

Bus Type/Size Study Parameters for Ad Hoc Metro Planning Committee Consideration

Issue: Currently, all of Metro's fixed-route fleet is made up of heavy-duty 40-foot buses. The perception by many in the community is that a bus fleet made up of some shorter buses would be more efficient.

What is the appropriate fleet size and bus size/type for Metro? Some routes, especially at certain times of the days or days of the week, have low ridership, and a bus smaller than 40-feet in length would appear to be more efficient to operate. On the other hand, ridership is growing and some bus routes (ie., campus) are so heavily loaded that discussions have begun on getting larger buses (ie., articulated buses). Currently Metro's fixed-route system average is **33 rides per hour per bus** in productivity, with the **5 highest** ridership productivity routes being: Rts. 80-UW (83 rides/hour), 85-UW (68 r/h), 90-93 school trippers (66 r/h), 81-82 UW (58 r/h), and 22/28 Mendota Loop & NTP – WTP Commuter(45 r/h) **vs. the 5 lowest** are Rts. 74 Middleton Loop (6 r/h), 24 Airport Loop (12 r/h), 55 Verona/Epic Commuter (13 r/h), 34 ETP-MATC (14 r/h), and 63 WTP-Prairie Towne Center (15 r/h). The paratransit vehicles perform demand-response services and average about 1.6 – 2 rides per hour.

Metro currently has 204 fixed-route buses which are heavy-duty and 40-feet in length. Also, there are 19 paratransit vehicles, which are light-duty and about 25 feet in length. The buses have a life of 12-16 years, and the paratransit vehicles 4-6 years. Typically, a fixed-route bus is kept in all-day service for about 10 - 12 years, and then goes into tripper service for another several years.

In figuring the proper fleet size and type, there are a number of issues to consider if a thorough analysis was to be done, including:

- Heavy-duty bus life cycle costs vs. light or medium-duty life cycle costs.
- Short term MPG and maintenance cost/per mile differences between bus sizes.
- Peak ridership times by routes and optimum bus size to minimize the need for added vehicles/labor time.
- The need for older school tripper buses that can handle large loads.
- The need for community support and perceived efficiency.
- The challenge of interlining buses (i.e., #6 and 67) where there may be different ridership levels between a core route (#6) and a periphery route (#67).
- Current garage/space limitations in having an additional bus size added and parked appropriately, given the garage holds 223 vehicles and was designed for less than 200 transit vehicles.
- Anticipated future trends, including ridership changes, gasoline prices, climate change issues, unlimited ride pass usage, campus ridership trends, and other factors.
- If the purchase of smaller buses is in **addition to** the current number of 40-foot buses (to operate off-peak and weekends), then other factors include driver wages to make the reliefs between peak and off-peak and staying within the Federal Transit Administration (FTA) Spare ratio rule (20% of maximum scheduled vehicles).