Final Report

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February 10, 2020

# Introduction

Toxic contamination of the air, especially in urban areas, has been a subject of public concern and scientific study for decades. The Clean Air Act Ammendments of 1990 introduced 187 toxic pollutants called hazardous air pollutants (HAPs).These HAPs are released from both natural and anthropogenic sources, and are classified distinctly from criteria pollutants like ground-level ozone, carbon monoxide, and lead. Although HAPs are usually released from the same sources as critera pollutants (Strum and Scheffe 2016) they are distinct because of their link to cancer and other serious health problems. Major anthropogenic sources of HAPs includes transportation (mobile), industry and power production (point), and smaller, local sources such as dry cleaners (area) (Strum and Scheffe 2016). Health risks from mobile sources of HAPs has become a great concern, especially in expanding cities where workers commute by car in huge numbers (Mayer 1999). HAPs released from mobile sources alone have been shown to lead to birth defects such as low birth weight of babies (Wilhelm et al. 2012). There have been arguments that the work of the EPA to enforce the Clean Air Act focuses too much on point sources, when a large volume of HAPs come from area and mobile sources. (Axelrad et al. 1999, Strum and Scheffe 2016) The city of San Francisco is no exception to this. The

# Methods

Add text here.

## Site Locations and Descriptions

Add text here.

## Field Sampling Design

Add text here.

## Data Analysis and Statistics

Add text here.

# Results

## Subsections are ok in the results section too

Add a number of code chunks in the Results section. These should read in, subset and plot the data as needed (no need to save any figures to pdf, since they will be put into the rendered document when you click ‘knit’), and, for any hypotheses that you want to test, an appropriate statistical test.

# If you add any additional packages here, make sure they are  
# also listed in the DESCRIPTION file  
library("dplyr")

##   
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':  
##   
## filter, lag

## The following objects are masked from 'package:base':  
##   
## intersect, setdiff, setequal, union

library("tidyr")  
library("ggplot2")  
library("readr")

# Discussion

# Sources Cited

Axelrad, D. A., R. A. Morello-Frosch, T. J. Woodruff, and J. C. Caldwell. 1999. Assessment of estimated 1990 air toxics concentrations in urban areas in the united states. Environmental Science & Policy 2:397–411.

Mayer, H. 1999. Air pollution in cities. Atmospheric environment 33:4029–4037.

Strum, M., and R. Scheffe. 2016. National review of ambient air toxics observations. Journal of the Air & Waste Management Association 66:120–133.

Wilhelm, M., J. K. Ghosh, J. Su, M. Cockburn, M. Jerrett, and B. Ritz. 2012. Traffic-related air toxics and term low birth weight in los angeles county, california. Environmental health perspectives 120:132–138.