

Appendix A: Data Sources and Calculations

This analysis is based on averages for weekday and Saturday ridership and service for the month of April 2006. This is the most recent month during which classes were in session for the full month at the University of Kansas.

Lawrence Transit System Data

LTS ridership data by route was taken from the April 2006 ridership report. Revenue hours by route were calculated from the LTS route schedules; totals of calculated revenue hours were within 0.02 percent of reported systemwide revenue hours in the April 2006 ridership report. Route productivity was calculated by dividing route ridership by route revenue hours.

LTS' contracted operating cost per hour is a combination of a fixed monthly cost of \$46,806 plus a marginal cost of \$29.44 per revenue hour. To determine operating costs:

1. The fixed monthly cost was allocated among all routes based on revenue hours.
2. The marginal cost per revenue hour was multiplied by the revenue hours for each route to calculate the marginal cost per route.
3. Fixed monthly and marginal costs per route were added together to determine total monthly operating cost per route.
4. Total monthly operating cost for the system was divided by monthly route revenue hours to calculate the operating cost per revenue hour.

The result was \$42.88 per revenue hour.

Daily operating cost for each route was calculated by multiplying daily revenue hours by \$42.88.

A systemwide average of farebox revenue per rider was calculated by:

1. adding together full fare and reduced fare revenue per day (from the 2006 farebox report)
2. summing the total fixed-route revenue for the month
3. adjusting for actual farebox revenue deposited in the bank (for April deposits, this factor was $9585.89/9126.25$), and
4. dividing by number of monthly riders.
5. Because LTS did not collect fares on Earth Day, the farebox revenue was adjusted by a factor of $25/24$ (25 actual service days in the month divided by 24 service days during which fares were collected); pass and ticket revenue was not adjusted.

The result was \$0.271 cents per rider in farebox revenue.

Farebox revenue was calculated for each route by multiplying average daily ridership on that route by \$0.271. Farebox recovery ratio was calculated for each route by dividing the calculated daily farebox revenue by the calculated daily operating cost. Cost per rider for each route was calculated by dividing the calculated daily operating cost by the daily ridership. Subsidy per rider for each route was calculated by dividing the difference between daily operating cost and daily revenue by the daily ridership.

KUOW Data

KUOW provided hard copies of average daily ridership, ridership per revenue hour (referred to on the sheets as vehicle hour), and cost per boarding for all buses operated during the month of April 2006. The first step was to group these into route totals, as follows:

1. Route 1/2 included McCollum Express, Park & Ride, Park & Ride 1, Campus Express, Park & Ride Extra, and Park & Ride Express
2. Route 3 included KU #3 Nais/Oliver, 3 Nais/Oliver, and Naismith Extra
3. Route 4 included KU #4 31st & Iowa and 4 31st & Iowa
4. Route 7 included 7a and 7b
5. Route 15 included 15N and 15S
6. Route 16 included KU #1 2nd & Michigan and 16 2nd & Michigan
7. Route 17 included KU #2 23rd & Louisiana and 17 23rd & Louisiana
8. All other routes had only one entry

For each bus, daily revenue hours were calculated by dividing daily ridership by boardings per revenue hour. Daily ridership and revenue hours were summed for each route, and the route-level ridership per revenue hour was calculated by dividing ridership by revenue hours.

KUOW's contracted operating cost per hour was \$37.45 per revenue hour. Daily operating cost for each route was calculated by multiplying daily revenue hours by \$37.45.

A systemwide average of farebox revenue per rider was calculated using Actual FY 2006 totals through the end of the third quarter in the KU on Wheels Budget document for FY 2007. The calculation took the following steps

1. multiplying bus pass sales, park and ride sales, and refunds and adjustments by 0.75. (the assumption is that pass sales are completed at this point, and the totals for the year need to be adjusted to reflect the first three quarters only)
2. summing the adjusted bus pass sales, adjusted park and ride sales, adjusted refunds and adjustments and the actual cash fares collected over the first three quarters to obtain the estimated farebox revenue for the first three quarters of FY 2006
3. summing the monthly ridership for the first three quarters from each monthly sheet (calculated by multiplying the average boardings per day by the number of run days)
4. dividing the estimated farebox revenue by the estimated number of riders in the first three quarters of FY 2006.

The result was \$0.495 cents per rider in farebox revenue.

Farebox revenue was calculated for each route by multiplying average daily ridership on that route by \$0.495. Farebox recovery ratio was calculated for each route by dividing the calculated daily farebox revenue by the calculated daily operating cost. Cost per rider for each route was calculated by dividing the calculated daily operating cost by the daily ridership. Subsidy per rider for each route was calculated by dividing the difference between daily operating cost and daily revenue by the daily ridership.