

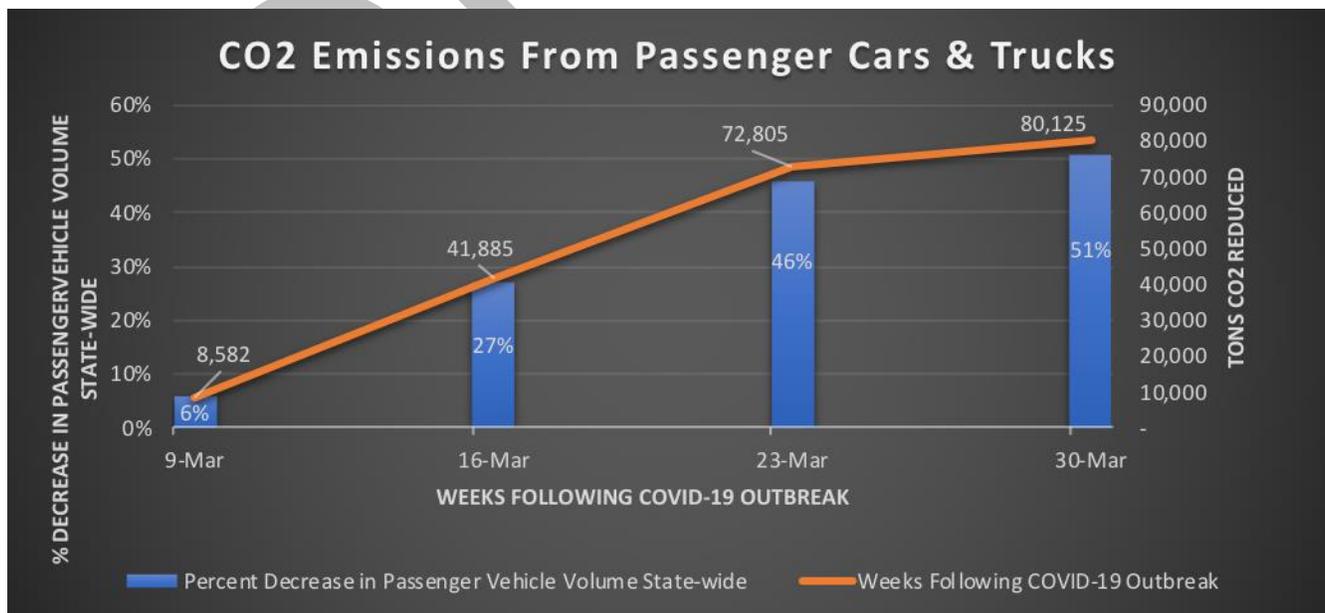
## Traffic Impacts from the COVID-19 Crisis and Enhancing Telework Initiatives

Telework has proven to be an effective tool for improving air quality. The Maryland Department of the Environment (MDE) and the University of Maryland College Park (UMCP) are collaborating on a research effort to evaluate how the COVID-19 crisis has impacted local and regional air quality. Preliminary data suggest that air quality has improved following the enactment of Governor Hogan’s stay-at-home Executive Order. The goal of the research is to inform policy makers during the COVID-19 recovery period with an eye on continued leadership and progress towards Maryland’s pollution reduction goals.

Maryland law requires each agency in the Executive Branch of State Government to meet a participation goal of “eligible” employees to telework. A significant percentage of the MDE workforce became “eligible” under the stay-at-home Executive Order – offering valuable data and insight on the impact of telework on air pollution in Maryland. MDE conducted a preliminary analysis based on the feasibility of an enhanced telework policy for all State of Maryland employees.

MDE evaluated the change in weekly vehicle traffic during March and April of 2020 with a focus on the weeks following Governor Hogan’s stay-at-home Executive Order. MDE utilized the Maryland Department of Transportation’s (MDOT) COVID-19 response webpage that offers statewide traffic impact data reported in percent change relative to 2019. The traffic impact data indicate that there was a 27% reduction in statewide weekly traffic during the week following the mandatory state employee telework mandate. Statewide light duty traffic activity decreased an additional 19% during the week of March 23-29 when non-essential businesses closed. By the end of March, a 51% reduction in vehicle activity statewide was recorded.

MDE used the stay-at-home Executive Order as a surrogate for large-scale enhancements to telework initiatives in the State. The CO<sub>2</sub> reduction potential was based on average round trip commute distance by MDE employees and then applied to all Maryland state employees. MDE used a CO<sub>2</sub> emission factor derived from the EPA MOVES model to estimate CO<sub>2</sub> reductions from light duty vehicles. The CO<sub>2</sub> reduction impact was extrapolated as an annual reduction for comparison to other reduction programs and initiatives. The 27% reduction in vehicle activity the week following the mandatory state employee telework requirement resulted in an emission decrease of approximately 41,855 metric tons of CO<sub>2</sub> per year. These findings are shown in the figure below.



CO<sub>2</sub> Emissions from Passenger Vehicles during the COVID-19 outbreak

## Scaling-up the effort

When analyzing the entirety of Maryland's workforce, MDE assumed similar commute distance and similar vehicle fleet (mpg). Maryland's entire workforce emits roughly 7 million metric tons of CO<sub>2</sub> annually from their annual commute. If 50% more Marylanders worked remotely, CO<sub>2</sub> emissions would decrease by over 3 million metric tons of CO<sub>2</sub> per year. If 75% more Marylanders worked remotely, CO<sub>2</sub> emissions would decrease by over 5 million metric tons of CO<sub>2</sub> per year.

## Maintaining Progress for the Climate through Recovery

In the coming weeks, Maryland will focus on recovery from the COVID-19 crisis. A strong recovery includes not only public health protection and economic repair, but also maintaining progress on state climate action with programs that reduce emissions and increase resiliency. The analysis described above provides data-driven evidence that telework can provide significant air quality improvement with significant co-benefits (toxic pollutants, fuel cost savings, increased productivity, time savings, etc). The COVID-19 crisis has tested Marylanders and shown what an adaptive workforce can do to maintain productivity and improve air quality through telework.

## Recommendations

- MDE and other state agencies should expand the telework-eligible job classifications and implement strategies, guidance, and policy to increase the number of teleworkers from a top down dictum, not at the discretion of immediate supervisors
- Maryland Department of Budget Management (DBM) should review all current telework documentation and policy and provide training and guidance to the agencies to assist them in meeting updated state-wide telework goal of at least 50% teleworked days per year
- DoIT should increase agency network access capabilities to improve employee effectiveness and efficiency in completing job functions
- MDE and all other state agencies should update the semi-annual performance evaluation process with updated policies that include an evolution of telework
- MDE and other state agencies should maintain a teleworker database to accurately calculate, verify and track GHG reductions as well as benefit to Maryland's economy
- Communicate lessons learned via MDE communications team to expand teleworking to the private sector

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