

# Appendix L

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## Review of Airport Operations Impact Report



WESTCONNEX ENABLING WORKS  
AIRPORT EAST  
REVIEW OF AIRPORT OPERATIONS IMPACT

**REPORT NO. 14260**  
**VERSION A**

AUGUST 2014

**PREPARED FOR**

ROADS AND MARITIME SERVICES  
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## DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
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### **APPENDIX A MOVEMENT AND RESPITE CHARTS**

## **1 INTRODUCTION**

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NSW Roads and Maritime Services (Roads and Maritime) is planning to upgrade roads east of Sydney Kingsford Smith Airport and remove the General Holmes Drive rail level crossing. This would remove an operational slow point in the rail freight network and improve traffic flow and access to the airport, Port Botany and in the future, the West Connex Motorway.

As a result of the associated construction works, Sydney Airport will have to modify flights on the East West runway for two short periods. Wilkinson Murray has been engaged to conduct an assessment of likely resulting operational changes associated with the Airport due these proposed construction works.

The purpose of the assessment is to provide quantitative guidance regarding the magnitude of the change to airport operations, and whether this would constitute a “significant impact” in the context of the Environment Protection and Biodiversity Conservation (EPBC) Act 1999.

## 2 PROJECT DESCRIPTION

Figure 2.1 shows the location of proposed road works to the east the Sydney Airport.

**Figure 2.1 Project Map extracted from RMS Community Update WestConnex Enabling Works – Airport East Precinct**



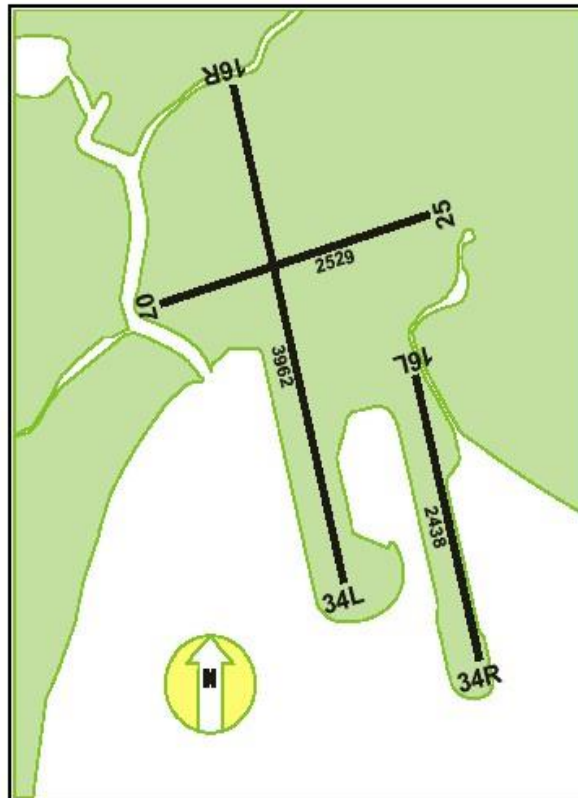
The key features and benefits of the proposal are to:

- Replace the General Holmes Drive rail level crossing with a road underpass that links General Holmes Drive, Botany Road and Wentworth Avenue. This would improve the movement of rail freight and improve access to the airport, Mascot and the eastern suburbs
- Improve the Mill Pond Road intersections with General Holmes Drive and Botany Road to support future growth and access to the airport
- Widen Joyce Drive and General Holmes Drive between O’Riordan Street and Mill Pond Road to three lanes in each direction. This would improve traffic flow around the airport and to Port Botany.

As a result of the above works, a number of piling rigs will be located at the eastern end of Wentworth Avenue for 2 periods of one to two weeks. Indicatively the first closure is planned for the early March 2016 and the second in late October 2016.

For the period of the short closures, aircraft operations on the east west runway would not occur with the exception of departures on Runway 25 i.e. takeoffs the west.

**Figure 2-2 Sydney Kingsford Smith Runway Configuration**



### 3 RELEVANT CRITERIA

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The legislative framework established for environmental management of Sydney Airport incorporates:

- Airports Act 1996, Part 5 and Part 6,
- Airports (Environment Protection) Regulations 1997, and
- Environment Protection and Biodiversity Conservation (EPBC) Act 1999.

As the proposed construction works are not permanent fixture, and are proposed for two short periods, the most relevant assessment guidance would be the Environment Protection and Biodiversity Conservation (EPBC) Act 1999, which is the predominant Commonwealth statute for the protection of the environment and biodiversity.

The works may ultimately require either referral to, or assessment and approval by, the Minister for the Environment and Heritage if the action has, or is likely to have, a significant impact on the environment of Commonwealth land (such as Sydney Airport).

The term 'significant' can be interpreted in many ways. To assist in this process, guidance is sought from the EPBC Act Policy Statement 1.2, Significant Impact Guidelines Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies, May 2006. Under the EPBC Act, approval is required for: "An action taken by any person on Commonwealth land that is likely to have a significant impact on the environment (subsection 26(1) of the EPBC Act)"  
What is a significant impact?

*A 'significant impact' is an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts. You should consider all of these factors when determining whether an action is likely to have a significant impact on the environment.*

When is a significant impact likely?

*To be 'likely', it is not necessary for a significant impact to have a greater than 50% chance of happening; it is sufficient if a significant impact on the environment is a real or not remote chance or possibility.*

*If there is scientific uncertainty about the impacts of your action and potential impacts are serious or irreversible, the precautionary principle is applicable. Accordingly, a lack of scientific certainty about the potential impacts of an action will not itself justify a decision that the action is not likely to have a significant impact on the environment.*



## 4 DETAILS OF REVIEW PROCEDURES

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A previous assessment of operational changes resulting from east west runway closure as a result of safety works at the western end of the runway were conducted by Wilkinson Murray in 2008 titled *Sydney Airport Temporary Alteration to Operations – Aircraft Noise Impacts Report No 08033-M0 Version C* dated February 2008. The closure of the runway occurred for a period of several months, and a detailed assessment of change in noise and operations at the airport and areas surrounding Sydney Airport was conducted.

The currently proposed period of closure is in the order of weeks rather than months, and the procedures required to ascertain and describe the impacts of this proposal are considered to be somewhat different.

The process adopted for this review consisted of the following steps.

- Sydney Airport Operations for the months of March and October in 2012 and 2013 were obtained from AirServices.
- Operations in each year were analysed after reallocating all 07 and 25 arrivals and 07 departures to either runways 34L and 34R, or 16L and 16R, based on a review of operations occurring close in time to the relocated operations.
- In the case where no operations on north south runways occurred close to the reallocated operations, which was infrequent, meteorological data was used to determine allocation to runway directions.
- Allocation to one or the other of the parallel runways was based on rules contained in the Department of Infrastructure Transparent Noise Information Package (TNIP).

Following the processing of the information, both the actual operational data and the modified operational data were processed in the TNIP Expert packed to produce the following information

1. Jet Flight Path Movements Comparison Chart
2. Jet Respite Comparison Chart.
3. Operational changes by runway.

## 5 RESULTS

### 5.1 Overflights By Runway

Tables 5-1 and 5-2 show the fundamental results of the assessment for the months of March and October. The table shows the change in movement numbers that would occur due to the above proposed alterations, on an average day during these months.

**Table 5-1 Mean Jet Movements per Day by Runway in March (Average over Two Years) – Existing Scenario and Changed Operations**

Operation	Scenario	Runway					
		07	16L	16R	25	34L	34R
Arrival	Current	5.9	43.3	76.6	7.5	134.7	53.0
	Changed Operations	-	46.5	85.4	-	136.1	53.2
Departure	Current	1.0	46.6	94.5	2.2	71.1	105.2
	Changed Operations	-	46.6	94.7	2.2	72.0	105.2

For March operations, from Table 5-1, the arrivals on runways 07 and 25 are redistributed generally to runways 16L (approx. 25%), and 16R (approx. 75%), with an increase of 3 - 9 movements per day on each of those runways. A much smaller increase is predicted on runways 34L and 34R. The number of departures on runway 07 is so small that the impact of redistributing these operations to other runways is negligible. The highest percentage change in number of operations is for runway 16R, which would experience a 5% increase in the number of arrivals. Runways 16L and 34L would experience increases of 4% and 1% respectively.

**Table 5-2 Mean Jet Movements per Day by Runway in October (Average over Two Years) – Existing Scenario and Changed Operations**

Operation	Scenario	Runway					
		07	16L	16R	25	34L	34R
Arrival	Current	10.7	47.3	84.7	10.2	125.1	52.9
	Changed Operations	0.0	50.9	95.8	0.0	130.5	53.7
Departure	Current	1.9	48.8	107.9	6.9	67.0	98.0
	Changed Operations	0.0	48.8	108.5	6.9	68.1	98.1

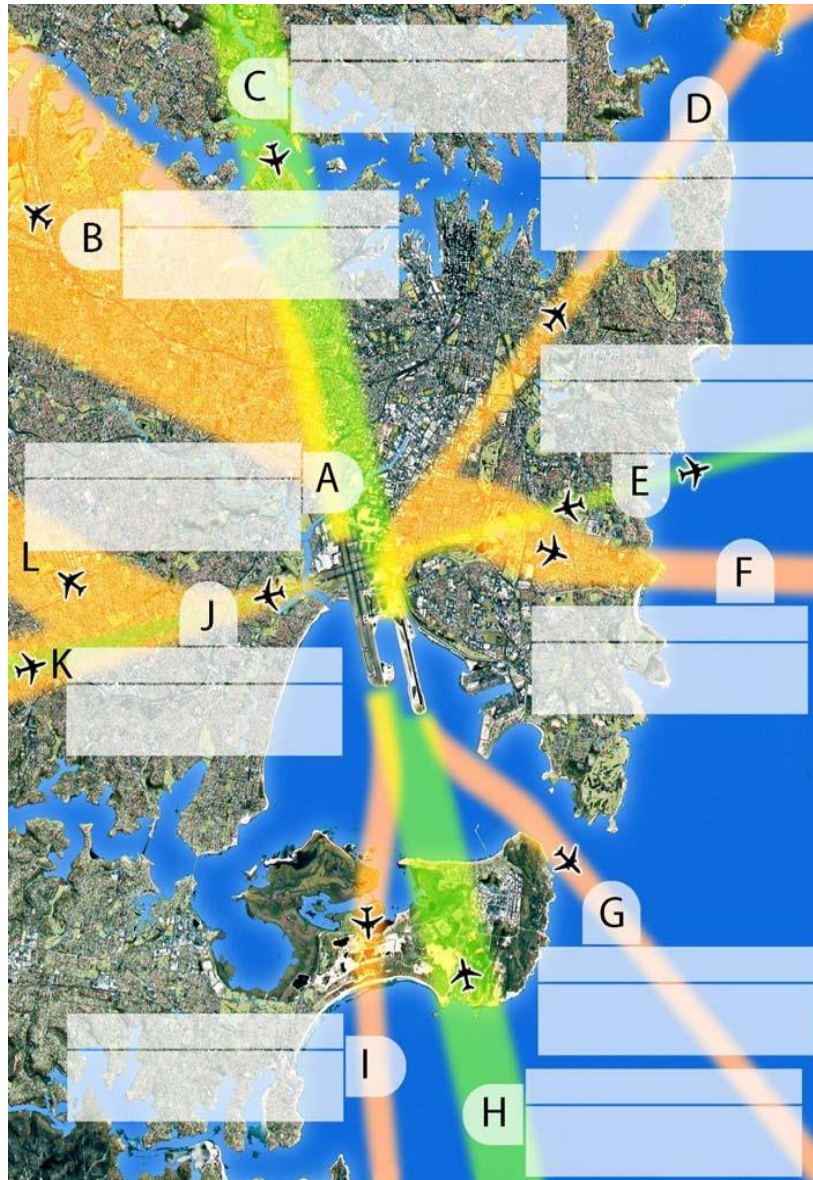
For October operations, from Table 5-2, the arrivals on runways 07 and 25 are redistributed generally to runways 16L (approx. 25%), 16R (approx. 50%) and 34L (approx.25%), with an increase of 4, 11 and 5 movements per day respectively on each of those runways. A much smaller increase is predicted on runway 34R. Again, the number of departures on runway 07 is so small that the impact of redistributing these operations to other runways is negligible. The

highest percentage change in number of operations is for runway 16R, which would experience a 6% increase in the number of movements. Runways 16L and 34L would experience increases of 4% and 3% respectively.

## 5.2 Respite and Operations

Fight zones are shown in Figure 5.1.

**Figure 5.1 Flight Zones at Sydney Airport**



Tables 5-3 and 5-4 present the results of the analysis in report format.

**Table 5-3 Mean Jet Movements per Day and Respite in March (Average over Two Years) – Existing Scenario and Changed Operations**

Zone	Existing		Changed Operations	
	Mean Operations Per Day	Respite Existing	Mean Operations Per Day	Respite
A	192	2%	204	0%
B	71	40%	72	40%
C	120	59%	132	57%
D	48	47%	48	47%
E	9	95%	0	100%
F	58	46%	58	46%
G	47	56%	47	56%
H	188	40%	190	40%
I	95	56%	95	56%
J	8	93%	2	98%
K	2	100%	2	100%

It is noted that in **March** the greatest reduction in respite will occur in areas A and C being the north of the airport where a reduction of 2 percentage points is predicted. In areas to the east and west of the airport (Areas L, K and E) an increase in respite is of course predicted. In all other areas no change in respite is predicted.

**Table 5-4 Mean Jet Movements per Day and Respite in October (Average over Two Years) – Existing Scenario and Changed Operations**

Zone	Existing		Changed Operations	
	Mean Operations Per Day	Respite Existing	Mean Operations Per Day	Respite
A	200	2%	216	0%
B	67	44%	68	44%
C	133	56%	147	53%
D	45	52%	45	52%
E	12	92%	0	100%
F	53	51%	53	51%
G	49	50%	49	50%
H	179	45%	185	43%
I	108	52%	109	52%
J	18	90%	7	96%
K	7	100%	7	100%

It is noted that in **October** the greatest reduction in respite will occur in area C, A and H being the north and south of the airport where reductions of 3, 2 and 2 percentage points are predicted respectively. In areas to the east and west of the airport (Areas L, K and E) an increase of 6 to 8 percentage points is predicted. In all other areas no change in respite is predicted.

Therefore based on a review of the above data it is noted that the partial closure of the east west runway is likely to result in a marginal increase in areas to the north and south of the airport for two short periods of time.

Figures of Aircraft movement comparisons and Operations are presented in Appendix A

## 6 CONCLUSION

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The proposed temporary road alterations to Wentworth Avenue will result in a change to operating procedures at Sydney Airport, as described in the body of this report.

The most significant change would be a reduction in movements to the east and west of the airport. The greatest increase in operations on either of the parallel runways is predicted to be between 5% and 6% for the proposed construction periods of March and October respectively.

Calculation of period of respite illustrate that a small reduction in periods of respite to the north and South of the airport are indicated.

Therefore based on a review of the above data it is noted that the partial closure of the east west runway is likely to result in a marginal increase in noise exposure, and reduction in respite, in areas to the north and south of the airport for two short periods of time.

The Environment Protection and Biodiversity Conservation (EPBC) Act 1999 indicates that an action undertaken on Commonwealth land may require assessment and approval by the Minister for the Environment and Heritage if the action has, or is likely to have, a "significant" effect on the environment. The EPBC Act Policy Statement 1.2, "Significant Impact Guidelines - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies", May 2006, provides guidance on the meaning of a "significant" effect under the EPBC Act. This Policy Statement indicates that a "significant impact" is "an impact which is important, notable or of consequence, having regard to its context or intensity".

Of the negative changes to aircraft noise exposure considered above (this is, those involving an increase in operations), the most noticeable would an approximately 3% increase in movements in October flight zone A, to the north of the airport. This change would be unlikely to be perceived by most people in the area, particularly given the short periods of the present proposal and the fact that there would already be some periods of several weeks during which the predicted number and pattern of operations would occur due to meteorological conditions.

Noise impacts that are not "noticeable" would generally not be considered "notable", since the major impacts of daytime environmental noise are annoyance and disturbance to activities. Sleep disturbance impacts are less important at Sydney Airport due to the presence of a curfew. Similarly, noise impacts that are unlikely to be noticed would not generally be considered as "important". Hence, from the point of view of noise impact assessment the impact of the proposed project on operational aircraft noise would appear not to be significant.



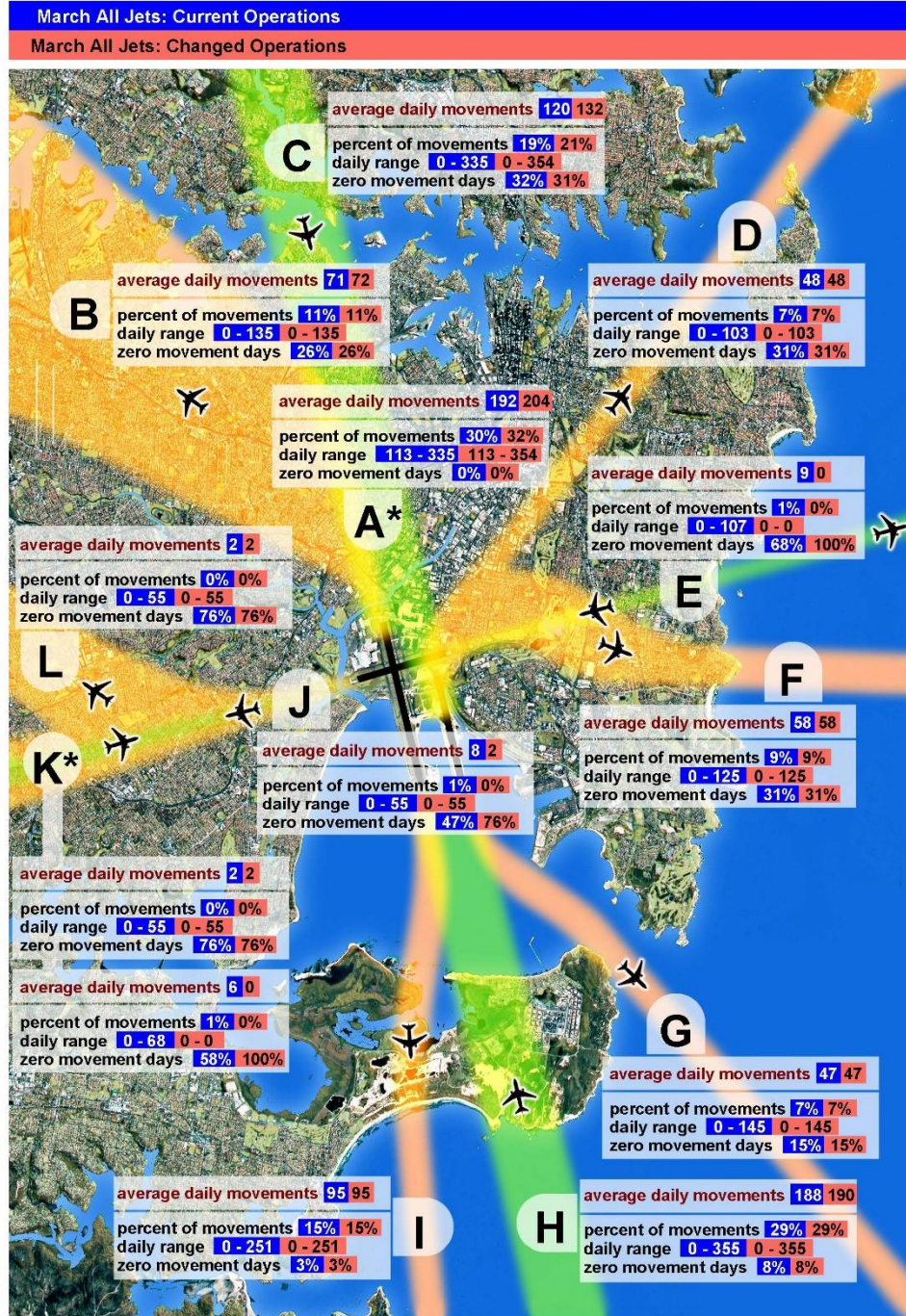
## APPENDIX A

### Movement and Respite Charts





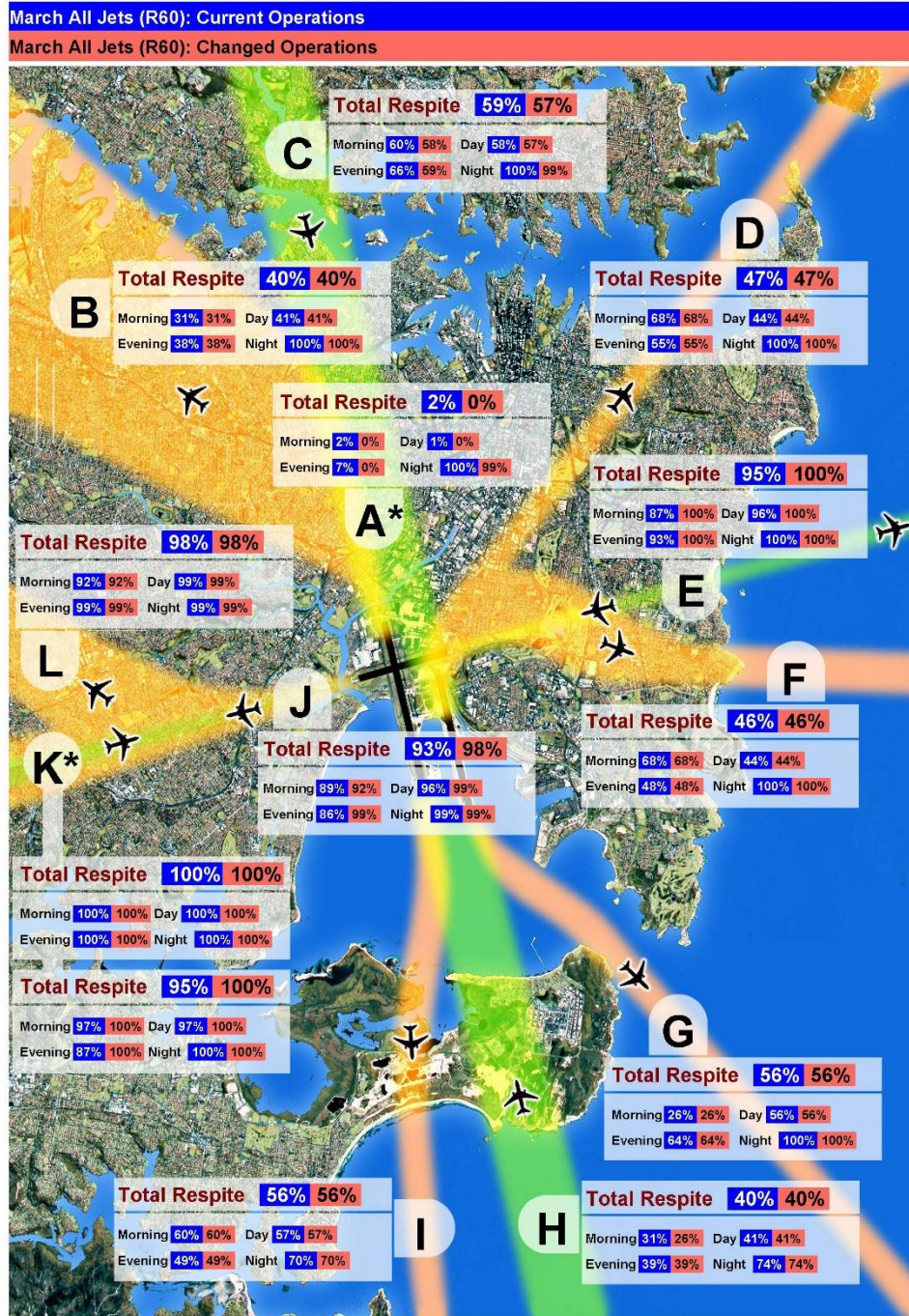
## Sydney Airport : Jet Flight Path Movements Comparison Chart



Note : Track A\* is Tracks B and C combined. Track K\* shows departures (top box) and arrivals (bottom box).



### Sydney Airport : Jet Respite Comparison Chart



Note : Track A\* is Tracks B and C combined. Track K\* shows departures (top box) and arrivals (bottom box).

Total number of movements = **39,920 39,920**

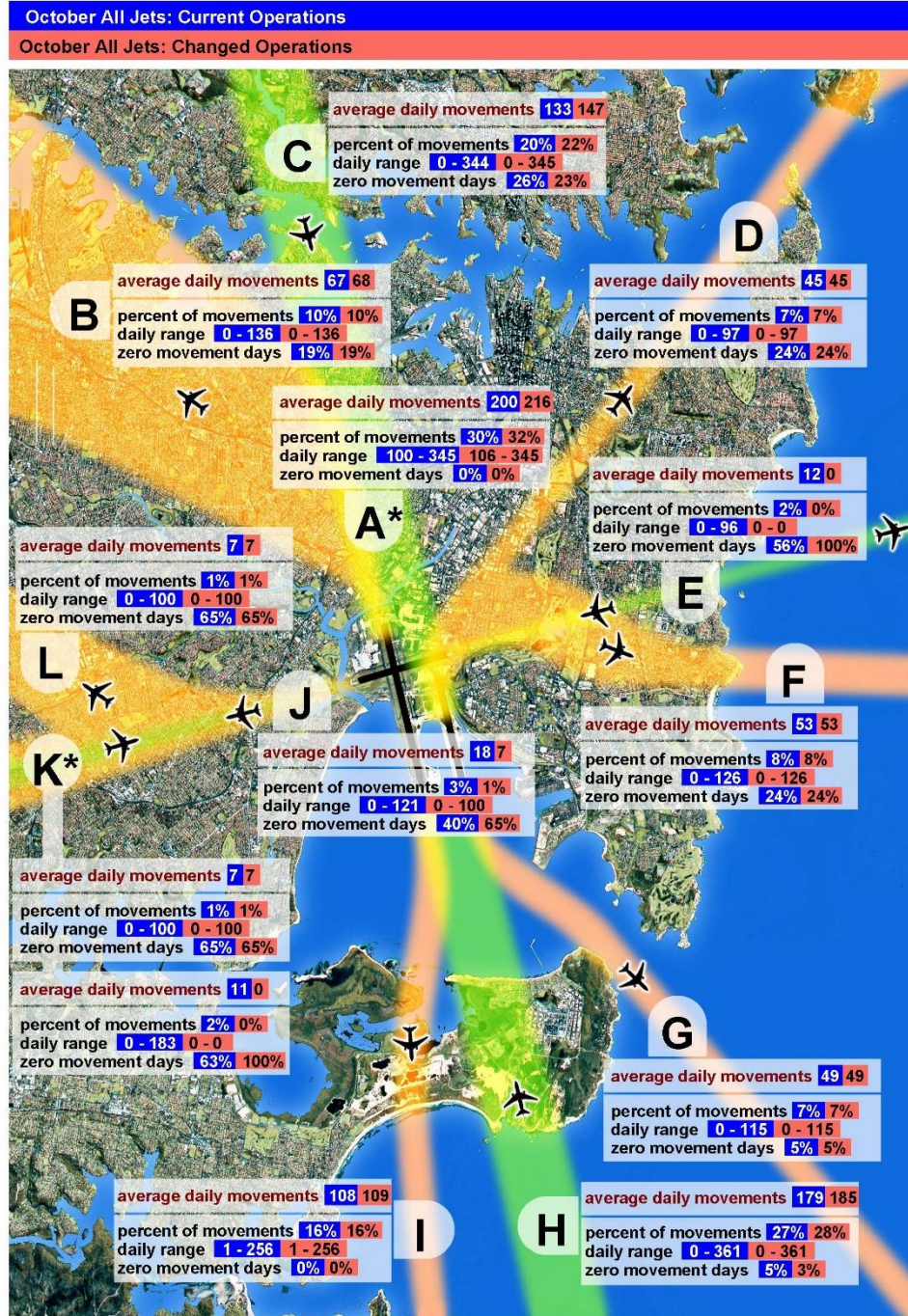
A respite interval is a **60 60** minute period when there are no jet movements.

Morning: 06:00 to 07:00 Day: 07:00 to 20:00 Evening: 20:00 to 23:00 Night: 23:00 to 06:00

Total Respite: 06:00 to 23:00



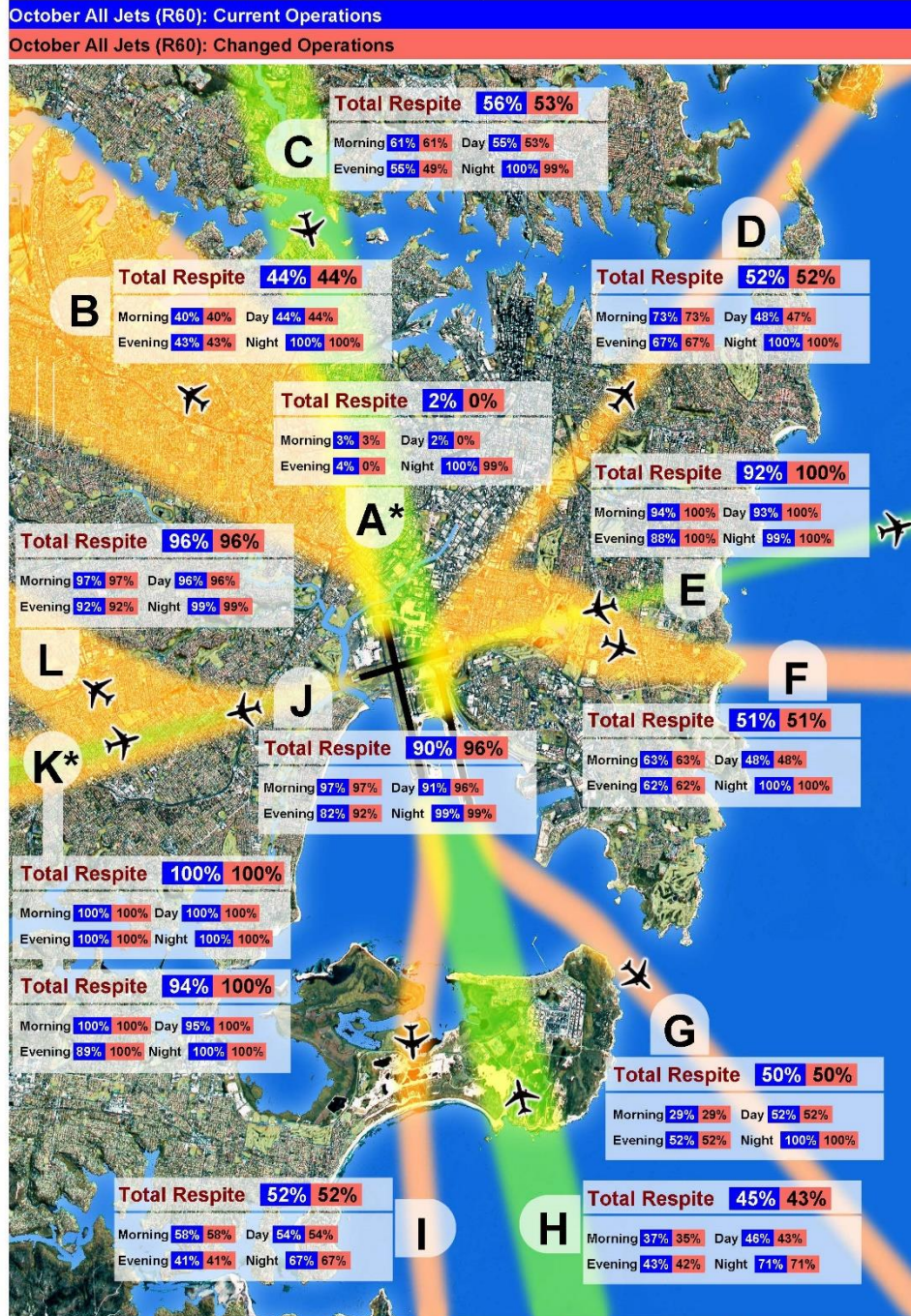
## Sydney Airport : Jet Flight Path Movements Comparison Chart



Note : Track A\* is Tracks B and C combined. Track K\* shows departures (top box) and arrivals (bottom box).



## Sydney Airport : Jet Respite Comparison Chart



Total number of movements = **41,171 41,171**

A respite interval is a **60 60** minute period when there are no jet movements.

Morning: 06:00 to 07:00 Day: 07:00 to 20:00 Evening: 20:00 to 23:00 Night: 23:00 to 06:00

Total Respite: 06:00 to 23:00