

IMPACTS OF THE COVID-19 PANDEMIC IN THE NATIONAL CAPITAL REGION

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Overview

- COVID-19 related restrictions have affected socio-economic activities throughout the country, including the Washington metropolitan area.
- Staff from various COG department are collaborating to develop a snapshot summary of observed impacts on the region from a multisectoral perspective.
- Sectors of analysis include:
 - Environment
 - Transportation (Roadways and Public Transportation)
 - Economy
 - Health
- Analysis will be presented in two phases:
 - *Near-term Activities*: readily available data that are being presented to stakeholders starting in December.
 - *Longer-term Activities*: data collection and analysis activities that may take longer to complete.



Air Quality

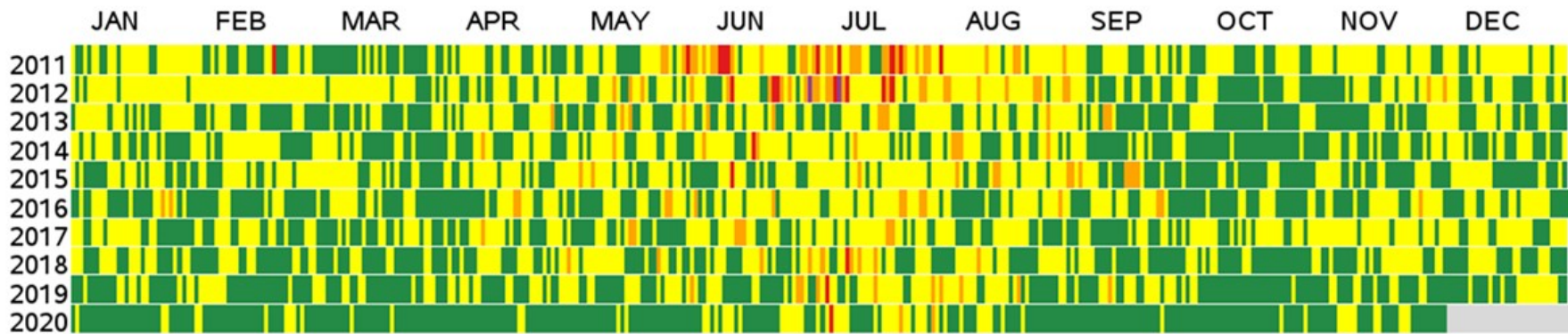
- **Ozone and fine particulate matter (PM2.5) were lower in 2020 compared to 2019**
(March 1 – Sept 30)
- COVID-19 related restrictions and closures reduced activities and related emissions
- Weather was unfavorable to the formation and build up of pollutants

Ozone Air Quality Index Days (March - September)			
Year	Code Green	Code Yellow	Code Orange
2020	180	32	2
2019	123	81	10



Air Quality

Daily AQI Values, 2011 to 2020 Washington-Arlington-Alexandria, DC-VA-MD-WV



Source: U.S. EPA AirData (<https://epa.gov/air-data>), generated December 2, 2020

Note: Data shown above is for combined AQI values for ozone, PM2.5, PM10, CO, NO2, and SO2 for the Washington-Arlington-Alexandria CBSA.



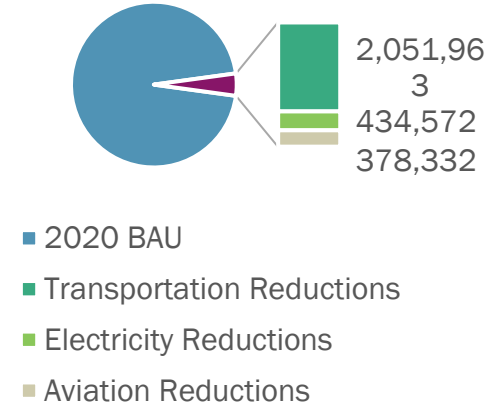
Impact on Greenhouse Gas Emission

- GHG Emission Reduction Estimates
 - Transportation: 40% average reduction of on-road sector (Mar 20 – June 26)
 - Electricity: 7.9% average reduction of electricity sector (Mar 20 – July 14)
 - Aviation: 65% average reduction of aviation sector (Mar 20 – July 20)

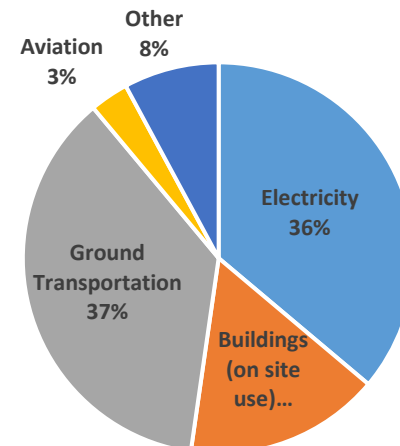
Note: COG BAU projections revised May 2020.

Emissions (MT CO₂e)

63,275,113



COG Region 2030 GHG Emissions by Sector



Impact on Greenhouse Gas Emission

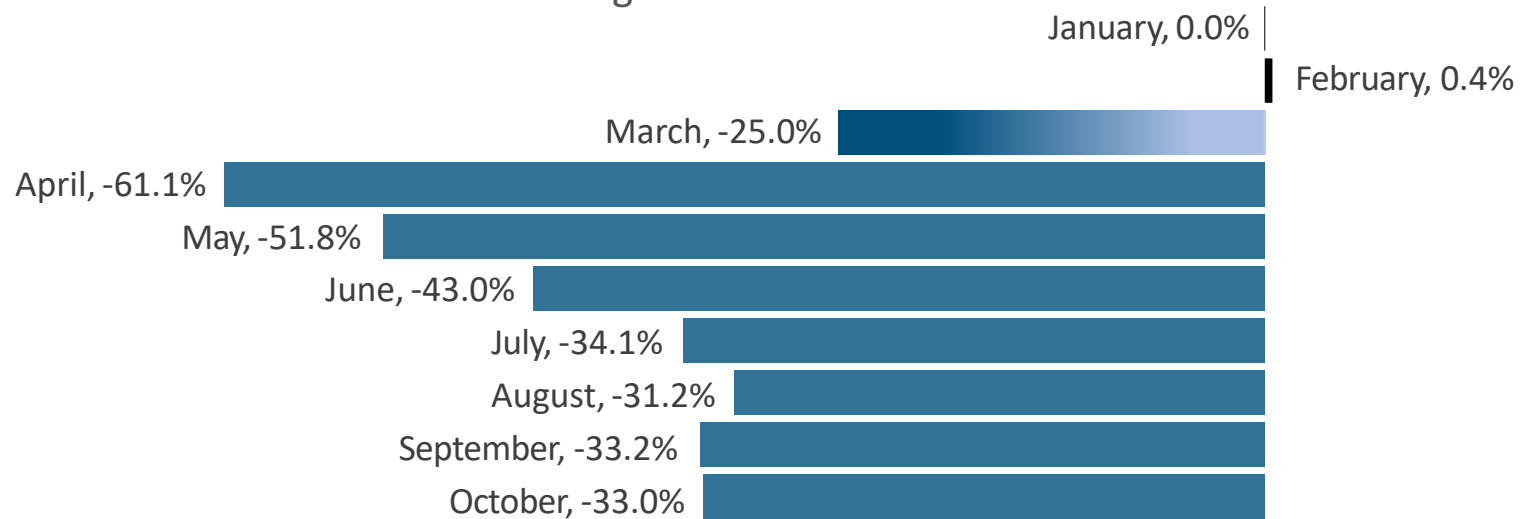
- Annual Reductions of Business As Usual (BAU) GHG emissions
 - Traffic volume down 12% annualized
 - Electricity consumption down 2.4% annualized
 - Aviation flights down 65% annualized
- **Total GHG emission reductions = 5.4% of 2020 baseline**

Note: Analysis will be updated to include data from July onwards



Roadway Traffic Volumes: Regional Core

Monthly Average Percent Change from Equivalent 2019 Month
Regional Core

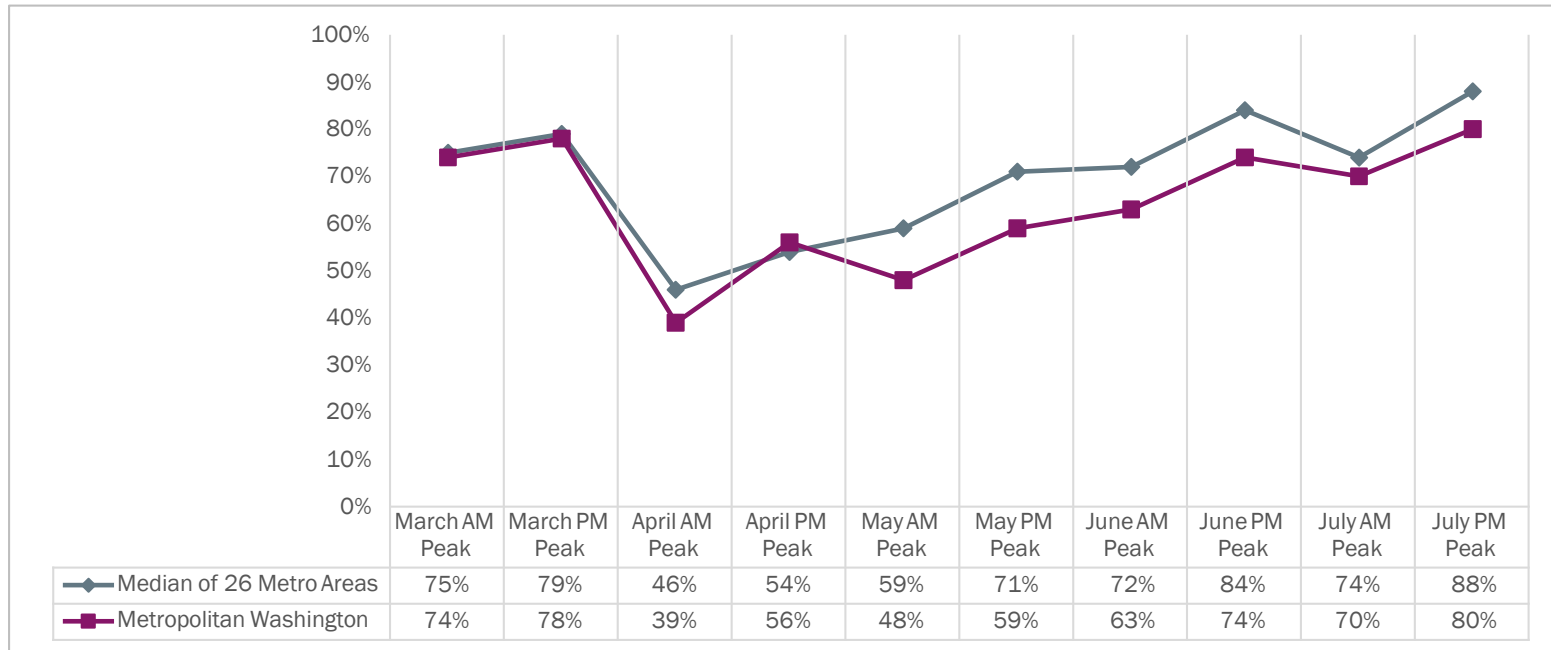


Source: COG/TPB

- Traffic Volumes in the Regional Core decreased by more than 60% over the year in April and have recovered more slowly compared to the region overall



Vehicle Miles of Travel

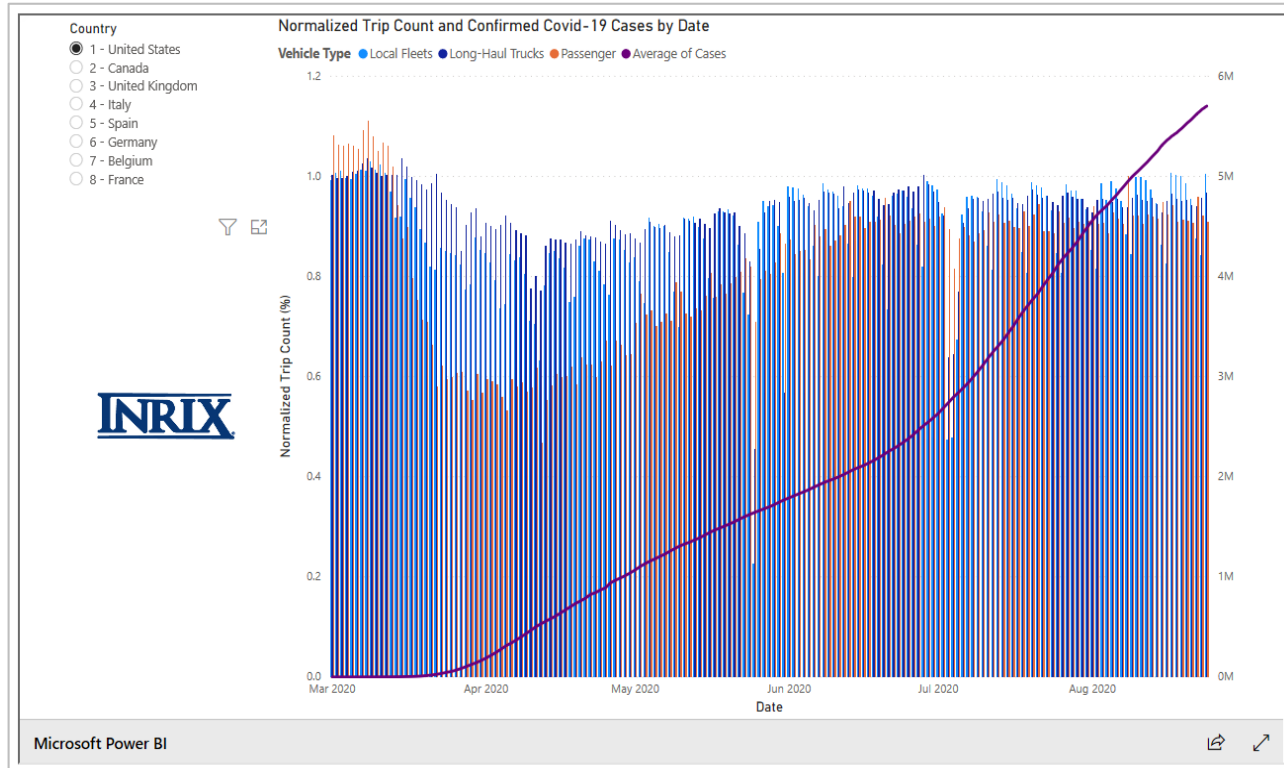


Comparison to pre-pandemic levels. Source: INRIX

- Regional vehicle miles of travel (VMT) dipped most dramatically in April, but by July had recovered significantly
- Lower but similar to the median of 26 major metro areas



Truck Travel

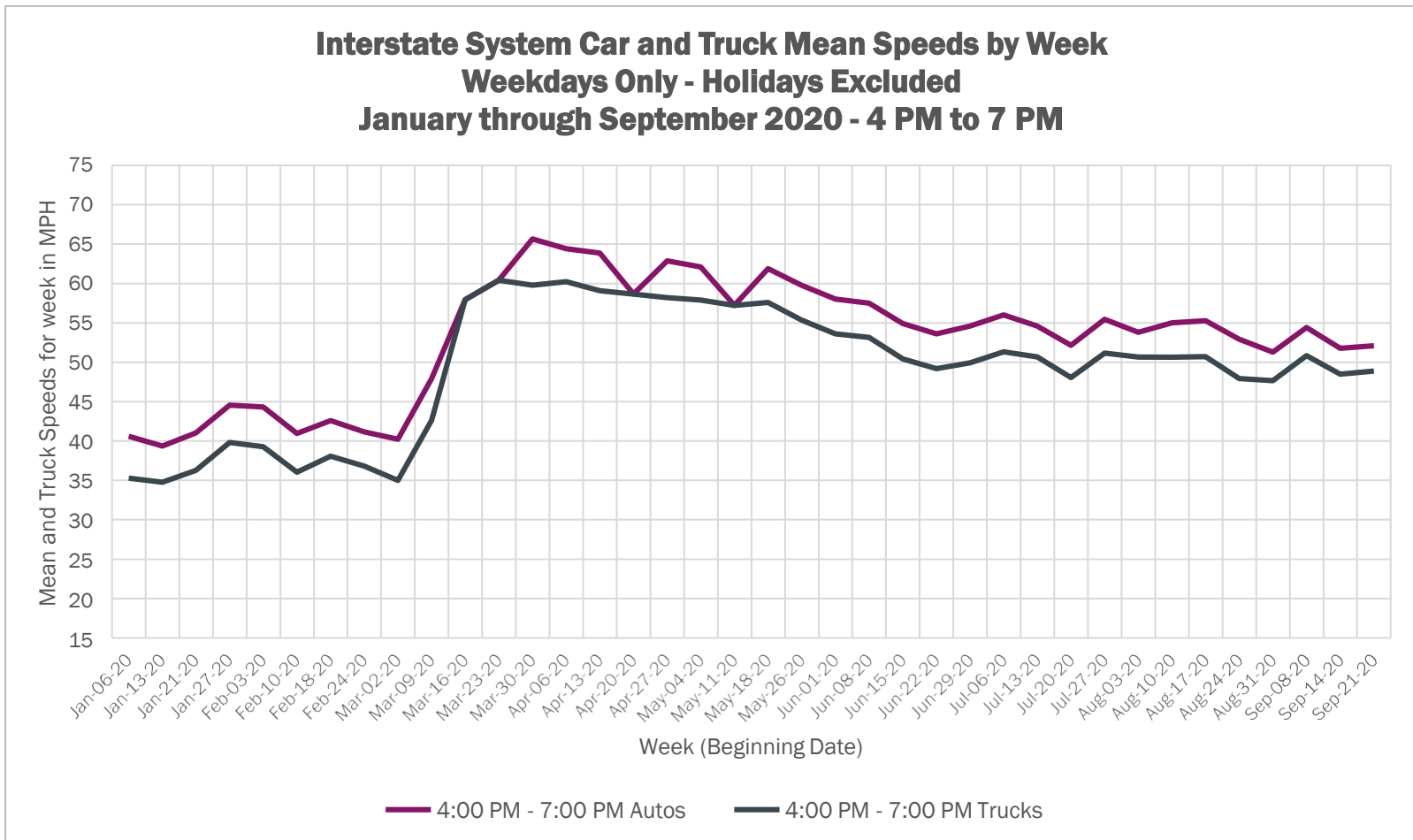


Nationwide data. Source: INRIX.

- Nationally and regionally, truck travel (blue) never declined as much as passenger travel (red/orange) did



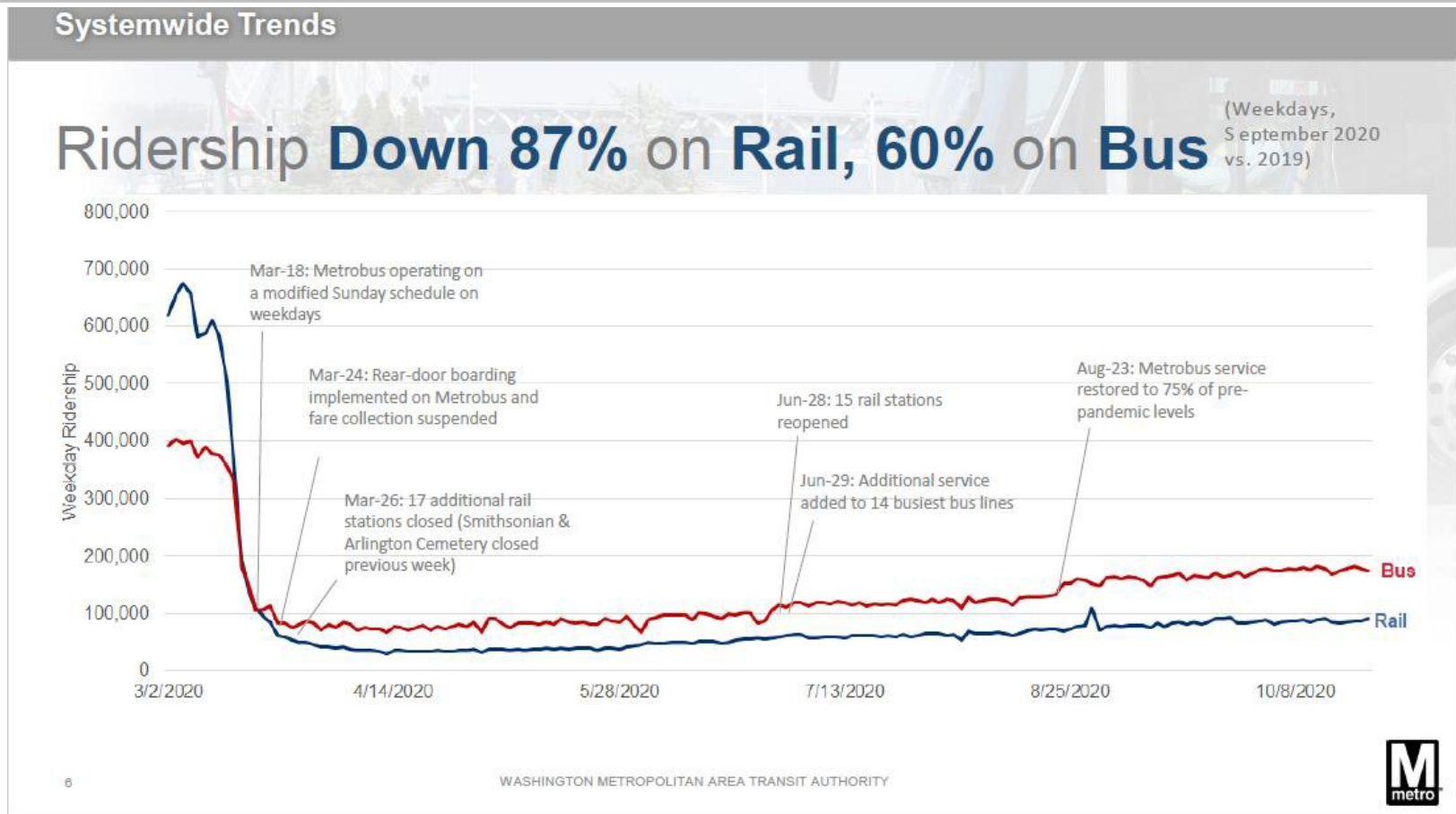
Roadway Speeds



Source: COG/TPB Analysis of the National Performance Management Research Data Set (NPMRDS).
Certain regional Interstate highway segments excluded due to data availability.



Metrorail and Metrobus Ridership

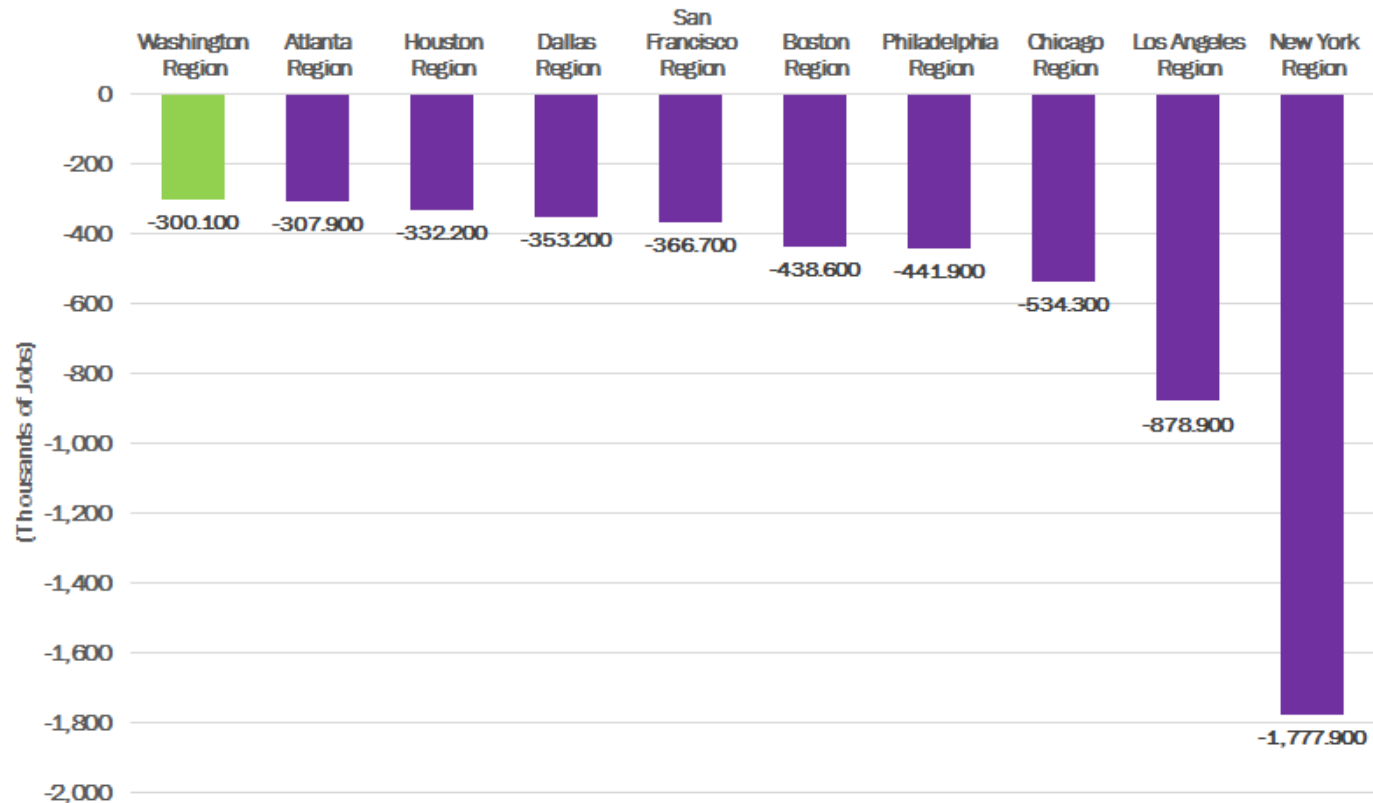


WMATA Regional Bus Ridership Workshop, November 17, 2020. COVID Ridership Trends, Diane Patterson.



Non-Farm Job Loss March to April 2020 In 10 Largest MSAs

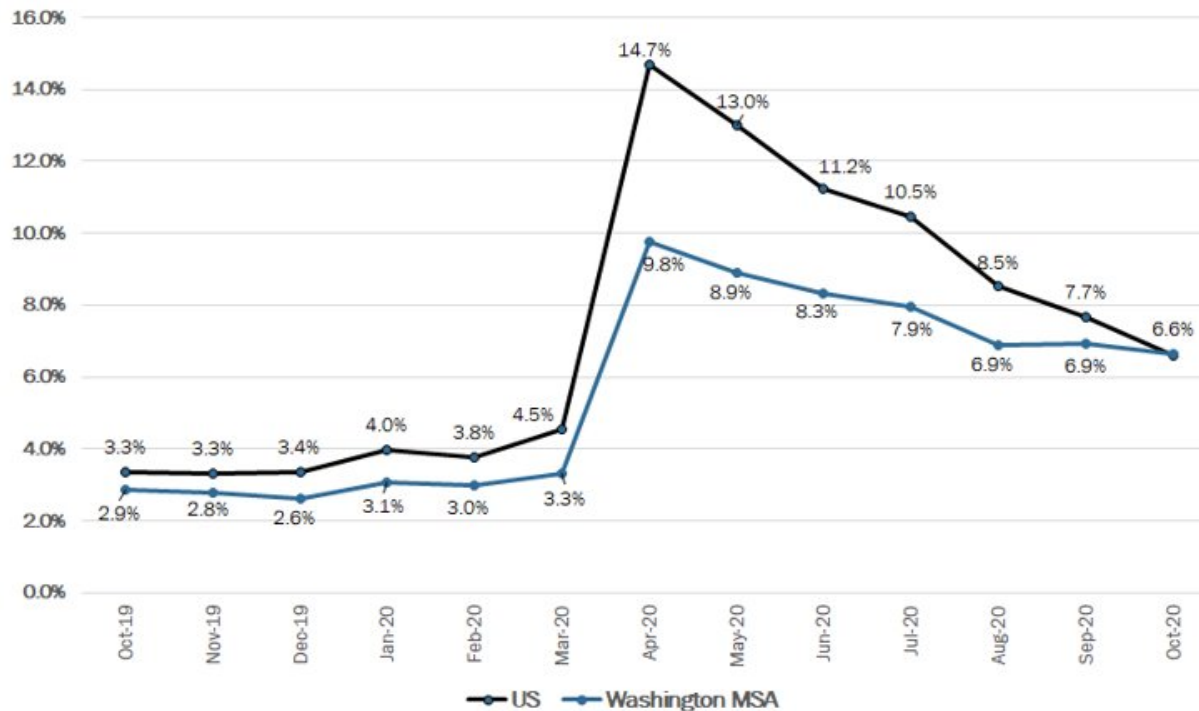
(Source: Bureau of Labor Statistics)



Our initial job losses were the lowest when compared to many of our peer regions. New York and Los Angeles experienced the most severe losses.



Unemployment Rate Washington MSA and US

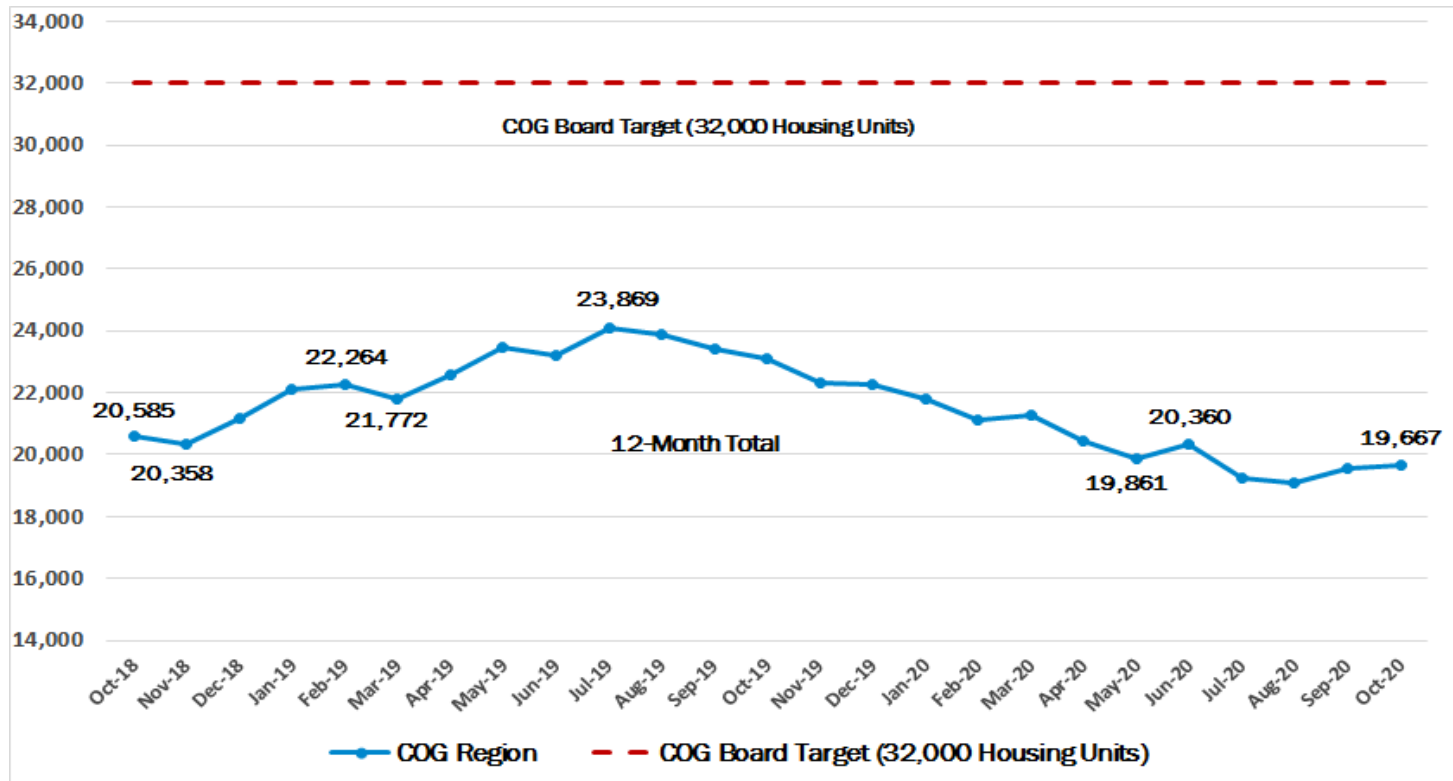


Our unemployment rate nearly tripled with the onset of the pandemic but is now the same as the nation. With reopening, the rates are declining but well above historic averages.



New Housing Units Authorized 12-month total for COG Region

(Source: US Census C-40 data)

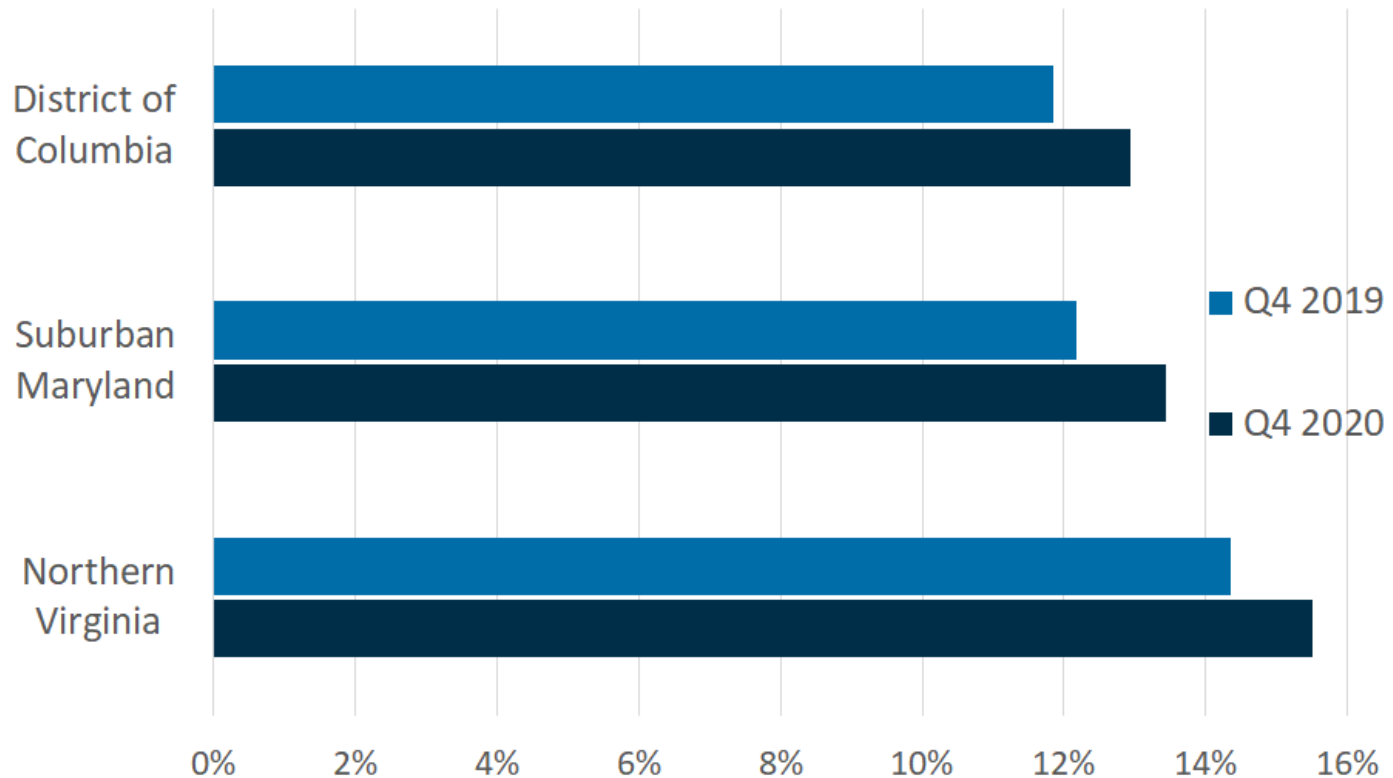


The number of new housing permits has declined monthly since July 2019 and is far below the adopted COG target.



Change in Office Vacancy Rates Q4 2019 vs Q4 2020

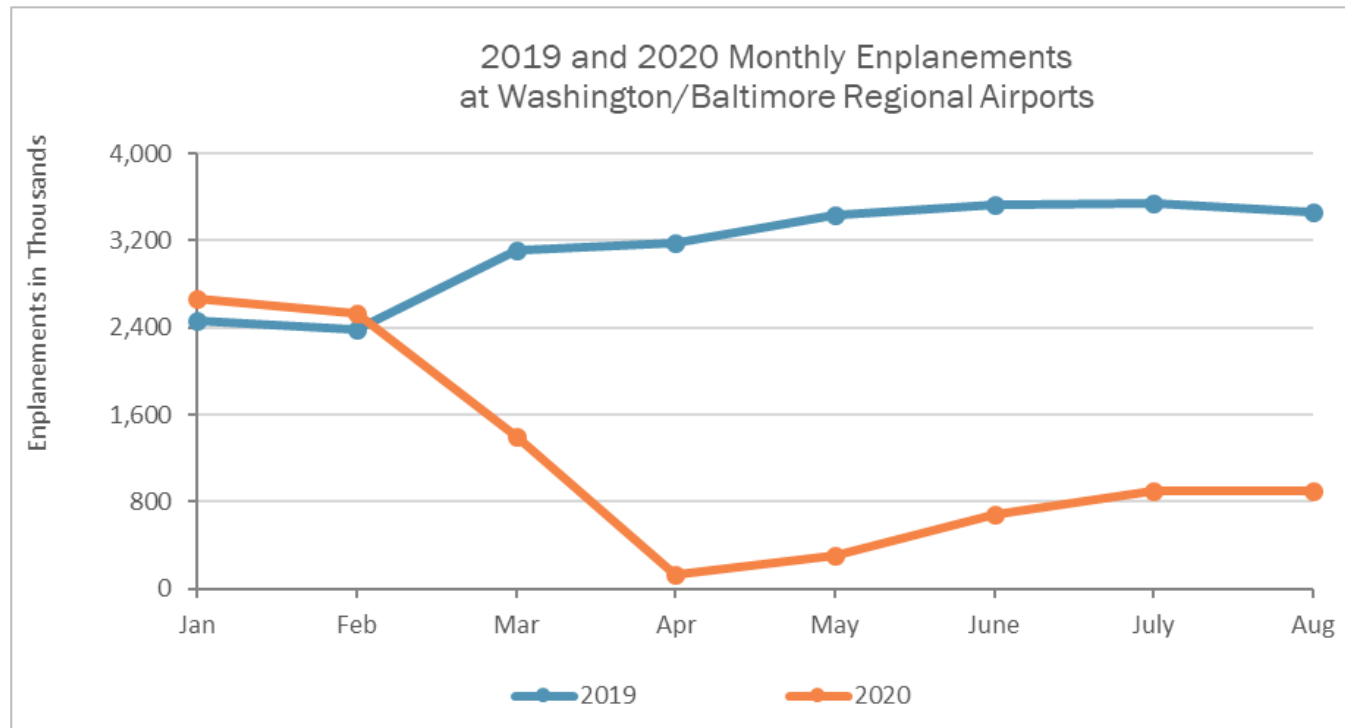
(Source: CoStar)



Office vacancy rates have increased slightly throughout the region. Office leases are for longer-term periods and will be monitored for changes



Air Travel

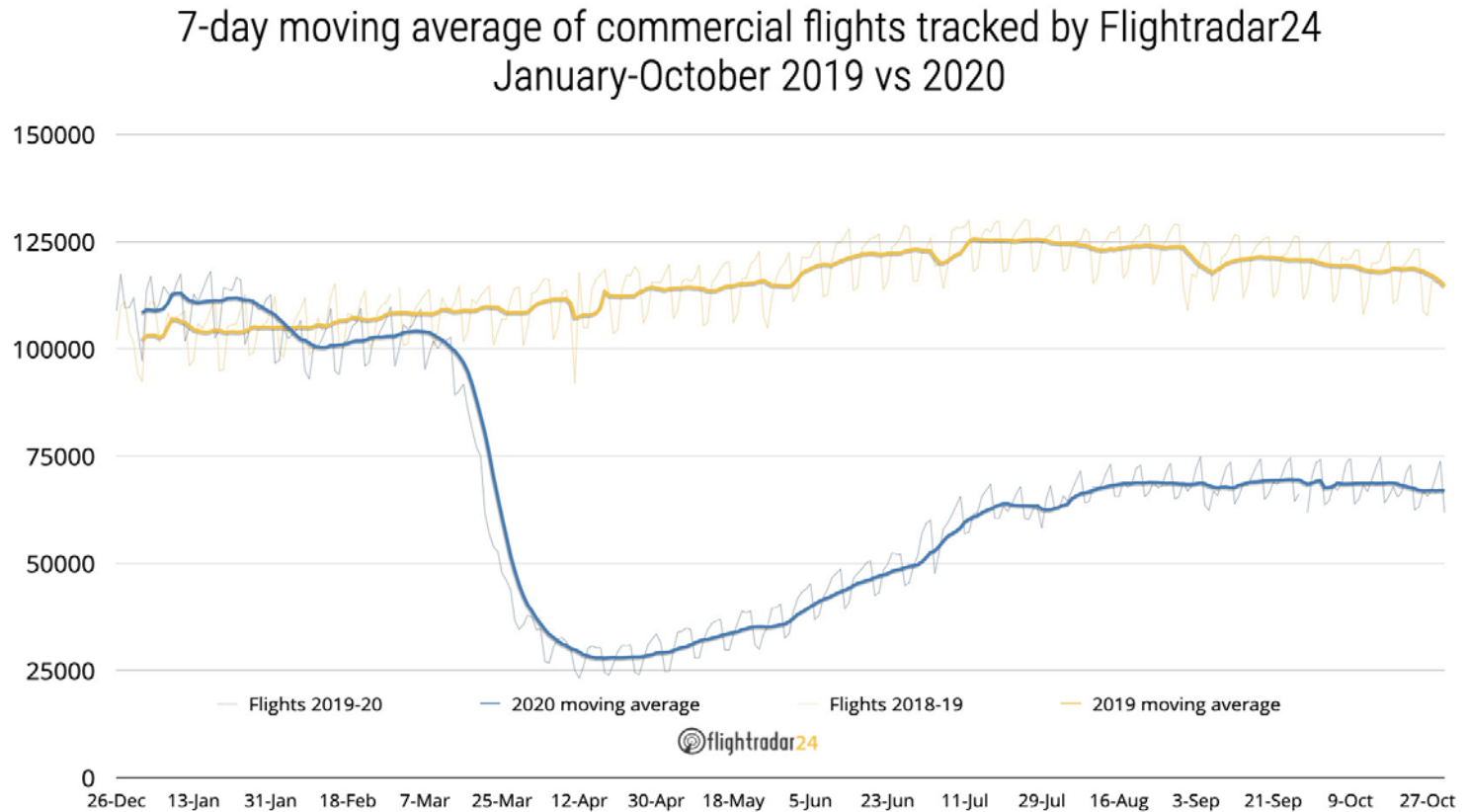


Source: COG

- Air travel has recovered somewhat at the region's three major airports since April, but remains much lower than 2019



Air Travel



- Source: Graph - <https://www.flightradar24.com/blog/bumping-along-charting-octobers-flight-activity/>



Summary

- Ozone and PM2.5 levels were overall lower in 2020 compared to 2019 as COVID-19 related restrictions were implemented in the Washington region. Overall, air quality has been the cleanest in the past 10 years due to reduction in emissions resulting from lower traffic and fuel/electricity consumption coupled with weather unfavorable for pollutant formation and build up.
- GHG emissions in general lower by an estimated 5.4% as of June 2020.
- Traffic volume and VMT dipped most dramatically in April but has recovered to a level at a somewhat lower than the pre-pandemic level.



Summary

- Roadway speeds in evening increased very rapidly between early to late March but started decreasing until mid-July when they became stable.
- Truck travel never declined as much as passenger travel did.
- Metrorail and metrobus ridership went down significantly in April but is increasing very slowly.
- Unemployment rate went up significantly in April but has been declining.
- The number of new housing permits has been steady during the pandemic.
- Air travel and flights went down significantly in April and are recovering very slowly.

