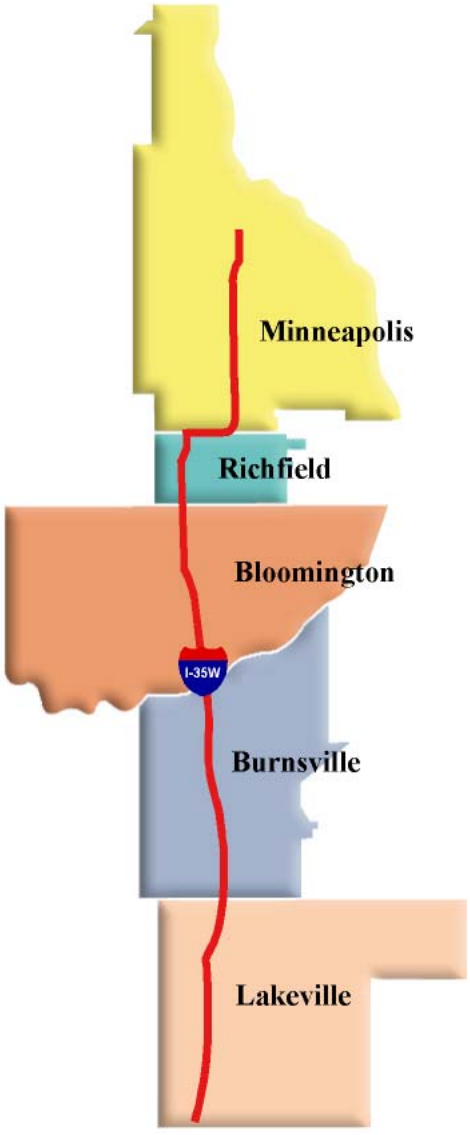
EXECUTIVE SUMMARY

Introduction

The I-35W Corridor between Downtown Minneapolis and Lakeville is one of the most heavily traveled in the Twin Cities, serving approximately 180,000 vehicles per day at Lake Street in south Minneapolis. It is also one of the busiest transit corridors in the region, serving approximately 15,000 bus riders per day. Over the next 25 years, the corridor is expected to experience significant levels of employment and population growth, resulting in very strong travel demand throughout the corridor.



As a result, there is a growing interest in improving public transit service in the corridor that includes exploring the feasibility of providing Bus Rapid Transit (BRT) service. This interest led the State Legislature to pass a bill in 2003 requiring the Minnesota Department of Transportation, (Mn/DOT) to study[1] the feasibility of BRT in the corridor and make recommendations for its implementation. The legislation is reprinted in Appendix A of this report.

The interest in improving public transit services in the corridor is also consistent with the Metropolitan Council's recently adopted Transportation Policy Plan that identified I-35W as one of three bus rapid transit corridors and with the State's desire to move forward on construction of major transitway corridors in the metro area.

This study coincides with a number of improvements that are underway or planned in the 35W Corridor including the following:

- Preliminary design is underway for reconstructing the Highway 62/35W interchange that includes 35W between 66th Street and 42nd Street. This project will include a shared BRT/HOV lane in each direction between 66th Street and 42nd Street.

[1] Mn/DOT hired the consulting firm of URS to assist with this study.

- Planning and discussions are underway for freeway improvements on I-35W, north of 42nd Street to improve access at Lake Street and a new interchange at 38th Street.
- Improvements are planned for the I-494 / I-35W Interchange.
- Metro Transit introduced restructured services in the 35W corridor in late 2004.

Bus Rapid Transit

One increasingly popular way of meeting peoples travel needs is by providing BRT service. While BRT features vary from city to city, all BRT buses offer frequent and quick service with travel times that can be as fast or faster than traveling alone in your car. Typically, BRT buses operate on roads and highways that are designed to give them an advantage equal to or greater than cars traveling along the same route. This may be accomplished by operating in exclusive lanes or with other vehicles operating in High Occupancy Vehicle (HOV) lanes.

University of Minnesota Transitway

In the Twin Cities, a range of BRT features are being used in the I-35W Corridor and other corridors as well. These features include:

- Buses operating on bus shoulder lanes.
- The University of Minnesota's Transitway that connects the Minneapolis and St. Paul campuses.
- Traffic signal priority on the University of Minnesota's Transitway.
- Bus stations located immediately adjacent to the shoulders of I-35W at Lake Street.
- Special lanes that allow buses and High Occupancy vehicles (HOVs) to bypass ramp meters.
- An Automatic Vehicle Location (AVL) system used by Metro Transit.
- A region-wide "Go - To Card" for electronic payment of fares, (under development).

Development of BRT Alternatives for the I-35W Corridor

To help guide the study's effort and develop a workable implementation plan, the following set of guiding principles were developed:

- Allow Buses to Operate at Posted Speeds
- Maximize Freeway Capacity
- Minimize Impacts on Right-of-Way
- Make Transit a Competitive Choice to Autos
- Utilize Existing Resources to the Greatest Extent Possible

The study team considered a number of BRT elements and their appropriateness for the I-35W Corridor including:

- Transitway Configuration
- Station Design Alternatives
- Fare Collection Options
- Bus Type / Design
- Passenger Information Systems
- BRT Operational Options
- Traffic Management
- Signal Priority

Key Findings

The main question that was posed at the outset of the study was – *Is it feasible to implement BRT in the I-35W Corridor?"* The answer is yes – the I-35W Corridor is an excellent candidate to deploy a robust BRT system.

This positive outlook for BRT in the I-35W Corridor is based on the following:

- Significant levels of transit service and investment already existing in the I-35W Corridor. With close to 15,000 passengers served per day in the I-35W Corridor, a solid base of transit riders already exists. This strong ridership along with established providers in the corridor and Metro Transit's plans for service expansion provide a solid foundation for transit.

- Buses will be able to operate at posted speeds in the peak hour. With the proposed service plan and recommended investments in BRT infrastructure, buses will be able to operate at posted speeds during the peak hour. These speeds are expected to offer significant travel time savings for people who choose the BRT service.

- The corridor will experience significant growth in employment and population. Over the next 25 years, employment in Downtown Minneapolis is expected to increase by 50,000 jobs and employment along the I-494 Corridor is expected to increase by 10,000. Additionally, many other areas south of the Minnesota River are also expected to see significant growth in population

- Forecasts indicate that ridership demand will almost triple over the next 25 years. As part of the study, the Metropolitan Council conducted a regional transit ridership forecast based on the methodology used for the region's Transportation Policy Plan. The results indicate that by introducing a BRT system that allows buses to operate at posted speeds, ridership demand is projected to be 43,000 passengers per day.

- BRT serves more people without adding freeway lanes. The proposed service levels make a significant contribution to the number of people who can be served during the peak hour of traffic volume. When comparing the projected number of BRT passengers in one hour with the number of people (single-occupant vehicles) in one general-purpose lane, BRT ridership equates to over three general-purpose lanes in one peak hour.

- Several planned highway projects provide an opportunity to incorporate BRT infrastructure. Mn/DOT is currently in the preliminary design phase for reconstructing the Highway 62/35W interchange. As a result of collaboration with the Cities of Minneapolis and Richfield, Metro Transit and the Metropolitan Council, Mn/DOT's design plans provide for a continuous shared BRT/HOV lane between 66th Street and 42nd Street and also provide space and a shell for an on-line BRT station at 46th Street. With other highway improvements planned for the I-35W Corridor, the experience with the Highway 62/35W Interchange Project serves as an excellent model for incorporating BRT infrastructure in these future highway projects.

Service Recommendation

The study concluded that the following elements should be incorporated into a BRT system for the I-35W Corridor:

- Buses operating at posted speeds in a shared BRT/HOV lane. In reviewing different alternatives, it was found that buses operating in a shared BRT/HOV lane will be as effective as other options while requiring the least amount of land and having the lowest capital cost. The key to making this approach a success is to manage the lanes through policy and enforcement to insure that buses are able to consistently operate at posted speeds.

- On-line stations at Lake Street, 46th Street and in the vicinity of I-494. At least three on-line BRT stations located in the median of the freeway are recommended. This configuration allows buses to remain on the corridor and save valuable time when they stop and make connections with local routes. An important design feature at the stations is to allow buses to pass each other while passengers are boarding at the station. Potential additional sites for on-line stations include 38th Street, 66th Street and 98th Street.

- Provide a mix of express, station-to-station and local service. The proposed service plan calls for express service to be provided that will originate at points along the corridor and upon entering the corridor, provide a direct, non-stop trip to their destination. Station-to-station service is also recommended which will be comprised of buses operating up and down the corridor and stopping at specific stations to allow people to make connections with local bus service. The precursor to this service was initiated recently with Metro Transit's 535 route. Local service will also play an important role and provide a connection between neighborhoods and BRT park and ride lots and BRT stations.

- Completion of a shared BRT/HOV lane to Downtown Minneapolis. A shared BRT/HOV lane provides buses with the means to operate at posted speeds throughout the corridor, which is critical to the success of BRT service.

- Utilize the existing fleet. BRT deployment in the I-35W Corridor can proceed by utilizing the region's existing bus fleet. Many bus manufacturers are marketing specialized vehicles that have the look and feel of rail vehicles. While these types of vehicles provide a unique identity for BRT and may attract additional riders, the cost can be 2 to 3 times greater than purchasing a standard transit bus.

- New service to Lakeville including a park and ride lot just north of County Road 50. The City of Lakeville will experience significant population growth during the next 25 years and expanding service to Lakeville will be an important step towards serving the travel needs of the entire corridor.

The graphic on the following page depicts a simulation of how the BRT system could operate at an on-line station. Also, accompanying this report in Appendix B is a CD that provides a video simulation of BRT operations on I-35W at 46th Street.

Implementation Strategy

Successfully implementing BRT in the I-35W Corridor requires working closely with planned highway projects to insure that BRT infrastructure is incorporated. In addition to the Highway 62/35W Interchange Project, other projects include highway improvements north of 46th Street and the I-35W / I-494 Interchange project.

A two-phase approach is recommended for deployment of BRT in the I-35W Corridor with each tied directly to the completion of specific highway projects. Phase I is tied to the Highway 62/35W Interchange Project and Phase II is tied to the completion of the improvements north of 46th Street and the I-494 / I-35W Interchange Project.

Another element critical to the success of BRT is to provide the necessary level of investment to support the increased ridership demand that the corridor will experience. This investment includes capital for BRT infrastructure and annual funding to pay for operating, maintenance and administrative costs.

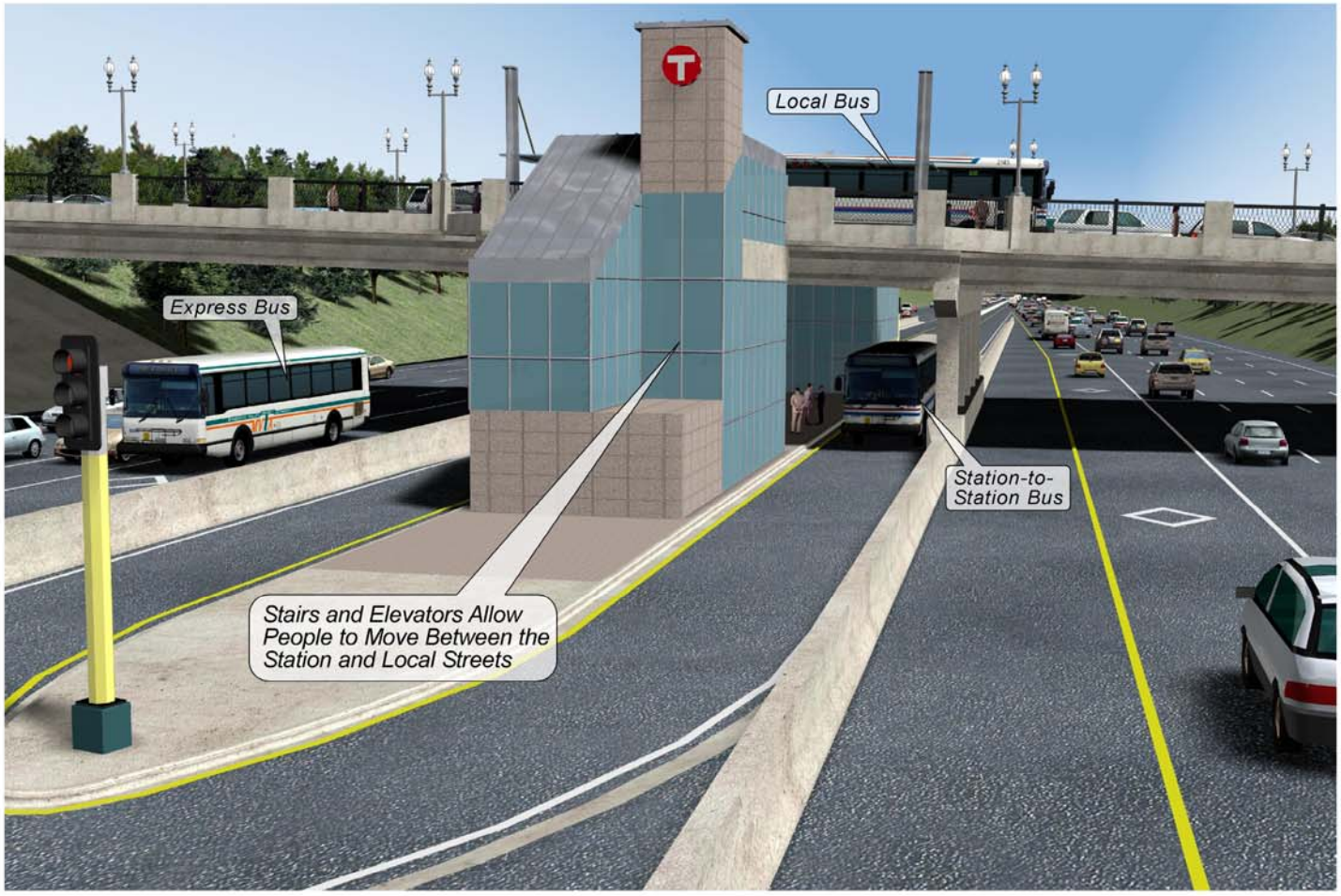


Figure 31
I-35W BRT Corridor Study
Station Simulation

January 2005

I-35W Bus Rapid Transit
URS

Estimated Costs

The annual subsidy to pay for operating, maintenance and administrative costs associated with serving 43,000 passengers per day is estimated to be $33 million and assumes 35% of the total cost ($51 million) is funded through passenger fares. This compares with an estimated annual subsidy today of approximately $16 million.

Summarized below are the estimated capital costs associated with implementing BRT service in the I-35W Corridor. It is important to note that the costs identified here are for investments that are not currently planned and require new funding commitments.

All Costs are Expressed as Year 2004 Dollars

Capital Cost Item[1]	Estimated Cost
PHASE I	
Buses[2]	
4 Buses	$ 1,180,000
On-Line BRT Stations	
46th Street BRT Station	$ 5,000,000
Park and Ride Sites	
440 Space Surface Parking & I-35 Access at Lakeville North	$ 2,000,000
Bus Shoulders	
4.2 Miles of Bus Shoulders Between Highway 13 and CO RD 46	$ 1,500,000
PHASE II	
Buses[2]	
61 Buses *(In additon to those added under Phase I)*	$ 17,995,000
On-Line BRT Stations	
Lake Street BRT Station	$ 5,000,000
I-494 Corridor BRT Station	$ 5,000,000
LONG-TERM VISION	
Buses[2]	
61 Buses *(In addition to those added under Phases I & II)*	$ 17,995,000
Potential Additional Costs	
Parking Structure at Lakeville North	
Interchange Improvements at CO RD 50 & I-35, *if Warranted*	
Pedestrian Connection & On-Line Station at Lakeville North	
Improvements for Buses at CO RD 70 & I-35 Park & Pool Lot	
Additional Park and Ride Sites	
Additional On-Line Transit Stations (38th, 66th & 98th Streets)	
Improved Transit Facilities in Downtown Minneapolis	

[1] *Costs of HOV lane construction are included in highway projects programmed in the Metropolitan Council's 20-Year Transportation Plan and Mn/DOT's 20-Year Transportation System Plan.*

[2] *Bus Numbers Reflect Express and Station-to-Station Buses*