

MEMORANDUM

To: Chuck Kamp
Fr: Owen O'Neil
Date: December 16, 2008
Re: Fare elasticity models

Chuck:

Per your request, I reviewed the alternative elasticity model proposed by the TPC to project the effect of the proposed fare increase. After reviewing the alternative model, I continue to feel that the model developed by Metro staff is the preferred option. I reached this conclusion based on the following observations:

- The model proposed by the TPC uses the elasticity rate of -0.43 which was presented in *TCRP Report #95: Transit Pricing and Fares: Traveler Response to Transportation System Changes*, the report cited in the first memo I submitted to you regarding this issue. The -0.43 rate represents an average of 32 urban areas with populations of less than one million. The study also indicates that the standard deviation from this average was ± 0.19 . This indicates that there was wide variation among the systems in the average, which was also noted in the study. Also, a normal distribution would suggest that approximately 2/3 of all observed systems would fall within \pm one standard deviation of the average, which represents a range of -0.24 to -0.62. The rates used in the Metro staff model are consistent with this pattern.
- The alternative model also applies the same -0.43 elasticity rate to all fare categories and does not assume any shifting among fare media. The industry research summarized in the TCRP report would suggest that this does not reflect the most accurate projection possible. The research suggests that passengers with different riding habits or demographic characteristics will have different elasticity rates. Since Metro has ridership by fare category statistics available, it is logical to use that data to greatest extent possible, and calculate different effects for the different rider groups.
- Metro experienced a ridership increase with its last fare increase. This would suggest that the uniform use of the -0.43 rate is overly pessimistic.
- Lastly, it is important to note that the fare increase scenario also calls for certain service improvements. It is safe to assume that new ridership will be generated through those improvements. This would partially offset the ridership loss due to the fare increase.

Overall, either model provides projections. All projection models rely, to some extent, on assumptions. It is necessary, then, to examine the assumptions made in each model. Based on the factors listed above, and in the previous memo concerning this subject, I feel that the assumptions made in the Metro staff model are logical and reasonable based on industry research and Metro's own past experience with fare increases.