



Air Quality

VIL OSHIA

REQUEST FOR PROPOSAL

RFP #: TS – F2.H4

TITLE: Ozone Forecasting

CLOSING DATE AND TIME: OCTOBER 5, 2020 @ 5:00 PM

Ozone Forecasting: TS – F2.H4

Background and Purpose

By responding to this Request for Proposal (RFP), the Proposer agrees that s/he has read and understood all documents within this RFP package.

Submission Details

Responders to this RFP should supply:

- A business report up to 5 pages (not including cover page or table of contents), including any supporting plots and tables.
- The commented code (in a separate file) used to produce the results.
- Both files should be uploaded to Moodle by October 5, 2020 @ 5:00 PM.

The report should address **all points described in the “Objective” section** below.

Objective

A local medical facility (hereafter the “client”) is seeking proposals for understanding and predicting average monthly Ozone levels at the Millbrook School station in Wake County, NC.

The client believes that seasonality is an important component of estimating Ozone and is interested in the use of a seasonal ARIMA model. The scope of services includes the following:

- The creation of a seasonal ARIMA. Be sure to address how seasonality is incorporated into the model for Ozone and how this decision was made.
- Indicate if anything needs to be done for trend (if so, how was this addressed).
- Discuss any relevant information regarding autoregressive and/or moving average terms.
- Be sure to indicate if white noise is achieved for the recommended model and how this was determined.
- Show the actual versus predicted values in a time plot for the test data set (last 5 months) and provide a measure of accuracy for this test data.

Data Provided

- The data is provided in a csv format. The variables contained within this data set are:

Date - Date of the observation (in days)

Source -usually AQS (Air Quality System)

Site ID – unique ID for the given monitoring station

POC – Parameter Occurrence Code (used to distinguish different instruments that measure the same parameter at the same site)

Daily Measurements – The measurement of interest

Units – Units in which daily measurements are recorded

Daily AQI – The daily Air Quality measurement

Site – Name of the site in which data was recorded

State Code – State code (37)

State – State (NC)

County Code – County Code (183)

County – County (Wake)

Site Latitude and Site Longitude of where the measurement was taken