Team Name: metromojo

Team Members: Ryan Carlin, Erica Eggleton, Harrison Goldwyn

Project Title: “route\_dynamics: An open-source package for predicting battery load on King County Metro Bus routes”

Abstract:

Cities across the United States are switching from diesel to fully electric or hybrid-electric buses, in part, to decrease transportation emissions. King County Metro Transit has the fifth largest electrified bus fleet in the US, and they report battery maintenance protocols that are reactive, rather than predictive, due to limited state-of-health information provided to the fleet operator. We developed a Python package, route\_dynamics, that combines a physics-based vehicle model, geographic information systems (GIS) route data, and ridership data to estimate the load requirements for a bus along a route. This tool is valuable for route planning and vehicle maintenance scheduling.