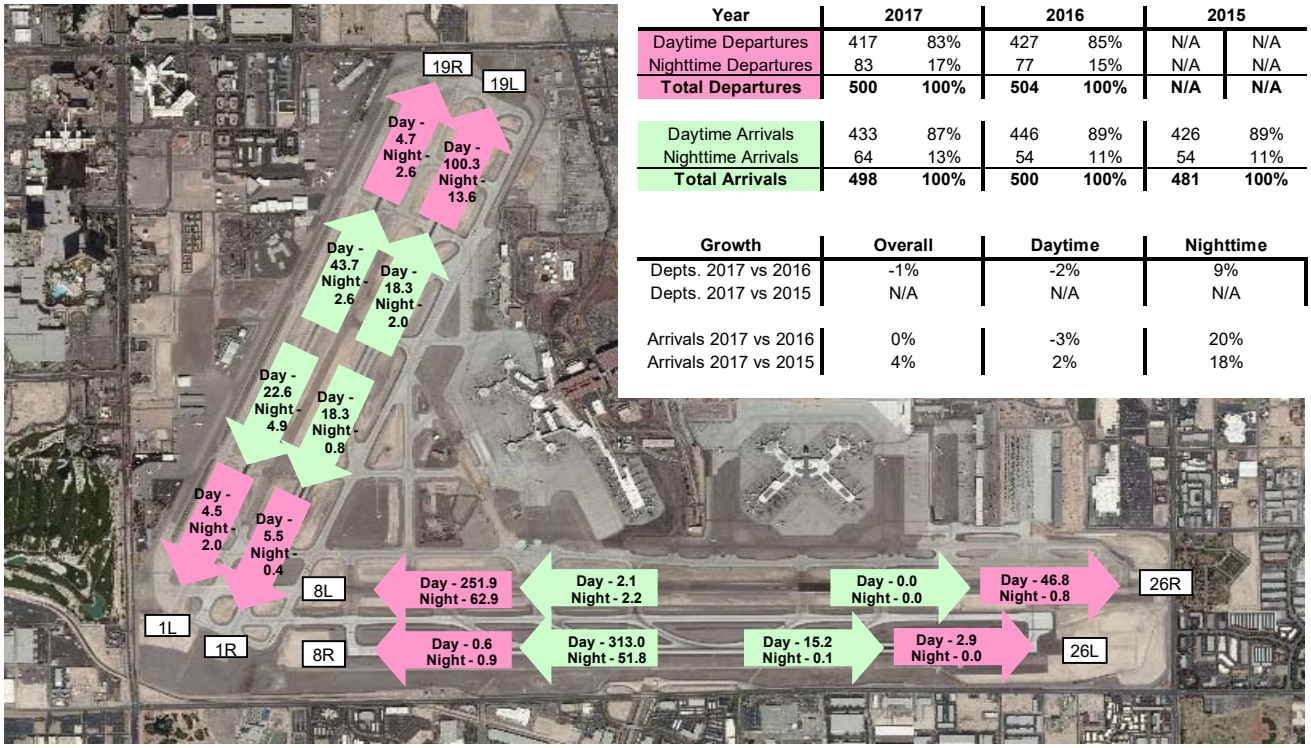
** Note that helicopter noise complaints are not tied to a specific facility since the operation cannot always be associated to a specific airport. Additionally, helicopter calls do nc include those associated with operations conducted by the Metropolitan Police Department or those associated with operations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

Exhibit 3: Aircraft Noise Complaints by Community - Sep 2017



2017 Noise Complaint Report

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

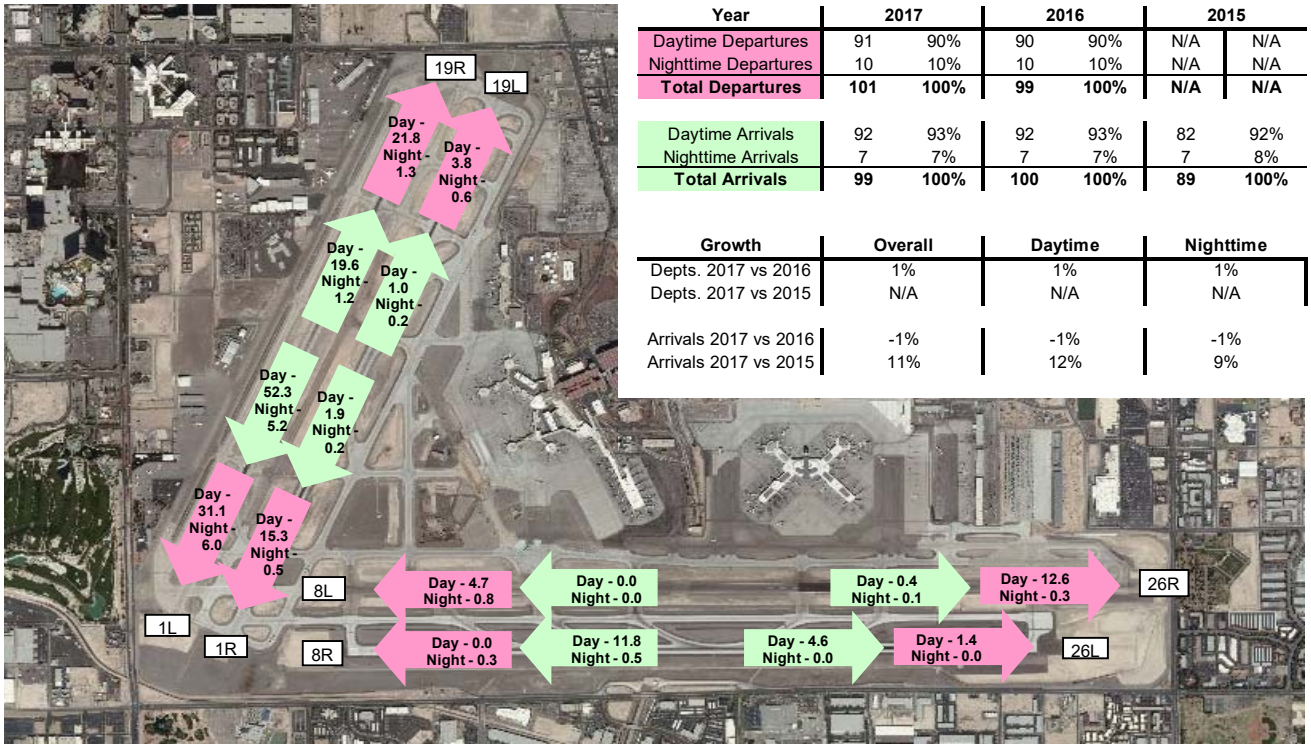


Year	2017		2016		2015	
Daytime Departures	417	83%	427	85%	N/A	N/A
Nighttime Departures	83	17%	77	15%	N/A	N/A
Total Departures	**500**	**100%**	**504**	**100%**	**N/A**	**N/A**
Daytime Arrivals	433	87%	446	89%	426	89%
Nighttime Arrivals	64	13%	54	11%	54	11%
Total Arrivals	**498**	**100%**	**500**	**100%**	**481**	**100%**

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	-1%	-2%	9%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	0%	-3%	20%
Arrivals 2017 vs 2015	4%	2%	18%

* 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 2017

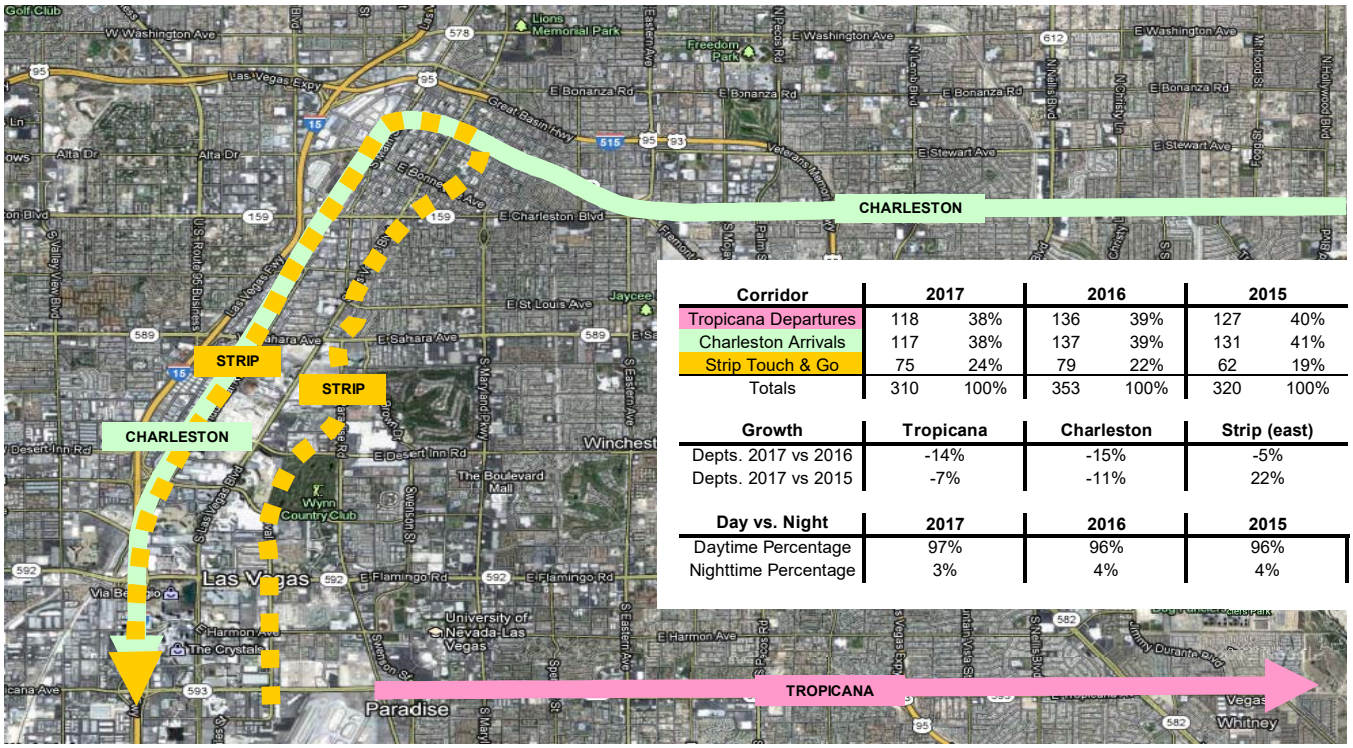


Year	2017		2016		2015	
Daytime Departures	91	90%	90	90%	N/A	N/A
Nighttime Departures	10	10%	10	10%	N/A	N/A
Total Departures	**101**	**100%**	**99**	**100%**	**N/A**	**N/A**
Daytime Arrivals	92	93%	92	93%	82	92%
Nighttime Arrivals	7	7%	7	7%	7	8%
Total Arrivals	**99**	**100%**	**100**	**100%**	**89**	**100%**

Growth	Overall	Daytime	Nighttime
Depts. 2017 vs 2016	1%	1%	1%
Depts. 2017 vs 2015	N/A	N/A	N/A
Arrivals 2017 vs 2016	-1%	-1%	-1%
Arrivals 2017 vs 2015	11%	12%	9%

** 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 2017



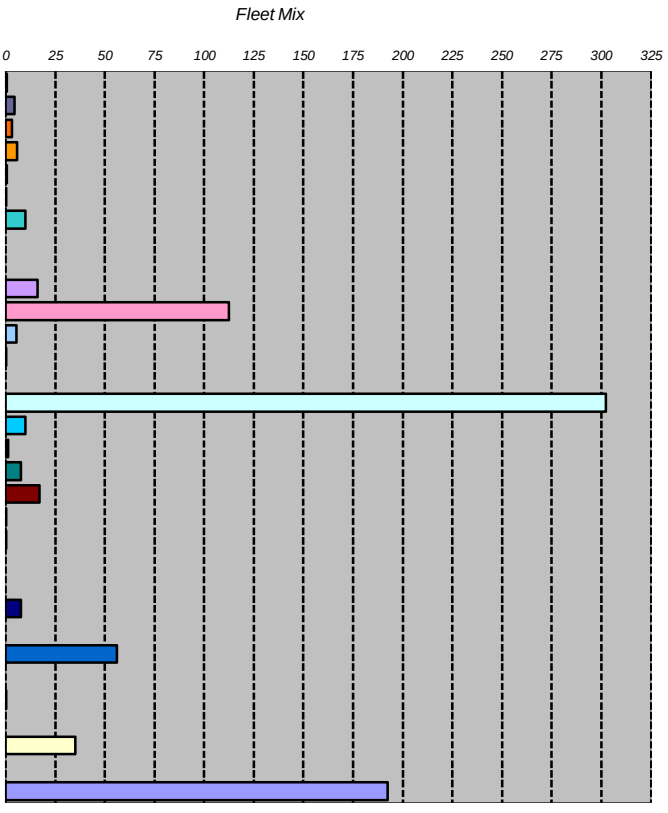
Corridor	2017		2016		2015	
Tropicana Departures	118	38%	136	39%	127	40%
Charleston Arrivals	117	38%	137	39%	131	41%
Strip Touch & Go	75	24%	79	22%	62	19%
Totals	310	100%	353	100%	320	100%

Growth	Tropicana	Charleston	Strip (east)
Depts. 2017 vs 2016	-14%	-15%	-5%
Depts. 2017 vs 2015	-7%	-11%	22%

Day vs. Night	2017	2016	2015
Daytime Percentage	97%	96%	96%
Nighttime Percentage	3%	4%	4%

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

Operation	Daily Average in 2017	Percent of Overall Total	Daily Average in 2016	Daily Average in 2015
A300s, A310s	0.70	0.1%	0.70	0.83
A330s, A340s	4.53	0.6%	4.53	3.67
B747s	3.13	0.4%	3.13	2.67
B767s	5.90	0.7%	5.90	4.53
B777s	0.73	0.1%	0.73	1.27
DC10, L1011, MD11	0.07	0.0%	0.07	0.00
Misc. (B707s, DC8s, etc.)	9.83	1.2%	0.00	0.00
Heavy Jets (>300,000 lbs.)	**24.90**	**3.2%**	**15.07**	**12.97**
A318s, A319s	16.03	2.0%	32.37	26.60
A320s, A321s	112.40	14.2%	96.13	83.77
B717s	5.57	0.7%	7.80	5.43
B727s	0.03	0.0%	0.03	0.07
B737-100s, -200s	0.00	0.0%	0.00	0.00
B737-300s to -900s	302.27	38.3%	309.93	303.17
B757s	9.83	1.2%	11.70	19.70
BAC 111s, E170s, E190s	1.40	0.2%	1.77	5.77
CRJ7s, CRJ9s	7.57	1.0%	1.00	3.33
MD80s	17.03	2.2%	17.47	17.73
MD90s	0.33	0.0%	1.63	1.97
Misc. (Bae 146s, DC9s)	0.33	0.0%	0.37	0.13
Large Jets (>75,000 lbs.)	**472.80**	**59.9%**	**480.20**	**467.67**
Medium Jets (>41,000	**7.67**	**1.0%**	**7.87**	**5.77**
Small Jets (<41,000 lbs.)	**56.10**	**7.1%**	**62.77**	**58.30**
Military Jets	**0.03**	**0.0%**	**0.07**	**0.27**
Non-Jets & Unknowns	**35.20**	**4.5%**	**29.00**	**24.73**
Helicopter Tours	**192.37**	**24.4%**	**216.40**	**192.80**
Overall Total*	**789**	**100%**	**811**	**763**



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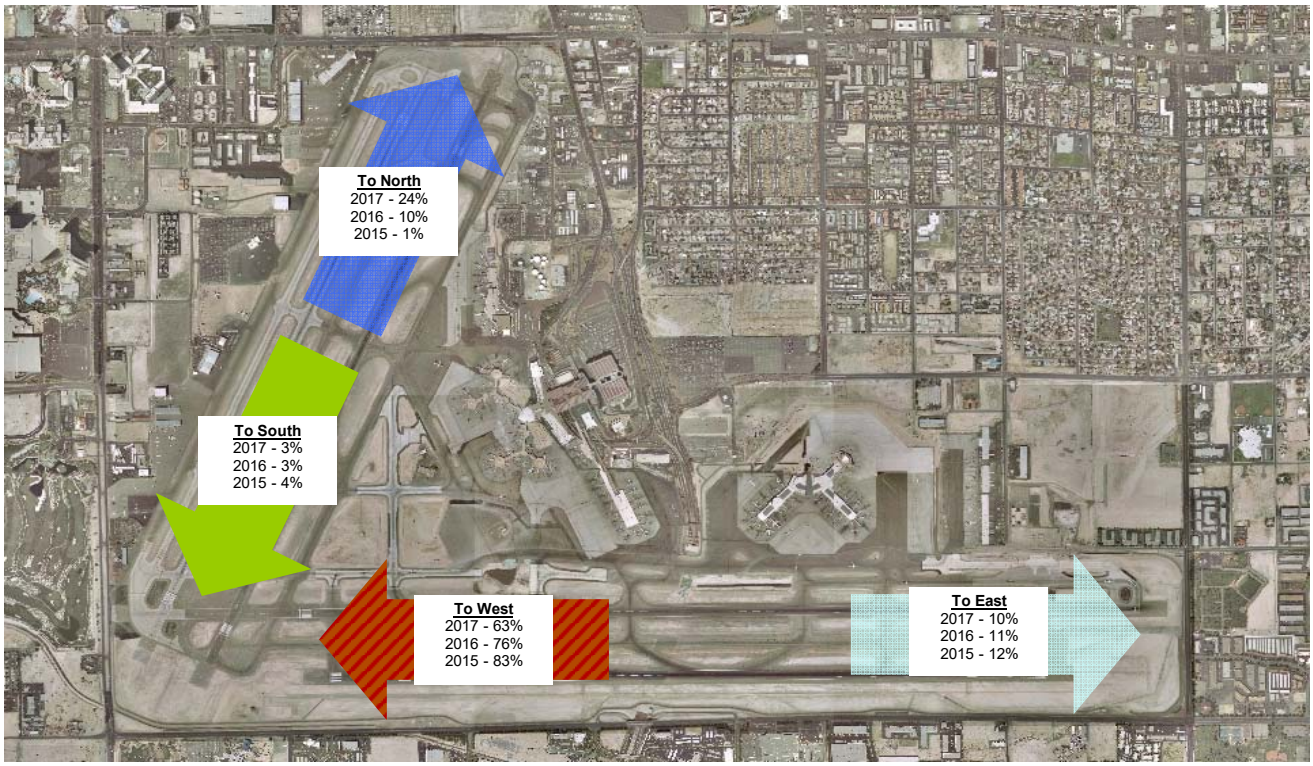

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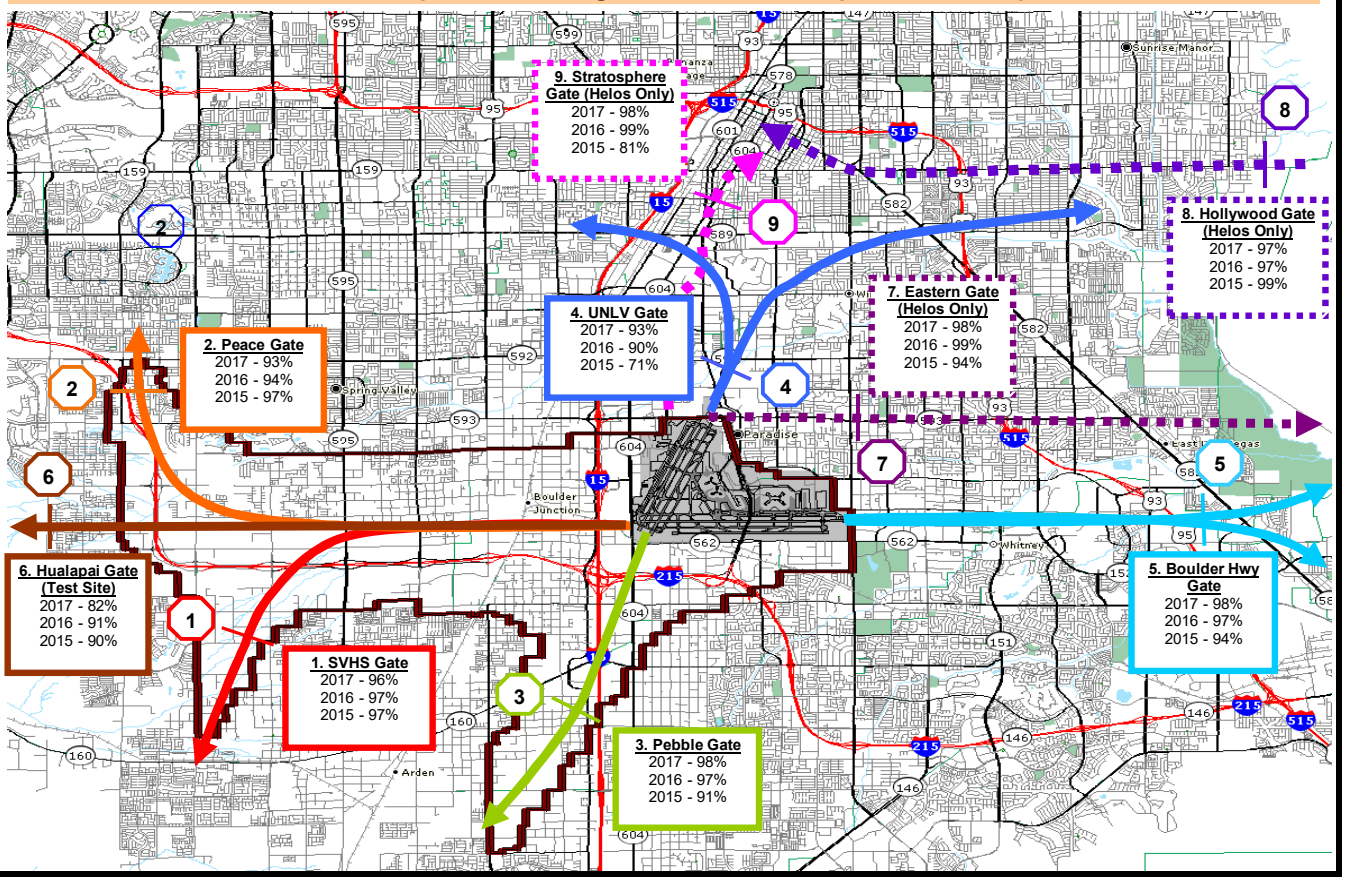

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