



# How The COVID-19 Pandemic Changed Work Commuting in The Denver Region

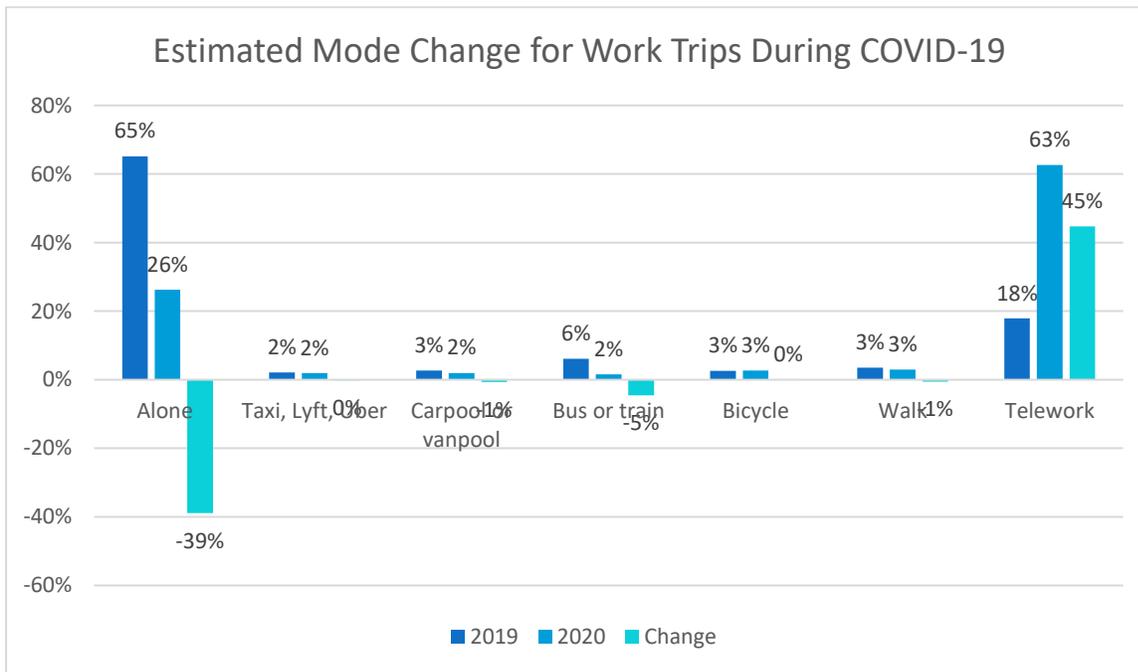
## Abstract

This report presents the changes that occurred in work commuting among a representative sample of 399 commuters from the Denver region during the COVID-19 pandemic. It uses the sample data to estimate mode share change during the pandemic, and the resulting reduction in vehicle trips, vehicle miles of travel and air pollution.

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## How we traveled or did not travel to work during the pandemic

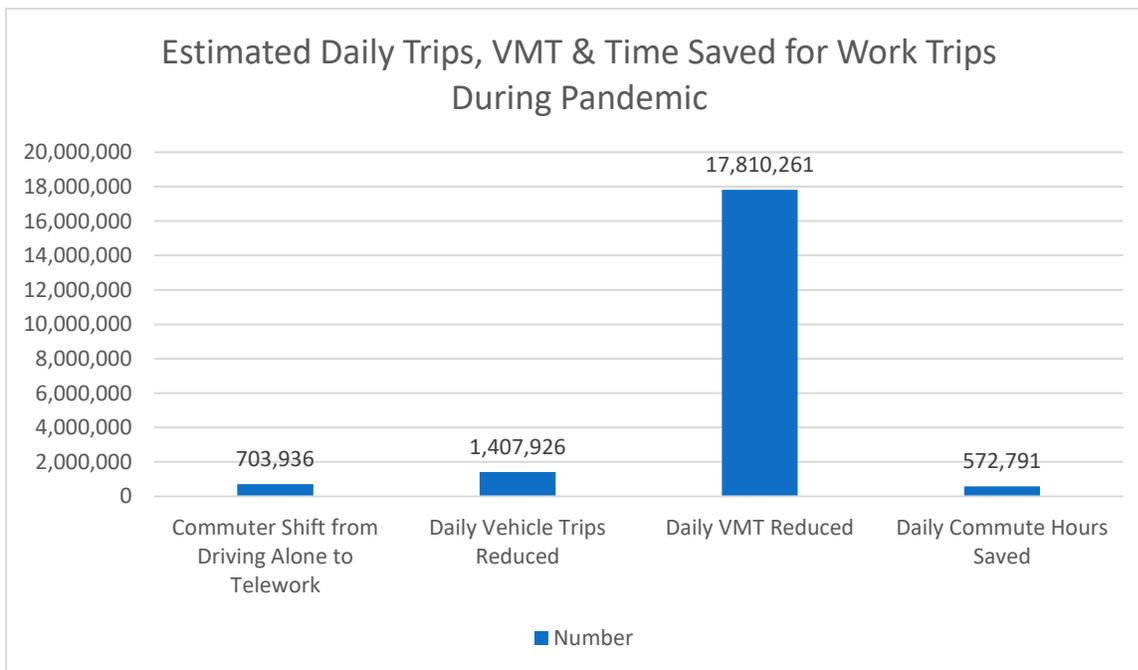
The survey results show that telework mode share during the pandemic increased from an estimated 18 percent of work commute trips during a typical week in March 2019 to an estimated 63 percent in March and April 2020, an increase of 45 percentage points. Not all of this increase came from a reduction in single occupant vehicle trips. Commuters also shifted from carpooling, bus and light rail to telework. Single occupant vehicle or drive alone mode share declined by 39 percentage points and non-SOV mode share declined by six percentage points due to the increase in telework.



## Vehicle trips, miles and time saved by driving less

According to 2018 American Community Survey data, there are a total of 1,805,033 workers age 16 or older residing in the seven primary counties that make up the Denver region (Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson). Based on the survey results, on any given Monday through Friday workday during the COVID-19 pandemic, 39 percent more of these workers or an estimated 703,963 teleworked instead of driving alone to work. Each of these teleworkers saved two vehicle trips per workday, with an average one-way trip distance of 12.65 miles, and a one-way commute time of 24.41 minutes.

The chart below summarizes the estimated daily vehicle work trips reduced, daily vehicle miles of travel reduced, and the daily hours of commute time saved by the commuters who shifted from driving alone to telework during the pandemic.



## Air quality benefits of reduced driving

The daily VMT reduction of 17.8 million miles resulted in less traffic congestion and yielded substantial air quality benefits. The reductions of specific pollutants were estimated at:

2,315 kilograms per day of volatile organic compounds (VOCs)

48,088 kilograms per day of carbon monoxide (CO)

7,195,345 kilograms per day carbon dioxide (CO<sub>2</sub>)

2,137 kilograms per day oxides of nitrogen (Nox)

356.21 kilograms per day particulate matter of 10 micrometers or less (PM-10)

### Estimated Daily Reduction in Pollutants from Reduced Driving to Work

	Kilograms per Vehicle Mile Traveled	Kilograms per Day
VOCs	.00013	2,315
CO	.0027	48,088
CO <sub>2</sub>	.404	7,195,345
Nox	.00012	2,137
PM-10	.00002	356

## How will commuters travel to work as businesses reopen?

Work commuters can be divided into three categories:

New teleworkers who have been working remotely for six months or less.

Experienced teleworkers who have been teleworking for more than six months.

Non-teleworkers who do not or