RIDERSHIP FORECAST

Introduction

The purpose of ridership forecasting is to estimate for a future year the number of trips per day that would use a particular mode of transportation. In this case, the ridership forecast is intended to estimate the number of daily trips in the year 2020 that would use a Southwest rail transit line.

Many cities with recently opened light rail transit lines found that they underestimated their ridership because they did not account for special event ridership (i.e. sporting events, state fairs, conventions) and for a rail preference factor. Part of the reason these systems did not account for these factors in their ridership forecast is because the Federal Transit Administration (FTA) does not allow cities to count special event ridership and also does not allow cities without an operational light rail transit line to factor in a rail preference. The "rail attractiveness" factor is defined as those riders who are specifically attracted by the rail element of the system (i.e., the higher level of amenities, the level of certainty/permanence, the service frequency, etc.). The FTA is now working to develop a methodology to account for rail attractiveness and will likely allow its use in the future.

Methodology

The Twin Cities regional model, which was developed and is maintained by the Metropolitan Council, was used to generate a ridership forecast for the Southwest rail transit line options. The Twin Cities regional model is a traditional four-step model that includes a series of mathematical equations that simulate human travel behavior.

The Twin Cities regional model contains the following four-steps:

Trip Generation - The first step in forecasting travel is trip generation. During this step the model estimates the number of trips that will be made throughout the study area based upon socio-economic information including households, employment, and other land uses (i.e., shopping centers, hospitals/clinics, schools, etc.).

Trip Distribution - The second step is trip distribution. During this step the model determines the origins/destinations for the trips estimated from the trip generation step.

Mode Choice - The third step is mode choice. During this step the mode of transportation (i.e., auto, bus, light rail transit, bicycle, walk, etc.) for the trips is determined. The choice of mode is based upon a number of factors including: relative travel time, travel cost, parking availability and cost, auto ownership, and income.

Traffic Assignment - The fourth step is traffic assignment. During this step the trips are assigned to particular routes. The routes factor in distance as well as projected congestion and then assign the trip to the quickest route.

APPENDIX E: RIDERSHIP FORECAST

Key Model Assumptions

Socioeconomic Data

The Metropolitan Council's forecast for year 2020 population, households, and employment was used.

Transportation System Improvements

The transportation (roadway and transit) system is assumed to include all improvements contained in the Metropolitan Council's Transportation Policy Plan (TPP) for year 2020. For the roadway system this includes improvements to I-494, TH 100, TH 169, TH 212, and TH 62. For the transit system, this includes both the Hiawatha and the proposed Central LRT lines.

Service Plan

The following assumptions were made for a Southwest rail transit line:

Hours of Service - The hours of service are assumed to be the same as for the Hiawatha LRT line, which is planned to operate from 4:30 AM to 12:30 AM.

Frequency - The service frequency is assumed to be the same as for the Hiawatha LRT line.

Peak Period	6:30 AM - 9:00 AM 3:30 PM - 6:00 PM	7.5 minutes
Base Period	6:00 AM - 6:30 AM 9:00 AM - 3:30 PM	10 minutes
Evening	6:00 PM - 9:00 PM	15 minutes
Early morning/ Late Evening	4:30 AM - 6:00 AM 9:00 PM - 12:30 AM	30 minutes

Park/Ride Lots - Park and ride lots are assumed to exist at all stations outside the city of Minneapolis. The city of Minneapolis currently has a policy that does not allow for park and ride lots within the city limits therefore stations within the city of Minneapolis will not include park/ride spaces, but will include space for feeder bus service.

Feeder Bus Routes - All rail stations will be served by feeder buses that will circulate throughout the study area cities to provide access to/from the rail stations. Transfers between the feeder buses and the rail line are assumed to be free.

Fares - The transit fare for LRT or DMU service is assumed to be the same as for the regular route bus service, which is currently $1.50 during the peak periods and $1.25 during the off-peak periods. Transfers between the buses and the rail line are assumed to be free.

Southwest Metro Express Bus Service - For purposes of this analysis, the Southwest Metro Express Bus service to downtown Minneapolis is assumed to remain in operation. It is also assumed that some Metro Transit Express Bus service from the study area cities to downtown Minneapolis via I-394's High Occupancy Vehicle (HOV) lane will also remain in operation.

Hiawatha/Central LRT Connection - The LRT options for a Southwest rail transit line are assumed to be "interlined" (i.e., to operate on the same tracks and as part of the Hiawatha and Central LRT lines through downtown Minneapolis, the UMN, the MSP, the MOA, and downtown St. Paul). The DMU options for a Southwest rail transit line are assumed to terminate at the proposed Multi-modal Station at North 5th Street and North 3rd Avenue. This would require passengers destined for downtown Minneapolis and beyond to either walk or transfer to the Hiawatha LRT line or a bus.

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Summary

A Southwest light rail transit line (LRT) from Eden Prairie to downtown Minneapolis is projected to carry from 17, 450 to 20,975 passengers per day, a Southwest light rail line (LRT) from Hopkins to downtown Minneapolis is projected to carry 16,500 passengers per day, and a Southwest diesel multiple unit (DMU) line from Eden Prairie to downtown Minneapolis is projected to carry 16, 975 passengers per day.