

County of Milwaukee Interoffice Communication

DATE: 5/11/2017
TO: Michael Mayo, Sr., Chairperson, Transportation, Public Works & Transit Committee
FROM: Brian Dranzik, Director, Department of Transportation
SUBJECT: Informational Report on MCTS Ridership by Route Type, and Time of Day, and Circumstances in which Route Modifications or Eliminations Could Be Considered

BACKGROUND

The Chairman of the Transportation, Public Works & Transit Committee requested information about ridership on the Milwaukee County Transit System (MCTS), including rides per route, ridership by time of day, and the productivity of bus routes in terms of passengers per bus hour (PBH) should route modifications or eliminations be necessary due to a lack of funding.

MCTS operates one of the largest urban public transportation systems in the United States. A recent analysis of the 25 largest bus transit systems in the U.S. identified MCTS as having the **lowest cost of vehicle maintenance per hour of bus operation (\$12.45)**, which was less than ½ of the average (\$26.82) for the 25 largest systems¹. A separate report evaluating administration costs and head counts in comparison to operations identifies MCTS as **having the highest number of revenue hours per administration employee (9,588)** of nine similar sized transit systems in the study.² In addition, data from the 2014 National Transit Database which was compiled by SRF Consulting for a study commissioned by the Wisconsin DOT shows MCTS outperforms its peers.³

- **MCTS operating expense per passenger (\$3.73) is lowest** amongst its peers and more than a dollar lower than the national average (\$4.78)
- **MCTS operating cost per bus hour (\$102.16) is lower** than most of its peers, and more than \$30 lower than the national average (\$133.81)
- **MCTS passenger trips per capita (42.73) are highest** amongst its peers, and 70% higher than the national average (25.1)

The passenger is the focal point of MCTS. Being efficient and effective allows us to maximize resources dedicated to service delivery. Recently, MCTS has also put a focus on providing the technological conveniences demanded by the community. MCTS implemented automated bus stop announcements, a real-time information system, and an advanced fare collection system. In fact, fewer than 40 smart card systems like the MCTS M-Card system have been deployed in the United States. Simply put, ridership is driven by a combination of maximizing services to the public and providing them with the amenities and positive experiences that they desire. This focus results in strong ridership. MCTS's fleet of 405 buses provide 40 million rides a year. Buses can be on the road continuously for up to 20 hours in one day.

¹ 2015 MBTA (Massachusetts Bay Transportation Authority) Bus Maintenance Costs Were Nation's Highest, Pioneer Institute – Public Policy Research, March 2017, Figure 4

² 2017 Memorandum from Capital Metro Transit Chief of Staff, regarding headcount benchmarking study involving nine similar sized U.S. bus systems that participated in the study; 2015 NTD Data and survey information sources

³ Milwaukee County Transit System, System Performance Review – Peer Analysis (Draft Report – Local Review), SRF Consulting Group Inc., August 2016

Altogether, MCTS vehicles operate 1.4 million bus hours of service annually. The average productivity of our service is 29 Passengers per Bus Hour (PBH), which is close to the National Average for PBH (32.4).⁴ By the time one of our vehicles is 13 years old it has nearly 600,000 miles on it. Bus replacement costs are close to \$480,000 per vehicle.

In addition to operating transit services in Milwaukee County, MCTS has contracts with Ozaukee and Waukesha Counties for services to and from our neighbors. We provide vehicles, labor and all related operations and maintenance for a fee that covers these costs. On the paratransit side of the operation, MCTS uses local van and taxi companies to provide 525,000 rides annually. The remainder of this report will focus on the non-paratransit and non-contractual services directly operated by MCTS.

MCTS operations include several different types of transit services.

- Local fixed route bus services
 - Frequent services
 - Coverage services
- Shuttles
 - Focused on business, or industrial parks
- School-based services
 - Weekday services to MPS and suburban School Districts
 - University Bus (UBUS) services to the University of Wisconsin – Milwaukee and Milwaukee Area Technical College (MATC)
- Freeway Flyer services
 - Park-ride lot services in Milwaukee County
- Summer services to festivals, baseball games, and state fair

Characteristics of these services will be described below, including ridership by route type.

Ridership by Route Type

Fixed Route Services: Local buses operate 365 days out of the year. About 93% of annual bus hours are applied to operating these essential services. Local buses are used by transit dependent and choice riders. Destinations served vary from residences, schools, and commercial activity centers, to employment centers, etc. 40% of Fixed Route Services are identified as frequent services, meaning that a bus arrives at least every 15 minutes, if not more often. The remaining portion of fixed route services are identified as coverage services, meaning that an area is provided with a bus, but that the frequency of arrivals is longer than 16 minutes and could be as long as an hour or more. These coverage services are of less utility to the community and as such, ridership tends to be lower on these routes than on the high frequency services.

| | Annual Bus Hours | Buses | Annual Rides | Passengers per Bus Hour (PBH) |
|--------------------------------|------------------|-------|--------------|-------------------------------|
| Fixed Route Local Bus Services | 1,284,000 | 310 | 37,825,000 | 29 |

Shuttle services: For the most part, these services operate on weekdays only. About 1% of annual bus hours are used to provide shuttle services. These routes tend to focus on business and industrial parks

⁴ NTD (National Transit Database) – 2015 National Transit Summary and Trends, Office of Budget and Policy, October 2016

with trips coordinated to support work shift change times in the area. A bus operating on Saturdays only to provide visitors with access to the House of Correction is also included in this grouping. Routes: 6, 61, 17, 219, 223, 276 and 137.

| | Annual Bus Hours | Buses | Rides | Passengers per Bus Hour (PBH) |
|------------------|------------------|-------|---------|-------------------------------|
| Shuttle Services | 39,450 | 10 | 364,000 | 9 |

Freeway Flyers: These park-ride lot services operate 255 weekdays out of the year. About 2.5% of annual bus hours are used to provide Freeway Flyer services. Park-ride lot services can be appealing to passengers because parking is free at the parking lot. Since these trips originate at park-ride lots they are primarily used by riders that choose the bus over a commute into Downtown Milwaukee in their own vehicle. These passengers have alternative means of taking the trip available to them. Routes: 40, 43, 44, 46, 48, and 49.

| | Annual Bus Hours | Buses | Rides | Passengers per Bus Hour (PBH) |
|--------------------------------------|------------------|-------|---------|-------------------------------|
| Freeway Flyer Park-Ride Lot Services | 34,800 | 40 | 352,900 | 10 |

School based services: Operate on school days only, about 180 days each year. About 3% of annual bus hours are used to provide school based services. There is a long history of MCTS providing buses to MPS and other school districts. In recent years, MPS has elected to move more students to yellow-school bus services as a cost savings measure. Suburban districts buy fares for fewer students; therefore, the presence of an MCTS school focused service is a 'no cost bonus' for these districts, especially in light of the fact that transportation is a responsibility of school districts. Also, it should not be overlooked that challenging behavior by some young passengers traveling to and from school is a drain on transit security services. Routes: RR1, RR2, RR3, 50, 85, 87, 88, and 89 as well as 40U, 42U, 44U and 49U.

| | Annual Bus Hours | Buses | Rides | Passengers per Bus Hour (PBH) |
|-----------------------|------------------|-------|---------|-------------------------------|
| Local School Services | 13,000 | 20 | 131,700 | 10 |
| UBUS Services | 29,000 | 25 | 283,400 | 10 |

Summer services: Taking MCTS buses to festivals, baseball games, State Fair, etc., can be a preferable form of transportation. We have partnered with organizations to provide easy access into and out of these potentially congested areas, as well as afford a near front-door drop off and pick-up location. Less than 1% of transit bus hours are used on summer services. MCTS can serve these events when we have enough equipment and staff, and it doesn't interfere with fixed route service reliability.

| | Annual Bus Hours | Buses | Rides | Passengers per Bus Hour (PBH) |
|-----------------|------------------|-------|---------|-------------------------------|
| Summer Services | 10000 | n/a* | 300,000 | 30 |

*note: no extra buses in the fleet for summer services only.

Ridership by time of day

As expected, most transit trips occur during the peak times of travel in the morning and evening when passengers are traveling to and from work and school. On a typical weekday:

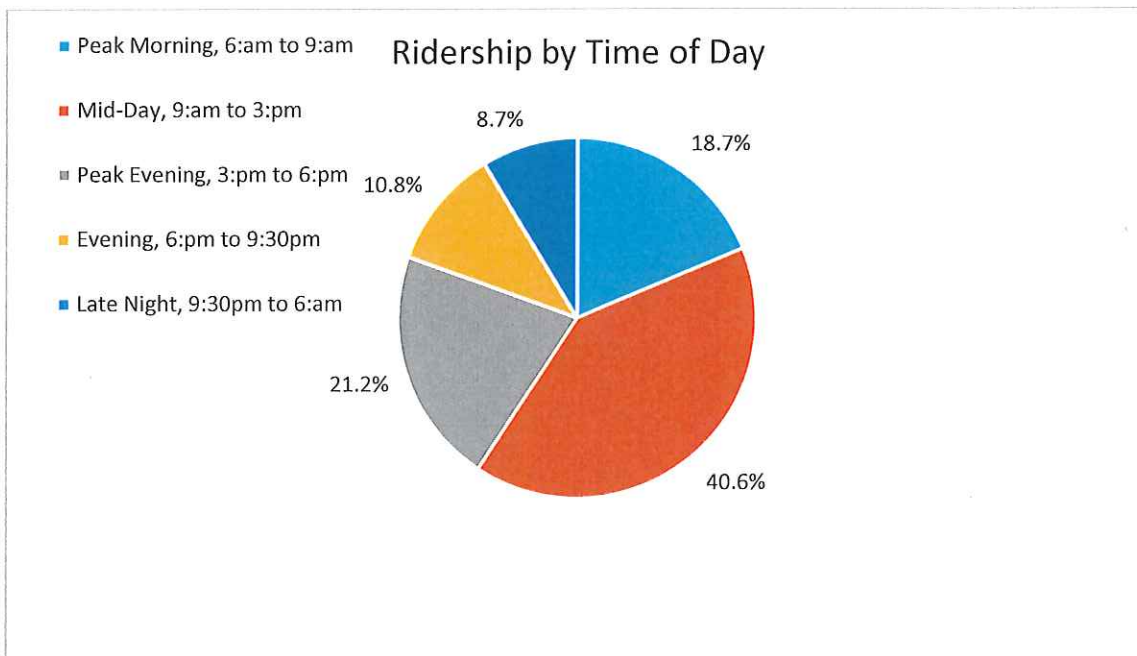
- 40% of transit rides are taken between 6:00am and 9:00am or between 3:00pm and 6:00pm.
- 40% of rides occur in the middle of the day between 9:00am and 3:00pm.
- 11% of rides occur in the evening, between 6:00pm and 9:30pm makes
- 9% of rides occurring after 9:30pm and before 6:00am

Services are supplied in a way that supports the ridership demand:

- 37% of service hours are provided during peak times when 40% of rides occur
- 33% of service hours are provided in the middle of the day when 40% of rides occur
- 13% of service hours are provided in the evening
- 16% of service hours are provided after 9:30pm and before 6:00am

The biggest discrepancy between service hours provided and ridership is late at night and in the early hours of the morning. This period of time makes up 35% of a 24-hour day, but only receives 16% of the bus hours. MCTS applies resources to support these trips to ensure that 2nd shift and 3 shift employees and other off-hour users have transit available to them. Also, transit operates year-round and in varied temperatures and weather conditions, although the service is reduced, we need to maintain a safe level of accessibility for those that find transit is the only form of transportation that is affordable to them.

The Chart below visually represents the ridership distribution by time of day, with each period of time between three (3) and six (6) hours in length.



Modifications or Eliminations that Could Be Considered

There are different reasons to consider route modifications or eliminations:

- Route Redesigns
- Operating Budget Pressures
- Capital Budget Pressures

Route Redesign. Many transit systems nationally are redesigning their route structure to increase the proportion of frequent services to coverage services. These changes generally increase ridership, passenger revenues and customer satisfaction. Recall that MCTS has 40% of its local fixed route bus service resources dedicated to high frequency routes. The wait times between buses on most portions of the following nine bus routes and bus corridors is 15 minutes or better: GoldLine, RedLine/Route 62, BlueLine/Route 23, GreenLine, PurpleLine/Route 27, 12, 19, 30/30x, and 80.

Twenty-two other local fixed route bus services encompass 60% of transit service hours. These routes operate with wait times between buses of 16 minutes to an hour or longer. MCTS will seek public input about the potential for modifying these services, including eliminating some portions of routes altogether, for purposes of reassigning the transit service hours in a way that increases the overall numbers of corridors with high frequency of service. The strategy involves a tradeoff for some passengers:

Walk farther to get to a bus stop Vs. Once you arrive service will operate more frequently than previously available.

In other cities, agreeing to this tradeoff has increased the utilization of transit, resulting in higher ridership and more passenger revenue. The attached **System Redesign Infographic** describes the MCTS distribution of high frequency to coverage bus routes as 40/60 and the potential to increase it to 60/40.

Operating Budget Pressures. In the past, MCTS considered route modifications or eliminations when faced with budget challenges presented by year-over-year inflation and cost increases. Despite stagnant federal and state funding in the last few years, MCTS has been able to maintain relatively consistent levels of service due to substantial local revenue support of transit by the County Executive and the County Board of Supervisors. MCTS also routinely seeks out efficiencies and cost saving initiatives, because we really do prioritize putting ‘rubber on the road’ with as many resources as possible.

Capital Budget Pressures. Pressure on the County’s capital purchase bonding program could also be a reason to consider a route modification or elimination. Reducing service not only helps to balance operating budgets, but it can decrease the total fleet size in a way that alleviates Capital budget pressures. Given the high cost of a transit bus (approximately \$480,000) a reduction in transit services can mitigate transit vehicle replacement pressures.

If MCTS were to need to modify or eliminate services to balance its operating or capital budget, the following questions could be asked:

- a) What is the productivity of each route, measured in passengers per bus hour? Recall that the system-wide average is about 29 PBH, therefore, any route operating at a productivity lower than the average could be a candidate for modification or elimination.
- b) Is the route used by a choice rider or persons with transportation alternatives available to them? Recall that Freeway Flyers, or park-ride lot services, cater largely to those with access to vehicles that benefit from free parking at the park-ride lots.
- c) Is the route part of the MCTS core mission, or can another entity assume responsibility for the route? Recall that school based services can be considered the responsibility of local school districts.

- d) Are the vehicles needed for the service used year round? Said another way, if the service was eliminated, would there be less demand on capital budgets for vehicle replacement? All vehicles in the fleet are used year round. Having up to 20% extra vehicles are necessary to ensure that vehicle maintenance can occur outside of the times that a vehicle is needed directly for transit services; however, there are some MCTS services that require extra vehicles to be in the fleet, but the need for the vehicle only exists on weekdays (in the case of Freeway Flyers and weekday work shift shuttles that operate only 255 days per year), or even less often as is the case for school based services that only are needed for operations about 180 days per year.

Two tables follow to show those routes that operate with a productivity that is above the average PBH, and show those routes that operate with a productivity that is below the average PBH.

Table 1: MCTS services with productivity greater than the average of 29 PBH

| Route | Service Type | Rides/Day | Bus Hours | PBH |
|------------|-----------------|-----------|-----------|------|
| RR2 | School | 166 | 2.1 | 77.8 |
| 30X | Local - Express | 5,295 | 106.0 | 50.0 |
| RedLine | Local - Express | 5,419 | 118.5 | 45.7 |
| PurpleLine | Local - Express | 5,046 | 114.5 | 44.1 |
| 27 | Local | 4,758 | 113.8 | 41.8 |
| RR1 | School | 203 | 4.9 | 41.7 |
| BlueLine | Local - Express | 6,396 | 154.5 | 41.4 |
| 30 | Local | 6,404 | 155.1 | 41.3 |
| 63 | Local | 2,825 | 70.4 | 40.2 |
| 62 | Local | 2,706 | 67.6 | 40.0 |
| 56 | Local | 2,762 | 69.5 | 39.8 |
| 22 | Local | 2,861 | 73.7 | 38.8 |
| 35 | Local | 3,797 | 100.4 | 37.8 |
| 85 | School | 79 | 2.2 | 35.4 |
| 60 | Local | 3,542 | 100.5 | 35.2 |
| 15 | Local | 5,461 | 158.0 | 34.6 |
| 12 | Local | 6,124 | 181.7 | 33.7 |
| GoldLine | Local - Express | 5,989 | 182.4 | 32.8 |
| 23 | Local | 5,314 | 163.5 | 32.5 |
| 51 | Local | 2,880 | 88.7 | 32.5 |
| 14 | Local | 5,142 | 159.2 | 32.3 |
| 21 | Local | 4,117 | 128.5 | 32.0 |
| 67 | Local | 4,019 | 129.3 | 31.1 |
| 54 | Local | 2,224 | 72.2 | 30.8 |
| 19 | Local | 6,426 | 208.7 | 30.8 |
| 87 | School | 34 | 1.1 | 30.4 |
| GreenLine | Local - Express | 6,267 | 206.2 | 30.4 |
| 80 | Local | 6,346 | 209.5 | 30.3 |

The twenty-eight (28) bus routes identified in Table 1 carry over 33 million passengers per year and include 2/3rds of all annual transit service hours supplied to the community. Generally, productivity of school based services is overstated⁵

Table 2: MCTS services with productivity less than or equal to the average of 29 PBH

| Route | Service Type | Rides/Day | Bus Hours | PBH |
|-------|------------------|-----------|-----------|------|
| 76 | Local | 4,914 | 166.4 | 29.5 |
| 53 | Local | 1,891 | 65.5 | 28.9 |
| 57 | Local | 1,965 | 71.2 | 27.6 |
| RR3 | School | 63 | 2.6 | 23.9 |
| 89 | School | 62 | 2.6 | 23.8 |
| 55 | Local | 1,158 | 50.7 | 22.9 |
| 33 | Local | 850 | 38.9 | 21.9 |
| 64 | Local | 559 | 29.1 | 19.2 |
| 31 | Local | 1,307 | 78.3 | 16.7 |
| 40 | Flyer | 282 | 17.3 | 16.3 |
| 28 | Local | 839 | 51.8 | 16.2 |
| 43 | Flyer | 258 | 17.2 | 15.0 |
| 40U | School - UBUS | 742 | 50.8 | 14.6 |
| 52 | Local | 470 | 32.9 | 14.3 |
| 48 | Flyer | 208 | 14.7 | 14.1 |
| 44 | Flyer | 192 | 13.8 | 13.9 |
| 143 | Flyer - Contract | 340 | 26.2 | 13.0 |
| 46 | Flyer | 187 | 14.8 | 12.6 |
| 49 | Flyer | 257 | 20.9 | 12.3 |
| 44U | School - UBUS | 798 | 67.5 | 11.8 |
| 6 | Shuttle | 212 | 19.3 | 11.0 |
| 50 | School | 28 | 2.7 | 10.6 |
| 79 | Flyer - Contract | 117 | 11.4 | 10.3 |
| 61 | Shuttle | 713 | 70.8 | 10.1 |
| 49U | School - UBUS | 211 | 21.1 | 10.0 |
| 17 | Shuttle | 107 | 11.3 | 9.5 |
| 88 | School | 19 | 2.7 | 7.1 |
| 223 | Shuttle | 98 | 13.9 | 7.0 |
| 219 | Shuttle | 31 | 4.7 | 6.6 |
| 276 | Shuttle | 110 | 16.9 | 6.5 |
| 42U | School - UBUS | 126 | 27.6 | 4.6 |
| 137 | Shuttle - HOC | 20 | 4.4 | 4.5 |

⁵ School based services typically include deadhead time and additional costs due to collective bargaining agreement terms that specify minimum pay-time whenever a bus is pulled out of the station. Revised PBHs for school routes follow: Rte 88 (6.8 pbh), Rte 50 (10.4 pbh), Rte 85 (19.8 pbh), Rte RR1 (21.4 pbh), Rte 89 (23.8 pbh), Rte 87 (28.3 pbh), Rte RR3 (32.3 pbh), and Rte RR2 (71 pbh)

The thirty-two (32) bus services shown in Table 2 vary from poor performers to routes that are very important to the community as evident by their ridership of several thousand passengers per day. Eliminating the lowest performing 16 of 32 services in Table 2 is projected to result in annual cost savings to MCTS of \$5.5 Million. About 750,000 fewer passengers would ride and \$1 million less in revenue would be collected. Low performing routes tend to carry a high cost per ride in comparison to routes with higher productivity. Recall that the average operating expense per passenger for MCTS is around \$3.73, but for low performing routes that cost can approach \$11.00 per ride.

Recent Developments in Transit Funding. The 2017 County Executive Recommended Budget included the creation of an annual \$60 Vehicle Registration Fee (VRF). The Comptroller's Office conducted an independent analysis of the future operating needs for Transit and the capital needs of transportation, and concluded that the County needs this revenue if it is to maintain the County's portion of the local transportation systems including highways, the bus system, and parkways. The 2017 Adopted Milwaukee County Budget included approval of a \$30 VRF. In April 2017, a non-binding referendum was held on the subject of a \$60/year VRF. The increase from \$30 VRF to \$60 VRF would have raised an additional \$16M annually in Milwaukee County. The referendum was rejected by the public.

As a frame of reference with respect to the VRF increase, the net cost of operating 31 of 32 services listed in Table 2 above is equivalent to the \$16M amount that would have been generated annually had the 2017 Adopted Milwaukee County Budget included a \$60/year VRF instead of the current \$30/year VRF. If these 31 routes were to be eliminated, about 3.5 million fewer passengers would use MCTS each year and annual passenger revenue would decrease by \$4M or more. To complicate matters further, Assembly Republicans introduced the notion of eliminating Milwaukee County's current VRF effective July 1, 2017 as a part of the State's Biennial Budget. Should that proposal become law, there is a strong likelihood that drastic service reductions as described above would have to be considered for MCTS to manage to the adopted 2017 budget.

Finally, the information presented herein reflects averages in costs and revenues for services depicted. Should transit service modifications or eliminations be necessary each change would be evaluated on a case-by-case basis to refine estimates of ridership and revenue loss, and operating cost savings. During the case-by-case review, Title VI analyses to assess any unintended disparate impacts on minority populations or unintended disproportionate burdens on low-income populations would be performed.

RECOMMENDATION

This report is for informational purposes unless otherwise directed.

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