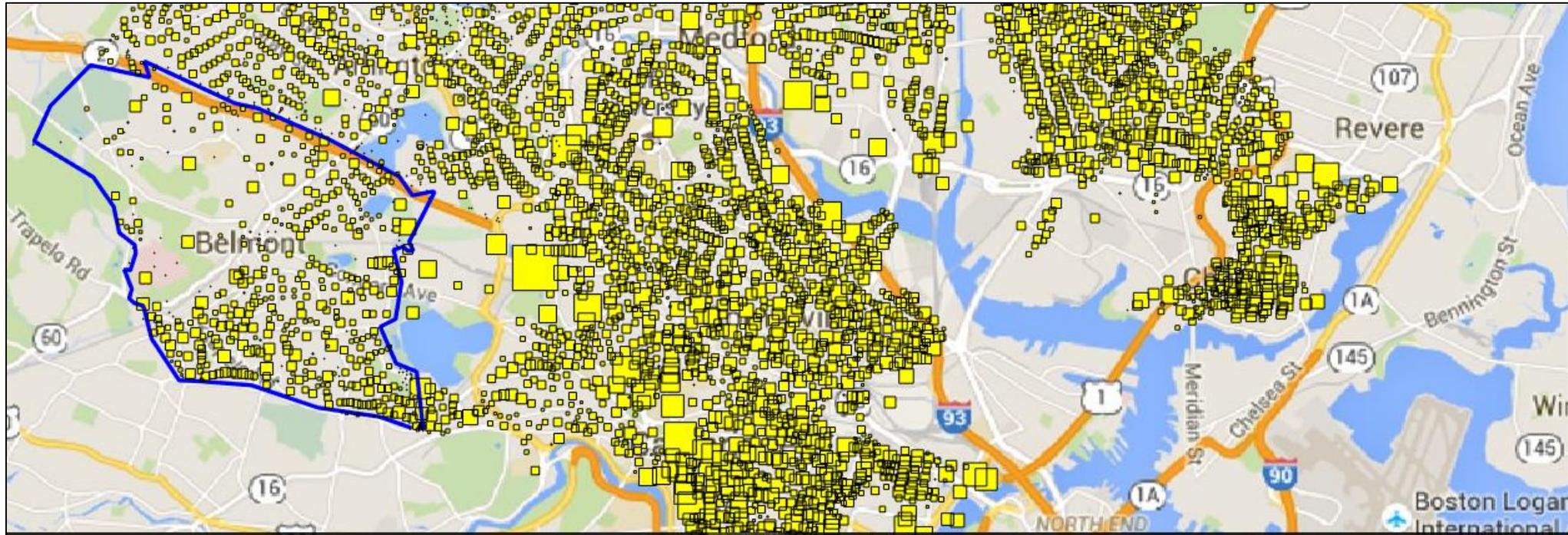


# Belmont residents have received new aircraft noise burden from RNAV

This analysis was done on a best efforts basis by private individuals based on publicly available data or obtained by FOIA and is provided for illustrative purposes without warranty expressed or implied to its accuracy or completeness.

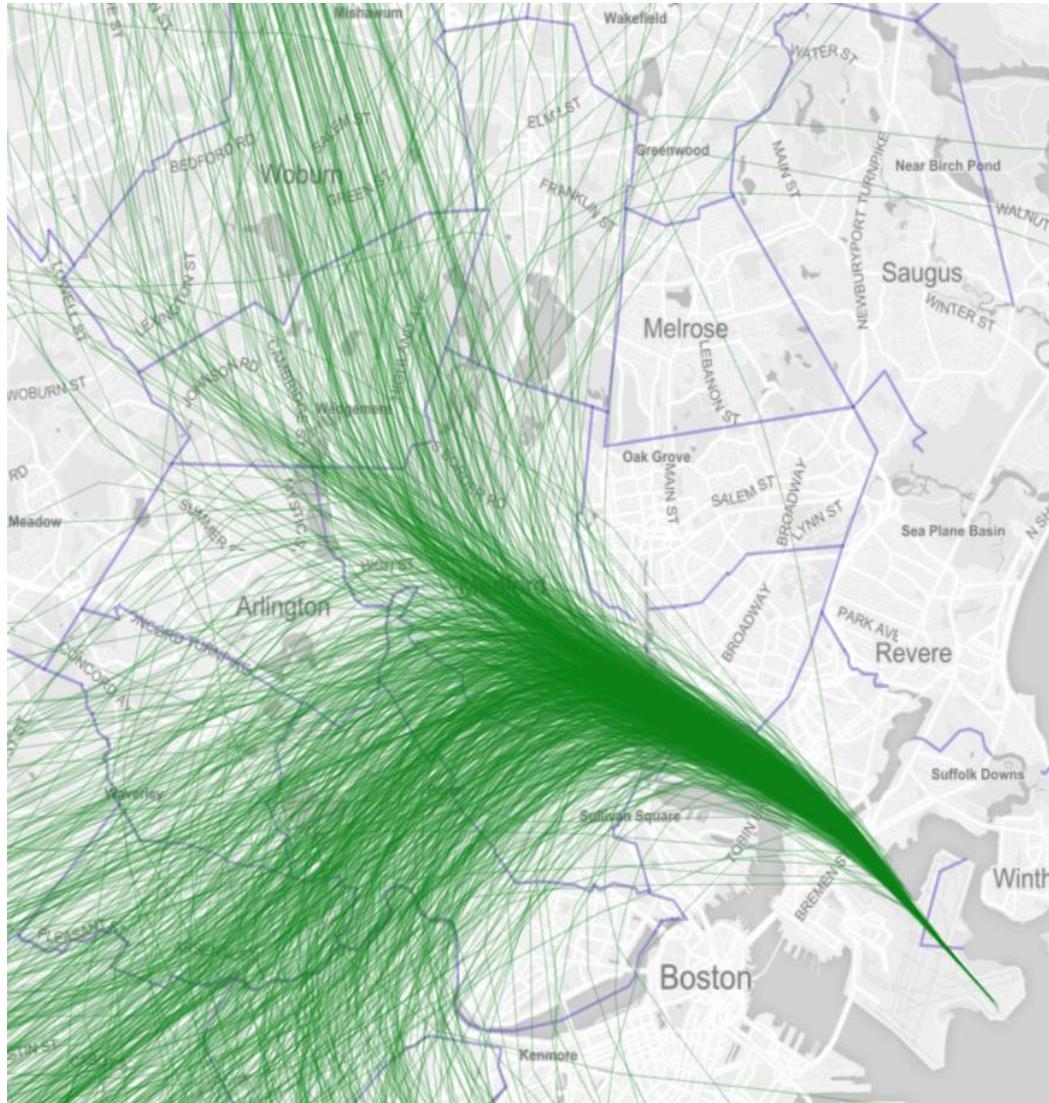
This is where people live in Belmont. The bigger the square, the greater the density.  
2010 Census Data



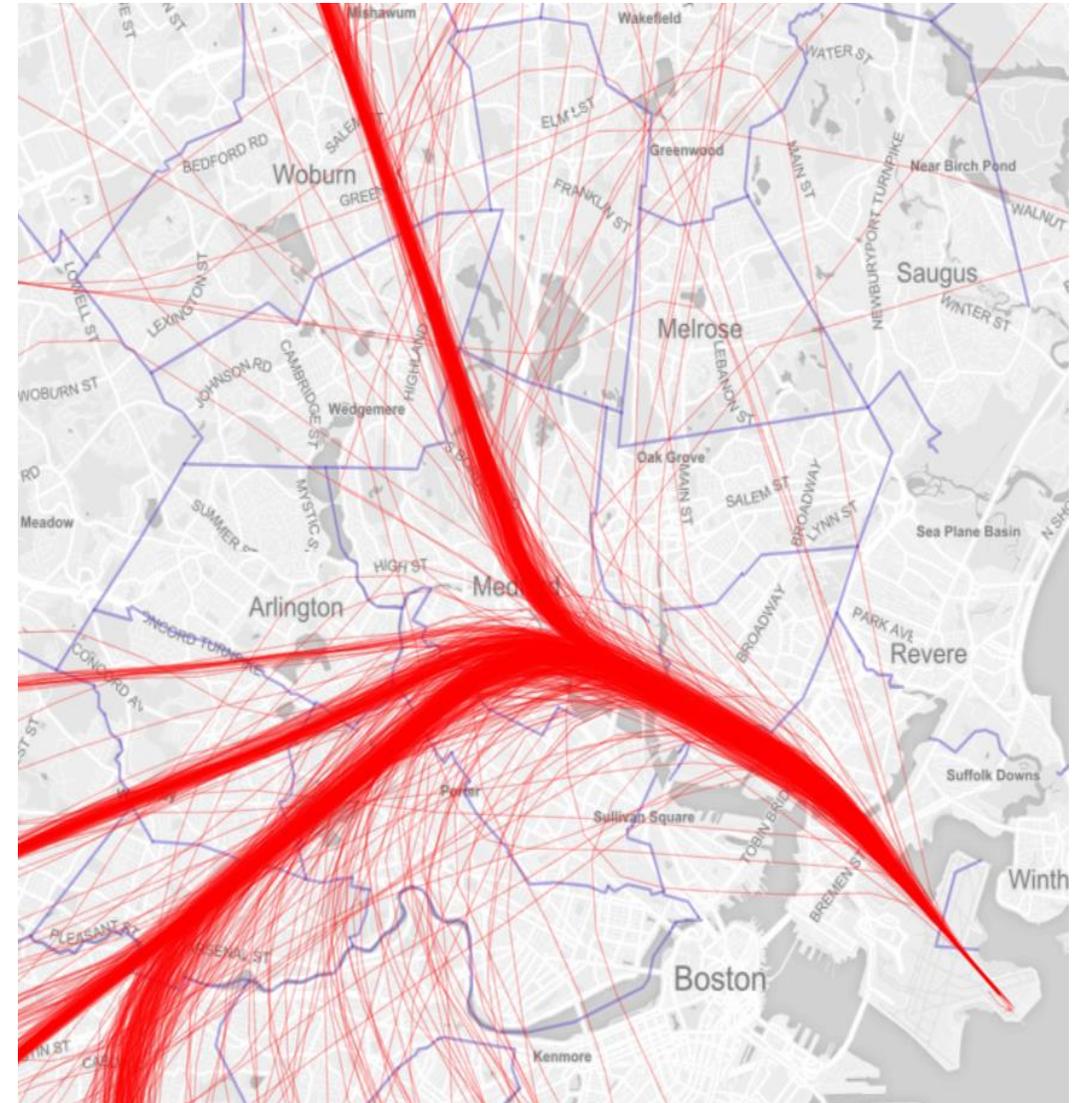
[from BLANS DNL by census block data 2008-2014  
and [://docs.digital.mass.gov/dataset/massgis-data-datalayers-2010-us-census](https://docs.digital.mass.gov/dataset/massgis-data-datalayers-2010-us-census) ]

These lines show where the planes fly after they take off from Runway 33L.

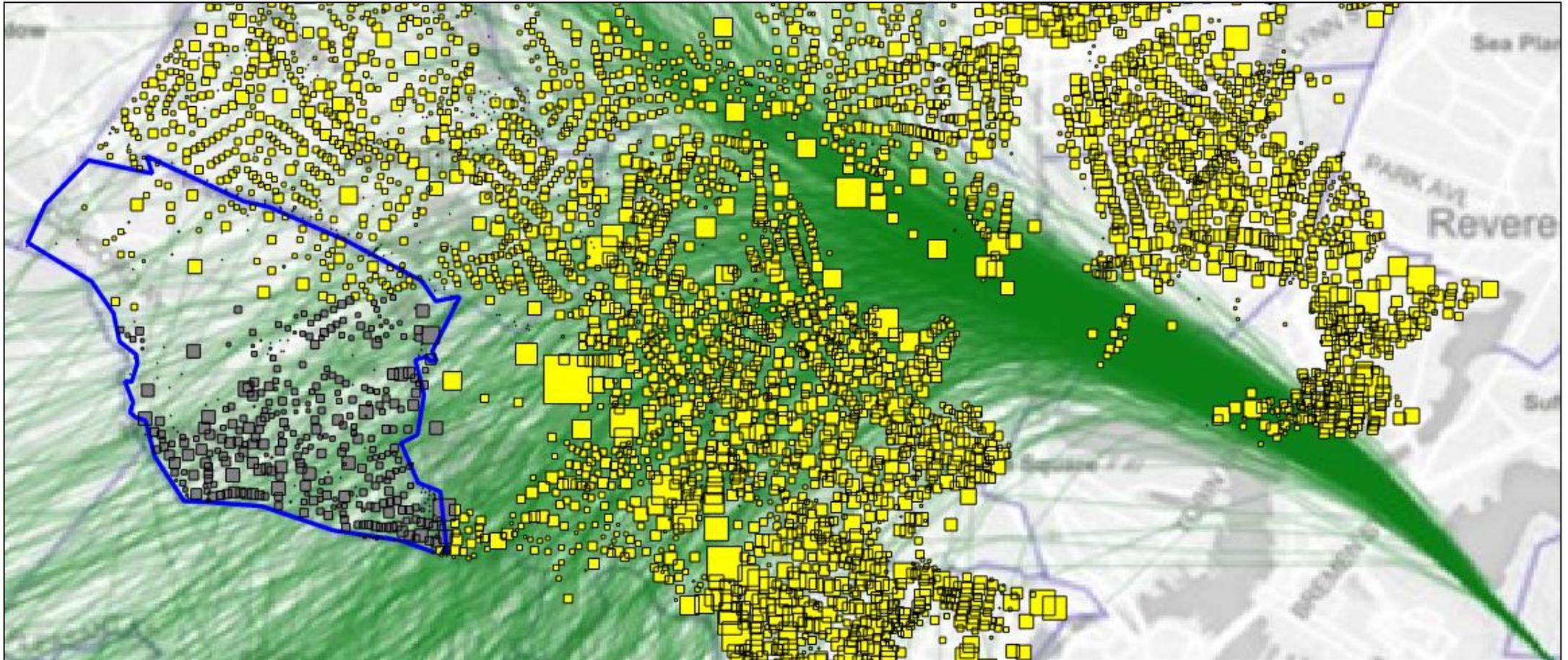
Before RNAV



After RNAV



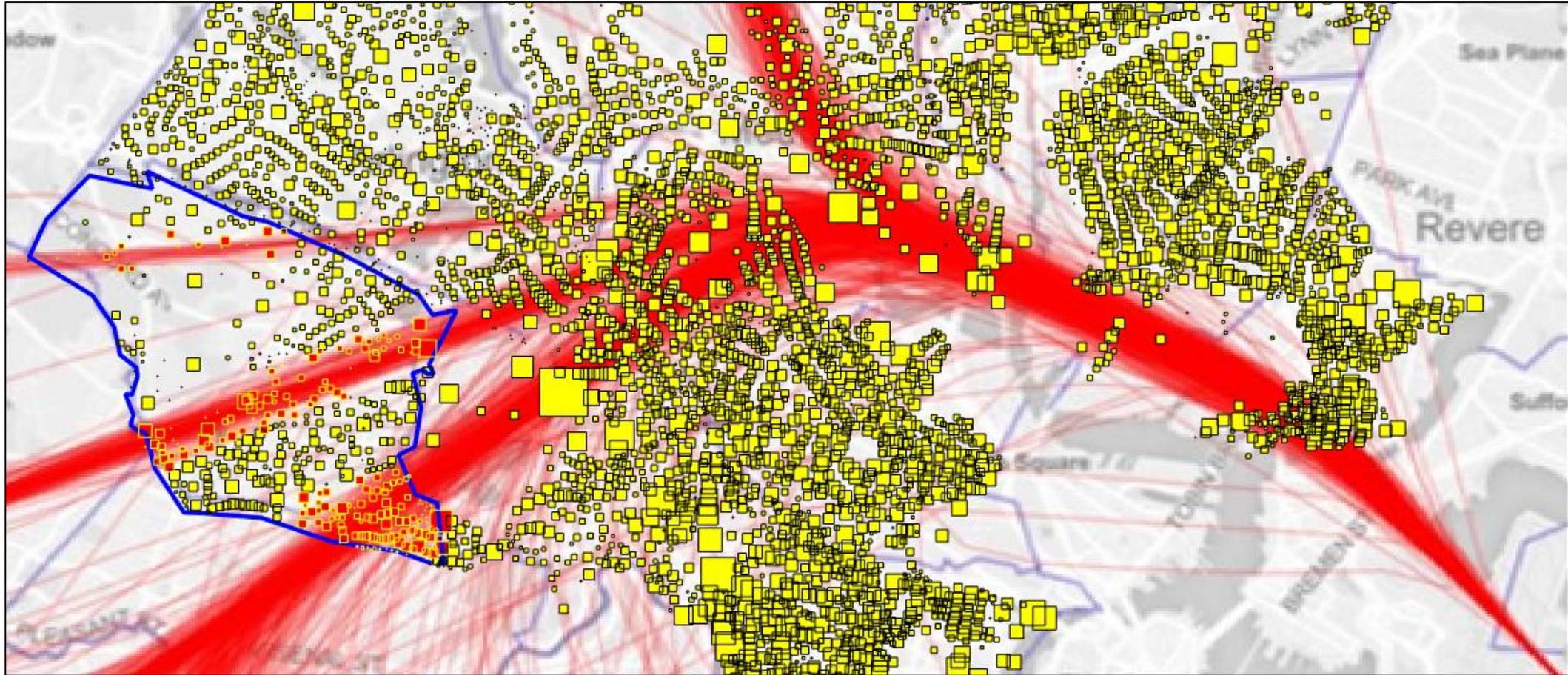
Before RNAV, ~22 K Belmont Residents had SOME Aircraft Noise (Not Concentrated)



[from BLANS DNL by census block data 2008-2014

and [://docs.digital.mass.gov/dataset/massgis-data-datalayers-2010-us-census](https://docs.digital.mass.gov/dataset/massgis-data-datalayers-2010-us-census) ]

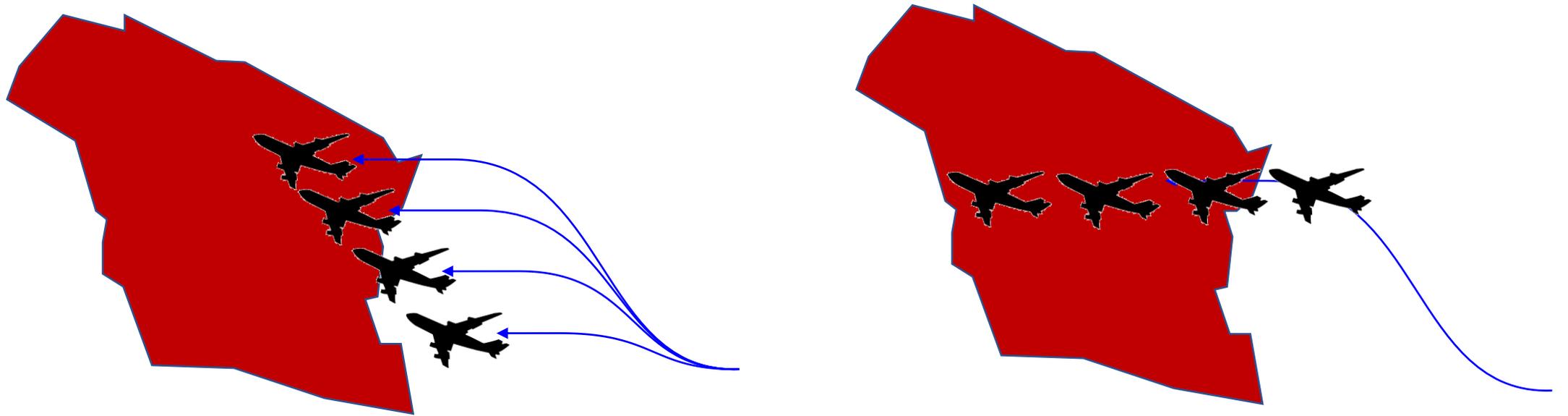
**AFTER RNAV, ~11 K Belmont Residents Got ALL THE Aircraft Noise (Concentrated)**



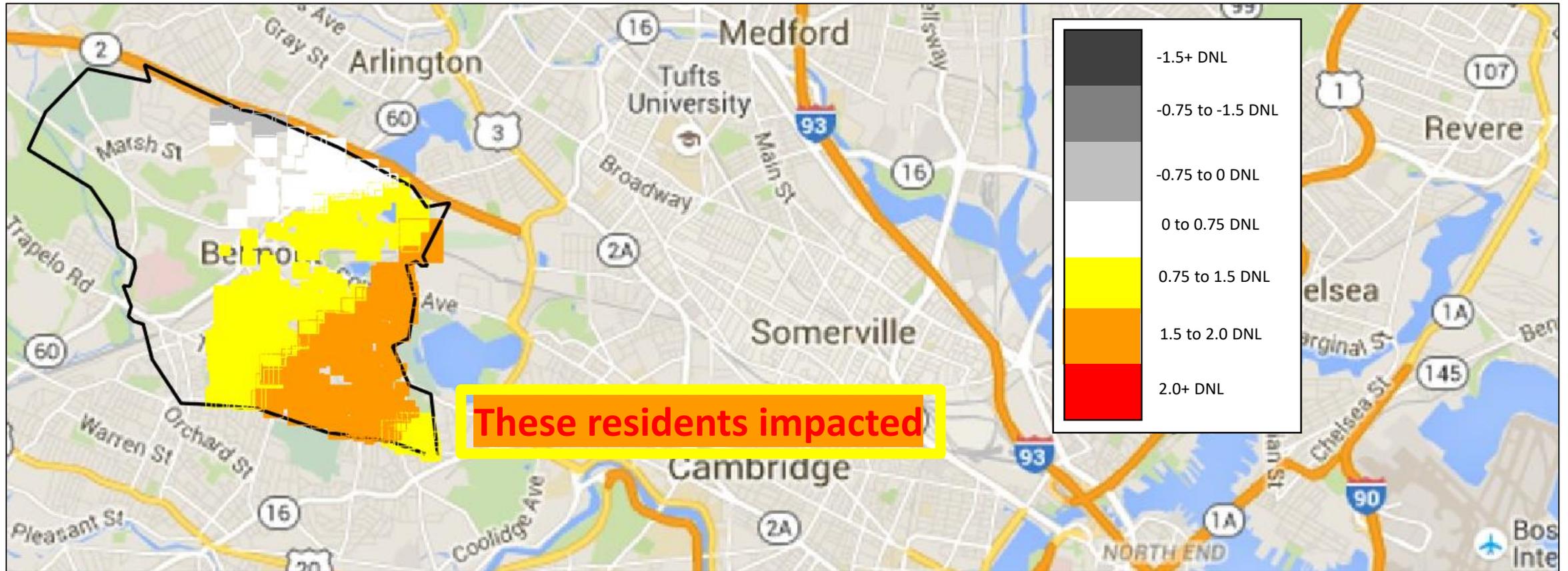
[from BLANS DNL by census block data 2008-2014

and [://docs.digital.mass.gov/dataset/massgis-data-datalayers-2010-us-census](https://docs.digital.mass.gov/dataset/massgis-data-datalayers-2010-us-census) ]

# The Before and After



**This indicates how much noise...Belmont residents gained  
[BLANS data set is clipped and omits Belmont-West... however most of Belmont gained DNL]**



[from BLANS DNL by census block data, comparing 2008-2010 log-mean annual DNL to 2014 (post-RNAV)]

# How much is a DNL?

A doubling or halving the airport operations equates to a +/-3-dB change in DNL

## Equivalent Operations for DNL = 65

### DNL Metric

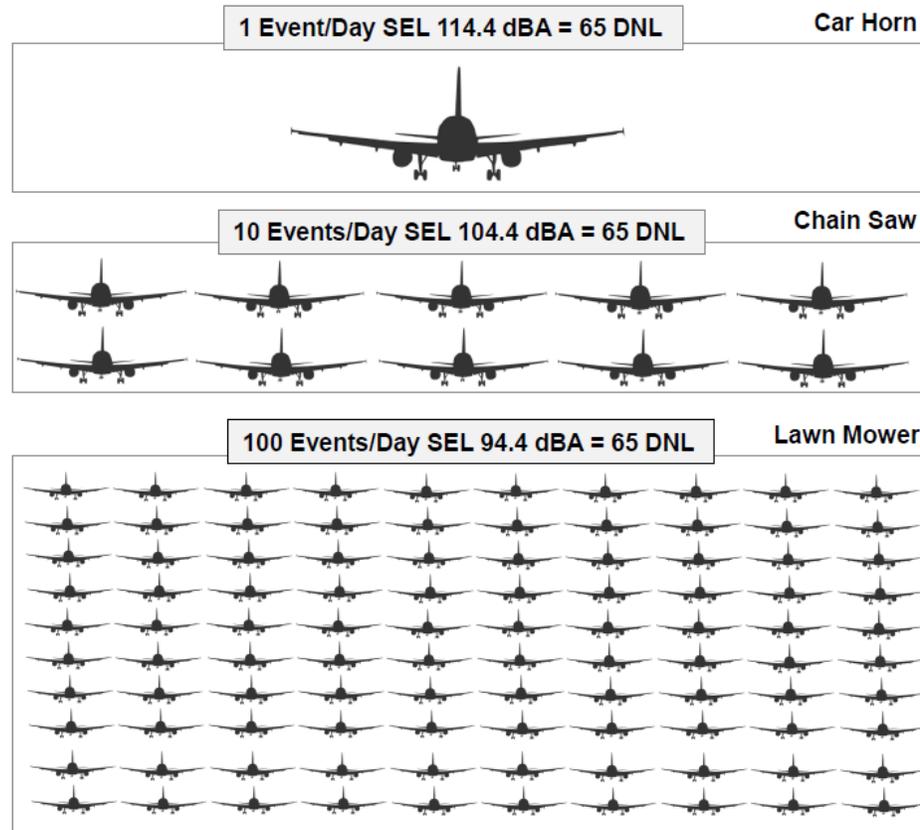
- DNL metric provides cumulative noise exposure to many individual noise events
- Can reach given DNL with single loud noise event or many quieter noise events

### Aircraft Noise over Time

- Aircraft noise from 1970s is different than aircraft noise today
- Aircraft from 1970s produced the same acoustic energy as 10 to 30 aircraft operations today

### Equivalent DNL

- A few, but relatively loud, events in 1970s would result in DNL 65 dB
- Many, relatively quiet events today would also result in DNL 65 dB
- However, noise experience would be very different

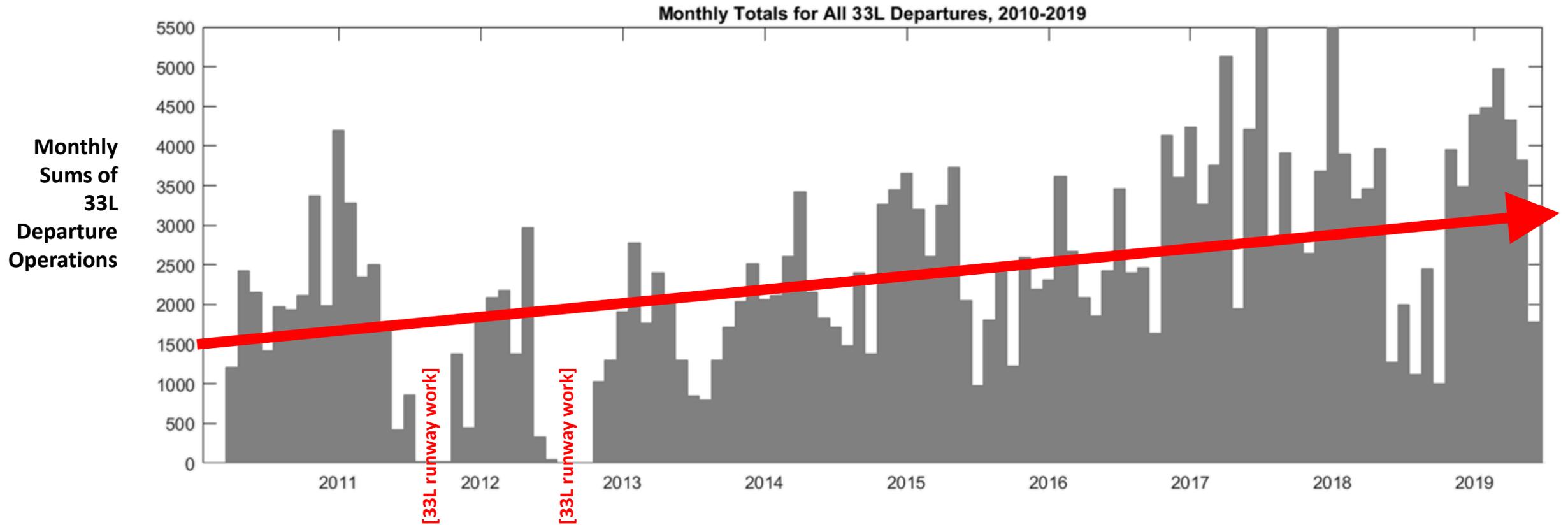


FAA reports DNL over the course of a year



However, it's gotten even worse than those charts show because...

**33L operations volume grow every year**



[from FOIA for Logan Operations data 2010-2019]