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CSCI 3900C Data Science

Dr. Spence

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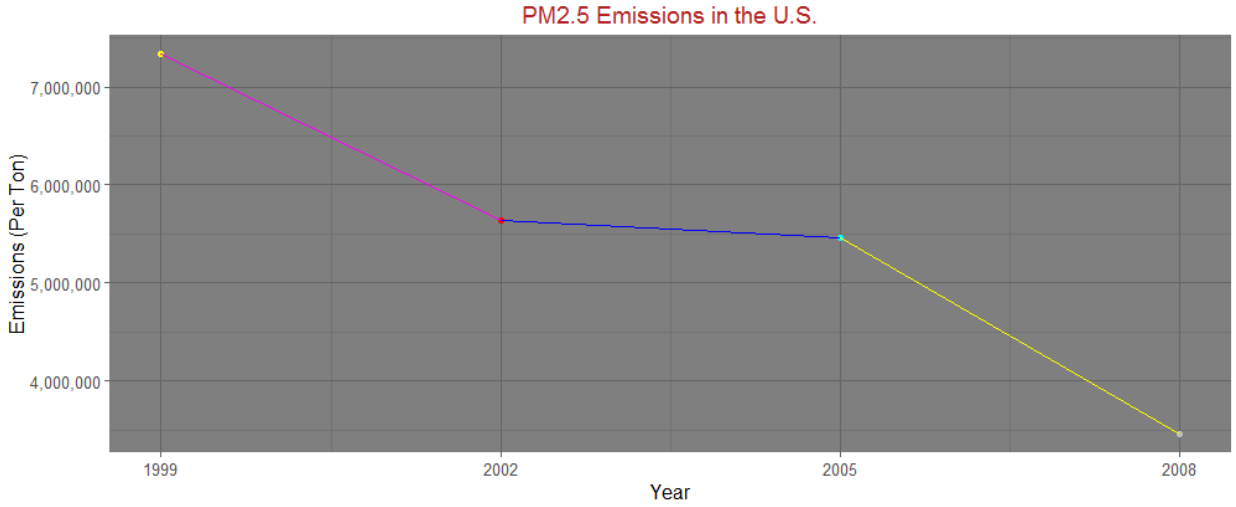
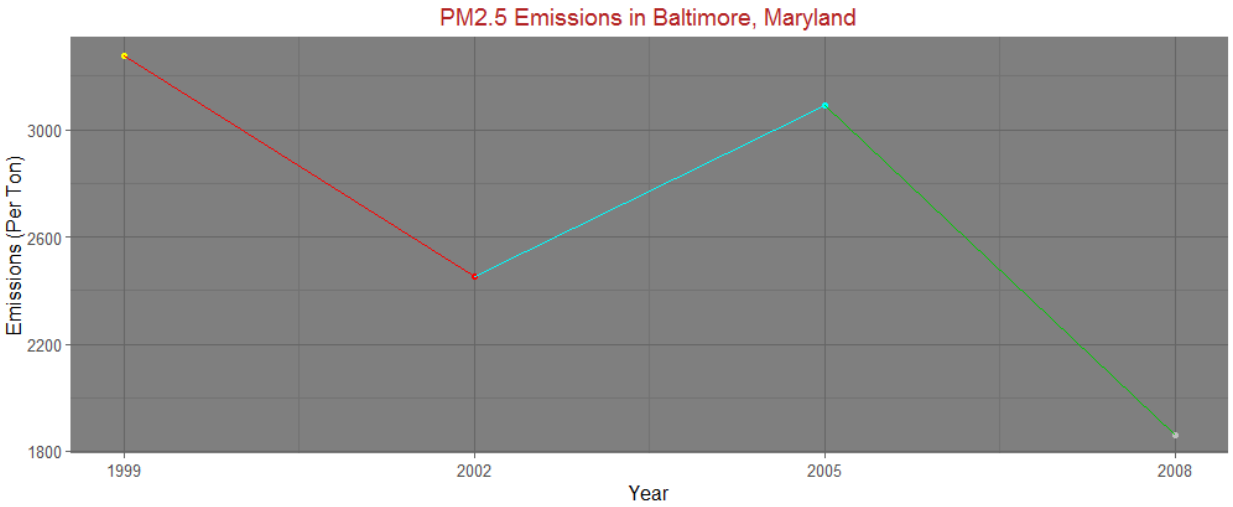
Project 3 Report

I. Have total PM2.5 emissions decreased in the United States from 1999 to 2008? Your plot(s) should show the total PM2.5 emissions (from all sources) for each of the years 1999, 2002, 2005, and 2008.



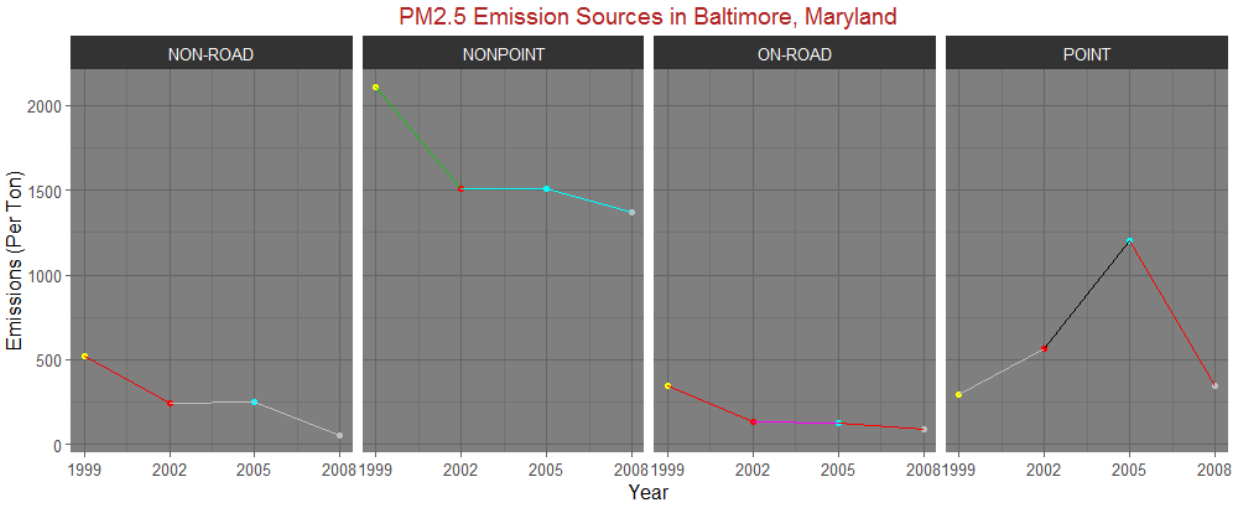
- The plot above shows the decrease of total PM2.5 emissions per ton in the U.S. from the years 1999, 2002, 2005, and 2008. PM2.5 emissions have drastically decreased over the nine-year span of recordings.

II. Have total emissions from PM2.5 decreased in the area of Baltimore City, Maryland from 1999 to 2008? (Note the fips code for this area is “24510”.)



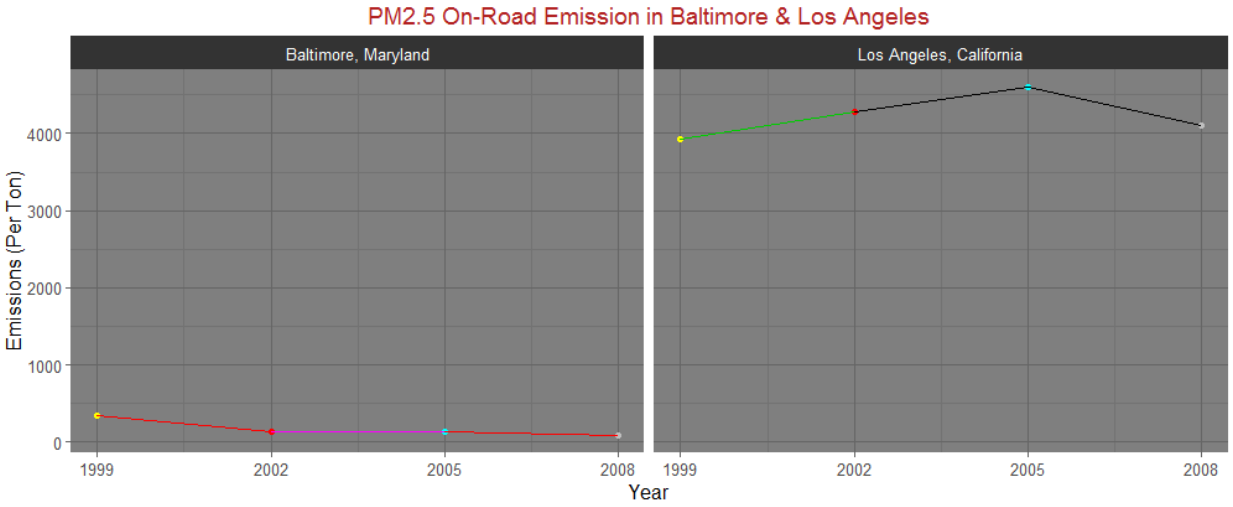
- The above plot displays levels of total PM2.5 emissions per ton in Baltimore, Maryland from 1999-2008. Total PM2.5 emissions in Baltimore, Maryland have drastically decreased from 1999 to 2008. A large increase occurred in 2005 before continuing to drop to its lowest point in 2008.

III. The type variable identifies four types of pollutant sources (point, nonpoint, onroad, nonroad). Of these four types of sources, which have seen emission increases in the Baltimore City area from 1999 to 2008? Which have seen emission decreases in that area during the same time period?



- The plots above display the total PM2.5 emissions in Baltimore city Maryland from 1999-2008 separated by Source type. Each emission source in Baltimore, Maryland has decreased except for the Point source emission which has increased. A drastic increase occurred in Point source emissions from 1999-2005; in 2008 they decreased rapidly but still remained above the total from 1999.

IV. Compare emissions from onroad sources in Baltimore City with emissions from onroad sources in Los Angeles County, California (fips code “06037”). Which city has seen greater changes over time in onroad emissions?



- The plots above display the total PM2.5 emissions per ton in Baltimore and Las Vegas from 1999-2008. Los Angeles has the greater changes over time in on-road emissions, with a large increase from 1999-2005 and then a rapid decrease in 2008.