

County of Milwaukee
Interoffice Communication

DATE: 10/20/2017
TO: Michael Mayo, Sr., Chair, Transportation, Public Works and Transit Committee
FROM: James H. Martin, Interim Director, Department of Transportation
SUBJECT: Milwaukee County Transit System (MCTS) automatic securement system pilot project

BACKGROUND

During the October 2017 Transportation, Public Works and Transit Committee meeting, public testimony was given in favor of the Quantum securement system currently being tested by MCTS. Quantum is an automatic self-securement system useful to passengers that use a wheelchair, scooter or similar mobility assistance device. Additional information about the Quantum system was requested by the Committee.

Existing Securement System

The Federal Transit Administration (FTA) requires buses to be equipped with at least one forward facing securement system to ensure that persons who use mobility devices can safely ride transit. There is an option for one side of the bus to have a rear facing securement system but currently each of the 410 buses in the MCTS fleet are equipped with two (2) forward facing securement systems. MCTS provides about 100,000 rides to individuals who use these securement systems annually. The existing systems requires bus operators to attach several straps with specialized fasteners to mobility devices at lockdown points to prevent movement of the passenger while the bus is in service.

Self-Securement System

Recent advances in securement technology allow passengers who use mobility devices to secure themselves. Automatic self-securement provides faster boarding and alighting times for passengers and can enhance safety. When using a self-securement system, the passenger is rear-facing to ensure the passenger's head is cradled by a padded head rest should the bus driver makes a sharp turn or emergency stop. MCTS initially became interested in the automatic self-securement system as a means of providing for increased independence and decreased boarding time for passengers that use mobility devices while traveling on the proposed East-West Bus Rapid Transit (BRT) line. MCTS anticipates that automatic self-securement has the potential to enhance accessibility, safety, and convenience for passengers.

Pilot Project Bus #5729

An initial pilot test of an automatic self-securement system is being conducted using Bus #5729. By testing this securement system on one bus, MCTS is seeking to initially gauge equipment reliability, safety benefits, ease of use and public "buy in" for the system, as well as a determine decreased time for securement. The test system was installed in July 2017, and subsequently demonstrated at organizations such as: Independence First, Milwaukee Center for Independence, Goodwill Industries of Southeastern

Wisconsin, Curative Care Network, etc. In September 2017, the test system was placed into general transit service for use by the public.

On the MCTS test bus, passengers who use a mobility device board the bus, maneuver into a rear-facing position immediately behind the bus driver, and push a button to engage the securement arms that grip the wheels of their device (See Figure 1 below). The bus driver does not assist unless asked to by the passenger.



Figure 1: Q'Straint Quantum Securement System Images

The automatic process takes about 30 seconds, whereas the manual process can take 2 to 3 minutes. Concerns raised about rear-facing travel include that it is more difficult to see upcoming stops, and that a rear-facing rider is directly facing nearly all other passengers onboard. Nonetheless, comments gathered from passengers and social-service organizations thus far have been positive.

New Cost and Retro-fit Cost

Each bus is currently equipped with a pair of standard wheelchair securement systems at a cost of about \$5,000. Due to current FTA regulations, a Quantum device can only be installed in one of the two wheelchair securement locations. The cost of a Quantum system installed in a new vehicle at the factory is about \$7,000, whereas the cost to retrofit an MCTS bus with one Quantum system is about \$11,000

including labor. The cost of securement on retrofitted buses is a 170% increase from \$5,000 per vehicle to \$13,500 per vehicle. A campaign to retrofit the fleet would cost about of \$4,510,000.

Summary

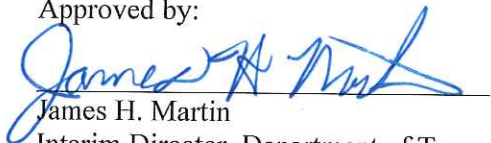
MCTS explores new technologies that enhance the passenger experience, improve reliability or generate a cost-savings return on investment. If Milwaukee County is awarded a Capital Improvement Grant for the East-West BRT project from the FTA, MCTS will plan to include an automatic securement system on each BRT bus as a means of further testing the reliability and benefits of self-securement on a subset of the fleet. After the small fleet pilot test on BRT, MCTS will be better positioned to recommend whether to deploy automatic self-securement on other MCTS buses.

RECOMMENDATION

This report is for informational purposes unless otherwise directed.

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Approved by:


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