

MEMORANDUM

DEPARTMENT OF AVIATION

TO: DISTRIBUTION

FROM: GEORGE C. SIMS, PLANNER

SUBJECT: JULY THROUGH SEPTEMBER 2016 NOISE COMPLAINT REPORTS

DATE: OCTOBER 26, 2016

Attached for your review are the Clark County Department of Aviation's (CCDOA) Monthly Noise Complaint Reports for July through September 2016. 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 (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 2016 data to 2015 and 2014 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 2016: 14 total complaints - an 85% decrease from 2015 and a 95% decrease from 2014. On average, each caller (or household) issued 1.4 calls. The most calls received from one household totaled 5.

Calls by Community - (Exhibits 1 and 3)

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

Minority (between 10% and 50%): The **Spring Valley** community issued 6 calls (43%). 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 **Paradise and Winchester** communities issued 4 calls (29%). 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).

The **Enterprise** community issued 2 calls (14%). This community is typically impacted by aircraft departing to the south (from Runway 19L and Runway 19R).

Repeat Caller Impact: One household issued 36% (5 calls) of all the calls received in July 2016.

Calls by Operation - (Exhibit 2)

LAS: 79% of the total calls were due to **LAS** fixed-wing operations.

- 29% were due to departures to the west from Runways 25L and 25R (50% from one household).
- 21% were due to departures to the north from Runways 01L and 01R (100% from one household, which is also the same household that issued 50% of the calls for LAS Runways 25L and 25R).

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

HND: 7% of the total calls were due to **HND** fixed-wing operations.

Helos: 14% of the total calls were due to **helicopter** operations.

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

Overall: 499 daily *departures*¹ – (see footnote).

- 76% of departures were to the west, 19% east, 3% south, and 2% north.

495 daily *arrivals* – no change from 2015 and 3% increase from 2014.

- 73% of arrivals were from the east, 17% north, 7% west, and 3% 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: 402 daily *departures*² – (see footnote).
▪ 73% of departures were to the west, 23% east, 3% south, and 2% north.
421 daily *arrivals* – a 1% increase from 2015 and a 1% increase from 2014.
▪ 71% of arrivals were from the east, 19% north, 8% west, and 2% south.

Nighttime: 97 daily *departures*³ – (see footnote).
▪ 89% of departures were to the west, 4% north, 4% south, and 4% east.
74 daily *arrivals* – a 7% decrease from 2015 and a 12% increase from 2014.
▪ 85% of arrivals were from the east, 8% north, and 7% south.

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: 85 daily *departures*⁴ – (see footnote).
▪ 64% of departures were to the south, 21% east, 10% west, and 4% north.
81 daily *arrivals* – a 6% increase from 2015 and 6% decrease from 2014.
▪ 79% of arrivals were from the north, 11% west, 6% east, and 4% south.

Daytime: 76 daily *departures*⁵ – (see footnote).
▪ 62% of departures were to the south, 24% east, 10% west, and 4% north.
76 daily *arrivals* – an 8% increase from 2015 and a 6% decrease from 2014.
▪ 78% of arrivals were from the north, 12% west, 6% east, and 4% south.

Nighttime: 9 daily *departures*⁶ – (see footnote).
▪ 79% of departures were to the south, 12% west, 7% north, and 2% east.
5 daily *arrivals* – a 15% decrease from 2015 and a 12% decrease from 2014.
▪ 85% of arrivals were from the north, 12% south, 2% east, and 1% west.

Daytime vs. Nighttime: Approximately 90% of all *departures* and 94% of all *arrivals* occurred during the daytime hours.

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

Tropicana: 121 daily *departures* - a 3% decrease from 2015 and a 5% decrease from 2014.

Charleston: 120 daily *arrivals* – a 5% decrease from 2015 and a 5% decrease from 2014.

Strip: 79 daily *touch and go's* - a 28% increase from 2015 and a 91% increase from 2014.

Daytime vs. Nighttime: Approximately 90% 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 2% 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 26% 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 2016, 76% departed to the *west* (from LAS's primary departure runways). This figure was 78% in 2015 and 63% in 2014.

Secondary: In 2016, 3% departed to the *south* (from LAS's secondary departure runways). This figure was 3% in 2015 and 2% in 2014

Alternate 1: In 2016, 2% departed to the *north* (from LAS's alternate departure runways). This figure was 5% in 2015 and 4% in 2014.

Alternate 2: In 2016, 19% departed to the *east* (from LAS's alternate departure runways). This figure was 14% in 2015 and 31% in 2014.

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

SVHS: In 2016, 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 95% in 2015 and 95% in 2014.

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 2016, 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 96% in 2015 and 95% in 2014.

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 2016, 95% 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 97% in 2015 and 94% in 2014.

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 2016, 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 80% in 2015 and 80% in 2014.

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 2016, 96% 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 2015 and 94% in 2014.

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 2016, 91% 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 89% in 2015 and 86% in 2014.

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 2016, 90% 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 89% in 2015 and 88% in 2014.

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 2016, 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 99% in 2015 and 99% in 2014.

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 2016, 88% 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 97% in 2015 and 78% in 2014.

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, fleet mix, and gate compliance.

August 2016: 25 total complaints - a 54% decrease from 2015 and a 93% decrease from 2014. On average, each caller (or household) issued 1.1 calls. The most calls received from one household totaled 2.

Calls by Community - (Exhibits 1 and 3)

Majority (more than 50%): The *Paradise and Winchester* communities issued 13 calls (52%). (See July 2016 synopsis of typical aircraft overflight impacts on this community.)

Minority (between 10% and 50%): The *Enterprise* community issued 5 calls (20%). (See July 2016 synopsis of typical aircraft overflight impacts on this community.)

Repeat Caller Impact: (Not applicable.)

Calls by Operation - (Exhibit 2)

LAS: 92% of the total calls received were due to *LAS* fixed-wing operations.
▪ 48% were due to departures to the north from Runways 01L and 01R.

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

HND: 4% 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: 496 daily *departures*⁷ – (see footnote).
▪ 75% of departures were to the west, 17% east, 5% south, and 4% north.
495 daily *arrivals* – a 1% increase from 2015 and a 5% increase from 2014.
▪ 74% of arrivals were from the east, 17% north, 7% west, and 3% south.

Daytime: 410 daily *departures*⁸ – (see footnote).
▪ 73% of departures were to the west, 20% east, 4% south, and 3% north.
430 daily *arrivals* – a 3% increase from 2015 and a 4% increase from 2014.
▪ 73% of arrivals were from the east, 18% north, 7% west, and 2% south.

⁷ See footnote #1.

⁸ See footnote #1.

Nighttime: 86 daily *departures*⁹ – (see footnote).
▪ 82% of departures were to the west, 7% north, 6% south, and 6% east.
65 daily *arrivals* – a 10% decrease from 2015 and a 19% increase from 2014.
▪ 79% of arrivals were from the east, 11% north, 8% south, and 1% west.

Daytime vs. Nighttime: Approximately 83% 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: 84 daily *departures*¹⁰ – (see footnote).
▪ 66% of departures were to the south, 19% east, 9% west, and 5% north.
81 daily *arrivals* – a 4% increase from 2015 and a 5% decrease from 2014.
▪ 82% of arrivals were from the north, 9% west, 5% east, and 4% south.

Daytime: 75 daily *departures*¹¹ – (see footnote).
▪ 65% of departures were to the south, 21% east, 9% west, and 5% north.
75 daily *arrivals* – a 5% increase from 2015 and a 7% decrease from 2014.
▪ 82% of arrivals were from the north, 10% west, 5% east, and 3% south.

Nighttime: 10 daily *departures*¹² – (see footnote).
▪ 79% of departures were to the south, 10% west, 7% north, and 4% east.
7 daily *arrivals* – a 4% decrease from 2015 and a 16% increase from 2014.
▪ 82% of arrivals were from the north, 10% south, 5% east, and 2% 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: 128 daily *departures* – a 4% increase from 2015 and a 6% decrease from 2014.

Charleston: 125 daily *arrivals* – no change from 2015 and a 10% decrease from 2014.

Strip: 70 daily *touch and go's* - a 12% increase from 2015 and a 53% increase from 2014.

Daytime vs. Nighttime: Approximately 93% 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 2% 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.

⁹ See footnote #1.

¹⁰ See footnote #1.

¹¹ See footnote #1.

¹² See footnote #1.

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

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

Military: *Military* turbine-driven aircraft accounted for less than 1% 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 26% 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 2016, 75% departed to the *west* (from LAS's primary departure runways). This figure was 69% in 2015 and 72% in 2014.

Secondary: In 2016, 5% departed to the *south* (from LAS's secondary departure runways). This figure was 2% in 2015 and 3% in 2014.

Alternate 1: In 2016, 4% departed to the *north* (from LAS's alternate departure runways). This figure was 3% in 2015, and 5% in 2014.

Alternate 2: In 2016, 17% departed to the *east* (from LAS's alternate departure runways). This figure was 26% in 2015 and 20% in 2014.

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

SVHS: In 2016, 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 96% in 2015 and 96% in 2014. (See July 2016 synopsis for specific location of the SVHS gate.)

Peace: In 2016, 94% 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 97% in 2015 and 96% in 2014. (See July 2016 synopsis for specific location of the Peace gate.)

Pebble: In 2016, 99% 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 96% in 2015 and 92% in 2014. (See July 2016 synopsis for specific location of the Pebble gate.)

UNLV: In 2016, 84% 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 80% in 2015, and 82% in 2014. (See July 2016 synopsis for specific location of the UNLV gate.)

Boulder: In 2016, 93% 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 2015 and 95% in 2014. (See July 2016 synopsis for specific location of the Boulder Hwy. gate.)

Hualapai: In 2016, 91% 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 86% in 2015, and 91% 2014. (See July 2016 synopsis for specific location of the Hualapai gate.)

Eastern: In 2016, 95% 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 2015 and 96% in 2014. (See July 2016 synopsis for specific location of the Eastern gate.)

Hollywood: In 2016, 96% 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 99% in 2015 and 99% in 2014. (See July 2016 synopsis for specific location of the Hollywood gate.)

Stratosphere: In 2016, 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 88% in 2015 and 92% in 2014. (See July 2016 synopsis for specific location of the Stratosphere gate.)

The information denoted in this monthly summary represents **typical** residential complaints, flight activity, fleet mix, and gate compliance.

September 2015: 29 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%): (Not applicable.)

Minority (between 10% and 50%): The *Spring Valley* community issued 11 calls (38%). (See July 2016 synopsis of typical aircraft overflight impacts on this community.)

The *Paradise and Winchester* communities issued 9 calls (31%). (See July 2016 synopsis of typical aircraft overflight impacts on this community.)

The *City of Las Vegas* community issued 5 calls (17%). This community is typically impacted by aircraft departing to the west (from Runway 25R and Runway 25L).

Repeat Caller Impact: One household issued 17% (5 calls) of all the calls received in September 2016.

Calls by Operation - (Exhibit 2)

- LAS:** 90% of the total calls received were due to **LAS** fixed-wing operations.
- 48% were due to departures to the north from Runways 01L and 01R (36% from one household).
- VGT:** 3% 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:** 7% 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:** 504 daily *departures*¹³ – (see footnote).
- 76% of departures were to the west, 11% east, 10% north, and 3% south.
- 500 daily *arrivals* – a 4% increase from 2015 and a 6% increase from 2014.
- 78% of arrivals were from the east, 10% north, 9% south and 3% west.
- Daytime:** 427 daily *departures*¹⁴ – (see footnote).
- 74% of departures were to the west, 13% east, 10% north, and 3% south.
- 446 daily *arrivals* – a 5% increase from 2015 and 5% increase from 2014.
- 77% of arrivals were from the east, 10% north, 10% south, and 3% west.
- Nighttime:** 77 daily *departures*¹⁵ – (see footnote).
- 85% of departures were to the west, 12% north, and 4% south.
- 54 daily *arrivals* – a 1% decrease from 2015 and 16% increase from 2014.
- 86% of arrivals were from the east, 8% north, and 6% south.

Daytime vs. Nighttime: Approximately 85% of all *departures* and 89% of all *arrivals* occurred during the daytime hours.

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

- Overall:** 99 daily *departures*¹⁶ – (see footnote).
- 68% of departures were to the south, 12% north, 12% east, and 7% west.
- 100 daily *arrivals* – a 12% increase from 2015 and a 12% increase from 2014.
- 72% of arrivals were from the north, 15% south, 9% east, and 4% west.
- Daytime:** 90 daily *departures*¹⁷ – (see footnote).
- 67% of departures were to the south, 13% east, 12% north, and 7% west.
- 92 daily *arrivals* – a 13% increase from 2015 and a 12% increase from 2014.
- 71% of arrivals were from the north, 15% south, 9% east, and 4% west.

¹³ See footnote #1.

¹⁴ See footnote #1.

¹⁵ See footnote #1.

¹⁶ See footnote #1.

¹⁷ See footnote #1.

- Nighttime:** 10 daily *departures*¹⁸ – (see footnote).
- 78% of departures were to the south, 12% north, and 10% west.
- 7 daily *arrivals* – a 1% increase from 2015 and a 10% increase from 2014.
- 78% of arrivals were from the north, 16% south, and 6% east.

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: 136 daily *departures* – a 7% increase from 2015 and an 8% increase from 2014.

Charleston: 137 daily *arrivals* - a 5% increase from 2015 and a 6% increase from 2014.

Strip: 79 daily *touch and go's* - a 28% increase from 2015 and 80% increase from 2014.

Daytime vs. Nighttime: Approximately 96% 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 2% 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 59% of the daily traffic.

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

Small: **Small** turbine-driven aircraft (those weighing 41,000 lbs. or less) accounted for 8% of the daily traffic.

Military: **Military** turbine-driven aircraft accounted for less than 1% 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 27% 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 2016, 76% departed to the **west** (from LAS's primary departure runways). This figure was 83% in 2015 and 78% in 2014.

Secondary: In 2016, 3% departed to the **south** (from LAS's secondary departure runways). This figure was 4% in 2015 and 3% in 2014.

¹⁸ See footnote #1.

Alternate 1: In 2016, 10% departed to the **north** (from LAS's alternate departure runways). This figure was 1% in 2015 and 4% in 2014.

Alternate 2: In 2016, 11% departed to the **east** (from LAS's alternate departure runways). This figure was 12% in 2015 and 15% in 2014.

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

SVHS: In 2016, 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 2015 and 95% in 2014. (See July 2016 synopsis for specific location of the SVHS gate.)

Peace: In 2016, 94% 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 97% in 2015 and 96% in 2014. (See July 2016 synopsis for specific location of the Peace gate.)

Pebble: In 2016, 97% 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 91% in 2015 and 95% in 2014. (See July 2016 synopsis for specific location of the Pebble gate.)

UNLV: In 2016, 90% 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 71% in 2015 and 81% in 2014. (See July 2016 synopsis for specific location of the UNLV gate.)

Boulder: In 2016, 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 94% in 2015 and 97% in 2014. (See July 2016 synopsis for specific location of the Boulder Hwy. gate.)

Hualapai: In 2016, 91% 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 90% in 2015 and 93% in 2014. (See July 2016 synopsis for specific location of the Hualapai gate.)

Eastern: In 2016, 99% 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 94% in 2015 and 94% in 2014. (See July 2016 synopsis for specific location of the Eastern gate.)

Hollywood: In 2016, 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 99% in 2015 and 99% in 2014. (See July 2016 synopsis for specific location of the Hollywood gate.)

Stratosphere: In 2016, 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 81% in 2015 and 98% in 2014. (See July 2016 synopsis for specific location of the Stratosphere gate.)

The information denoted in this monthly summary represents **typical** residential complaints, flight activity, fleet mix, and gate compliance.

Other Notable Issues

Helicopter Operator Users Meeting: On September 8, 2016, DOA staff members met with FAA 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.

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 26, 2016

Page 15 of 30

Distribution: Commissioner Sisolak, Chair
Commissioner Brown, Vice-Chair
Commissioner Brager
Commissioner Giunchigliani
Commissioner Kirkpatrick
Commissioner Scow
Commissioner Weekly
Donald G. Burnette
Rosemary Vassiliadis
Saeed Bonabian
James Chrisley
Sandra Cikity
Judy Villalta
Dennis Anderson
Ben Czyzewski
Donna Bergstrom
Curtis Hedgepeth

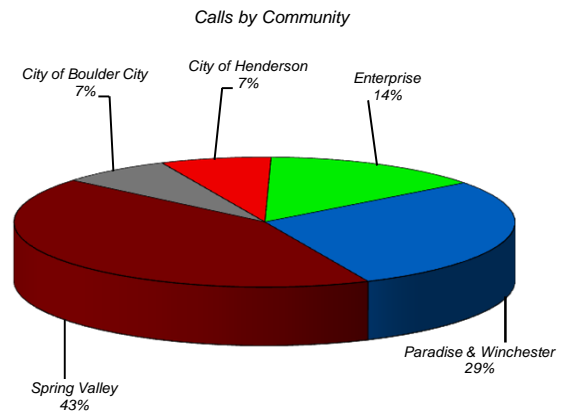
John Howard (FAA TRACON)
Jon Holman (FAA ATC)
Charlie Halterman (HND Tower)
Richard Falcon (FAA FSDO)
Bristol Ellington (COH)
Josh Reid (COH)
Elizabeth Fretwell (CLV)
Mayor Carolyn Goodman (CLV)
Councilman Bob Beers (CLV)
Councilman Bob Coffin (CLV)
Councilwoman L. Tarkanian (CLV)
Councilman S. Anthony (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)
William Olivieri (Citizen)
Samuel Carter (ITT)

Sean Roebuck
Bruce Daugherty
Kelly Burns
Sam Ingalls
Chris Jones
Linda Healey
Christine Crews
Tina Frias
Teresa Motley
Jeff Jacquart
Charlie Hall
Tucker Field
Mark Silverstein
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)

Exhibit 1: Noise Complaint Calls by Community* - July 2016

Community	No. of Calls in 2016	No. of Callers in 2016	No. of Calls in 2015	No. of Calls in 2014
City of Boulder City	1	1	1	1
City of Henderson	1	1	2	1
City of Las Vegas				
City of North Las Vegas				
Enterprise	2	2	8	1
Lone Mountain				
Paradise & Winchester	4	4	79	263
Spring Valley	6	2		6
Summerlin South			1	
Sunrise Manor			1	1
Whitney				
Location unknown				
Overall Total	14	10	92	273



Difference between 2016 and 2015 Total Calls: -85%

Difference between 2016 and 2014 Total Calls: -95%

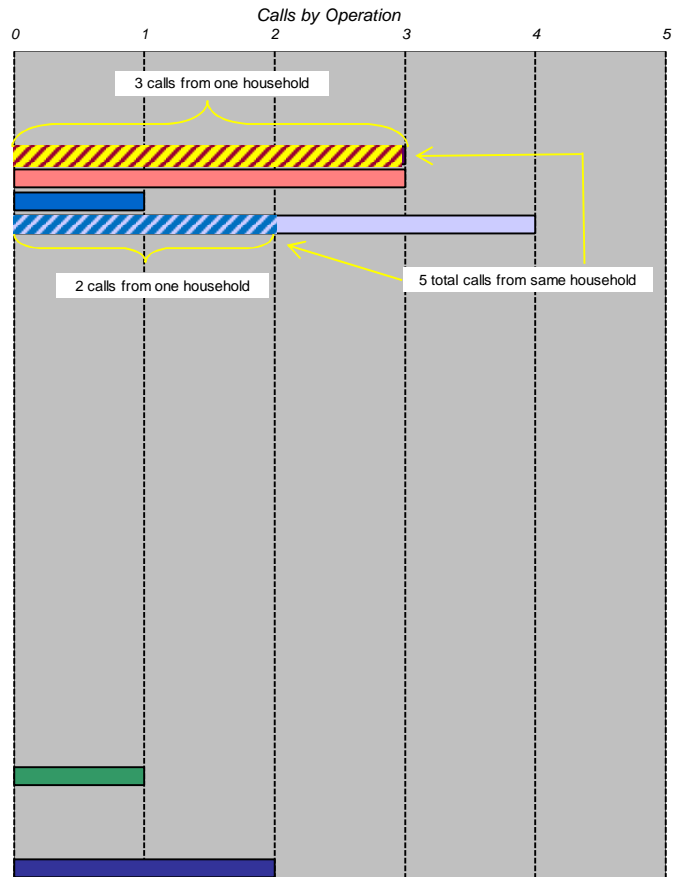
Average Number of Calls per Caller: 1.4

Most calls received from one household: 5

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

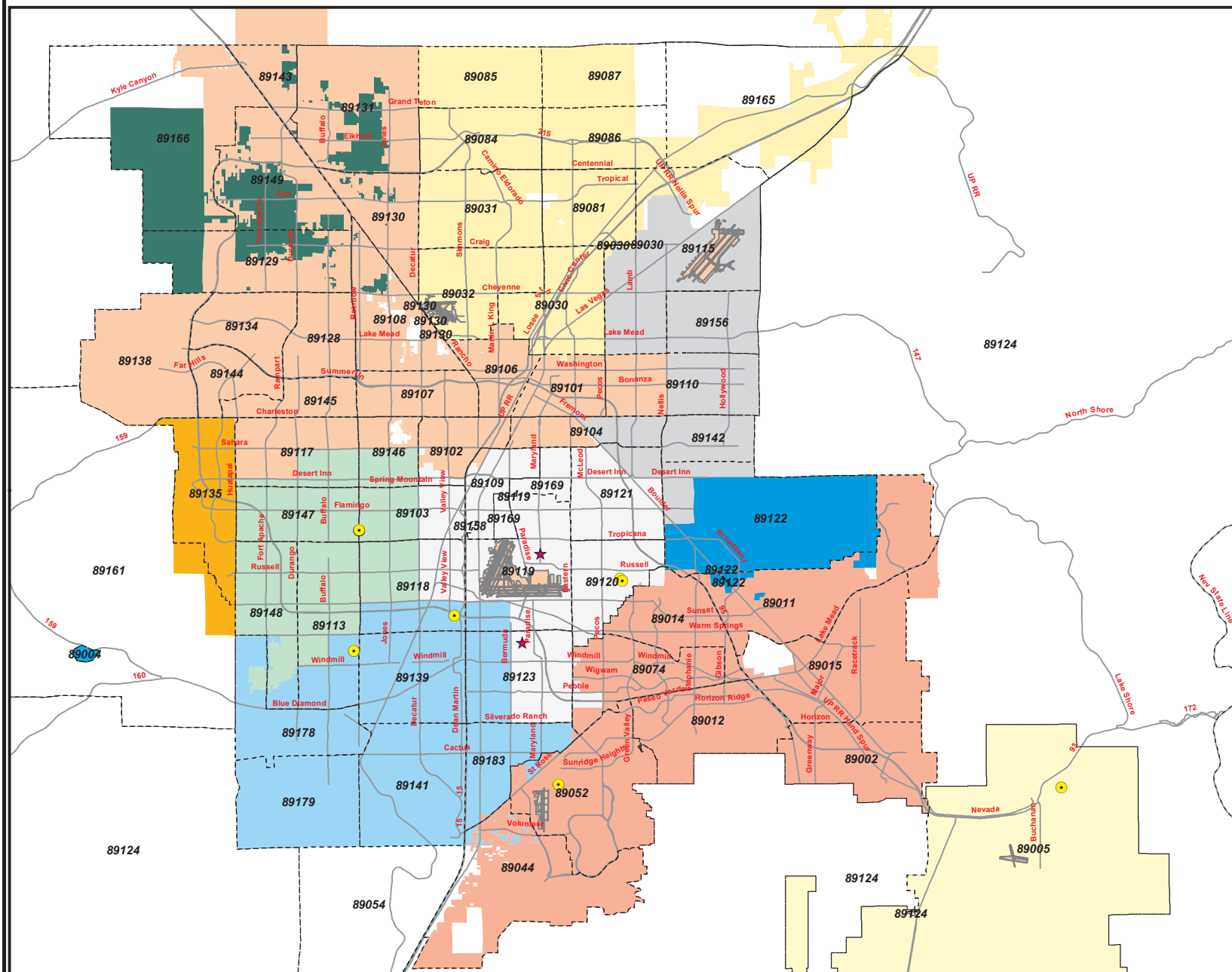
Exhibit 2: Noise Complaint Calls by Type of Operation - July 2016

Operation	No. of Calls in 2016	Percent of Overall Total	No. of Calls in 2015	No. of Calls in 2014
LAS 01R/L Arrivals				
LAS 07R/L Arrivals				
LAS 19R/L Arrivals				
LAS 25R/L Arrivals				
LAS 01R/L Departures	3	21.4%	1	2
LAS 07R/L Departures	3	21.4%	8	34
LAS 19R/L Departures	1	7.1%	65	
LAS 25R/L Departures	4	28.6%	8	228
LAS Run-ups			1	
LAS GA				
LAS Other				
LAS Total	11	78.6%	83	264
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	1	7.1%	1	1
HND Other				
HND Total	1	7.1%	1	1
Helicopters**	2	14.3%	7	8
Overall Total	14	100%	92	273



** 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 2016



Legend

Jul 2016
Total Complaints: 14

- Aircraft Complaints Received 12 Mapped 11
- ★ Helicopter Complaints Received 2 Mapped 2

- Major Streets
- Airports
- - - Zip Code Boundaries

- Unincorporated Clark County
- Boulder City
- Whitney
- Henderson
- Las Vegas
- North Las Vegas
- Paradise/Winchester
- Summerlin
- Spring Valley
- Sunrise Manor
- Winchester
- Enterprise
- Lone Mountain

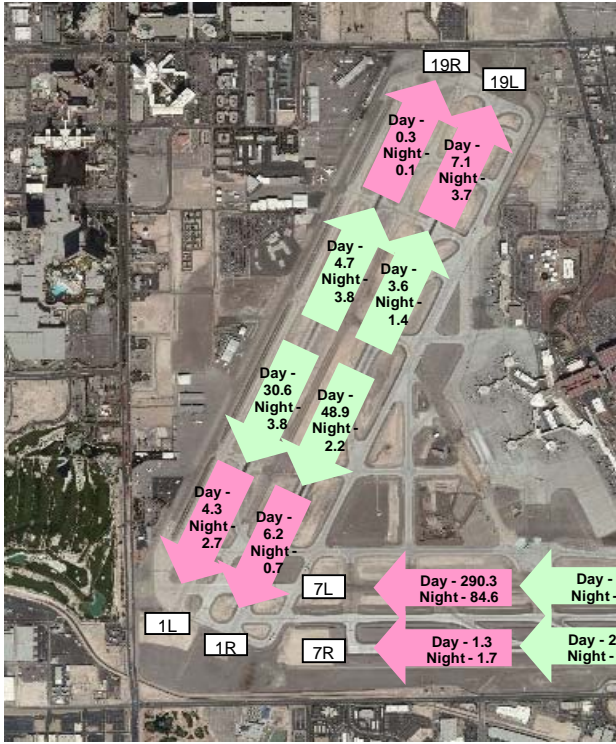
Department of Aviation
Geographic Information Systems

Oct 11, 2016

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

\\scom\civ\01\B\GIS\Standard\Project\Noise\2016\3\03_NOISE16.mxd

Exhibit 4: LAS Daily Average Operations Runway for Large Air Carrier Aircraft* - July 2016

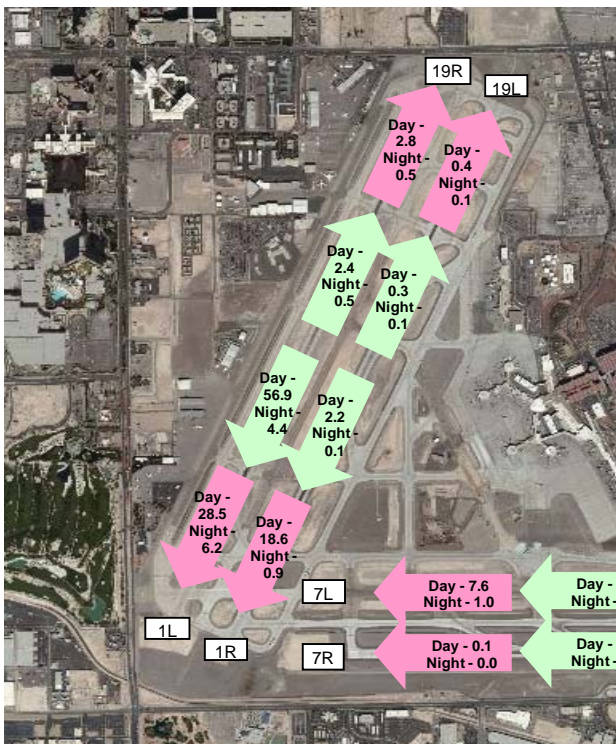


Year	2016		2015		2014	
Daytime Departures	402	81%	N/A	N/A	N/A	N/A
Nighttime Departures	97	19%	N/A	N/A	N/A	N/A
Total Departures	499	100%	N/A	N/A	N/A	N/A
Daytime Arrivals	421	85%	416	84%	415	86%
Nighttime Arrivals	74	15%	80	16%	67	14%
Total Arrivals	495	100%	496	100%	481	100%

Growth	Overall	Daytime	Nighttime
Depts. 2016 vs 2015	N/A	N/A	N/A
Depts. 2016 vs 2014	N/A	N/A	N/A
Arrivals 2016 vs 2015	0%	1%	-7%
Arrivals 2016 vs 2014	3%	1%	12%

* 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 2016



Year	2016		2015		2014	
Daytime Departures	76	90%	N/A	N/A	N/A	N/A
Nighttime Departures	9	10%	N/A	N/A	N/A	N/A
Total Departures	85	100%	N/A	N/A	N/A	N/A
Daytime Arrivals	76	93%	71	92%	80	93%
Nighttime Arrivals	5	7%	6	8%	6	7%
Total Arrivals	81	100%	77	100%	86	100%

Growth	Overall	Daytime	Nighttime
Depts. 2016 vs 2015	N/A	N/A	N/A
Depts. 2016 vs 2014	N/A	N/A	N/A
Arrivals 2016 vs 2015	6%	8%	-15%
Arrivals 2016 vs 2014	-6%	-6%	-12%

** 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 2016

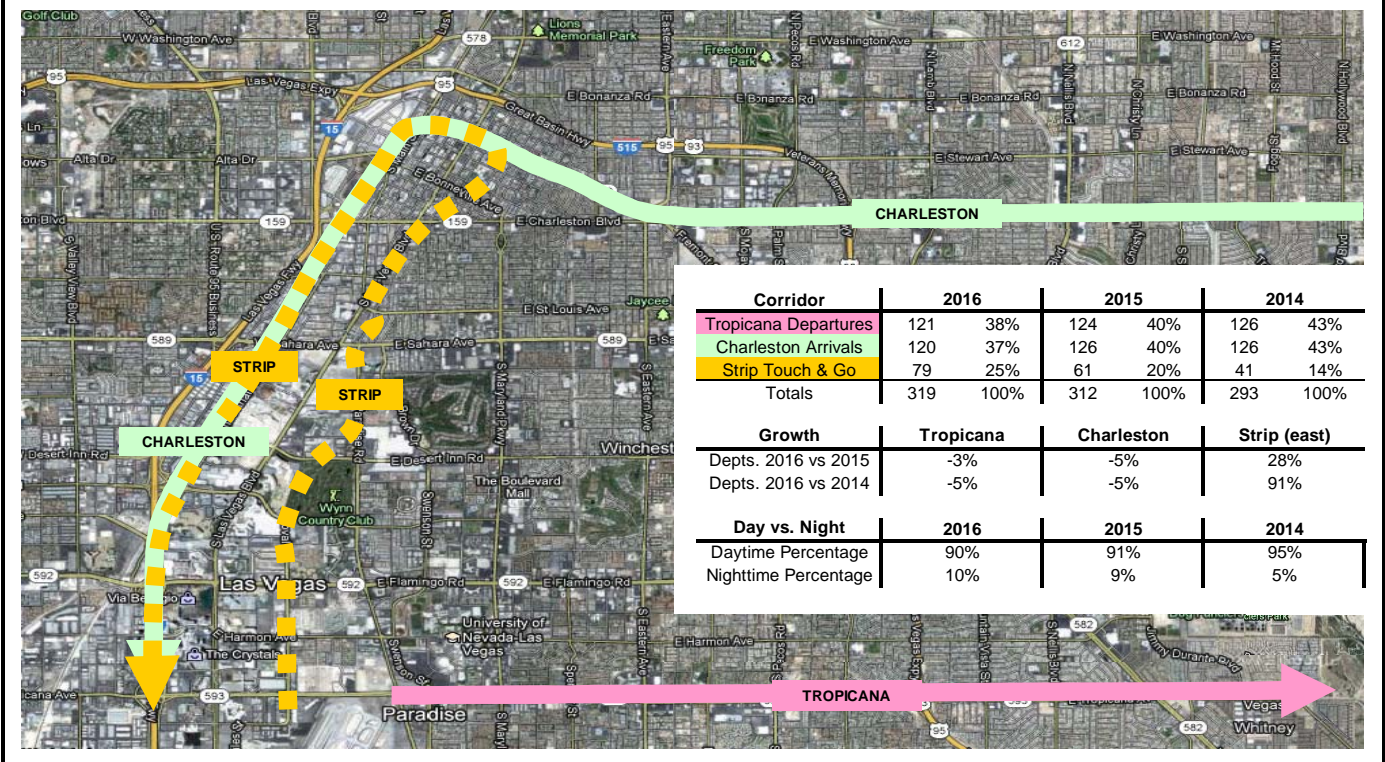
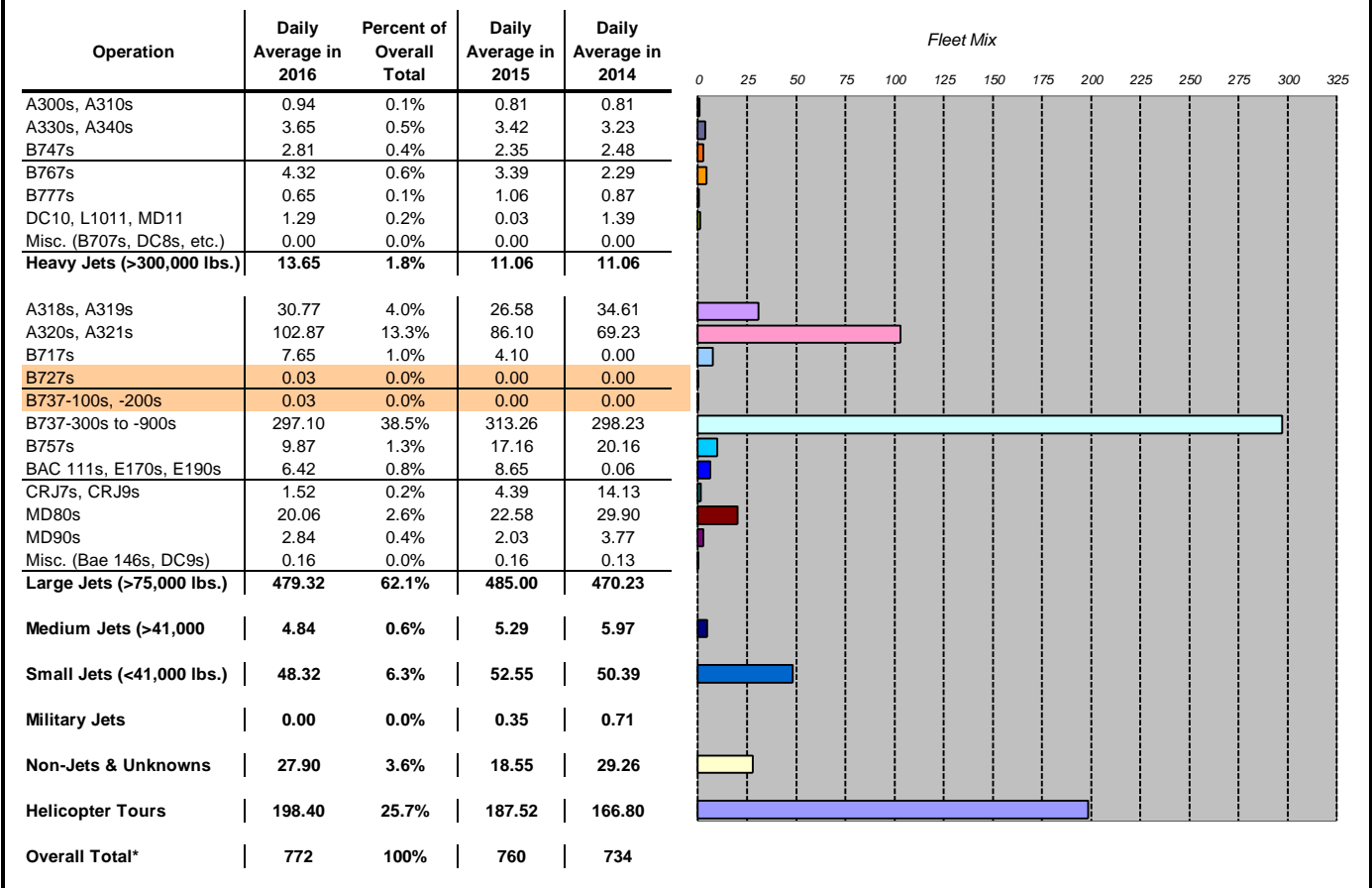


Exhibit 7: LAS Aircraft Arrival Fleet Mix* - July 2016



* Overall Total: Note that operation type and runway use counts are estimated by ITT Exelis AirScene.com Noise and Monitoring Operations (NOMS) 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 2016 to 2014

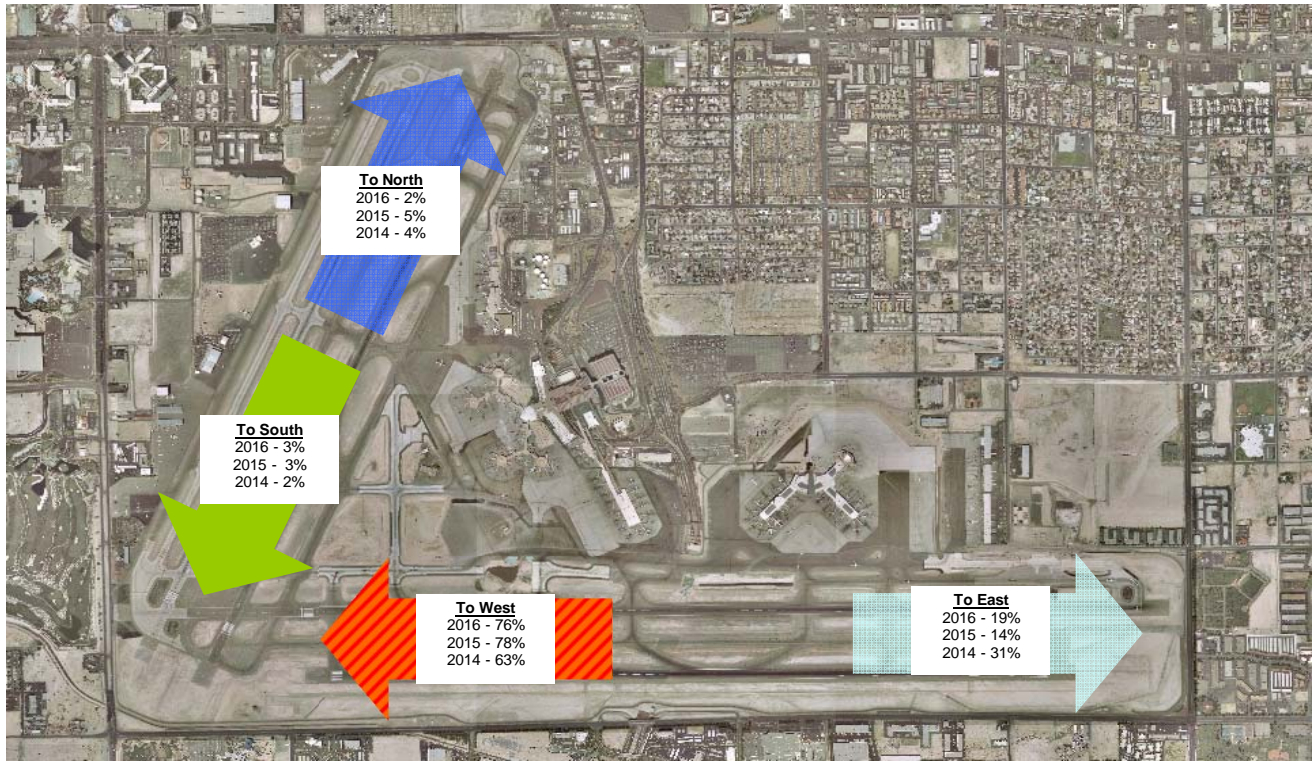
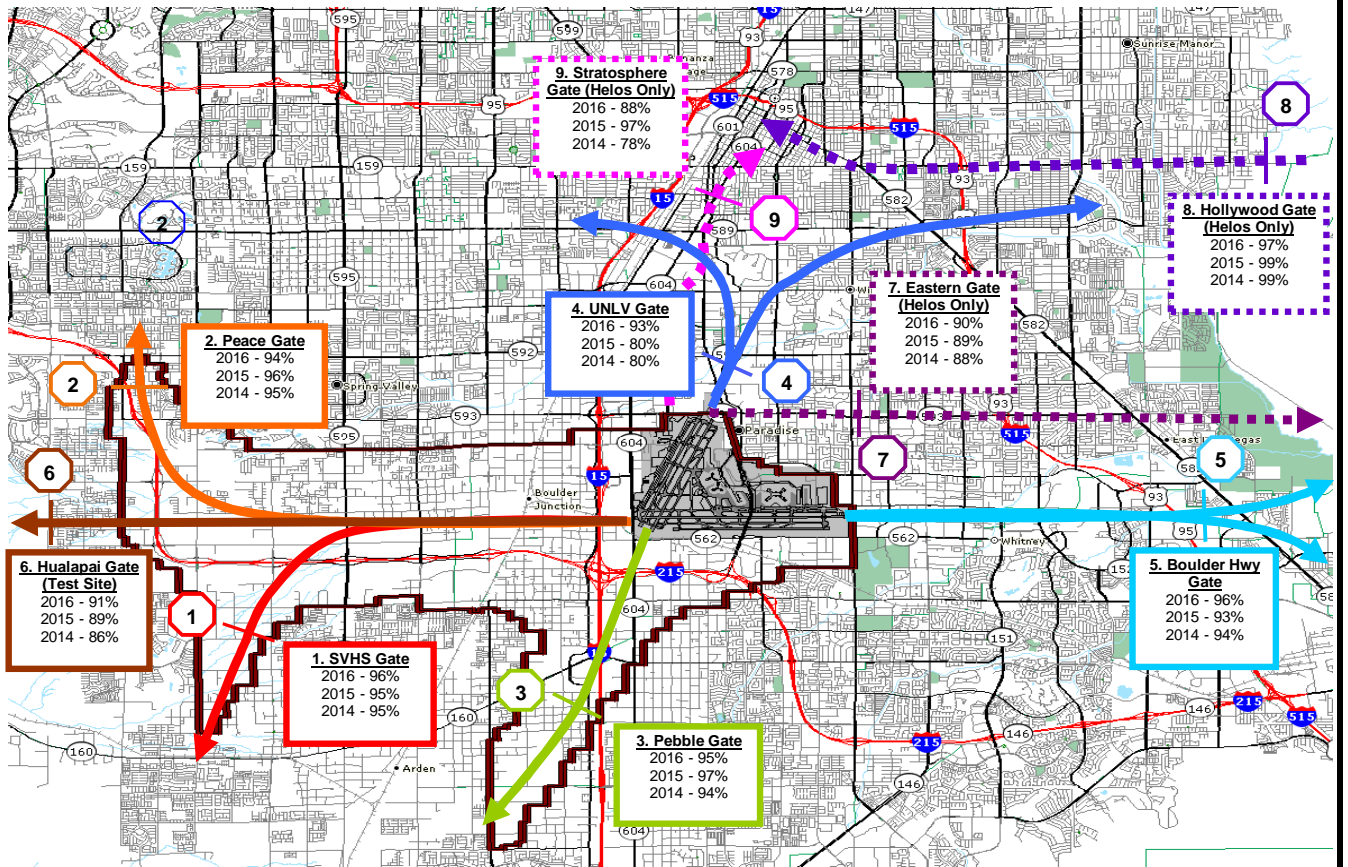


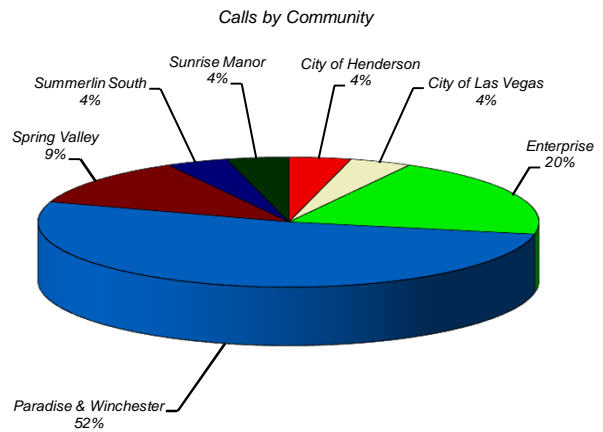
Exhibit 9: "Gate" Compliance for Large Aircraft* & Helicopter Tours - July 2016



* 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* - August 2016

Community	No. of Calls in 2016	No. of Callers in 2016	No. of Calls in 2015	No. of Calls in 2014
City of Boulder City	1	1	1	1
City of Henderson	1	1	2	3
City of Las Vegas	1	1	2	3
City of North Las Vegas				
Enterprise	5	5	2	2
Lone Mountain				
Paradise & Winchester	13	11	43	372
Spring Valley	3	2	5	1
Summerlin South	1	1		
Sunrise Manor	1	1		
Whitney			1	
Location unknown				
Overall Total	25	22	54	379



Difference between 2016 and 2015 Total Calls: -54%

Difference between 2016 and 2014 Total Calls: -93%

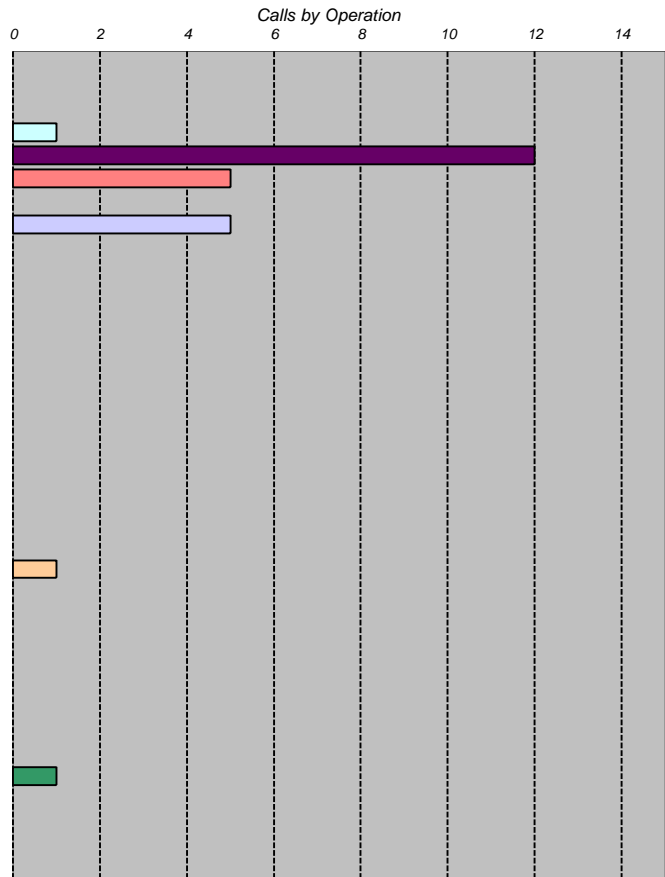
Average Number of Calls per Caller: 1.1

Most calls received from one household: 2

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

Exhibit 2: Noise Complaint Calls by Type of Operation - August 2016

Operation	No. of Calls in 2016	Percent of Overall Total	No. of Calls in 2015	No. of Calls in 2014
LAS 01R/L Arrivals			2	
LAS 07R/L Arrivals				
LAS 19R/L Arrivals				
LAS 25R/L Arrivals	1	4.0%	1	
LAS 01R/L Departures	12	48.0%	5	73
LAS 07R/L Departures	5	20.0%	11	17
LAS 19R/L Departures			30	2
LAS 25R/L Departures	5	20.0%	4	277
LAS Run-ups				
LAS GA				
LAS Other				
LAS Total	23	92.0%	53	369
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	4.0%		
VGT Other				
VGT Total	1	4.0%	0	0
HND 17R/L Arrivals				
HND 35R/L Arrivals				
HND 17R/L Departures				
HND 35R/L Departures				
HND Run-ups				
HND GA	1	4.0%		
HND Other				
HND Total	1	4.0%	0	0
Helicopters**			1	10
Overall Total	25	100%	54	379



** 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 2016

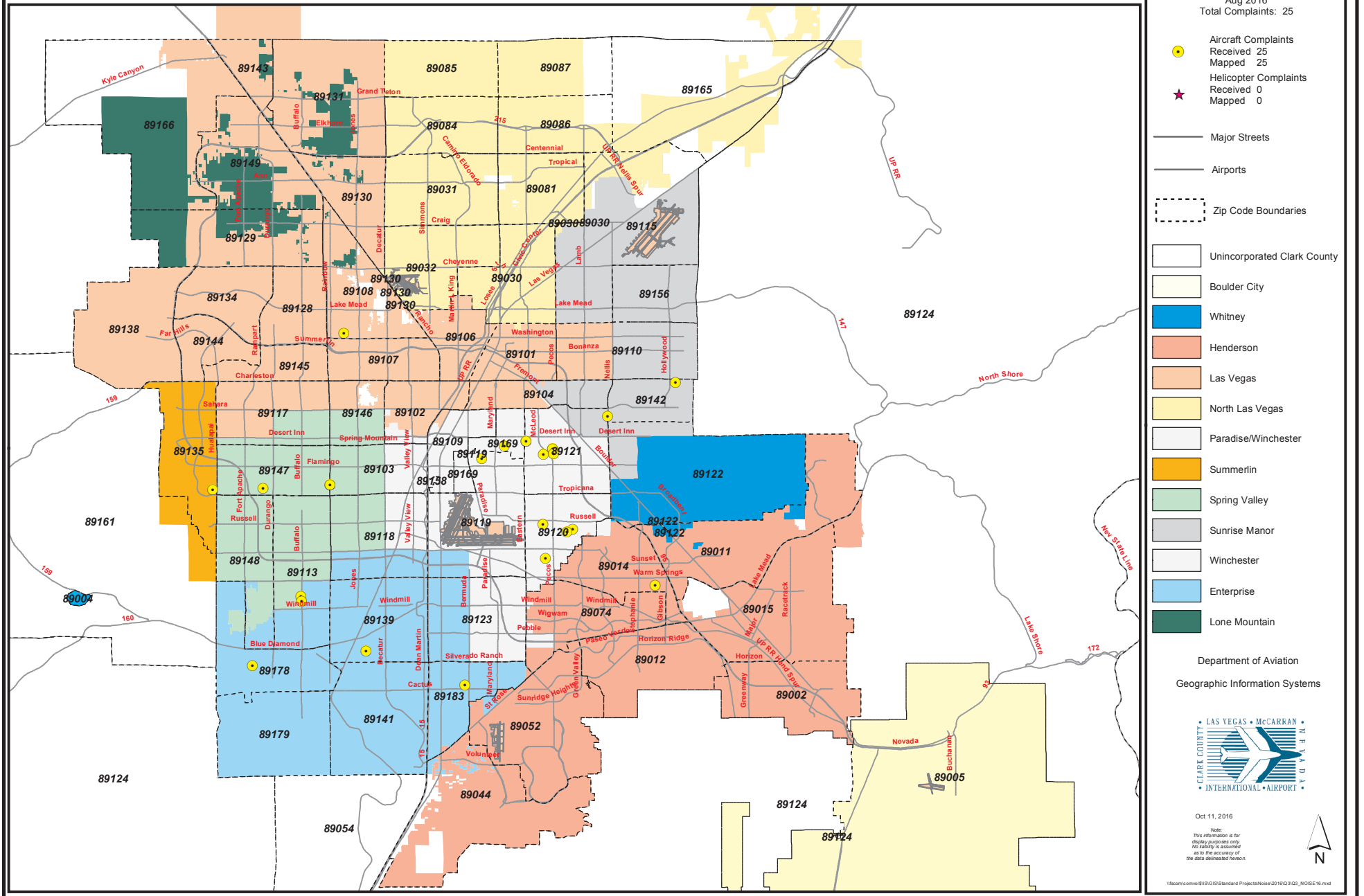
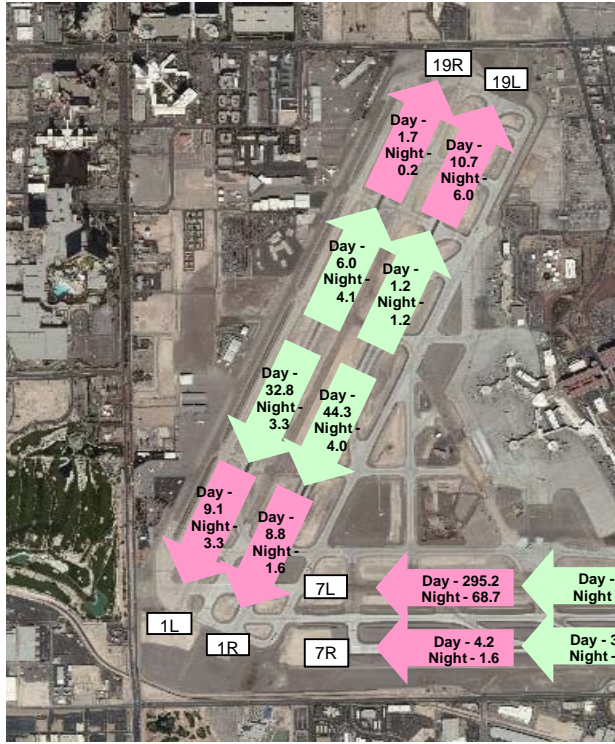


Exhibit 4: LAS Daily Average Operations Runway for Large Air Carrier Aircraft* - August 2016

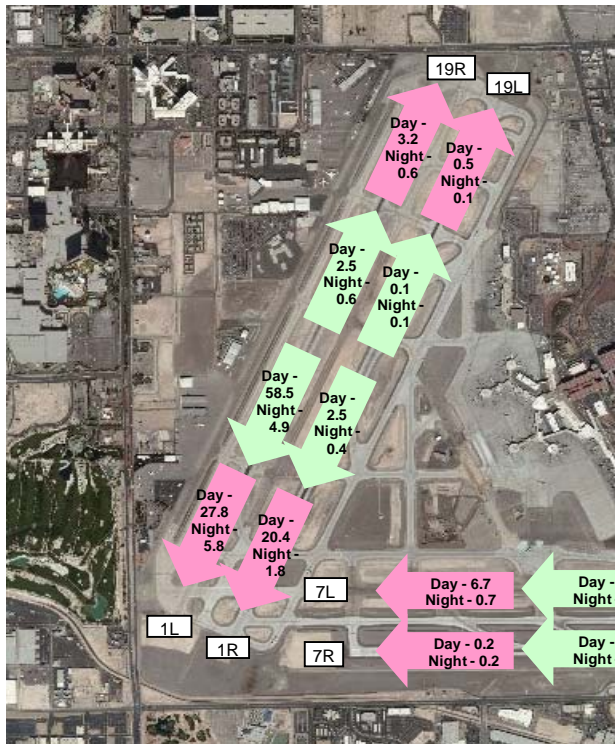


Year	2016		2015		2014	
Daytime Departures	410	83%	N/A	N/A	N/A	N/A
Nighttime Departures	86	17%	N/A	N/A	N/A	N/A
Total Departures	496	100%	N/A	N/A	N/A	N/A
Daytime Arrivals	430	87%	418	85%	416	88%
Nighttime Arrivals	65	13%	72	15%	54	12%
Total Arrivals	495	100%	490	100%	470	100%

Growth	Overall	Daytime	Nighttime
Depts. 2016 vs 2015	N/A	N/A	N/A
Depts. 2016 vs 2014	N/A	N/A	N/A
Arrivals 2016 vs 2015	1%	3%	-10%
Arrivals 2016 vs 2014	5%	4%	19%

* 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 2016

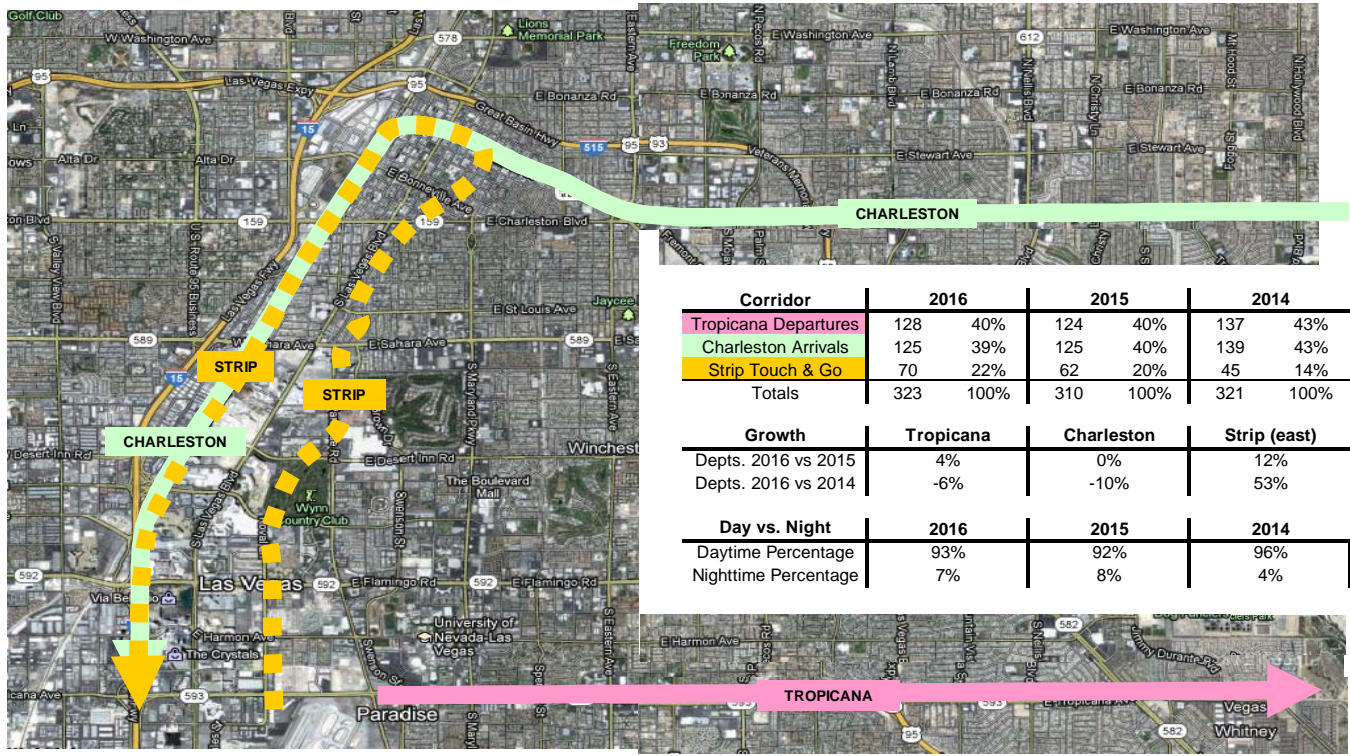


Year	2016		2015		2014	
Daytime Departures	75	89%	N/A	N/A	N/A	N/A
Nighttime Departures	10	11%	N/A	N/A	N/A	N/A
Total Departures	84	100%	N/A	N/A	N/A	N/A
Daytime Arrivals	75	92%	71	91%	80	93%
Nighttime Arrivals	7	8%	7	9%	6	7%
Total Arrivals	81	100%	78	100%	86	100%

Growth	Overall	Daytime	Nighttime
Depts. 2016 vs 2015	N/A	N/A	N/A
Depts. 2016 vs 2014	N/A	N/A	N/A
Arrivals 2016 vs 2015	4%	5%	-4%
Arrivals 2016 vs 2014	-5%	-7%	16%

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

Exhibit 6: LAS Daily Average Operations by Corridor for Helicopter Tours - August 2016

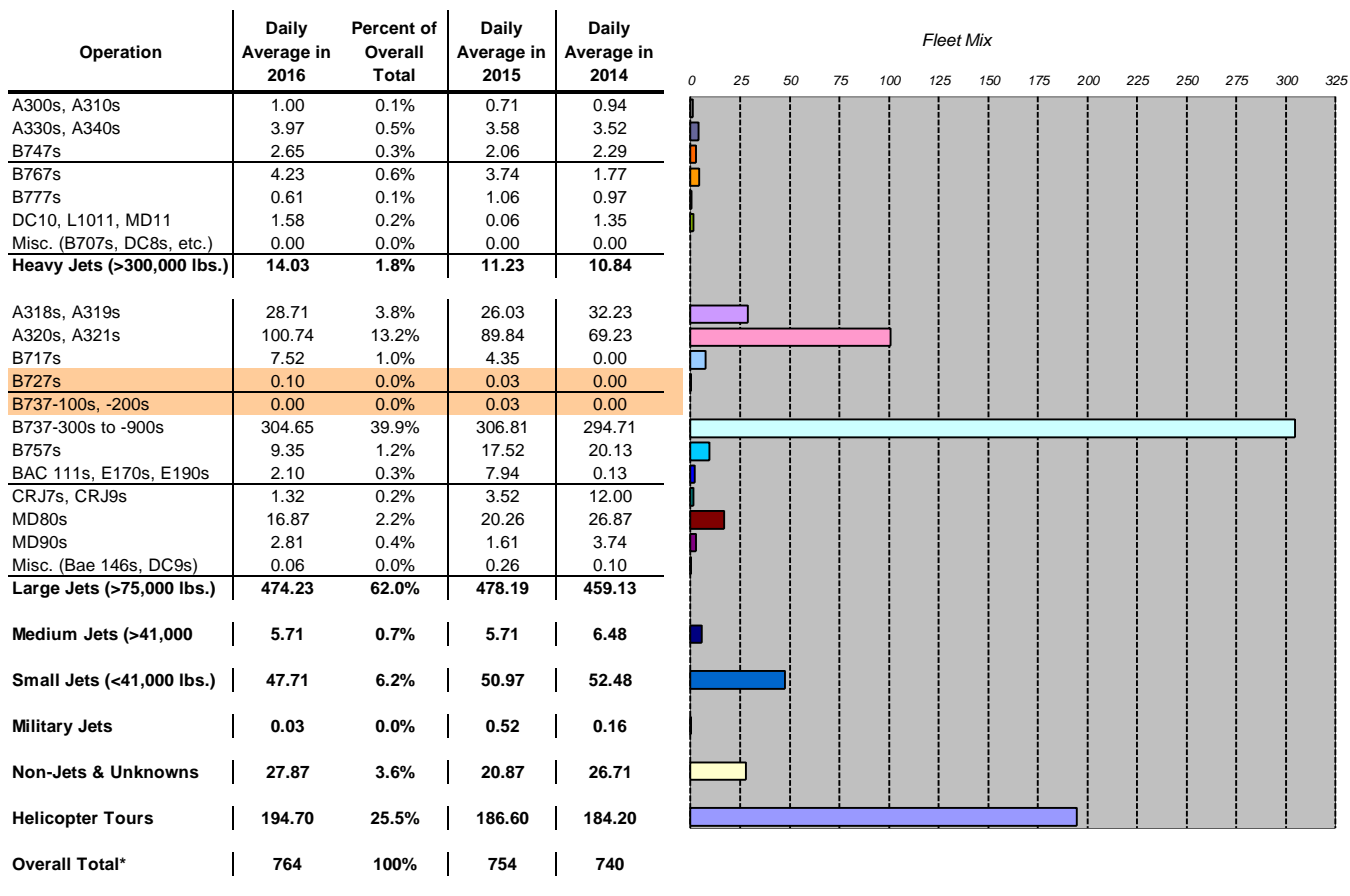


Corridor	2016	2015	2014
Tropicana Departures	128 40%	124 40%	137 43%
Charleston Arrivals	125 39%	125 40%	139 43%
Strip Touch & Go	70 22%	62 20%	45 14%
Totals	323 100%	310 100%	321 100%

Growth	Tropicana	Charleston	Strip (east)
Depts. 2016 vs 2015	4%	0%	12%
Depts. 2016 vs 2014	-6%	-10%	53%

Day vs. Night	2016	2015	2014
Daytime Percentage	93%	92%	96%
Nighttime Percentage	7%	8%	4%

Exhibit 7: LAS Aircraft Arrival Fleet Mix* - August 2016



* Overall Total: Note that operation type and runway use counts are estimated by ITT Exelis AirScene.com Noise and Monitoring Operations (NOMS) 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 2016 to 2014

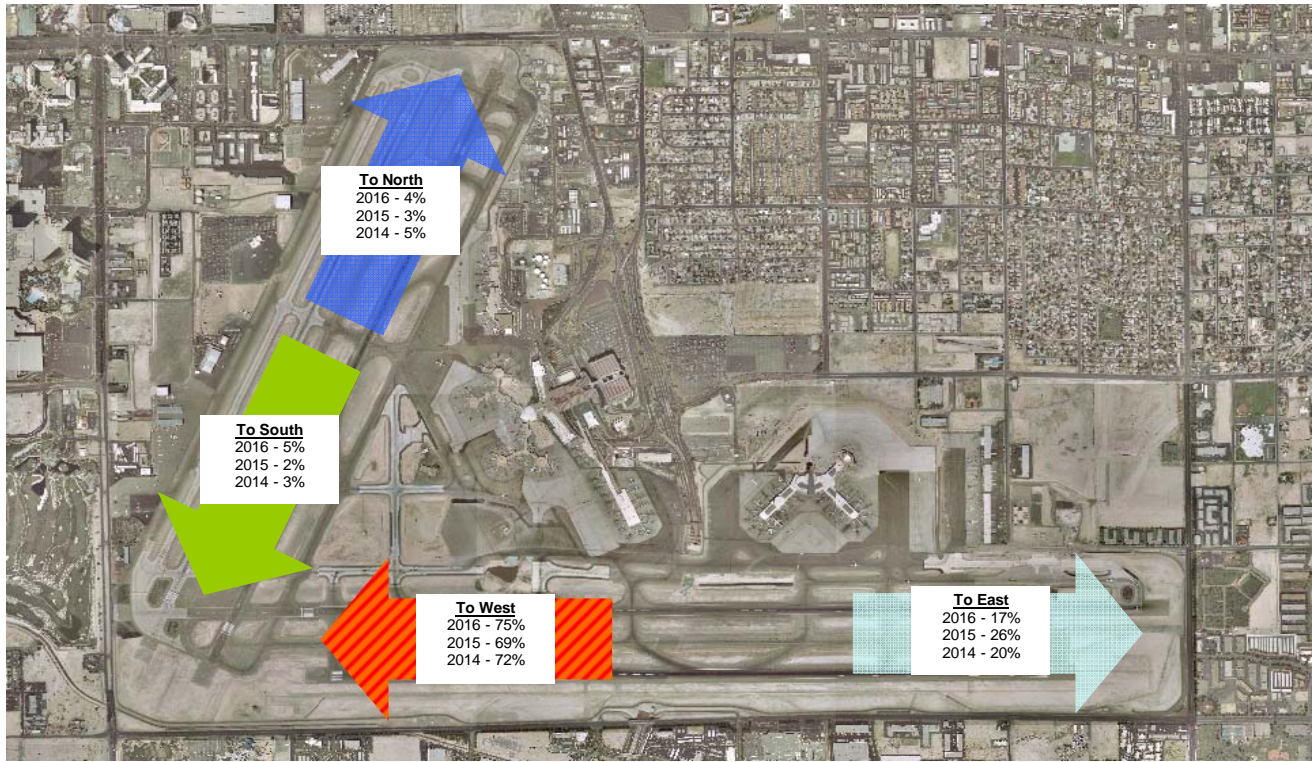
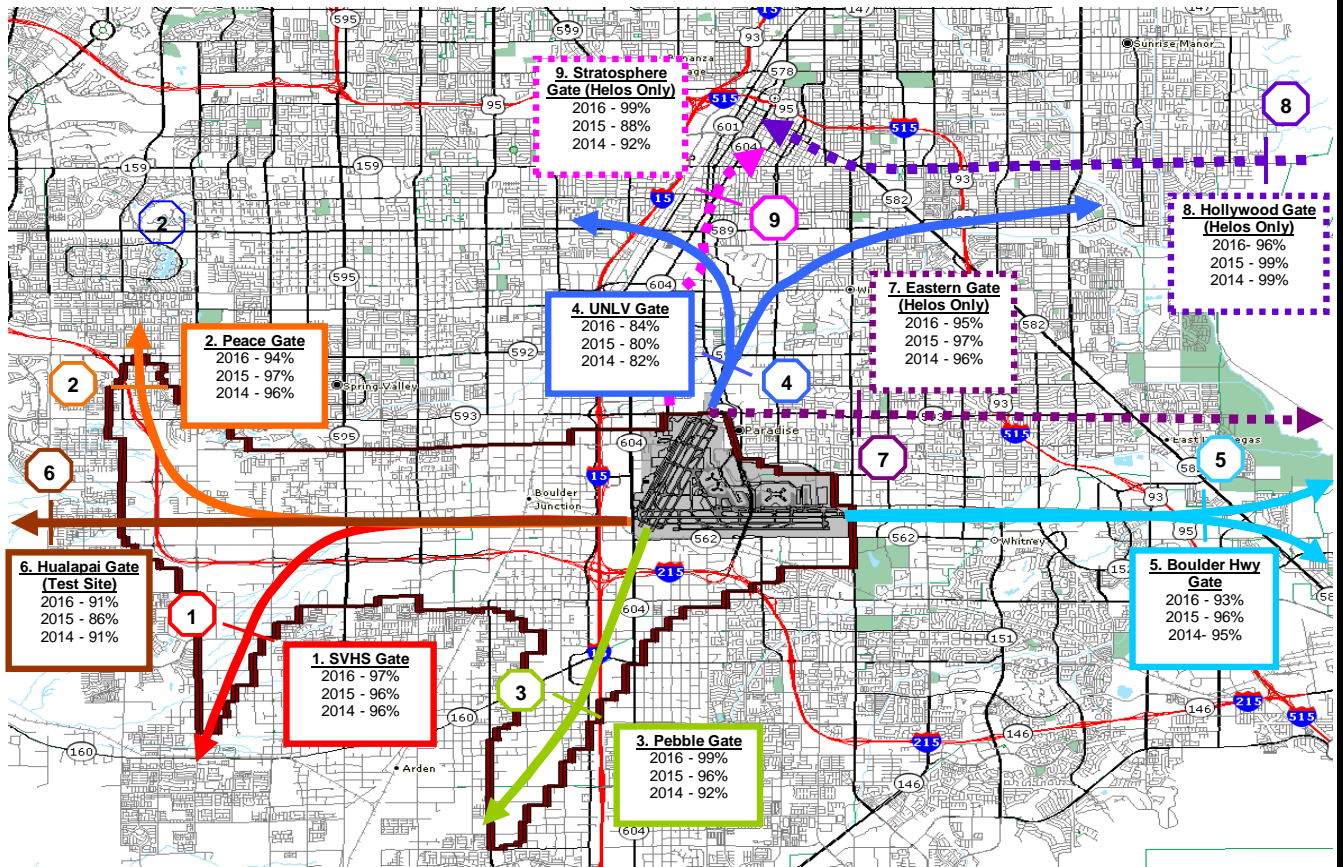


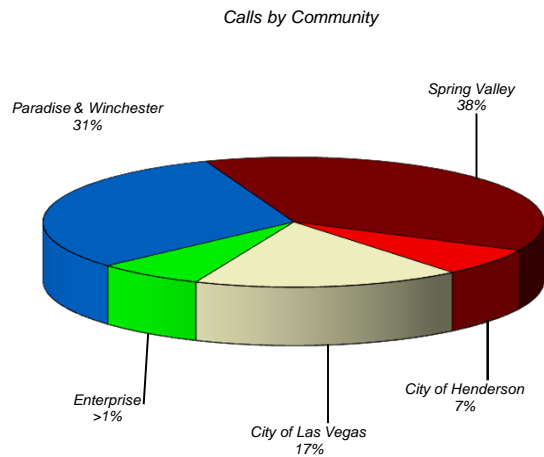
Exhibit 9: "Gate" Compliance for Large Aircraft* & Helicopter Tours - August 2016



* 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 2016

Community	No. of Calls in 2016	No. of Callers in 2016	No. of Calls in 2015	No. of Calls in 2014
City of Boulder City	2	2	10	7
City of Henderson	5	2	5	3
City of Las Vegas				
City of North Las Vegas				
Enterprise	2	2	1	3
Lone Mountain				
Paradise & Winchester	9	7	461	152
Spring Valley	11	4	3	9
Summerlin South				1
Sunrise Manor			1	
Whitney				
Location unknown				
Overall Total	29	17	481	175



Difference between 2016 and 2015 Total Calls: -94%

Difference between 2016 and 2014 Total Calls: -83%

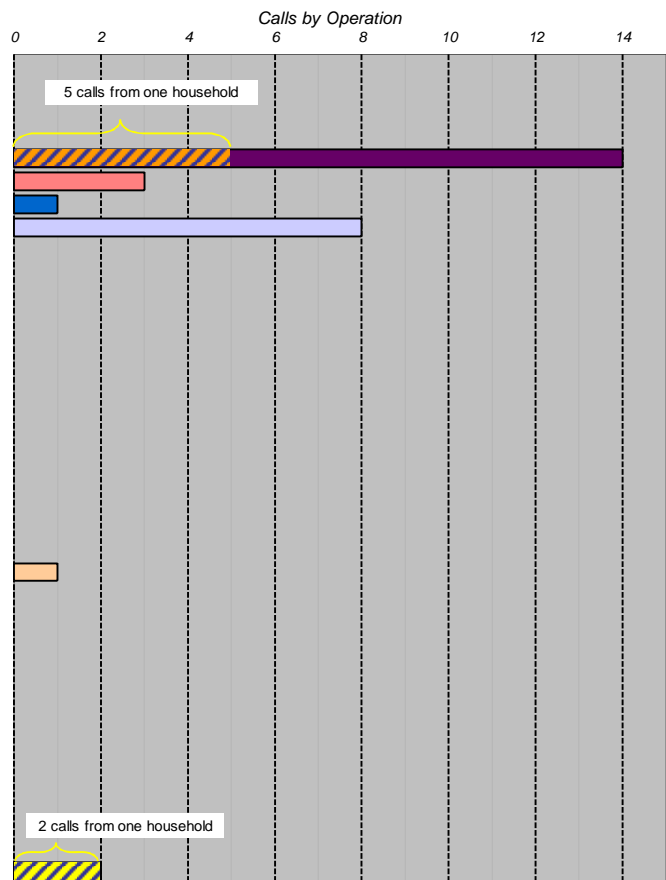
Average Number of Calls per Caller: 1.7

Most calls received from one household: 7

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

Exhibit 2: Noise Complaint Calls by Type of Operation - September 2016

Operation	No. of Calls in 2016	Percent of Overall Total	No. of Calls in 2015	No. of Calls in 2014
LAS 01R/L Arrivals				
LAS 07R/L Arrivals			3	
LAS 19R/L Arrivals			4	
LAS 25R/L Arrivals				
LAS 01R/L Departures	14	48.3%	1	11
LAS 07R/L Departures	3	10.3%	10	9
LAS 19R/L Departures	1	3.4%	445	3
LAS 25R/L Departures	8	27.6%	4	145
LAS Run-ups				
LAS GA				
LAS Other				
LAS Total	26	89.7%	467	168
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	3.4%	1	
VGT Other				
VGT Total	1	3.4%	1	0
HND 17R/L Arrivals				
HND 35R/L Arrivals				
HND 17R/L Departures				
HND 35R/L Departures				
HND Run-ups				
HND GA			6	3
HND Other				
HND Total	0	0.0%	6	3
Helicopters**	2	6.9%	7	4
Overall Total	29	100%	481	175



** 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 2016

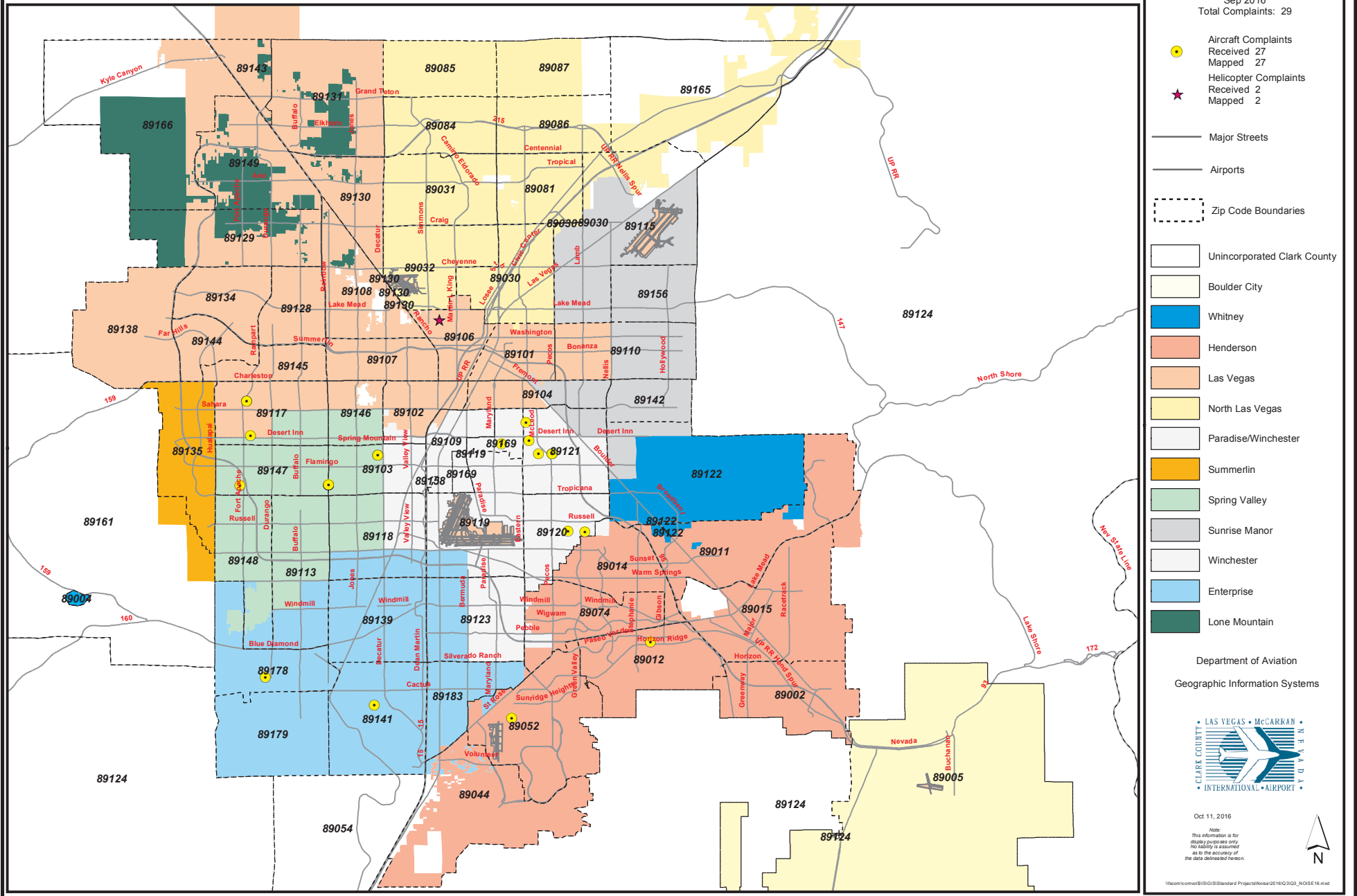
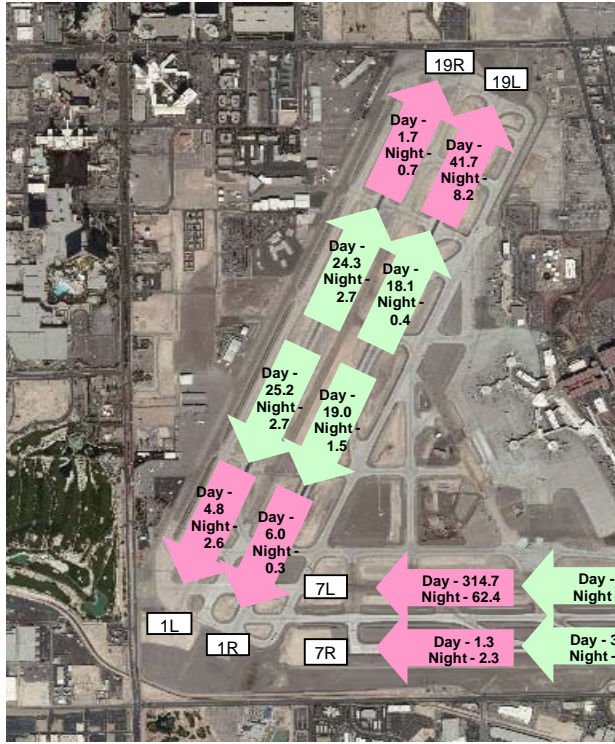


Exhibit 4: LAS Daily Average Operations Runway for Large Air Carrier Aircraft* - September 2016

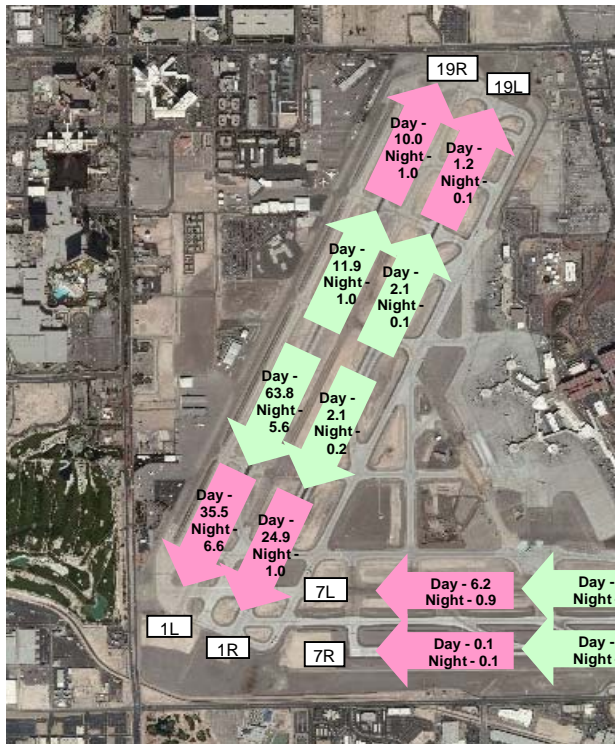


Year	2016		2015		2014	
Daytime Departures	427	85%	N/A	#VALUE!	N/A	#VALUE!
Nighttime Departures	77	15%	N/A	#VALUE!	N/A	#VALUE!
Total Departures	504	100%	N/A	N/A	N/A	N/A
Daytime Arrivals	446	89%	426	89%	425	90%
Nighttime Arrivals	54	11%	54	11%	46	10%
Total Arrivals	500	100%	481	100%	471	100%

Growth	Overall	Daytime	Nighttime
Depts. 2016 vs 2015	N/A	N/A	N/A
Depts. 2016 vs 2014	N/A	N/A	N/A
Arrivals 2016 vs 2015	4%	5%	-1%
Arrivals 2016 vs 2014	6%	5%	16%

* Aircraft types: All aircraft with a maximum gross take off 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 2016

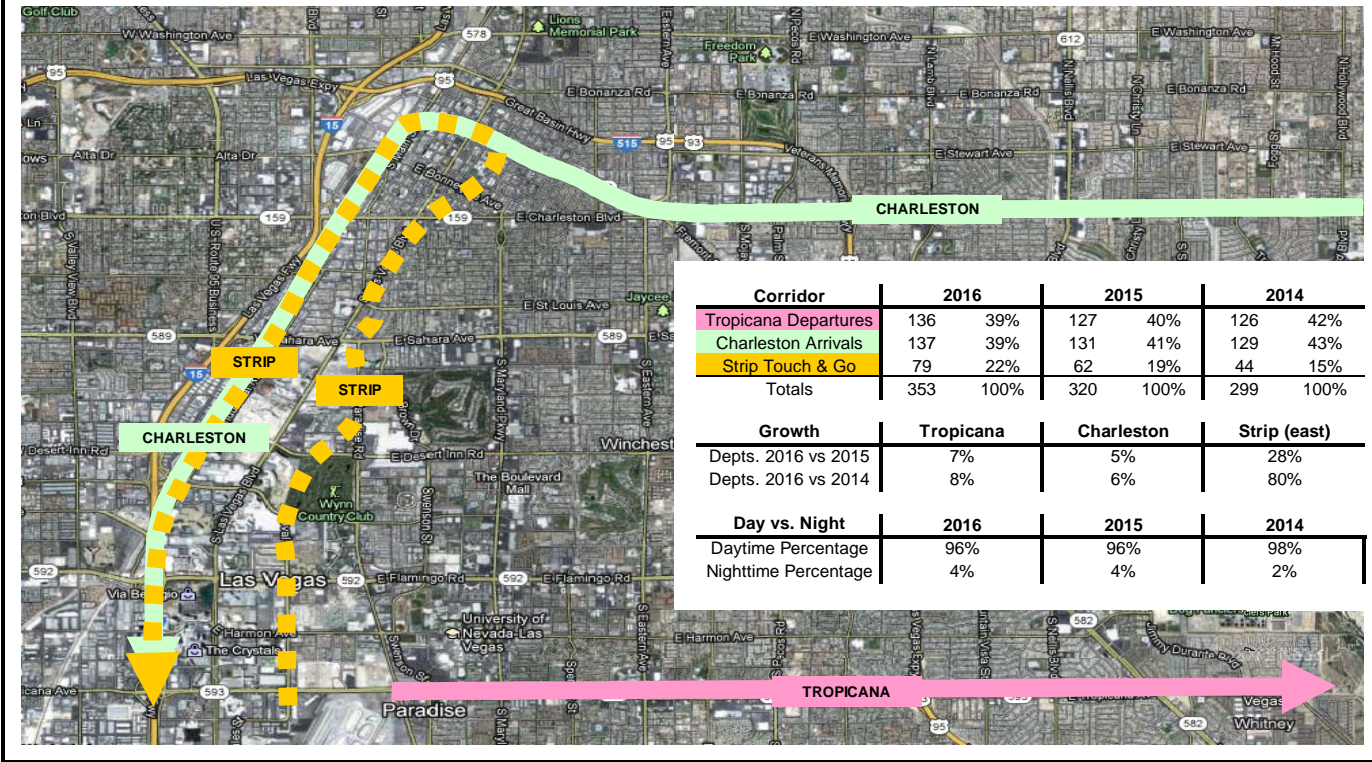


Year	2016		2015		2014	
Daytime Departures	90	90%	N/A	N/A	N/A	N/A
Nighttime Departures	10	10%	N/A	N/A	N/A	N/A
Total Departures	99	100%	N/A	N/A	N/A	N/A
Daytime Arrivals	92	93%	82	92%	82	92%
Nighttime Arrivals	7	7%	7	8%	7	8%
Total Arrivals	100	100%	89	100%	89	100%

Growth	Overall	Daytime	Nighttime
Depts. 2016 vs 2015	N/A	N/A	N/A
Depts. 2016 vs 2014	N/A	N/A	N/A
Arrivals 2016 vs 2015	12%	13%	1%
Arrivals 2016 vs 2014	12%	12%	10%

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

Exhibit 6: LAS Daily Average Operations by Corridor for Helicopter Tours - September 2016



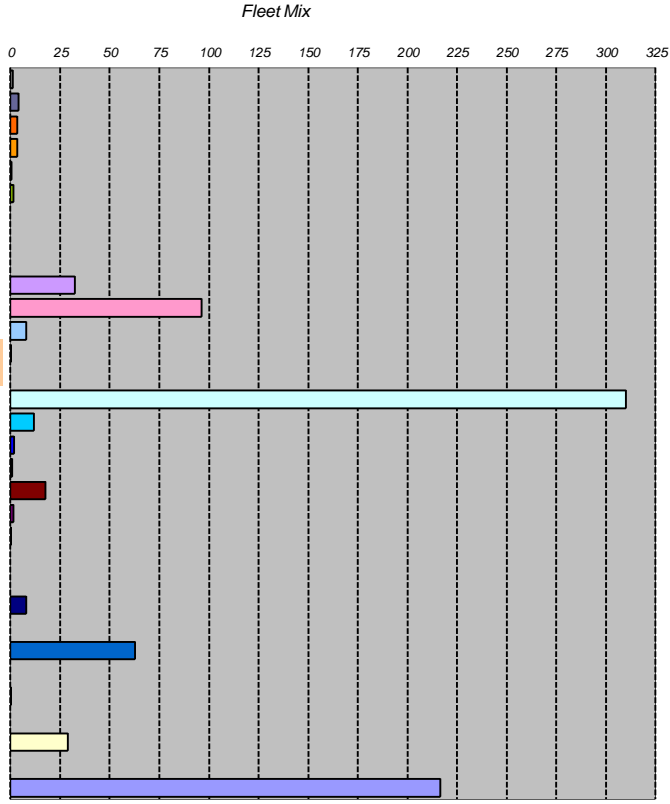
Corridor	2016	2015	2014
Tropicana Departures	136 39%	127 40%	126 42%
Charleston Arrivals	137 39%	131 41%	129 43%
Strip Touch & Go	79 22%	62 19%	44 15%
Totals	353 100%	320 100%	299 100%

Growth	Tropicana	Charleston	Strip (east)
Depts. 2016 vs 2015	7%	5%	28%
Depts. 2016 vs 2014	8%	6%	80%

Day vs. Night	2016	2015	2014
Daytime Percentage	96%	96%	98%
Nighttime Percentage	4%	4%	2%

Exhibit 7: LAS Aircraft Arrival Fleet Mix* - September 2016

Operation	Daily Average in 2016	Percent of Overall	Daily Average in 2015	Daily Average in 2014
A300s, A310s	1.17	0.1%	0.83	0.87
A330s, A340s	4.07	0.5%	3.67	3.20
B747s	3.33	0.4%	2.67	2.33
B767s	3.37	0.4%	4.53	3.57
B777s	0.60	0.1%	1.27	0.87
DC10, L1011, MD11	1.50	0.2%	0.00	1.37
Misc. (B707s, DC8s, etc.)	0.00	0.0%	0.00	0.00
Heavy Jets (>300,000 lbs.)	14.03	1.7%	12.97	12.20
A318s, A319s	32.37	4.0%	26.60	26.87
A320s, A321s	96.13	11.9%	83.77	68.80
B717s	7.80	1.0%	5.43	0.00
B727s	0.03	0.0%	0.07	0.03
B737-100s, -200s	0.00	0.0%	0.00	0.03
B737-300s to -900s	309.93	38.2%	303.17	307.10
B757s	11.70	1.4%	19.70	22.03
BAC 111s, E170s, E190s	1.77	0.2%	5.77	0.37
CRJ7s, CRJ9s	1.00	0.1%	3.33	11.70
MD80s	17.47	2.2%	17.73	19.73
MD90s	1.63	0.2%	1.97	1.77
Misc. (Bae 146s, DC9s)	0.37	0.0%	0.13	0.30
Large Jets (>75,000 lbs.)	480.20	59.3%	467.67	458.73
Medium Jets (>41,000)	7.87	1.0%	5.77	7.37
Small Jets (<41,000 lbs.)	62.77	7.7%	58.30	56.90
Military Jets	0.07	0.0%	0.27	0.20
Non-Jets & Unknowns	29.00	3.6%	24.73	24.33
Helicopter Tours	216.40	26.7%	192.80	173.03
Overall Total*	810	100%	763	733



* Overall Total: Note that operation type and runway use counts are estimated by ITT Exelis AirScene.com Noise and Monitoring Operations (NOMS) 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 2016 to 2014

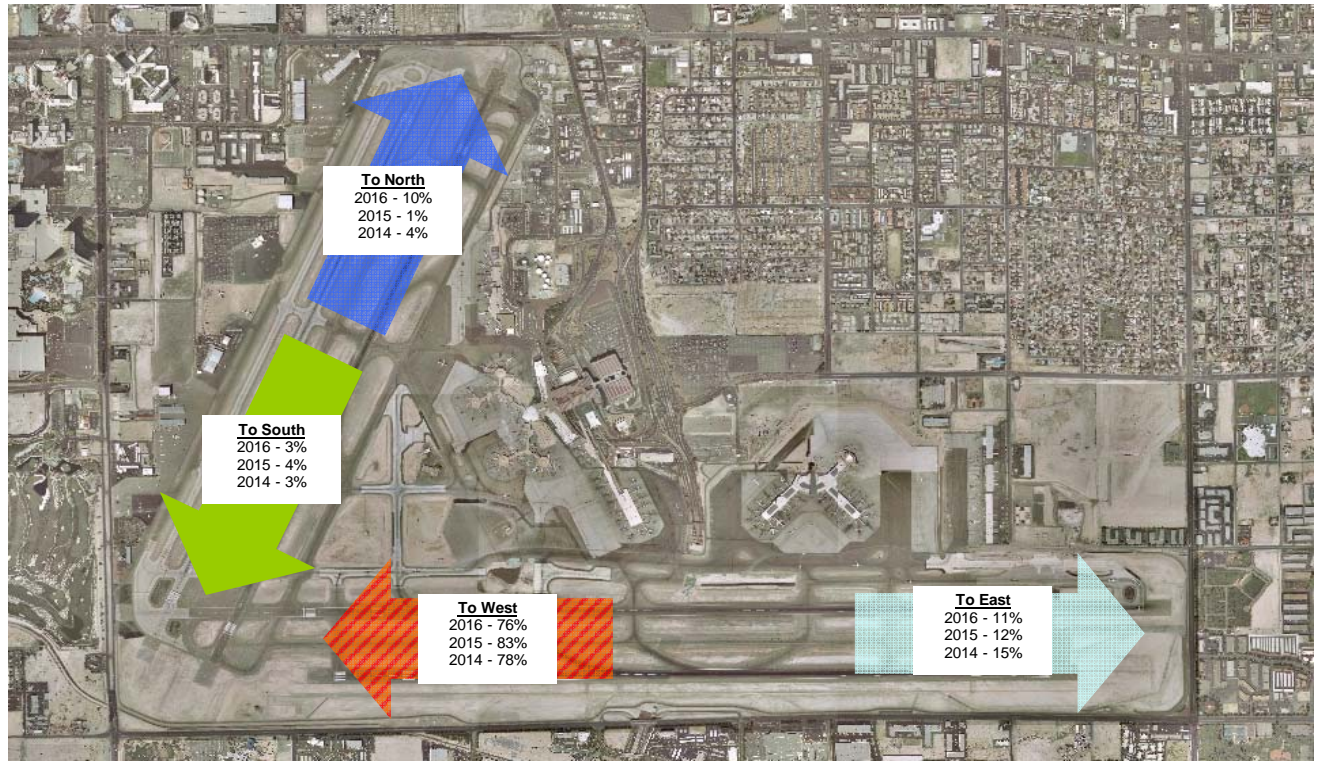
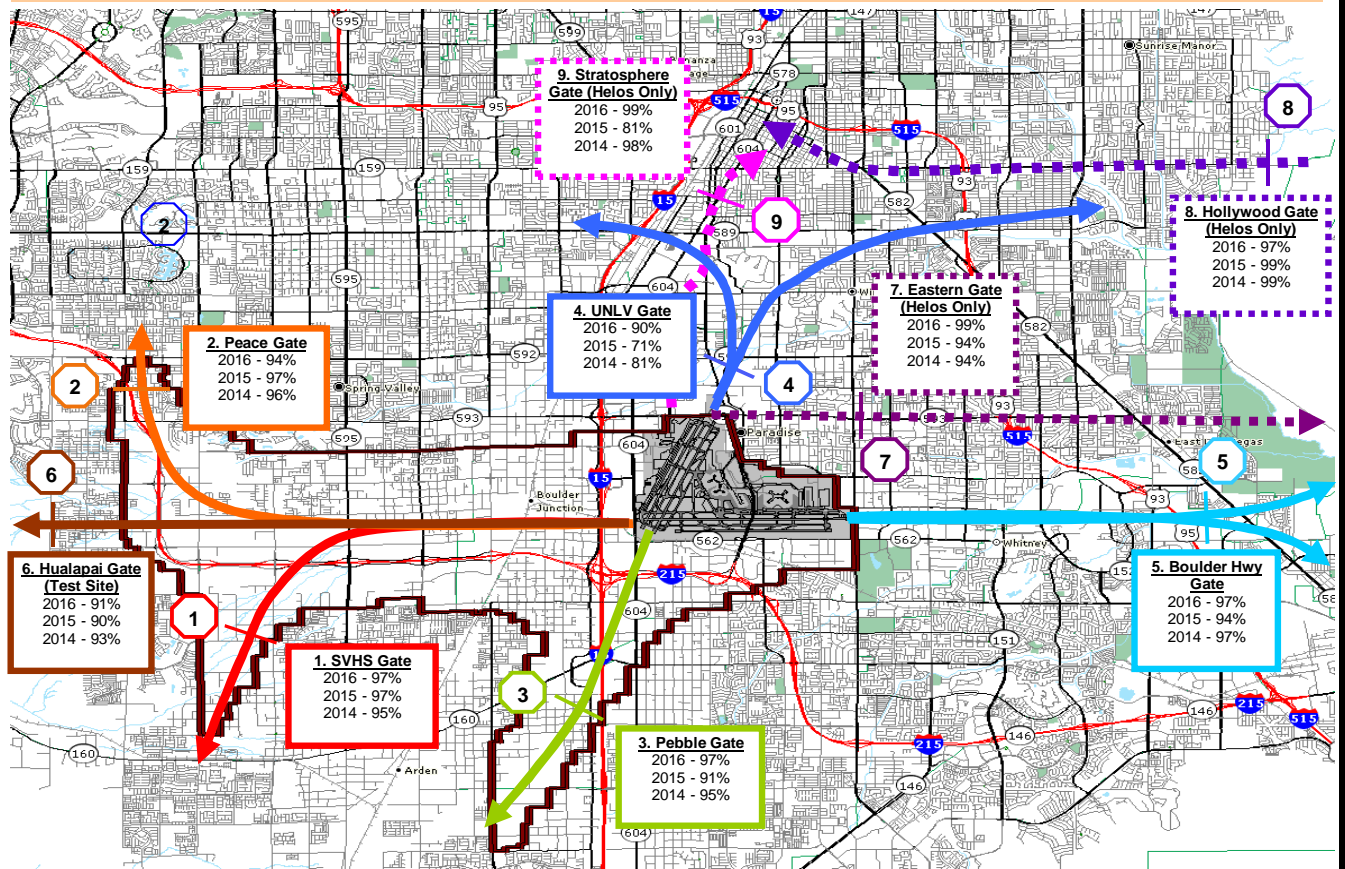


Exhibit 9: "Gate" Compliance for Large Aircraft* & Helicopter Tours - September 2016



* 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.