

Measurement of Aviation Emissions in Near-Airport Communities

Our study is being performed by investigators from the School of Public Health at Boston University and the School of Engineering at Tufts University. The goal of our effort is to measure aviation-related emissions in communities located near major airports to develop a better understanding of the impacts on residents and communities.

Why are we studying aviation emissions in the Boston area? Recent studies have concluded that airports are significant contributors to local air pollution, but these studies have not had sufficient data to quantify how much of the pollution comes from aircraft versus other pollution sources, such as traffic on



roadways. Because Logan is so close to Boston it is likely that many nearby areas are being impacted with emissions from arriving and departing aircraft as well as ground transport activities at the airport. We believe that by conducting measurement campaigns in communities near Logan including Chelsea, Revere and Winthrop we will be able to detect and quantify these emissions.

How are we studying aviation contributions to air quality? We will collect and analyze air pollution measurements to determine the contributions of arriving and departing aircraft to ground-based concentrations in communities around Logan. Previous studies have not had the

monitoring infrastructure and real-time flight activity data necessary to determine how much of the pollution is from aviation sources. We are hoping to establish air monitoring sites where we can house state-of-the-art air pollution monitors (inside a medium sized box like the one in the photo above) for 12 months between August 2020 and August 2021. The air quality data will be analyzed along with flight activity data from the U.S. Federal Aviation Administration and meteorology data from Logan to determine temporal variations in aircraft contributions at each of the monitoring sites.

Air Quality Monitor Sites:

We have already established monitoring sites in Chelsea and at UMASS Boston, but we are still in need of two more sites – one in Revere and one in Winthrop (preferably in the Point Shirley area).

Site needs:

- Accessible for research team 1 day per week for ~30 mins
- Electric outlet or extension-cord accessible (we will pay for all the electricity we use)
- Rooftop, driveway or open sites away from trees are preferred
- Greater than 50 meters away from major roadways.
- Relatively close to flightpaths leading runways 22L, 22R, or 27

If you like to learn more about our study or are interested in housing a monitoring box on your property, please contact Dr. John Durant at Tufts University. John.durant@tufts.edu; 617-627-5489.