



OFFICE OF RACIAL EQUITY AND SOCIAL JUSTICE


Marc Elrich
County Executive

Tiffany Ward
Director and Chief Equity Officer

MEMORANDUM

February 9, 2024

To: Jennifer Bryant, Director
Office of Management and Budget

From: Tiffany Ward, Director
Office of Racial Equity and Social Justice 

Re: Racial Equity Impact Assessment (REIA) Supplemental Appropriation (SA) #24-59
RideOn Bus Fleet (No. 500821)

- I. **FINDING:** The Office of Racial Equity and Social Justice finds *that Supplemental Appropriation #24-59 RideOn Bus Fleet (No. 500821)* has the potential to advance racial equity and social justice in the County, as replacing older diesel buses with new zero-emission buses is likely to produce two discrete but related impacts. First, replacing older buses with new zero-emission buses and creating a zero-emission fleet will create universal greenhouse gas reduction benefits in the County; however, the localized benefits by zip code or other geographic area are difficult to quantify. If replacement buses can reduce emissions on a localized level and are used along routes where majorities of BIPOC and low-income communities reside, it is possible that these buses could help to reduce some health disparities, though they are unlikely to change traffic patterns at a scale. Second, steps towards a zero-emissions fleet will help to reduce the occupational health risks associated with being a transit operator. Given the demographic makeup of transit operators in the County, zero-emission replacement buses could help to reduce racial disparities in rates of heart disease mortality and other chronic illnesses.
- II. **BACKGROUND:** The purpose of Supplemental Appropriation #24-59 RideOn Bus Fleet (No. 500821) is to allocate \$46,024,000 (in Current Revenue, Federal and State Aid) to the RideOn Bus Fleet Capital Improvements Program (CIP) project to cover cost increases related to replacing older diesel buses with new zero-emission buses. Approximately 100 buses will need to be replaced through FY26; transitioning to zero-

emissions transportation is a key feature of the County's Climate Action Plan and its pathway to zero emissions by 2035.

The Office of Racial Equity and Social Justice (ORESJ) has explored the intersection of climate change, transportation, and racial equity and social justice in the following REIAs:

- Racial Equity Impact Assessment (REIA) Supplemental Appropriation (SA) #24-13 FY24 Capital Budget Montgomery County Hydrogen Fuel Cell Fueling Station
<https://www.montgomerycountymd.gov/ore/Resources/Files/24-13.pdf>
- Racial Equity Impact Assessment (REIA) Special Appropriation (SA) #23-53 FY23 Capital Budget Montgomery County Government Department of Transportation Bus Rapid Transit (BRT): US 29 Phase 2 (CIP No. 502201)
<https://www.montgomerycountymd.gov/ore/Resources/Files/23-53.pdf>
- Racial Equity Impact Assessment (REIA) Supplemental Appropriation (SA) #23-88 Montgomery County Public Schools (MCPS) Maryland Department of the Environment Volkswagen Environmental Mitigation Trust Grant, \$349,393
<https://www.montgomerycountymd.gov/ore/Resources/Files/23-88.pdf>

Each of these REIAs extensively discusses the history of structural racism and its impacts, in the US and Montgomery County, on zoning, housing, and transportation policies. These REIAs also explain how historical inequities in these policy areas have produced racial disparities in climate-change-related risks, health hazards, and access to adaptability and resilience-enhancing resources.

III. **ANALYSIS.** Supplemental Appropriation #24-59 does not specify which bus routes will likely receive new electric buses. The CAP specifically states that “when replacing gas buses with electric or other alternative fuel options, the County will need to prioritize buses that travel the greatest distances and that serve vulnerable or underrepresented communities”¹. As the previous REIAs and the CAP describe, “the majority of BIPOC and low-income communities live near major roadways, and they are more likely to live in close proximity to traffic”; this results in racially disparate health outcomes². The route selection and prioritization process for replacing buses is not publicly available. To increase transit equity and make the benefits of the county's transition to zero-emission buses more equitable, the buses that travel the greatest distances and that serve vulnerable or underrepresented communities should be prioritized for replacement.

¹ Montgomery County Climate Action Plan. Page 165. Available at:

<https://www.montgomerycountymd.gov/climate/Resources/Files/climate/climate-action-plan.pdf>

² <https://www.lung.org/clean-air/outdoors/who-is-at-risk/disparities#:~:text=Recent%20studies%20have%20looked%20at,communities%20that%20are%20predominately%20white.>

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In addition to the impacts of electrification on transit riders and communities living adjacent to major roadways and bus routes, ORESJ recommends considering the impacts of electrification on the occupational health of bus operators. In November 2021, ORESJ conducted a REIA of Supplemental Appropriation #22-62 Transit Service Bus Operators, in which ORESJ documented the history of occupational segregation and current workforce policies and practices that have shaped the racial composition of the transit operator workforce. In Montgomery County, 76% of Transit Bus Operators are Black, while only 20% of the County population is made up of Black residents—a clear disproportionality. The REIA highlighted the critical role wages and benefits play in shaping racially disparate outcomes in income and housing observed in Montgomery County. Just as wages and benefits influence a worker’s economic outcomes, working conditions shape workers’ health outcomes and quality of life.

As discussed in ORESJ’s REIA of SA #23-88 MCPS and MDE Volkswagon Environmental Mitigation Trust Grant, the negative impacts of diesel-powered school buses on children are well documented³. Focusing on the health of bus operators shows similar impacts.

The occupational health and well-being of bus operators are challenged by a range of factors that impact their physical and mental health: “high physical, psychosocial and organizational hazards, such as high workloads, the need for high levels of mental alertness, erratic and long work schedules, time pressures, exposure to chemicals such as fumes, disrupted sleep patterns, social isolation and loneliness, low job control, customer confrontations, as well as the standard risks of being a driver, such as the sedentary nature of driving, and the exposure to vibration through the seat of the vehicle and steering wheel”⁴. Together, these hazards contribute to dozens of health issues⁵. Regarding exposure to traffic-related pollutants, a study in Denmark found that carbon monoxide exposure is two to three times higher than in non-traffic environments⁶. Given the International Agency for Research on Cancer (IARC)’s documented links between diesel engine exhaust and increased rates of brain tumors, colorectal cancer, and breast cancer,⁷ a transition away from diesel engine buses could have a powerful impact on the reduction of certain cancer risks. A 2015 meta-analysis of cancer risk and road

³ <https://www.montgomerycountymd.gov/ore/Resources/Files/23-88.pdf>

⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8507880/>

⁵ https://www.transittraining.net/images/uploads/document_previews/Bus_Operator_Health_Issues.pdf

⁶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1757547/>

⁷ ARC Working Group on the Evaluation of Carcinogenic Risks to Humans. Diesel and gasoline engine exhausts and some nitroarenes. IARC monographs on the evaluation of carcinogenic risks to humans. **105**, 9 (2014). Found in.: <https://www.nature.com/articles/s41598-020-68242-5>

transportation workers found that “occupational exposure to air pollution among professional drivers significantly increased the incidence and mortality of lung cancer”⁸.

While it is beyond the scope of this REIA to fully review the occupational health hazards facing bus operators, there is sufficient evidence to suggest that the reduction of diesel engine exhaust as well as gasoline engine exhaust⁹—achieved with the transition to zero-emission buses—can positively affect driver health and wellbeing by limiting exposure to carcinogens found in diesel exhaust. Given the demographic makeup of transit operators in the County, the transition to zero-emission buses could also support the reduction of certain racial disparities in health outcomes, particularly the incidence of heart disease and chronic respiratory illnesses, which, according to a 2016-2018 study, were higher, among Black residents than any other group in Montgomery County¹⁰.

cc: Chris Conklin, Director, Montgomery County Department of Transportation
Ken Hartman, Director, Office of Strategic Partnerships, Office of the County Executive

⁸ Chen, G., Wan, X., Yang, G. & Zou, X. J. Traffic-related air pollution and lung cancer: a meta-analysis. *Thoracic Cancer* **6**, 307–318 (2015). Found in <https://www.nature.com/articles/s41598-020-68242-5>

⁹ The International Agency for Research on Cancer has categorized gasoline engine exhaust as ‘possibly carcinogenic to humans’ (Group 2B). Found in: <https://www.nature.com/articles/s41598-020-68242-5>

¹⁰ Montgomery County, MD Climate Action Plan. Found in: National Research Council (US) Panel on Race, Ethnicity, and Health in Later Life. Understanding Racial and Ethnic Differences in Health in Late Life: A Research Agenda. Available: <https://www.ncbi.nlm.nih.gov/books/NBK24693/>