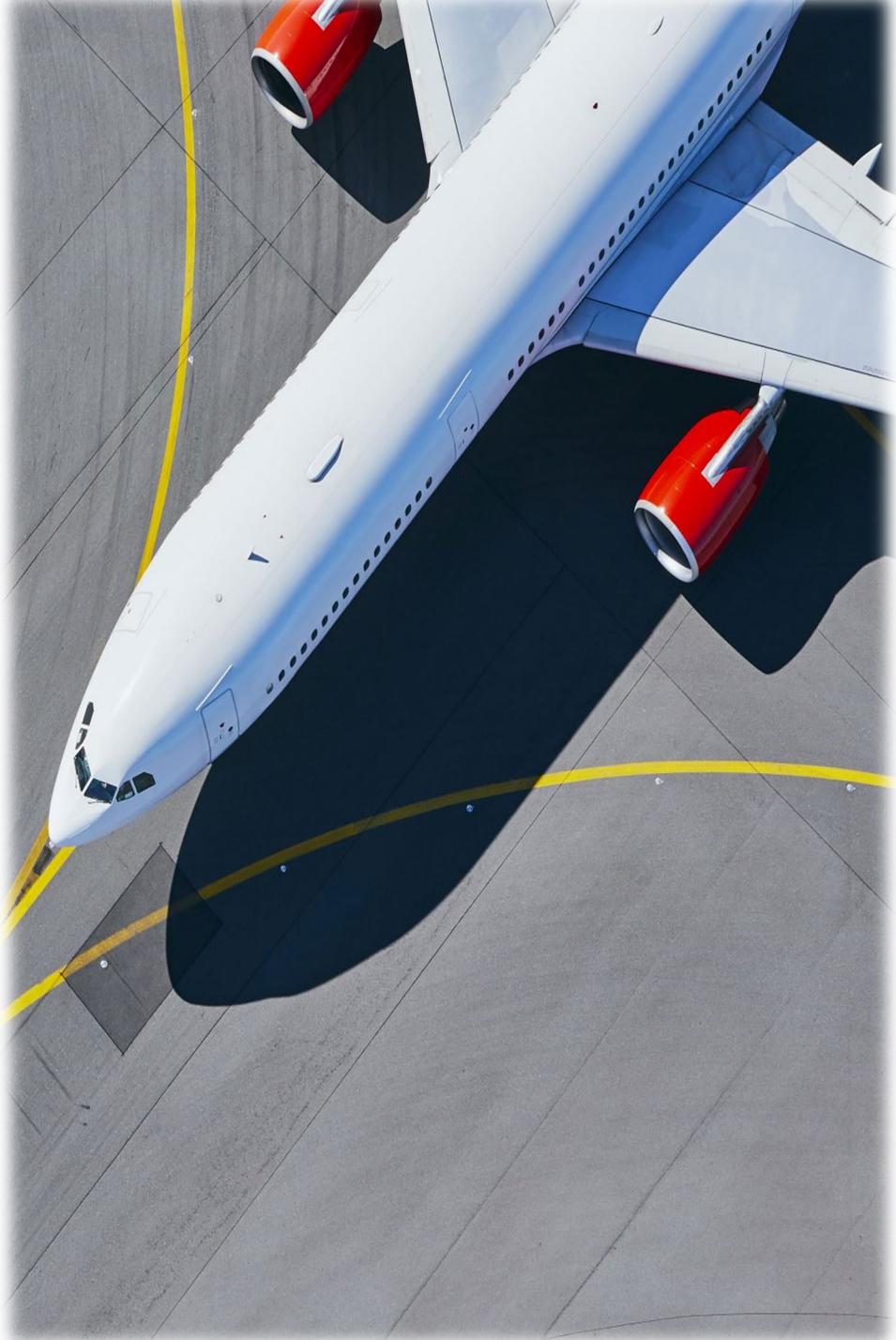


COVID-19 Effects on Airport Operations, Noise and Complaints at LAX and Other Airports

Irene Ramirez

November 18, 2020



Research Questions

- How do changes in the number of aircraft operations compare with changes in noise levels?
- How do changes in aircraft operations and noise levels compare with changes in noise complaints?

Pre-Pandemic	November 1, 2019 to March 15, 2020
Pandemic	March 16, 2020 to October 31, 2020

Raw
Data

Complaints

Noise Monitoring Terminal
(NMT)

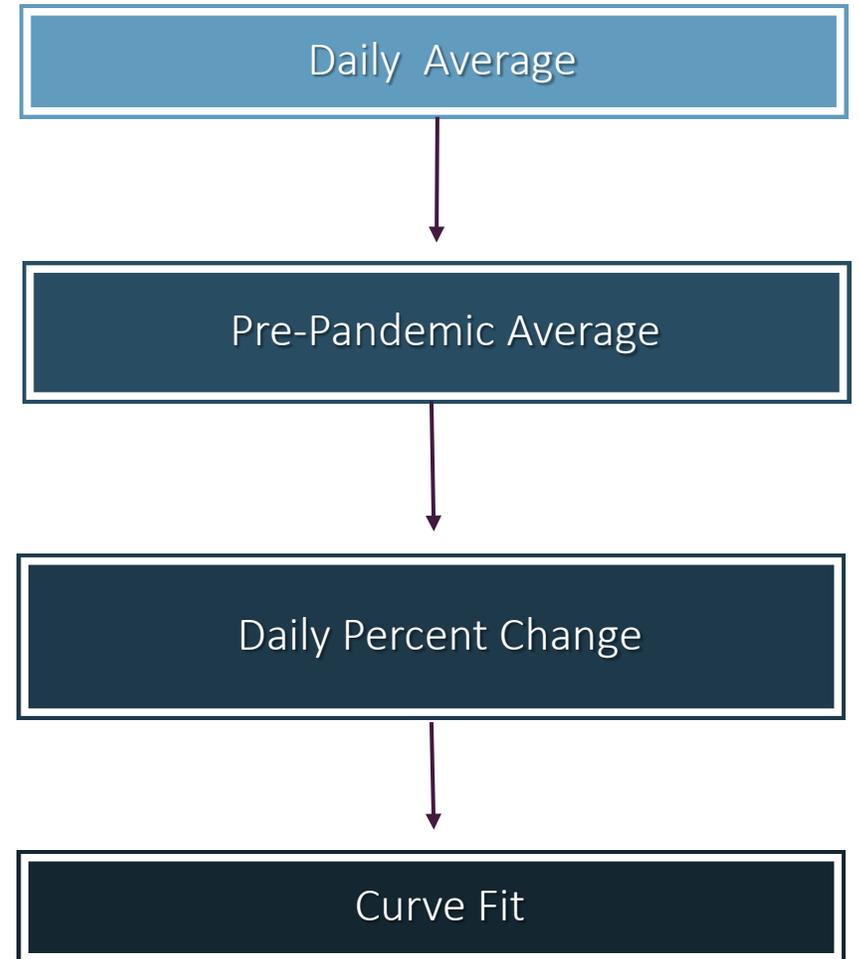
Operations

Data Processed

- 1) Complaints
- 2) Operations

Operations Percent Change Example:
 $((774 - 1807) / 1807) * 100 = -57\%$

Processing Flow

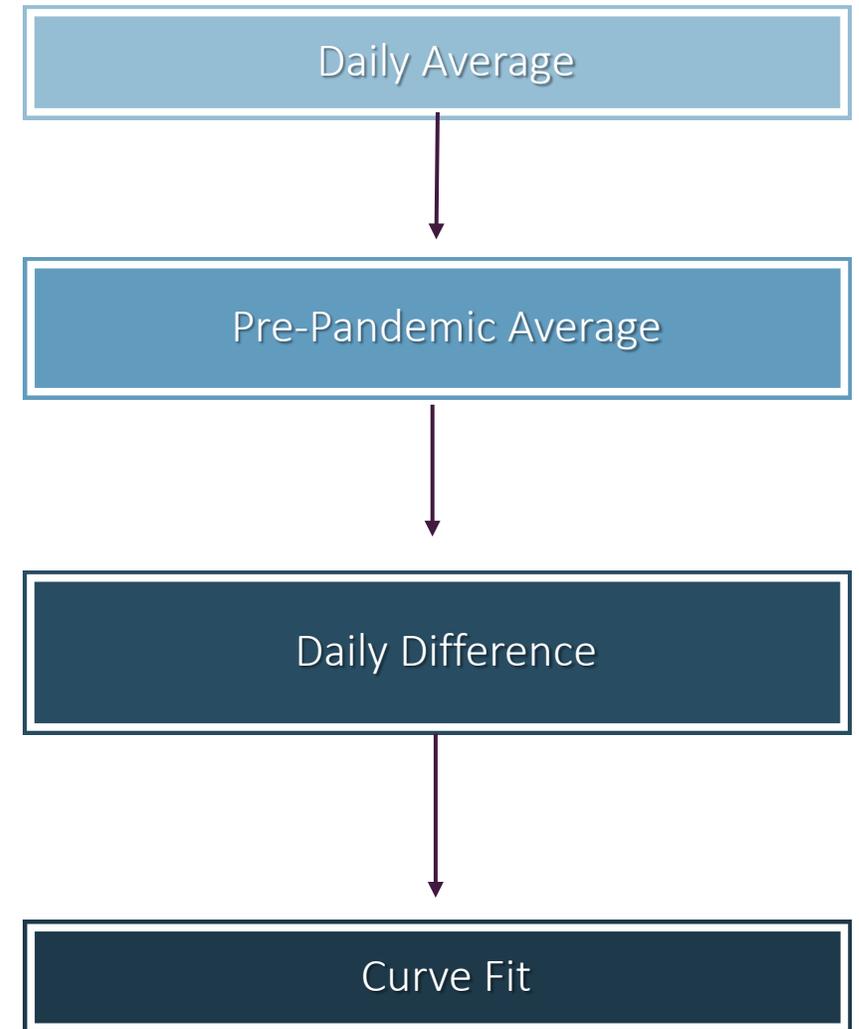


Data Processed Continued...

3) Noise Monitoring Terminals (NMTs)

NMT Delta Difference Example:
 $58.7 \text{ dB} - 62.1 \text{ dB} = -3.4 \text{ dB}$

Processing Flow



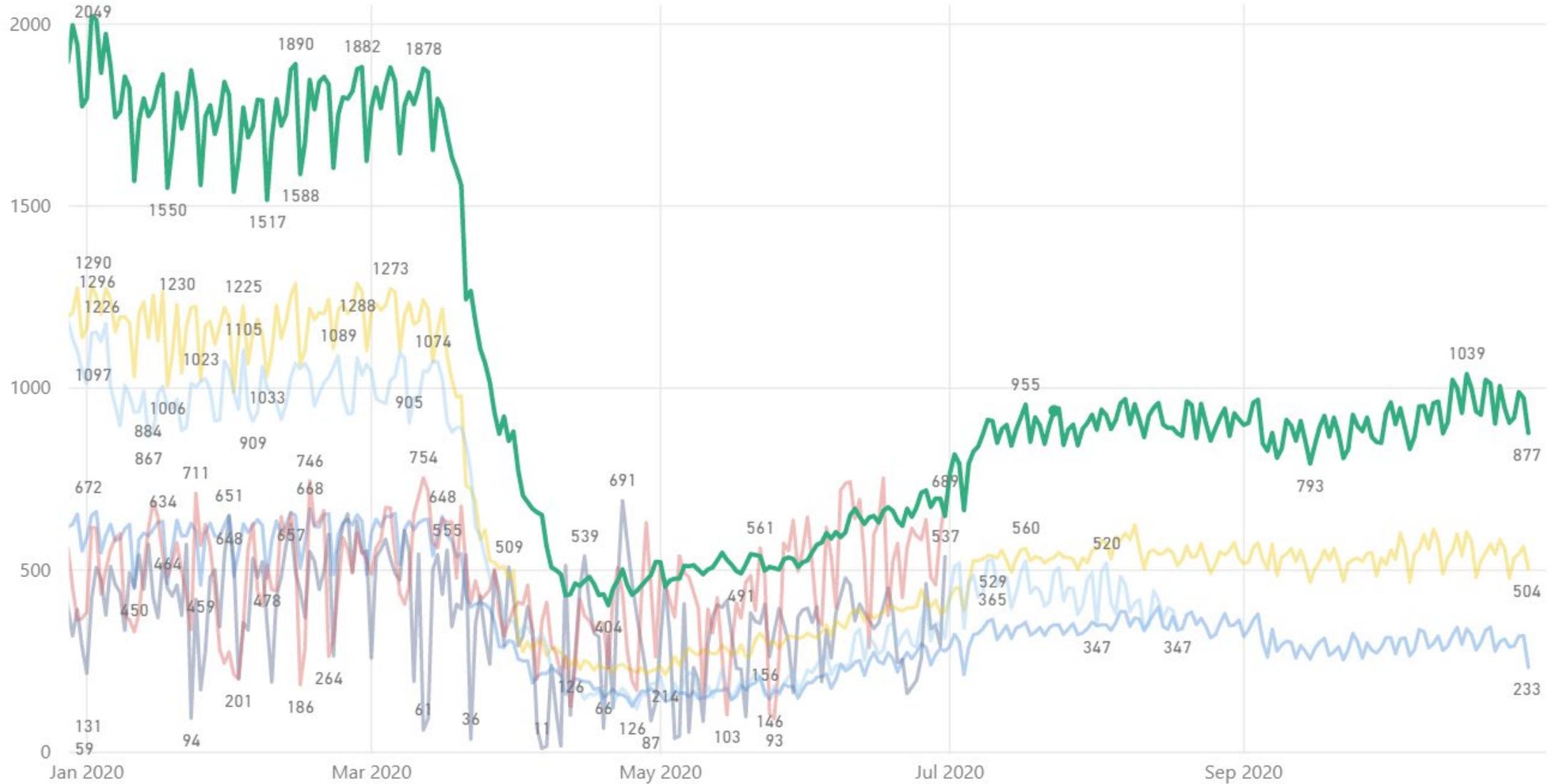


All Airports Results

Daily Airport Operations

Airport ● A ● B ● C ● D ● E ● F

E = LAX



Average Daily Difference Noise Summary

Airport	Aircraft ¹ CNEL/DNL (dB) ³	Community ² CNEL/DNL (dB) ³
A	-5.4	-2.0
B	-1.6	-2.8
C	-5.6	-0.3
D	-2.7	0.0
E (LAX)	-2.5	-0.7
F	-7.8	-1.8

Table notes:

1-Average daily difference in aircraft noise levels

2-Average daily difference in non-aircraft noise levels

3-Average daily Difference = Pre-Pandemic Average – Daily Pandemic Average

Average Daily Difference in Complaints and Operations Summary

Airport	Complaints*	Operations*
A	-94	-304
B	+6	-107
C	-2,078	-683
D	-2	-24
E (LAX)	-458	-959
F	-162	-590

*Average daily Difference = Pre-Pandemic Average – Daily Pandemic Average

Average Noise Per Flight Difference Summary

Airport	Noise Per Flight (dB)*
A	-2
B	0
C	+1
D	0
E (LAX)	0
F	-4

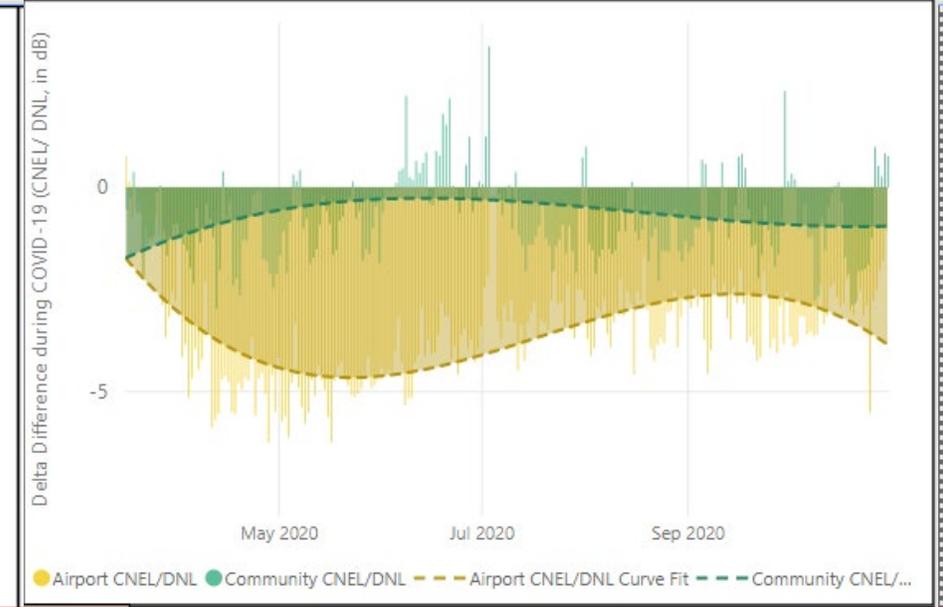
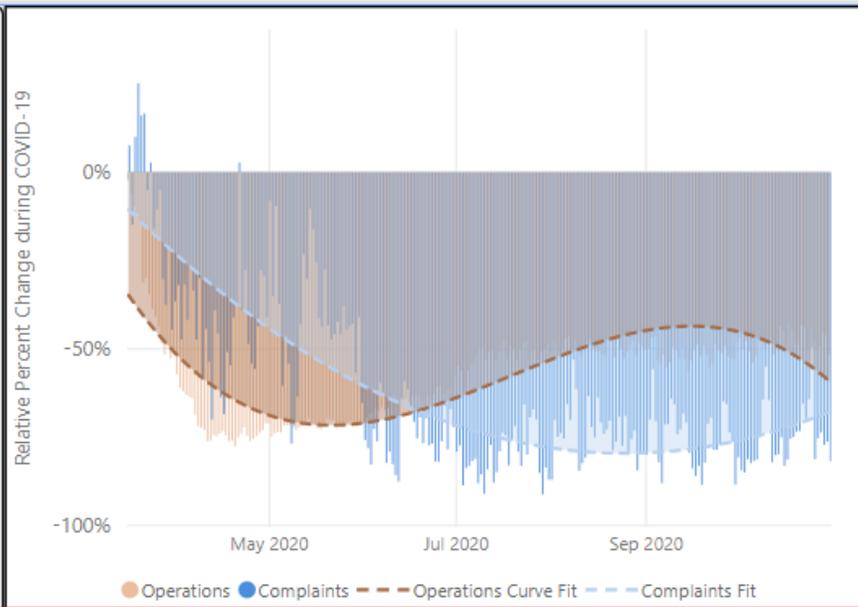
*Difference = Pre-Pandemic Average – Pandemic Average



LAX Airport Results

LAX Summary Results

Complaints, Operations, and Noise Data during the COVID-19 Pandemic

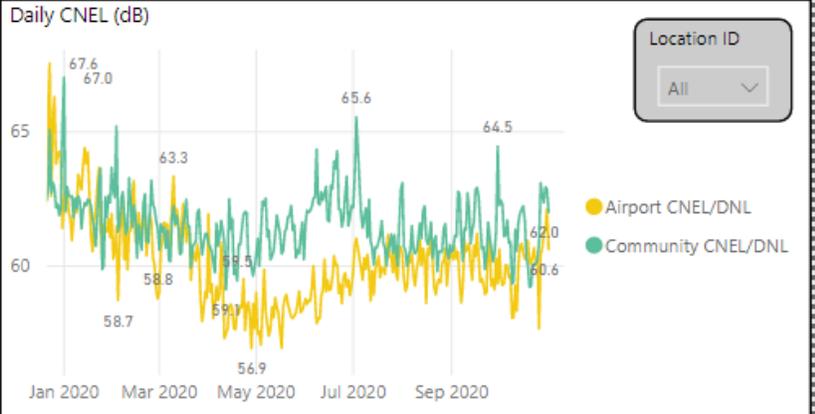
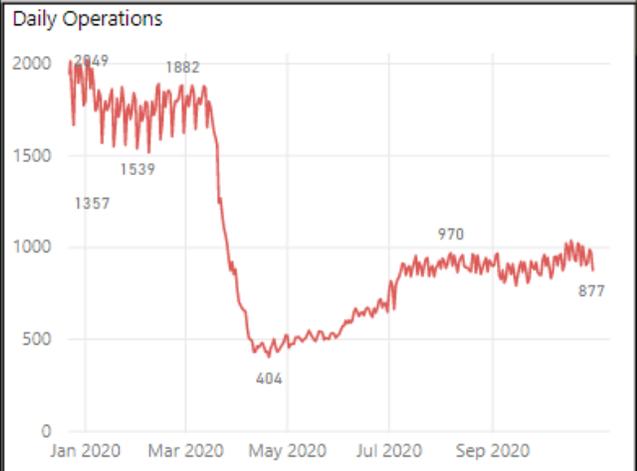
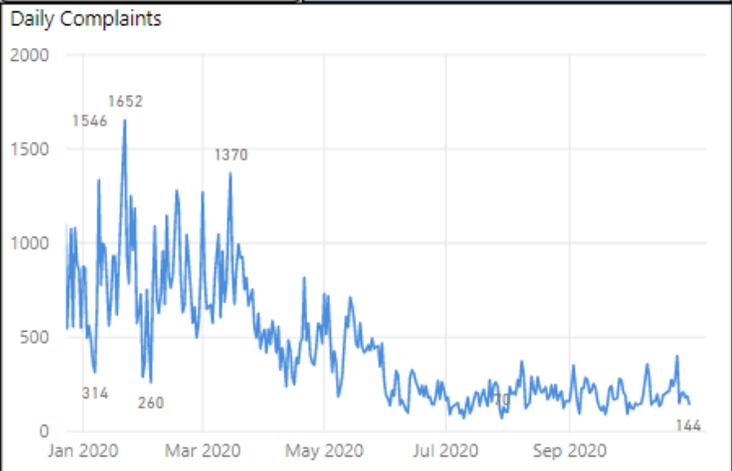


Airport Tag, Name

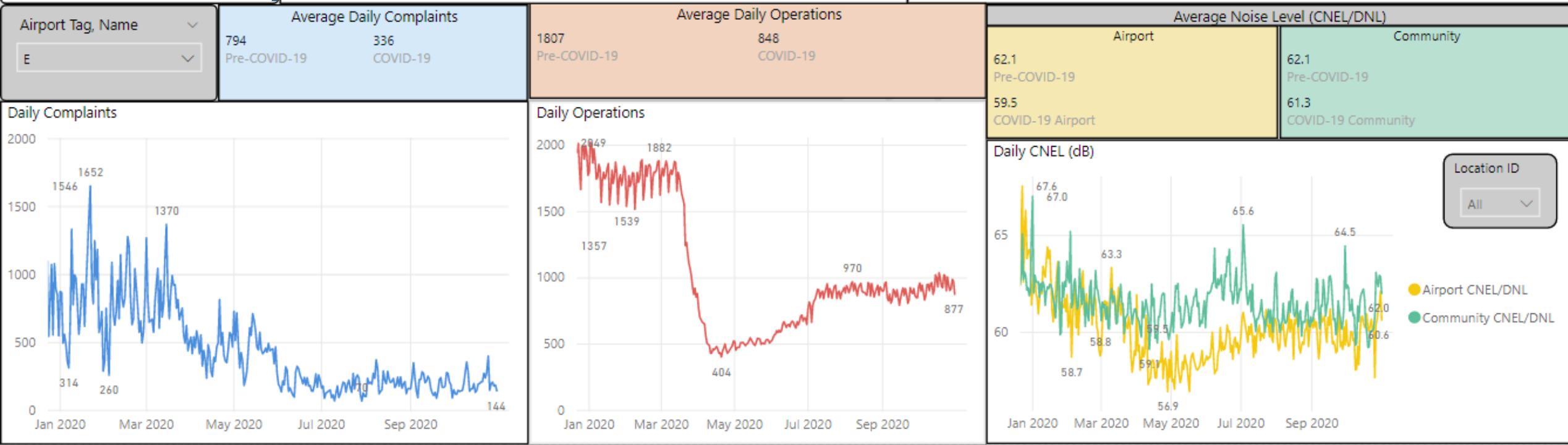
Average Daily Complaints	
794	336
Pre-COVID-19	COVID-19

Average Daily Operations	
1807	848
Pre-COVID-19	COVID-19

Average Noise Level (CNEL/DNL)	
62.1	62.1
Pre-COVID-19	Pre-COVID-19
59.5	61.3
COVID-19 Airport	COVID-19 Community



LAX Summary Results

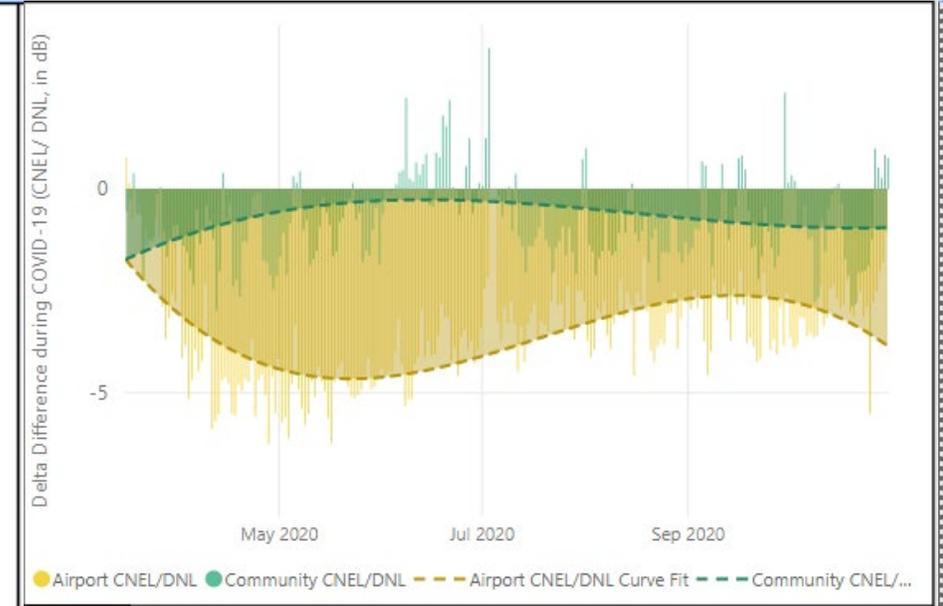
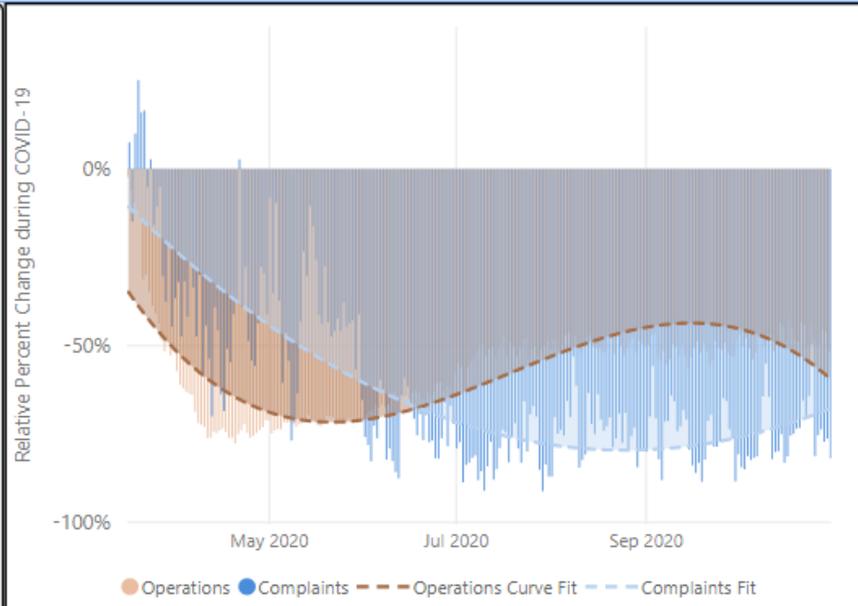


Findings:

- The number of daily noise complaints gradually reduced during March to June 2020
- The number of daily noise complaints have since leveled off
 - Current complaint levels around 200 per day compared to greater than 750 per day prior to the pandemic
- Aircraft operations reduced dramatically in the March/April 2020 timeframe
 - From a high prior to the pandemic of around 2000 per day to a low of 400 per day
- Aircraft operations increase since June 2020 to a level just below 1000 per day
 - Still many fewer operations than pre-pandemic levels (less than 50% of pre-pandemic operations)
- Daily noise levels from aircraft operations are approximately 2.5 dB lower during the pandemic
- Daily noise levels from non-aircraft noise sources dropped to a low in May 2020
 - increased since May 2020
- Daily noise levels from non-aircraft noise sources on average are about 1 dB lower now than pre-pandemic

LAX Summary Results

Complaints, Operations, and Noise Data during the COVID-19 Pandemic

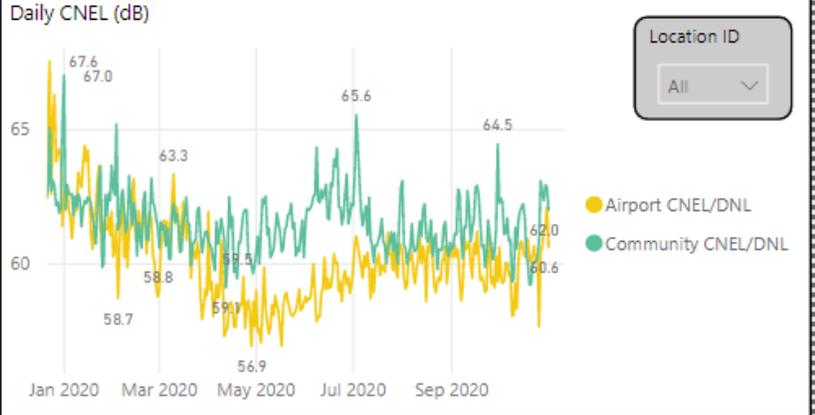
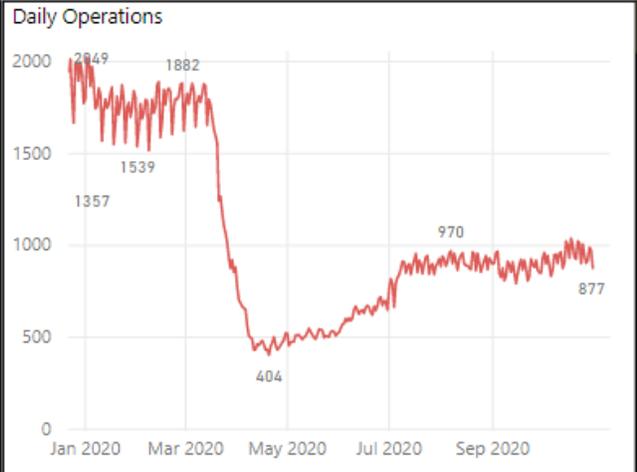
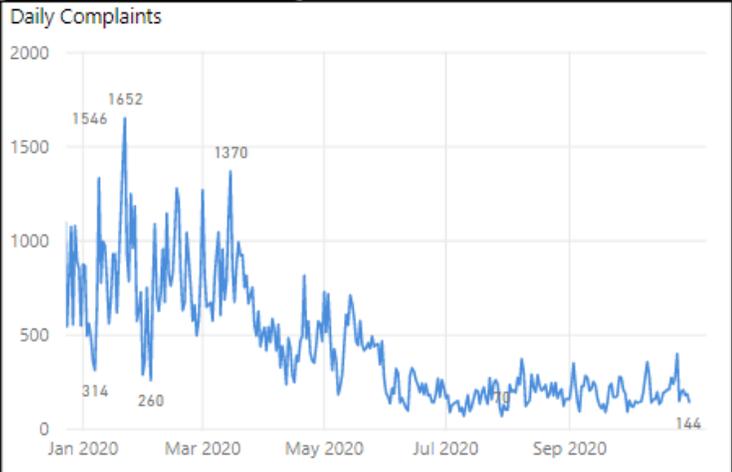


Airport Tag, Name

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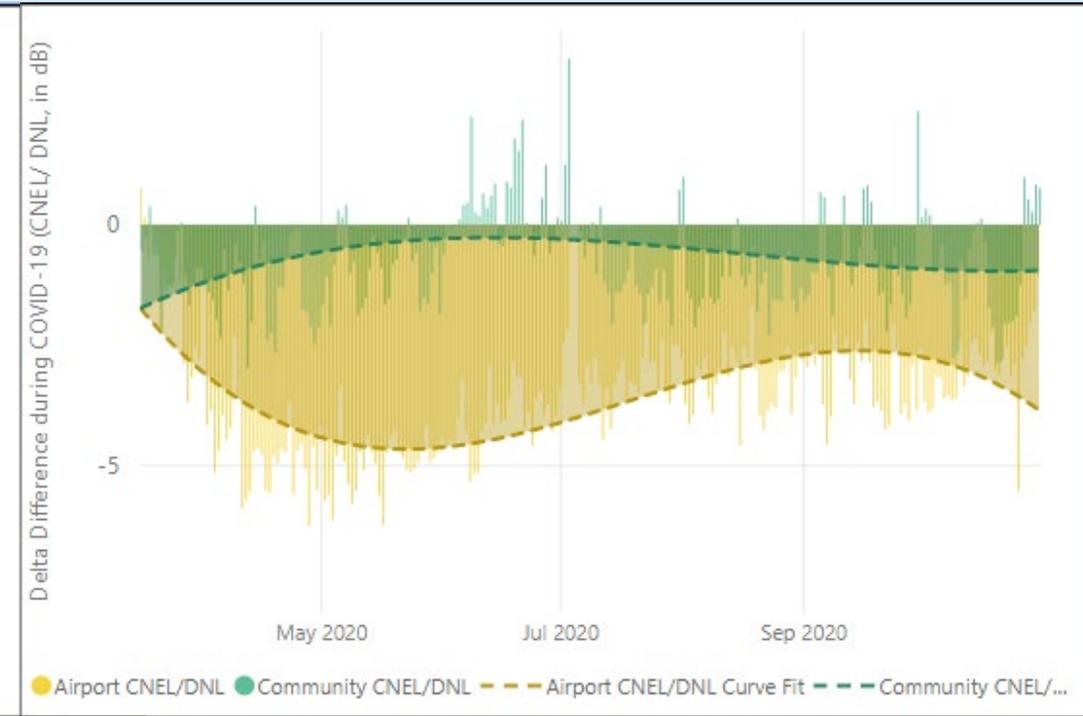
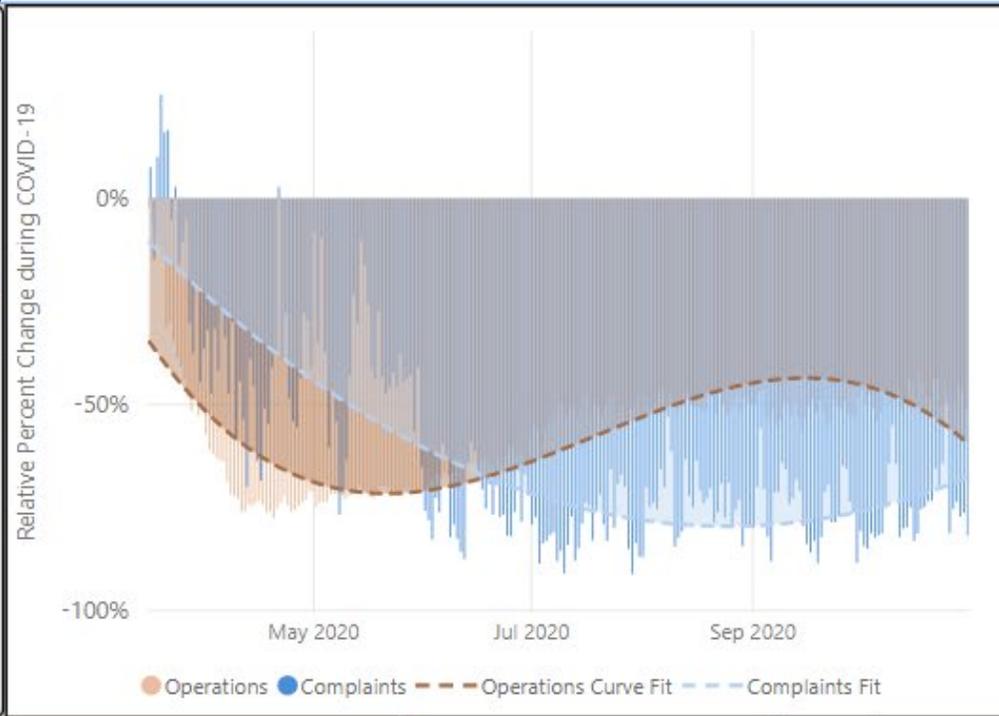
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Average Noise Level (CNEL/DNL)	
62.1	62.1
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59.5	61.3
COVID-19 Airport	COVID-19 Community



LAX Summary Results

Complaints, Operations, and Noise Data during the COVID-19 Pandemic



Findings:

- Aircraft noise complaints reduced by as much as 90% compared to pre-pandemic
 - Trend downward through September 2020
 - Leveling off or perhaps increasing since September 2020
- Aircraft operations plummeted during March to April 2020 to a low of 25% of pre-pandemic operations
- Aircraft operations were increasing since early summer 2020, but seem to be going down again this fall
- Airport and community noise levels reduced compared to pre-pandemic levels
 - Community noise levels reduced to a low in mid-March, returned to pre-pandemic levels over the summer and reduced again this fall
 - Aircraft noise levels dropped more significantly (as much as 6.2 dB), increased slowly as aircraft operations recovered over the summer, but trending downward again