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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:

AN AMENDED 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

64
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

72
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

92

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 Transportation and Transit, at its meeting of
98 March 11, 2024, recommended adoption of File No. 24-310 as amended (vote 5-0);
99 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 (the 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~~
116 ~~will continue until after fully assessing the initial BEB experience, and potentially~~
117 ~~transition from clean diesel buses to Battery Electric Buses or future alternative~~
118 ~~fuel source buses only when these vehicles are further tested, easily available,~~
119 ~~determined to be fiscally sustainable and have the appropriate infrastructure~~
120 ~~deployed within Milwaukee County.~~
121

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124 s:\committees\2024\march\t&t march 11\resolutions\24-310 bus replacement program plan (t&t).docx
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