



Town and Country Planning Act Section 106/299A

**Environment Report 1
January to June 2020**

Farnborough Airport Ltd
Farnborough
Hampshire
GU14 6XA

1. INTRODUCTION

- 1.1 In compliance with the requirements of the agreement in place under Sections 106 and 299A of the Town and Country Planning Act 1990 between Farnborough Airport (FAL) and Rushmoor Borough Council (RBC), FAL hereby submits a report for January to June 2020, detailing results of environmental monitoring as required by clause 1.3, 2.8a, 2.8b and 3.4.

2. NOISE MONITORING

- 2.1 Two permanent noise monitoring terminals (NMTs) continuously operate at the sites of Tweseldown Racecourse and Farnborough College of Technology, approximately one mile from the airfield and beneath the typical arrival and departure flight path.

A portable noise monitoring terminal is stored at the Airport and remains available on request to any member of the community that has a requirement for noise monitoring within their residential area.

- 2.2 Correlated Noise data (dB(A) L_{eq16}) recorded by the fixed NMTs for “Aircraft”, “Community” and “Total” noise is tabulated in Appendix A. Due to a power outage at Tweseldown Racecourse in February, a short period of data loss occurred between the 22nd and 25th February.
- 2.3 Tweseldown Racecourse events have the potential to influence values for “community” and “total” noise at the Tweseldown NMT. No major events took place at the racecourse during the reporting period however, with all events cancelled due to COVID-19. Values for “aircraft” noise remained relatively stable throughout the period of reporting.
- 2.4 All three operational NMTs were subject to calibration by an independent specialist on the 18th March 2020.
- 2.5 Noise contours produced using the FAA’s Integrated Noise Model (INM 7.0d) for previous year business movements, together with predicted contours for the year ahead, were submitted to RBC in February in accordance with the requirements of the agreement between FAL and RBC. The modelling exercise results are given below in Table 1, along with those included within the planning agreement. The predicted noise contours were generated using movement data (flight tracks) from the study year, taking into account the forecast growth for the year ahead (including predicted helicopter movements).

Table 1: Most Recent Results of the INM Modelling exercise

dB <small>$L_{Aeq,16h}$</small>	Control Contours Predicted 20,000 (km ²) movements (1997 mix)	Amended Control Contour Areas (km ²) as per clause 12.1a of the S106 (29/10/2010)	Actual Contours Areas Jan-Dec 2018 (km ²) (29,958 actual movements)	Predicted Contour Areas Jan-Dec 2019 (km ²) (31,000 predicted movements, 2018 fleet mix)
55	9.07	6.58	2.18	2.24
60	4.03	2.42	0.94	0.96
65	1.70	N/A	0.45	0.46

- 2.6 Contours relating to actual movements for January to June and predicted contours for July to December this calendar year will be submitted to RBC in August.
- 2.7 Use of the dB(A) L_{eq16} contour is internationally recognised as a means of noise measurement. A 66 dB(A) L_{eq16} indicates that the average level of noise during a 16-hour day is 66 dB(A).

- 2.8 The 55 dB(A) L_{eq16} contour, used in agreement with Rushmoor, is below that deemed to be the trigger of "low annoyance" in the Wilson Committee Report (1963), a report traditionally used as a method of assessing the probability of annoyance due to aircraft noise.
- 2.9 The FAA's INM complies with the requirements of ECAC -CEAC Document 29 as specified in the proposed European Noise Directive.
- 2.10 In accordance with the requirements of the Section 106 Agreement FAL uses INM 7.0d to produce noise contours. This version of the software includes helicopter movements and considers surrounding terrain within the modelling process.
- 2.11 Daily dB(A) L_{eq16} Figures are given in Appendix A.

3. AIRCRAFT MOVEMENTS

- 3.1 Table 2 displays a summary of aircraft movements for the reporting period by movement category.

Table 2: Movements summary by type

Category	Jan	Feb	Mar	Apr	May	Jun	Report 1 Total
Business	2139	2162	1700	301	593	1059	7954
Helicopter	95	93	42	2	2	26	260
Subtotal (Reported under planning obligations)	2234	2255	1742	303	595	1085	8214
Military	6	2	4	2	4	12	30
Flying Club	31	6	18	0	22	20	97
Other	92	82	62	20	76	42	374
ADS	0	0	0	0	0	0	0
Total	2363	2345	1826	325	697	1159	8715

- 3.2 Tables 3 and 4 display a summary of movement percentages against the total for each month, by category for weekdays and weekends.

Table 3: Percentage summary by category for weekday movements

	Jan	Feb	Mar	Apr	May	Jun
Business	67.9	66.6	71.1	74.5	56.5	69.9
Helicopter	3.3	3.3	1.9	0.0	0.0	1.9
Military	0.2	0.1	0.2	0.0	0.6	1.0
Flying Club	0.9	0.2	1.0	0.0	2.6	1.4
Other	3.2	3.0	2.7	3.7	10.0	3.6
ADS	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	76	73	77	78	70	78

* totals to the nearest whole percent

Table 4: Percentage summary by category for weekend movements

	Jan	Feb	Mar	Apr	May	Jun
Business	22.6	25.6	22.0	18.2	28.6	21.5
Helicopter	0.8	0.7	0.4	0.6	0.3	0.3
Military	0.0	0.0	0.0	0.6	0.0	0.0
Flying Club	0.4	0.0	0.0	0.0	0.6	0.3
Other	0.7	0.5	0.7	2.5	0.9	0.0
ADS	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	24	27	23	22	30	22

* totals to the nearest whole percent

3.3 Table 5 displays runway use data. Operations are divided into Arrivals, Departures and those undertaken by helicopters without use of the runway (Aerodrome).

Table 5: Runway in use (as percentages) by mode of operation

Operation	Jan	Feb	Mar	Apr	May	Jun
06 Arrival	2	1	11	31	22	16
06 Departure	2	1	12	30	22	17
24 Arrival	47	49	38	19	28	33
24 Departure	47	47	38	19	28	33
Aerodrome (Heli)	2	2	1	1	0	1

3.4 Table 6 displays Maximum Take Off Weight data for aircraft operated during this reporting period, reflected as a percentage of the overall movements in each month.

Table 6: Percentage by Maximum Take-Off Weight (MTOW) against monthly movements total

	Jan	Feb	Mar	Apr	May	Jun
Over 50t	2	2	2	1	1	3
50t or less	98	98	98	99	99	97

3.5 All civil aircraft using Farnborough between during the reporting period were compliant with the International Civil Aviation Organisation (ICAO) Chapter 4. All aircraft must provide certification of Noise Chapter prior to permission being granted to operate.

3.6 Helicopters, light aircraft and turbo-prop aircraft are not subject to the requirements of the ICAO noise certification scheme.

4. AIR QUALITY MONITORING

- 4.1 The locations of the thirteen nitrogen oxide diffusion tubes and the two Learian Streetbox monitors remain as previously reported, to see details of the locations of the monitors please refer to previous reports prior to the first quarter of 2005.
- 4.2 Table 7 displays the standards accepted by the Government and recommended by the expert panel on air quality standards.

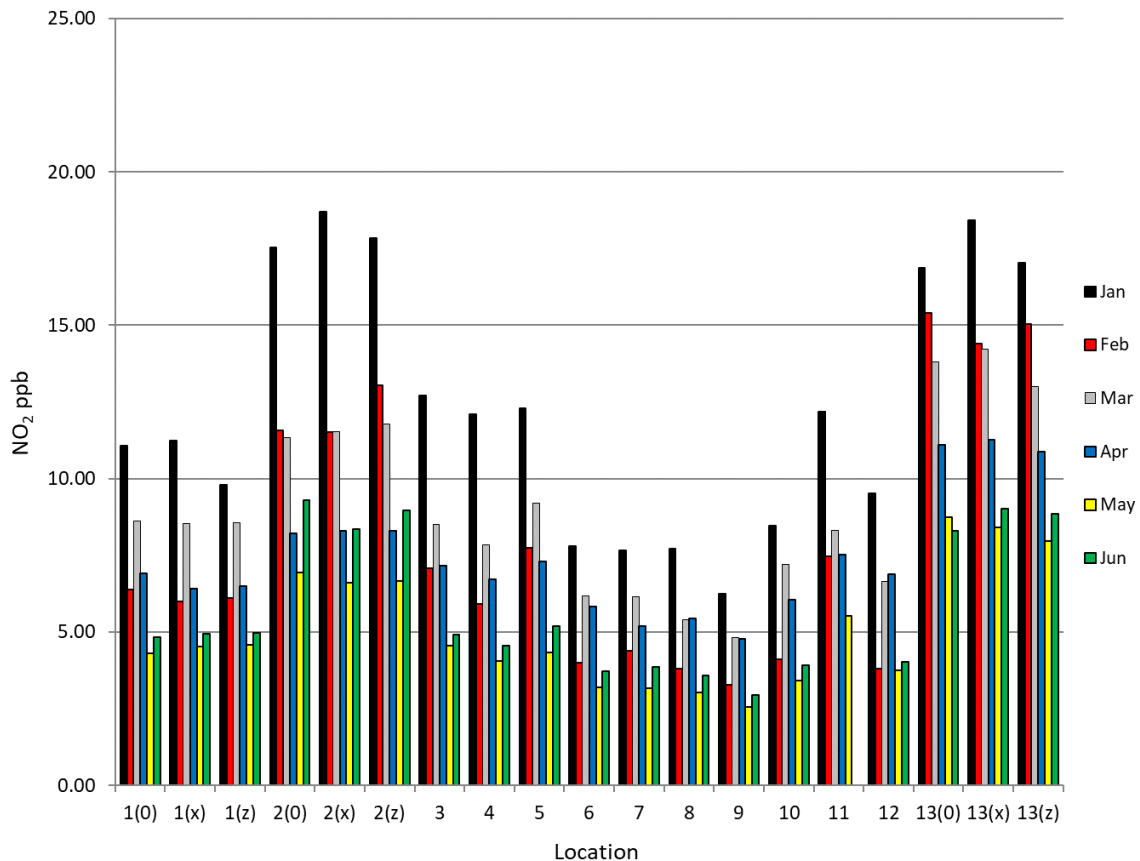
Table 7: Objectives included in regulations for purposes of local Air Quality Management

Pollutant	Air Quality Objective		Date to be achieved by and maintained thereafter
	Concentration	Measured as	
NO ₂	200µg/m ³ (105ppb) not to be exceeded more than 18 times a year	1 hour mean	1 st Jan 2010
NO ₂	40µg/m ³ (21ppb)	annual mean	1 st Jan 2010

^a Conversions of ppb and ppm to µg/m³ and mg/m³ at 20°C and 1013mb. ppb = parts per billion, µg/m³ = micrograms per cubic metre. Source: https://uk-air.defra.gov.uk/assets/documents/National_air_quality_objectives.pdf (last updated 22-09-17)

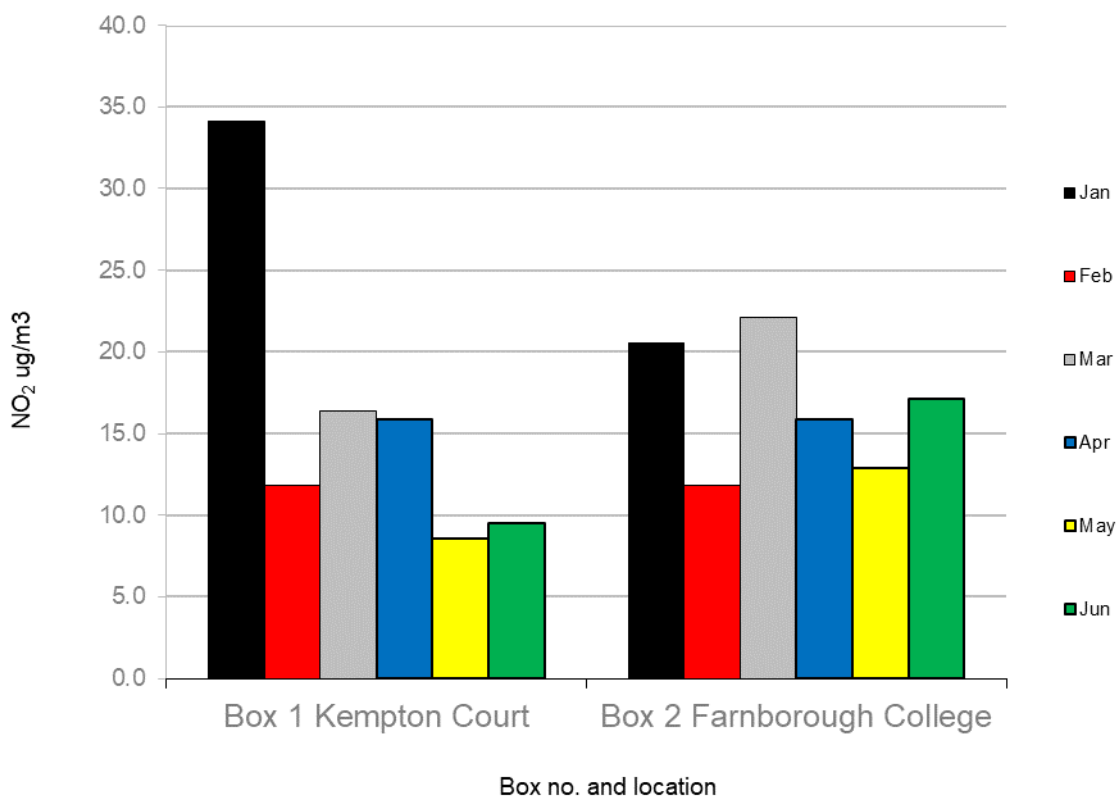
- 4.3 Air quality monitoring results consist of raw and manipulated from the diffusion tube laboratory analysis. Data taken from the Learian Streetbox Monitors consists of hourly mean concentrations of NO₂. As this data is extensive when covering a six-month period, it has been displayed as monthly means for the purpose of this report.
- 4.4 Passive and active NO₂ monitoring results are detailed in Figures 1 and 2.

Figure 1: Passive NO₂ monitoring results, January to June



N.B. ppb - parts per billion expressed as a monthly mean. This data has not had a bias adjustment applied

Figure 2: Active NO₂ monitoring results, January – June



N.B. µg/m³ expressed as a monthly mean

4.5 The results taken from the diffusion tubes indicate that NO₂ levels around the airfield during the reporting period have achieved the objectives within the regulations for the purpose of Air Quality Management.

4.6 Trends in the results indicate terrestrial sources of NO₂ as predominate.

5. CONCLUSION

5.1 Routine monitoring of compliance with noise abatement routes, air quality targets, and aircraft movements continues at the Airport. To date, all environmental monitoring undertaken has been implemented in accordance with the regulatory requirements and those of the Town and Country Planning Act Section 106 Agreement.

5.2 All movements operated at the airport are restricted to those permitted by the terms of the planning consent and the accompanying agreement.

5.3 NO₂ levels recorded by monitoring stations remain compliant with applicable legislation.

5.4 The activities at the airport remain within the specifications of the Section 106/299A agreement.

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27/07/2019

Appendix A

Noise Report

Farnborough Airport

Aircraft Noise By Day of Month and NMT

Start Date:01-Jan-2020

End Date: 30-Jun-2020

January 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	47.1	44.0	45.7	47.4	48.3	49.5	49.2	50.9	50.1	52.4	45.8	48.5	51.9	55.8	48.8	49.9	51.0	46.9	50.9	52.2	51.8	52.3	52.3	52.1	46.8	50.8	50.0	49.2	48.1	50.3	50.5
3	49.8	54.8	54.2	57.1	56.1	56.3	56.1	55.1	56.6	55.8	54.4	54.5	55.3	58.0	57.2	57.1	55.1	53.2	55.5	56.4	56.0	56.2	55.4	57.6	53.4	56.5	55.3	55.8	54.3	56.7	56.4

February 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
2	44.1	47.8	49.3	50.1	50.7	52.9	49.6	46.4	57.9	54.6	53.5	49.1	51.5	53.9	60.6	50.1	49.9	50.6	47.8	50.8	0.0					47.9	52.6	53.0	48.8
3	54.0	54.4	55.2	53.9	55.8	57.7	54.9	50.7	50.5	57.7	55.2	53.8	58.8	60.1	60.9	55.6	58.7	57.3	56.1	56.3	55.1	57.3	58.8	58.0	56.2	54.5	58.2	57.3	52.3

March 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	50.2	48.9	50.0	49.0	56.4	50.1	44.4	50.0	49.4	51.8	51.2	52.4	52.8	50.1	49.9	51.3	47.8	50.3	51.1	52.1	53.5	48.6	45.3	45.8	45.3	44.3	45.4	47.6	55.9	45.8	42.5
3	56.8	54.8	55.1	56.0	53.7	52.7	55.9	56.1	56.8	58.4	55.7	56.3	55.0	54.7	55.2	56.1	56.5	56.7	56.3	53.5	51.3	47.6	47.2	52.5	51.3	48.6	43.5	50.9	39.1	48.9	51.4

April 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
2	44.6	44.0	35.7	43.5	36.1	42.2	39.4	41.6	37.0	41.4	36.9	32.5	48.3	41.6	43.7	40.9	42.7	40.0	41.1	50.3	44.1	43.5	43.6	41.8	40.7	47.4	45.2	43.9	44.3	38.2
3	47.6	43.4	43.6	38.3	40.1	43.9	44.3	40.8	45.7	46.7	47.6	38.7	46.6	49.4	47.3	39.2	50.1	44.3	39.2	50.0	42.1	39.6	49.3	51.1	45.4	41.9	48.4	40.4	47.8	50.1

May 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	41.3	44.2	46.2	45.9	46.3	45.6	43.2	41.4	41.3	42.5	53.6	43.4	50.6	50.1	46.4	45.2	44.1	41.8	41.0	43.4	43.7	47.7	51.5	47.6	39.0	45.9	49.3	45.1	48.1	46.3	44.4
3	48.2	44.5	43.4	47.5	45.5	48.3	47.8	44.2	47.9	49.4	44.5	45.2	49.1	49.9	49.0	48.6	48.2	48.8	48.6	51.5	49.5	49.3	51.9	47.6	48.6	51.4	49.5	50.3	52.4	49.8	47.9

June 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
2	46.9	46.9	48.8	47.4	50.6	52.6	49.5	51.7	47.3	48.1	47.3	49.8	45.4	46.8	48.0	48.1	49.8	50.4	52.3	49.0	45.3	52.8	47.5	46.9	53.4	43.5	43.1	45.2	51.7	48.2
3	51.6	51.3	51.8	54.0	55.1	53.0	52.5	56.0	53.2	51.7	52.9	46.3	51.3	51.5	51.1	51.1	52.8	53.6	56.0	51.4	49.1	57.5	53.1	50.4	56.4	52.2	52.3	50.2	53.4	54.6

Noise Report

Farnborough Airport

Community Noise By Day of Month and NMT

Start Date:01-Jan-2020
End Date: 30-Jun-2020

January 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	46.5	58.4	52.8	51.6	50.0	54.7	57.7	51.1	60.7	51.2	66.6	58.0	65.7	71.7	54.4	59.0	61.5	50.8	50.7	54.0	51.8	54.7	49.2	52.0	49.6	52.8	52.9	57.5	53.2	54.0	61.3
3	47.3	53.4	52.6	52.3	51.3	57.6	54.6	53.1	57.3	52.9	54.7	52.6	59.0	59.2	54.7	55.4	55.0	52.1	51.8	57.2	53.4	51.6	51.6	51.4	51.4	53.2	57.0	55.1	54.4	54.3	55.1

February 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
2	62.3	58.4	53.5	59.1	50.7	50.7	51.5	58.3	77.1	66.6	65.1	56.7	55.2	60.2	74.0	64.2	61.5	61.4	56.3	63.5	55.5					55.5	61.4	63.3	64.6
3	54.5	52.6	53.4	54.2	53.0	53.3	54.1	52.6	61.9	57.0	56.2	54.2	55.1	55.2	58.8	55.5	60.9	55.6	54.3	56.7	55.4	55.3	55.1	56.4	55.0	53.7	54.4	56.9	55.7

March 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	58.9	53.2	53.3	53.7	65.4	52.2	59.7	56.6	57.3	61.2	61.9	64.1	55.0	53.0	56.4	50.6	56.2	52.6	50.2	63.3	67.7	60.1	48.9	47.1	47.4	52.5	56.4	69.5	71.4	50.3	50.9
3	52.9	53.5	54.1	53.8	55.0	52.7	53.3	53.0	54.7	55.0	54.4	55.6	53.2	52.6	51.9	52.7	53.4	52.5	53.2	52.5	51.9	50.3	49.9	48.7	47.7	47.8	48.7	50.3	51.5	48.9	48.5

April 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
2	45.3	49.6	47.4	46.6	52.4	48.6	45.9	47.4	45.0	45.3	45.3	44.1	66.5	45.0	44.3	44.4	52.9	46.7	49.4	68.2	62.4	51.9	46.3	47.2	44.7	47.9	47.6	47.4	52.3	57.7
3	47.5	48.2	47.6	47.1	46.3	48.0	47.0	46.1	46.7	45.6	50.2	55.7	55.4	56.0	52.7	46.8	52.6	47.1	53.7	54.7	50.9	50.7	46.0	47.5	50.1	50.3	59.1	50.1	49.1	51.3

May 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	58.5	48.0	46.6	54.7	58.3	46.9	48.0	49.5	45.1	68.3	69.6	49.5	55.9	49.7	47.7	48.5	50.0	52.6	51.6	48.2	48.0	63.5	68.5	53.5	50.4	47.2	51.0	51.8	48.0	50.6	55.5
3	49.8	48.0	47.5	48.3	49.5	48.5	48.2	48.5	46.2	50.8	52.9	46.0	48.4	48.1	48.2	48.2	48.0	51.8	50.5	48.0	47.1	51.9	52.8	47.9	46.5	55.5	46.9	50.0	49.2	48.9	49.9

June 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
2	50.2	50.0	48.9	49.2	62.3	65.3	47.7	50.3	50.1	48.9	55.6	58.0	54.8	48.7	51.6	50.8	48.3	51.2	57.4	51.9	54.6	52.4	49.5	48.7	48.5	52.7	63.5	62.3	66.3	49.8
3	48.1	49.7	51.7	49.9	53.1	53.0	49.7	50.6	49.3	52.1	51.4	52.6	50.4	49.0	49.2	48.0	47.5	50.4	51.4	49.4	49.6	51.5	48.6	49.0	48.2	50.4	52.3	51.9	52.9	56.9

Noise Report

Farnborough Airport

Total Noise By Day of Month and NMT

Start Date:01-Jan-2020

End Date: 30-Jun-2020

January 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	49.8	58.3	53.5	53.0	52.3	55.8	58.0	54.0	60.7	54.8	66.2	58.2	65.4	70.3	55.4	59.2	61.6	52.3	53.8	56.0	54.8	56.6	54.1	55.0	51.5	54.9	54.6	57.8	54.4	55.5	61.3
3	51.7	57.2	56.5	58.4	57.4	60.0	58.4	57.3	59.9	57.6	57.6	56.7	60.5	61.6	59.1	59.3	58.1	55.7	57.1	59.8	57.9	57.5	57.0	58.5	55.6	58.2	59.2	58.4	57.4	58.7	58.8

February 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
2	62.1	58.5	54.9	59.3	53.7	55.0	53.7	58.3	74.9	66.5	65.0	57.2	56.7	60.7	72.4	64.2	61.5	61.5	56.6	63.2	55.5					56.0	61.4	63.3	64.4
3	57.3	56.6	57.4	57.1	57.6	59.1	57.5	54.8	62.0	60.4	58.7	57.0	60.4	61.3	63.0	58.6	62.9	59.5	58.4	59.5	58.3	59.4	60.4	60.3	58.7	57.1	59.7	60.1	57.3

March 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	59.2	54.5	54.9	54.9	65.5	54.2	59.6	57.3	57.7	61.3	62.0	64.1	56.9	54.8	57.1	54.0	56.7	54.6	53.7	63.3	67.5	60.1	50.5	49.5	49.5	53.0	56.6	69.3	71.2	51.6	51.4
3	58.3	57.2	57.6	58.0	57.4	55.7	57.8	57.9	58.9	60.0	58.1	59.0	57.2	56.8	56.9	57.8	58.2	58.2	58.0	56.0	54.6	52.2	51.8	54.0	52.8	51.3	49.8	53.6	51.8	52.0	53.2

April 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
2	48.0	50.7	47.7	48.4	52.4	49.6	46.8	48.5	45.7	46.8	46.0	44.4	66.4	46.7	47.1	46.0	53.3	47.5	50.0	67.9	62.2	52.4	48.2	48.3	46.2	50.7	49.6	49.1	52.9	57.7
3	50.6	49.5	49.1	47.7	47.3	49.4	48.9	47.3	49.2	49.2	52.1	55.7	55.9	56.9	53.9	47.5	54.5	49.0	53.9	56.0	51.5	51.1	51.0	52.7	51.4	50.9	59.4	50.6	51.5	53.8

May 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	58.4	49.5	49.5	55.1	58.3	49.3	49.2	50.1	46.6	68.1	69.5	50.5	56.9	53.0	50.1	50.2	50.9	52.9	51.9	49.5	49.4	63.4	68.3	54.4	50.7	49.6	53.2	52.6	51.1	51.9	55.7
3	52.1	49.6	49.0	50.9	50.9	51.5	51.1	49.9	50.2	53.1	53.5	48.7	51.8	52.1	51.7	51.4	51.1	53.6	52.7	53.1	51.5	53.8	55.4	50.8	50.7	56.8	51.5	53.2	54.1	52.4	52.1

June 2020

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
2	51.9	51.8	51.9	51.4	62.3	65.3	51.7	54.1	52.0	51.6	56.0	58.4	55.1	50.8	53.1	52.6	52.1	53.8	58.4	53.7	55.0	55.5	51.6	50.9	54.6	53.1	63.2	62.2	66.2	52.1
3	53.2	53.6	54.8	55.4	57.3	56.0	54.4	57.2	54.7	54.9	55.2	53.5	53.9	53.5	53.3	52.9	54.0	55.3	57.3	53.5	52.4	58.5	54.5	52.8	57.1	54.4	55.3	54.2	56.2	58.9