

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

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Transportation Planning Board  
December 16, 2020

# Overview

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- Numerous actions have been taken to contain the pandemic spread of the COVID-19 virus and to mitigate COVID-19's threat to personal and public health.
- These actions have restricted 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 will include:
  - Transportation (Roadways and Public Transportation)
  - Economy
  - Environment
  - Health



# Overview cont'd

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- A multisectoral approach will provide a snapshot summary of impacts from a broader perspective to provide more context.
- Analyses and findings, while empirical, are intended to provide a general contextual understanding of the impacts and are not intended to constitute a comprehensive “deep dive.”
- Analyses will measure what has occurred and will not be predictive in nature due to remaining uncertainties.
- Presentations to be made in two phases:
  - *Near-term Activities*: readily available data that can be presented to stakeholders starting in December.
  - *Longer-term Activities*: data collection and analysis activities that may take longer to complete.



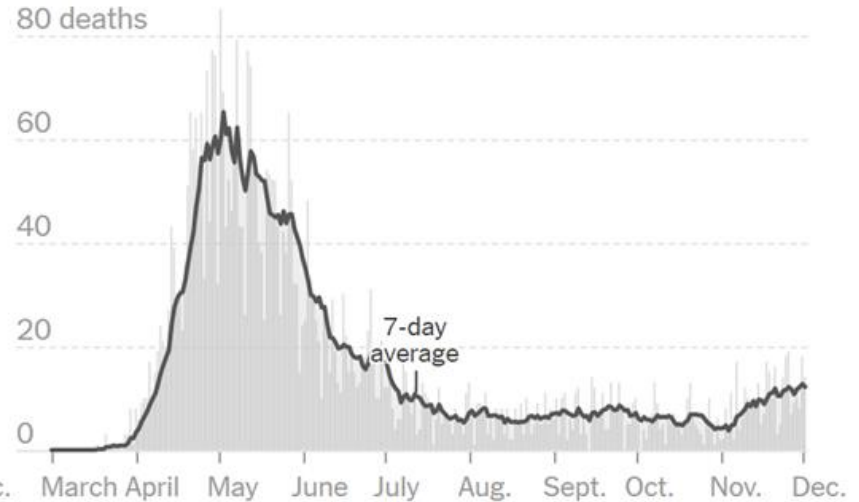
# COVID Cases & Deaths in Washington, DC Metro Area

	ON DEC. 2	DAILY AVG. IN LAST 7 DAYS	PER 100,000	14-DAY CHANGE	TOTAL REPORTED
<b>Cases</b>	<b>1,909</b>	<b>1,840</b>	<b>29</b>	<b>+27%</b> 	<b>201,301</b>
<b>Deaths</b>	<b>14</b>	<b>12</b>	<b>&lt;1</b>	<b>+23%</b> 	<b>4,356</b>

**New cases**



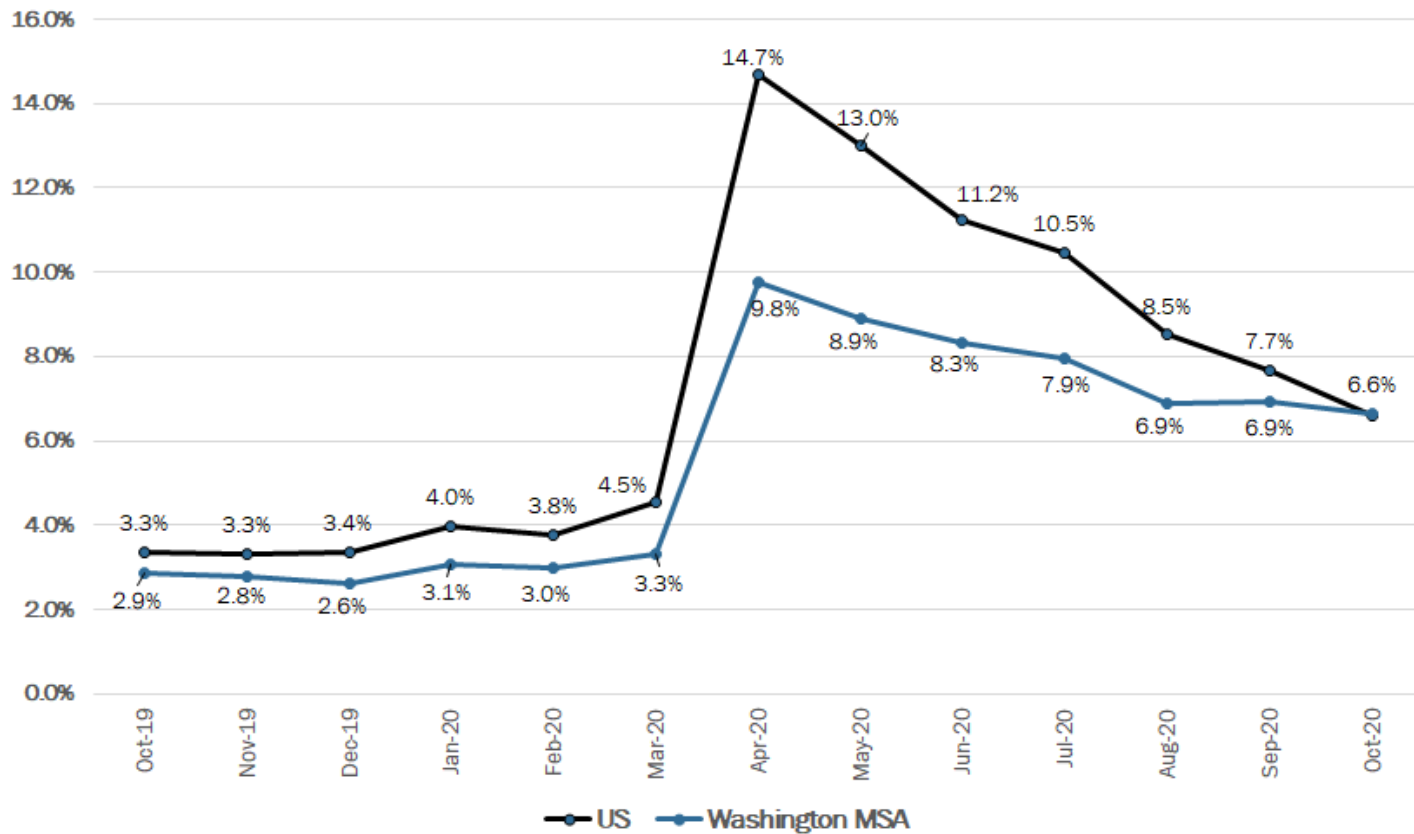
**Deaths**



**New York Times Cases & Deaths Tracker:** <https://www.nytimes.com/interactive/2020/us/covid-cases-deaths-tracker.html#USA-MSA47900>  
 The Times uses reports from state, county and regional health departments.



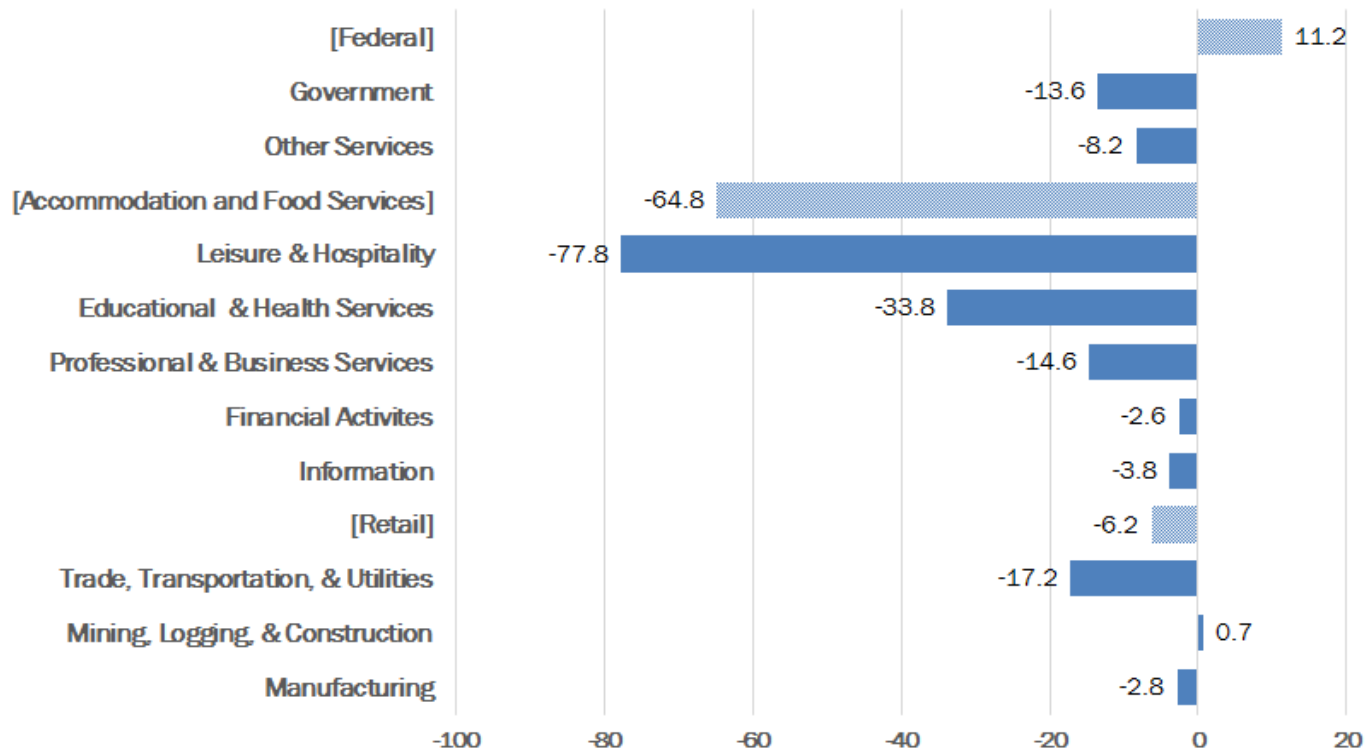
# Unemployment Rate Washington MSA and US



Our unemployment rate nearly tripled with the onset of the pandemic but was still nearly 5 points below the nation. With reopening, the national and local rates have converged but remain above historic averages.



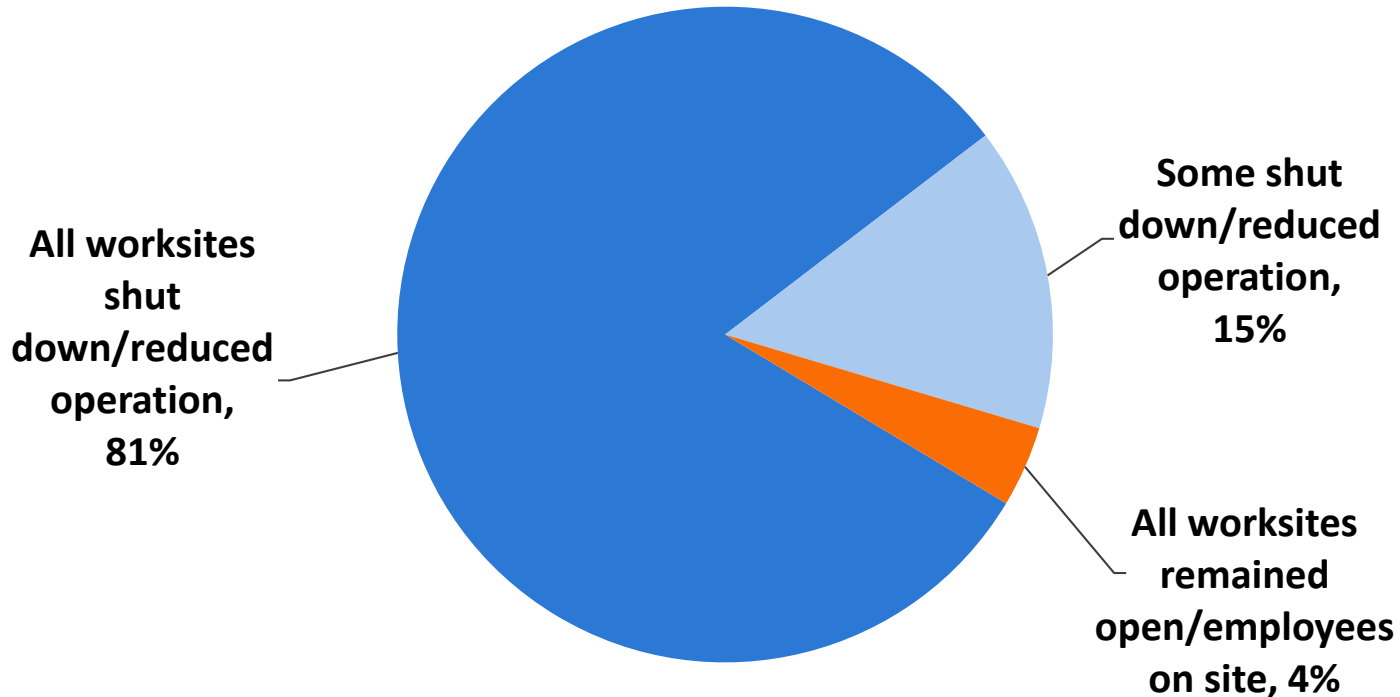
# Over-the-year Job Change By Sector October 2020 vs October 2019 Washington MSA



The most-current employment data shows job losses to be in hospitality, retail, and several service industry sectors.



# Worksite Operations

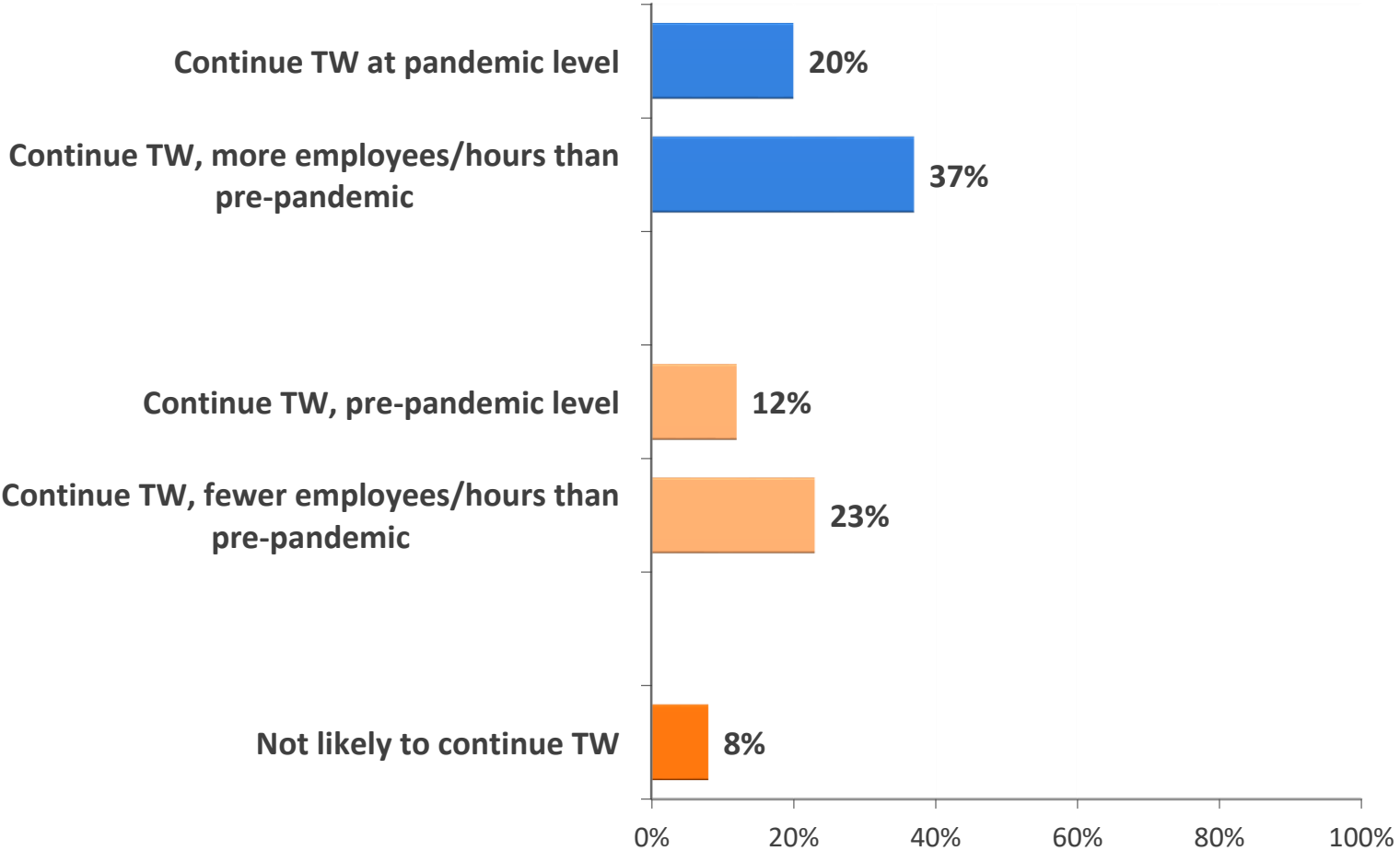


Source: Commuter Connections 2020 Employer Telework Survey

- 96% of Worksites Shut Down or Reduced On-site Operation Either Completely (81%) or Partially (15%) Since Coronavirus Pandemic Began



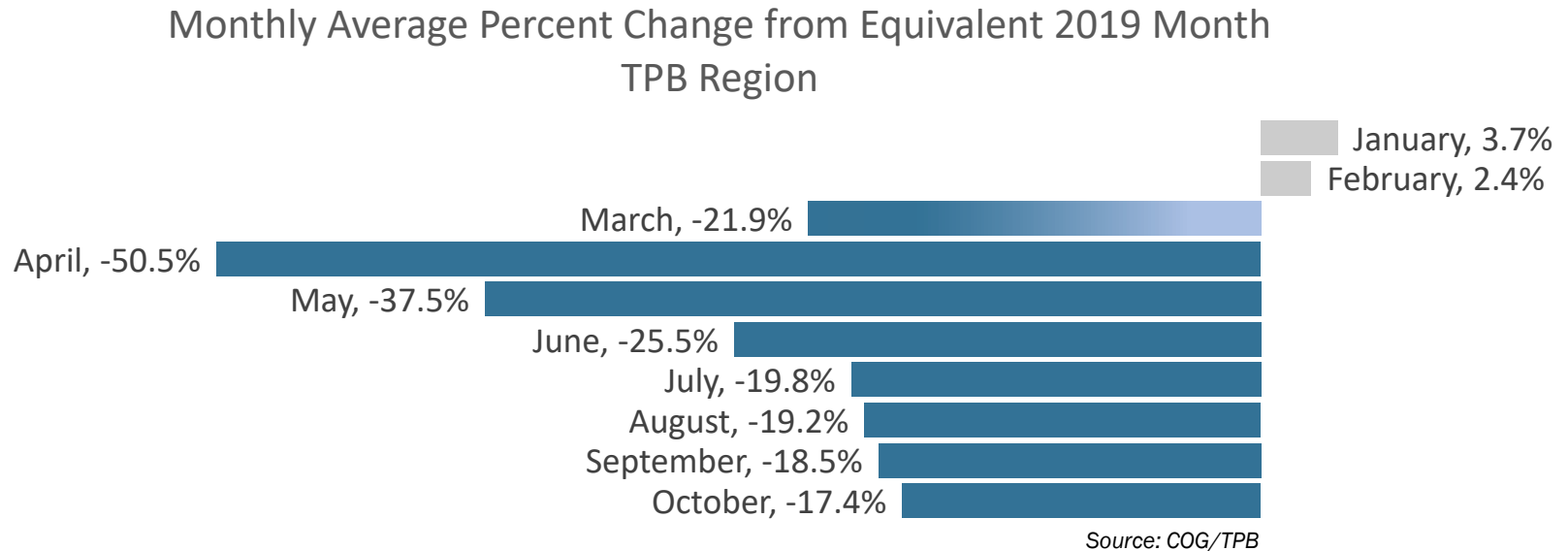
# Anticipated Post-Pandemic Teleworking



Source: Commuter Connections 2020 Employer Telework Survey



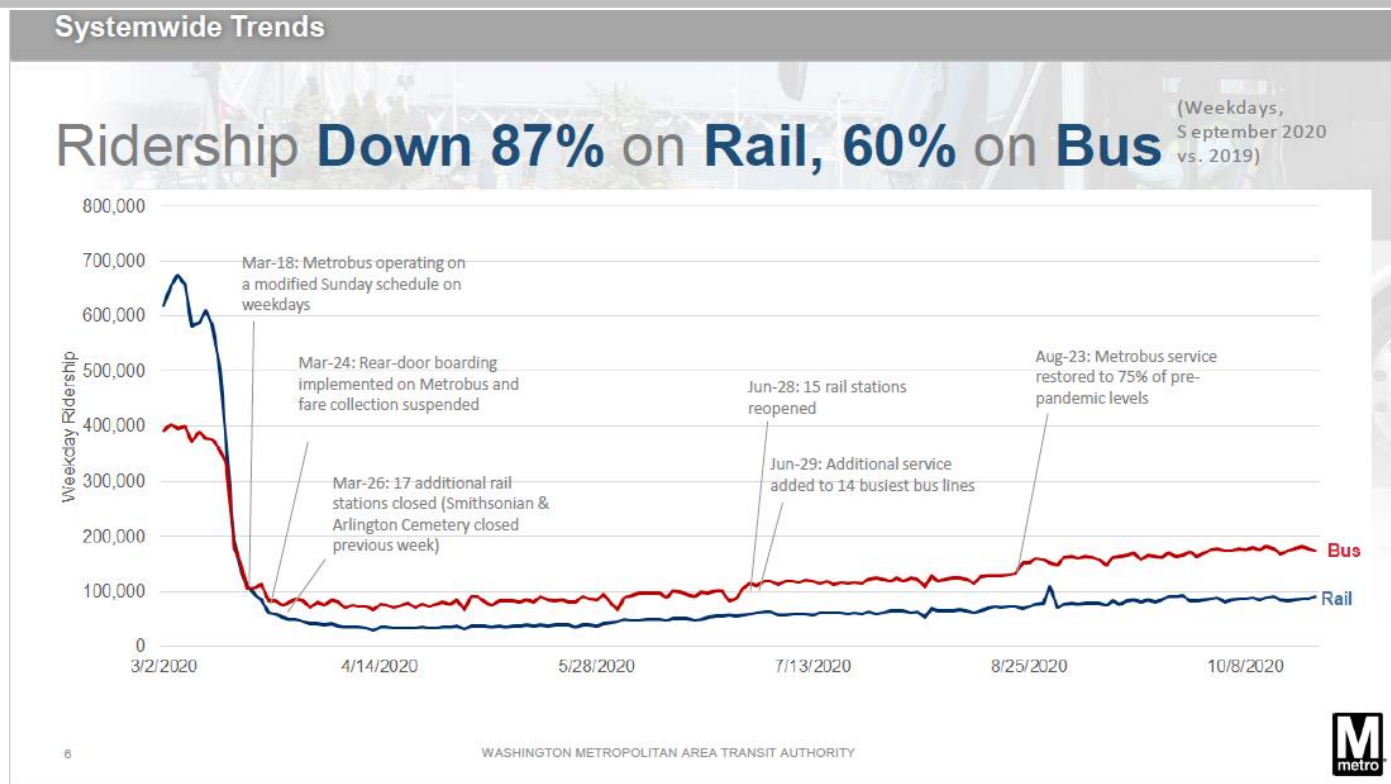
# Roadway Traffic Volumes: TPB Region



- Regional traffic volumes, which in April 2020 had dipped below 50% of 2019 volumes, had recovered to over 80% of 2019 volumes by July, and continued a slow recovery through October.



# Metrorail and Metrobus Ridership

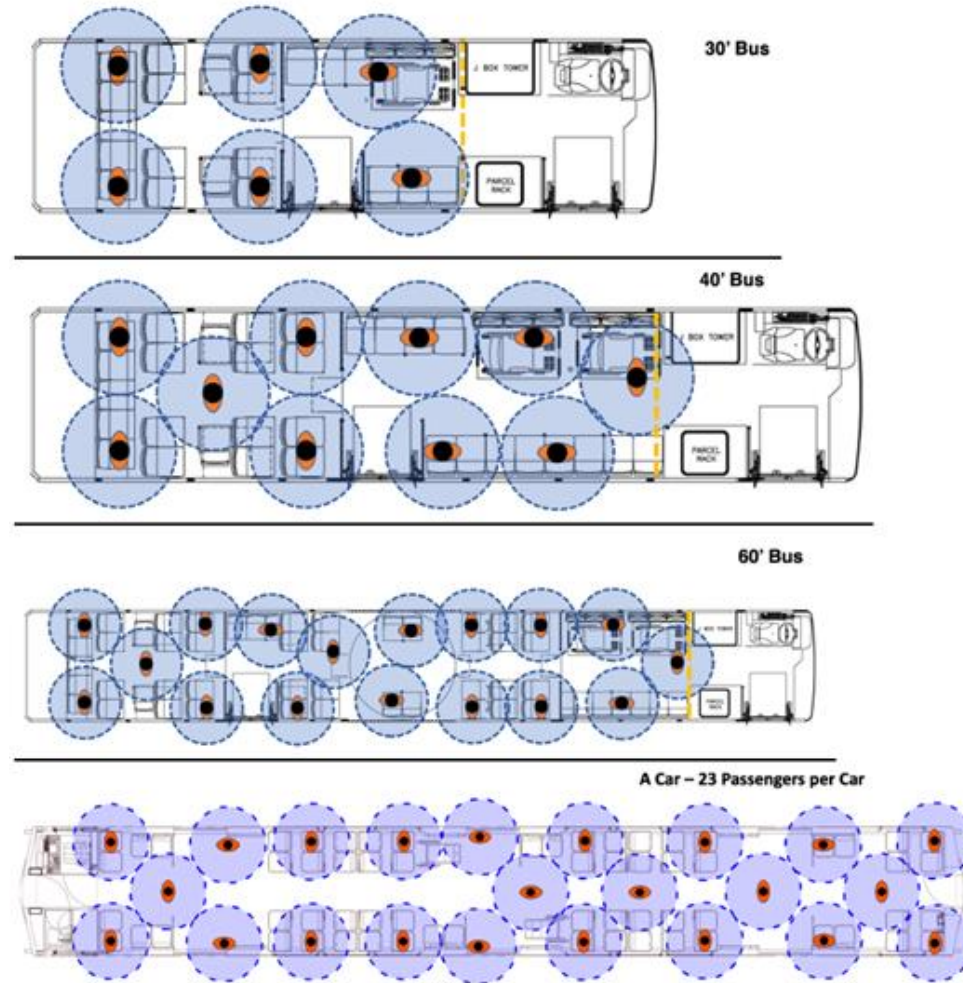


WMATA Regional Bus Ridership Workshop, November 17, 2020. COVID Ridership Trends, Diane Patterson.

- Ridership decreased as a result of both reduced demand and reduced transit capacity, underscoring the complex interrelationship of supply and demand on transit. This contrasts to roadway volume decreases, which resulted from demand reductions.



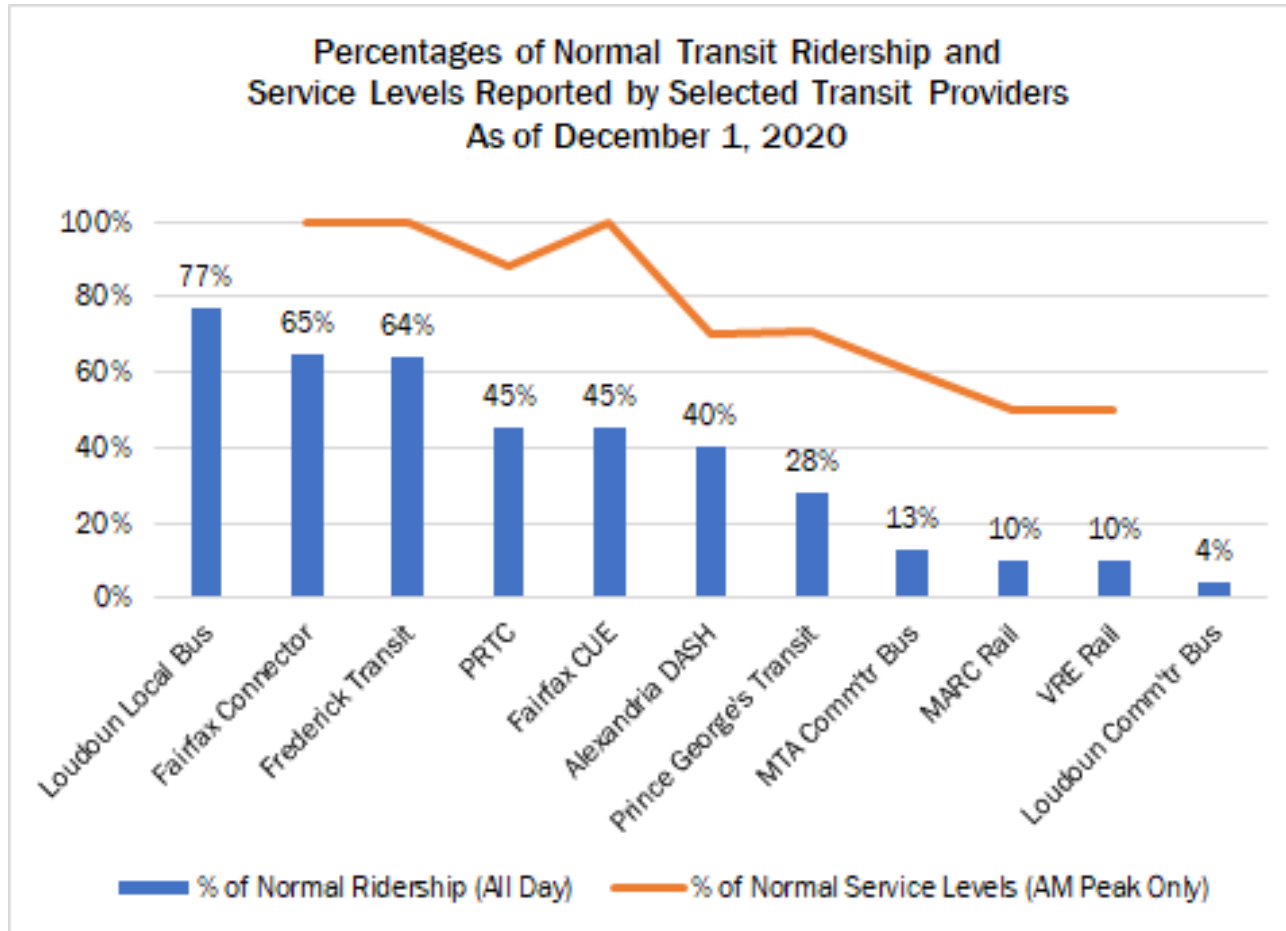
# Effect of Capacity Limits on Ridership



- Implementing increased social distancing on transit vehicles reduced the maximum ridership, or capacity, that can be achieved.



# Local and Commuter Transit

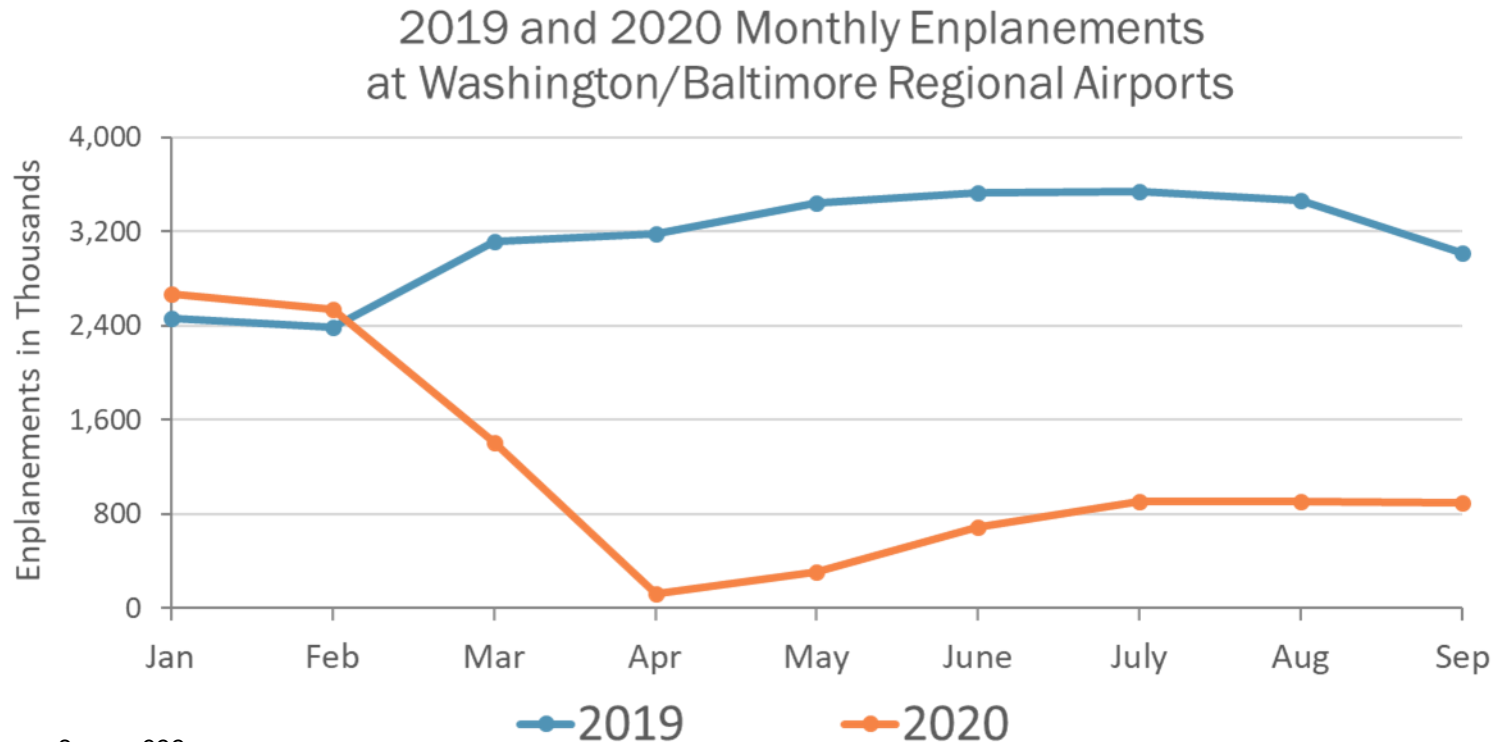


- Impacts varied among long-distance, local, and tourist routes

Reported approximate percentages of ridership and service levels vs. typical levels. Source: COG/TPB questionnaire of local transit agencies, December 1, 2020. Disaggregated service levels for Loudoun County services were not available. Providers not shown did not participate in the questionnaire.



# Air Travel



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



# Air Quality

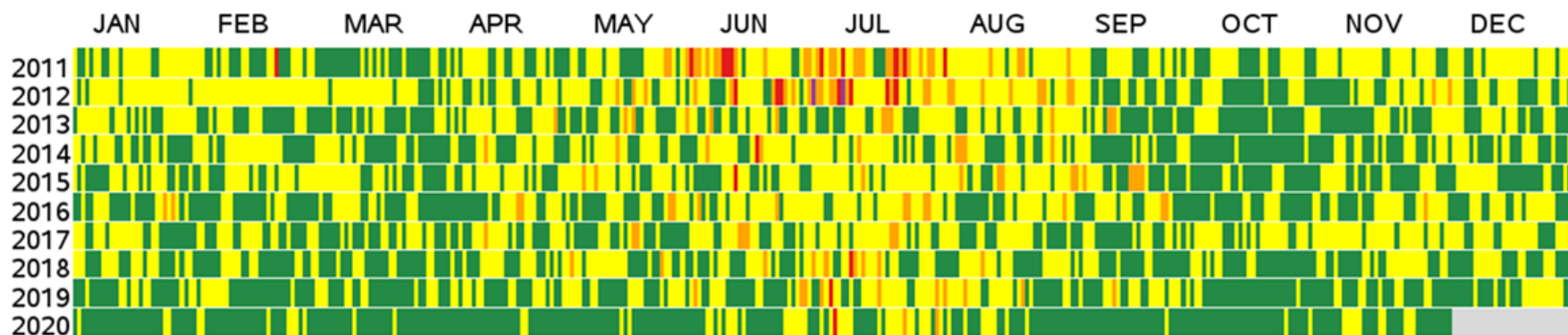
- **Ozone and fine particulate matter (PM2.5) were lower in 2020 compared to 2019**  
(March 1 – Sept 30)
- COVID-19 related restrictions and closures reduced activities and related emissions
- Weather was unfavorable to the formation and build up of pollutants

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

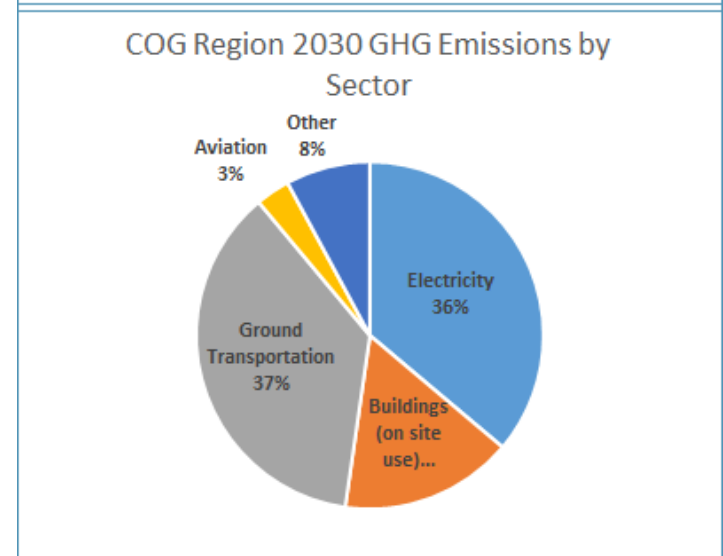
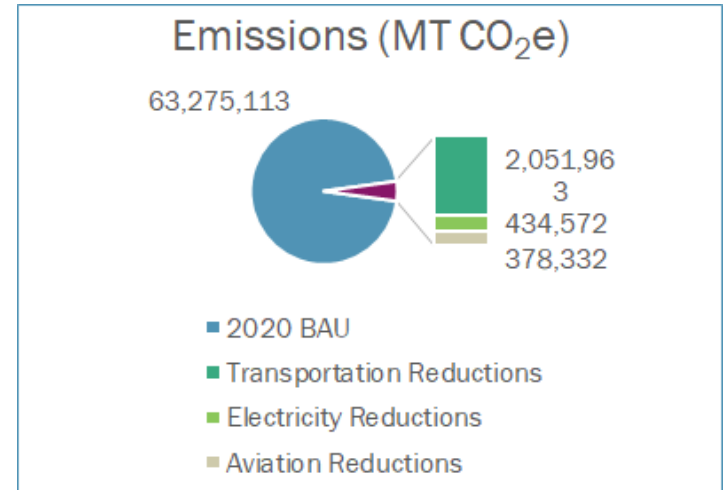
Note: Data shown above is for combined AQI values for ozone, PM2.5, PM10, CO, NO2, and SO2 for the Washington-Arlington-Alexandria CBSA.



# 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.





# Next Steps

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Staff from COG departments continue collaborating on the multisectoral assessment of COVID-19 impacts on the region.

- Deeper dive into more data
- Future presentations to be made (near-term and longer-term)
  - COG Board of Directors
  - Transportation Planning Board
  - Climate Energy and Environment Policy Committee
  - Metropolitan Washington Air Quality Committee
  - Chesapeake Bay and Water Resources Policy Committee
  - Human Services Policy Committee
  - Region Forward Coalition
  - Supporting Committees and Subcommittees



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National Capital Region  
**Transportation Planning Board**

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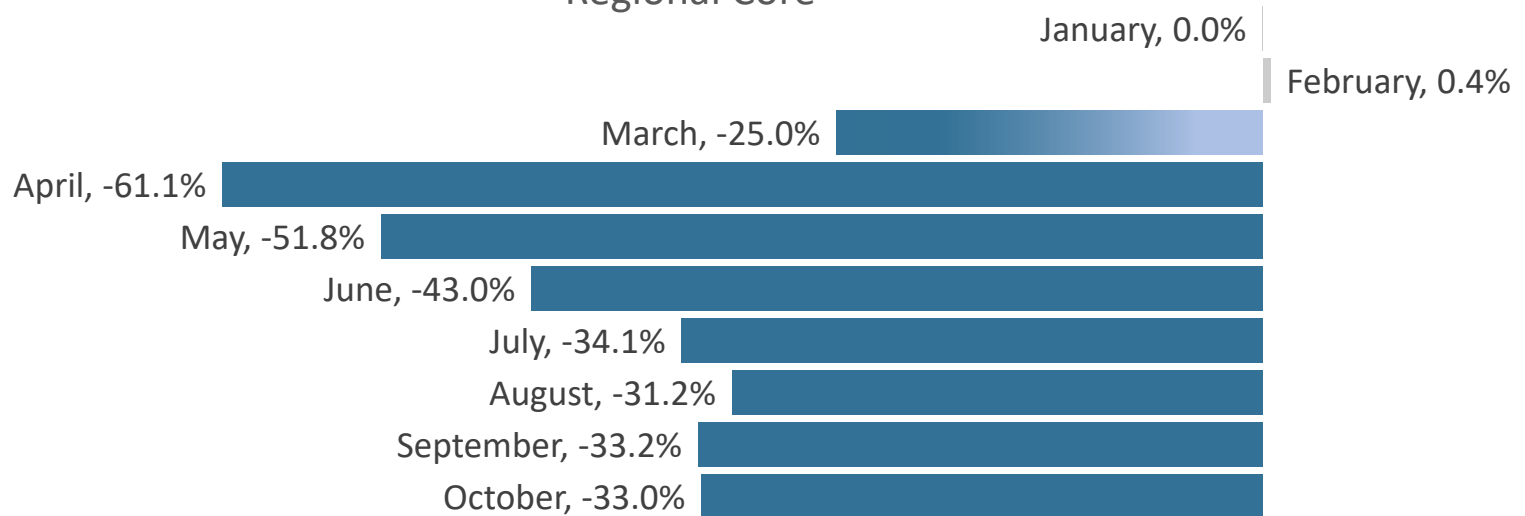
**Additional Slides**



National Capital Region  
**Transportation Planning Board**

# Roadway Traffic Volumes: Regional Core

Monthly Average Percent Change from Equivalent 2019 Month  
Regional Core

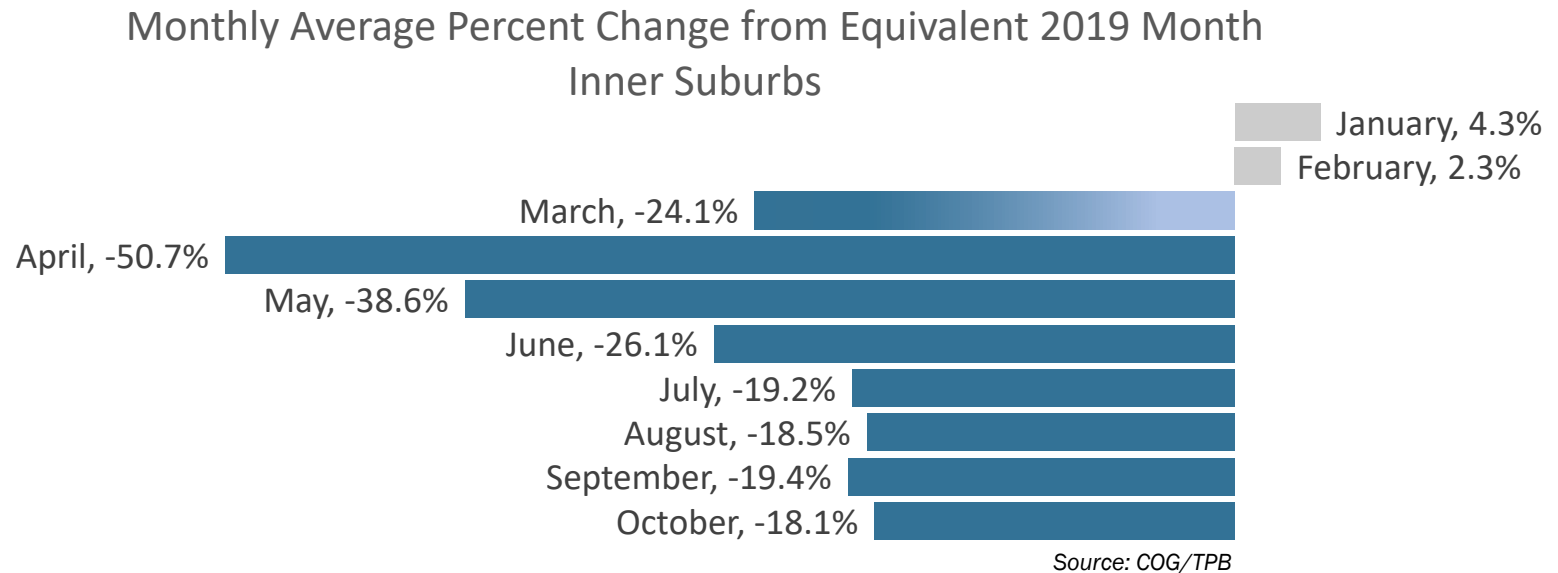


Source: COG/TPB

- 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



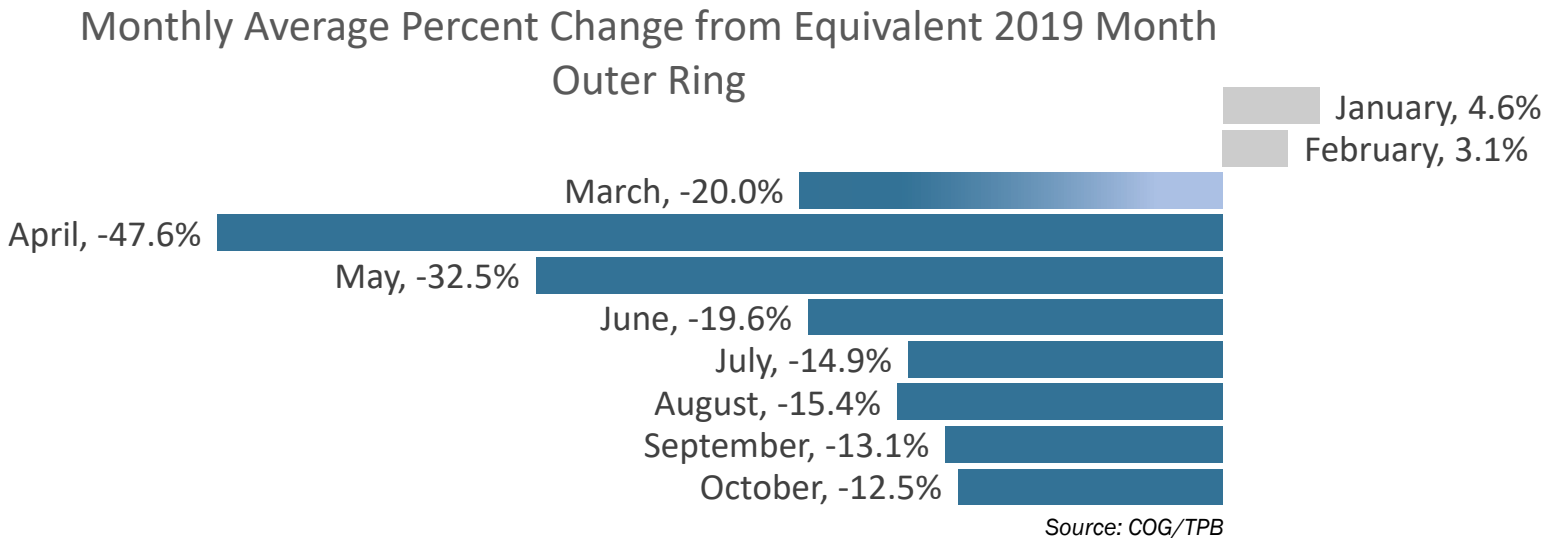
# Roadway Traffic Volumes: Inner Suburbs



- After decreasing by more than 50% in April, traffic volumes in the inner suburbs have recovered to nearly 80% of 2019 levels, although fluctuations in recovery are still being observed.



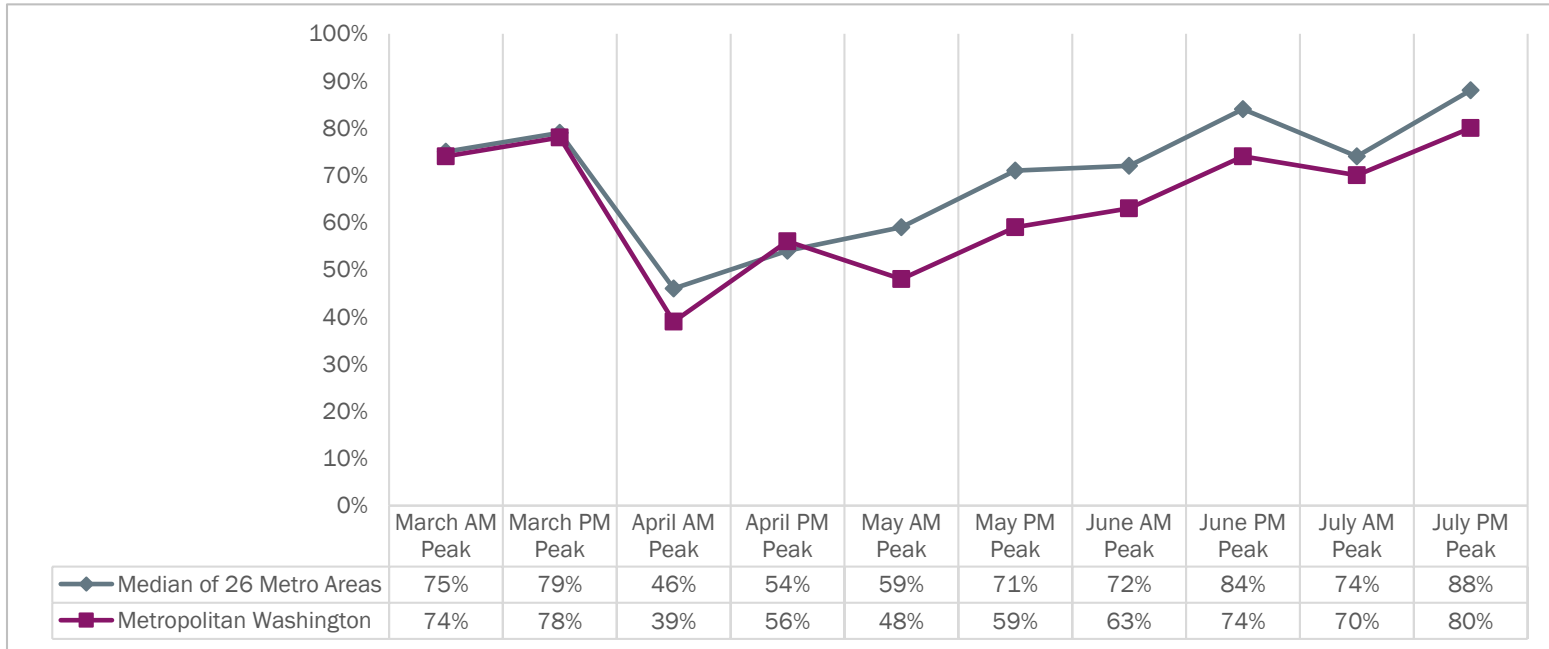
# Roadway Traffic Volumes: Outer Ring



- In the outer ring within the TPB Modeled Area, traffic volumes sustained the smallest peak decrease in April of 47.6% and have since registered notable recovery. By October, volumes in the outer ring were down only 12.5% compared to the same time in 2019.



# Vehicle Miles of Travel

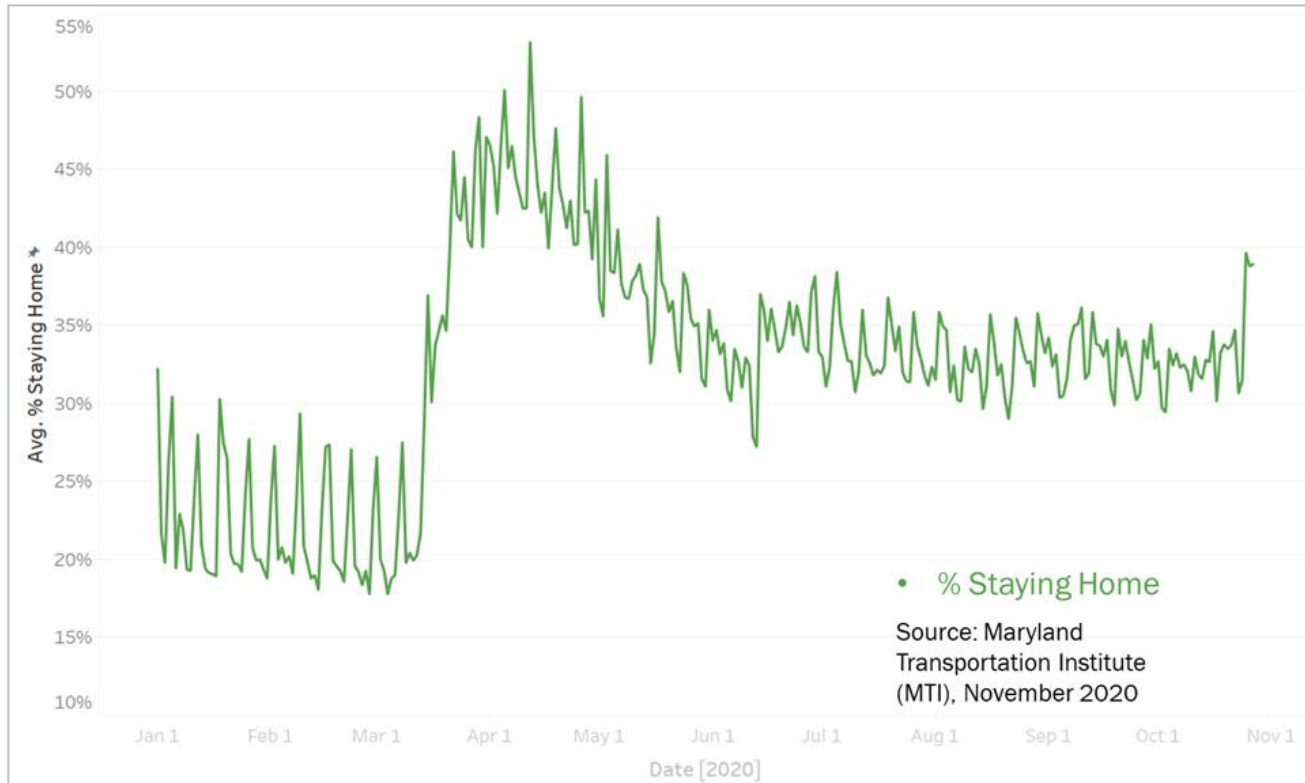


Comparison to pre-pandemic levels. Source: INRIX

- 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



# Person Travel

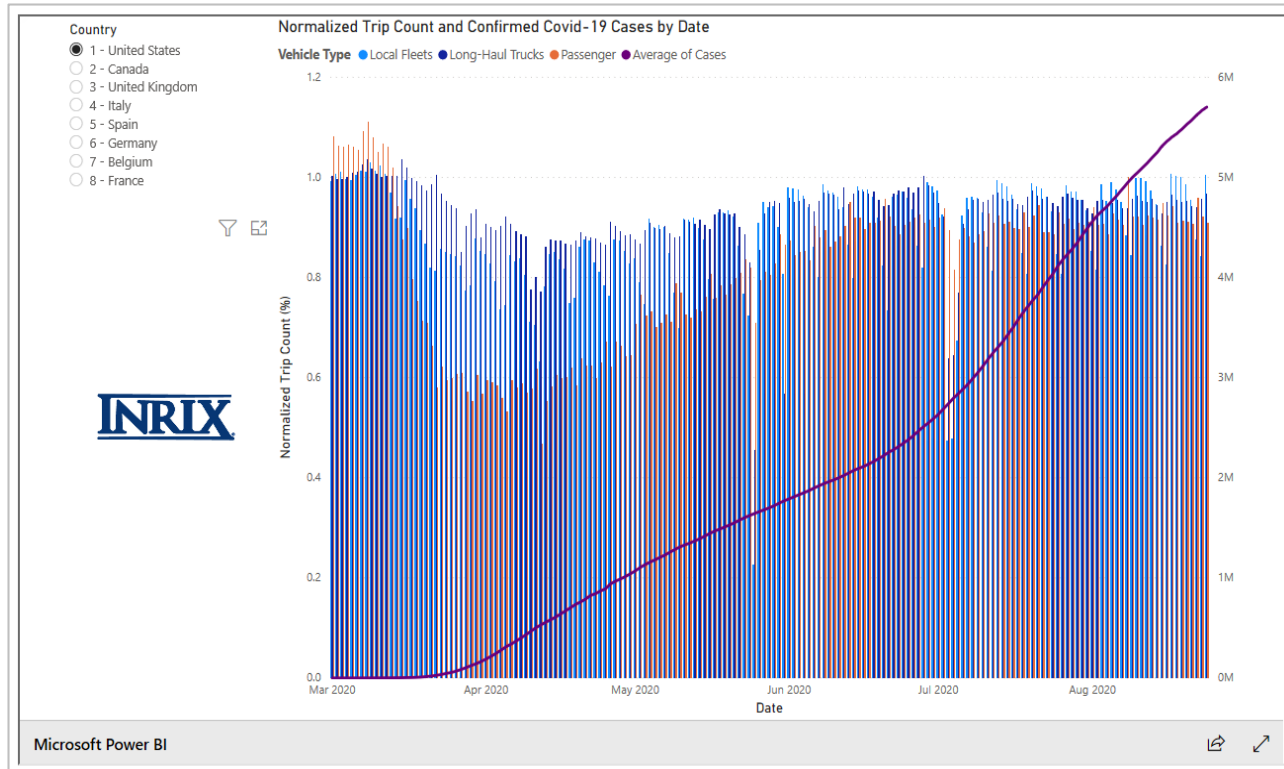


- Persons staying home on a given day regionally went from about 25% pre-pandemic, up to about 45%, and recently back to around 35%





# Truck Travel



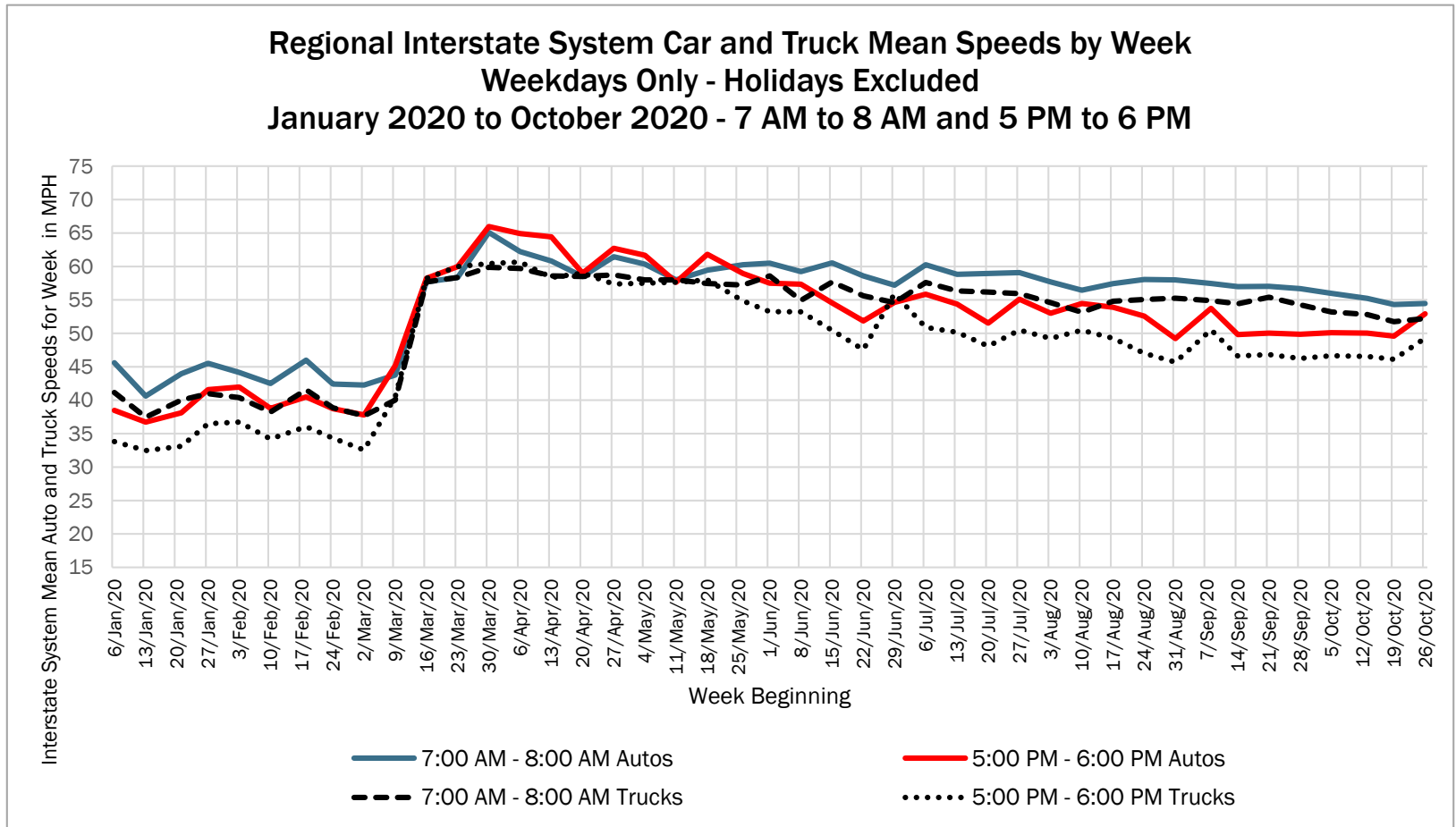
Nationwide data. Source: INRIX.

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



# Roadway Speeds

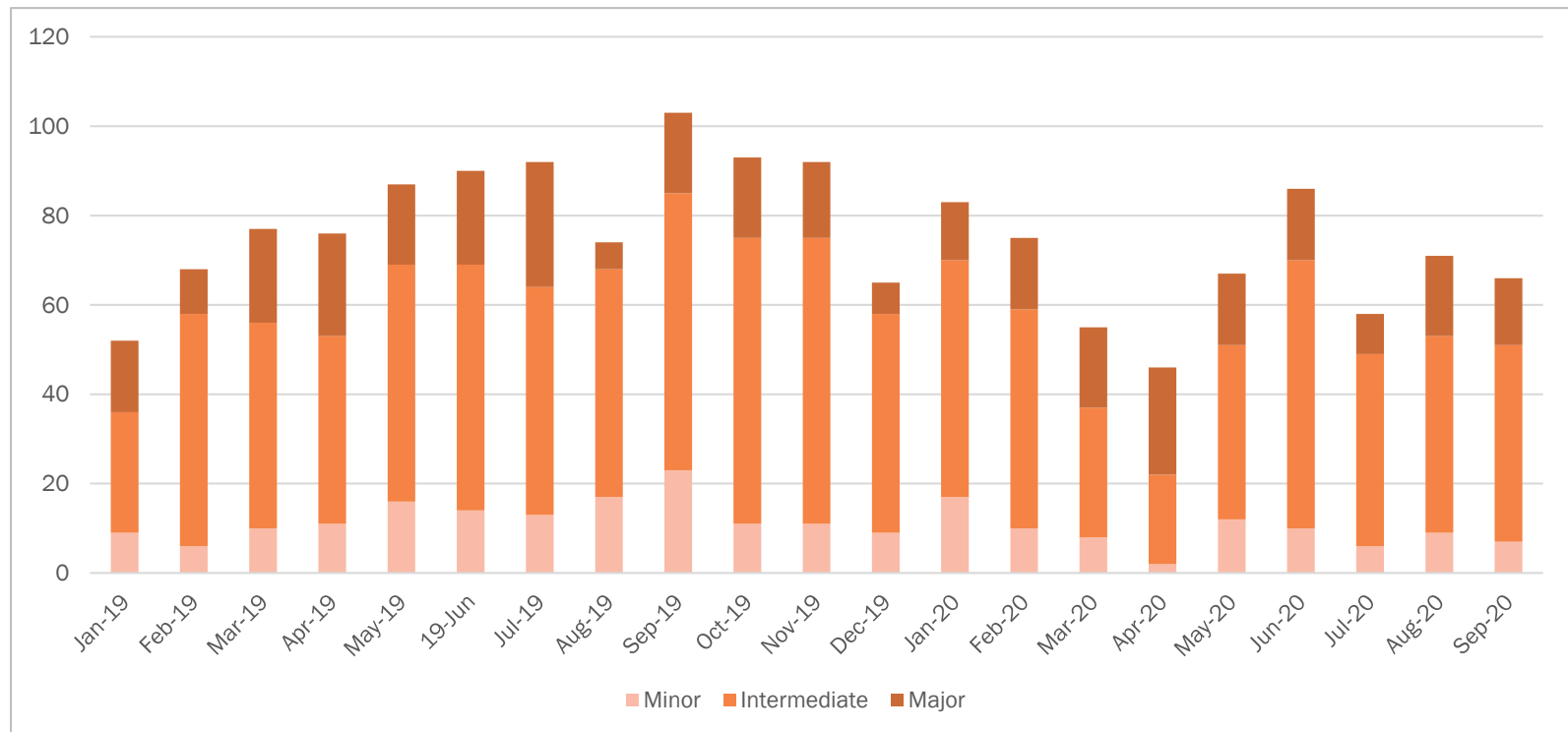
**Regional Interstate System Car and Truck Mean Speeds by Week  
Weekdays Only - Holidays Excluded  
January 2020 to October 2020 - 7 AM to 8 AM and 5 PM to 6 PM**



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



# Safety: MATOC Incidents

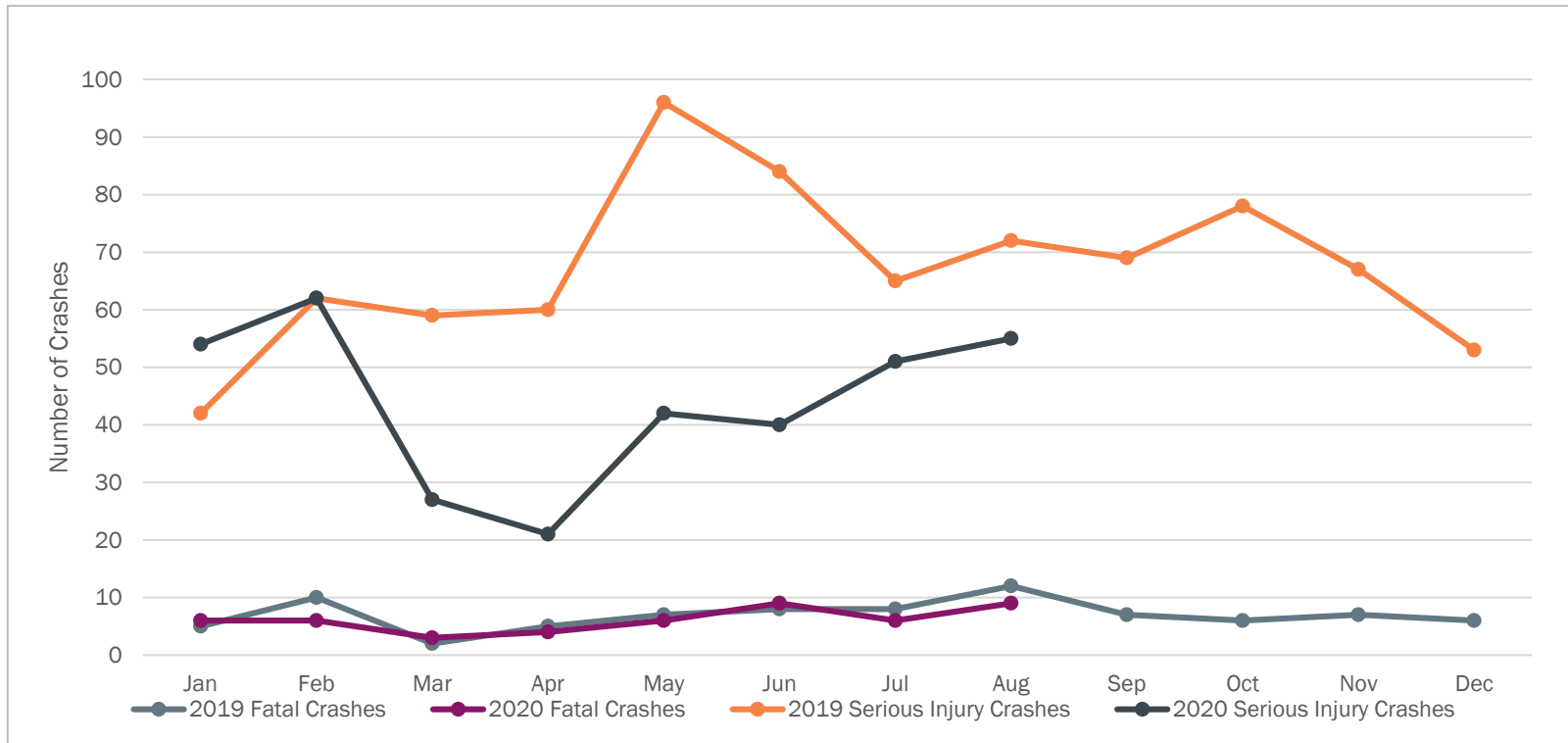


Numbers of documented roadway incidents during Metropolitan Area Transportation Operations Coordination (MATOC) Program operating hours (4:30 A.M. to 8:00 P.M. weekdays only). Source: MATOC.

- MATOC-tracked major incidents were disproportionately high in April



# Safety: Crashes (Northern Virginia)



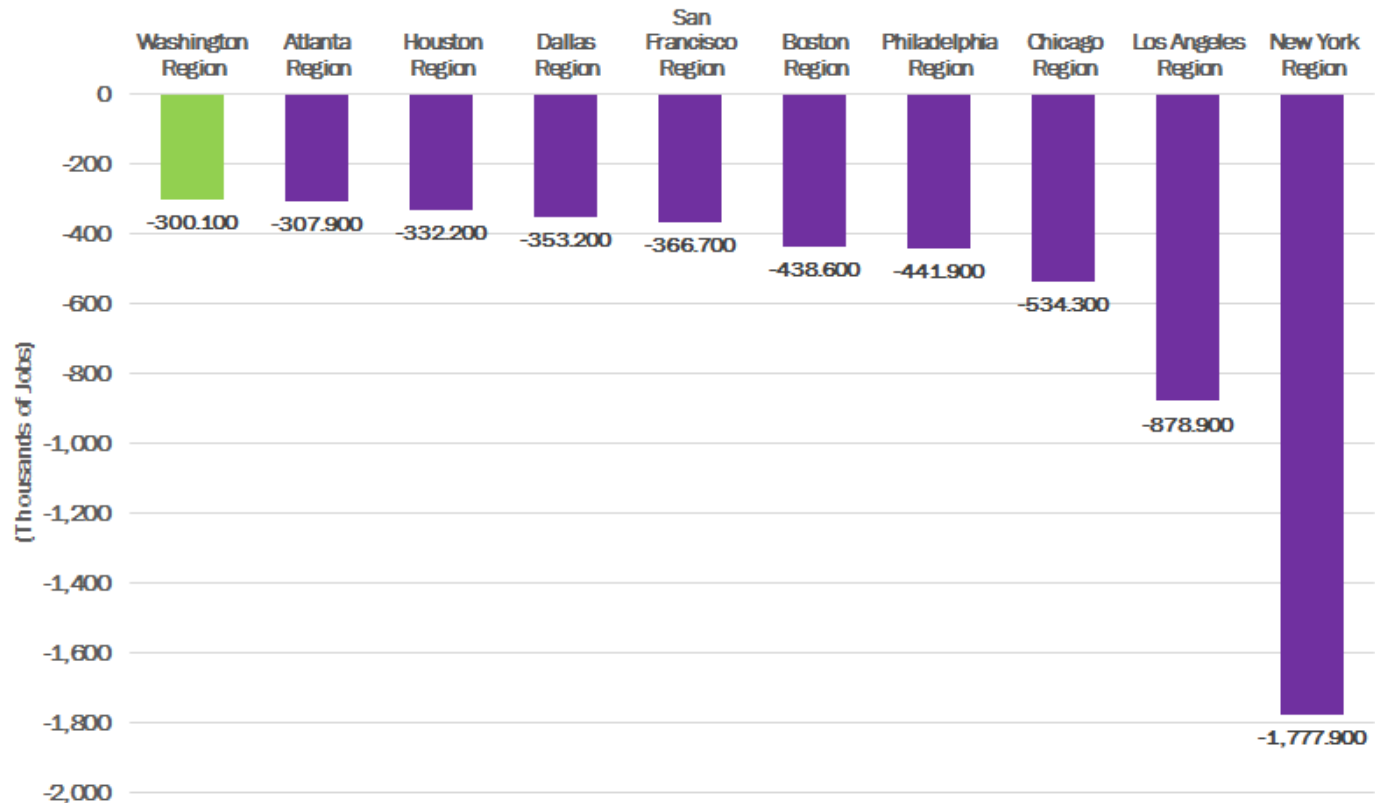
Data for 2020 are preliminary and subject to change. Source: VDOT.

- Though serious crash numbers have been lower than 2019, fatal crashes have remained at about the same level as 2019, even with reduced traffic volumes since March



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

(Source: Bureau of Labor Statistics)



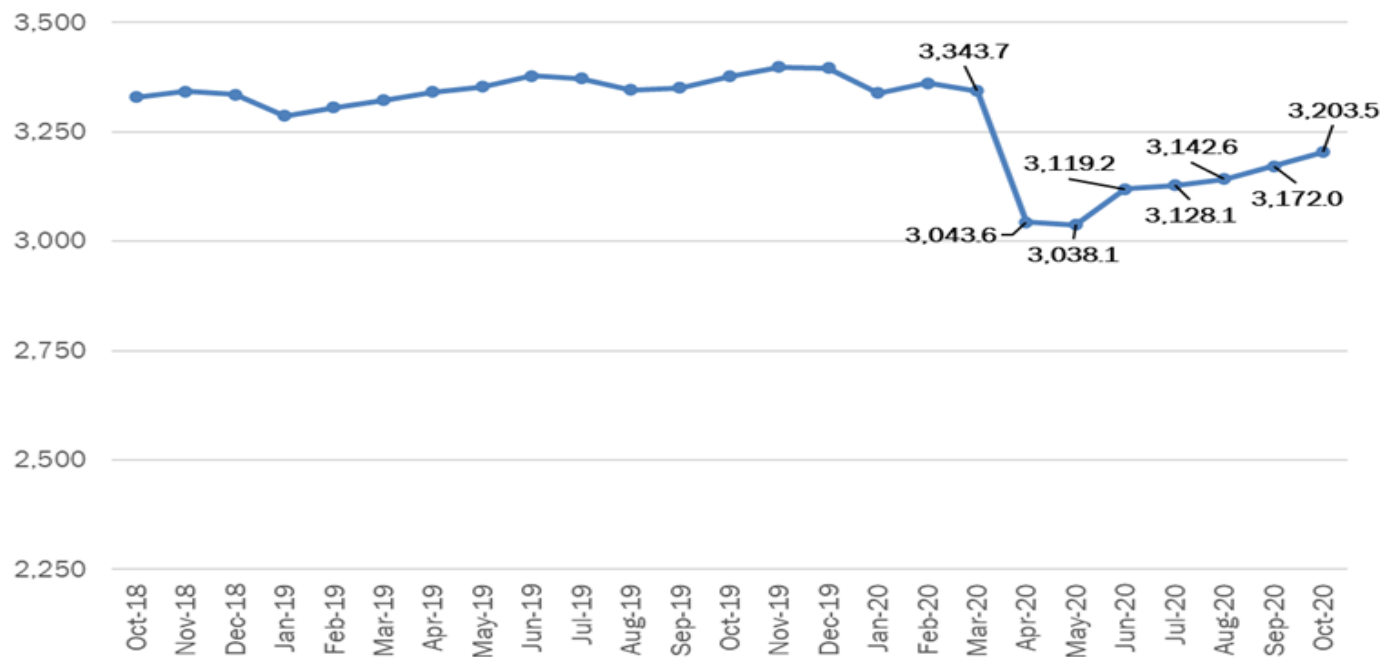
- Our initial job losses were the lowest when compared to many of our peer regions. New York and Los Angeles experienced the most severe losses.



# Non-Farm Jobs (000s) - Washington MSA

## October 2018 to October 2020

(Bureau of Labor Statistics, Not Seasonally-adjusted)

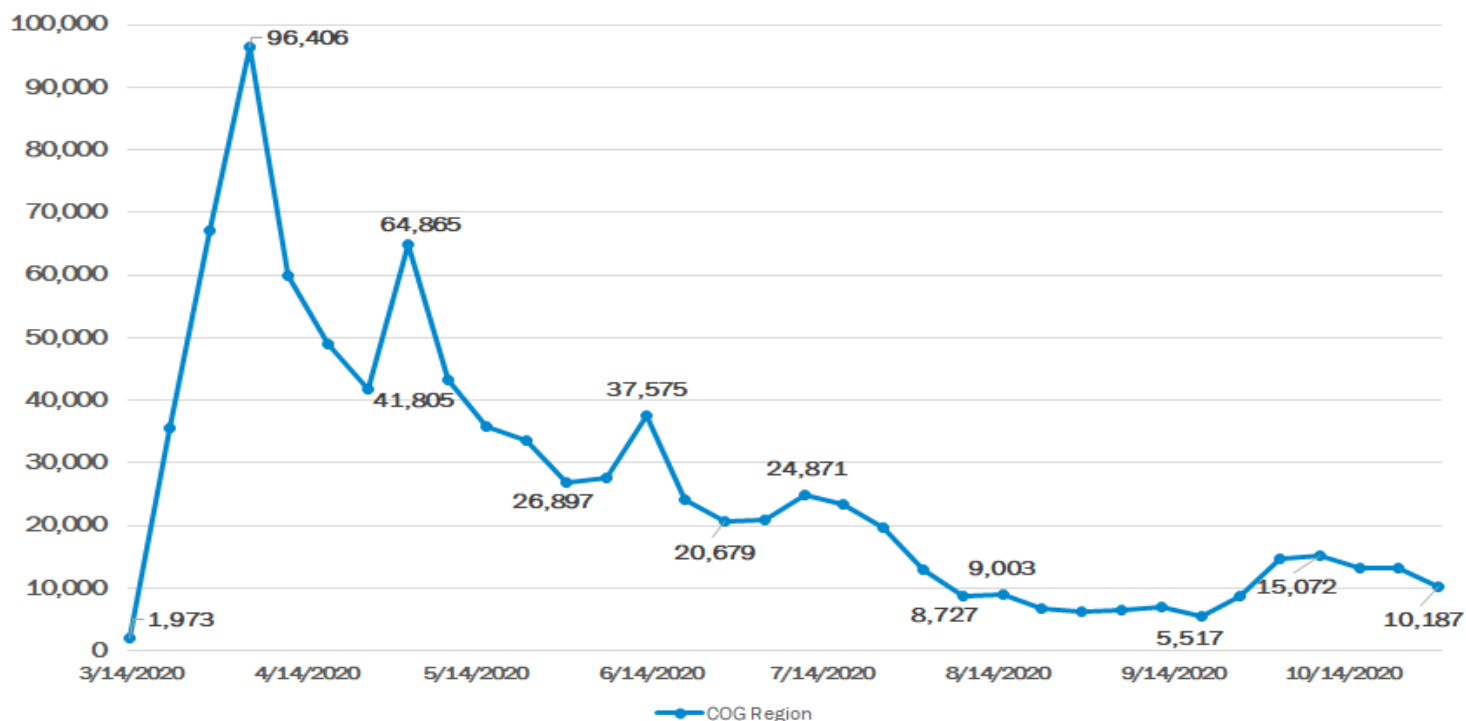


- The region lost 300,000 jobs between March and April of this year. As of October, 160,000 jobs have been added during our partial reopening.



# Unemployment Insurance Claims

(DC Department of Employment Services, Maryland Department of Labor, Licensing, and Regulation and the Virginia Employment Commission)



- Weekly unemployment insurance claims peaked during April and have declined steadily as reflected in our improving unemployment rate.

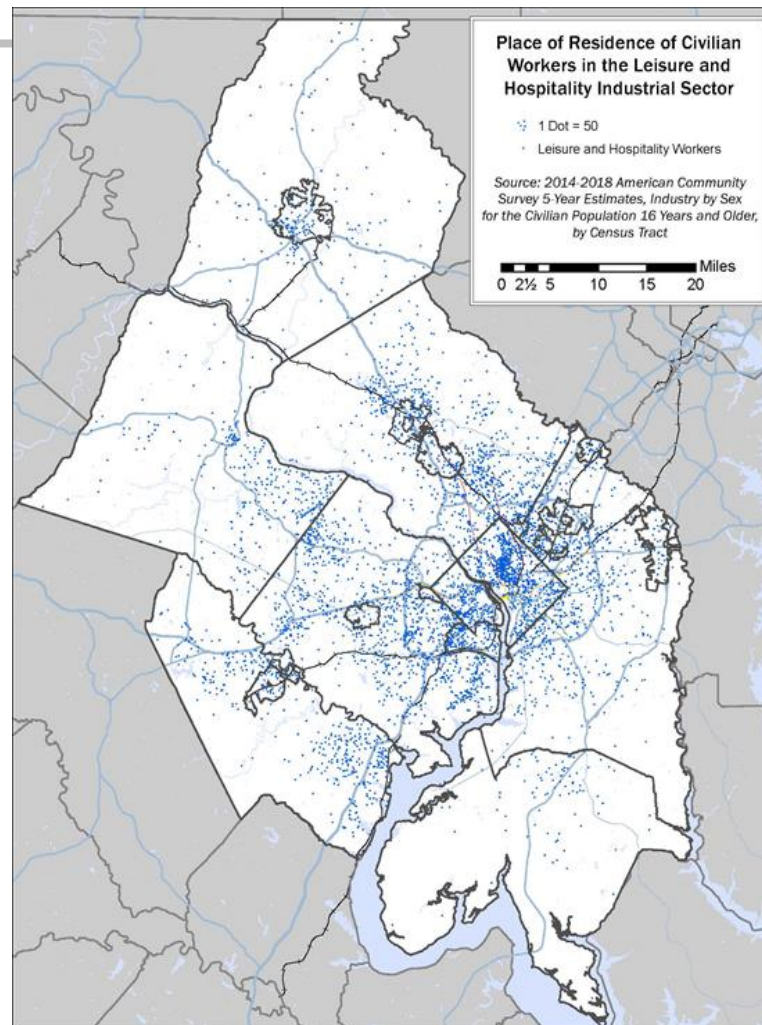


# Place of Residence for Leisure and Hospitality Workers

(Source: Census ACS)

Leisure and Hospitality workers – the sector most vulnerable to layoffs – live throughout the region

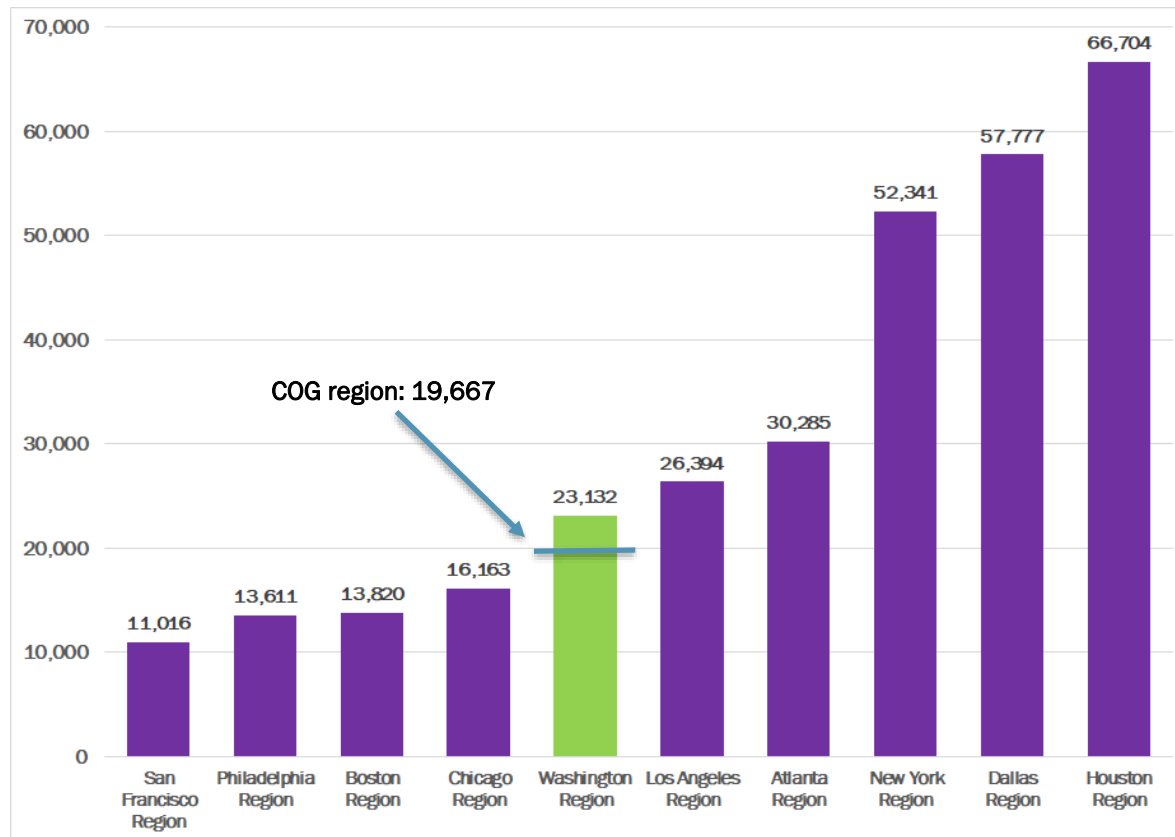
Neighborhoods with the highest concentrations of leisure and hospitality workers include east of Rock Creek Park in the District of Columbia, western Alexandria, South Arlington, Herndon and Annandale in Fairfax County, along US 1 in Fairfax and Prince William Counties, and Wheaton and Twinbrook in Montgomery County





# New Housing Permits Issued in 10 Largest MSAs November 2019 to October 2020

(Source: Census Bureau)

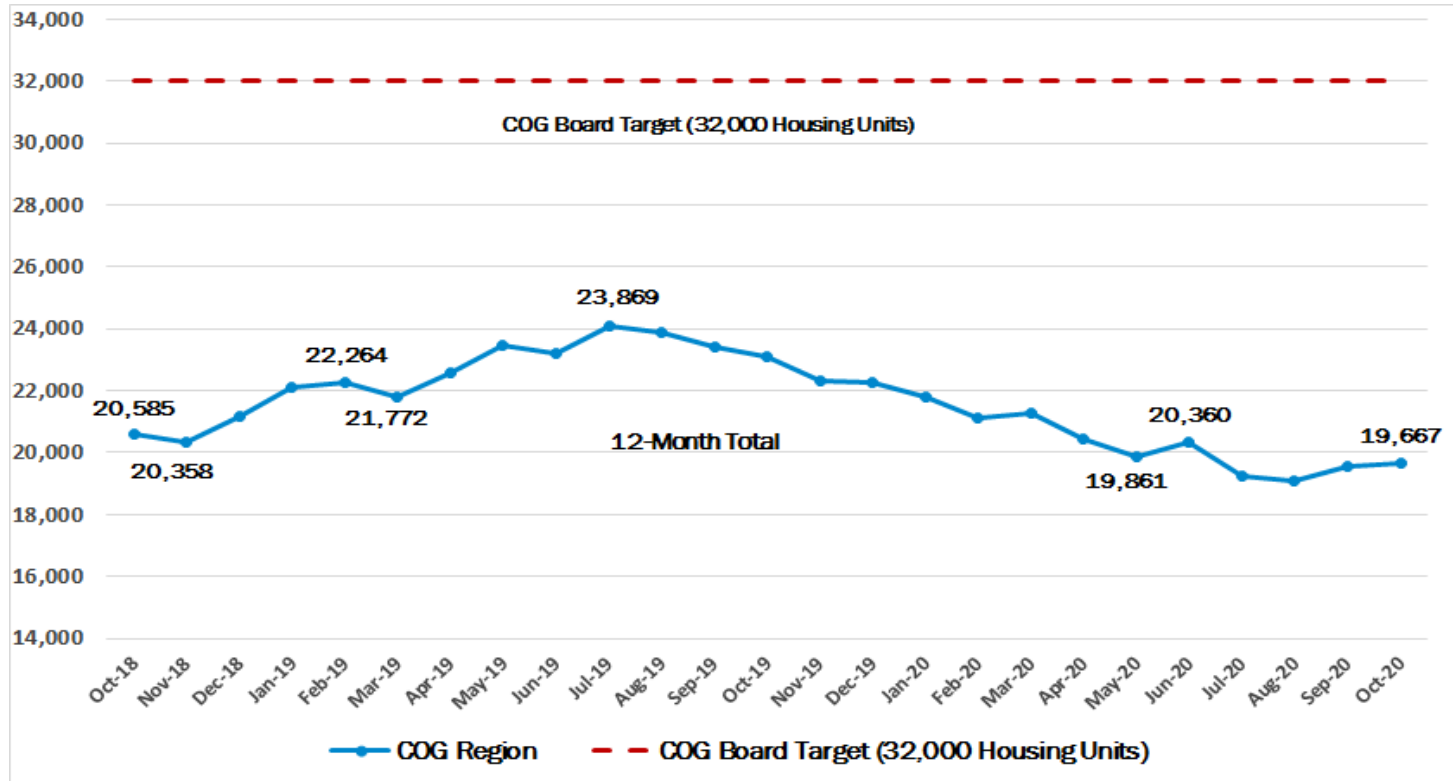


- Our region lags behind several large peer MSAs in current permitting activity, most notably Houston, Dallas and New York.



# New Housing Units Authorized 12-month total for COG Region

(Source: US Census C-40 data)

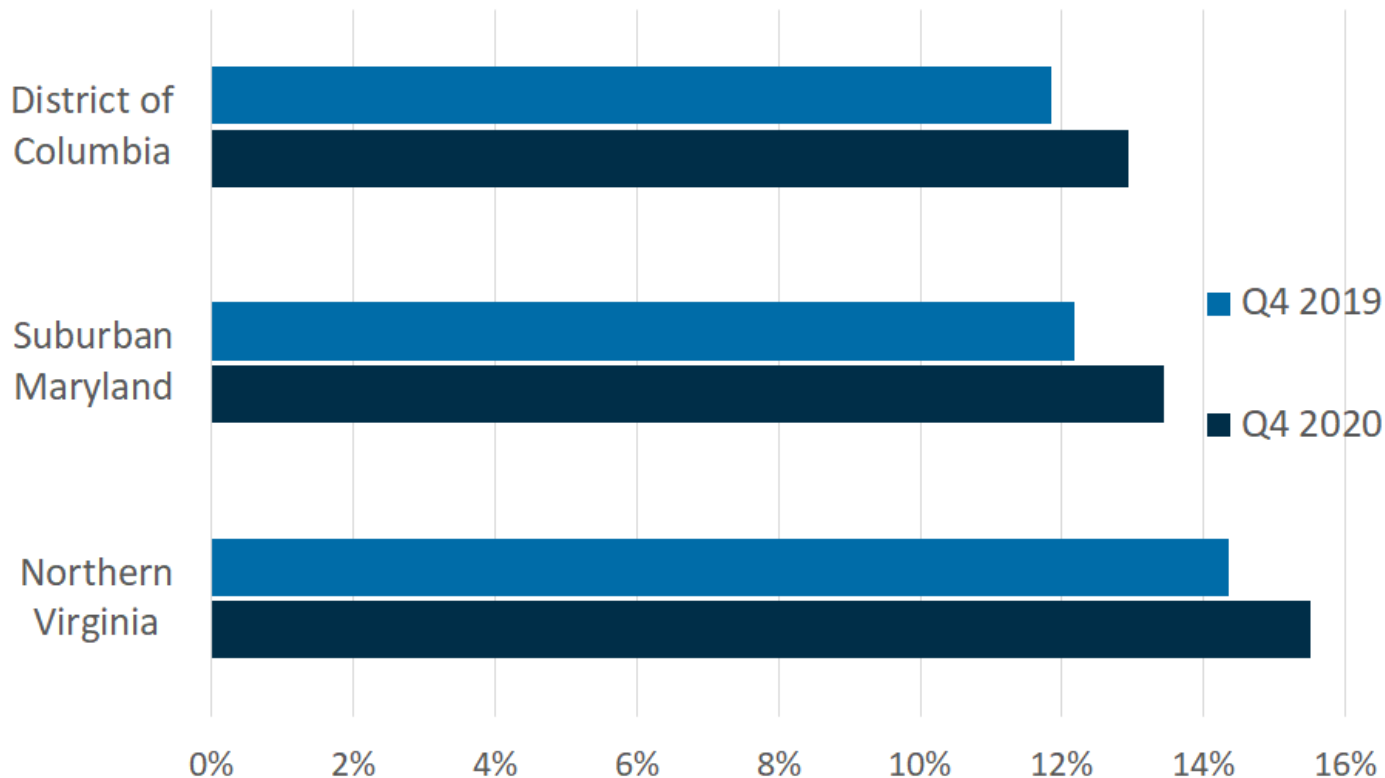


- The number of new housing permits has declined monthly since July 2019 and is far below the adopted COG target.



# Change in Office Vacancy Rates Q4 2019 vs Q4 2020

(Source: CoStar)

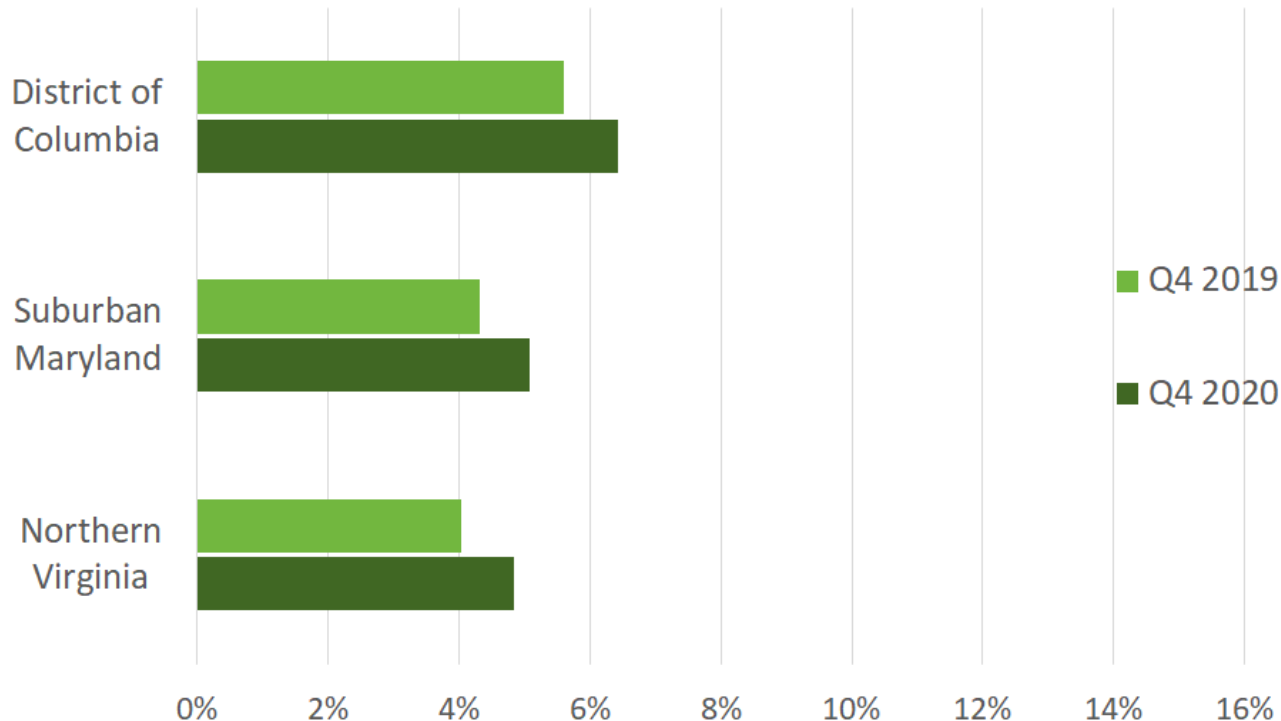


- Office vacancy rates have increased slightly throughout the region. Office leases are for longer-term periods and will be monitored for changes.



# Change in Retail Vacancy Rates Q4 2019 vs Q4 2020

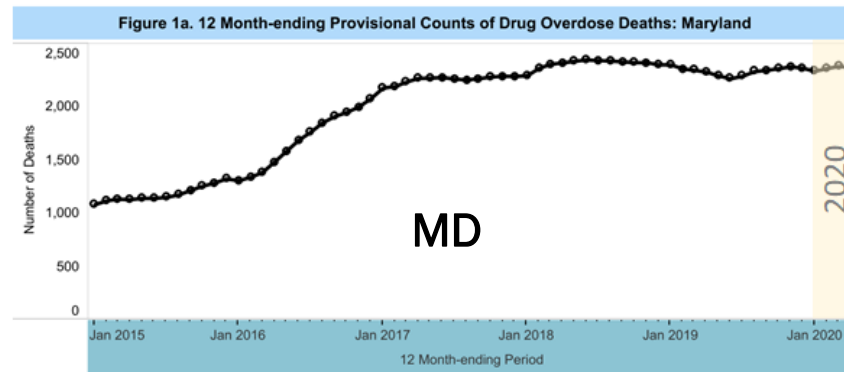
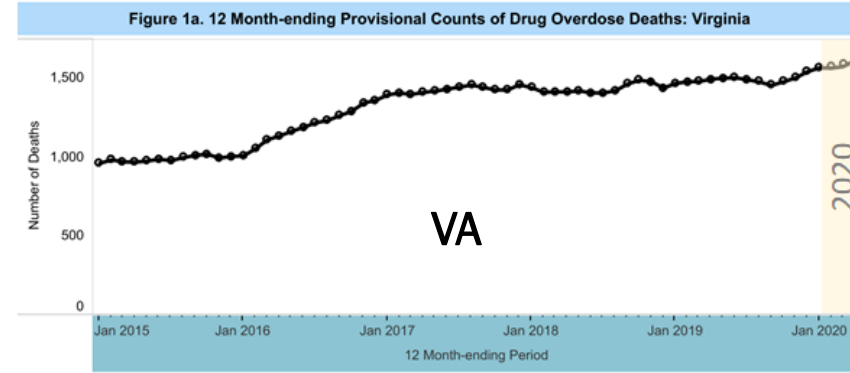
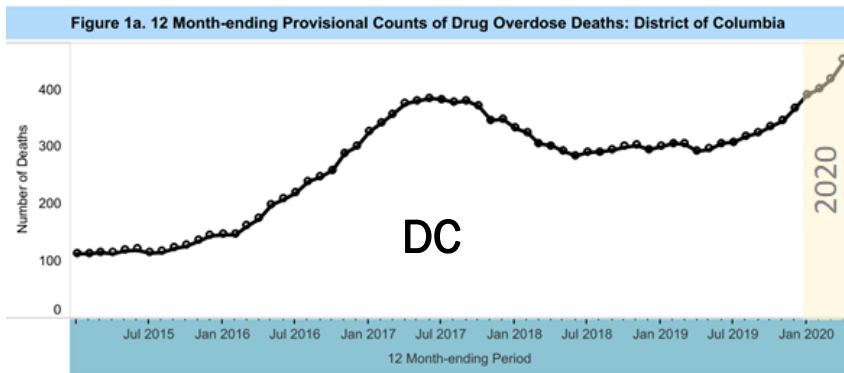
(Source: CoStar)



- Retail vacancy rates have also increased slightly throughout the region. Retail space is very susceptible to COVID-related closures and will be monitored.



# Drug Overdose Deaths



CDC National Center for Health Statistics  
<https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>

- Current overdose death counts are available from January 2015 - April 2020.
- Early in the pandemic, overdose deaths were trending upward across the DMV.

