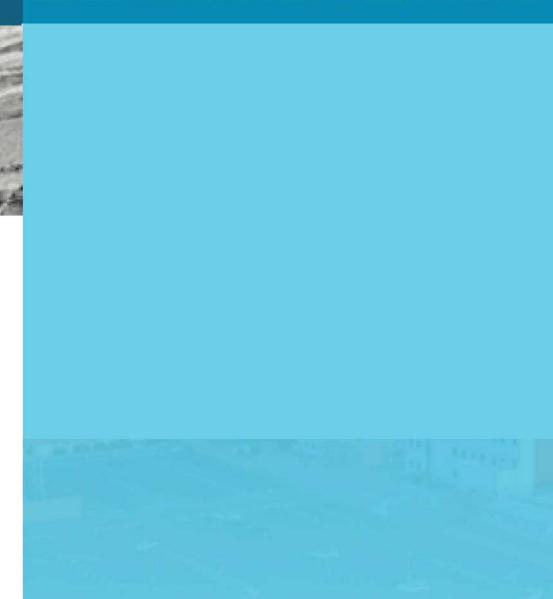
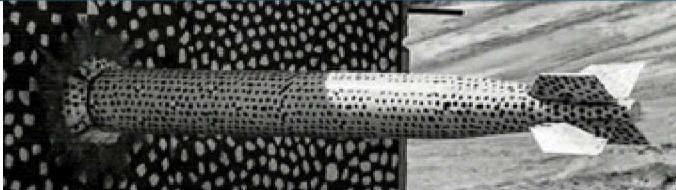
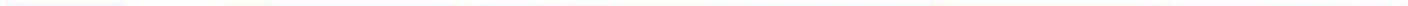


Changes in Background Infrasound Noise in Albuquerque, New Mexico Due to COVID-19



Presented By:

Sarah Albert



SAND 2020-XXXX

SAND2020-8116PE



Sandia National Laboratories is a multimission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

Introduction

University of Alaska Fairbanks

- B.S. Geosciences
- M.S. Geophysics – Volcano Infrasound

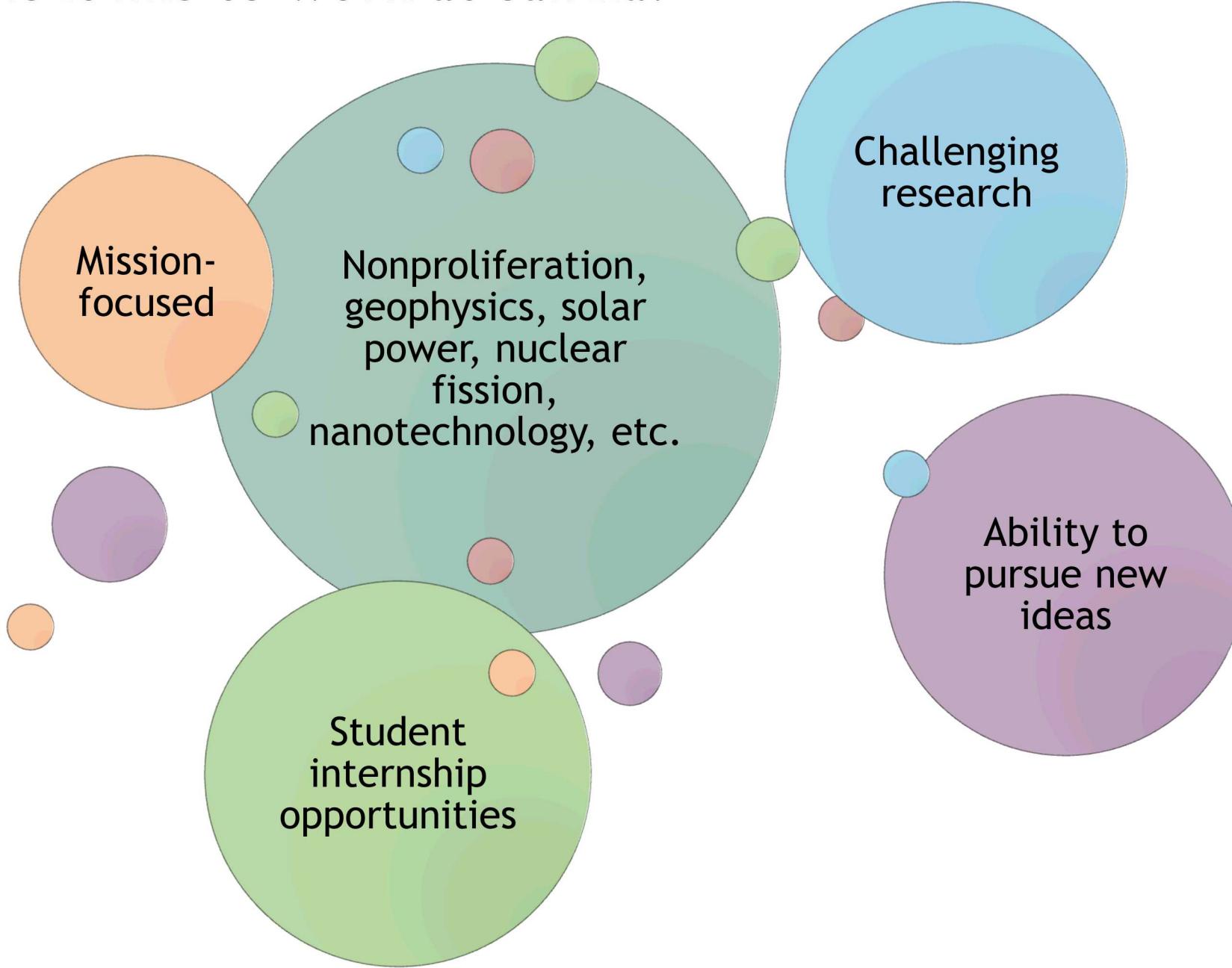


Sandia National Laboratories

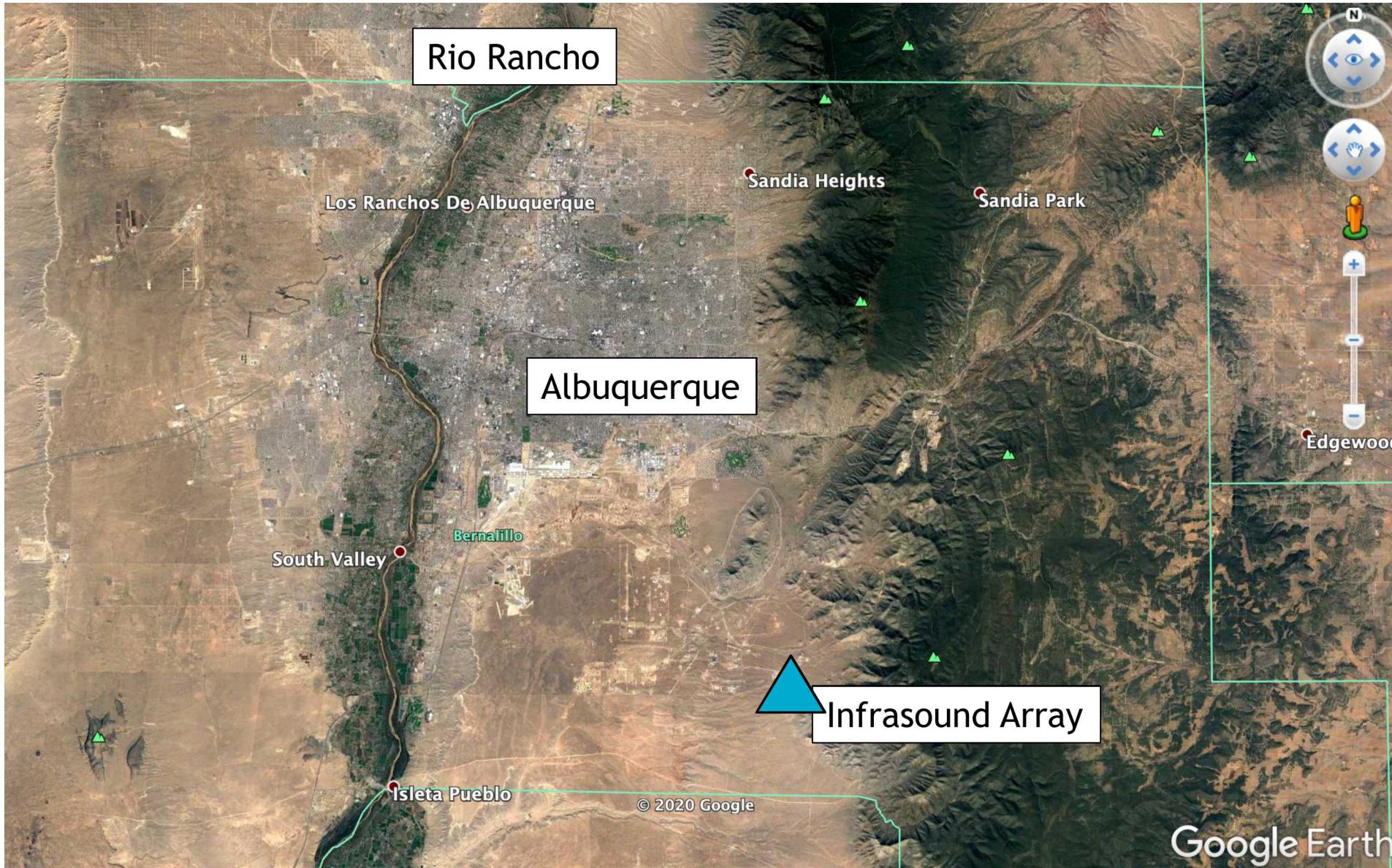
- Since 2016
- Infrasound geophysicist – National security (monitoring for nuclear explosions)



What is it like to work at Sandia?



FACT Infrasound Array



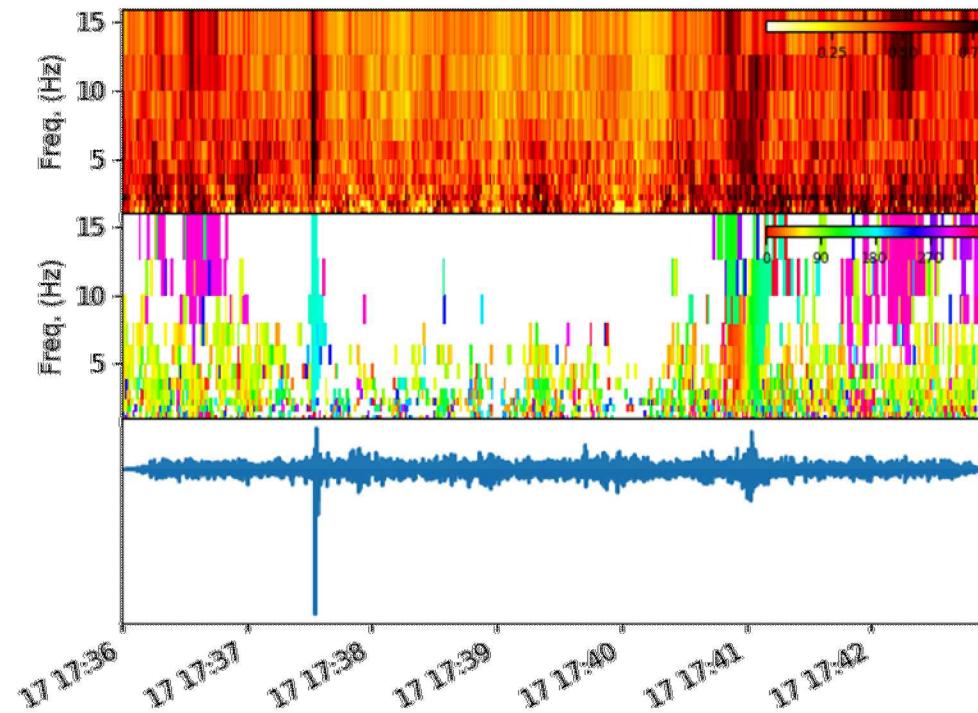
Methods

PSDs calculated using 60 minute windows with 50% overlap

Mean PSD taken for each time period (before restrictions, during stay-at-home order, and during phased re-opening)

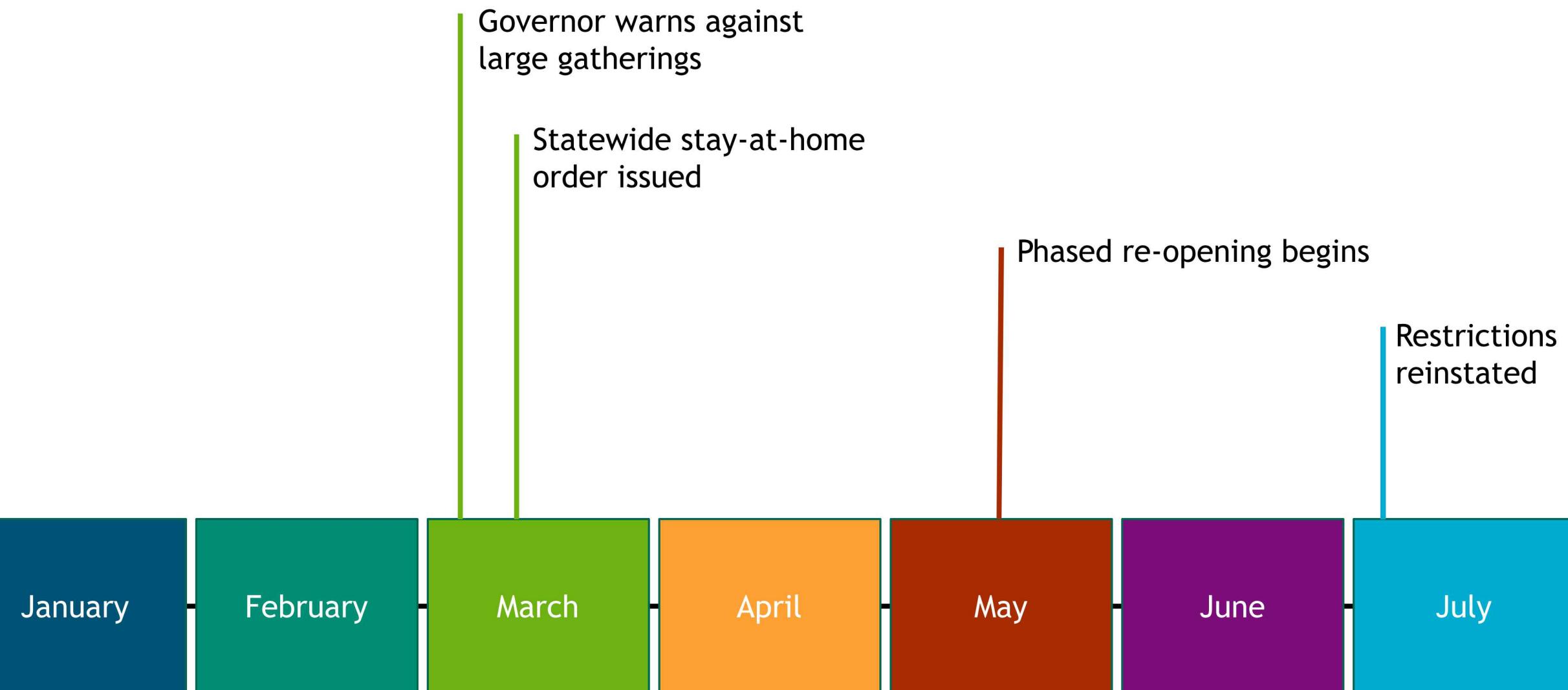
Data was processed using SNL-developed infrasound processing software

- Frequency-wavenumber analysis for arrays



Example of infrasound processing (not from this study)

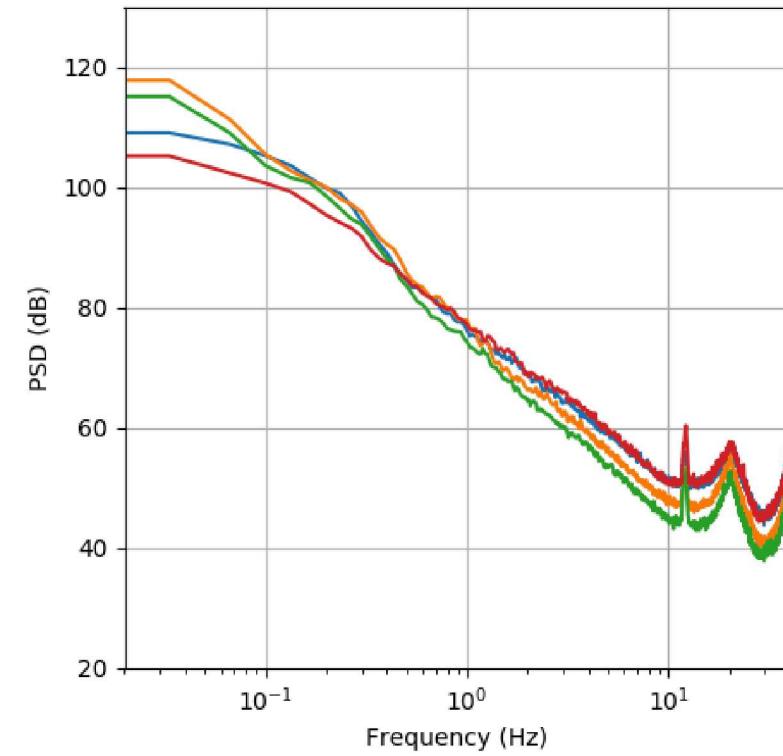
Timeline of COVID Restrictions in New Mexico



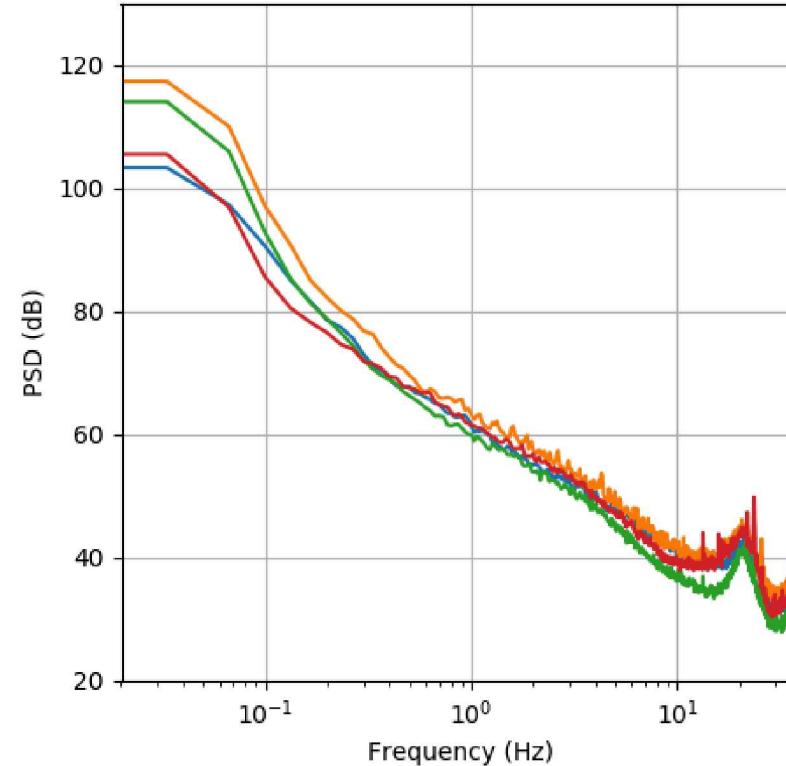
Background Infrasound Noise 08:00 UTC (02:00 Local)



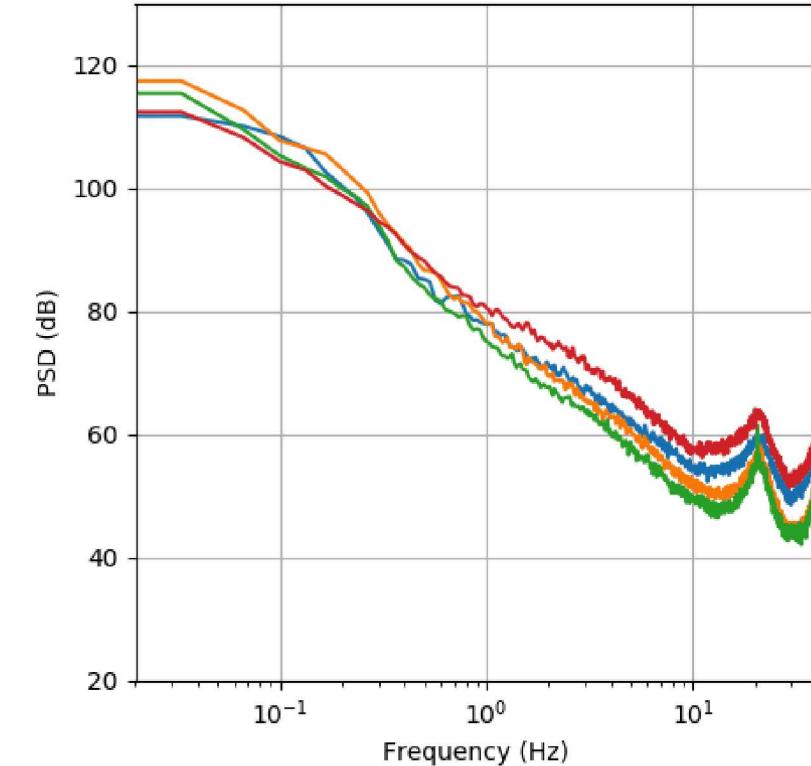
Before Restrictions



Stay-at-home Order



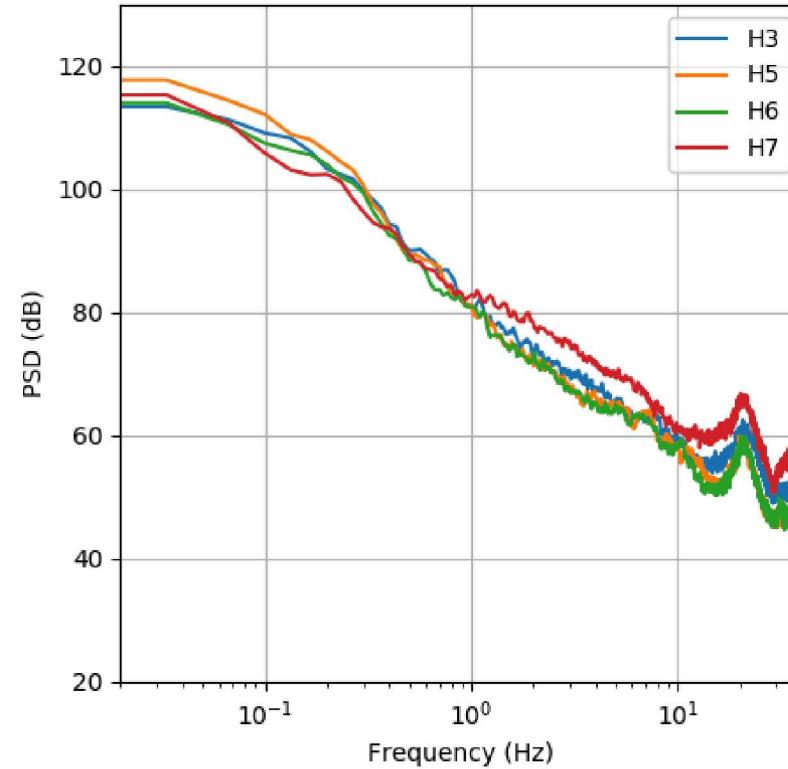
Phased Re-opening



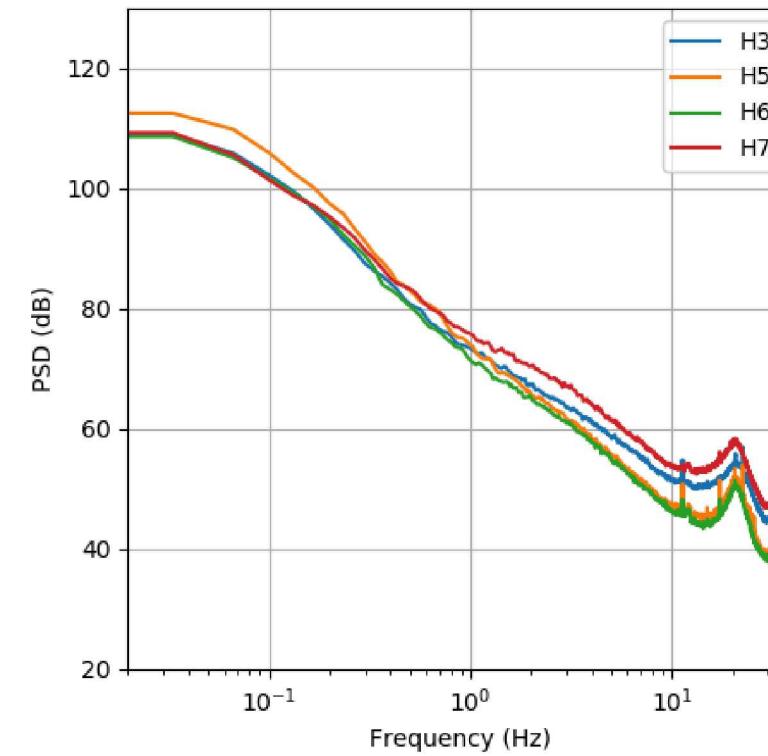
Background Infrasound Noise 20:00 UTC (14:00 Local)



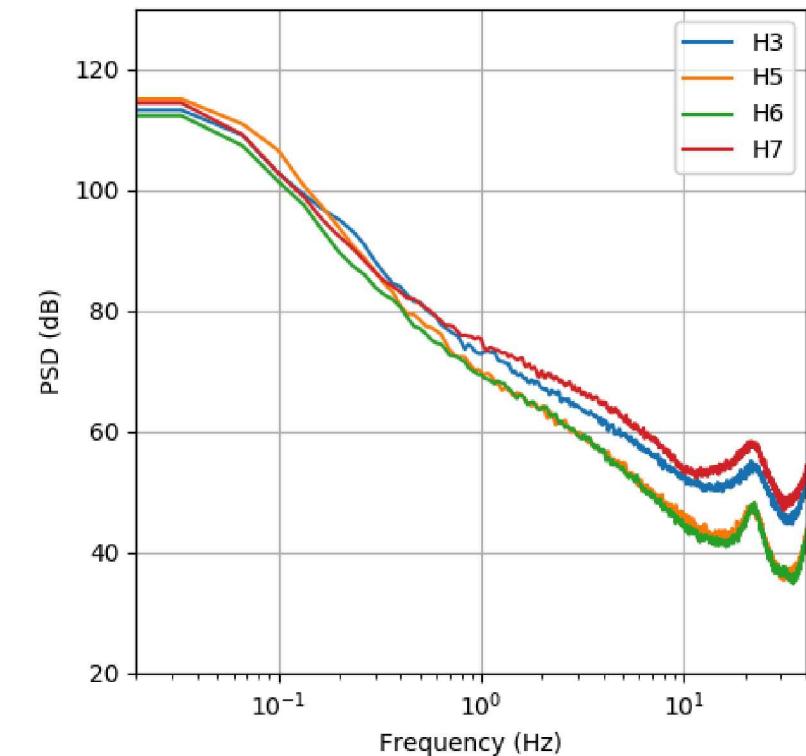
Before Restrictions



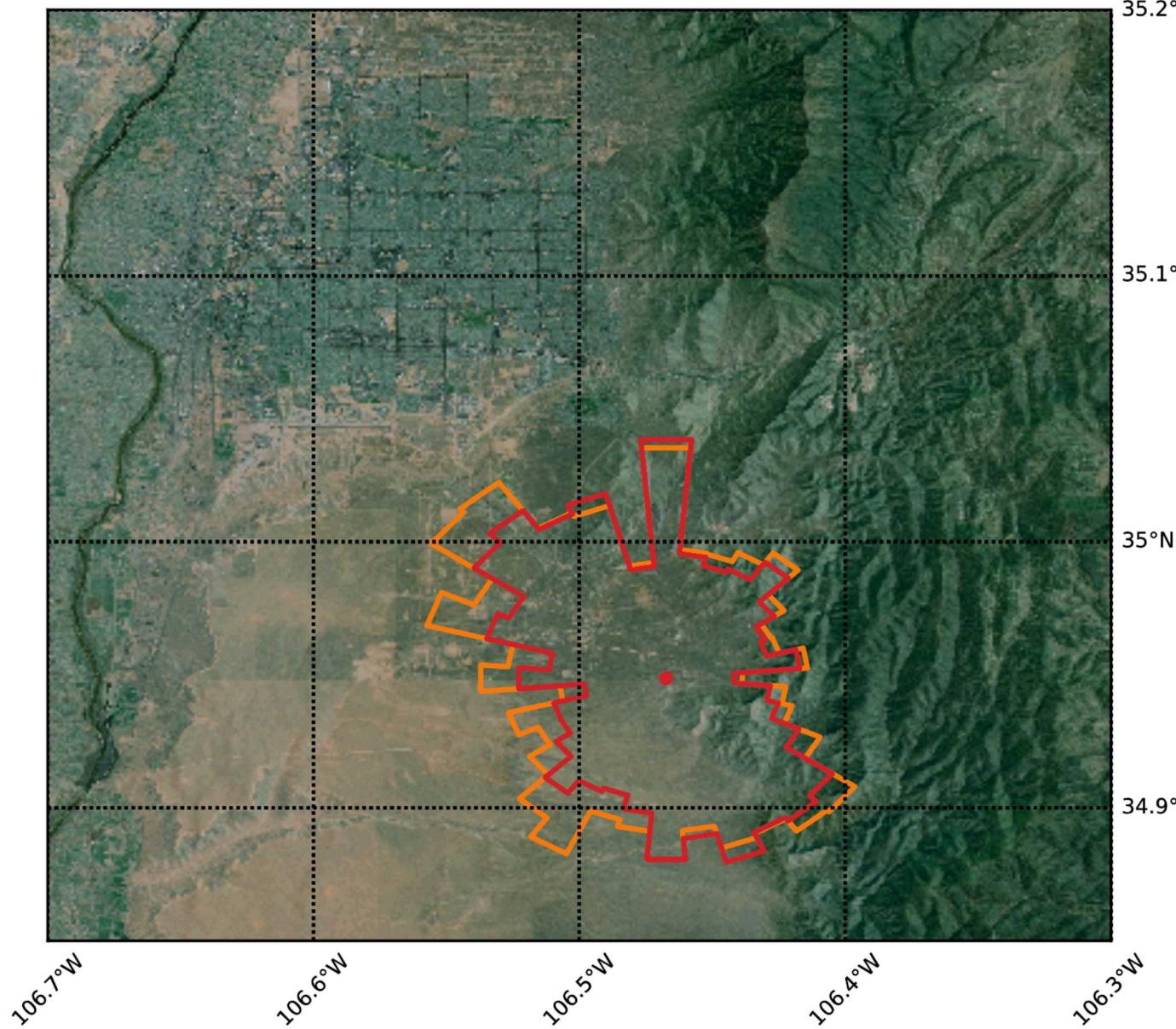
Stay-at-home Order



Phased Re-opening



9 Backazimuth Distribution



Decrease in distribution of backazimuths to the NW-SW

Due to fewer commercial flights?

— Before restrictions
— Stay-at-home order

Next Steps

Compare daily PSD amplitudes with mobility data

Obtain flight data and compare backazimuth distribution

Collaboration with others?

