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From the Director, Department of Transportation and the President and Managing Director, Milwaukee County Transit System requesting approval of the approach towards the Milwaukee County Transit System’s bus replacement program, by recommending adoption of the following:

**A RESOLUTION**

WHEREAS, the 2019 Adopted Capital Improvements Budget (2019 Adopted Budget) directed the Milwaukee County Transit System (MCTS) to initiate the transition of its vehicle fleet to battery electric buses (BEBs), and the Department of Transportation (DOT) and MCTS were directed to begin the pertinent facilities planning related to BEB repair and maintenance needs, utility rate-structure, and related charging infrastructure; and

WHEREAS, the 2019 Adopted Budget further directed the purchase of up to 15 BEBs, extending pricing for future-year purchases, and charging and infrastructure needs to accommodate the planned initial Bus Rapid Transit (BRT) bus purchase of 11 BEBs, as well as at least four additional BEBs for general use, and provided for the possibility of seeking bids for hybrid buses (hybrids) as a transitional technology; and

WHEREAS, per adopted File No. 20-850, it is Milwaukee County (County) policy to pause acquisition of BEBs after procurement of the initial 15 BEBs to allow DOT, MCTS, and policymakers to study the efficacy and performance of BEB technology; and

WHEREAS, in accordance with the County’s policy directive, MCTS worked with M.J. Bradley on development of a Request For Proposals for acquisition of hybrids, and the research and analysis performed indicates that acquisition and implementation of hybrids into the MCTS fleet and route system presents more challenges than originally identified; and

WHEREAS, for example, 5,100 total hours of BEB maintenance training is required and there are few mechanics who already have this training, mechanics will be required to wear Personal Protective Equipment (PPE) when performing maintenance on BEBs to prevent electrocution, and first responders will also need to wear PPE in the event of a BEB-related accident or emergency; and

WHEREAS, hybrid maintenance is also complex, as the fuel technology is comprised of battery packs, diesel engines, and electrical components; and

WHEREAS, while the technology could potentially lead to an average increase in fuel efficiency of up to 15 percent, it is estimated that hybrid operation along MCTS’ route system would realize closer to a 6 percent increase in fuel efficiency due to bus idling; and

47 WHEREAS, geofencing is a benefit of hybrids as the engines can be  
48 programmed for electric-only use along certain sections of a given bus route, however,  
49 because batteries degrade with use, the size of areas programmed for electric-only use  
50 become smaller and smaller over time; and

51

52 WHEREAS, as of 2022, transit emissions (from revenue and non-revenue  
53 vehicles and equipment) represent around 30 percent of the County's remaining  
54 emissions, and transit operations will not reach carbon neutrality by 2045 without  
55 additional investments in clean energy and clean vehicles/equipment; and

56

57 WHEREAS, in terms of greenhouse gas emissions savings, there is  
58 comparatively small difference in output of Nitrogen Oxide emissions between clean  
59 diesels and hybrids as clean diesel engine emissions continue to improve from one  
60 generation to the next; and

61

62 WHEREAS, for many of these reasons, the transit industry is slowly transitioning  
63 toward BEBs and away from hybrids as an alternative to clean diesel buses; and

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65 WHEREAS, the United States Environmental Protection Agency has adopted a  
66 final rule, "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and  
67 Vehicle Standards," that sets stronger emission standards for heavy-duty vehicles and  
68 engines starting in model year 2027; and

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70 WHEREAS, another significant challenge of embarking on a full-fleet transition  
71 from clean diesels to BEBs is the cost of both infrastructure and bus procurements; and

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73 WHEREAS, the County's annual bonding cap is approximately \$45 million, and  
74 even with a 3 percent year-over-year increase in the bonding cap, the purchase of  
75 hybrids and BEBs would consume most of the available bonding over a two-year period;  
76 and

77

78 WHEREAS, 2023 Wisconsin Act 12 has given the County access to additional  
79 sources of funding, including an increase in the local sales tax, but MCTS is still facing  
80 significant financial concerns after 2026, which require it to remain fiscally prudent while  
81 working to comply with County goals and directives; and

82

83 WHEREAS, clean diesel buses are more firmly established than BEBs, have  
84 greater reliability, are less costly to procure, require fewer infrastructure upgrades, and  
85 may serve as a stepping stone towards future alternative fuel options; and

86

87 WHEREAS, because of the many substantial requirements and challenges with  
88 transitioning from clean diesels to hybrids and/or BEBs, DOT and MCTS recommend  
89 replacing buses with clean diesel buses, with close monitoring of alternative fuel trends  
90 and markets moving forward, so as not to close the door to any future fleet transitions;  
91 and

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93 WHEREAS, MCTS has monitored the CONNECT 1 BEB pilot over the past eight  
94 months, and has reported initial findings to the Milwaukee County Board of Supervisors,  
95 per adopted File No. 21-509; and

96  
97 WHEREAS, the Committee on Community, Environment, and Economic  
98 Development, at its meeting of March 11, 2024, recommended rejection of File No.  
99 24-310 due to a failed motion to adopt (vote 2-3); now, therefore,

100  
101 BE IT RESOLVED, the Milwaukee County Board of Supervisors hereby  
102 authorizes the Director, Department of Transportation (DOT), to continue with  
103 implementation and operation of the pilot of 11 Battery Electric Buses (BEBs) along the  
104 CONNECT 1 route; and

105  
106 BE IT FURTHER RESOLVED, Milwaukee County (County) will continue to  
107 evaluate alternative fuel sources to mitigate fossil fuel emissions for the purposes of  
108 combatting global climate change and improving air quality for County residents; and

109  
110 BE IT FURTHER RESOLVED, the Milwaukee County Transit System and DOT  
111 will continue to provide recommendations for vehicle upgrades and any associated  
112 infrastructure improvements that are equitable, sustainable, and cost-effective for  
113 County residents; and

114  
115 BE IT FURTHER RESOLVED, replacement of aging buses with clean diesels will  
116 continue until after fully assessing the initial BEB experience, and a potential transition  
117 from clean diesel buses to BEBs or future alternative fuel source buses would occur  
118 only when these vehicles are further tested, easily available, determined to be fiscally  
119 sustainable, and have the appropriate infrastructure deployed within the County.

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124 s:\committees\2024\march\ceed march 11\resolutions\24-310 bus replacement program approach.docx