
Southwest Transitway Alternatives Analysis



*Technical Memorandum No. 7
Capital Cost Estimate*

*Prepared for
Hennepin County Regional Railroad Authority*

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January, 2007

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1. Introduction

This technical memorandum documents the methodology, assumptions, and results of the Capital Cost Estimate task of the Southwest Transitway Alternatives Analysis (Southwest Transitway AA).

Capital cost estimates include the one-time expenditure to build the system and typically include tracks, stations, structures, signalization and communications systems, maintenance facility, vehicles, as well as right-of-way acquisition and relocations.

2. Background

At this early study stage, the capital cost estimates are developed on a per unit basis. Assuming additional studies are conducted, the capital cost estimates contained in this document will be refined based upon additional engineering work.

The per unit capital costs contained in this document were calculated for year 2006 and escalated to year 2015 by applying a 2.7% annual escalation rate, which is consistent with the escalation rate used for the Central Corridor in the *Central Corridor Draft Environmental Impact Statement, 2002*.

A large proportion of the potential right-of-way needed for several of the Southwest Transitway alternatives is already owned by the Hennepin County Regional Railroad Authority (HCRRA). This includes former railroad routes known as the Southwest Corridor, the Kenilworth Corridor, the Cedar Lakes Corridor, and the Midtown Corridor. It also owns land for several stations on these Southwest transitway alignments. The costs for acquiring any needed HCRRA rights-of-way are not included in the Southwest Transitway AA capital cost estimates.

Throughout this study there has been an emphasis on building upon previous work by HCRRA and others related to the Southwest Transitway. With respect to the capital cost estimates, that was accomplished by reviewing and validating previous estimates for the Southwest and Central corridors and maintaining consistent assumptions, wherever reasonably possible.

Capital cost estimates have been developed for the full range of potential Southwest Transitway alternatives, including the Enhanced Bus or baseline alternative, BRT 1, BRT 2, LRT 1A, LRT 2A, LRT 3A, LRT 4A, LRT 1C, LRT 2C, LRT 3C, and LRT 4C.

Maps illustrating the alternatives are provided in Appendix A, and more detailed descriptions can be found in *Technical Memorandum No. 3, Definition of Alternatives*.

Enhanced Bus Alternative

The Enhanced Bus alternative includes two new limited stop bus routes providing bi-directional service from Eden Prairie to downtown Minneapolis, minor modifications to the existing study area express service, and restructuring of local bus service providing access to the two new limited stop bus routes. The Enhanced Bus alternative also includes increases in service frequency for many Metro Transit and SouthWest Metro bus routes to improve the overall level of transit service in the corridor.

In addition to route additions and modifications, the definition of the Enhanced Bus alternative includes construction of new or expanded park-and-ride facilities at the following locations:

- Mitchell Road
- SouthWest Metro Station
- Shady Oak Road
- Hopkins
- Texas Avenue

BRT Alternatives

There are two bus rapid transit (BRT) alternatives for the Southwest Transitway.

BRT 1

The BRT 1 route begins at TH 5 in Eden Prairie and runs along an exclusive bus-only guideway within existing HCRRA right-of-way through Eden Prairie, Minnetonka, Hopkins, St. Louis Park and Minneapolis. As it nears downtown Minneapolis the exclusive guideway ends and the route turns onto Dunwoody Boulevard and Hennepin Avenue. BRT 1 includes 16 stations:

- TH 5 (P&R)
- TH 62 (P&R)
- Rowland Road (P&R)
- Shady Oak Road (P&R)
- Hopkins (P&R)
- Blake Road (P&R)
- Louisiana Avenue (P&R)
- Wooddale Avenue (P&R)
- Beltline Boulevard (P&R)
- West Lake Street (P&R)
- 21st Street (P&R)
- Penn Avenue (P&R)
- Van White Boulevard
- 12th Street
- 8th Street
- 5th Street

BRT 2

The BRT 2 route begins at Mitchell Road in Eden Prairie and runs along TH 5, Prairie Center Drive, Singletree Lane, and Flying Cloud Drive. At Valley View Road it enters an exclusive bus-only guideway that continues to Bren Road. BRT 2 follows Bren Road and TH 169 to Excelsior Boulevard. It enters existing HCRRA right-of-way near Excelsior Boulevard, running along an exclusive bus-only guideway through Hopkins, St. Louis Park, and Minneapolis. As it nears downtown Minneapolis the exclusive guideway ends and the route turns onto Dunwoody Boulevard and Hennepin Avenue. BRT 2 includes 19 stations:

- Mitchell Road (P&R)
- SouthWest Station (P&R)
- Eden Prairie Town Center (P&R)
- Golden Triangle (P&R)
- City West (P&R)
- Opus (P&R)
- Shady Oak Road (P&R)
- Hopkins (P&R)
- Blake Road (P&R)
- Louisiana Avenue (P&R)
- Wooddale Avenue (P&R)
- Beltline Boulevard (P&R)
- West Lake Street (P&R)
- 21st Street (P&R)
- Penn Avenue (P&R)
- Van White Boulevard
- 12th Street
- 8th Street
- 5th Street

LRT Alternatives

There are eight light rail transit (LRT) alternatives being evaluated for the Southwest Transitway.

LRT 1A

The LRT 1A route begins at TH 5 in Eden Prairie and run along existing HCRRA right-of-way through Eden Prairie, Minnetonka, Hopkins, St. Louis Park, and into Minneapolis. It continues in Minneapolis along existing HCRRA right-of-way through the Kenilworth corridor and into the Cedar Lake corridor. As the LRT 1A route approaches downtown Minneapolis it leaves the HCRRA right-of-way and follows Royalston Avenue and 6th Avenue to a connection with the Hiawatha line on 5th Street. LRT 1A includes 14 stations:

- TH 5 (P&R)
- TH 62 (P&R)
- Rowland Road (P&R)
- Shady Oak Road (P&R)
- Hopkins (P&R)
- Blake Road (P&R)
- Louisiana Avenue (P&R)
- Wooddale Avenue (P&R)
- Beltline Boulevard (P&R)
- West Lake Street (P&R)
- 21st Street (P&R)
- Penn Avenue (P&R)
- Van White Boulevard
- Royalston Avenue

LRT 2A

The LRT 2A route begins at Mitchell Road in Eden Prairie and runs along TH 5 and I-494 through Eden Prairie and Minnetonka. It leaves the I-494 right-of-way as the freeway crosses over the existing HCRRA right-of-way in Minnetonka. From that point the LRT 2A route runs along the existing HCRRA right-of-way through Hopkins, St. Louis Park, and into Minneapolis. It continues in Minneapolis along existing HCRRA right-of-way through the Kenilworth corridor and into the Cedar Lake corridor. As the LRT 2A route approaches downtown Minneapolis it leaves the HCRRA right-of-way and follows Royalston Avenue and 6th Avenue to a connection with the Hiawatha line on 5th Street. LRT 2A includes 16 stations:

- Mitchell Road (P&R)
- SouthWest Station (P&R)
- Valley View Road (P&R)
- TH 62 (P&R)
- Rowland Road (P&R)
- Shady Oak Road (P&R)
- Hopkins (P&R)
- Blake Road (P&R)
- Louisiana Avenue (P&R)
- Wooddale Avenue (P&R)
- Beltline Boulevard (P&R)
- West Lake Street (P&R)
- 21st Street (P&R)
- Penn Avenue (P&R)
- Van White Boulevard
- Royalston Avenue

LRT 3A

The LRT 3A route begins at Mitchell Road in Eden Prairie and runs along TH 5 and Prairie Center Drive, turns east into new right-of-way north of Singletree Lane, then follows Leona Lane to Flying Cloud Drive. After crossing over I-494, the LRT 3A route enters new right-of-way and continues through Eden Prairie, Minnetonka, and Hopkins. In Hopkins the LRT 3A route turns east and follows the existing HCRRA right-of-way through Hopkins, St. Louis Park, and into Minneapolis. It continues in Minneapolis along existing HCRRA right-of-way through the Kenilworth corridor and into the Cedar Lake

corridor. As the LRT 3A route approaches downtown Minneapolis it leaves the HCRRA right-of-way and follows Royalston Avenue and 6th Avenue to a connection with the Hiawatha line on 5th Street. LRT 3A includes 17 stations:

- Mitchell Road (P&R)
- SouthWest Station (P&R)
- Eden Prairie Town Center (P&R)
- Golden Triangle (P&R)
- City West (P&R)
- Opus (P&R)
- Shady Oak Road (P&R)
- Hopkins (P&R)
- Blake Road (P&R)
- Louisiana Avenue (P&R)
- Wooddale Avenue (P&R)
- Beltline Boulevard (P&R)
- West Lake Street (P&R)
- 21st Street (P&R)
- Penn Avenue (P&R)
- Van White Boulevard
- Royalston Avenue

LRT 4A

The LRT 4A route begins at Shady Oak Road in Minnetonka and runs along existing HCRRA right-of-way through Hopkins, St. Louis Park, and into Minneapolis. It continues in Minneapolis along existing HCRRA right-of-way through the Kenilworth corridor and into the Cedar Lake corridor. As the LRT 4A route approaches downtown Minneapolis it leaves the HCRRA right-of-way and follows Royalston Avenue and 6th Avenue to a connection with the Hiawatha line on 5th Street. LRT 4A includes 11 stations:

- Shady Oak Road (P&R)
- Hopkins (P&R)
- Blake Road (P&R)
- Louisiana Avenue (P&R)
- Wooddale Avenue (P&R)
- Beltline Boulevard (P&R)
- West Lake Street (P&R)
- 21st Street (P&R)
- Penn Avenue (P&R)
- Van White Boulevard
- Royalston Avenue

LRT 1C

The LRT 1C route begins at TH 5 in Eden Prairie and run along existing HCRRA right-of-way through Eden Prairie, Minnetonka, Hopkins, St. Louis Park, and into Minneapolis. It continues in Minneapolis along existing HCRRA right-of-way into the Midtown corridor. At Nicollet Avenue the LRT 1C route turns north, running in a tunnel between 28th Street and Franklin Avenue, and continues north along Nicollet Avenue into downtown Minneapolis. LRT 1C includes 17 stations:

- TH 5 (P&R)
- TH 62 (P&R)
- Rowland Road (P&R)
- Shady Oak Road (P&R)
- Hopkins (P&R)
- Blake Road (P&R)
- Louisiana Avenue (P&R)
- Wooddale Avenue (P&R)
- Beltline Boulevard (P&R)
- West Lake Street (P&R)
- Uptown
- Lyndale Avenue
- 28th Street
- Franklin Avenue
- 12th Street
- 8th Street
- 4th Street

LRT 2C

The LRT 2C route begins at Mitchell Road in Eden Prairie and runs along TH 5 and I-494 through Eden Prairie and Minnetonka. It leaves the I-494 right-of-way as the freeway crosses over the existing HCRRA right-of-way in Minnetonka. From that point the LRT 2C route runs along the existing HCRRA right-of-way through Hopkins, St. Louis Park, and into Minneapolis. It continues in Minneapolis along existing HCRRA right-of-way into the Midtown corridor. At Nicollet Avenue the LRT 2C route turns north, running in a tunnel between 28th Street and Franklin Avenue, and continues north along Nicollet Avenue into downtown Minneapolis. LRT 2C includes 19 stations:

- Mitchell Road (P&R)
- SouthWest Station (P&R)
- Valley View Road (P&R)
- TH 62 (P&R)
- Rowland Road (P&R)
- Shady Oak Road (P&R)
- Hopkins (P&R)
- Blake Road (P&R)
- Louisiana Avenue (P&R)
- Wooddale Avenue (P&R)
- Beltline Boulevard (P&R)
- West Lake Street (P&R)
- Uptown
- Lyndale Avenue
- 28th Street
- Franklin Avenue
- 12th Street
- 8th Street
- 4th Street

LRT 3C

The LRT 3C route begins at Mitchell Road in Eden Prairie and runs along TH 5 and Prairie Center Drive, turns east into new right-of-way north of Singletree Lane, then follows Leona Lane to Flying Cloud Drive. After crossing over I-494, the LRT 3C route enters new right-of-way and continues through Eden Prairie, Minnetonka, and Hopkins. In Hopkins the LRT 3C route turns east and follows the existing HCRRA right-of-way through Hopkins, St. Louis Park, and into Minneapolis. It continues in Minneapolis along existing HCRRA right-of-way into the Midtown corridor. At Nicollet Avenue the LRT 3C route turns north, running in a tunnel between 28th Street and Franklin Avenue, and continues north along Nicollet Avenue into downtown Minneapolis. LRT 3C includes 20 stations:

- Mitchell Road (P&R)
- SouthWest Station (P&R)
- Eden Prairie Town Center (P&R)
- Golden Triangle (P&R)
- City West (P&R)
- Opus (P&R)
- Shady Oak Road (P&R)
- Hopkins (P&R)
- Blake Road (P&R)
- Louisiana Avenue (P&R)
- Wooddale Avenue (P&R)
- Beltline Boulevard (P&R)
- West Lake Street (P&R)
- Uptown
- Lyndale Avenue
- 28th Street
- Franklin Avenue
- 12th Street
- 8th Street
- 4th Street

LRT 4C

The LRT 4C route begins at Shady Oak Road in Minnetonka and runs along existing HCRRA right-of-way through Hopkins, St. Louis Park, and into Minneapolis. It continues in Minneapolis along existing HCRRA right-of-way into the Midtown corridor. At Nicollet Avenue the LRT 4C route turns north, running in a tunnel between 28th Street and Franklin Avenue, and continues north along Nicollet Avenue into downtown Minneapolis. LRT 4C includes 14 stations:

- Shady Oak Road (P&R)
- Hopkins (P&R)
- Blake Road (P&R)
- Louisiana Avenue (P&R)
- Wooddale Avenue (P&R)
- Beltline Boulevard (P&R)
- West Lake Street (P&R)
- Uptown
- Lyndale Avenue
- 28th Street
- Franklin Avenue
- 12th Street
- 8th Street
- 4th Street

3. Methodology

Capital cost estimates have been prepared using the format and procedures currently recommended by the Federal Transit Administration (FTA). The FTA methodology includes the use of standard cost categories (SCC) and groupings for organization of the data, and detailed spreadsheets for development of forecast year estimates and annualized capital costs. Appendix B includes the list of the FTA SCC categories and definitions.

The FTA SCC organization for capital cost estimates was developed for application to many different types of transit improvements, and on project phases ranging from alternatives analysis (AA) to final design and construction. The capital cost elements for the Southwest Transitway AA Study were organized into the FTA SCC format as indicated in Table 1.

The level of detail of the capital cost estimates for this study corresponds with the current level of Southwest Transitway definition, engineering, and environmental analyses. The level of estimating detail typically increases as the project progresses through the various phases of development during the AA, Environmental Impact Statement, Preliminary Engineering, and eventually into Final Design. The corollary is that as the level of design detail increases, more and more items are specifically costed,

which in turn leads to lower contingency costs in the estimate. Ideally, such project design and cost estimating maturization will not materially change the overall total capital cost estimate, it just makes the estimate far more specific in nature.

Table 1 FTA SCC Capital Cost Estimate Organization

10: Guideway	Guideway grading and drainage; retaining walls, bridges and tunnels; LRT trackwork; BRT roadway construction; estimating contingency
20: Stations	Construction of station platforms, enclosures, canopies and fixtures; elevators, escalators and stairs; multi-story auto parking structures; estimating contingency
30: Support Facilities	Light-duty vehicle maintenance and storage facilities; LRT yard and yard trackwork; estimating contingency
40: Sitework and Special Conditions	Demolition, clearing, and earthwork; utilities and utility relocation; hazardous soil and water remediation; environmental mitigation; reconstruction of roadways, intersection, and non-guideway structures; construction of surface parking at stations; pedestrian and bicycle accommodations, sidewalks and trails; landscaping, fencing and lighting; estimating contingency
50: Systems	LRT train control signals and signal houses; LRT roadway crossing protection; LRT traction power substations; LRT overhead catenary system; communication systems; central control hardware and software; fare collection systems; roadway traffic signals; estimating contingency
60: Right-of-way	Acquisition of right-of-way or easements for guideway, stations; relocation of existing households and businesses; estimating contingency
70: Vehicles	Light rail vehicles, buses, non-revenue vehicles, spare parts; estimating contingency
80: Professional Services	Preliminary engineering; final design; project management for design and construction; construction administration and management; insurance; legal, permits review fees; surveys, testing, investigation, inspection; agency force account work
90: Unallocated Contingency	Overall project contingency and reserves
100: Finance Changes	Estimated expenses for local financing of project activities prior to Federal funding commitment

Source: Federal Transit Administration, 2006.

The Southwest Transitway AA capital cost estimates have been developed using a segmented and tiered approach. Each of the BRT and LRT alternatives were divided into geographic segments, many of which are common to multiple alternatives. Within each geographic segment the estimates have been separated into the individual SCC categories. Finally, each of those SCC categories consist of multiple line-items with corresponding quantities and unit prices.

The methodology differs for corridor-wide cost elements such as vehicles and support facilities, and for soft costs such as professional services and unallocated contingencies. Cost for those elements were identified and added after the individual segment estimates had been combined into the full alternatives.

For those alternatives forwarded from the 2003 *Southwest Corridor Rail Transit Study*, (LRT 1A, 2A, 3A, and 4A) the capital cost estimates were reviewed and modified to fit within the current FTA SCC format.

4. Assumptions

These capital cost estimates are based upon information obtained from a number of sources. The assumptions include capital cost parameters applied at certain steps during the process, unit prices for the various capital cost elements, and specific information regarding each of the alternatives.

Parameters

Capital cost parameters are necessary assumptions that are not related to the specific features of the Southwest Transitway or the alternatives under consideration. The Southwest Transitway AA capital cost estimates have been based upon the following parameters:

Base Year – Year 2006 was used as the base year for definition of the unit prices and preparation of the capital cost estimates.

Forecast Year – Year 2015 was used as the forecast year for projecting base year capital costs estimates to the assumed midpoint of expenditure.

Unallocated Contingency – An unallocated contingency of 20% was used in the estimates. This contingency is applied to the total capital cost for each alternative, and is in addition to the estimating contingencies included within each cost category.

Escalation Factor – An annual escalation factor of 2.7% was used to inflate capital cost estimates from the base year to the forecast year. This assumption is consistent with the capital cost estimate developed for the *Central Corridor AA/DEIS*.

Annualization Factors – Annualization factors are necessary to convert base year capital cost estimates into annualized capital costs, which are used in calculation of cost effectiveness measures. The FTA-required annualization factors (based upon a 7% internal rate of return) were used for these estimates.

Unit Prices

Base year unit prices for the various capital cost elements have been developed using several references and resources. Primary sources for unit price assumptions included:

- *Southwest Rail Transit Study, 2003*
- *Central Corridor AA/DEIS, 2002*
- *Hiawatha Project Office Cost Proposal Analysis, 2003*
- *Northstar Corridor LRT Connection Advanced Design, 2006*
- *29th Street and Southwest Corridor Busway Feasibility Study, 2000*
- *St. Louis Park Railroad Study, 1999*

The unit price assumptions from these sources were reviewed to determine if they were applicable to the Southwest Transitway alternatives and compatible with the methodology and format being used.

Most of the unit price assumptions were derived from the 2003 *Southwest Corridor Rail Transit Study* and the 2002 *Central Corridor AA/DEIS*. Where possible, the data available from the Hiawatha LRT project was used to validate and refine the unit prices. In all cases the unit prices have been adjusted from the source year to Year 2006 dollars using the 2.7% annual escalation factor.

Guideway

Year 2006 unit prices for items in the Guideway category are listed in Table 2. This category includes all of the civil and structural costs for construction of the roadbed and pavement (BRT) or trackwork (LRT). Guideway and structure unit prices are based upon a typical 28' BRT roadway or double track LRT.

Stations

Year 2006 unit prices for items in the Stations category are listed in Table 3. This category includes costs for platforms, ramps, platform fixtures, canopies, and passenger amenities, along with costs for vertical circulation (elevators, escalators and stairs) to the platform, where necessary. It also includes the cost of parking structures at stations, but does not include the costs for surface parking and other station site construction costs which are included in the Sitework category. BRT and LRT stations are proposed to be "high amenity" designs similar to the Hiawatha LRT stations.

Table 2 Year 2006 Unit Prices – Guideway

Description	Unit	Unit Price	SCC Line
At-grade Guideway - BRT/LRT	RF	\$ 225	10.02
Aerial Guideway Structure - BRT/LRT	RF	\$ 6,000	10.04
Cut and Cover Tunnel - BRT/LRT	RF	\$ 12,000	10.06
Cut and Cover Tunnel Portal - BRT/LRT	EA	\$ 750,000	10.06
Bridge Reconstruction - BRT/LRT	RF	\$ 5,300	10.04
Bridge Modification - BRT/LRT	RF	\$ 2,200	10.04

Bridge Abutment Modification - BRT/LRT	EA	\$ 100,000	10.08
Retaining Wall (10' Average Height)	LF	\$ 560	10.08
BRT Roadway	SF	\$ 15	10.02
BRT Shared Roadway Improvements	RF	\$ 100	10.03
LRT Ballast Curb	LF	\$ 25	10.02
LRT Ballasted Track	TF	\$ 160	10.11
LRT Direct Fixation Track	TF	\$ 350	10.09
LRT Embedded Track	TF	\$ 350	10.10
LRT At-Grade Roadway Crossing	TF	\$ 350	10.12
LRT Track Crossover	EA	\$ 195,000	10.12
LRT Track Turnout	EA	\$ 100,000	10.12
LRT Crossing Diamond	EA	\$ 100,000	10.12
Railroad Track Removal	TF	\$ 15	10.02
Railroad Temporary Shoofly Track	TF	\$ 175	10.02
Railroad Grading and Drainage	TF	\$ 150	10.02
Railroad Bridge	TF	\$ 5,600	10.02
Railroad Ballasted Track	TF	\$ 170	10.02
Railroad Turnout	EA	\$ 150,000	10.02

Source: LTK, 2006.

Table 3 Year 2006 Unit Prices – Stations

Description	Unit	Unit Price	SCC Line
Station Platform (200' Length) - BRT/LRT	LS	\$ 1,100,000	20.01
Elevator, Escalator and Stairway Allowance	LS	\$ 890,000	20.07
Structured Parking Stall	EA	\$ 13,000	20.06
Conventional Bus Stop	LS	\$ 30,000	20.01

Source: LTK, 2006.

Support Facilities

Year 2006 unit prices for items in the Support Facilities category are listed in Table 4. The Support Facilities category includes costs for operations and maintenance facilities for the system.

For the LRT alternatives it is assumed that the excess capacity at the existing Hiawatha operations and maintenance facility will be used by the proposed Central Corridor LRT line. During this AA study no specific site was identified for a Southwest Corridor LRT support facility, rather an allowance was included to cover the potential requirements. The lump sum unit price for LRT support facilities was taken from the 2003 *Southwest Rail Transit Study* and divided into components representing a light-duty maintenance and storage facility and the surrounding yard and yard trackwork. This distinction was necessary for the subsequent calculation of annualized capital costs.

The requirements for BRT support facilities are dependent on the type of vehicle, the size of the fleet, and the maintenance needs of the system. The Southwest BRT alternatives are assumed to utilize low-floor hybrid diesel-electric buses. It's unlikely that an entirely new facility would be needed to support a Southwest BRT line; existing Metro Transit facilities could be modified and expanded to meet the need. The BRT cost estimates include an allowance for that purpose based on fleet changes.

Table 4 Year 2006 Unit Prices – Support Facilities

Description	Unit	Unit Price	SCC Line
LRT Light Maintenance Facility	LS	\$ 25,996,960	30.02
LRT Yard and Yard Track	LS	\$ 12,998,480	30.05
BRT Support Facility Allowance	RF	\$ 150	30.02

Source: LTK, 2006.

Sitework and Special Conditions

Year 2006 unit prices for items in the Sitework and Special Conditions category are listed in Table 5. This category includes all sitework and civil construction for the alternatives except the guideways, station platforms, and parking structures. It includes costs for site preparation (grading, drainage); surface parking; public utility work; soil and groundwater remediation; environmental mitigation; construction or modification of bridges, roadways (including BRT station by-pass lanes for through bus services), intersections, sidewalks, and trails; and landscaping, fencing and lighting.

The estimates do not include potential costs associated with relocation of private utilities such as electricity, gas, and telecommunications. It is assumed these costs are the responsibility of the owning utility.

Temporary relocations and other indirect costs during construction are not specifically identified in these estimates. The unit prices for construction include allowances for such direct or indirect costs for that primary work unit price.

Table 5 Year 2006 Unit Prices – Sitework and Special Conditions

Description	Unit	Unit Price	SCC Line
Station Site Preparation Allowance	LS	\$ 500,000	40.01
Surface Park-and-Ride Parking Stall	EA	\$ 3,000	40.07
Utility Allowance - High	RF	\$ 670	40.02
Utility Allowance - Medium	RF	\$ 390	40.02
Utility Allowance - Low	RF	\$ 200	40.02
Soil/Water Remediation Allowance - High	RF	\$ 20	40.03
Soil/Water Remediation Allowance - Medium	RF	\$ 10	40.03
Soil/Water Remediation Allowance - Low	RF	\$ 5	40.03
Environmental Mitigation Allowance - High	RF	\$ 20	40.04
Environmental Mitigation Allowance - Medium	RF	\$ 10	40.04

Environmental Mitigation Allowance - Low	RF	\$ 5	40.04
Traffic Control Allowance	RF	\$ 100	40.07
Cut and Cover Tunnel Traffic Control Allowance	RF	\$ 1,000	40.07
Minor Roadway Closure Allowance	EA	\$ 50,000	40.07
Major Roadway Closure Allowance	EA	\$ 100,000	40.07
Roadway Demolition	SF	\$ 5	40.07
Roadway Bridge Demolition	SF	\$ 50	40.07
Roadway Construction	SF	\$ 15	40.07
Roadway Bridge Construction	SF	\$ 100	40.07
Minor Roadway Intersection Construction	EA	\$ 167,000	40.07
Major Roadway Intersection Construction	EA	\$ 278,000	40.07
Complex Roadway Intersection Construction	EA	\$ 389,000	40.07
Sidewalk Construction	SF	\$ 10	40.06
Pedestrian Bridge	LF	\$ 1,200	40.06
Bituminous Trail (12' average width)	LF	\$ 85	40.06
Bituminous Trail (20' average width)	LF	\$ 115	40.06
Fencing	LF	\$ 30	40.06
Landscaping Allowance	RF	\$ 70	40.06
Lighting Allowance	RF	\$ 15	40.06

Source: LTK, 2006.

Systems

Year 2006 unit prices for items in the Systems category are listed in Table 6. The Systems category includes train control signals; communications; central control hardware and software; traction power substations; overhead catenary systems; underground ductbanks; fare collection; grade crossing protection; and roadway traffic signal systems.

Table 6 Year 2006 Unit Prices – Systems

Description	Unit	Unit Price	SCC Line
LRT Signal and Communication Building Allowance	RF	\$ 20	50.01
LRT Train Control Signal Allowance	RF	\$ 335	50.01
LRT Roadway Grade Crossing Protection	EA	\$ 250,000	50.02
Minor Traffic Signal System	EA	\$ 110,000	50.02
Major Traffic Signal System	EA	\$ 225,000	50.02
LRT Substation Enclosure Allowance	RF	\$ 30	50.03
LRT Substation Equipment Allowance	RF	\$ 160	50.03
LRT Ductbank Allowance	RF	\$ 100	50.04
LRT Corrosion Control Allowance	RF	\$ 15	50.04
LRT OCS Foundation Allowance	RF	\$ 20	50.04

LRT OCS Simple Catenary Allowance	RF	\$ 125	50.04
LRT OCS Single Contact Wire Allowance	RF	\$ 140	50.04
Bus Stop Communications Allowance	EA	\$ 5,000	50.05
Communications Allowance - BRT/LRT	RF	\$ 155	50.05
Fare Collection Allowance - BRT/LRT	EA	\$ 85,000	50.06
Central Control Allowance - BRT/LRT	RF	\$ 25	50.07

Source: LTK, 2006.

Right-of-Way

Year 2006 unit prices for items in the Right-of-Way category (which also includes relocation costs) are listed in Table 7. For the portions of the alternatives assumed to use the existing HCRRA right-of-way, the allowance for right-of-way at stations is added only at park-and-ride sites that are not currently owned by HCRRA. For the portions of the alternatives not assumed to be on HCRRA right-of-way, allowances for guideway right-of-way are assigned by the current use; commercial (high), industrial (medium), or state/municipal right-of-way (low).

In addition to the allowances for station and guideway right-of-way, the BRT 1, BRT 2, LRT 1A, LRT 2A, LRT 3A, and LRT 4A estimates include a portion of the cost to reroute freight rail traffic from the Kenilworth Corridor in Minneapolis through St. Louis Park. The railroad relocation project is distinct from the proposed Southwest Transitway project, but is required in order to construct either BRT or LRT through the Kenilworth Corridor. The cost estimate for the HCRRA portion of the freight rail relocation was taken from the 1999 *St. Louis Park Railroad Study*.

Table 7 Year 2006 Unit Prices – Right-of-Way

Description	Unit	Unit Price	SCC Line
Station Site Allowance	LS	\$1,083,207	60.01
Guideway Allowance - High	SF	\$ 13	60.01
Guideway Allowance - Medium	SF	\$ 6	60.01
Guideway Allowance - Low	SF	\$ 1	60.01
St. Louis Park Railroad Connection	EA	\$4,867,930	60.02

Source: LTK, 2006.

Vehicles

Year 2006 unit prices for items in the Vehicles category are listed in Table 8. Vehicle costs include light rail vehicles, low-floor diesel-electric hybrid buses for BRT, standard transit buses for regular route and feeder bus service, spare vehicles and other service vehicles to support operations and maintenance. The cost estimates also include allowances for vehicle spare parts.

Table 8 Year 2006 Unit Prices – Vehicles

Description	Unit	Unit Price	SCC Line
LRT Light Rail Vehicle	EA	\$ 3,000,000	70.01
BRT Low-Floor Hybrid Bus	EA	\$ 650,000	70.05
Standard Bus	EA	\$ 352,042	70.04
Non-revenue Vehicle Allowance	RF	\$ 30	70.06
LRT Spare Parts Allowance	EA	\$ 500,000	70.07
BRT Spare Parts Allowance	EA	\$ 100,000	70.07

Source: LTK, 2006.

Professional Services

Cost estimates for professional services are generated by applying assumed rates to different categories of the estimate. Table 9 lists the rate assumptions provided by the FTA for estimating costs in the Professional Services category.

Table 9 Professional Services

Description	Construction	Right-of-way	Vehicles	SCC Line
Preliminary Engineering	2%	-	-	80.01
Final Design	5%	1%	2%	80.02
Project Management for Design and Construction	2%	3%	1%	80.03
Construction Administration and Management	8%	1%	-	80.04
Insurance	4%	-	-	80.05
Legal; Permits; Review Fees by Other Agencies	1%	5%	-	80.06
Surveys, Testing, Investigation, Inspection	2%	10%	2%	80.07
Agency Force Account Work	6%	10%	-	80.08
Total	30%	30%	5%	

Source: Federal Transit Administration, LTK, 2006

Allocated Contingencies

Allocated contingencies are contingencies that are associated with individual cost estimate categories. These contingencies are intended to compensate for unforeseen items of work, quantity fluctuations, and variances in unit costs that develop as the project progresses through the various stages of development. The level of contingency applied to each cost category reflects the relative potential variability of those costs. Table 10 lists the contingencies included in the capital cost estimates for each of the SCC categories.

Table 10 Allocated Contingencies

SCC Category	Allocated Contingency
10: Guideway and Track Elements	20%
20: Stations	20%
30: Support Facilities	20%
40: Sitework and Special Conditions	20%
50: Systems	20%
60: Right-of-Way	100%
70: Vehicles	5%

Source: LTK, 2006.

Basis of the Estimate

The Southwest Transitway AA capital cost estimates are based upon the alternatives as defined in *Technical Memorandum No. 3, Definition of Alternatives*. Those definitions have been refined into conceptual engineering drawings for each alternative, with sufficient detail to estimate quantities for the various capital cost elements.

This section identifies and describes the specific assumptions regarding the alternatives that have been necessary during the conceptual engineering and capital cost estimation tasks. These assumptions and the conceptual engineering drawings are the basis of the capital cost estimates.

Enhanced Bus Alternative

By definition, the Enhanced Bus Alternative has limited capital costs. The assumptions for the capital cost estimate were limited to the addition of 49 standard buses and infrastructure costs at 13 bus stop locations. The infrastructure costs include construction of conventional bus stops with shelters and electronic readerboards, and park-and-ride facilities at certain locations. Table 11 lists the assumed improvements with the Enhanced Bus alternative.

Table 11 Enhanced Bus Improvements

Stop Location	Bus Stop	Park-and-Ride	
		Surface	Structured
Mitchell Road	○	230	
SouthWest Station	○		675
Flying Cloud Drive	○		
US 212/Shady Oak Road	○	35	
Bren Road	○		
Shady Oak Road	○		
Hopkins	○	90	
TH 169	○		

Excelsior Boulevard	○		
Blake Road	○		
Texas Avenue	○	265	
Louisiana Avenue	○		
Wooddale Drive	○		

Source: LTK, 2006.

BRT Alternatives

Guideway

The BRT 1 alternative consist of an exclusive bus-only roadway along the existing HCRRA right-of-way between Eden Prairie and Minneapolis, and restricted diamond lanes in Minneapolis along Dunwoody Boulevard and Hennepin Avenue. The exclusive guideway is assumed to be a 28-foot wide paved roadway. The BRT 2 alternative includes a combination of restricted diamond lanes, bus only shoulder lanes, and exclusive bus-only roadway. Table 12 lists the locations of new guideway structures for the BRT alternatives.

Table 12 BRT Guideway Structures

BRT 1	over Valley View Road in Eden Prairie under TC&W Railroad in Minnetonka over Excelsior Boulevard in Hopkins
BRT 2	over TH 212 in Eden Prairie over TH 62 in Eden Prairie over Excelsior Boulevard in Hopkins

Source: LTK, 2006.

Stations

Tables 13 and 14 list the assumed station characteristics for the two BRT alternatives, including station type, need for vertical circulation (i.e., elevator, escalator, stairs), and park-and-ride facilities.

Systems

The BRT estimates include allowances for communication systems and central control hardware and software based upon the total route length, and costs for two (2) fare collection systems at each BRT station.

The BRT alternatives assume a new traffic signal system would be required at every at-grade BRT crossing or intersection along the route.

Right-of-Way

A right-of-way allowance has been included for each BRT park-and-ride station that is on property not currently owned by the HCRRA. Potential BRT station sites currently owned by the HCRRA include Wooddale, Beltline, and West Lake.

Both BRT alternatives require that existing freight traffic be rerouted from the Kenilworth Corridor in Minneapolis to St. Louis Park. Assumptions regarding the HCRRA

contribution to the relocation project were taken from the 1999 *St. Louis Park Railroad Study*, and adjusted to Year 2006 dollars.

Table 13 BRT 1 Stations

Station	Type	Vertical Circulation	Park-and-Ride	
			Surface	Structured
TH 5	At-Grade		400	785
TH 62	At-Grade		200	
Rowland Road	At-Grade		50	
Shady Oak Road	At-Grade		230	
Hopkins	At-Grade		90	
Blake Road	At-Grade		305	
Louisiana Avenue	Elevated	○	40	
Wooddale	At-Grade		85	
Beltline Road	At-Grade		25	
West Lake	At-Grade		150	
21st Street	At-Grade		30	
Penn Avenue	At-Grade	○	70	
Van White Boulevard	At-Grade			
12th Street	At-Grade			
8th Street	At-Grade			
4th Street	At-Grade			

Source: Parsons Brinckerhoff, LTK, LSA Design, 2006.

Table 14 BRT 2 Stations

Station	Type	Vertical Circulation	Park-and-Ride	
			Surface	Structured
Mitchell Road	At-Grade		400	420
SouthWest	At-Grade			370
Eden Prairie Town Center	At-Grade			655
Golden Triangle	At-Grade		70	
City West	At-Grade			100
Opus	At-Grade		80	
Shady Oak Road	At-Grade		255	
Hopkins	At-Grade		90	
Blake Road	At-Grade		330	
Louisiana Avenue	Elevated	○	40	
Wooddale	At-Grade		90	
Beltline Road	At-Grade		25	
West Lake	At-Grade		145	
21st Street	At-Grade		30	

Penn Avenue	At-Grade	o	70	
Van White Boulevard	At-Grade			
12th Street	At-Grade			
8th Street	At-Grade			
4th Street	At-Grade			

Source: Parsons Brinckerhoff, LTK, LSA Design, 2006.

Vehicles

The BRT alternatives have been defined to include both conventional buses and low-floor hybrid diesel-electric buses. In addition, conventional buses will operate feeder bus routes and regular route and express service outside of the bus-only guideway. Vehicle requirements were estimated from the operating plans and ridership estimates of each BRT alternative. Assumed vehicle requirements for the BRT alternatives are listed in Table 15.

Table 15 BRT Vehicle Requirements

Alternative	Hybrid Low-floor Buses	Conventional Buses
BRT 1	15	39
BRT 2	18	39

Source: LTK, 2006.

LRT Alternatives

Guideway

The LRT guideway costs include elements such as grading, drainage, retaining walls, bridges, tunnels, and trackwork. All of the LRT alternatives assume a double track alignment, with crossover tracks at one-mile intervals. Table 16 lists the locations of new guideway structures for each of the LRT alternatives.

Stations

Tables 17 through 24 list the assumed station “high amenity design” characteristics for the eight LRT alternatives, including station type, need for vertical circulation (i.e., elevator, escalator, stairs), and park-and-ride spaces. LRT station costs assume two-car train operation.

Right-of-Way

A right-of-way allowance has been included for each LRT park-and-ride station that is on property not currently owned by the HCRRA. Station sites owned by the HCRRA include Wooddale Avenue, Beltline Boulevard, West Lake Street, 21st Street, and Penn Avenue.

LRT 1A, LRT 2A, LRT 3A, and LRT 4A require that existing freight traffic be rerouted from the HCRRA Kenilworth Corridor in Minneapolis to St. Louis Park. Assumptions regarding the HCRRA contribution to the relocation project were taken from the 1999 *St. Louis Park Railroad Study*.

Table 16 LRT Guideway Structures

LRT 1A	over Valley View Road in Eden Prairie under TC&W Railroad in Minnetonka over Excelsior Boulevard in Hopkins over BNSF Railroad in Minneapolis under 7th Street in Minneapolis
LRT 2A	under Prairie Center Drive in Eden Prairie over TH 5 in Eden Prairie over Valley View exit ramp in Eden Prairie over TH 62 in Eden Prairie over TC&W Railroad in Minnetonka over Excelsior Boulevard in Hopkins over BNSF Railroad in Minneapolis under 7th Street in Minneapolis
LRT 3A	under Prairie Center Drive in Eden Prairie over I-494 in Eden Prairie over Flying Cloud Drive in Eden Prairie over TH 212 in Eden Prairie over TH 62 in Eden Prairie under Smetana Road in Minnetonka under CP Railroad in Hopkins over Excelsior Boulevard in Hopkins over BNSF Railroad in Minneapolis under 7th Street in Minneapolis
LRT 4A	over Excelsior Boulevard in Hopkins over BNSF Railroad in Minneapolis under 7th Street in Minneapolis
LRT 1C	over Valley View Road in Eden Prairie under TC&W Railroad in Minnetonka over Excelsior Boulevard in Hopkins over Wooddale/CP Railroad in St. Louis Park Nicollet Avenue tunnel in Minneapolis
LRT 2C	under Prairie Center Drive in Eden Prairie over TH 5 in Eden Prairie over Valley View exit ramp in Eden Prairie over TH 62 in Eden Prairie over TC&W Railroad in Minnetonka over Excelsior Boulevard in Hopkins over Wooddale/CP Railroad in St. Louis Park Nicollet Avenue tunnel in Minneapolis
LRT 3C	under Prairie Center Drive in Eden Prairie over I-494 in Eden Prairie over Flying Cloud Drive in Eden Prairie over TH 212 in Eden Prairie over TH 62 in Eden Prairie under Smetana Road in Minnetonka under CP Railroad in Hopkins over Excelsior Boulevard in Hopkins over Wooddale/CP Railroad in St. Louis Park Nicollet Avenue tunnel in Minneapolis
LRT 4C	over Excelsior Boulevard in Hopkins over Wooddale/CP Railroad in St. Louis Park Nicollet Avenue tunnel in Minneapolis

Source: Parsons Brinckerhoff, 2006.

Table 17 LRT 1A Stations

Station	Type	Vertical Circulation	Park-and-Ride	
			Surface	Structured
TH 5	At-Grade		400	785
TH 62	At-Grade		200	
Rowland Road	At-Grade		50	
Shady Oak Road	At-Grade		230	
Hopkins	At-Grade		90	
Blake Road	At-Grade		305	
Louisiana Avenue	Elevated	o	40	
Wooddale Avenue	At-Grade		85	
Beltline Boulevard	At-Grade		25	
West Lake Street	At-Grade		150	
21st Street	At-Grade		30	
Penn Avenue	At-Grade	o	70	
Van White Boulevard	At-Grade			
Royalston Avenue	At-Grade			

Source: Parsons Brinckerhoff, LTK, LSA Design, 2006.

Table 18 LRT 2A Stations

Station	Type	Vertical Circulation	Park-and-Ride	
			Surface	Structured
Mitchell Road	At-Grade		400	330
SouthWest	At-Grade			625
Valley View Road	At-Grade		220	
TH 62	At-Grade		120	
Rowland Road	At-Grade		55	
Shady Oak Road	At-Grade		240	
Hopkins	At-Grade		90	
Blake Road	At-Grade		335	
Louisiana Avenue	Elevated	o	40	
Wooddale Avenue	At-Grade		90	
Beltline Boulevard	At-Grade		25	
West Lake Street	At-Grade		155	
21st Street	At-Grade		30	
Penn Avenue	At-Grade	o	70	
Van White Boulevard	At-Grade			
Royalston Avenue	At-Grade			

Source: Parsons Brinckerhoff, LTK, LSA Design, 2006.

Table 19 LRT 3A Stations

Station	Type	Vertical Circulation	Park-and-Ride	
			Surface	Structured
Mitchell Road	At-Grade		400	420
SouthWest	At-Grade			370
Eden Prairie Town Center	At-Grade			655
Golden Triangle	At-Grade		70	
City West	At-Grade			100
Opus	At-Grade		80	
Shady Oak Road	At-Grade		255	
Hopkins	At-Grade		90	
Blake Road	At-Grade		330	
Louisiana Avenue	Elevated	○	40	
Wooddale Avenue	At-Grade		90	
Beltline Boulevard	At-Grade		25	
West Lake Street	At-Grade		145	
21st Street	At-Grade		30	
Penn Avenue	At-Grade	○	70	
Van White Boulevard	At-Grade			
Royalston Avenue	At-Grade			

Source: Parsons Brinckerhoff, LTK, LSA Design, 2006.

Table 20 LRT 4A Stations

Station	Type	Vertical Circulation	Park-and-Ride	
			Surface	Structured
Mitchell Road	At-Grade		180	
Shady Oak Road	At-Grade		885	
Hopkins	At-Grade		90	
Blake Road	At-Grade		325	
Louisiana Avenue	Elevated	○	35	
Wooddale Avenue	At-Grade		85	
Beltline Boulevard	At-Grade		25	
West Lake Street	At-Grade		115	
21st Street	At-Grade		30	
Penn Avenue	At-Grade	○	70	
Van White Boulevard	At-Grade			
Royalston Avenue	At-Grade			

Source: Parsons Brinckerhoff, LTK, LSA Design, 2006.

Table 21 LRT 1C Stations

Station	Type	Vertical Circulation	Park-and-Ride	
			Surface	Structured
TH 5	At-Grade		400	700
TH 62	At-Grade		200	
Rowland Road	At-Grade		50	
Shady Oak Road	At-Grade		215	
Hopkins	At-Grade		90	
Blake Road	At-Grade		300	
Louisiana Avenue	Elevated	o	35	
Wooddale Avenue	At-Grade		80	
Beltline Boulevard	At-Grade		25	
West Lake Street	At-Grade		145	
Uptown	Open Cut	o		
Lyndale Avenue	Open Cut	o		
28th Street	Open Cut	o		
Franklin Avenue	Open Cut	o		
12th Street	At-Grade			
8th Street	At-Grade			
4th Street	At-Grade			

Source: Parsons Brinckerhoff, LTK, LSA Design, 2006.

Table 22 LRT 2C Stations

Station	Type	Vertical Circulation	Park-and-Ride	
			Surface	Structured
Mitchell Road	At-Grade		400	315
SouthWest	At-Grade			605
Valley View Road	At-Grade		215	
TH 62	At-Grade		115	
Rowland Road	At-Grade		50	
Shady Oak Road	At-Grade		230	
Hopkins	At-Grade		90	
Blake Road	At-Grade		325	
Louisiana Avenue	Elevated	o	40	
Wooddale Avenue	At-Grade		85	
Beltline Boulevard	At-Grade		25	
West Lake Street	At-Grade		150	
Uptown	Open Cut	o		
Lyndale Avenue	Open Cut	o		
28th Street	Open Cut	o		

Franklin Avenue	Open Cut	○		
12th Street	At-Grade			
8th Street	At-Grade			
4th Street	At-Grade			

Source: Parsons Brinckerhoff, LTK, LSA Design, 2006.

Table 23 LRT 3C Stations

Station	Type	Vertical Circulation	Park-and-Ride	
			Surface	Structured
Mitchell Road	At-Grade		400	395
SouthWest	At-Grade			360
Eden Prairie Town Center	At-Grade			640
Golden Triangle	At-Grade		70	
City West	At-Grade			100
Opus	At-Grade		80	
Shady Oak Road	At-Grade		250	
Hopkins	At-Grade		90	
Blake Road	At-Grade		320	
Louisiana Avenue	Elevated	○	40	
Wooddale Avenue	At-Grade		90	
Beltline Boulevard	At-Grade		25	
West Lake Street	At-Grade		145	
Uptown	Open Cut	○		
Lyndale Avenue	Open Cut	○		
28th Street	Open Cut	○		
Franklin Avenue	Open Cut	○		
12th Street	At-Grade			
8th Street	At-Grade			
4th Street	At-Grade			

Source: Parsons Brinckerhoff, LTK, LSA Design, 2006.

Table 24 LRT 4C Stations

Station	Type	Vertical Circulation	Park-and-Ride	
			Surface	Structured
Mitchell Road	At-Grade		180	
Shady Oak Road	At-Grade		865	
Hopkins	At-Grade		90	
Blake Road	At-Grade		315	
Louisiana Avenue	Elevated	○	35	
Wooddale Avenue	At-Grade		85	

Beltline Boulevard	At-Grade		25	
West Lake Street	At-Grade		115	
Uptown	Open Cut	o		
Lyndale Avenue	Open Cut	o		
28th Street	Open Cut	o		
Franklin Avenue	Open Cut	o		
12th Street	At-Grade			
8th Street	At-Grade			
4th Street	At-Grade			

Source: Parsons Brinckerhoff, LTK, LSA Design, 2006.

Vehicles

The LRT alternatives have been defined to include both light rail vehicles and conventional buses. The light rail vehicles would operate as one- or two-car trains that either interline with Hiawatha service (LRT 1A, LRT 2A, LRT 3A, and LRT 4A) or operate exclusively on the Southwest line (LRT 1C, LRT 2C, LRT 3C, and LRT 4C). The conventional buses would primarily be used on feeder routes to LRT stations.

Vehicle requirements were estimated from the operating plans and ridership estimates of each LRT alternative. Table 25 lists the vehicle requirements identified for each alternative.

Table 25 LRT Vehicle Requirements

Alternative	Light Rail Vehicles	Conventional Buses
LRT 1A	19	38
LRT 2A	21	40
LRT 3A	24	42
LRT 4A	12	44
LRT 1C	24	38
LRT 2C	26	40
LRT 3C	28	42
LRT 4C	17	44

Source: Parsons Brinckerhoff, 2006.

5. Results

Table 26 contains summaries of the total capital cost estimates for the Southwest Transitway alternatives. For each alternative the summaries include the Base Year (2006) total estimate, the unallocated contingency (20%), the Base Year (2006) project total, and the Forecast Year (2015) project total.

Table 26 Summary of Total Capital Cost Estimates

Alternative	Year 2006 Estimate (thousands)	Unallocated Contingency (thousands)	Year 2006 Project Total (thousands)	Year 2015 Project Total (thousands)
Enhanced Bus	\$ 52,376	\$ 10,475	\$ 62,851	\$ 79,882
BRT 1	\$ 354,057	\$ 70,811	\$ 424,869	\$ 539,994
BRT 2	\$ 461,580	\$ 92,316	\$ 553,896	\$ 703,983
LRT 1A	\$ 566,786	\$ 113,357	\$ 680,143	\$ 864,438
LRT 2A	\$ 647,578	\$ 129,516	\$ 777,093	\$ 987,659
LRT 3A	\$ 758,842	\$ 151,768	\$ 910,611	\$ 1,157,355
LRT 4A	\$ 414,963	\$ 82,993	\$ 497,956	\$ 632,885
LRT 1C	\$ 732,908	\$ 146,582	\$ 879,490	\$ 1,117,801
LRT 2C	\$ 814,692	\$ 162,938	\$ 977,630	\$ 1,242,535
LRT 3C	\$ 921,938	\$ 184,388	\$ 1,106,326	\$ 1,406,103
LRT 4C	\$ 582,877	\$ 116,575	\$ 699,453	\$ 888,981

Source: LTK, 2006.

In addition to total project costs, the capital cost estimates have been computed on a per mile basis. Table 27 contains a summary of the estimated costs per mile for the BRT and LRT alternatives. The table lists the overall length of each alternative, the number of stations, the Base Year (2006) total project cost per mile, and the Forecast Year (2015) total project cost per mile.

Details of the capital cost estimates for each alternative are included in the Appendices:

- Appendix C: Enhanced Bus Alternative
- Appendix D: BRT Alternatives
- Appendix E: LRT Alternatives

Table 27 Summary of per Mile Capital Cost Estimates

Alternative	Length (miles)	Stations	Capital Cost per Mile	
			Year 2006 (thousands)	Year 2015 (thousands)
BRT 1	13.9	16	\$ 30,657	\$ 38,964
BRT 2	18.3	19	\$ 30,245	\$ 38,441
LRT 1A	13.8	14	\$ 49,374	\$ 62,752
LRT 2A	15.1	16	\$ 51,448	\$ 65,389
LRT 3A	15.7	17	\$ 57,895	\$ 73,583
LRT 4A	9.1	11	\$ 54,728	\$ 69,558
LRT 1C	14.6	17	\$ 60,088	\$ 76,370
LRT 2C	16.0	19	\$ 61,233	\$ 77,825
LRT 3C	16.6	20	\$ 66,686	\$ 84,756
LRT 4C	10.0	14	\$ 70,226	\$ 89,255

Source: LTK, 2006.

The results of the capital cost estimate have been used to estimate the annualized capital cost for each of the Southwest Transitway alternatives. The annualized capital cost estimates are summarized in Table 28. Details of the annualized capital cost estimates are included in Appendix F.

Table 28 Summary of Annualized Capital Cost Estimates

Alternative	Annualized Capital Cost (thousands)
Enhanced Bus	\$ 5,788
BRT 1	\$ 35,336
BRT 2	\$ 45,276
LRT 1A	\$ 55,457
LRT 2A	\$ 62,795
LRT 3A	\$ 73,226
LRT 4A	\$ 40,779
LRT 1C	\$ 71,409
LRT 2C	\$ 78,835
LRT 3C	\$ 88,832
LRT 4C	\$ 56,888

Source: LTK, 2006.

Appendices

Appendix A: Southwest Transitway Alternative Maps

Appendix B: FTA Standard Cost Category (SCC) Definitions

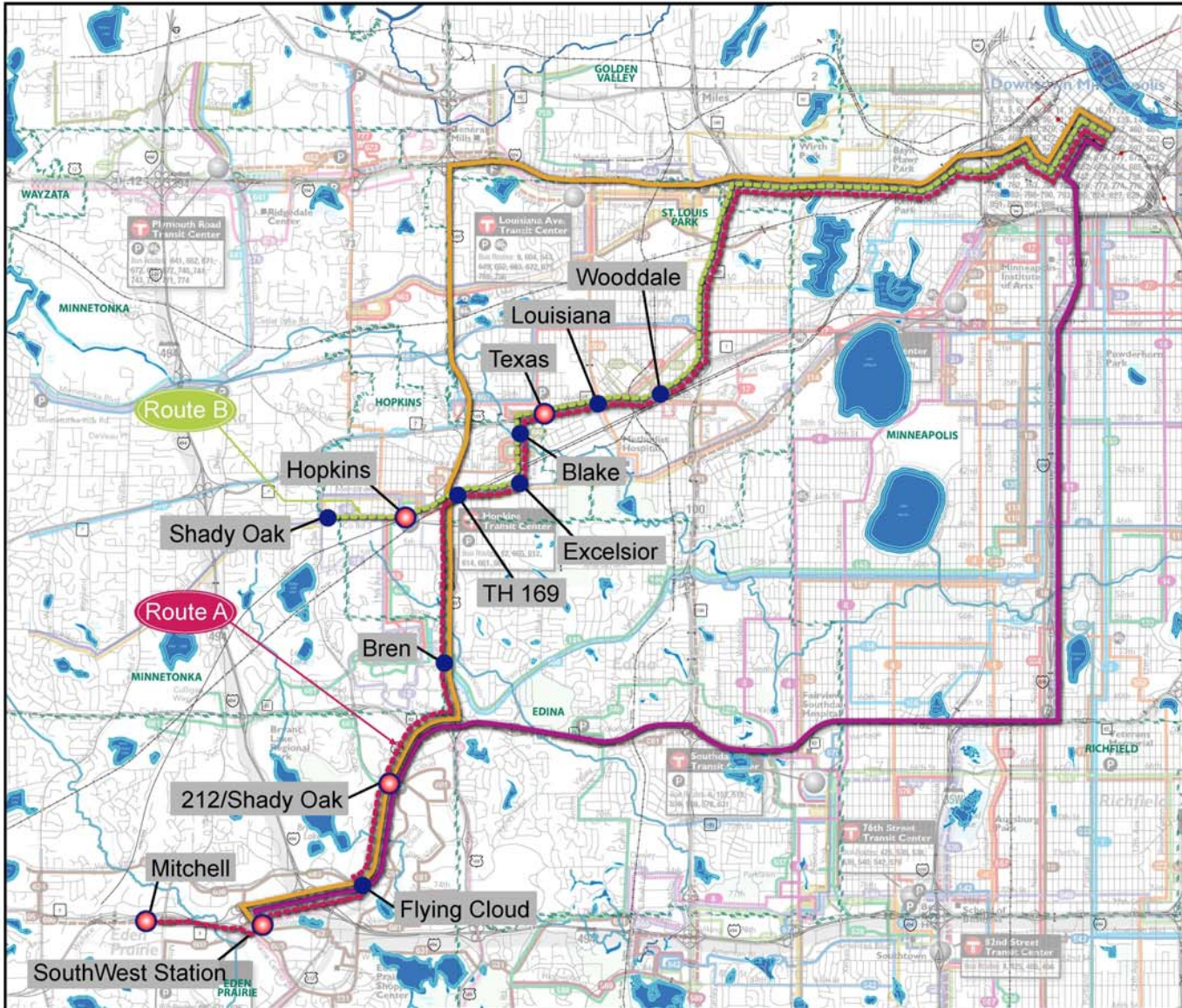
Appendix C: Enhanced Bus Alternative

Appendix D: BRT Alternatives

Appendix E: LRT Alternatives

Appendix F: Annualized Capital Costs

Appendix A: Southwest Transitway Alternative Maps



**SOUTHWEST TRANSITWAY
ALTERNATIVES ANALYSIS**

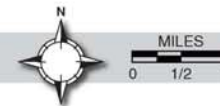
**Enhanced Bus
Alternative***

LEGEND

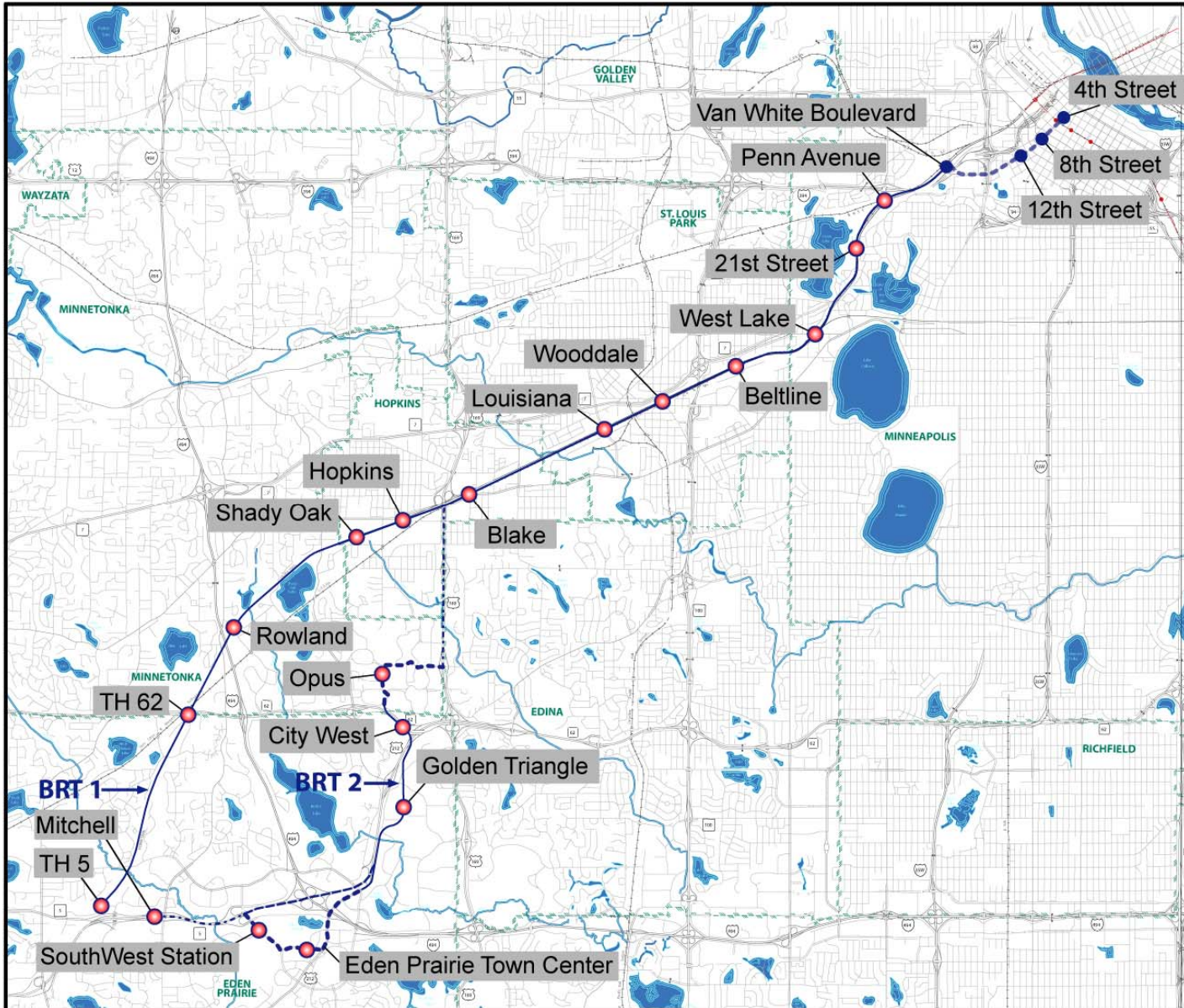
- Route A Limited Stop (New)
- Route B Limited Stop (New)
- SW Express via I-394
- SW Express Via I-35W
- Bus Stop Location
- LRT Park & Ride Station
- Hiawatha LRT
- Northstar Commuter Rail


* New routes shown are in addition to background local bus network, modified to serve new route access points.

December 2006



Hennepin County
Regional Railroad Authority






**SOUTHWEST TRANSITWAY
ALTERNATIVES ANALYSIS**

**Bus Rapid Transit
Alternatives**

LEGEND


- New Exclusive Busway
- Existing Bus Shoulder Lanes
- New Bus Only Lanes
- Alternative Alignment Option
- BRT Station
- BRT Park & Ride Station
- Hiawatha LRT
- Northstar Commuter Rail

December 2006

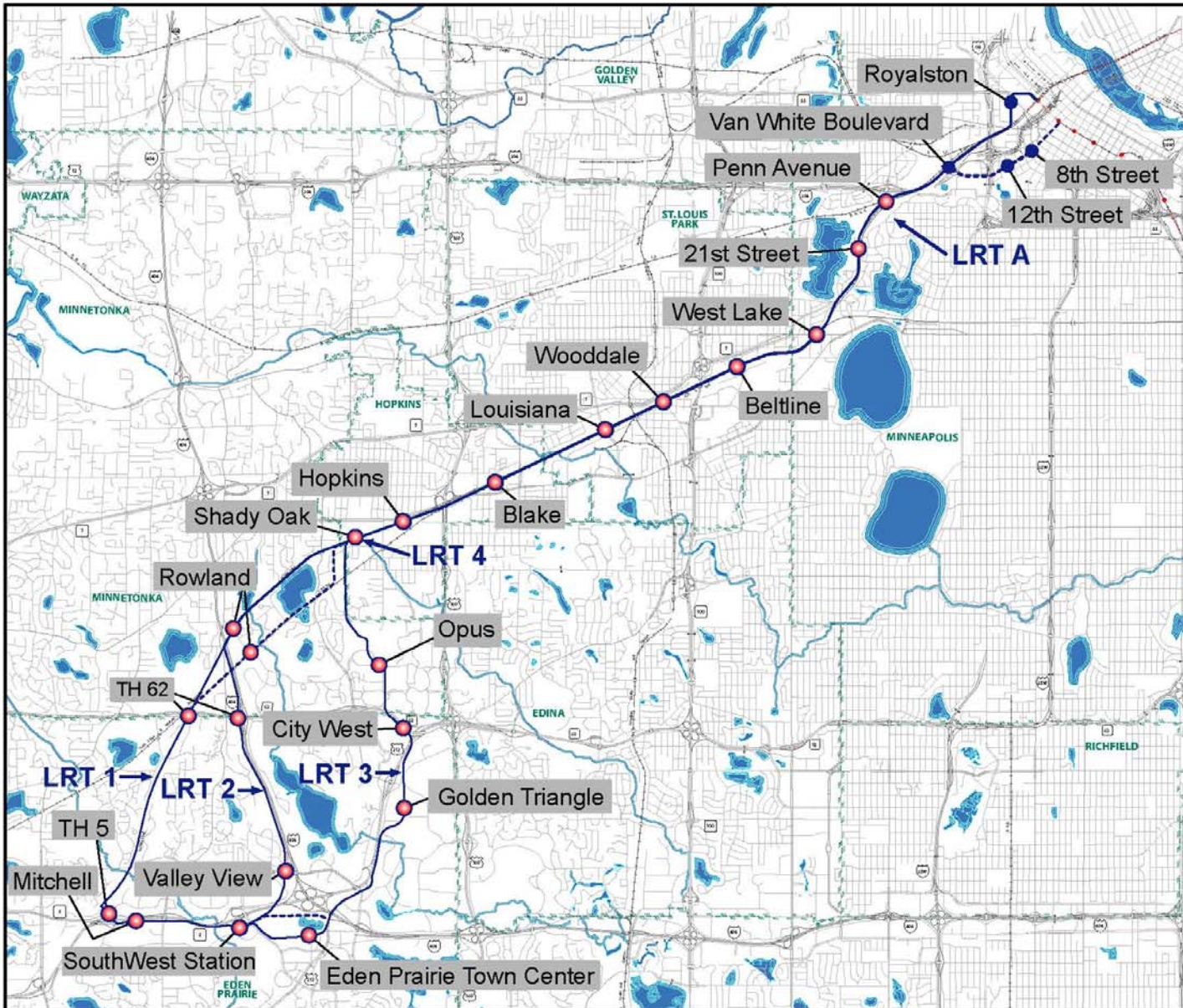


MILES

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Hennepin County
Regional Railroad Authority



**SOUTHWEST TRANSITWAY
ALTERNATIVES ANALYSIS**

**Light Rail Transit
"A" Alternatives**

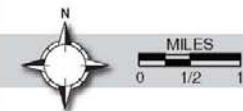
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- LRT Alignment
- - - Alternative Alignment Option
- LRT Station
- LRT Park & Ride Station
- Hiawatha LRT
- Northstar Commuter Rail

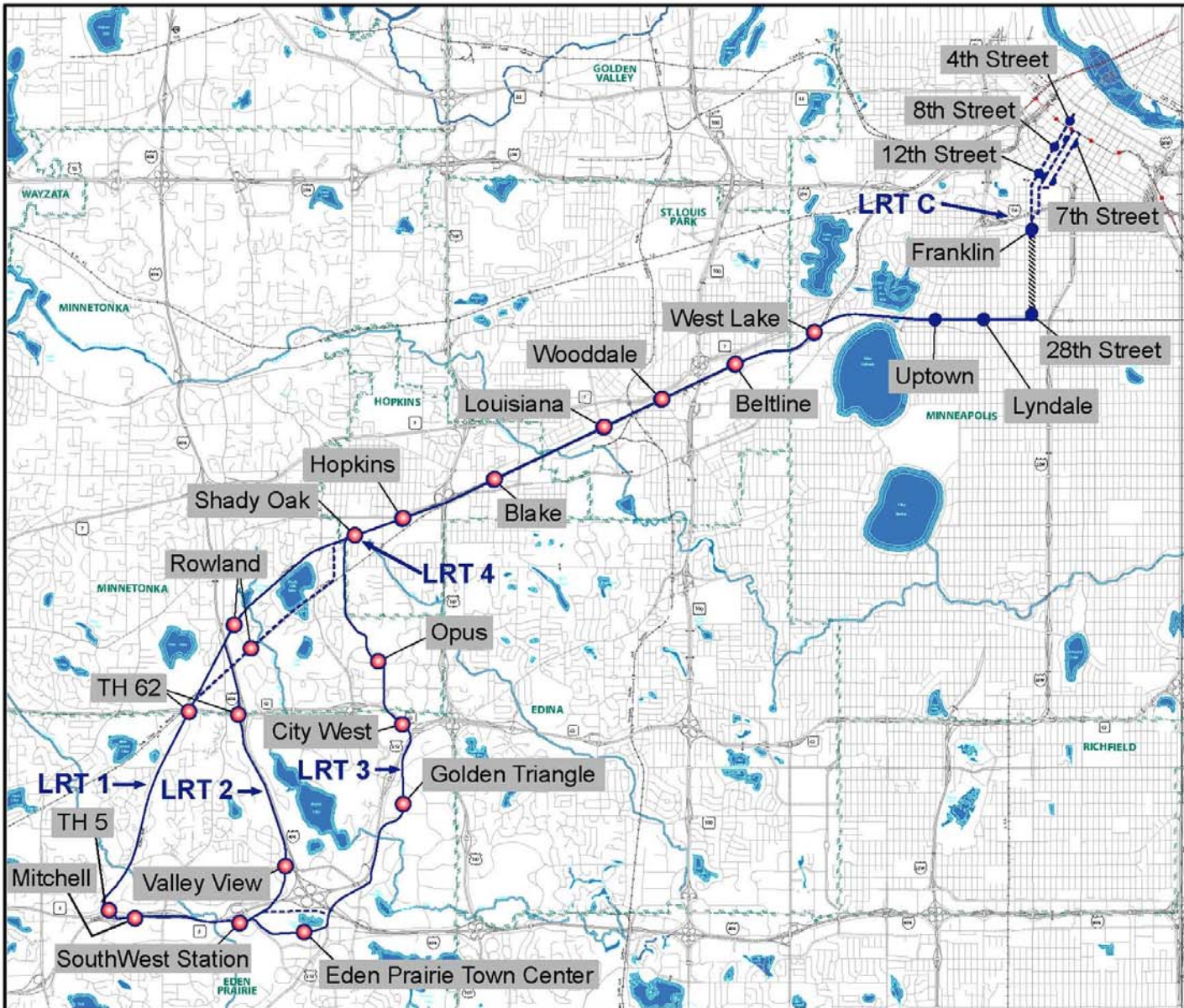
LRT 4 terminates in Hopkins at Shady Oak Station


LRT 1, 2 & 3 terminate in Eden Prairie

December 2006



**Hennepin County
Regional Railroad Authority**





**SOUTHWEST TRANSITWAY
ALTERNATIVES ANALYSIS**


**Light Rail Transit
"C" Alternatives**

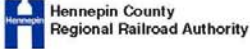
LEGEND

- LRT Alignment
- Alternative Alignment Option
- LRT Station
- LRT Park & Ride Station
- Hiawatha LRT
- Northstar Commuter Rail

LRT 4 terminates in Hopkins at Shady Oak Station
LRT 1, 2 & 3 terminate in Eden Prairie

December 2006





Appendix B: FTA Standard Cost Category (SCC) Definitions

Standard Cost Categories Definitions		NOTE: The SCC cost breakdown is based on a traditional Design Bid Build model. If your project is Design Build, to the best of your ability, separate construction costs from design, administration, testing, etc. Put construction in 10 through 50. Put design, administration, testing, etc. in 80.
(Rev. 6, Feb 7, 2006)		
10 GUIDEWAY & TRACK ELEMENTS (route miles)		Include guideway and track costs for all transit modes (rail, bus, monorail, cable car, etc.) The unit of measure is route miles of guideway, regardless of width. As associated with the guideway, include costs for rough grading, excavation, and concrete base for guideway where applicable. Include all construction materials and labor regardless of who is performing the work. In your written description of the scope and in supporting graphic diagrams, indicate whether busway or rail track is single, double, triple, relocated, etc. For guideway and track elements associated with yards, see <i>30 Support Facilities</i> below.
10.01	Guideway: At-grade exclusive right-of-way	
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	
10.03	Guideway: At-grade in mixed traffic	
10.04	Guideway: Aerial structure	Include foundation excavation; guideway structures including caissons, columns, bridges, viaducts, cross-overs, fly-overs.
10.05	Guideway: Built-up fill	Include construction of earthen berms.
10.06	Guideway: Underground cut & cover	Include excavation, retaining walls, backfill, underground guideway structure and finishes.
10.07	Guideway: Underground tunnel	Include tunneling by means of a tunnel boring machine, drill blasting, mining, and immersed tube tunneling; tunnel structure and finishes.
10.08	Guideway: Retained cut or fill	Include excavation, retaining walls, backfill, underground guideway structure and finishes.
10.09	Track: Direct fixation	Include rails, connectors.
10.10	Track: Embedded	Include rails, ties; ballast where applicable
10.11	Track: Ballasted	Include rails, ties and ballast.
10.12	Track: Special (switches, turnouts)	Include transitional curves.
10.13	Track: Vibration and noise dampening	Include upcharge for vib/noise dampening to any track condition above.
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		As associated with stations, include costs for rough grading, excavation, ventilation structures and equipment, station power and lighting, public address/customer information system, safety systems such as fire detection and prevention, security surveillance, access control, and life safety systems; finishes and equipment. Include all construction materials and labor regardless of who is performing the work.
		Place all guideway and track associated with stations in <i>10 Guideway & Track Elements</i> above.
20.01	At-grade station, stop, shelter, mall, terminal, platform	
20.02	Aerial station, stop, shelter, mall, terminal, platform	Include station structures including caissons, columns, platforms, superstructures, etc.
20.03	Underground station, stop, shelter, mall, terminal, platform	Include retaining walls, backfill, structure.
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	
20.05	Joint development	Per the FTA Circular 5010.1C Grant Management Guidelines, "Joint development is any income-producing activity with a transit nexus related to a real estate asset in which FTA has an interest. . . . Joint development projects are commercial, residential, industrial, or mixed-use developments that are induced by or enhance the effectiveness of transit projects. . . ." See circular for additional information. Path: www.fta.dot.gov -- Home / Government & Legal / Guidance / Circulars / 5000 - Grants Management - General / Table of Contents, Appendix: Joint Development Projects
20.06	Automobile parking multi-story structure	Include retaining walls, backfill, structure.
20.07	Elevators, escalators	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		As associated with support facilities, include costs for rough grading, excavation, ventilation structures and equipment, facility power and lighting, safety systems such as fire detection and prevention, security surveillance, access control, and life safety systems; finishes and equipment. Include fueling stations, alternative fueling stations. Include all construction materials and labor regardless of who is performing the work. Where a support facility shares structure with a station, its cost may be included with station cost. Identify this with a note. Except for guideway and track associated with a yard, include all guideway and track costs associated with support facilities in <i>10 Guideway & Track Elements</i> above.
30.01	Administration Building: Office, sales, storage, revenue counting	
30.02	Light Maintenance Facility	Include service, inspection, and storage facilities and equipment.
30.03	Heavy Maintenance Facility	Include heavy maintenance and overhaul facilities and equipment.
30.04	Storage or Maintenance of Way Building	
30.05	Yard and Yard Track	Include yard construction, guideway and track associated with yard.
40 SITEWORK & SPECIAL CONDITIONS		Include all construction materials and labor regardless of who is performing the work.
40.01	Demolition, Clearing, Earthwork	Include project-wide clearing, demolition and fine grading.
40.02	Site Utilities, Utility Relocation	Include all site utilities - storm, sewer, water, gas, electric.
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	Include underground storage tanks, fuel tanks and other hazardous materials and treatments not listed.
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	Include other environmental mitigation not listed.
40.05	Site structures including retaining walls, sound walls	
40.06	Pedestrian / bike access and accommodation, landscaping	Include sidewalks, paths, plazas, landscape, site and station furniture, site lighting, signage, public artwork, bike facilities, permanent fencing.
40.07	Automobile, bus, van accessways including roads, parking lots	

40.08	Temporary Facilities and other indirect costs during construction	As a general rule and to the extent possible, appropriately allocate indirect costs among the construction costs in Categories 10 through 50. Where that is not possible, include in <i>40.08 Temporary Facilities</i> costs for mobilization, demobilization, phasing; time and temporary construction associated with weather (heat, rain, freezing, etc.); temporary power and facilities; temporary construction, easements, and barriers for storm water pollution prevention; temporary access and to mitigate construction impacts; project and construction supervision; general conditions, overhead, profit. NOTE: Include contractor's general liability and other insurance related to construction such as builder's risk in 10 through 50, not in 80 Professional Services below.
50 SYSTEMS		Include all construction materials and labor regardless of who is performing the work.
50.01	Train control and signals	
50.02	Traffic signals and crossing protection	
50.03	Traction power supply: substations	
50.04	Traction power distribution: catenary and third rail	
50.05	Communications	Include intelligent transportation systems for stations and vehicles.
50.06	Fare collection system and equipment	Include fare sales and swipe machines, fare counting equipment.
50.07	Central Control	
Construction Subtotal (10 - 50)		
60 ROW, LAND, EXISTING IMPROVEMENTS		
60.01	Purchase or lease of real estate	Include donated, leased or purchased land. Include existing buildings and other structures on land. Include permanent surface and subsurface easements, costs for trackage rights. Include professional services associated with the real estate component of the project. These may include legal services and court expenses and consulting real estate services.
60.02	Relocation of existing households and businesses	Include professional services associated with relocation component of the project. Include costs related to exercise of eminent domain.
70 VEHICLES (number)		Include design and manufacturing costs associated with vehicles. Include warranty costs.
70.01	Light Rail	Include streetcar.
70.02	Heavy Rail	
70.03	Commuter Rail	Include Locomotive Diesel, Locomotive Electric, Trailer Cars, Self-Propelled Electric (EMU), Self-Propelled Diesel (DMU).
70.04	Bus	Include STD 40 ft bus, STD 35 ft bus, 30 ft bus, <30 ft bus, School, Articulated, Commuter/Suburban, Intercity, Trolley STD, Trolley Articulated, Double Decker, Used, Used School Bus, Dual Mode.
70.05	Other	Include Vans, Sedan/Station Wagon, Cable Car, People Mover, Monorail, Car/Inclined Railway, Ferry Boat, Transferred Vehicle
70.06	Non-revenue vehicles	
70.07	Spare parts	
80 PROFESSIONAL SERVICES		Include all professional, technical and management services (and related professional liability insurance costs) during the preliminary engineering, final design, and construction phases of the project. This includes environmental work, design, engineering and architectural services; specialty services such as safety or security analyses; value engineering, risk assessment, cost estimating, scheduling, Before and After studies, ridership modeling and analyses, auditing, legal services, administration and management, etc. by agency staff or outside consultants. As required, use back-up worksheets to track detailed costs within each of the line items. <i>(Note that costs for alternatives analysis and NEPA work done before FTA approval to enter preliminary engineering (PE), regardless of funding source, are not included in an FFGA and therefore, should not be included in the Standard Cost Category worksheets. For example, on one and the same grant, costs incurred prior to FTA approval to enter PE should be omitted from these worksheets whereas costs incurred after FTA approval to enter PE should be included.)</i>
80.01	Preliminary Engineering	
80.02	Final Design	
80.03	Project Management for Design and Construction	
80.04	Construction Administration & Management	
80.05	Insurance	
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	
80.07	Surveys, Testing, Investigation, Inspection	
80.08	Agency Force Account Work	Include construction work by agency staff including access and protection work in Categories 10 through 50 above. Include here testing, inspection, start up and training.
Subtotal (10 - 80)		
90 UNALLOCATED CONTINGENCY		Includes unallocated contingency, project reserves. Document allocated contingencies for individual line items on the Allocated Contingency worksheet.
Subtotal (10 - 90)		
100 FINANCE CHARGES		Include finance charges expected to be paid by the project sponsor/grantee prior to either the completion of the project or the fulfillment of the New Starts funding commitment, whichever occurs later in time. Finance charges incurred after this date should not be included in Total Project Cost on the <i>Main Worksheet</i> or in the FFGA Baseline Cost Estimate. (See FFGA Circular FTA C5200.1A Chapter III for additional information.) Derive finance charges from the New Starts project's financial plan, based on an analysis of the sources and uses of funds. The amount and type of debt financing required and revenues available determine the finance charges. By year, compute finance charges in year-of-expenditure (YOE) dollars. On the Inflation Calculation to YOE worksheet enter the finance charges for the appropriate years. The Inflation worksheet automatically calculates the amounts in base year dollars.
Total Project Cost (10 - 100)		

Appendix C: Enhanced Bus Alternative

Major Capital Project Costs - Main Worksheet										(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Enhanced Bus Baseline							Date	10/17/06		
Location	Hennepin County, MN							Base Year	2006		
Project ID								Revenue Ops	2015		
(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase			AA				Forecast Year		2015		
(Design Bid Build, Design Build, CM at Risk, etc.) Contracting Method			Design Bid Build								
	Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)	Base Year Total (X000)	Base Year Unit Cost (X000)	Base Year Percentage of Construction	Base Year Percentage of Project Total	Forecast Year Total (X000)			
10 GUIDEWAY & TRACK ELEMENTS (route miles)	16.00	-	-	-	-	0%	0%	-			
10.01 Guideway, At-grade exclusive right-of-way	-	-	-	-	-						
10.02 Guideway, At-grade semi-exclusive (allows cross-traffic)	-	-	-	-	-						
10.03 Guideway, At-grade in mixed traffic	16.00	-	-	-	-						
10.04 Guideway, Aerial structure	-	-	-	-	-						
10.05 Guideway, Built-up fill	-	-	-	-	-						
10.06 Guideway, Underground cut & cover	-	-	-	-	-						
10.07 Guideway, Underground tunnel	-	-	-	-	-						
10.08 Guideway, Retained cut or fill	-	-	-	-	-						
10.09 Track, Direct fixation	-	-	-	-	-						
10.10 Track, Embedded	-	-	-	-	-						
10.11 Track, Ballasted	-	-	-	-	-						
10.12 Track, Special (switches, turnouts)	-	-	-	-	-						
10.13 Track, Vibration and noise dampening	-	-	-	-	-						
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	13	9,165	2,750	11,915	917	70%	19%	15,143			
20.01 At-grade station, stop, shelter, mall, terminal, platform	13	390	117	507	39						
20.02 Aerial station, stop, shelter, mall, terminal, platform	-	-	-	-	-						
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-						
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-						
20.05 Joint development	-	-	-	-	-						
20.06 Automobile parking multi-story structure	-	8,775	2,633	11,408	-						
20.07 Elevators, escalators	-	-	-	-	-						
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	16.00	-	-	-	-	0%	0%	-			
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-						
30.02 Light Maintenance Facility	-	-	-	-	-						
30.03 Heavy Maintenance Facility	-	-	-	-	-						
30.04 Storage or Maintenance of Way Building	-	-	-	-	-						
30.05 Yard and Yard Track	-	-	-	-	-						
40 SITework & SPECIAL CONDITIONS	16.00	3,860	1,158	5,018	314	29%	8%	6,378			
40.01 Demolition, Clearing, Earthwork	-	2,000	600	2,600	-						
40.02 Site Utilities, Utility Relocation	-	-	-	-	-						
40.03 Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	-	-	-	-						
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	-	-	-	-						
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-						
40.06 Pedestrian / bike access and accommodation, landscaping	-	-	-	-	-						
40.07 Automobile, bus, van accessways including roads, parking lots	-	1,860	558	2,418	-						
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-						
50 SYSTEMS	16.00	65	20	85	5	0%	0%	107			
50.01 Train control and signals	-	-	-	-	-						
50.02 Traffic signals and crossing protection	-	-	-	-	-						
50.03 Traction power supply: substations	-	-	-	-	-						
50.04 Traction power distribution: catenary and third rail	-	-	-	-	-						
50.05 Communications	-	65	20	85	-						
50.06 Fare collection system and equipment	-	-	-	-	-						
50.07 Central Control	-	-	-	-	-						
Construction Subtotal (10-50)	16.00	13,090	3,927	17,017	1,064	100%	27%	21,628			
60 ROW, LAND, EXISTING IMPROVEMENTS	16.00	5,416	5,416	10,832	677		17%	13,767			
60.01 Purchase or lease of real estate	-	5,416	5,416	10,832	-						
60.02 Relocation (freight railroad traffic)	-	-	-	-	-						
70 VEHICLES (number)	49	17,250	863	18,113	370		29%	23,020			
70.01 Light Rail	-	-	-	-	-						
70.02 Heavy Rail	-	-	-	-	-						
70.03 Commuter Rail	-	-	-	-	-						
70.04 Bus	49	17,250	863	18,113	370						
70.05 Other	-	-	-	-	-						
70.06 Non-revenue vehicles	-	-	-	-	-						
70.07 Spare parts	-	-	-	-	-						
80 PROFESSIONAL SERVICES	16.00	6,414	-	6,414	401		10%	8,152			
80.01 Preliminary Engineering	-	262	-	262	-						
80.02 Final Design	-	1,054	-	1,054	-						
80.03 Project Management for Design and Construction	-	597	-	597	-						
80.04 Construction Administration & Management	-	1,101	-	1,101	-						
80.05 Insurance	-	524	-	524	-						
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.	-	402	-	402	-						
80.07 Surveys, Testing, Investigation, Inspection	-	1,148	-	1,148	-						
80.08 Agency Force Account Work	-	1,327	-	1,327	-						
Subtotal (10-80)	16.00	42,170	10,206	52,376	3,273		83%	66,568			
90 UNALLOCATED CONTINGENCY				10,475			17%	13,314			
Subtotal (10-90)	16.00			62,851	3,928		100%	79,882			
100 FINANCE CHARGES							0%	-			
Total Project Cost (10-100)	16.00			62,851	3,928		100%	79,882			
Total Allocated Contingency as % of Base Year Estimate								24%			
Total Contingency (Allocated and Unallocated)								20,681			
Total Contingency as % of Base Year Estimate								49%			
Total Contingency as % of Base Year Total (w/o Finance Charges)								33%			
Total Contingency as % of Base Year Total Project Cost								33%			
Forecast Year Construction Cost per Mile								1,352			
Forecast Year Total Project Cost per Mile								4,993			
Professional Services as % of Construction								38%			

Appendix D: BRT Alternatives

Major Capital Project Costs - Main Worksheet							(Rev. 6, Feb 7, 2006)		
Project	Southwest Transitway - Alternative BRT 1						Date	10/17/06	
Location	Hennepin County, MN						Base Year	2006	
Project ID									
(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase			AA				Revenue Ops	2015	
(Design Bid/Bid, Design Build, CM at Risk, etc) Contracting Method			Design Bid Build				Forecast Year	2015	
	Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)	Base Year Total (X000)	Base Year Unit Cost (X000)	Base Year Percentage of Construction	Base Year Percentage of Project Total	Forecast Year Total (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	13.86	54,306	16,291	70,596	5,094	31%	17%	89,726	
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	-	-	-	
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	11.29	39,239	11,772	51,010	4,518	-	-	-	
10.03 Guideway: At-grade in mixed traffic	1.41	742	223	965	686	-	-	-	
10.04 Guideway: Aerial structure	0.24	6,353	1,906	8,259	34,499	-	-	-	
10.05 Guideway: Built-up fill	-	-	-	-	-	-	-	-	
10.06 Guideway: Underground cut & cover	-	-	-	-	-	-	-	-	
10.07 Guideway: Underground tunnel	-	-	-	-	-	-	-	-	
10.08 Guideway: Retained cut or fill	0.92	7,971	2,391	10,362	11,207	-	-	-	
10.09 Track: Direct fixation	-	-	-	-	-	-	-	-	
10.10 Track: Embedded	-	-	-	-	-	-	-	-	
10.11 Track: Ballasted	-	-	-	-	-	-	-	-	
10.12 Track: Special (switches, turnouts)	-	-	-	-	-	-	-	-	
10.13 Track: Vibration and noise dampening	-	-	-	-	-	-	-	-	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	16	29,685	8,876	38,461	2,404	17%	9%	48,882	
20.01 At-grade station, stop, shelter, mall, terminal, platform	15	16,500	4,950	21,450	1,430	-	-	-	
20.02 Aerial station, stop, shelter, mall, terminal, platform	1	1,100	330	1,430	1,430	-	-	-	
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	-	-	-	
20.04 Other stations, landings, terminals: Intermodal, terry, trolley, etc.	-	-	-	-	-	-	-	-	
20.05 Joint development	-	-	-	-	-	-	-	-	
20.06 Automobile parking multi-story structure	-	10,205	3,062	13,267	-	-	-	-	
20.07 Elevators, escalators	-	1,700	534	2,314	-	-	-	-	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	13.86	10,976	3,293	14,269	1,030	6%	3%	18,136	
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	-	-	-	
30.02 Light Maintenance Facility	-	10,976	3,293	14,269	-	-	-	-	
30.03 Heavy Maintenance Facility	-	-	-	-	-	-	-	-	
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	-	-	-	
30.05 Yard and Yard Track	-	-	-	-	-	-	-	-	
40 SITING & SPECIAL CONDITIONS	13.86	61,972	18,592	80,564	5,810	35%	19%	102,094	
40.01 Demolition, Clearing, Earthwork	-	8,000	2,400	10,400	-	-	-	-	
40.02 Site Utilities, Utility Relocation	-	16,095	4,828	20,923	-	-	-	-	
40.03 Haz. mat., contain'd soil removal/mitigation, ground water treatments	-	366	110	476	-	-	-	-	
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	382	115	497	-	-	-	-	
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	-	-	-	
40.06 Pedestrian / bike access and accommodation, landscaping	-	16,311	4,893	21,204	-	-	-	-	
40.07 Automobile, bus, van accessways including roads, parking lots	-	20,819	6,246	27,064	-	-	-	-	
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	-	-	-	
50 SYSTEMS	13.86	21,187	6,386	27,542	1,987	12%	6%	35,006	
50.01 Train control and signals	-	-	-	-	-	-	-	-	
50.02 Traffic signals and crossing protection	-	4,785	1,436	6,221	-	-	-	-	
50.03 Traction power supply: substations	-	-	-	-	-	-	-	-	
50.04 Traction power distribution: catenary and third rail	-	-	-	-	-	-	-	-	
50.05 Communications	-	11,342	3,403	14,745	-	-	-	-	
50.06 Fare collection system and equipment	-	3,230	969	4,199	-	-	-	-	
50.07 Central Control	-	1,829	549	2,378	-	-	-	-	
Construction Subtotal (10-60)	13.86	178,025	53,407	231,432	16,699	100%	54%	294,142	
60 ROW, LAND, EXISTING IMPROVEMENTS	13.86	17,098	17,098	34,196	2,467		8%	43,462	
60.01 Purchase or lease of real estate	-	12,230	12,230	24,460	-	-	-	-	
60.02 Relocation (freight railroad traffic)	-	4,868	4,868	9,736	-	-	-	-	
70 VEHICLES (number)	54	27,178	1,369	28,534	528		7%	38,265	
70.01 Light Rail	-	-	-	-	-	-	-	-	
70.02 Heavy Rail	-	-	-	-	-	-	-	-	
70.03 Commuter Rail	-	-	-	-	-	-	-	-	
70.04 Bus	39	13,730	686	14,416	370	-	-	-	
70.05 Other (BRT)	15	9,750	400	10,230	683	-	-	-	
70.06 Non-revenue vehicles	-	2,195	110	2,305	-	-	-	-	
70.07 Spare parts	-	1,500	75	1,575	-	-	-	-	
80 PROFESSIONAL SERVICES	13.86	89,896	-	89,896	4,322		14%	76,125	
80.01 Preliminary Engineering	-	3,560	-	3,560	-	-	-	-	
80.02 Final Design	-	9,616	-	9,616	-	-	-	-	
80.03 Project Management for Design and Construction	-	4,345	-	4,345	-	-	-	-	
80.04 Construction Administration & Management	-	14,413	-	14,413	-	-	-	-	
80.05 Insurance	-	7,121	-	7,121	-	-	-	-	
80.06 Legal; Permits; Review Fees by other agencies, cities, etc.	-	2,635	-	2,635	-	-	-	-	
80.07 Surveys, Testing, Investigation, Inspection	-	5,814	-	5,814	-	-	-	-	
80.08 Agency Force Account Work	-	12,391	-	12,391	-	-	-	-	
Subtotal (10-80)	13.86	282,193	71,864	354,057	25,547		83%	449,995	
90 UNALLOCATED CONTINGENCY				70,811			17%	89,999	
Subtotal (10-90)	13.86			424,869	30,657		100%	539,994	
100 FINANCE CHARGES							0%	-	
Total Project Cost (10-100)	13.86			424,869	30,657		100%	539,994	
Total Allocated Contingency as % of Base Year Estimate								25%	
Total Contingency (Allocated and Unallocated)				142,676					
Total Contingency as % of Base Year Estimate								51%	
Total Contingency as % of Base Year Total (w/o Finance Charges)								34%	
Total Contingency as % of Base Year Total Project Cost								34%	
Forecast Year Construction Cost per Mile								21,224	
Forecast Year Total Project Cost per Mile								38,964	
Professional Services as % of Construction								26%	

Major Capital Project Costs - Main Worksheet							(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Alternative BRT 2					Date	10/17/06	
Location	Hennepin County, MN					Base Year	2006	
Project ID								
(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase			AA			Revenue Ops	2015	
(Design Bid Build, Design Build, CM at Risk, etc) Contracting Method			Design Bid Build			Forecast Year	2015	
	Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)	Base Year Total (X000)	Base Year Unit Cost (X000)	Base Year Percentage of Construction	Base Year Percentage of Project Total	Forecast Year Total (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)	18.31	81,932	24,580	106,511	5,816	34%	19%	135,373
10.01 Guideway, At-grade exclusive right-of-way	-	-	-	-	-	-	-	-
10.02 Guideway, At-grade semi-exclusive (allows cross-traffic)	8.36	29,262	8,778	38,040	4,550	-	-	-
10.03 Guideway, At-grade in mixed traffic	7.50	5,796	1,739	7,534	994	-	-	-
10.04 Guideway, Aerial structure	0.87	32,805	9,842	42,647	49,015	-	-	-
10.05 Guideway, Built-up fill	-	-	-	-	-	-	-	-
10.06 Guideway, Underground cut & cover	-	-	-	-	-	-	-	-
10.07 Guideway, Underground tunnel	-	-	-	-	-	-	-	-
10.08 Guideway, Retained cut or fill	1.51	14,070	4,221	18,290	12,141	-	-	-
10.09 Track, Direct fixation	-	-	-	-	-	-	-	-
10.10 Track, Embedded	-	-	-	-	-	-	-	-
10.11 Track, Ballasted	-	-	-	-	-	-	-	-
10.12 Track, Special (switches, turnouts)	-	-	-	-	-	-	-	-
10.13 Track, Vibration and noise dampening	-	-	-	-	-	-	-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	19	42,765	12,830	55,595	2,926	18%	10%	70,559
20.01 At-grade station, stop, shelter, mall, terminal, platform	18	19,800	5,940	25,740	1,430	-	-	-
20.02 Aerial station, stop, shelter, mall, terminal, platform	1	1,100	330	1,430	1,430	-	-	-
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	-	-	-
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	-	-	-
20.05 Joint development	-	-	-	-	-	-	-	-
20.06 Automobile parking multi-story structure	-	20,085	6,026	26,111	-	-	-	-
20.07 Elevators, escalators	-	1,780	534	2,314	-	-	-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	18.31	14,504	4,351	18,856	1,000	6%	3%	23,965
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	-	-	-
30.02 Light Maintenance Facility	-	14,504	4,351	18,856	-	-	-	-
30.03 Heavy Maintenance Facility	-	-	-	-	-	-	-	-
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	-	-	-
30.05 Yard and Yard Track	-	-	-	-	-	-	-	-
40 SITING & SPECIAL CONDITIONS	18.31	75,259	22,590	97,888	5,345	31%	18%	124,413
40.01 Demolition, Clearing, Earthwork	-	9,500	2,850	12,350	-	-	-	-
40.02 Site Utilities, Utility Relocation	-	20,688	6,206	26,895	-	-	-	-
40.03 Haz. mat., contam'd soil removal/mitigation, ground water treatments	-	606	182	787	-	-	-	-
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	777	233	1,010	-	-	-	-
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	-	-	-
40.06 Pedestrian / bike access and accommodation, landscaping	-	15,885	4,705	20,590	-	-	-	-
40.07 Automobile, bus, van accessways including roads, parking lots	-	20,044	6,413	26,457	-	-	-	-
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	-	-	-
50 SYSTEMS	18.31	28,694	8,608	37,302	2,037	12%	7%	47,410
50.01 Train control and signals	-	-	-	-	-	-	-	-
50.02 Traffic signals and crossing protection	-	7,300	2,214	9,594	-	-	-	-
50.03 Traction power supply: substations	-	-	-	-	-	-	-	-
50.04 Traction power distribution: catenary and third rail	-	-	-	-	-	-	-	-
50.05 Communications	-	14,987	4,496	19,483	-	-	-	-
50.06 Fare collection system and equipment	-	3,910	1,173	5,083	-	-	-	-
50.07 Central Control	-	2,417	725	3,143	-	-	-	-
Construction Subtotal (10-60)	18.31	243,154	72,558	316,152	17,263	100%	57%	401,815
60 ROW, LAND, EXISTING IMPROVEMENTS	18.31	17,098	17,098	34,196	1,867		6%	43,462
60.01 Purchase or lease of real estate	-	12,230	12,230	24,460	-	-	-	-
60.02 Relocation (freight railroad traffic)	-	4,868	4,868	9,736	-	-	-	-
70 VEHICLES (number)	57	30,130	1,507	31,637	555		6%	40,210
70.01 Light Rail	-	-	-	-	-	-	-	-
70.02 Heavy Rail	-	-	-	-	-	-	-	-
70.03 Commuter Rail	-	-	-	-	-	-	-	-
70.04 Bus	39	13,730	686	14,416	370	-	-	-
70.05 Other (BRT)	18	11,700	585	12,285	683	-	-	-
70.06 Non-revenue vehicles	-	2,901	145	3,046	-	-	-	-
70.07 Spare parts	-	1,800	90	1,890	-	-	-	-
80 PROFESSIONAL SERVICES	18.31	79,594	-	79,594	4,346		14%	101,162
80.01 Preliminary Engineering	-	4,864	-	4,864	-	-	-	-
80.02 Final Design	-	12,933	-	12,933	-	-	-	-
80.03 Project Management for Design and Construction	-	5,678	-	5,678	-	-	-	-
80.04 Construction Administration & Management	-	19,627	-	19,627	-	-	-	-
80.05 Insurance	-	9,728	-	9,728	-	-	-	-
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.	-	3,287	-	3,287	-	-	-	-
80.07 Surveys, Testing, Investigation, Inspection	-	7,176	-	7,176	-	-	-	-
80.08 Agency Force Account Work	-	16,301	-	16,301	-	-	-	-
Subtotal (10-90)	18.31	370,017	91,563	461,580	25,204		80%	596,652
90 UNALLOCATED CONTINGENCY				52,316			17%	117,330
Subtotal (10-90)	18.31			553,896	30,245		100%	703,983
100 FINANCE CHARGES							0%	-
Total Project Cost (10-100)	18.31			553,896	30,245		100%	703,983
Total Allocated Contingency as % of Base Year Estimate								29%
Total Contingency (Allocated and Unallocated)				183,879				
Total Contingency as % of Base Year Estimate								50%
Total Contingency as % of Base Year Total (w/o Finance Charges)								33%
Total Contingency as % of Base Year Total Project Cost								33%
Forecast Year Construction Cost per Mile								21,941
Forecast Year Total Project Cost per Mile								38,441
Professional Services as % of Construction								25%

Major Capital Project Costs - By Segment			(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment BRT 1-1	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	2.20	
		Stations	1	
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		2.20	8,492	2,548
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	2.11	7,176	2,153
10.03	Guideway: At-grade in mixed traffic	-	-	-
10.04	Guideway: Aerial structure	0.03	858	257
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	0.06	458	137
10.09	Track: Direct fixation		-	-
10.10	Track: Embedded		-	-
10.11	Track: Ballasted		-	-
10.12	Track: Special (switches, turnouts)		-	-
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		1	1,100	330
20.01	At-grade station, stop, shelter, mall, terminal, platform	1	1,100	330
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-	-
30.01	Administration Building: Office, sales, storage, revenue counting			-
30.02	Light Maintenance Facility			-
30.03	Heavy Maintenance Facility			-
30.04	Storage or Maintenance of Way Building			-
30.05	Yard and Yard Track			-
40 SITEWORK & SPECIAL CONDITIONS			7,642	2,293
40.01	Demolition, Clearing, Earthwork		500	150
40.02	Site Utilities, Utility Relocation		2,323	697
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		58	17
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		58	17
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		2,696	809
40.07	Automobile, bus, van accessways including roads, parking lots		2,006	602
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			2,371	711
50.01	Train control and signals		-	-
50.02	Traffic signals and crossing protection		110	33
50.03	Traction power supply: substations		-	-
50.04	Traction power distribution: catenary and third rail		-	-
50.05	Communications		1,801	540
50.06	Fare collection system and equipment		170	51
50.07	Central Control		290	87
Construction Subtotal (10-50)			19,605	5,882
60 ROW, LAND, EXISTING IMPROVEMENTS			1,083	1,083
60.01	Purchase or lease of real estate		1,083	1,083
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment BRT 1-2	Date	10/17/06
Location	Hennepin County, MN	Base Year	2006
Project ID			
		Route Miles	2.70
		Stations	3
		Quantity	Base Year Estimate (X000)
			Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		2.70	11,621
10.01	Guideway: At-grade exclusive right-of-way	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	2.26	7,697
10.03	Guideway: At-grade in mixed traffic	-	-
10.04	Guideway: Aerial structure	-	-
10.05	Guideway: Built-up fill	-	-
10.06	Guideway: Underground cut & cover	-	-
10.07	Guideway: Underground tunnel	-	-
10.08	Guideway: Retained cut or fill	0.44	3,924
10.09	Track: Direct fixation	-	-
10.10	Track: Embedded	-	-
10.11	Track: Ballasted	-	-
10.12	Track: Special (switches, turnouts)	-	-
10.13	Track: Vibration and noise dampening	-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		3	3,300
20.01	At-grade station, stop, shelter, mall, terminal, platform	3	3,300
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-
20.05	Joint development	-	-
20.06	Automobile parking multi-story structure	-	-
20.07	Elevators, escalators	-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			
30.01	Administration Building: Office, sales, storage, revenue counting	-	-
30.02	Light Maintenance Facility	-	-
30.03	Heavy Maintenance Facility	-	-
30.04	Storage or Maintenance of Way Building	-	-
30.05	Yard and Yard Track	-	-
40 SITEWORK & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork	-	-
40.02	Site Utilities, Utility Relocation	-	-
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	-	-
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	-
40.05	Site structures including retaining walls, sound walls	-	-
40.06	Pedestrian / bike access and accommodation, landscaping	-	-
40.07	Automobile, bus, van accessways including roads, parking lots	-	-
40.08	Temporary facilities and other indirect costs during construction	-	-
50 SYSTEMS			
50.01	Train control and signals	-	-
50.02	Traffic signals and crossing protection	-	-
50.03	Traction power supply: substations	-	-
50.04	Traction power distribution: catenary and third rail	-	-
50.05	Communications	-	-
50.06	Fare collection system and equipment	-	-
50.07	Central Control	-	-
Construction Subtotal (10-50)		30,457	9,122
60 ROW, LAND, EXISTING IMPROVEMENTS			
60.01	Purchase or lease of real estate	-	-
60.02	Relocation (freight railroad traffic)	-	-

Major Capital Project Costs - By Segment				(Rev. 6, Feb 7, 2006)
Project	Southwest Transitway - Segment BRT 1-3		Date	10/17/06
Location	Hennepin County, MN		Base Year	2006
Project ID				
			Route Miles	0.99
			Stations	1
			Quantity	Base Year Estimate (X000)
				Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)			0.99	3,807
10.01	Guideway: At-grade exclusive right-of-way		-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)		0.99	3,807
10.03	Guideway: At-grade in mixed traffic		-	-
10.04	Guideway: Aerial structure		-	-
10.05	Guideway: Built-up fill		-	-
10.06	Guideway: Underground cut & cover		-	-
10.07	Guideway: Underground tunnel		-	-
10.08	Guideway: Retained cut or fill		-	-
10.09	Track: Direct fixation			-
10.10	Track: Embedded			-
10.11	Track: Ballasted			-
10.12	Track: Special (switches, turnouts)			-
10.13	Track: Vibration and noise dampening			-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)			1	1,100
20.01	At-grade station, stop, shelter, mall, terminal, platform		1	1,100
20.02	Aerial station, stop, shelter, mall, terminal, platform		-	-
20.03	Underground station, stop, shelter, mall, terminal, platform		-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		-	-
20.05	Joint development			-
20.06	Automobile parking multi-story structure			-
20.07	Elevators, escalators			-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				-
30.01	Administration Building: Office, sales, storage, revenue counting			-
30.02	Light Maintenance Facility			-
30.03	Heavy Maintenance Facility			-
30.04	Storage or Maintenance of Way Building			-
30.05	Yard and Yard Track			-
40 SITEWORK & SPECIAL CONDITIONS				4,123
40.01	Demolition, Clearing, Earthwork			150
40.02	Site Utilities, Utility Relocation			312
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments			8
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks			8
40.05	Site structures including retaining walls, sound walls			-
40.06	Pedestrian / bike access and accommodation, landscaping			359
40.07	Automobile, bus, van accessways including roads, parking lots			400
40.08	Temporary facilities and other indirect costs during construction			-
50 SYSTEMS				466
50.01	Train control and signals			-
50.02	Traffic signals and crossing protection			134
50.03	Traction power supply: substations			-
50.04	Traction power distribution: catenary and third rail			-
50.05	Communications			242
50.06	Fare collection system and equipment			51
50.07	Central Control			39
Construction Subtotal (10-50)				3,175
60 ROW, LAND, EXISTING IMPROVEMENTS				1,083
60.01	Purchase or lease of real estate			1,083
60.02	Relocation (freight railroad traffic)			-

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)		
Project	Southwest Transitway - Segment BRT 1-4	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	0.16	
		Stations	1	
		Quantity	Base Year Estimate (X000)	
			Base Year Allocated Contingency (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)		0.16	542	163
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	0.16	542	163
10.03	Guideway: At-grade in mixed traffic	-	-	-
10.04	Guideway: Aerial structure	-	-	-
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	-	-	-
10.09	Track: Direct fixation		-	-
10.10	Track: Embedded		-	-
10.11	Track: Ballasted		-	-
10.12	Track: Special (switches, turnouts)		-	-
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		1	1,100	330
20.01	At-grade station, stop, shelter, mall, terminal, platform	1	1,100	330
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				
30.01	Administration Building: Office, sales, storage, revenue counting			
30.02	Light Maintenance Facility			
30.03	Heavy Maintenance Facility			
30.04	Storage or Maintenance of Way Building			
30.05	Yard and Yard Track			
40 SITEWORK & SPECIAL CONDITIONS			2,744	823
40.01	Demolition, Clearing, Earthwork		500	150
40.02	Site Utilities, Utility Relocation		168	50
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		4	1
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		4	1
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		496	149
40.07	Automobile, bus, van accessways including roads, parking lots		1,571	471
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			431	129
50.01	Train control and signals		-	-
50.02	Traffic signals and crossing protection		110	33
50.03	Traction power supply: substations		-	-
50.04	Traction power distribution: catenary and third rail		-	-
50.05	Communications		130	39
50.06	Fare collection system and equipment		170	51
50.07	Central Control		21	6
Construction Subtotal (10-50)			4,818	1,445
60 ROW, LAND, EXISTING IMPROVEMENTS			1,083	1,083
60.01	Purchase or lease of real estate		1,083	1,083
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)		
Project	Southwest Transitway - Segment BRT 2-1	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	1.13	
		Stations	1	
		Quantity	Base Year Estimate (X000)	
			Base Year Allocated Contingency (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)		1.13	2,140	642
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	0.38	1,291	387
10.03	Guideway: At-grade in mixed traffic	0.75	849	255
10.04	Guideway: Aerial structure	-	-	-
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	-	-	-
10.09	Track: Direct fixation	-	-	-
10.10	Track: Embedded	-	-	-
10.11	Track: Ballasted	-	-	-
10.12	Track: Special (switches, turnouts)	-	-	-
10.13	Track: Vibration and noise dampening	-	-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		1	1,100	330
20.01	At-grade station, stop, shelter, mall, terminal, platform	1	1,100	330
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development	-	-	-
20.06	Automobile parking multi-story structure	-	-	-
20.07	Elevators, escalators	-	-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				
30.01	Administration Building: Office, sales, storage, revenue counting			
30.02	Light Maintenance Facility			
30.03	Heavy Maintenance Facility			
30.04	Storage or Maintenance of Way Building			
30.05	Yard and Yard Track			
40 SITEWORK & SPECIAL CONDITIONS			3,223	967
40.01	Demolition, Clearing, Earthwork		500	150
40.02	Site Utilities, Utility Relocation		1,197	359
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		20	6
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		20	6
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		509	153
40.07	Automobile, bus, van accessways including roads, parking lots		977	293
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			1,472	441
50.01	Train control and signals		-	-
50.02	Traffic signals and crossing protection		225	68
50.03	Traction power supply: substations		-	-
50.04	Traction power distribution: catenary and third rail		-	-
50.05	Communications		927	278
50.06	Fare collection system and equipment		170	51
50.07	Central Control		150	45
Construction Subtotal (10-50)			7,934	2,380
60 ROW, LAND, EXISTING IMPROVEMENTS			1,083	1,083
60.01	Purchase or lease of real estate		1,083	1,083
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)		
Project	Southwest Transitway - Segment BRT 2-2	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	2.93	
		Stations	2	
		Quantity	Base Year Estimate (X000)	
			Base Year Allocated Contingency (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)		2.93	23,016	6,905
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	-	-	-
10.03	Guideway: At-grade in mixed traffic	2.09	1,101	330
10.04	Guideway: Aerial structure	0.35	16,980	5,094
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	0.49	4,935	1,480
10.09	Track: Direct fixation		-	-
10.10	Track: Embedded		-	-
10.11	Track: Ballasted		-	-
10.12	Track: Special (switches, turnouts)		-	-
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		2	2,200	660
20.01	At-grade station, stop, shelter, mall, terminal, platform	2	2,200	660
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-	-
30.01	Administration Building: Office, sales, storage, revenue counting		-	-
30.02	Light Maintenance Facility		-	-
30.03	Heavy Maintenance Facility		-	-
30.04	Storage or Maintenance of Way Building		-	-
30.05	Yard and Yard Track		-	-
40 SITEWORK & SPECIAL CONDITIONS			14,053	4,216
40.01	Demolition, Clearing, Earthwork		1,000	300
40.02	Site Utilities, Utility Relocation		4,700	1,410
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		155	46
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		310	93
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		1,792	538
40.07	Automobile, bus, van accessways including roads, parking lots		6,097	1,829
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			5,772	1,732
50.01	Train control and signals		-	-
50.02	Traffic signals and crossing protection		2,475	743
50.03	Traction power supply: substations		-	-
50.04	Traction power distribution: catenary and third rail		-	-
50.05	Communications		2,400	720
50.06	Fare collection system and equipment		510	153
50.07	Central Control		387	116
Construction Subtotal (10-50)			45,041	13,512
60 ROW, LAND, EXISTING IMPROVEMENTS			5,676	5,676
60.01	Purchase or lease of real estate		5,676	5,676
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment BRT 2-3	Date	10/17/06
Location	Hennepin County, MN	Base Year	2006
Project ID			
		Route Miles	5.13
		Stations	3
		Quantity	Base Year Estimate (X000)
			Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		5.13	22,041
10.01	Guideway: At-grade exclusive right-of-way	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	0.90	3,062
10.03	Guideway: At-grade in mixed traffic	3.33	3,104
10.04	Guideway: Aerial structure	0.30	10,330
10.05	Guideway: Built-up fill	-	-
10.06	Guideway: Underground cut & cover	-	-
10.07	Guideway: Underground tunnel	-	-
10.08	Guideway: Retained cut or fill	0.60	5,546
10.09	Track: Direct fixation		-
10.10	Track: Embedded		-
10.11	Track: Ballasted		-
10.12	Track: Special (switches, turnouts)		-
10.13	Track: Vibration and noise dampening		-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		3	3,300
20.01	At-grade station, stop, shelter, mall, terminal, platform	3	3,300
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-
20.05	Joint development		-
20.06	Automobile parking multi-story structure		-
20.07	Elevators, escalators		-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-
30.01	Administration Building: Office, sales, storage, revenue counting		-
30.02	Light Maintenance Facility		-
30.03	Heavy Maintenance Facility		-
30.04	Storage or Maintenance of Way Building		-
30.05	Yard and Yard Track		-
40 SITEWORK & SPECIAL CONDITIONS			12,958
40.01	Demolition, Clearing, Earthwork		1,500
40.02	Site Utilities, Utility Relocation		3,705
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		190
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		190
40.05	Site structures including retaining walls, sound walls		-
40.06	Pedestrian / bike access and accommodation, landscaping		2,856
40.07	Automobile, bus, van accessways including roads, parking lots		4,518
40.08	Temporary facilities and other indirect costs during construction		-
50 SYSTEMS			5,831
50.01	Train control and signals		-
50.02	Traffic signals and crossing protection		445
50.03	Traction power supply: substations		-
50.04	Traction power distribution: catenary and third rail		-
50.05	Communications		4,199
50.06	Fare collection system and equipment		510
50.07	Central Control		677
Construction Subtotal (10-50)			44,131
60 ROW, LAND, EXISTING IMPROVEMENTS			6,707
60.01	Purchase or lease of real estate		6,707
60.02	Relocation (freight railroad traffic)		-

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)		
Project	Southwest Transitway - Segment BRT A-1	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	1.56	
		Stations	1	
		Quantity	Base Year Estimate (X000)	
			Base Year Allocated Contingency (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)		1.56	11,173	3,362
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	1.10	3,731	1,119
10.03	Guideway: At-grade in mixed traffic	-	-	-
10.04	Guideway: Aerial structure	0.13	4,381	1,314
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	0.34	3,060	918
10.09	Track: Direct fixation		-	-
10.10	Track: Embedded		-	-
10.11	Track: Ballasted		-	-
10.12	Track: Special (switches, turnouts)		-	-
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		1	1,100	330
20.01	At-grade station, stop, shelter, mall, terminal, platform	1	1,100	330
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-	-
30.01	Administration Building: Office, sales, storage, revenue counting		-	-
30.02	Light Maintenance Facility		-	-
30.03	Heavy Maintenance Facility		-	-
30.04	Storage or Maintenance of Way Building		-	-
30.05	Yard and Yard Track		-	-
40 SITEWORK & SPECIAL CONDITIONS			5,431	1,629
40.01	Demolition, Clearing, Earthwork		500	150
40.02	Site Utilities, Utility Relocation		1,649	495
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		41	12
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		41	12
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		1,897	569
40.07	Automobile, bus, van accessways including roads, parking lots		1,303	391
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			1,879	564
50.01	Train control and signals		-	-
50.02	Traffic signals and crossing protection		225	68
50.03	Traction power supply: substations		-	-
50.04	Traction power distribution: catenary and third rail		-	-
50.05	Communications		1,278	383
50.06	Fare collection system and equipment		170	51
50.07	Central Control		206	62
Construction Subtotal (10-50)			19,583	5,875
60 ROW, LAND, EXISTING IMPROVEMENTS			1,083	1,083
60.01	Purchase or lease of real estate		1,083	1,083
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)		
Project	Southwest Transitway - Segment BRT A-2	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	4.87	
		Stations	6	
		Quantity	Base Year Estimate (X000)	
			Base Year Allocated Contingency (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)		4.87	18,004	5,401
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	4.70	16,362	4,909
10.03	Guideway: At-grade in mixed traffic	-	-	-
10.04	Guideway: Aerial structure	0.08	1,114	334
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	0.08	529	159
10.09	Track: Direct fixation	-	-	-
10.10	Track: Embedded	-	-	-
10.11	Track: Ballasted	-	-	-
10.12	Track: Special (switches, turnouts)	-	-	-
10.13	Track: Vibration and noise dampening	-	-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		6	8,380	2,514
20.01	At-grade station, stop, shelter, mall, terminal, platform	5	5,500	1,650
20.02	Aerial station, stop, shelter, mall, terminal, platform	1	1,100	330
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development	-	-	-
20.06	Automobile parking multi-story structure	-	-	-
20.07	Elevators, escalators	-	1,780	534
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				
30.01	Administration Building: Office, sales, storage, revenue counting			
30.02	Light Maintenance Facility			
30.03	Heavy Maintenance Facility			
30.04	Storage or Maintenance of Way Building			
30.05	Yard and Yard Track			
40 SITEWORK & SPECIAL CONDITIONS			18,006	5,402
40.01	Demolition, Clearing, Earthwork		3,000	900
40.02	Site Utilities, Utility Relocation		5,140	1,542
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		129	39
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		129	39
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		5,688	1,706
40.07	Automobile, bus, van accessways including roads, parking lots		3,921	1,176
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			6,431	1,929
50.01	Train control and signals		-	-
50.02	Traffic signals and crossing protection		785	236
50.03	Traction power supply: substations		-	-
50.04	Traction power distribution: catenary and third rail		-	-
50.05	Communications		3,984	1,195
50.06	Fare collection system and equipment		1,020	306
50.07	Central Control		643	193
Construction Subtotal (10-50)			50,822	15,247
60 ROW, LAND, EXISTING IMPROVEMENTS			8,118	8,118
60.01	Purchase or lease of real estate		3,250	3,250
60.02	Relocation (freight railroad traffic)		4,868	4,868

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)		
Project	Southwest Transitway - Segment BRT A-3	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	1.54	
		Stations	4	
		Quantity	Base Year Estimate (X000)	
			Base Year Allocated Contingency (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)		1.54	1,207	362
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	0.14	465	140
10.03	Guideway: At-grade in mixed traffic	1.41	742	223
10.04	Guideway: Aerial structure	-	-	-
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	-	-	-
10.09	Track: Direct fixation			
10.10	Track: Embedded			
10.11	Track: Ballasted			
10.12	Track: Special (switches, turnouts)			
10.13	Track: Vibration and noise dampening			
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		4	4,400	1,320
20.01	At-grade station, stop, shelter, mall, terminal, platform	4	4,400	1,320
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development			
20.06	Automobile parking multi-story structure			
20.07	Elevators, escalators			
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				
30.01	Administration Building: Office, sales, storage, revenue counting			
30.02	Light Maintenance Facility			
30.03	Heavy Maintenance Facility			
30.04	Storage or Maintenance of Way Building			
30.05	Yard and Yard Track			
40 SITEWORK & SPECIAL CONDITIONS			9,886	2,966
40.01	Demolition, Clearing, Earthwork		2,000	600
40.02	Site Utilities, Utility Relocation		3,088	926
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		41	12
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		57	17
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		1,251	375
40.07	Automobile, bus, van accessways including roads, parking lots		3,449	1,035
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			5,326	1,598
50.01	Train control and signals		-	-
50.02	Traffic signals and crossing protection		2,670	801
50.03	Traction power supply: substations		-	-
50.04	Traction power distribution: catenary and third rail		-	-
50.05	Communications		1,262	379
50.06	Fare collection system and equipment		1,190	357
50.07	Central Control		204	61
Construction Subtotal (10-50)			20,819	6,246
60 ROW, LAND, EXISTING IMPROVEMENTS			2,481	2,481
60.01	Purchase or lease of real estate		2,481	2,481
60.02	Relocation (freight railroad traffic)		-	-

Appendix E: LRT Alternatives

Major Capital Project Costs - Main Worksheet								(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Alternative LRT 1A						Date	10/17/06	
Location	Hennepin County, MN						Base Year	2006	
Project ID									
(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase			AA			Revenue Ops	2015		
(Design Bid Build, Design Build, CM at Risk, etc.) Contracting Method			Design Bid Build			Forecast Year	2015		
	Quantity	Base Year Estimate (x000)	Base Year Allocated Contingency (x000)	Base Year Total (x000)	Base Year Unit Cost (x000)	Base Year Percentage of Construction	Base Year Percentage of Project Total	Forecast Year Total (x000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	13.78	63,070	18,921	81,991	5,962	23%	12%	104,208	
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	-	-	-	
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	11.82	14,914	4,474	19,389	1,640	-	-	-	
10.03 Guideway: At-grade in mixed traffic	0.23	279	84	362	1,544	-	-	-	
10.04 Guideway: Aerial structure	0.34	9,011	2,703	11,714	34,925	-	-	-	
10.05 Guideway: Built-up fill	-	-	-	-	-	-	-	-	
10.06 Guideway: Underground cut & cover	0.02	1,056	317	1,373	62,368	-	-	-	
10.07 Guideway: Underground tunnel	-	-	-	-	-	-	-	-	
10.08 Guideway: Retained cut or fill	1.37	8,425	2,528	10,953	8,006	-	-	-	
10.09 Track: Direct fixation	-	775	232	1,007	-	-	-	-	
10.10 Track: Embedded	-	867	260	1,127	-	-	-	-	
10.11 Track: Ballasted	-	22,572	6,772	29,344	-	-	-	-	
10.12 Track: Special (switches, turnouts)	-	5,171	1,551	6,722	-	-	-	-	
10.13 Track: Vibration and noise dampening	-	-	-	-	-	-	-	-	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	14	27,385	8,216	35,601	2,543	10%	5%	45,247	
20.01 At-grade station, stop, shelter, mall, terminal, platform	13	14,300	4,290	18,590	1,430	-	-	-	
20.02 Aerial station, stop, shelter, mall, terminal, platform	1	1,100	330	1,430	1,430	-	-	-	
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	-	-	-	
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	-	-	-	
20.05 Joint development	-	-	-	-	-	-	-	-	
20.06 Automobile parking multi-story structure	-	10,205	3,062	13,267	-	-	-	-	
20.07 Elevators, escalators	-	1,780	534	2,314	-	-	-	-	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	13.78	38,595	11,699	50,694	3,680	14%	7%	64,430	
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	-	-	-	
30.02 Light Maintenance Facility	-	25,997	7,799	33,796	-	-	-	-	
30.03 Heavy Maintenance Facility	-	-	-	-	-	-	-	-	
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	-	-	-	
30.05 Yard and Yard Track	-	12,998	3,900	16,898	-	-	-	-	
40 SITEWORK & SPECIAL CONDITIONS	13.78	66,475	19,942	86,417	6,273	24%	13%	109,833	
40.01 Demolition, Clearing, Earthwork	-	7,000	2,100	9,100	-	-	-	-	
40.02 Site Utilities, Utility Relocation	-	15,129	4,539	19,667	-	-	-	-	
40.03 Haz. mat., contam'd soil removal/mitigation, ground water treatments	-	364	109	473	-	-	-	-	
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	364	109	473	-	-	-	-	
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	-	-	-	
40.06 Pedestrian / bike access and accommodation, landscaping	-	15,025	4,747	20,572	-	-	-	-	
40.07 Automobile, bus, van accessways including roads, parking lots	-	27,794	8,338	36,132	-	-	-	-	
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	-	-	-	
50 SYSTEMS	13.78	77,475	20,243	100,718	7,311	28%	15%	128,009	
50.01 Train control and signals	-	25,021	7,746	33,567	-	-	-	-	
50.02 Traffic signals and crossing protection	-	6,470	1,941	8,411	-	-	-	-	
50.03 Traction power supply: substations	-	13,819	4,146	17,965	-	-	-	-	
50.04 Traction power distribution: catenary and third rail	-	18,911	5,673	24,584	-	-	-	-	
50.05 Communications	-	8,256	2,477	10,733	-	-	-	-	
50.06 Fare collection system and equipment	-	2,380	714	3,094	-	-	-	-	
50.07 Central Control	-	1,818	546	2,364	-	-	-	-	
Construction Subtotal (10-50)	13.78	273,400	82,020	355,420	25,801	100%	52%	451,727	
60 ROW, LAND, EXISTING IMPROVEMENTS	13.78	16,991	16,991	33,982	2,467		5%	43,190	
60.01 Purchase or lease of real estate	-	12,123	12,123	24,247	-	-	-	-	
60.02 Relocation (freight railroad traffic)	-	4,868	4,868	9,736	-	-	-	-	
70 VEHICLES (number)	67	82,060	4,103	86,163	1,612		13%	109,510	
70.01 Light Rail	19	57,000	2,850	59,850	3,150	-	-	-	
70.02 Heavy Rail	-	-	-	-	-	-	-	-	
70.03 Commuter Rail	-	-	-	-	-	-	-	-	
70.04 Bus	38	13,378	669	14,046	370	-	-	-	
70.05 Other	-	-	-	-	-	-	-	-	
70.06 Non-revenue vehicles	-	2,182	109	2,291	-	-	-	-	
70.07 Spare parts	-	9,500	475	9,975	-	-	-	-	
80 PROFESSIONAL SERVICES	13.78	91,220	-	91,220	6,622		13%	115,938	
80.01 Preliminary Engineering	-	5,468	-	5,468	-	-	-	-	
80.02 Final Design	-	16,481	-	16,481	-	-	-	-	
80.03 Project Management for Design and Construction	-	6,798	-	6,798	-	-	-	-	
80.04 Construction Administration & Management	-	22,042	-	22,042	-	-	-	-	
80.05 Insurance	-	10,936	-	10,936	-	-	-	-	
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.	-	3,584	-	3,584	-	-	-	-	
80.07 Surveys, Testing, Investigation, Inspection	-	8,808	-	8,808	-	-	-	-	
80.08 Agency Force Account Work	-	18,103	-	18,103	-	-	-	-	
Subtotal (10-80)	13.78	463,671	103,114	566,786	41,145		83%	720,265	
90 UNALLOCATED CONTINGENCY				113,367			17%	144,673	
Subtotal (10-90)	13.78			680,143	49,374		100%	864,438	
100 FINANCE CHARGES							0%	-	
Total Project Cost (10-100)	13.78			680,143	49,374		100%	864,438	
Total Allocated Contingency as % of Base Year Estimate				22%					
Total Contingency (Allocated and Unallocated)				216,471					
Total Contingency as % of Base Year Estimate				47%					
Total Contingency as % of Base Year Total (w/o Finance Charges)				32%					
Total Contingency as % of Base Year Total Project Cost				32%					
Forecast Year Construction Cost per Mile								32,792	
Forecast Year Total Project Cost per Mile								62,752	
Professional Services as % of Construction				26%					

Major Capital Project Costs - Main Worksheet							(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Alternative LRT 2A					Date	10/17/06	
Location	Hennepin County, MN					Base Year	2006	
Project ID								
(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase			AA			Revenue Ops	2015	
(Design Bid Build, Design Build, CM at Risk, etc) Contracting Method			Design Bid Build			Forecast Year	2015	
	Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)	Base Year Total (X000)	Base Year Unit Cost (X000)	Base Year Percentage of Construction	Base Year Percentage of Project Total	Forecast Year Total (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)	15.10	84,385	25,216	109,701	7,263	27%	14%	139,426
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	-	-	-
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	11.16	14,417	4,325	18,742	1,680	-	-	-
10.03 Guideway: At-grade in mixed traffic	0.23	279	84	362	1,544	-	-	-
10.04 Guideway: Aerial structure	0.63	18,239	5,472	23,711	37,834	-	-	-
10.05 Guideway: Built-up fill	-	-	-	-	-	-	-	-
10.06 Guideway: Underground cut & cover	0.05	3,348	1,004	4,352	82,368	-	-	-
10.07 Guideway: Underground tunnel	-	-	-	-	-	-	-	-
10.08 Guideway: Retained cut or fill	3.04	16,035	4,811	20,846	6,868	-	-	-
10.09 Track: Direct fixation	-	1,913	574	2,487	-	-	-	-
10.10 Track: Embedded	-	867	260	1,127	-	-	-	-
10.11 Track: Ballasted	-	24,298	7,289	31,587	-	-	-	-
10.12 Track: Special (switches, turnouts)	-	4,990	1,497	6,487	-	-	-	-
10.13 Track: Vibration and noise dampening	-	-	-	-	-	-	-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	16	31,795	8,539	41,334	2,583	10%	5%	82,533
20.01 At-grade station, stop, shelter, mall, terminal, platform	15	16,500	4,950	21,450	1,430	-	-	-
20.02 Aerial station, stop, shelter, mall, terminal, platform	1	1,100	330	1,430	1,430	-	-	-
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	-	-	-
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	-	-	-
20.05 Joint development	-	-	-	-	-	-	-	-
20.06 Automobile parking multi-story structure	-	12,415	3,725	16,140	-	-	-	-
20.07 Elevators, escalators	-	1,780	534	2,314	-	-	-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	15.10	38,995	11,699	50,694	3,056	12%	7%	64,430
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	-	-	-
30.02 Light Maintenance Facility	-	25,997	7,799	33,796	-	-	-	-
30.03 Heavy Maintenance Facility	-	-	-	-	-	-	-	-
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	-	-	-
30.05 Yard and Yard Track	-	12,998	3,900	16,898	-	-	-	-
40 SITEWORK & SPECIAL CONDITIONS	15.10	74,027	22,208	96,235	6,371	24%	12%	122,311
40.01 Demolition, Clearing, Earthwork	-	7,500	2,250	9,750	-	-	-	-
40.02 Site Utilities, Utility Relocation	-	21,065	6,319	27,384	-	-	-	-
40.03 Haz. mat., contam'd soil removal/mitigation, ground water treatments	-	486	146	631	-	-	-	-
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	399	120	518	-	-	-	-
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	-	-	-
40.06 Pedestrian / bike access and accommodation, landscaping	-	14,589	4,377	18,966	-	-	-	-
40.07 Automobile, bus, van accessways including roads, parking lots	-	29,900	8,997	38,897	-	-	-	-
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	-	-	-
50 SYSTEMS	15.10	85,177	25,653	110,730	7,331	27%	14%	140,734
50.01 Train control and signals	-	28,312	8,493	36,805	-	-	-	-
50.02 Traffic signals and crossing protection	-	6,920	2,076	8,996	-	-	-	-
50.03 Traction power supply: substations	-	15,153	4,546	19,699	-	-	-	-
50.04 Traction power distribution: catenary and third rail	-	20,735	6,221	26,956	-	-	-	-
50.05 Communications	-	9,343	2,803	12,146	-	-	-	-
50.06 Fare collection system and equipment	-	2,720	816	3,536	-	-	-	-
50.07 Central Control	-	1,994	598	2,592	-	-	-	-
Construction Subtotal (10-50)	15.10	314,379	94,314	408,693	27,058	100%	53%	519,435
60 ROW, LAND, EXISTING IMPROVEMENTS	15.10	19,825	19,825	39,651	2,625		5%	50,395
60.01 Purchase or lease of real estate	-	14,958	14,958	29,915	-	-	-	-
60.02 Relocation (freight railroad traffic)	-	4,868	4,868	9,736	-	-	-	-
70 VEHICLES (number)	61	89,974	4,499	94,473	1,549		12%	120,072
70.01 Light Rail	21	63,000	3,150	66,150	3,150	-	-	-
70.02 Heavy Rail	-	-	-	-	-	-	-	-
70.03 Commuter Rail	-	-	-	-	-	-	-	-
70.04 Bus	40	14,082	704	14,786	370	-	-	-
70.05 Other	-	-	-	-	-	-	-	-
70.06 Non-revenue vehicles	-	2,893	120	3,013	-	-	-	-
70.07 Spare parts	-	10,500	525	11,025	-	-	-	-
80 PROFESSIONAL SERVICES	15.10	104,760	-	104,760	6,936		13%	133,147
80.01 Preliminary Engineering	-	6,288	-	6,288	-	-	-	-
80.02 Final Design	-	17,717	-	17,717	-	-	-	-
80.03 Project Management for Design and Construction	-	7,782	-	7,782	-	-	-	-
80.04 Construction Administration & Management	-	25,349	-	25,349	-	-	-	-
80.05 Insurance	-	12,575	-	12,575	-	-	-	-
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.	-	4,135	-	4,135	-	-	-	-
80.07 Surveys, Testing, Investigation, Inspection	-	10,070	-	10,070	-	-	-	-
80.08 Agency Force Account Work	-	20,845	-	20,845	-	-	-	-
Subtotal (10-80)	15.10	528,940	119,638	647,578	42,874		80%	820,049
90 UNALLOCATED CONTINGENCY				129,516			17%	164,510
Subtotal (10-90)	15.10			777,093	51,448		100%	987,659
100 FINANCE CHARGES							0%	-
Total Project Cost (10-100)	15.10			777,093	51,448		100%	987,659
Total Allocated Contingency as % of Base Year Estimate								22%
Total Contingency (Allocated and Unallocated)					248,154			
Total Contingency as % of Base Year Estimate								47%
Total Contingency as % of Base Year Total (w/o Finance Charges)								32%
Total Contingency as % of Base Year Total Project Cost								32%
Forecast Year Construction Cost per Mile								34,390
Forecast Year Total Project Cost per Mile								65,389
Professional Services as % of Construction								26%

Major Capital Project Costs - Main Worksheet									(Rev. 6, Feb 7, 2006)
Project	Southwest Transitway - Alternative LRT 3A							Date	10/17/06
Location	Hennepin County, MN							Base Year	2006
Project ID									
(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase			AA				Revenue Ops	2015	
(Design Bid Build, Design Build, CM at Risk, etc) Contracting Method			Design Bid Build				Forecast Year	2015	
	Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)	Base Year Total (X000)	Base Year Unit Cost (X000)	Base Year Percentage of Construction	Base Year Percentage of Project Total	Forecast Year Total (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	15.73	100,025	30,008	130,033	8,267	28%	14%	165,267	
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	-	-	-	
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	10.98	14,047	4,214	18,260	1,664	-	-	-	
10.03 Guideway: At-grade in mixed traffic	0.43	515	155	670	1,544	-	-	-	
10.04 Guideway: Aerial structure	0.92	27,569	8,271	35,840	38,905	-	-	-	
10.05 Guideway: Built-up fill	-	-	-	-	-	-	-	-	
10.06 Guideway: Underground cut & cover	0.06	3,864	1,159	5,023	82,368	-	-	-	
10.07 Guideway: Underground tunnel	-	-	-	-	-	-	-	-	
10.08 Guideway: Retained cut or fill	3.34	19,011	5,703	24,714	7,407	-	-	-	
10.09 Track: Direct fixation	-	2,898	869	3,767	-	-	-	-	
10.10 Track: Embedded	-	1,603	481	2,083	-	-	-	-	
10.11 Track: Ballasted	-	24,642	7,393	32,034	-	-	-	-	
10.12 Track: Special (switches, turnouts)	-	5,878	1,763	7,641	-	-	-	-	
10.13 Track: Vibration and noise dampening	-	-	-	-	-	-	-	-	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	17	40,665	12,170	52,735	3,102	11%	6%	67,024	
20.01 At-grade station, stop, shelter, mall, terminal, platform	16	17,600	5,280	22,880	1,430	-	-	-	
20.02 Aerial station, stop, shelter, mall, terminal, platform	1	1,100	330	1,430	1,430	-	-	-	
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	-	-	-	
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	-	-	-	
20.05 Joint development	-	-	-	-	-	-	-	-	
20.06 Automobile parking multi-story structure	-	20,085	6,026	26,111	-	-	-	-	
20.07 Elevators, escalators	-	1,780	534	2,314	-	-	-	-	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	15.73	38,995	11,659	50,654	3,223	11%	6%	64,430	
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	-	-	-	
30.02 Light Maintenance Facility	-	25,997	7,799	33,796	-	-	-	-	
30.03 Heavy Maintenance Facility	-	-	-	-	-	-	-	-	
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	-	-	-	
30.05 Yard and Yard Track	-	12,998	3,900	16,898	-	-	-	-	
40 SITEWORK & SPECIAL CONDITIONS	15.73	86,884	26,065	112,949	7,181	24%	12%	143,554	
40.01 Demolition, Clearing, Earthwork	-	8,000	2,400	10,400	-	-	-	-	
40.02 Site Utilities, Utility Relocation	-	24,001	7,200	31,201	-	-	-	-	
40.03 Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	950	285	1,235	-	-	-	-	
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	863	259	1,122	-	-	-	-	
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	-	-	-	
40.06 Pedestrian / bike access and accommodation, landscaping	-	15,252	4,576	19,828	-	-	-	-	
40.07 Automobile, bus, van accessways including roads, parking lots	-	37,817	11,345	49,163	-	-	-	-	
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	-	-	-	
50 SYSTEMS	15.73	93,263	27,979	121,242	7,708	26%	13%	154,094	
50.01 Train control and signals	-	29,566	8,870	38,436	-	-	-	-	
50.02 Traffic signals and crossing protection	-	11,355	3,407	14,762	-	-	-	-	
50.03 Traction power supply: substations	-	15,824	4,747	20,571	-	-	-	-	
50.04 Traction power distribution: catenary and third rail	-	21,654	6,496	28,150	-	-	-	-	
50.05 Communications	-	9,891	2,967	12,859	-	-	-	-	
50.06 Fare collection system and equipment	-	2,890	867	3,757	-	-	-	-	
50.07 Central Control	-	2,082	625	2,707	-	-	-	-	
Construction Subtotal (10-50)	15.73	359,732	107,920	467,652	29,733	100%	51%	594,369	
60 ROW, LAND, EXISTING IMPROVEMENTS	15.73	31,246	31,246	62,492	3,973		7%	79,425	
60.01 Purchase or lease of real estate	-	26,378	26,378	52,756	-	-	-	-	
60.02 Relocation (freight railroad traffic)	-	4,868	4,868	9,736	-	-	-	-	
70 VEHICLES (number)	66	101,277	5,064	106,341	1,611		12%	135,156	
70.01 Light Rail	24	72,000	3,600	75,600	3,150	-	-	-	
70.02 Heavy Rail	-	-	-	-	-	-	-	-	
70.03 Commuter Rail	-	-	-	-	-	-	-	-	
70.04 Bus	42	14,786	739	15,525	370	-	-	-	
70.05 Other	-	-	-	-	-	-	-	-	
70.06 Non-revenue vehicles	-	2,491	125	2,616	-	-	-	-	
70.07 Spare parts	-	12,000	600	12,600	-	-	-	-	
80 PROFESSIONAL SERVICES	15.73	122,357	-	122,357	7,779		13%	155,512	
80.01 Preliminary Engineering	-	7,195	-	7,195	-	-	-	-	
80.02 Final Design	-	20,325	-	20,325	-	-	-	-	
80.03 Project Management for Design and Construction	-	9,145	-	9,145	-	-	-	-	
80.04 Construction Administration & Management	-	29,091	-	29,091	-	-	-	-	
80.05 Insurance	-	14,389	-	14,389	-	-	-	-	
80.06 Legal Permits, Review Fees by other agencies, cities, etc.	-	5,160	-	5,160	-	-	-	-	
80.07 Surveys, Testing, Investigation, Inspection	-	12,345	-	12,345	-	-	-	-	
80.08 Agency Force Account Work	-	24,709	-	24,709	-	-	-	-	
Subtotal (10-80)	15.73	614,613	144,230	758,842	48,246		83%	964,463	
90 UNALLOCATED CONTINGENCY				151,758			17%	192,893	
Subtotal (10-90)	15.73			910,611	57,895		100%	1,157,356	
100 FINANCE CHARGES							0%	-	
Total Project Cost (10-100)	15.73			910,611	57,895		100%	1,157,356	
Total Allocated Contingency as % of Base Year Estimate								23%	
Total Contingency (Allocated and Unallocated)								295,998	
Total Contingency as % of Base Year Estimate								48%	
Total Contingency as % of Base Year Total (w/o Finance Charges)								33%	
Total Contingency as % of Base Year Total Project Cost								35%	
Forecast Year Construction Cost per Mile								37,789	
Forecast Year Total Project Cost per Mile								73,583	
Professional Services as % of Construction								26%	

Major Capital Project Costs - Main Worksheet								(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Alternative LRT 4A						Date	10/17/06	
Location	Hennepin County, MN						Base Year	2006	
Project ID									
(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase			AA			Revenue Ops	2015		
(Design Bid Build, Design Build, CM at Risk, etc) Contracting Method			Design Bid Build			Forecast Year	2015		
	Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)	Base Year Total (X000)	Base Year Unit Cost (X000)	Base Year Percentage of Construction	Base Year Percentage of Project Total	Forecast Year Total (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	9.10	44,070	13,221	57,291	6,297	22%	12%	72,815	
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	-	-	-	
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	7.68	9,873	2,962	12,835	1,672	-	-	-	
10.03 Guideway: At-grade in mixed traffic	0.23	279	84	362	1,544	-	-	-	
10.04 Guideway: Aerial structure	0.31	8,111	2,433	10,544	34,345	-	-	-	
10.05 Guideway: Built-up fill	-	-	-	-	-	-	-	-	
10.06 Guideway: Underground cut & cover	0.02	1,056	317	1,373	82,368	-	-	-	
10.07 Guideway: Underground tunnel	-	-	-	-	-	-	-	-	
10.08 Guideway: Retained cut or fill	0.86	5,166	1,550	6,715	7,788	-	-	-	
10.09 Track: Direct fixation	-	775	232	1,007	-	-	-	-	
10.10 Track: Embedded	-	867	260	1,127	-	-	-	-	
10.11 Track: Ballasted	-	14,671	4,401	19,072	-	-	-	-	
10.12 Track: Special (switches, turnouts)	-	3,273	982	4,255	-	-	-	-	
10.13 Track: Vibration and noise dampening	-	-	-	-	-	-	-	-	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	11	13,880	4,164	18,044	1,640	7%	4%	22,933	
20.01 At-grade station, stop, shelter, mail, terminal, platform	10	11,000	3,300	14,300	1,430	-	-	-	
20.02 Aerial station, stop, shelter, mail, terminal, platform	1	1,100	330	1,430	1,430	-	-	-	
20.03 Underground station, stop, shelter, mail, terminal, platform	-	-	-	-	-	-	-	-	
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	-	-	-	
20.05 Joint development	-	-	-	-	-	-	-	-	
20.06 Automobile parking multi-story structure	-	-	-	-	-	-	-	-	
20.07 Elevators, escalators	-	1,780	534	2,314	-	-	-	-	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	9.10	38,996	11,898	50,894	5,572	20%	10%	64,430	
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	-	-	-	
30.02 Light Maintenance Facility	-	25,997	7,799	33,796	-	-	-	-	
30.03 Heavy Maintenance Facility	-	-	-	-	-	-	-	-	
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	-	-	-	
30.05 Yard and Yard Track	-	12,998	3,900	16,898	-	-	-	-	
40 SITEWORK & SPECIAL CONDITIONS	9.10	50,746	15,224	65,969	7,250	25%	13%	80,845	
40.01 Demolition, Clearing, Earthwork	-	5,500	1,650	7,150	-	-	-	-	
40.02 Site Utilities, Utility Relocation	-	10,190	3,057	13,247	-	-	-	-	
40.03 Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	240	72	312	-	-	-	-	
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	240	72	312	-	-	-	-	
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	-	-	-	
40.06 Pedestrian / bike access and accommodation, landscaping	-	10,468	3,140	13,609	-	-	-	-	
40.07 Automobile, bus, van accessways including roads, parking lots	-	24,107	7,232	31,339	-	-	-	-	
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	-	-	-	
50 SYSTEMS	9.10	51,392	15,418	66,810	7,343	26%	13%	84,913	
50.01 Train control and signals	-	17,055	5,116	22,171	-	-	-	-	
50.02 Traffic signals and crossing protection	-	5,220	1,566	6,786	-	-	-	-	
50.03 Traction power supply: substations	-	9,128	2,738	11,866	-	-	-	-	
50.04 Traction power distribution: catenary and third rail	-	12,491	3,747	16,238	-	-	-	-	
50.05 Communications	-	4,428	1,329	5,757	-	-	-	-	
50.06 Fare collection system and equipment	-	1,070	561	2,431	-	-	-	-	
50.07 Central Control	-	1,201	360	1,561	-	-	-	-	
Construction Subtotal (10-50)	9.10	199,083	59,725	258,808	28,445	100%	52%	328,937	
60 ROW, LAND, EXISTING IMPROVEMENTS	9.10	13,742	13,742	27,483	3,021		6%	34,930	
60.01 Purchase or lease of real estate	-	8,874	8,874	17,747	-	-	-	-	
60.02 Relocation (freight railroad traffic)	-	4,868	4,868	9,736	-	-	-	-	
70 VEHICLES (number)	56	58,931	2,947	61,878	1,105		12%	78,644	
70.01 Light Rail	12	36,000	1,800	37,800	3,150	-	-	-	
70.02 Heavy Rail	-	-	-	-	-	-	-	-	
70.03 Commuter Rail	-	-	-	-	-	-	-	-	
70.04 Bus	44	15,490	774	16,264	370	-	-	-	
70.05 Other	-	-	-	-	-	-	-	-	
70.06 Non-revenue vehicles	-	1,441	72	1,513	-	-	-	-	
70.07 Spare parts	-	6,000	300	6,300	-	-	-	-	
80 PROFESSIONAL SERVICES	9.10	66,794	-	66,794	7,341		13%	84,893	
80.01 Preliminary Engineering	-	3,982	-	3,982	-	-	-	-	
80.02 Final Design	-	11,270	-	11,270	-	-	-	-	
80.03 Project Management for Design and Construction	-	4,983	-	4,983	-	-	-	-	
80.04 Construction Administration & Management	-	16,064	-	16,064	-	-	-	-	
80.05 Insurance	-	7,963	-	7,963	-	-	-	-	
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.	-	2,678	-	2,678	-	-	-	-	
80.07 Surveys, Testing, Investigation, Inspection	-	6,534	-	6,534	-	-	-	-	
80.08 Agency Force Account Work	-	13,319	-	13,319	-	-	-	-	
Subtotal (10-80)	9.10	338,560	76,413	414,973	45,807		83%	527,404	
90 UNALLOCATED CONTINGENCY				82,593			17%	105,481	
Subtotal (10-90)	9.10			497,566	54,728		100%	632,885	
100 FINANCE CHARGES							0%	-	
Total Project Cost (10-100)	9.10			497,566	54,728		100%	632,885	
Total Allocated Contingency as % of Base Year Estimate								23%	
Total Contingency (Allocated and Unallocated)				159,406				47%	
Total Contingency as % of Base Year Estimate								32%	
Total Contingency as % of Base Year Total (w/o Finance Charges)								32%	
Total Contingency as % of Base Year Total Project Cost								32%	
Forecast Year Construction Cost per Mile								36,152	
Forecast Year Total Project Cost per Mile								69,558	
Professional Services as % of Construction								26%	

Major Capital Project Costs - Main Worksheet									(Rev. 6, Feb 7, 2006)
Project	Southwest Transitway - Alternative LRT 1C							Date	10/17/06
Location	Hennepin County, MN							Base Year	2006
Project ID									
(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase			AA				Revenue Ops	2015	
(Design Bid Build, Design Build, CM at Risk, etc) Contracting Method			Design Bid Build				Forecast Year	2015	
	Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)	Base Year Total (X000)	Base Year Unit Cost (X000)	Base Year Percentage of Construction	Base Year Percentage of Project Total	Forecast Year Total (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	14.64	124,934	37,480	162,414	11,096	33%	18%	206,423	
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-				
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	9.56	14,921	4,476	19,397	2,028				
10.03 Guideway: At-grade in mixed traffic	1.40	1,661	498	2,159	1,544				
10.04 Guideway: Aerial structure	0.56	17,132	5,140	22,272	39,608				
10.05 Guideway: Built-up fill	-	-	-	-	-				
10.06 Guideway: Underground cut & cover	0.59	39,988	11,696	50,684	85,664				
10.07 Guideway: Underground tunnel	-	-	-	-	-				
10.08 Guideway: Retained cut or fill	2.52	15,278	4,563	19,861	7,878				
10.09 Track: Direct fixation	-	4,348	1,304	5,652					
10.10 Track: Embedded	-	7,496	2,249	9,744					
10.11 Track: Ballasted	-	19,316	5,795	25,111					
10.12 Track: Special (switches, turnouts)	-	5,795	1,738	7,533					
10.13 Track: Vibration and noise dampening	-	-	-	-	-				
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	17	33,140	9,942	43,082	2,534	9%	5%	54,756	
20.01 At-grade station, stop, shelter, mall, terminal, platform	15	16,500	4,950	21,450	1,430				
20.02 Aerial station, stop, shelter, mall, terminal, platform	2	2,200	660	2,860	1,430				
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-				
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-				
20.05 Joint development	-	-	-	-	-				
20.06 Automobile parking multi-story structure	-	9,100	2,730	11,830					
20.07 Elevators, escalators	-	5,340	1,602	6,942					
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	14.64	38,995	11,659	50,654	3,463	10%	6%	64,430	
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-				
30.02 Light Maintenance Facility	-	25,997	7,799	33,796					
30.03 Heavy Maintenance Facility	-	-	-	-	-				
30.04 Storage or Maintenance of Way Building	-	-	-	-	-				
30.05 Yard and Yard Track	-	12,998	3,900	16,898					
40 SITEWORK & SPECIAL CONDITIONS	14.64	89,458	26,837	116,295	7,945	24%	13%	147,807	
40.01 Demolition, Clearing, Earthwork	-	8,500	2,550	11,050					
40.02 Site Utilities, Utility Relocation	-	22,505	6,751	29,256					
40.03 Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	386	116	502					
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	549	165	714					
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-				
40.06 Pedestrian / bike access and accommodation, landscaping	-	19,748	5,924	25,672					
40.07 Automobile, bus, van accessways including roads, parking lots	-	37,769	11,331	49,100					
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-				
50 SYSTEMS	14.64	87,934	26,380	114,314	7,810	23%	13%	145,290	
50.01 Train control and signals	-	27,435	8,231	35,666					
50.02 Traffic signals and crossing protection	-	8,670	2,601	11,271					
50.03 Traction power supply: substations	-	14,684	4,405	19,089					
50.04 Traction power distribution: catenary and third rail	-	20,175	6,052	26,227					
50.05 Communications	-	11,979	3,594	15,572					
50.06 Fare collection system and equipment	-	3,060	918	3,978					
50.07 Central Control	-	1,932	580	2,512					
Construction Subtotal (10-50)	14.64	374,461	112,338	486,799	33,259	100%	55%	618,705	
60 ROW, LAND, EXISTING IMPROVEMENTS	14.64	10,480	10,480	20,961	1,432		2%	26,640	
60.01 Purchase or lease of real estate	-	10,480	10,480	20,961					
60.02 Relocation (freight railroad traffic)	-	-	-	-	-				
70 VEHICLES (number)	62	99,696	4,985	104,681	1,688		12%	133,046	
70.01 Light Rail	24	72,000	3,600	75,600	3,150				
70.02 Heavy Rail	-	-	-	-	-				
70.03 Commuter Rail	-	-	-	-	-				
70.04 Bus	38	13,378	669	14,046	370				
70.05 Other	-	-	-	-	-				
70.06 Non-revenue vehicles	-	2,318	116	2,434					
70.07 Spare parts	-	12,000	600	12,600					
80 PROFESSIONAL SERVICES	14.64	120,467	-	120,467	8,230		14%	153,110	
80.01 Preliminary Engineering	-	7,489	-	7,489					
80.02 Final Design	-	20,822	-	20,822					
80.03 Project Management for Design and Construction	-	8,801	-	8,801					
80.04 Construction Administration & Management	-	30,062	-	30,062					
80.05 Insurance	-	14,978	-	14,978					
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.	-	4,269	-	4,269					
80.07 Surveys, Testing, Investigation, Inspection	-	10,531	-	10,531					
80.08 Agency Force Account Work	-	23,516	-	23,516					
Subtotal (10-80)	14.64	605,105	127,803	732,908	50,073		83%	931,501	
90 UNALLOCATED CONTINGENCY				146,582			17%	186,300	
Subtotal (10-90)	14.64			879,490	60,088		100%	1,117,801	
100 FINANCE CHARGES							0%	-	
Total Project Cost (10-100)	14.64			879,490	60,088		100%	1,117,801	
Total Allocated Contingency as % of Base Year Estimate								21%	
Total Contingency (Allocated and Unallocated)								274,385	
Total Contingency as % of Base Year Estimate								45%	
Total Contingency as % of Base Year Total (w/o Finance Charges)								31%	
Total Contingency as % of Base Year Total Project Cost								31%	
Forecast Year Construction Cost per Mile								42,271	
Forecast Year Total Project Cost per Mile								76,370	
Professional Services as % of Construction								25%	

Major Capital Project Costs - Main Worksheet								(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Alternative LRT 2C						Date	10/17/06	
Location	Hennepin County, MN						Base Year	2006	
Project ID									
(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase				AA		Revenue Ops	2015		
(Design Bid Build, Design Build, CM at Risk, etc) Contracting Method				Design Bid Build		Forecast Year	2015		
	Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)	Base Year Total (X000)	Base Year Unit Cost (X000)	Base Year Percentage of Construction	Base Year Percentage of Project Total	Forecast Year Total (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	15.97	146,249	43,875	190,124	11,908	35%	19%	241,641	
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	-	-	-	
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	8.90	14,424	4,327	18,751	2,107	-	-	-	
10.03 Guideway: At-grade in mixed traffic	1.40	1,661	498	2,159	1,544	-	-	-	
10.04 Guideway: Aerial structure	0.85	26,360	7,908	34,269	40,146	-	-	-	
10.05 Guideway: Built-up fill	-	-	-	-	-	-	-	-	
10.06 Guideway: Underground cut & cover	0.63	41,280	12,384	53,664	85,474	-	-	-	
10.07 Guideway: Underground tunnel	-	-	-	-	-	-	-	-	
10.08 Guideway: Retained cut or fill	4.19	22,888	6,866	29,754	7,105	-	-	-	
10.09 Track: Direct fixation	-	5,486	1,646	7,132	-	-	-	-	
10.10 Track: Embedded	-	7,496	2,249	9,744	-	-	-	-	
10.11 Track: Ballasted	-	21,041	6,312	27,354	-	-	-	-	
10.12 Track: Special (switches, turnouts)	-	5,614	1,684	7,298	-	-	-	-	
10.13 Track: Vibration and noise dampening	-	-	-	-	-	-	-	-	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	19	38,200	11,460	49,660	2,614	9%	5%	63,116	
20.01 At-grade station, stop, shelter, mall, terminal, platform	17	18,700	5,610	24,310	1,430	-	-	-	
20.02 Aerial station, stop, shelter, mall, terminal, platform	2	2,200	660	2,860	1,430	-	-	-	
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	-	-	-	
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	-	-	-	
20.05 Joint development	-	-	-	-	-	-	-	-	
20.06 Automobile parking multi-story structure	-	11,960	3,588	15,548	-	-	-	-	
20.07 Elevators, escalators	-	5,340	1,602	6,942	-	-	-	-	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMN. BLDGS	15.97	38,995	11,699	50,694	3,175	9%	5%	64,430	
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	-	-	-	
30.02 Light Maintenance Facility	-	25,997	7,799	33,796	-	-	-	-	
30.03 Heavy Maintenance Facility	-	-	-	-	-	-	-	-	
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	-	-	-	
30.05 Yard and Yard Track	-	12,998	3,900	16,898	-	-	-	-	
40 SITEWORK & SPECIAL CONDITIONS	15.97	96,980	29,094	126,074	7,897	23%	13%	160,236	
40.01 Demolition, Clearing, Earthwork	-	9,000	2,700	11,700	-	-	-	-	
40.02 Site Utilities, Utility Relocation	-	28,441	8,532	36,974	-	-	-	-	
40.03 Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	508	153	661	-	-	-	-	
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	584	175	759	-	-	-	-	
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	-	-	-	
40.06 Pedestrian / bike access and accommodation, landscaping	-	18,512	5,554	24,066	-	-	-	-	
40.07 Automobile, bus, van accessways including roads, parking lots	-	39,934	11,980	51,914	-	-	-	-	
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	-	-	-	
50 SYSTEMS	15.97	95,636	28,691	124,327	7,787	23%	13%	158,015	
50.01 Train control and signals	-	29,926	8,978	38,904	-	-	-	-	
50.02 Traffic signals and crossing protection	-	9,120	2,736	11,856	-	-	-	-	
50.03 Traction power supply: substations	-	16,017	4,805	20,822	-	-	-	-	
50.04 Traction power distribution: catenary and third rail	-	21,999	6,600	28,599	-	-	-	-	
50.05 Communications	-	13,066	3,920	16,986	-	-	-	-	
50.06 Fare collection system and equipment	-	3,400	1,020	4,420	-	-	-	-	
50.07 Central Control	-	2,107	632	2,740	-	-	-	-	
Construction Subtotal (10-60)	15.97	416,060	124,818	540,878	33,877	100%	55%	687,438	
60 ROW, LAND, EXISTING IMPROVEMENTS	15.97	13,315	13,315	26,629	1,668		3%	33,845	
60.01 Purchase or lease of real estate	-	13,315	13,315	26,629	-	-	-	-	
60.02 Relocation (freight railroad traffic)	-	-	-	-	-	-	-	-	
70 VEHICLES (number)	66	107,611	5,381	112,991	1,712		12%	143,608	
70.01 Light Rail	26	78,000	3,900	81,900	3,150	-	-	-	
70.02 Heavy Rail	-	-	-	-	-	-	-	-	
70.03 Commuter Rail	-	-	-	-	-	-	-	-	
70.04 Bus	40	14,082	704	14,786	370	-	-	-	
70.05 Other	-	-	-	-	-	-	-	-	
70.06 Non-revenue vehicles	-	2,529	126	2,655	-	-	-	-	
70.07 Spare parts	-	13,000	650	13,650	-	-	-	-	
80 PROFESSIONAL SERVICES	15.97	134,193	-	134,193	8,405		14%	170,555	
80.01 Preliminary Engineering	-	8,321	-	8,321	-	-	-	-	
80.02 Final Design	-	23,088	-	23,088	-	-	-	-	
80.03 Project Management for Design and Construction	-	9,797	-	9,797	-	-	-	-	
80.04 Construction Administration & Management	-	33,418	-	33,418	-	-	-	-	
80.05 Insurance	-	16,642	-	16,642	-	-	-	-	
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.	-	4,826	-	4,826	-	-	-	-	
80.07 Surveys, Testing, Investigation, Inspection	-	11,805	-	11,805	-	-	-	-	
80.08 Agency Force Account Work	-	26,295	-	26,295	-	-	-	-	
Subtotal (10-90)	15.97	671,179	143,513	814,692	51,028		83%	1,035,446	
90 UNALLOCATED CONTINGENCY				162,938			17%	207,089	
Subtotal (10-90)	15.97			977,630	61,233		100%	1,242,535	
100 FINANCE CHARGES							0%	-	
Total Project Cost (10-100)	15.97			977,630	61,233		100%	1,242,535	
Total Allocated Contingency as % of Base Year Estimate								21%	
Total Contingency (Allocated and Unallocated)								306,452	
Total Contingency as % of Base Year Estimate								46%	
Total Contingency as % of Base Year Total (w/o Finance Charges)								31%	
Total Contingency as % of Base Year Total Project Cost								31%	
Forecast Year Construction Cost per Mile								43,057	
Forecast Year Total Project Cost per Mile								77,825	
Professional Services as % of Construction								25%	

Major Capital Project Costs - Main Worksheet								(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Alternative LRT 3C						Date	10/17/06	
Location	Hennepin County, MN						Base Year	2006	
Project ID									
(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase			AA			Revenue Ops	2015		
(Design Bid Build, Design Build, CM at Risk, etc) Contracting Method			Design Bid Build			Forecast Year	2015		
	Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)	Base Year Total (X000)	Base Year Unit Cost (X000)	Base Year Percentage of Construction	Base Year Percentage of Project Total	Forecast Year Total (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	16.59	161,889	48,567	210,455	12,686	35%	19%	267,482	
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	-	-	-	
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	8.72	14,063	4,216	18,269	2,095	-	-	-	
10.03 Guideway: At-grade in mixed traffic	1.60	1,897	569	2,466	1,544	-	-	-	
10.04 Guideway: Aerial structure	1.15	35,690	10,707	46,398	40,412	-	-	-	
10.05 Guideway: Built-up fill	-	-	-	-	-	-	-	-	
10.06 Guideway: Underground cut & cover	0.64	41,796	12,539	54,335	85,434	-	-	-	
10.07 Guideway: Underground tunnel	-	-	-	-	-	-	-	-	
10.08 Guideway: Retained cut or fill	4.49	25,863	7,759	33,622	7,489	-	-	-	
10.09 Track: Direct fixation	-	6,471	1,941	8,412	-	-	-	-	
10.10 Track: Embedded	-	8,232	2,469	10,701	-	-	-	-	
10.11 Track: Ballasted	-	21,385	6,416	27,801	-	-	-	-	
10.12 Track: Special (switches, turnouts)	-	6,502	1,950	8,452	-	-	-	-	
10.13 Track: Vibration and noise dampening	-	-	-	-	-	-	-	-	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	20	46,775	14,033	60,808	3,040	10%	5%	77,284	
20.01 At-grade station, stop, shelter, mall, terminal, platform	18	19,800	5,940	25,740	1,430	-	-	-	
20.02 Aerial station, stop, shelter, mall, terminal, platform	2	2,200	660	2,860	1,430	-	-	-	
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	-	-	-	
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	-	-	-	
20.05 Joint development	-	-	-	-	-	-	-	-	
20.06 Automobile parking multi-story structure	-	19,435	5,831	25,266	-	-	-	-	
20.07 Elevators, escalators	-	5,340	1,602	6,942	-	-	-	-	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMN. BLDGS	16.59	38,995	11,699	50,694	3,056	8%	5%	64,430	
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	-	-	-	
30.02 Light Maintenance Facility	-	25,997	7,799	33,796	-	-	-	-	
30.03 Heavy Maintenance Facility	-	-	-	-	-	-	-	-	
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	-	-	-	
30.05 Yard and Yard Track	-	12,998	3,900	16,898	-	-	-	-	
40 SITEWORK & SPECIAL CONDITIONS	16.59	109,927	32,978	142,905	8,614	24%	13%	181,627	
40.01 Demolition, Clearing, Earthwork	-	9,500	2,850	12,350	-	-	-	-	
40.02 Site Utilities, Utility Relocation	-	31,377	9,413	40,790	-	-	-	-	
40.03 Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	973	292	1,265	-	-	-	-	
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	1,049	315	1,363	-	-	-	-	
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	-	-	-	
40.06 Pedestrian / bike access and accommodation, landscaping	-	19,175	5,753	24,928	-	-	-	-	
40.07 Automobile, bus, van accessways including roads, parking lots	-	47,883	14,356	62,209	-	-	-	-	
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	-	-	-	
50 SYSTEMS	16.59	103,722	31,117	134,838	8,128	22%	12%	171,375	
50.01 Train control and signals	-	31,181	9,354	40,535	-	-	-	-	
50.02 Traffic signals and crossing protection	-	13,555	4,067	17,622	-	-	-	-	
50.03 Traction power supply: substations	-	16,688	5,006	21,695	-	-	-	-	
50.04 Traction power distribution: catenary and third rail	-	22,918	6,875	29,793	-	-	-	-	
50.05 Communications	-	13,614	4,084	17,698	-	-	-	-	
50.06 Fare collection system and equipment	-	3,570	1,071	4,641	-	-	-	-	
50.07 Central Control	-	2,196	659	2,855	-	-	-	-	
Construction Subtotal (10-60)	16.59	461,308	138,382	599,700	36,148	100%	54%	762,199	
60 ROW, LAND, EXISTING IMPROVEMENTS	16.59	24,735	24,735	49,470	2,982		4%	62,875	
60.01 Purchase or lease of real estate	-	24,735	24,735	49,470	-	-	-	-	
60.02 Relocation (freight railroad traffic)	-	-	-	-	-	-	-	-	
70 VEHICLES (number)	70	116,414	5,771	121,184	1,731		11%	154,021	
70.01 Light Rail	28	84,000	4,200	88,200	3,150	-	-	-	
70.02 Heavy Rail	-	-	-	-	-	-	-	-	
70.03 Commuter Rail	-	-	-	-	-	-	-	-	
70.04 Bus	42	14,786	739	15,525	370	-	-	-	
70.05 Other	-	-	-	-	-	-	-	-	
70.06 Non-revenue vehicles	-	2,628	131	2,759	-	-	-	-	
70.07 Spare parts	-	14,000	700	14,700	-	-	-	-	
80 PROFESSIONAL SERVICES	16.59	151,584	-	151,584	9,137		14%	192,658	
80.01 Preliminary Engineering	-	9,226	-	9,226	-	-	-	-	
80.02 Final Design	-	25,621	-	25,621	-	-	-	-	
80.03 Project Management for Design and Construction	-	11,122	-	11,122	-	-	-	-	
80.04 Construction Administration & Management	-	37,152	-	37,152	-	-	-	-	
80.05 Insurance	-	18,452	-	18,452	-	-	-	-	
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.	-	5,850	-	5,850	-	-	-	-	
80.07 Surveys, Testing, Investigation, Inspection	-	14,008	-	14,008	-	-	-	-	
80.08 Agency Force Account Work	-	30,152	-	30,152	-	-	-	-	
Subtotal (10-90)	16.59	753,040	168,898	921,938	55,672		83%	1,171,753	
90 UNALLOCATED CONTINGENCY				184,388	66,686		17%	234,351	
Subtotal (10-90)	16.59			1,106,326	66,686		100%	1,406,103	
100 FINANCE CHARGES				-	-		0%	-	
Total Project Cost (10-100)	16.59			1,106,326	66,686		100%	1,406,103	
Total Allocated Contingency as % of Base Year Estimate								22%	
Total Contingency (Allocated and Unallocated)								353,286	
Total Contingency as % of Base Year Estimate								47%	
Total Contingency as % of Base Year Total (w/o Finance Charges)								32%	
Total Contingency as % of Base Year Total Project Cost								32%	
Forecast Year Construction Cost per Mile								45,943	
Forecast Year Total Project Cost per Mile								84,756	
Professional Services as % of Construction								25%	

Major Capital Project Costs - Main Worksheet									(Rev. 6, Feb 7, 2006)
Project	Southwest Transitway - Alternative LRT 4C							Date	10/17/06
Location	Hennepin County, MN							Base Year	2006
Project ID									
(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase			AA				Revenue Ops	2015	
(Design Bid Build, Design Build, CM at Risk, etc) Contracting Method			Design Bid Build				Forecast Year	2015	
	Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)	Base Year Total (X000)	Base Year Unit Cost (X000)	Base Year Percentage of Construction	Base Year Percentage of Project Total	Forecast Year Total (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	9.96	105,933	31,780	137,714	13,827	35%	20%	175,029	
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	-	-	-	
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	5.42	9,879	2,964	12,843	2,369	-	-	-	
10.03 Guideway: At-grade in mixed traffic	1.40	1,661	498	2,159	1,544	-	-	-	
10.04 Guideway: Aerial structure	0.53	16,232	4,870	21,102	39,524	-	-	-	
10.05 Guideway: Built-up fill	-	-	-	-	-	-	-	-	
10.06 Guideway: Underground cut & cover	0.59	39,988	11,696	50,684	85,664	-	-	-	
10.07 Guideway: Underground tunnel	-	-	-	-	-	-	-	-	
10.08 Guideway: Retained cut or fill	2.02	12,018	3,605	15,623	7,753	-	-	-	
10.09 Track: Direct fixation	-	4,348	1,304	5,652	-	-	-	-	
10.10 Track: Embedded	-	7,496	2,249	9,744	-	-	-	-	
10.11 Track: Ballasted	-	11,414	3,424	14,839	-	-	-	-	
10.12 Track: Special (switches, turnouts)	-	3,898	1,169	5,067	-	-	-	-	
10.13 Track: Vibration and noise dampening	-	-	-	-	-	-	-	-	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	14	20,740	6,222	26,962	1,926	7%	4%	34,268	
20.01 At-grade station, stop, shelter, mall, terminal, platform	12	13,200	3,960	17,160	1,430	-	-	-	
20.02 Aerial station, stop, shelter, mall, terminal, platform	2	2,200	660	2,860	1,430	-	-	-	
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	-	-	-	
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	-	-	-	
20.05 Joint development	-	-	-	-	-	-	-	-	
20.06 Automobile parking multi-story structure	-	-	-	-	-	-	-	-	
20.07 Elevators, escalators	-	5,340	1,602	6,942	-	-	-	-	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	9.96	38,995	11,699	50,694	5,090	13%	7%	64,430	
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	-	-	-	
30.02 Light Maintenance Facility	-	25,997	7,799	33,796	-	-	-	-	
30.03 Heavy Maintenance Facility	-	-	-	-	-	-	-	-	
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	-	-	-	
30.05 Yard and Yard Track	-	12,998	3,900	16,898	-	-	-	-	
40 SITEWORK & SPECIAL CONDITIONS	9.96	73,744	22,123	95,867	9,625	24%	14%	121,843	
40.01 Demolition, Clearing, Earthwork	-	7,000	2,100	9,100	-	-	-	-	
40.02 Site Utilities, Utility Relocation	-	17,566	5,270	22,836	-	-	-	-	
40.03 Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	263	79	342	-	-	-	-	
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	426	128	553	-	-	-	-	
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	-	-	-	
40.06 Pedestrian / bike access and accommodation, landscaping	-	14,391	4,317	18,708	-	-	-	-	
40.07 Automobile, bus, van accessways including roads, parking lots	-	34,098	10,229	44,327	-	-	-	-	
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	-	-	-	
50 SYSTEMS	9.96	61,882	18,555	80,407	8,073	21%	11%	102,195	
50.01 Train control and signals	-	18,669	5,601	24,270	-	-	-	-	
50.02 Traffic signals and crossing protection	-	7,420	2,226	9,646	-	-	-	-	
50.03 Traction power supply: substations	-	9,992	2,998	12,990	-	-	-	-	
50.04 Traction power distribution: catenary and third rail	-	13,755	4,126	17,881	-	-	-	-	
50.05 Communications	-	8,151	2,445	10,597	-	-	-	-	
50.06 Fare collection system and equipment	-	2,550	765	3,315	-	-	-	-	
50.07 Central Control	-	1,315	394	1,709	-	-	-	-	
Construction Subtotal (10-50)	9.96	301,264	90,379	391,643	39,321	100%	56%	497,765	
60 ROW, LAND, EXISTING IMPROVEMENTS	9.96	7,231	7,231	14,461	1,452		2%	18,380	
60.01 Purchase or lease of real estate	-	7,231	7,231	14,461	-	-	-	-	
60.02 Relocation (freight railroad traffic)	-	-	-	-	-	-	-	-	
70 VEHICLES (number)	61	76,568	3,828	80,396	1,318		11%	102,180	
70.01 Light Rail	17	51,000	2,550	53,550	3,150	-	-	-	
70.02 Heavy Rail	-	-	-	-	-	-	-	-	
70.03 Commuter Rail	-	-	-	-	-	-	-	-	
70.04 Bus	44	15,490	774	16,264	370	-	-	-	
70.05 Other	-	-	-	-	-	-	-	-	
70.06 Non-revenue vehicles	-	1,578	79	1,657	-	-	-	-	
70.07 Spare parts	-	8,500	425	8,925	-	-	-	-	
80 PROFESSIONAL SERVICES	9.96	96,377	-	96,377	9,676		14%	122,492	
80.01 Preliminary Engineering	-	6,025	-	6,025	-	-	-	-	
80.02 Final Design	-	16,667	-	16,667	-	-	-	-	
80.03 Project Management for Design and Construction	-	7,008	-	7,008	-	-	-	-	
80.04 Construction Administration & Management	-	24,173	-	24,173	-	-	-	-	
80.05 Insurance	-	12,051	-	12,051	-	-	-	-	
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.	-	3,374	-	3,374	-	-	-	-	
80.07 Surveys, Testing, Investigation, Inspection	-	8,280	-	8,280	-	-	-	-	
80.08 Agency Force Account Work	-	18,799	-	18,799	-	-	-	-	
Subtotal (10-80)	9.96	481,439	101,438	582,877	58,522		83%	740,818	
90 UNALLOCATED CONTINGENCY				116,576			17%	148,164	
Subtotal (10-90)	9.96			699,453	70,226		100%	888,981	
100 FINANCE CHARGES							0%	-	
Total Project Cost (10-100)	9.96			699,453	70,226		100%	888,981	
Total Allocated Contingency as % of Base Year Estimate								21%	
Total Contingency (Allocated and Unallocated)								218,014	
Total Contingency as % of Base Year Estimate								45%	
Total Contingency as % of Base Year Total (w/o Finance Charges)								31%	
Total Contingency as % of Base Year Total Project Cost								31%	
Forecast Year Construction Cost per Mile								49,976	
Forecast Year Total Project Cost per Mile								89,256	
Professional Services as % of Construction								25%	

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment LRT 1-1	Date	10/17/06
Location	Hennepin County, MN	Base Year	2006
Project ID			
		Route Miles	2.20
		Stations	1
		Quantity	Base Year Estimate (X000)
			Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		2.20	8,299
10.01	Guideway: At-grade exclusive right-of-way	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	2.11	2,518
10.03	Guideway: At-grade in mixed traffic	-	-
10.04	Guideway: Aerial structure	0.03	900
10.05	Guideway: Built-up fill	-	-
10.06	Guideway: Underground cut & cover	-	-
10.07	Guideway: Underground tunnel	-	-
10.08	Guideway: Retained cut or fill	0.06	315
10.09	Track: Direct fixation		-
10.10	Track: Embedded		-
10.11	Track: Ballasted		3,719
10.12	Track: Special (switches, turnouts)		847
10.13	Track: Vibration and noise dampening		-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		1	1,100
20.01	At-grade station, stop, shelter, mall, terminal, platform	1	1,100
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-
20.05	Joint development		-
20.06	Automobile parking multi-story structure		-
20.07	Elevators, escalators		-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			
30.01	Administration Building: Office, sales, storage, revenue counting		-
30.02	Light Maintenance Facility		-
30.03	Heavy Maintenance Facility		-
30.04	Storage or Maintenance of Way Building		-
30.05	Yard and Yard Track		-
40 SITEWORK & SPECIAL CONDITIONS			7,603
40.01	Demolition, Clearing, Earthwork		500
40.02	Site Utilities, Utility Relocation		2,324
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		58
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		58
40.05	Site structures including retaining walls, sound walls		-
40.06	Pedestrian / bike access and accommodation, landscaping		2,656
40.07	Automobile, bus, van accessways including roads, parking lots		2,007
40.08	Temporary facilities and other indirect costs during construction		-
50 SYSTEMS			11,867
50.01	Train control and signals		4,125
50.02	Traffic signals and crossing protection		250
50.03	Traction power supply: substations		2,208
50.04	Traction power distribution: catenary and third rail		3,021
50.05	Communications		1,801
50.06	Fare collection system and equipment		170
50.07	Central Control		291
Construction Subtotal (10-50)			28,869
60 ROW, LAND, EXISTING IMPROVEMENTS			1,083
60.01	Purchase or lease of real estate		1,083
60.02	Relocation (freight railroad traffic)		-

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment LRT 1-2	Date	10/17/06
Location	Hennepin County, MN	Base Year	2006
Project ID			
		Route Miles	0.99
		Stations	1
		Quantity	Base Year Estimate (X000)
			Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		0.99	5,287
10.01	Guideway: At-grade exclusive right-of-way	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	0.72	861
10.03	Guideway: At-grade in mixed traffic	-	-
10.04	Guideway: Aerial structure	-	-
10.05	Guideway: Built-up fill	-	-
10.06	Guideway: Underground cut & cover	-	-
10.07	Guideway: Underground tunnel	-	-
10.08	Guideway: Retained cut or fill	0.26	2,210
10.09	Track: Direct fixation		-
10.10	Track: Embedded		-
10.11	Track: Ballasted		1,670
10.12	Track: Special (switches, turnouts)		547
10.13	Track: Vibration and noise dampening		-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		1	1,100
20.01	At-grade station, stop, shelter, mall, terminal, platform	1	1,100
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-
20.05	Joint development		-
20.06	Automobile parking multi-story structure		-
20.07	Elevators, escalators		-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			
30.01	Administration Building: Office, sales, storage, revenue counting		-
30.02	Light Maintenance Facility		-
30.03	Heavy Maintenance Facility		-
30.04	Storage or Maintenance of Way Building		-
30.05	Yard and Yard Track		-
40 SITEWORK & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork		500
40.02	Site Utilities, Utility Relocation		1,044
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		26
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		26
40.05	Site structures including retaining walls, sound walls		-
40.06	Pedestrian / bike access and accommodation, landscaping		1,066
40.07	Automobile, bus, van accessways including roads, parking lots		956
40.08	Temporary facilities and other indirect costs during construction		-
50 SYSTEMS			
50.01	Train control and signals		1,853
50.02	Traffic signals and crossing protection		500
50.03	Traction power supply: substations		992
50.04	Traction power distribution: catenary and third rail		1,357
50.05	Communications		809
50.06	Fare collection system and equipment		170
50.07	Central Control		130
Construction Subtotal (10-50)			5,811
60 ROW, LAND, EXISTING IMPROVEMENTS			1,745
60.01	Purchase or lease of real estate		1,083
60.02	Relocation (freight railroad traffic)		-
			1,083

Major Capital Project Costs - By Segment			(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment LRT 1-3	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	1.55	
		Stations	1	
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		1.55	5,601	1,680
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	1.38	1,739	522
10.03	Guideway: At-grade in mixed traffic	-	-	-
10.04	Guideway: Aerial structure	-	-	-
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	0.18	736	221
10.09	Track: Direct fixation		-	-
10.10	Track: Embedded		-	-
10.11	Track: Ballasted		2,623	787
10.12	Track: Special (switches, turnouts)		503	151
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		1	1,100	330
20.01	At-grade station, stop, shelter, mall, terminal, platform	1	1,100	330
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-	-
30.01	Administration Building: Office, sales, storage, revenue counting			-
30.02	Light Maintenance Facility			-
30.03	Heavy Maintenance Facility			-
30.04	Storage or Maintenance of Way Building			-
30.05	Yard and Yard Track			-
40 SITEWORK & SPECIAL CONDITIONS			5,222	1,567
40.01	Demolition, Clearing, Earthwork		500	150
40.02	Site Utilities, Utility Relocation		1,639	492
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		41	12
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		41	12
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		1,747	524
40.07	Automobile, bus, van accessways including roads, parking lots		1,254	376
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			8,744	2,623
50.01	Train control and signals		2,910	873
50.02	Traffic signals and crossing protection		500	150
50.03	Traction power supply: substations		1,557	467
50.04	Traction power distribution: catenary and third rail		2,131	639
50.05	Communications		1,271	381
50.06	Fare collection system and equipment		170	51
50.07	Central Control		205	61
Construction Subtotal (10-50)			20,667	6,200
60 ROW, LAND, EXISTING IMPROVEMENTS			1,083	1,083
60.01	Purchase or lease of real estate		1,083	1,083
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment			(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment LRT 1-4	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	2.60	
		Stations	2	
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		2.60	13,841	4,152
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	2.22	5,743	1,723
10.03	Guideway: At-grade in mixed traffic	-	-	-
10.04	Guideway: Aerial structure	0.03	753	226
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	0.36	2,145	643
10.09	Track: Direct fixation		-	-
10.10	Track: Embedded		-	-
10.11	Track: Ballasted		4,401	1,320
10.12	Track: Special (switches, turnouts)		800	240
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		2	2,200	660
20.01	At-grade station, stop, shelter, mall, terminal, platform	2	2,200	660
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-	-
30.01	Administration Building: Office, sales, storage, revenue counting		-	-
30.02	Light Maintenance Facility		-	-
30.03	Heavy Maintenance Facility		-	-
30.04	Storage or Maintenance of Way Building		-	-
30.05	Yard and Yard Track		-	-
40 SITEWORK & SPECIAL CONDITIONS			7,757	2,327
40.01	Demolition, Clearing, Earthwork		1,000	300
40.02	Site Utilities, Utility Relocation		2,751	825
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		69	21
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		69	21
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		1,842	553
40.07	Automobile, bus, van accessways including roads, parking lots		2,026	608
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			14,638	4,391
50.01	Train control and signals		4,883	1,465
50.02	Traffic signals and crossing protection		750	225
50.03	Traction power supply: substations		2,613	784
50.04	Traction power distribution: catenary and third rail		3,576	1,073
50.05	Communications		2,132	640
50.06	Fare collection system and equipment		340	102
50.07	Central Control		344	103
Construction Subtotal (10-50)			38,436	11,531
60 ROW, LAND, EXISTING IMPROVEMENTS			7,115	7,115
60.01	Purchase or lease of real estate		7,115	7,115
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment			(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment LRT 2-1	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	1.10	
		Stations	2	
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		1.10	4,482	1,345
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	0.89	1,161	348
10.03	Guideway: At-grade in mixed traffic	-	-	-
10.04	Guideway: Aerial structure	-	-	-
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	0.21	865	260
10.09	Track: Direct fixation		-	-
10.10	Track: Embedded		-	-
10.11	Track: Ballasted		1,856	557
10.12	Track: Special (switches, turnouts)		600	180
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		2	2,200	660
20.01	At-grade station, stop, shelter, mall, terminal, platform	2	2,200	660
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-	-
30.01	Administration Building: Office, sales, storage, revenue counting		-	-
30.02	Light Maintenance Facility		-	-
30.03	Heavy Maintenance Facility		-	-
30.04	Storage or Maintenance of Way Building		-	-
30.05	Yard and Yard Track		-	-
40 SITEWORK & SPECIAL CONDITIONS			5,804	1,741
40.01	Demolition, Clearing, Earthwork		500	150
40.02	Site Utilities, Utility Relocation		2,262	679
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		116	35
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		29	9
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		620	186
40.07	Automobile, bus, van accessways including roads, parking lots		2,278	683
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			7,028	2,108
50.01	Train control and signals		2,059	618
50.02	Traffic signals and crossing protection		975	293
50.03	Traction power supply: substations		1,102	331
50.04	Traction power distribution: catenary and third rail		1,508	452
50.05	Communications		899	270
50.06	Fare collection system and equipment		340	102
50.07	Central Control		145	44
Construction Subtotal (10-50)			19,514	5,854
60 ROW, LAND, EXISTING IMPROVEMENTS			2,329	2,329
60.01	Purchase or lease of real estate		2,329	2,329
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment				(Rev. 6, Feb 7, 2006)
Project	Southwest Transitway - Segment LRT 2-2	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
			Route Miles	3.42
			Stations	2
10 GUIDEWAY & TRACK ELEMENTS (route miles)				
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
		3.42	30,420	9,126
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	1.28	1,722	516
10.03	Guideway: At-grade in mixed traffic	-	-	-
10.04	Guideway: Aerial structure	0.32	10,128	3,038
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	0.04	2,292	688
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	1.79	9,269	2,781
10.09	Track: Direct fixation		1,138	341
10.10	Track: Embedded		-	-
10.11	Track: Ballasted		5,258	1,577
10.12	Track: Special (switches, turnouts)		613	184
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)				
		2	2,200	660
20.01	At-grade station, stop, shelter, mall, terminal, platform	2	2,200	660
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				
			-	-
30.01	Administration Building: Office, sales, storage, revenue counting		-	-
30.02	Light Maintenance Facility		-	-
30.03	Heavy Maintenance Facility		-	-
30.04	Storage or Maintenance of Way Building		-	-
30.05	Yard and Yard Track		-	-
40 SITEWORK & SPECIAL CONDITIONS				
			12,385	3,715
40.01	Demolition, Clearing, Earthwork		1,000	300
40.02	Site Utilities, Utility Relocation		7,042	2,113
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		90	27
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		90	27
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		1,867	560
40.07	Automobile, bus, van accessways including roads, parking lots		2,295	688
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS				
			18,351	5,505
50.01	Train control and signals		6,410	1,923
50.02	Traffic signals and crossing protection		225	68
50.03	Traction power supply: substations		3,431	1,029
50.04	Traction power distribution: catenary and third rail		4,695	1,408
50.05	Communications		2,799	840
50.06	Fare collection system and equipment		340	102
50.07	Central Control		451	135
Construction Subtotal (10-50)			63,356	19,007
60 ROW, LAND, EXISTING IMPROVEMENTS				
			2,672	2,672
60.01	Purchase or lease of real estate		2,672	2,672
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment				(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment LRT 3-1	Date	10/17/06		
Location	Hennepin County, MN	Base Year	2006		
Project ID					
			Route Miles	1.34	
			Stations	1	
			Quantity		
			Base Year Estimate (X000)		
			Base Year Allocated Contingency (X000)		
10 GUIDEWAY & TRACK ELEMENTS (route miles)			1.34	9,341	2,802
10.01	Guideway: At-grade exclusive right-of-way		-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)		0.75	1,001	300
10.03	Guideway: At-grade in mixed traffic		0.20	237	71
10.04	Guideway: Aerial structure		0.04	1,110	333
10.05	Guideway: Built-up fill		-	-	-
10.06	Guideway: Underground cut & cover		0.03	1,656	497
10.07	Guideway: Underground tunnel		-	-	-
10.08	Guideway: Retained cut or fill		0.33	1,975	592
10.09	Track: Direct fixation			-	-
10.10	Track: Embedded			736	221
10.11	Track: Ballasted			1,923	577
10.12	Track: Special (switches, turnouts)			704	211
10.13	Track: Vibration and noise dampening			-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)			1	1,100	330
20.01	At-grade station, stop, shelter, mall, terminal, platform		1	1,100	330
20.02	Aerial station, stop, shelter, mall, terminal, platform		-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform		-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		-	-	-
20.05	Joint development			-	-
20.06	Automobile parking multi-story structure			-	-
20.07	Elevators, escalators			-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				-	-
30.01	Administration Building: Office, sales, storage, revenue counting				-
30.02	Light Maintenance Facility				-
30.03	Heavy Maintenance Facility				-
30.04	Storage or Maintenance of Way Building				-
30.05	Yard and Yard Track				-
40 SITEWORK & SPECIAL CONDITIONS				10,191	3,057
40.01	Demolition, Clearing, Earthwork			500	150
40.02	Site Utilities, Utility Relocation			2,754	826
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments			141	42
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks			141	42
40.05	Site structures including retaining walls, sound walls			-	-
40.06	Pedestrian / bike access and accommodation, landscaping			1,271	381
40.07	Automobile, bus, van accessways including roads, parking lots			5,383	1,615
40.08	Temporary facilities and other indirect costs during construction			-	-
50 SYSTEMS				10,085	3,026
50.01	Train control and signals			2,507	752
50.02	Traffic signals and crossing protection			2,960	888
50.03	Traction power supply: substations			1,342	402
50.04	Traction power distribution: catenary and third rail			1,836	551
50.05	Communications			1,094	328
50.06	Fare collection system and equipment			170	51
50.07	Central Control			177	53
Construction Subtotal (10-50)				30,717	9,215
60 ROW, LAND, EXISTING IMPROVEMENTS				3,653	3,653
60.01	Purchase or lease of real estate			3,653	3,653
60.02	Relocation (freight railroad traffic)			-	-

Major Capital Project Costs - By Segment				(Rev. 6, Feb 7, 2006)
Project	Southwest Transitway - Segment LRT 3-2		Date	10/17/06
Location	Hennepin County, MN		Base Year	2006
Project ID				
			Route Miles	4.26
			Stations	3
			Quantity	Base Year Estimate (X000)
				Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)			4.26	42,320
10.01	Guideway: At-grade exclusive right-of-way		-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)		1.73	2,089
10.03	Guideway: At-grade in mixed traffic		-	-
10.04	Guideway: Aerial structure		0.58	18,348
10.05	Guideway: Built-up fill		-	-
10.06	Guideway: Underground cut & cover		0.02	1,152
10.07	Guideway: Underground tunnel		-	-
10.08	Guideway: Retained cut or fill		1.94	11,005
10.09	Track: Direct fixation			2,123
10.10	Track: Embedded			-
10.11	Track: Ballasted			6,302
10.12	Track: Special (switches, turnouts)			1,300
10.13	Track: Vibration and noise dampening			-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)			3	3,300
20.01	At-grade station, stop, shelter, mall, terminal, platform		3	3,300
20.02	Aerial station, stop, shelter, mall, terminal, platform		-	-
20.03	Underground station, stop, shelter, mall, terminal, platform		-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		-	-
20.05	Joint development			-
20.06	Automobile parking multi-story structure			-
20.07	Elevators, escalators			-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				-
30.01	Administration Building: Office, sales, storage, revenue counting			-
30.02	Light Maintenance Facility			-
30.03	Heavy Maintenance Facility			-
30.04	Storage or Maintenance of Way Building			-
30.05	Yard and Yard Track			-
40 SITEWORK & SPECIAL CONDITIONS				21,008
40.01	Demolition, Clearing, Earthwork			1,500
40.02	Site Utilities, Utility Relocation			8,864
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments			455
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks			455
40.05	Site structures including retaining walls, sound walls			-
40.06	Pedestrian / bike access and accommodation, landscaping			3,007
40.07	Automobile, bus, van accessways including roads, parking lots			6,729
40.08	Temporary facilities and other indirect costs during construction			-
50 SYSTEMS				25,096
50.01	Train control and signals			8,068
50.02	Traffic signals and crossing protection			2,200
50.03	Traction power supply: substations			4,318
50.04	Traction power distribution: catenary and third rail			5,909
50.05	Communications			3,523
50.06	Fare collection system and equipment			510
50.07	Central Control			568
Construction Subtotal (10-50)				91,724
60 ROW, LAND, EXISTING IMPROVEMENTS				11,522
60.01	Purchase or lease of real estate			11,522
60.02	Relocation (freight railroad traffic)			-

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)		
Project	Southwest Transitway - Segment LRT 3-3	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	1.16	
		Stations	-	
		Quantity	Base Year Estimate (X000)	
			Base Year Allocated Contingency (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)		1.16	12,126	3,638
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	0.63	784	235
10.03	Guideway: At-grade in mixed traffic	-	-	-
10.04	Guideway: Aerial structure	0.13	4,152	1,246
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	0.04	2,340	702
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	0.36	2,121	636
10.09	Track: Direct fixation		465	140
10.10	Track: Embedded		-	-
10.11	Track: Ballasted		1,752	526
10.12	Track: Special (switches, turnouts)		513	154
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		-	-	-
20.01	At-grade station, stop, shelter, mall, terminal, platform	-	-	-
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-	-
30.01	Administration Building: Office, sales, storage, revenue counting			-
30.02	Light Maintenance Facility			-
30.03	Heavy Maintenance Facility			-
30.04	Storage or Maintenance of Way Building			-
30.05	Yard and Yard Track			-
40 SITEWORK & SPECIAL CONDITIONS			7,220	2,166
40.01	Demolition, Clearing, Earthwork		-	-
40.02	Site Utilities, Utility Relocation		2,395	718
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		123	37
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		123	37
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		804	241
40.07	Automobile, bus, van accessways including roads, parking lots		3,775	1,133
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			7,723	2,317
50.01	Train control and signals		2,180	654
50.02	Traffic signals and crossing protection		1,675	503
50.03	Traction power supply: substations		1,167	350
50.04	Traction power distribution: catenary and third rail		1,596	479
50.05	Communications		952	286
50.06	Fare collection system and equipment		-	-
50.07	Central Control		154	46
Construction Subtotal (10-50)			27,069	8,121
60 ROW, LAND, EXISTING IMPROVEMENTS			2,235	2,235
60.01	Purchase or lease of real estate		2,235	2,235
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment				(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment LRT 4-1		Date	10/17/06	
Location	Hennepin County, MN		Base Year	2006	
Project ID					
			Route Miles	0.07	
			Stations	-	
			Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)			0.07	187	56
10.01	Guideway: At-grade exclusive right-of-way		-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)		0.07	77	23
10.03	Guideway: At-grade in mixed traffic		-	-	-
10.04	Guideway: Aerial structure		-	-	-
10.05	Guideway: Built-up fill		-	-	-
10.06	Guideway: Underground cut & cover		-	-	-
10.07	Guideway: Underground tunnel		-	-	-
10.08	Guideway: Retained cut or fill		-	-	-
10.09	Track: Direct fixation			-	-
10.10	Track: Embedded			-	-
10.11	Track: Ballasted			110	33
10.12	Track: Special (switches, turnouts)			-	-
10.13	Track: Vibration and noise dampening			-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)			-	-	-
20.01	At-grade station, stop, shelter, mall, terminal, platform		-	-	-
20.02	Aerial station, stop, shelter, mall, terminal, platform		-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform		-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		-	-	-
20.05	Joint development			-	-
20.06	Automobile parking multi-story structure			-	-
20.07	Elevators, escalators			-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-	-	-
30.01	Administration Building: Office, sales, storage, revenue counting			-	-
30.02	Light Maintenance Facility			-	-
30.03	Heavy Maintenance Facility			-	-
30.04	Storage or Maintenance of Way Building			-	-
30.05	Yard and Yard Track			-	-
40 SITEWORK & SPECIAL CONDITIONS			-	220	66
40.01	Demolition, Clearing, Earthwork			-	-
40.02	Site Utilities, Utility Relocation			69	21
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments			2	1
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks			2	1
40.05	Site structures including retaining walls, sound walls			-	-
40.06	Pedestrian / bike access and accommodation, landscaping			113	34
40.07	Automobile, bus, van accessways including roads, parking lots			34	10
40.08	Temporary facilities and other indirect costs during construction			-	-
50 SYSTEMS			-	339	102
50.01	Train control and signals			122	37
50.02	Traffic signals and crossing protection			-	-
50.03	Traction power supply: substations			65	20
50.04	Traction power distribution: catenary and third rail			89	27
50.05	Communications			53	16
50.06	Fare collection system and equipment			-	-
50.07	Central Control			9	3
Construction Subtotal (10-50)			-	746	224
60 ROW, LAND, EXISTING IMPROVEMENTS			-	-	-
60.01	Purchase or lease of real estate			-	-
60.02	Relocation (freight railroad traffic)			-	-

Major Capital Project Costs - By Segment				(Rev. 6, Feb 7, 2006)
Project	Southwest Transitway - Segment LRT 4-2	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
			Route Miles	2.71
			Stations	3
			Quantity	
			Base Year Estimate (X000)	
			Base Year Allocated Contingency (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)			2.71	15,359
10.01	Guideway: At-grade exclusive right-of-way		-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)		2.24	3,131
10.03	Guideway: At-grade in mixed traffic		-	-
10.04	Guideway: Aerial structure		0.13	4,134
10.05	Guideway: Built-up fill		-	-
10.06	Guideway: Underground cut & cover		-	-
10.07	Guideway: Underground tunnel		-	-
10.08	Guideway: Retained cut or fill		0.34	2,316
10.09	Track: Direct fixation			420
10.10	Track: Embedded			-
10.11	Track: Ballasted			4,381
10.12	Track: Special (switches, turnouts)			977
10.13	Track: Vibration and noise dampening			-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)			3	3,300
20.01	At-grade station, stop, shelter, mall, terminal, platform		3	3,300
20.02	Aerial station, stop, shelter, mall, terminal, platform		-	-
20.03	Underground station, stop, shelter, mall, terminal, platform		-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		-	-
20.05	Joint development			-
20.06	Automobile parking multi-story structure			-
20.07	Elevators, escalators			-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				-
30.01	Administration Building: Office, sales, storage, revenue counting			-
30.02	Light Maintenance Facility			-
30.03	Heavy Maintenance Facility			-
30.04	Storage or Maintenance of Way Building			-
30.05	Yard and Yard Track			-
40 SITEWORK & SPECIAL CONDITIONS				12,012
40.01	Demolition, Clearing, Earthwork			1,500
40.02	Site Utilities, Utility Relocation			2,858
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments			71
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks			71
40.05	Site structures including retaining walls, sound walls			-
40.06	Pedestrian / bike access and accommodation, landscaping			3,304
40.07	Automobile, bus, van accessways including roads, parking lots			4,207
40.08	Temporary facilities and other indirect costs during construction			-
50 SYSTEMS				16,513
50.01	Train control and signals			5,074
50.02	Traffic signals and crossing protection			1,925
50.03	Traction power supply: substations			2,715
50.04	Traction power distribution: catenary and third rail			3,716
50.05	Communications			2,215
50.06	Fare collection system and equipment			510
50.07	Central Control			357
Construction Subtotal (10-50)				47,183
60 ROW, LAND, EXISTING IMPROVEMENTS				3,250
60.01	Purchase or lease of real estate			3,250
60.02	Relocation (freight railroad traffic)			-

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)		
Project	Southwest Transitway - Segment LRT A-1	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	4.40	
		Stations	6	
		Quantity	Base Year Estimate (X000)	
			Base Year Allocated Contingency (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)		4.40	15,319	4,596
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	4.23	5,304	1,591
10.03	Guideway: At-grade in mixed traffic	-	-	-
10.04	Guideway: Aerial structure	0.08	935	281
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	0.08	345	103
10.09	Track: Direct fixation		-	-
10.10	Track: Embedded		-	-
10.11	Track: Ballasted		7,429	2,229
10.12	Track: Special (switches, turnouts)		1,307	392
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		6	8,380	2,514
20.01	At-grade station, stop, shelter, mall, terminal, platform	5	5,500	1,650
20.02	Aerial station, stop, shelter, mall, terminal, platform	1	1,100	330
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		1,780	534
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-	-
30.01	Administration Building: Office, sales, storage, revenue counting		-	-
30.02	Light Maintenance Facility		-	-
30.03	Heavy Maintenance Facility		-	-
30.04	Storage or Maintenance of Way Building		-	-
30.05	Yard and Yard Track		-	-
40 SITEWORK & SPECIAL CONDITIONS			16,710	5,013
40.01	Demolition, Clearing, Earthwork		3,000	900
40.02	Site Utilities, Utility Relocation		4,643	1,393
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		116	35
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		116	35
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		5,162	1,549
40.07	Automobile, bus, van accessways including roads, parking lots		3,673	1,102
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			22,319	6,696
50.01	Train control and signals		8,241	2,472
50.02	Traffic signals and crossing protection		1,450	435
50.03	Traction power supply: substations		4,411	1,323
50.04	Traction power distribution: catenary and third rail		6,036	1,811
50.05	Communications		580	174
50.06	Fare collection system and equipment		1,020	306
50.07	Central Control		580	174
Construction Subtotal (10-50)			62,728	18,818
60 ROW, LAND, EXISTING IMPROVEMENTS			8,118	8,118
60.01	Purchase or lease of real estate		3,250	3,250
60.02	Relocation (freight railroad traffic)		4,868	4,868

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment LRT A-2	Date	10/17/06
Location	Hennepin County, MN	Base Year	2006
Project ID			
		Route Miles	1.93
		Stations	2
		Quantity	Base Year Estimate (X000)
			Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		1.93	13,204
10.01	Guideway: At-grade exclusive right-of-way	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	1.14	1,361
10.03	Guideway: At-grade in mixed traffic	0.23	279
10.04	Guideway: Aerial structure	0.10	3,042
10.05	Guideway: Built-up fill	-	-
10.06	Guideway: Underground cut & cover	0.02	1,056
10.07	Guideway: Underground tunnel	-	-
10.08	Guideway: Retained cut or fill	0.44	2,505
10.09	Track: Direct fixation		355
10.10	Track: Embedded		867
10.11	Track: Ballasted		2,750
10.12	Track: Special (switches, turnouts)		990
10.13	Track: Vibration and noise dampening		-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		2	2,200
20.01	At-grade station, stop, shelter, mall, terminal, platform	2	2,200
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-
20.05	Joint development		-
20.06	Automobile parking multi-story structure		-
20.07	Elevators, escalators		-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			
30.01	Administration Building: Office, sales, storage, revenue counting		-
30.02	Light Maintenance Facility		-
30.03	Heavy Maintenance Facility		-
30.04	Storage or Maintenance of Way Building		-
30.05	Yard and Yard Track		-
40 SITEWORK & SPECIAL CONDITIONS			16,284
40.01	Demolition, Clearing, Earthwork		1,000
40.02	Site Utilities, Utility Relocation		2,620
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		51
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		51
40.05	Site structures including retaining walls, sound walls		-
40.06	Pedestrian / bike access and accommodation, landscaping		1,889
40.07	Automobile, bus, van accessways including roads, parking lots		10,673
40.08	Temporary facilities and other indirect costs during construction		-
50 SYSTEMS			12,222
50.01	Train control and signals		3,617
50.02	Traffic signals and crossing protection		1,845
50.03	Traction power supply: substations		1,936
50.04	Traction power distribution: catenary and third rail		2,649
50.05	Communications		1,579
50.06	Fare collection system and equipment		340
50.07	Central Control		255
Construction Subtotal (10-50)			43,910
60 ROW, LAND, EXISTING IMPROVEMENTS			2,374
60.01	Purchase or lease of real estate		2,374
60.02	Relocation (freight railroad traffic)		-

Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment LRT A-3	Date	10/17/06
Location	Hennepin County, MN	Base Year	2006
Project ID			
		Route Miles	1.95
		Stations	3
		Quantity	Base Year Estimate (X000)
			Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		1.95	8,760
10.01	Guideway: At-grade exclusive right-of-way	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	1.03	1,300
10.03	Guideway: At-grade in mixed traffic	0.92	1,096
10.04	Guideway: Aerial structure	-	-
10.05	Guideway: Built-up fill	-	-
10.06	Guideway: Underground cut & cover	-	-
10.07	Guideway: Underground tunnel	-	-
10.08	Guideway: Retained cut or fill	-	-
10.09	Track: Direct fixation		-
10.10	Track: Embedded		3,411
10.11	Track: Ballasted		1,734
10.12	Track: Special (switches, turnouts)		1,219
10.13	Track: Vibration and noise dampening		-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		3	3,300
20.01	At-grade station, stop, shelter, mall, terminal, platform	3	3,300
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-
20.05	Joint development		-
20.06	Automobile parking multi-story structure		-
20.07	Elevators, escalators		-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-
30.01	Administration Building: Office, sales, storage, revenue counting		-
30.02	Light Maintenance Facility		-
30.03	Heavy Maintenance Facility		-
30.04	Storage or Maintenance of Way Building		-
30.05	Yard and Yard Track		-
40 SITEWORK & SPECIAL CONDITIONS			24,575
40.01	Demolition, Clearing, Earthwork		1,500
40.02	Site Utilities, Utility Relocation		5,378
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		51
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		103
40.05	Site structures including retaining walls, sound walls		-
40.06	Pedestrian / bike access and accommodation, landscaping		2,477
40.07	Automobile, bus, van accessways including roads, parking lots		15,065
40.08	Temporary facilities and other indirect costs during construction		-
50 SYSTEMS			13,280
50.01	Train control and signals		3,653
50.02	Traffic signals and crossing protection		2,560
50.03	Traction power supply: substations		1,955
50.04	Traction power distribution: catenary and third rail		2,749
50.05	Communications		1,595
50.06	Fare collection system and equipment		510
50.07	Central Control		257
Construction Subtotal (10-50)			49,914
60 ROW, LAND, EXISTING IMPROVEMENTS			3,192
60.01	Purchase or lease of real estate		3,192
60.02	Relocation (freight railroad traffic)		-

Major Capital Project Costs - By Segment				(Rev. 6, Feb 7, 2006)
Project	Southwest Transitway - Segment LRT C-1	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
			Route Miles	6.16
			Stations	8
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		6.16	83,889	25,167
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	3.12	6,671	2,001
10.03	Guideway: At-grade in mixed traffic	0.37	440	132
10.04	Guideway: Aerial structure	0.40	12,098	3,630
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	0.59	38,988	11,696
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	1.68	9,702	2,911
10.09	Track: Direct fixation		3,928	1,178
10.10	Track: Embedded		3,698	1,109
10.11	Track: Ballasted		6,923	2,077
10.12	Track: Special (switches, turnouts)		1,441	432
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		8	14,140	4,242
20.01	At-grade station, stop, shelter, mall, terminal, platform	6	6,600	1,980
20.02	Aerial station, stop, shelter, mall, terminal, platform	2	2,200	660
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		5,340	1,602
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-	-
30.01	Administration Building: Office, sales, storage, revenue counting		-	-
30.02	Light Maintenance Facility		-	-
30.03	Heavy Maintenance Facility		-	-
30.04	Storage or Maintenance of Way Building		-	-
30.05	Yard and Yard Track		-	-
40 SITEWORK & SPECIAL CONDITIONS			42,323	12,697
40.01	Demolition, Clearing, Earthwork		4,000	1,200
40.02	Site Utilities, Utility Relocation		11,004	3,301
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		163	49
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		325	98
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		7,583	2,275
40.07	Automobile, bus, van accessways including roads, parking lots		19,247	5,774
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			37,745	11,324
50.01	Train control and signals		11,547	3,464
50.02	Traffic signals and crossing protection		4,175	1,253
50.03	Traction power supply: substations		6,180	1,854
50.04	Traction power distribution: catenary and third rail		8,457	2,537
50.05	Communications		5,042	1,513
50.06	Fare collection system and equipment		1,530	459
50.07	Central Control		813	244
Construction Subtotal (10-50)			178,097	53,429
60 ROW, LAND, EXISTING IMPROVEMENTS			3,829	3,829
60.01	Purchase or lease of real estate		3,829	3,829
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment			(Rev. 6, Feb 7, 2006)	
Project	Southwest Transitway - Segment LRT C-2	Date	10/17/06	
Location	Hennepin County, MN	Base Year	2006	
Project ID				
		Route Miles	1.03	
		Stations	3	
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		1.03	6,498	1,949
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	-	-	-
10.03	Guideway: At-grade in mixed traffic	1.03	1,221	366
10.04	Guideway: Aerial structure	-	-	-
10.05	Guideway: Built-up fill	-	-	-
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	-	-	-
10.09	Track: Direct fixation		-	-
10.10	Track: Embedded		3,798	1,139
10.11	Track: Ballasted		-	-
10.12	Track: Special (switches, turnouts)		1,480	444
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		3	3,300	990
20.01	At-grade station, stop, shelter, mall, terminal, platform	3	3,300	990
20.02	Aerial station, stop, shelter, mall, terminal, platform	-	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-	-
30.01	Administration Building: Office, sales, storage, revenue counting		-	-
30.02	Light Maintenance Facility		-	-
30.03	Heavy Maintenance Facility		-	-
30.04	Storage or Maintenance of Way Building		-	-
30.05	Yard and Yard Track		-	-
40 SITEWORK & SPECIAL CONDITIONS			14,059	4,218
40.01	Demolition, Clearing, Earthwork		1,500	450
40.02	Site Utilities, Utility Relocation		3,635	1,090
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		27	8
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		27	8
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		3,391	1,017
40.07	Automobile, bus, van accessways including roads, parking lots		5,479	1,644
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS			7,255	2,177
50.01	Train control and signals		1,926	578
50.02	Traffic signals and crossing protection		1,320	396
50.03	Traction power supply: substations		1,031	309
50.04	Traction power distribution: catenary and third rail		1,492	448
50.05	Communications		841	252
50.06	Fare collection system and equipment		510	153
50.07	Central Control		136	41
Construction Subtotal (10-50)			31,112	9,334
60 ROW, LAND, EXISTING IMPROVEMENTS			152	152
60.01	Purchase or lease of real estate		152	152
60.02	Relocation (freight railroad traffic)		-	-

Major Capital Project Costs - By Segment				(Rev. 6, Feb 7, 2006)
Project	Southwest Transitway - Segment LRT C-3		Date	10/17/06
Location	Hennepin County, MN		Base Year	2006
Project ID				
			Route Miles	1.62
			Stations	2
			Quantity	Base Year Estimate (X000)
				Base Year Allocated Contingency (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)			1.62	5,969
10.01	Guideway: At-grade exclusive right-of-way		-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)		-	-
10.03	Guideway: At-grade in mixed traffic		1.62	1,926
10.04	Guideway: Aerial structure		-	-
10.05	Guideway: Built-up fill		-	-
10.06	Guideway: Underground cut & cover		-	-
10.07	Guideway: Underground tunnel		-	-
10.08	Guideway: Retained cut or fill		-	-
10.09	Track: Direct fixation		-	-
10.10	Track: Embedded		-	3,253
10.11	Track: Ballasted		-	-
10.12	Track: Special (switches, turnouts)		-	790
10.13	Track: Vibration and noise dampening		-	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)			2	2,200
20.01	At-grade station, stop, shelter, mall, terminal, platform		2	2,200
20.02	Aerial station, stop, shelter, mall, terminal, platform		-	-
20.03	Underground station, stop, shelter, mall, terminal, platform		-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		-	-
20.05	Joint development		-	-
20.06	Automobile parking multi-story structure		-	-
20.07	Elevators, escalators		-	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				
30.01	Administration Building: Office, sales, storage, revenue counting		-	-
30.02	Light Maintenance Facility		-	-
30.03	Heavy Maintenance Facility		-	-
30.04	Storage or Maintenance of Way Building		-	-
30.05	Yard and Yard Track		-	-
40 SITEWORK & SPECIAL CONDITIONS				
40.01	Demolition, Clearing, Earthwork		-	2,000
40.02	Site Utilities, Utility Relocation		-	5,736
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		-	43
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		-	43
40.05	Site structures including retaining walls, sound walls		-	-
40.06	Pedestrian / bike access and accommodation, landscaping		-	2,782
40.07	Automobile, bus, van accessways including roads, parking lots		-	12,492
40.08	Temporary facilities and other indirect costs during construction		-	-
50 SYSTEMS				
50.01	Train control and signals		-	3,039
50.02	Traffic signals and crossing protection		-	2,320
50.03	Traction power supply: substations		-	1,627
50.04	Traction power distribution: catenary and third rail		-	2,354
50.05	Communications		-	1,327
50.06	Fare collection system and equipment		-	680
50.07	Central Control		-	214
Construction Subtotal (10-50)				11,561
60 ROW, LAND, EXISTING IMPROVEMENTS				3,468
60.01	Purchase or lease of real estate		-	130
60.02	Relocation (freight railroad traffic)		-	130
				42,826
				12,848

Appendix F: Annualized Capital Costs

Major Capital Project Costs - Annualized Cost

(Rev. 6, Feb 7, 2006)

Project	Southwest Transitway - Enhanced Bus Baseline	Date	10/17/06
Location	Hennepin County, MN	Base Year	2006

	Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Useful Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)	16.00	-	-	-	-	-	-	-
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	80	0.0703	-
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	-	-	-	-	-	30	0.0806	-
10.03 Guideway: At-grade in mixed traffic	16.00	-	-	-	-	20	0.0944	-
10.04 Guideway: Aerial structure	-	-	-	-	-	80	0.0703	-
10.05 Guideway: Built-up fill	-	-	-	-	-	80	0.0703	-
10.06 Guideway: Underground cut & cover	-	-	-	-	-	70	0.0706	-
10.07 Guideway: Underground tunnel	-	-	-	-	-	70	0.0706	-
10.08 Guideway: Retained cut or fill	-	-	-	-	-	80	0.0703	-
10.09 Track: Direct fixation	-	-	-	-	-	30	0.0806	-
10.10 Track: Embedded	-	-	-	-	-	20	0.0944	-
10.11 Track: Ballasted	-	-	-	-	-	35	0.0772	-
10.12 Track: Special (switches, turnouts)	-	-	-	-	-	30	0.0806	-
10.13 Track: Vibration and noise dampening	-	-	-	-	-	30	0.0806	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	13	11,915	2,715	19,121	19,121	-	-	1,384
20.01 At-grade station, stop, shelter, mall, terminal, platform	13	507	191	116	814	70	0.0706	57
20.02 Aerial station, stop, shelter, mall, terminal, platform	-	-	-	-	-	70	0.0706	-
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	70	0.0706	-
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	70	0.0706	-
20.05 Joint development	-	-	-	-	-	70	0.0706	-
20.06 Automobile parking multi-story structure	-	11,408	4,300	2,600	18,307	50	0.0725	1,327
20.07 Elevators, escalators	-	-	-	-	-	30	0.0806	-
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS								
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	50	0.0725	-
30.02 Light Maintenance Facility	-	-	-	-	-	50	0.0725	-
30.03 Heavy Maintenance Facility	-	-	-	-	-	50	0.0725	-
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	50	0.0725	-
30.05 Yard and Yard Track	-	-	-	-	-	80	0.0703	-
40 SITEWORK & SPECIAL CONDITIONS		5,018		1,144	8,053			659
40.01 Demolition, Clearing, Earthwork	-	2,600	980	593	4,173	100	0.0701	292
40.02 Site Utilities, Utility Relocation	-	-	-	-	-	100	0.0701	-
40.03 Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	-	-	-	-	100	0.0701	-
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	-	-	-	-	100	0.0701	-
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	80	0.0703	-
40.06 Pedestrian / bike access and accommodation, landscaping	-	-	-	-	-	20	0.0944	-
40.07 Automobile, bus, van accessways including roads, parking lots	-	2,418	911	551	3,881	20	0.0944	366
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	100	0.0701	-
50 SYSTEMS		85		19	136			13
50.01 Train control and signals	-	-	-	-	-	30	0.0806	-
50.02 Traffic signals and crossing protection	-	-	-	-	-	30	0.0806	-
50.03 Traction power supply: substations	-	-	-	-	-	40	0.0750	-
50.04 Traction power distribution: catenary and third rail	-	-	-	-	-	30	0.0806	-
50.05 Communications	-	85	32	19	136	20	0.0944	13
50.06 Fare collection system and equipment	-	-	-	-	-	20	0.0944	-
50.07 Central Control	-	-	-	-	-	30	0.0806	-
Construction Subtotal (10-60)		17,017		3,878	27,310			2,056
60 ROW, LAND, EXISTING IMPROVEMENTS		10,832		2,469	13,301			932
60.01 Purchase or lease of real estate	-	10,832	-	-	10,832	100	0.0701	932
60.02 Relocation (freight railroad traffic)	-	-	-	-	-	100	0.0701	-
70 VEHICLES (number)	49	18,113		4,128	22,241			2,800
70.01 Light Rail	-	-	-	-	-	25	0.0858	-
70.02 Heavy Rail	-	-	-	-	-	25	0.0858	-
70.03 Commuter Rail	-	-	-	-	-	25	0.0858	-
70.04 Bus	49	18,113	-	4,128	22,241	12	0.1259	2,800
70.05 Other	-	-	-	-	-	12	0.1259	-
70.06 Non-revenue vehicles	-	-	-	-	-	12	0.1259	-
70.07 Spare parts	-	-	-	-	-	12	0.1259	-
80 PROFESSIONAL SERVICES		6,414						
80.01 Preliminary Engineering	-	262	-	-	262	-	-	-
80.02 Final Design	-	1,054	-	-	1,054	-	-	-
80.03 Project Management for Design and Construction	-	597	-	-	597	-	-	-
80.04 Construction Administration & Management	-	1,101	-	-	1,101	-	-	-
80.05 Insurance	-	524	-	-	524	-	-	-
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.	-	402	-	-	402	-	-	-
80.07 Surveys, Testing, Investigation, Inspection	-	1,146	-	-	1,146	-	-	-
80.08 Agency Force Account Work	-	1,327	-	-	1,327	-	-	-
90 UNALLOCATED CONTINGENCY		10,475						
Subtotal (10-90)		62,851	6,414	10,475	62,851			5,788

Major Capital Project Costs - Annualized Cost

(Rev. 6, Feb 7, 2006)

Project		Southwest Transitway - Alternative BRT 1					Date	10/17/06	
Location		Hennepin County, MN					Base Year	2006	
	Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Useful Life	Annualization Factor (7% rate)	Annualized Cost (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	13.86	70,596		16,994	105,861			8,264	
10.01	Guideway, At-grade exclusive right-of-way	-	-	-	-	80	0.0703	-	
10.02	Guideway, At-grade semi-exclusive (allows cross-traffic)	11.29	51,010	13,202	12,279	30	0.0806	6,164	
10.03	Guideway, At-grade in mixed traffic	1.41	965	250	232	20	0.0944	137	
10.04	Guideway, Aerial structure	0.24	8,259	2,137	1,988	80	0.0703	871	
10.05	Guideway, Built-up fill	-	-	-	-	80	0.0703	-	
10.06	Guideway, Underground cut & cover	-	-	-	-	70	0.0706	-	
10.07	Guideway, Underground tunnel	-	-	-	-	70	0.0706	-	
10.08	Guideway, Retained cut or fill	0.92	10,362	2,682	2,494	80	0.0703	1,093	
10.09	Track, Direct fixation	-	-	-	-	30	0.0806	-	
10.10	Track, Embedded	-	-	-	-	20	0.0944	-	
10.11	Track, Ballasted	-	-	-	-	35	0.0772	-	
10.12	Track, Special (switches, turnouts)	-	-	-	-	30	0.0806	-	
10.13	Track, Vibration and noise dampening	-	-	-	-	30	0.0806	-	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	16	38,461		9,258	57,673			4,144	
20.01	At-grade station, stop, shelter, mail, terminal, platform	15	21,450	5,551	5,164	70	0.0706	2,271	
20.02	Aerial station, stop, shelter, mail, terminal, platform	1	1,430	370	344	70	0.0706	151	
20.03	Underground station, stop, shelter, mail, terminal, platform	-	-	-	-	70	0.0706	-	
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	70	0.0706	-	
20.05	Joint development	-	-	-	-	70	0.0706	-	
20.06	Automobile parking multi-story structure	-	13,267	3,433	3,194	50	0.0725	1,441	
20.07	Elevators, escalators	-	2,314	599	557	30	0.0806	280	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		14,269		3,435	21,397			1,550	
30.01	Administration Building: Office, sales, storage, revenue counting	-	-	-	-	50	0.0725	-	
30.02	Light Maintenance Facility	-	14,269	3,693	3,435	50	0.0725	1,550	
30.03	Heavy Maintenance Facility	-	-	-	-	50	0.0725	-	
30.04	Storage or Maintenance of Way Building	-	-	-	-	50	0.0725	-	
30.05	Yard and Yard Track	-	-	-	-	80	0.0703	-	
40 SITEWORK & SPECIAL CONDITIONS		80,564		19,394	120,808			10,226	
40.01	Demolition, Clearing, Earthwork	-	10,400	2,692	2,504	100	0.0701	1,093	
40.02	Site Utilities, Utility Relocation	-	20,923	5,415	5,037	100	0.0701	2,199	
40.03	Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	476	123	114	100	0.0701	50	
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	497	129	120	100	0.0701	52	
40.05	Site structures including retaining walls, sound walls	-	-	-	-	80	0.0703	-	
40.06	Pedestrian / bike access and accommodation, landscaping	-	21,204	5,488	5,104	20	0.0944	3,001	
40.07	Automobile, bus, van accessways including roads, parking lots	-	27,064	7,004	6,515	20	0.0944	3,831	
40.08	Temporary Facilities and other indirect costs during construction	-	-	-	-	100	0.0701	-	
50 SYSTEMS		27,542		6,630	41,301			3,720	
50.01	Train control and signals	-	-	-	-	30	0.0806	-	
50.02	Traffic signals and crossing protection	-	6,221	1,610	1,497	30	0.0806	752	
50.03	Traction power supply: substations	-	-	-	-	40	0.0750	-	
50.04	Traction power distribution: catenary and third rail	-	-	-	-	30	0.0806	-	
50.05	Communications	-	14,745	3,816	3,549	20	0.0944	2,087	
50.06	Fare collection system and equipment	-	4,199	1,087	1,011	20	0.0944	594	
50.07	Central Control	-	2,378	615	572	30	0.0806	287	
Construction Subtotal (10-50)		231,432		55,711	347,039			27,905	
60 ROW, LAND, EXISTING IMPROVEMENTS		34,196		8,232	42,428			2,973	
60.01	Purchase or lease of real estate	-	24,460	-	5,888	100	0.0701	2,127	
60.02	Relocation (freight railroad traffic)	-	9,736	-	2,344	100	0.0701	847	
70 VEHICLES (number)	54	28,534		6,869	35,402			4,457	
70.01	Light Rail	-	-	-	-	25	0.0858	-	
70.02	Heavy Rail	-	-	-	-	25	0.0858	-	
70.03	Commuter Rail	-	-	-	-	25	0.0858	-	
70.04	Bus	39	14,416	-	3,470	17,886	12	0.1259	2,252
70.05	Other (BRT)	15	10,238	-	2,464	12,702	12	0.1259	1,599
70.06	Non-revenue vehicles	-	2,305	-	555	2,860	12	0.1259	360
70.07	Spare parts	-	1,575	-	379	1,954	12	0.1259	246
80 PROFESSIONAL SERVICES		59,896							
80.01	Preliminary Engineering	-	3,560	-	-	-	-	-	
80.02	Final Design	-	9,616	-	-	-	-	-	
80.03	Project Management for Design and Construction	-	4,345	-	-	-	-	-	
80.04	Construction Administration & Management	-	14,413	-	-	-	-	-	
80.05	Insurance	-	7,121	-	-	-	-	-	
80.06	Legal, Permits, Review Fees by other agencies, cities, etc.	-	2,635	-	-	-	-	-	
80.07	Surveys, Testing, Investigation, Inspection	-	5,814	-	-	-	-	-	
80.08	Agency Force Account Work	-	12,391	-	-	-	-	-	
90 UNALLOCATED CONTINGENCY		70,811							
Subtotal (10-90)		424,869	69,896	70,811	424,869			35,336	

Major Capital Project Costs - Annualized Cost								(Rev. 6, Feb 7, 2006)
Project	Southwest Transitway - Alternative BRT 2						Date	10/17/06
Location	Hennepin County, MN						Base Year	2006
	Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Useful Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)	18.31	106,511		25,741	159,058			12,039
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	80	0.0703	-
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	8.36	38,040	9,577	9,193	56,810	30	0.0806	4,578
10.03 Guideway: At-grade in mixed traffic	7.58	7,534	1,897	1,821	11,252	20	0.0944	1,062
10.04 Guideway: Aerial structure	0.07	42,647	10,737	10,307	63,690	80	0.0703	4,470
10.05 Guideway: Built-up fill	-	-	-	-	-	80	0.0703	-
10.06 Guideway: Underground cut & cover	-	-	-	-	-	70	0.0706	-
10.07 Guideway: Underground tunnel	-	-	-	-	-	70	0.0706	-
10.08 Guideway: Retained cut or fill	1.51	18,290	4,605	4,420	27,316	80	0.0703	1,921
10.09 Track: Direct fixation	-	-	-	-	-	30	0.0806	-
10.10 Track: Embedded	-	-	-	-	-	20	0.0944	-
10.11 Track: Ballasted	-	-	-	-	-	35	0.0772	-
10.12 Track: Special (switches, turnouts)	-	-	-	-	-	30	0.0806	-
10.13 Track: Vibration and noise dampening	-	-	-	-	-	30	0.0806	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	18	55,596		13,438	83,027			5,970
20.01 At-grade station, stop, shelter, mall, terminal, platform	10	25,740	6,400	6,221	30,441	70	0.0706	2,715
20.02 Aerial station, stop, shelter, mall, terminal, platform	1	1,430	360	346	2,136	70	0.0706	151
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	70	0.0706	-
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	70	0.0706	-
20.05 Joint development	-	-	-	-	-	70	0.0706	-
20.06 Automobile parking multi-story structure	-	26,111	6,574	6,310	30,994	50	0.0725	2,026
20.07 Elevators, escalators	-	2,314	583	559	3,456	30	0.0806	278
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		18,856		4,567	28,169			2,040
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	50	0.0725	-
30.02 Light Maintenance Facility	-	18,856	4,747	4,567	28,159	50	0.0725	2,040
30.03 Heavy Maintenance Facility	-	-	-	-	-	50	0.0725	-
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	50	0.0725	-
30.05 Yard and Yard Track	-	-	-	-	-	80	0.0703	-
40 SITEWORK & SPECIAL CONDITIONS		97,888		23,657	146,190			12,009
40.01 Demolition, Clearing, Earthwork	-	12,360	3,109	2,985	18,444	100	0.0701	1,293
40.02 Site Utilities, Utility Relocation	-	26,885	6,771	6,500	40,165	100	0.0701	2,615
40.03 Haz. mat., contam'd soil removal/mitigation, ground water treatments	-	787	198	190	1,176	100	0.0701	82
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	1,010	264	244	1,608	100	0.0701	106
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	80	0.0703	-
40.06 Pedestrian / bike access and accommodation, landscaping	-	20,390	5,133	4,928	30,451	20	0.0944	2,874
40.07 Automobile, bus, van accessways including roads, parking lots	-	36,457	9,178	8,811	54,446	20	0.0944	5,139
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	100	0.0701	-
50 SYSTEMS		37,302		9,015	56,709			4,998
50.01 Train control and signals	-	-	-	-	-	30	0.0806	-
50.02 Traffic signals and crossing protection	-	9,594	2,415	2,319	14,328	30	0.0806	1,150
50.03 Traction power supply: substations	-	-	-	-	-	40	0.0750	-
50.04 Traction power distribution: catenary and third rail	-	-	-	-	-	30	0.0806	-
50.05 Communications	-	19,483	4,905	4,708	29,096	20	0.0944	2,746
50.06 Fare collection system and equipment	-	5,083	1,280	1,228	7,591	20	0.0944	717
50.07 Central Control	-	3,143	791	759	4,693	30	0.0806	378
Construction Subtotal (10-50)		316,152		76,406	472,152			37,254
60 ROW, LAND, EXISTING IMPROVEMENTS		34,196		9,294	42,461			2,976
60.01 Purchase or lease of real estate	-	24,460	-	5,911	30,372	100	0.0701	2,128
60.02 Relocation (freight railroad traffic)	-	9,736	-	2,353	12,089	100	0.0701	847
70 VEHICLES (number)	57	31,637		7,646	39,283			4,948
70.01 Light Rail	-	-	-	-	-	25	0.0858	-
70.02 Heavy Rail	-	-	-	-	-	25	0.0858	-
70.03 Commuter Rail	-	-	-	-	-	25	0.0858	-
70.04 Bus	39	14,416	-	3,484	17,900	12	0.1259	2,254
70.05 Other (BRT)	18	12,285	-	2,969	15,254	12	0.1259	1,921
70.06 Non-revenue vehicles	-	3,046	-	736	3,782	12	0.1259	476
70.07 Spare parts	-	1,890	-	457	2,347	12	0.1259	295
80 PROFESSIONAL SERVICES		79,594						
80.01 Preliminary Engineering	-	4,064	-	-	-	-	-	-
80.02 Final Design	-	12,933	-	-	-	-	-	-
80.03 Project Management for Design and Construction	-	5,678	-	-	-	-	-	-
80.04 Construction Administration & Management	-	19,627	-	-	-	-	-	-
80.05 Insurance	-	9,728	-	-	-	-	-	-
80.06 Legal; Permits; Review Fees by other agencies, cities, etc.	-	3,207	-	-	-	-	-	-
80.07 Surveys; Testing; Investigation; Inspection	-	7,176	-	-	-	-	-	-
80.08 Agency Force Account Work	-	16,301	-	-	-	-	-	-
90 UNALLOCATED CONTINGENCY		92,316						
Subtotal (10-90)		563,898	79,594	92,316	563,898			46,278

Major Capital Project Costs - Annualized Cost

(Rev. 6, Feb 7, 2006)

Project	Southwest Transitway - Alternative LRT 1A					Date	10/17/06		
Location	Hennepin County, MN					Base Year	2006		
	Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Useful Life	Annualization Factor (7% rate)	Annualized Cost (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	13.78	81,991		19,544	122,578			9,393	
10.01 Guideway At-grade exclusive right-of-way	-	-	-	-	-	80	0.0703	-	
10.02 Guideway At-grade semi-exclusive (allows cross-traffic)	11.82	19,389	4,976	4,622	28,986	30	0.0806	2,336	
10.03 Guideway At-grade in mixed traffic	0.23	362	93	86	541	20	0.0944	51	
10.04 Guideway Aerial structure	0.34	11,714	3,007	2,792	17,513	80	0.0703	1,231	
10.05 Guideway Built-up fill	-	-	-	-	-	80	0.0703	-	
10.06 Guideway Underground cut & cover	0.02	1,373	352	327	2,052	70	0.0706	145	
10.07 Guideway Underground tunnel	-	-	-	-	-	70	0.0706	-	
10.08 Guideway Retained cut or fill	1.37	10,953	2,811	2,611	16,375	80	0.0703	1,151	
10.09 Track Direct fixation		1,007	259	240	1,506	30	0.0806	121	
10.10 Track Embedded		1,127	209	269	1,604	20	0.0944	159	
10.11 Track Ballasted		29,344	7,531	6,995	43,870	35	0.0772	3,300	
10.12 Track Special (switches, turnouts)		6,722	1,728	1,602	10,050	30	0.0806	810	
10.13 Track Vibration and noise dampening		-	-	-	-	30	0.0806	-	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	14	35,601		8,486	83,223			3,830	
20.01 At-grade station, stop, shelter, mall, terminal, platform	13	18,590	4,771	4,431	27,792	70	0.0706	1,963	
20.02 Aerial station, stop, shelter, mall, terminal, platform	1	1,430	367	341	2,138	70	0.0706	151	
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	70	0.0706	-	
20.04 Other stations, landings, terminals: intermodal, ferry, trolley, etc.	-	-	-	-	-	70	0.0706	-	
20.05 Joint development	-	-	-	-	-	70	0.0706	-	
20.06 Automobile parking multi-story structure		13,267	3,405	3,162	19,834	50	0.0725	1,437	
20.07 Elevators, escalators		2,314	594	552	3,459	30	0.0806	279	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		60,694		12,084	76,789			6,437	
30.01 Administration Building: Office, sales, storage, revenue counting		-	-	-	-	50	0.0725	-	
30.02 Light Maintenance Facility		33,796	6,674	6,056	50,526	50	0.0725	3,661	
30.03 Heavy Maintenance Facility		-	-	-	-	50	0.0725	-	
30.04 Storage or Maintenance of Way Building		-	-	-	-	50	0.0725	-	
30.05 Yard and Yard Track		16,898	4,337	4,028	25,263	80	0.0703	1,776	
40 SITEWORK & SPECIAL CONDITIONS		86,417		20,599	129,196			11,116	
40.01 Demolition, Clearing, Earthwork		9,100	2,336	2,169	13,605	100	0.0701	953	
40.02 Site Utilities, Utility Relocation		19,667	5,048	4,680	29,403	100	0.0701	2,061	
40.03 Haz. mat., contam'd soil removal/mitigation, ground water treatments		473	121	113	707	100	0.0701	50	
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks		473	121	113	707	100	0.0701	50	
40.05 Site structures including retaining walls, sound walls		-	-	-	-	80	0.0703	-	
40.06 Pedestrian / bike access and accommodation, landscaping		20,572	5,280	4,904	30,756	20	0.0944	2,903	
40.07 Automobile, bus, van accessways including roads, parking lots		36,132	9,273	8,613	54,018	20	0.0944	5,099	
40.08 Temporary Facilities and other indirect costs during construction		-	-	-	-	100	0.0701	-	
50 SYSTEMS		100,718		24,007	180,575			12,270	
50.01 Train control and signals		33,567	8,615	8,001	50,183	30	0.0806	4,044	
50.02 Traffic signals and crossing protection		8,411	2,159	2,005	12,575	30	0.0806	1,013	
50.03 Traction power supply: substations		17,965	4,511	4,282	26,858	40	0.0750	2,015	
50.04 Traction power distribution: catenary and third rail		24,664	6,310	5,860	36,754	30	0.0806	2,962	
50.05 Communications		10,733	2,755	2,558	16,045	20	0.0944	1,515	
50.06 Fare collection system and equipment		3,094	794	737	4,626	20	0.0944	437	
50.07 Central Control		2,364	607	563	3,534	30	0.0806	285	
Construction Subtotal (10-50)		355,420		84,719	531,960			42,045	
60 ROW, LAND, EXISTING IMPROVEMENTS		30,982		8,100	42,083			2,949	
60.01 Purchase or lease of real estate		24,247		5,779	30,026	100	0.0701	2,104	
60.02 Relocation (freight railroad traffic)		6,736		2,321	12,057	100	0.0701	845	
70 VEHICLES (number)	57	86,163		20,538	106,701			10,462	
70.01 Light Rail	19	59,050		14,266	74,116	25	0.0859	6,360	
70.02 Heavy Rail	-	-		-	-	25	0.0858	-	
70.03 Commuter Rail	-	-		-	-	25	0.0858	-	
70.04 Bus	38	14,046		3,348	17,395	12	0.1259	2,190	
70.05 Other	-	-		-	-	12	0.1259	-	
70.06 Non-revenue vehicles		2,291		546	2,837	12	0.1259	357	
70.07 Spare parts		9,975		2,370	12,353	12	0.1259	1,555	
80 PROFESSIONAL SERVICES		91,220							
80.01 Preliminary Engineering		5,468							
80.02 Final Design		15,481							
80.03 Project Management for Design and Construction		6,798							
80.04 Construction Administration & Management		22,042							
80.05 Insurance		10,936							
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.		3,584							
80.07 Surveys, Testing, Investigation, Inspection		8,808							
80.08 Agency Force Account Work		18,103							
90 UNALLOCATED CONTINGENCY		113,367							
Subtotal (10-90)		680,143	91,220	113,357	680,143			55,457	

Major Capital Project Costs - Annualized Cost

(Rev. 6, Feb 7, 2006)

Project	Southwest Transitway - Alternative LRT 2A	Date	10/17/06
Location	Hennepin County, MN	Base Year	2006

	Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Useful Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)	15.10	109,701		26,175	163,995			12,339
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	80	0.0703	-
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	11.16	18,742	4,804	4,472	28,019	30	0.0806	2,298
10.03 Guideway: At-grade in mixed traffic	0.23	362	93	86	541	20	0.0944	51
10.04 Guideway: Aerial structure	0.63	23,711	6,078	5,657	35,446	80	0.0703	2,492
10.05 Guideway: Built-up fill	-	-	-	-	-	80	0.0703	-
10.06 Guideway: Underground cut & cover	0.05	4,352	1,116	1,038	6,507	70	0.0706	459
10.07 Guideway: Underground tunnel	-	-	-	-	-	70	0.0706	-
10.08 Guideway: Retained cut or fill	3.04	20,846	5,343	4,974	31,163	80	0.0703	2,191
10.09 Track: Direct fixation		2,487	637	593	3,718	30	0.0806	300
10.10 Track: Embedded		1,127	289	269	1,684	20	0.0944	159
10.11 Track: Ballasted		31,567	8,097	7,537	47,220	35	0.0772	3,647
10.12 Track: Special (switches, turnouts)		6,487	1,663	1,548	9,697	30	0.0806	781
10.13 Track: Vibration and noise dampening		-	-	-	-	30	0.0806	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	16	41,334		9,862	61,791			4,443
20.01 At-grade station, stop, shelter, mall, terminal, platform	15	21,450	5,498	5,118	32,066	70	0.0706	2,265
20.02 Aerial station, stop, shelter, mall, terminal, platform	1	1,430	367	341	2,138	70	0.0706	151
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	70	0.0706	-
20.04 Other stations, landings, terminals: intermodal, ferry, trolley, etc.	-	-	-	-	-	70	0.0706	-
20.05 Joint development	-	-	-	-	-	70	0.0706	-
20.06 Automobile parking multi-story structure		16,140	4,137	3,851	24,127	50	0.0725	1,748
20.07 Elevators, escalators		2,314	593	552	3,459	30	0.0806	279
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		60,694		12,096	76,784			6,437
30.01 Administration Building: Office, sales, storage, revenue counting		-	-	-	-	50	0.0725	-
30.02 Light Maintenance Facility		33,796	8,663	8,064	50,523	50	0.0725	3,661
30.03 Heavy Maintenance Facility		-	-	-	-	50	0.0725	-
30.04 Storage or Maintenance of Way Building		-	-	-	-	50	0.0725	-
30.05 Yard and Yard Track		16,898	4,331	4,032	25,261	80	0.0703	1,776
40 SITEWORK & SPECIAL CONDITIONS		96,236		22,962	143,864			12,188
40.01 Demolition, Clearing, Earthwork		9,750	2,499	2,326	14,576	100	0.0701	1,021
40.02 Site Utilities, Utility Relocation		27,364	7,019	6,534	40,938	100	0.0701	2,869
40.03 Haz. mat., contam'd soil removal/mitigation, ground water treatments		631	162	151	944	100	0.0701	66
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks		518	133	124	775	100	0.0701	54
40.05 Site structures including retaining walls, sound walls		-	-	-	-	80	0.0703	-
40.06 Pedestrian / bike access and accommodation, landscaping		18,966	4,861	4,525	28,352	20	0.0944	2,676
40.07 Automobile, bus, van accessways including roads, parking lots		38,965	9,993	9,302	58,260	20	0.0944	5,501
40.08 Temporary Facilities and other indirect costs during construction		-	-	-	-	100	0.0701	-
50 SYSTEMS		110,730		26,420	165,633			13,499
50.01 Train control and signals		36,805	9,434	8,782	55,021	30	0.0806	4,434
50.02 Traffic signals and crossing protection		8,996	2,306	2,146	13,448	90	0.0806	1,084
50.03 Traction power supply: substations		19,698	5,049	4,700	29,448	40	0.0750	2,209
50.04 Traction power distribution: catenary and third rail		26,956	6,910	6,402	40,297	30	0.0806	3,247
50.05 Communications		12,146	3,114	2,898	18,158	20	0.0944	1,714
50.06 Fare collection system and equipment		3,536	906	844	5,286	20	0.0944	499
50.07 Central Control		2,592	664	618	3,875	30	0.0806	312
Construction Subtotal (10-50)		406,699		97,514	610,967			47,906
60 ROW, LAND, EXISTING IMPROVEMENTS		39,651		9,461	49,112			3,442
60.01 Purchase or lease of real estate		29,915	-	7,130	37,053	100	0.0701	2,597
60.02 Relocation (freight railroad traffic)		9,736	-	2,333	12,059	100	0.0701	845
70 VEHICLES (number)	61	94,473		22,541	117,014			11,447
70.01 Light Rail	21	66,150	-	15,703	81,853	25	0.0858	7,031
70.02 Heavy Rail	-	-	-	-	-	25	0.0858	-
70.03 Commuter Rail	-	-	-	-	-	25	0.0858	-
70.04 Bus	40	14,786	-	3,528	18,314	12	0.1259	2,306
70.05 Other	-	-	-	-	-	12	0.1259	-
70.06 Non-revenue vehicles		2,512	-	599	3,112	12	0.1259	392
70.07 Spare parts		11,025	-	2,631	13,656	12	0.1259	1,719
80 PROFESSIONAL SERVICES		104,760						
80.01 Preliminary Engineering		6,288	-	-	-			
80.02 Final Design		17,717	-	-	-			
80.03 Project Management for Design and Construction		7,782	-	-	-			
80.04 Construction Administration & Management		25,349	-	-	-			
80.05 Insurance		12,575	-	-	-			
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.		4,135	-	-	-			
80.07 Surveys, Testing, Investigation, Inspection		10,070	-	-	-			
80.08 Agency Force Account Work		20,845	-	-	-			
90 UNALLOCATED CONTINGENCY		128,616						
Subtotal (10-90)		777,093	104,760	129,516	777,093			62,795

Major Capital Project Costs - Annualized Cost

(Rev. 6, Feb 7, 2006)

Project	Southwest Transitway - Alternative LRT 3A	Date	10/17/06
Location	Hennepin County, MN	Base Year	2006

	Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Useful Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)	15.73	130,033		31,006	195,061			14,607
10.01 Guideway At-grade exclusive right-of-way	-	-	-	-	-	80	0.0703	-
10.02 Guideway At-grade semi-exclusive (allows cross-traffic)	10.98	18,260	4,778	4,354	27,392	30	0.0806	2,207
10.03 Guideway At-grade in mixed traffic	0.43	670	175	160	1,005	20	0.0944	95
10.04 Guideway Aerial structure	0.92	35,840	9,377	8,546	53,763	80	0.0703	3,780
10.05 Guideway Built-up fill	-	-	-	-	-	80	0.0703	-
10.06 Guideway Underground cut & cover	0.06	5,023	1,314	1,198	7,535	70	0.0706	532
10.07 Guideway Underground tunnel	-	-	-	-	-	70	0.0706	-
10.08 Guideway Retained cut or fill	3.34	24,714	6,466	5,893	37,073	80	0.0703	2,607
10.09 Track Direct fixation		3,767	986	898	5,651	30	0.0806	455
10.10 Track Embedded		2,083	545	497	3,125	20	0.0944	295
10.11 Track Ballasted		32,034	8,302	7,639	48,054	35	0.0772	3,711
10.12 Track Special (switches, turnouts)		7,641	1,999	1,822	11,462	30	0.0806	924
10.13 Track Vibration and noise dampening		-	-	-	-	30	0.0806	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	17	52,735		12,574	75,106			5,693
20.01 At-grade station, stop, shelter, mall, terminal, platform	16	22,880	5,986	5,456	34,322	70	0.0706	2,424
20.02 Aerial station, stop, shelter, mall, terminal, platform	1	1,430	374	341	2,145	70	0.0706	151
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	70	0.0706	-
20.04 Other stations, landings, terminals: intermodal, ferry, trolley, etc.	-	-	-	-	-	70	0.0706	-
20.05 Joint development	-	-	-	-	-	70	0.0706	-
20.06 Automobile parking multi-story structure		26,111	6,832	6,226	39,168	50	0.0725	2,838
20.07 Elevators, escalators		2,314	605	552	3,471	30	0.0806	280
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		60,894		12,088	76,046			6,466
30.01 Administration Building: Office, sales, storage, revenue counting		-	-	-	-	50	0.0725	-
30.02 Light Maintenance Facility		33,796	8,842	8,059	50,697	50	0.0725	3,674
30.03 Heavy Maintenance Facility		-	-	-	-	50	0.0725	-
30.04 Storage or Maintenance of Way Building		-	-	-	-	50	0.0725	-
30.05 Yard and Yard Track		16,898	4,421	4,029	25,349	80	0.0703	1,782
40 SITEWORK & SPECIAL CONDITIONS		112,849		26,932	169,433			14,290
40.01 Demolition, Clearing, Earthwork		10,400	2,721	2,480	15,601	100	0.0701	1,093
40.02 Site Utilities, Utility Relocation		31,201	8,163	7,440	46,804	100	0.0701	3,260
40.03 Haz. mat., contam'd soil removal/mitigation, ground water treatments		1,235	323	295	1,853	100	0.0701	130
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks		1,122	294	268	1,683	100	0.0701	118
40.05 Site structures including retaining walls, sound walls		-	-	-	-	80	0.0703	-
40.06 Pedestrian / bike access and accommodation, landscaping		19,828	5,188	4,728	29,744	20	0.0944	2,808
40.07 Automobile, bus, van accessways including roads, parking lots		49,163	12,863	11,723	73,749	20	0.0944	6,961
40.08 Temporary Facilities and other indirect costs during construction		-	-	-	-	100	0.0701	-
50 SYSTEMS		121,242		28,910	181,873			14,829
50.01 Train control and signals		38,436	10,056	9,165	57,657	30	0.0806	4,646
50.02 Traffic signals and crossing protection		14,762	3,862	3,520	22,144	90	0.0806	1,784
50.03 Traction power supply: substations		20,571	5,382	4,905	30,859	40	0.0750	2,315
50.04 Traction power distribution: catenary and third rail		26,150	7,365	6,712	42,228	30	0.0806	3,403
50.05 Communications		12,859	3,364	3,066	19,289	20	0.0944	1,821
50.06 Fare collection system and equipment		3,757	983	896	5,636	20	0.0944	532
50.07 Central Control		2,707	700	645	4,052	30	0.0806	327
Construction Subtotal (10-50)		467,652		111,511	701,520			54,975
60 ROW, LAND, EXISTING IMPROVEMENTS		62,492		14,901	77,993			6,424
60.01 Purchase or lease of real estate		52,756	-	12,500	65,336	100	0.0701	4,579
60.02 Relocation (freight railroad traffic)		9,736	-	2,321	12,057	100	0.0701	845
70 VEHICLES (number)	66	106,341		25,367	131,698			12,827
70.01 Light Rail	24	75,600	-	10,027	93,627	25	0.0859	8,034
70.02 Heavy Rail	-	-	-	-	-	25	0.0858	-
70.03 Commuter Rail	-	-	-	-	-	25	0.0858	-
70.04 Bus	42	15,925	-	3,702	19,227	12	0.1259	2,421
70.05 Other	-	-	-	-	-	12	0.1259	-
70.06 Non-revenue vehicles		2,616	-	624	3,240	12	0.1259	400
70.07 Spare parts		12,600	-	3,004	15,604	12	0.1259	1,965
80 PROFESSIONAL SERVICES		122,957						
80.01 Preliminary Engineering		7,195	-	-	-			
80.02 Final Design		20,325	-	-	-			
80.03 Project Management for Design and Construction		9,145	-	-	-			
80.04 Construction Administration & Management		29,091	-	-	-			
80.05 Insurance		14,309	-	-	-			
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.		5,160	-	-	-			
80.07 Surveys, Testing, Investigation, Inspection		12,345	-	-	-			
80.08 Agency Force Account Work		24,709	-	-	-			
90 UNALLOCATED CONTINGENCY		161,768						
Subtotal (10-90)		910,611	122,367	151,768	910,611			73,226

Major Capital Project Costs - Annualized Cost

(Rev. 6, Feb 7, 2006)

Project	Southwest Transitway - Alternative LRT 4A					Date	10/17/06		
Location	Hennepin County, MN					Base Year	2006		
	Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Useful Life	Annualization Factor (7% rate)	Annualized Cost (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	9.10	57,291		13,656	85,733			6,558	
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	80	0.0703	-	
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	7.88	12,895	3,312	3,059	19,207	30	0.0806	1,548	
10.03 Guideway: At-grade in mixed traffic	0.23	362	93	86	542	20	0.0944	51	
10.04 Guideway: Aerial structure	0.31	10,544	2,721	2,513	15,779	80	0.0703	1,109	
10.05 Guideway: Built-up fill	-	-	-	-	-	80	0.0703	-	
10.06 Guideway: Underground cut & cover	0.02	1,373	354	327	2,054	70	0.0706	145	
10.07 Guideway: Underground tunnel	-	-	-	-	-	70	0.0706	-	
10.08 Guideway: Retained cut or fill	0.86	6,715	1,733	1,601	10,049	80	0.0703	707	
10.09 Track: Direct fixation	-	1,007	260	240	1,507	30	0.0806	121	
10.10 Track: Embedded	-	1,127	291	269	1,686	20	0.0944	159	
10.11 Track: Ballasted	-	19,072	4,922	4,546	26,540	35	0.0772	2,204	
10.12 Track: Special (switches, turnouts)	-	4,265	1,098	1,014	6,368	30	0.0806	513	
10.13 Track: Vibration and noise dampening	-	-	-	-	-	30	0.0806	-	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	11	18,044		4,301	27,002			1,941	
20.01 At-grade station, stop, shelter, mall, terminal, platform	10	14,300	3,691	3,409	21,399	70	0.0706	1,511	
20.02 Aerial station, stop, shelter, mall, terminal, platform	1	1,430	369	341	2,140	70	0.0706	151	
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	70	0.0706	-	
20.04 Other stations, landings, terminals: intermodal, ferry, trolley, etc. Joint development	-	-	-	-	-	70	0.0706	-	
20.05 Automobile parking multi-story structure	-	-	-	-	-	50	0.0725	-	
20.07 Elevators, escalators	-	2,314	597	552	3,463	30	0.0806	279	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		60,694		12,084	76,861			6,443	
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	50	0.0725	-	
30.02 Light Maintenance Facility	-	33,796	8,722	8,056	50,574	50	0.0725	3,665	
30.03 Heavy Maintenance Facility	-	-	-	-	-	50	0.0725	-	
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	50	0.0725	-	
30.05 Yard and Yard Track	-	16,898	4,361	4,028	25,287	80	0.0703	1,778	
40 SITEWORK & SPECIAL CONDITIONS		65,969		16,725	86,720			8,664	
40.01 Demolition, Clearing, Earthwork	-	7,150	1,845	1,704	10,700	100	0.0701	750	
40.02 Site Utilities, Utility Relocation	-	13,247	3,419	3,150	19,824	100	0.0701	1,369	
40.03 Haz. mat., contam'd soil removal/mitigation, ground water treatments	-	312	81	74	467	100	0.0701	33	
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	312	81	74	467	100	0.0701	33	
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	80	0.0703	-	
40.06 Pedestrian / bike access and accommodation, landscaping	-	19,609	3,512	3,244	20,365	20	0.0944	1,922	
40.07 Automobile, bus, van accessways including roads, parking lots	-	31,339	8,008	7,470	46,897	20	0.0944	4,427	
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	100	0.0701	-	
50 SYSTEMS		66,810		15,525	99,978			8,127	
50.01 Train control and signals	-	22,171	5,722	5,285	33,178	30	0.0806	2,674	
50.02 Traffic signals and crossing protection	-	6,786	1,751	1,618	10,155	90	0.0806	818	
50.03 Traction power supply: substations	-	11,866	3,062	2,829	17,757	40	0.0750	1,392	
50.04 Traction power distribution: catenary and third rail	-	16,208	4,191	3,871	24,299	30	0.0806	1,950	
50.05 Communications	-	5,757	1,466	1,372	8,615	20	0.0944	813	
50.06 Fare collection system and equipment	-	2,431	627	579	3,638	20	0.0944	343	
50.07 Central Control	-	1,561	403	372	2,336	30	0.0806	180	
Construction Subtotal (10-50)		258,808		61,692	387,294			30,823	
60 ROW, LAND, EXISTING IMPROVEMENTS		27,483		6,561	34,034			2,985	
60.01 Purchase or lease of real estate	-	17,747	-	4,230	21,978	100	0.0701	1,540	
60.02 Relocation (freight railroad traffic)	-	9,736	-	2,321	12,057	100	0.0701	845	
70 VEHICLES (number)	56	61,878		14,750	76,627			7,771	
70.01 Light Rail	12	37,800	-	9,010	46,810	25	0.0859	4,017	
70.02 Heavy Rail	-	-	-	-	-	25	0.0858	-	
70.03 Commuter Rail	-	-	-	-	-	25	0.0858	-	
70.04 Bus	44	16,264	-	3,877	20,141	12	0.1259	2,536	
70.05 Other	-	-	-	-	-	12	0.1259	-	
70.06 Non-revenue vehicles	-	1,513	-	361	1,874	12	0.1259	236	
70.07 Spare parts	-	6,300	-	1,502	7,802	12	0.1259	982	
80 PROFESSIONAL SERVICES		66,794							
80.01 Preliminary Engineering	-	3,982	-	-	-	-	-	-	
80.02 Final Design	-	11,270	-	-	-	-	-	-	
80.03 Project Management for Design and Construction	-	4,963	-	-	-	-	-	-	
80.04 Construction Administration & Management	-	16,064	-	-	-	-	-	-	
80.05 Insurance	-	7,963	-	-	-	-	-	-	
80.06 Legal, Permits, Review Fees by other agencies, cities, etc.	-	2,678	-	-	-	-	-	-	
80.07 Surveys, Testing, Investigation, Inspection	-	6,534	-	-	-	-	-	-	
80.08 Agency Force Account Work	-	13,319	-	-	-	-	-	-	
90 UNALLOCATED CONTINGENCY		82,993							
Subtotal (10-90)		497,956	66,794	82,990	497,956			40,779	

Major Capital Project Costs - Annualized Cost

(Rev. 6, Feb 7, 2006)

Project		Southwest Transitway - Alternative LRT 1C					Date	10/17/06	
Location		Hennepin County, MN					Base Year	2006	
	Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Useful Life	Annualization Factor (7% rate)	Annualized Cost (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	14.64	162,414		38,872	241,478			18,184	
10.01	Guideway: At-grade exclusive right-of-way	-	-	-	-	80	0.0703	-	
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	9.56	19,397	4,800	4,642	28,839	30	0.0806	2,324
10.03	Guideway: At-grade in mixed traffic	1.40	2,169	534	517	3,209	20	0.0944	303
10.04	Guideway: Aerial structure	0.56	22,272	5,512	5,331	33,114	80	0.0703	2,320
10.05	Guideway: Built-up fill	-	-	-	-	-	80	0.0703	-
10.06	Guideway: Underground cut & cover	0.59	50,684	12,543	12,131	75,368	70	0.0706	5,322
10.07	Guideway: Underground tunnel	-	-	-	-	-	70	0.0706	-
10.08	Guideway: Retained cut or fill	2.52	19,861	4,915	4,754	29,530	80	0.0703	2,076
10.09	Track: Direct fixation	-	5,652	1,399	1,358	8,403	30	0.0806	677
10.10	Track: Embedded	-	9,744	2,411	2,332	14,488	20	0.0944	1,368
10.11	Track: Ballasted	-	25,111	6,214	6,010	37,335	35	0.0772	2,884
10.12	Track: Special (switches, turnouts)	-	7,533	1,864	1,803	11,201	30	0.0806	903
10.13	Track: Vibration and noise dampening	-	-	-	-	-	30	0.0806	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	17	43,082		10,311	64,055			4,659	
20.01	At-grade station, stop, shelter, mall, terminal, platform	15	21,450	5,300	5,134	31,892	70	0.0706	2,252
20.02	Aerial station, stop, shelter, mall, terminal, platform	2	2,860	708	685	4,252	70	0.0706	300
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	70	0.0706	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	70	0.0706	-
20.05	Joint development	-	-	-	-	-	70	0.0706	-
20.06	Automobile parking multi-story structure	-	11,030	2,920	2,831	17,509	50	0.0725	1,274
20.07	Elevators, escalators	-	6,942	1,718	1,661	10,321	30	0.0806	832
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		50,694		12,133	75,372			5,408	
30.01	Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	50	0.0725	-
30.02	Light Maintenance Facility	-	33,796	8,363	8,089	50,248	50	0.0725	3,641
30.03	Heavy Maintenance Facility	-	-	-	-	-	50	0.0725	-
30.04	Storage or Maintenance of Way Building	-	-	-	-	-	50	0.0725	-
30.05	Yard and Yard Track	-	16,898	4,102	4,044	25,124	80	0.0703	1,767
40 SITEWORK & SPECIAL CONDITIONS		116,295		27,834	172,908			14,820	
40.01	Demolition, Clearing, Earthwork	-	11,050	2,735	2,645	16,429	100	0.0701	1,151
40.02	Site Utilities, Utility Relocation	-	29,256	7,240	7,002	43,499	100	0.0701	3,048
40.03	Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	502	124	120	747	100	0.0701	52
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	714	177	171	1,061	100	0.0701	74
40.05	Site structures including retaining walls, sound walls	-	-	-	-	-	80	0.0703	-
40.06	Pedestrian / bike access and accommodation, landscaping	-	25,672	6,353	6,144	38,169	20	0.0944	3,603
40.07	Automobile, bus, van accessways including roads, parking lots	-	49,100	12,151	11,752	73,003	20	0.0944	6,691
40.08	Temporary Facilities and other indirect costs during construction	-	-	-	-	-	100	0.0701	-
50 SYSTEMS		114,314		27,360	169,964			13,940	
50.01	Train control and signals	-	35,666	8,026	8,536	53,028	30	0.0806	4,273
50.02	Traffic signals and crossing protection	-	11,271	2,789	2,698	16,768	30	0.0806	1,350
50.03	Traction power supply: substations	-	19,089	4,724	4,569	28,381	40	0.0750	2,129
50.04	Traction power distribution: catenary and third rail	-	26,227	6,490	6,277	38,995	30	0.0806	3,142
50.05	Communications	-	15,672	3,854	3,727	23,153	20	0.0944	2,185
50.06	Fare collection system and equipment	-	3,978	984	952	5,915	20	0.0944	558
50.07	Central Control	-	2,512	622	601	3,734	30	0.0806	301
Construction Subtotal (10-50)		486,799		116,511	720,777			57,011	
60 ROW, LAND, EXISTING IMPROVEMENTS		20,961		5,017	25,977			1,821	
60.01	Purchase or lease of real estate	-	20,961	-	5,017	25,977	100	0.0701	1,821
60.02	Relocation (freight railroad traffic)	-	-	-	-	-	100	0.0701	-
70 VEHICLES (number)	62	104,681		25,054	129,735			12,578	
70.01	Light Rail	24	75,600	-	18,094	93,694	25	0.0858	8,040
70.02	Heavy Rail	-	-	-	-	-	25	0.0858	-
70.03	Commuter Rail	-	-	-	-	-	25	0.0858	-
70.04	Bus	38	14,046	-	3,362	17,408	12	0.1259	2,192
70.05	Other	-	-	-	-	-	12	0.1259	-
70.06	Non-revenue vehicles	-	2,434	-	583	3,017	12	0.1259	360
70.07	Spare parts	-	12,600	-	3,016	15,616	12	0.1259	1,966
80 PROFESSIONAL SERVICES		120,467							
80.01	Preliminary Engineering	-	7,409	-	-	-	-	-	
80.02	Final Design	-	20,822	-	-	-	-	-	
80.03	Project Management for Design and Construction	-	8,801	-	-	-	-	-	
80.04	Construction Administration & Management	-	30,062	-	-	-	-	-	
80.05	Insurance	-	14,978	-	-	-	-	-	
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	-	4,269	-	-	-	-	-	
80.07	Surveys; Testing; Investigation; Inspection	-	10,531	-	-	-	-	-	
80.08	Agency Force Account Work	-	23,516	-	-	-	-	-	
90 UNALLOCATED CONTINGENCY		146,582							
Subtotal (10-90)		879,490	120,467	146,582	879,490			71,409	

Major Capital Project Costs - Annualized Cost

(Rev. 6, Feb 7, 2006)

Project		Southwest Transitway - Alternative LRT 2C						Date	10/17/06
Location		Hennepin County, MN						Base Year	2006
		Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Useful Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)		15.97	190,124		45,523	282,817			21,125
10.01	Guideway: At-grade exclusive right-of-way	-	-	-	-	-	80	0.0703	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	8.90	18,751	4,652	4,490	27,892	30	0.0806	2,248
10.03	Guideway: At-grade in mixed traffic	1.40	2,159	536	517	3,211	20	0.0944	303
10.04	Guideway: Aerial structure	0.85	34,269	8,502	8,205	50,976	80	0.0703	3,584
10.05	Guideway: Built-up fill	-	-	-	-	-	80	0.0703	-
10.06	Guideway: Underground cut & cover	0.63	53,664	13,314	12,849	79,827	70	0.0706	5,637
10.07	Guideway: Underground tunnel	-	-	-	-	-	70	0.0706	-
10.08	Guideway: Retained cut or fill	4.19	29,754	7,382	7,124	44,260	80	0.0703	3,112
10.09	Track: Direct fixation	-	7,132	1,769	1,708	10,609	30	0.0806	855
10.10	Track: Embedded	-	9,744	2,418	2,333	14,495	20	0.0944	1,368
10.11	Track: Ballasted	-	27,354	6,787	6,550	40,690	35	0.0772	3,143
10.12	Track: Special (switches, turnouts)	-	7,298	1,811	1,747	10,856	30	0.0806	875
10.13	Track: Vibration and noise dampening	-	-	-	-	-	30	0.0806	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		19	49,660		11,891	73,871			5,362
20.01	At-grade station, stop, shelter, mall, terminal, platform	17	24,310	6,031	5,821	36,162	70	0.0706	2,554
20.02	Aerial station, stop, shelter, mall, terminal, platform	2	2,860	710	685	4,254	70	0.0706	300
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	70	0.0706	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	70	0.0706	-
20.05	Joint development	-	-	-	-	-	70	0.0706	-
20.06	Automobile parking multi-story structure	-	15,548	3,857	3,723	23,128	50	0.0725	1,676
20.07	Elevators, escalators	-	6,942	1,722	1,662	10,327	30	0.0806	832
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			50,694		12,138	75,410			5,410
30.01	Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	50	0.0725	-
30.02	Light Maintenance Facility	-	33,796	8,385	8,092	50,273	50	0.0725	3,643
30.03	Heavy Maintenance Facility	-	-	-	-	-	50	0.0725	-
30.04	Storage or Maintenance of Way Building	-	-	-	-	-	50	0.0725	-
30.05	Yard and Yard Track	-	16,898	4,192	4,046	25,137	80	0.0703	1,767
40 SITEWORK & SPECIAL CONDITIONS			126,074		30,187	187,540			16,891
40.01	Demolition, Clearing, Earthwork	-	11,700	2,903	2,801	17,404	100	0.0701	1,220
40.02	Site Utilities, Utility Relocation	-	36,974	9,173	8,853	55,000	100	0.0701	3,854
40.03	Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	661	164	158	983	100	0.0701	69
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	759	188	182	1,130	100	0.0701	79
40.05	Site structures including retaining walls, sound walls	-	-	-	-	-	80	0.0703	-
40.06	Pedestrian / bike access and accommodation, landscaping	-	24,065	5,971	5,762	35,798	20	0.0944	3,379
40.07	Automobile, bus, van accessways including roads, parking lots	-	51,914	12,880	12,430	77,225	20	0.0944	7,289
40.08	Temporary Facilities and other indirect costs during construction	-	-	-	-	-	100	0.0701	-
50 SYSTEMS			124,327		29,769	184,941			15,171
50.01	Train control and signals	-	38,904	9,652	9,315	57,871	30	0.0806	4,664
50.02	Traffic signals and crossing protection	-	11,856	2,941	2,839	17,636	30	0.0806	1,421
50.03	Traction power supply: substations	-	20,822	5,166	4,986	30,973	40	0.0750	2,323
50.04	Traction power distribution: catenary and third rail	-	28,599	7,095	6,848	42,542	30	0.0806	3,428
50.05	Communications	-	16,986	4,214	4,067	25,269	20	0.0944	2,385
50.06	Fare collection system and equipment	-	4,420	1,097	1,059	6,575	20	0.0944	621
50.07	Central Control	-	2,740	680	656	4,075	30	0.0806	328
Construction Subtotal (10-50)			540,878		129,508	804,579			62,959
60 ROW, LAND, EXISTING IMPROVEMENTS			26,629		6,376	33,006			2,313
60.01	Purchase or lease of real estate	-	26,629	-	-	33,006	100	0.0701	2,313
60.02	Relocation (freight railroad traffic)	-	-	-	-	-	100	0.0701	-
70 VEHICLES (number)		66	112,991		27,055	140,046			13,562
70.01	Light Rail	26	81,900	-	19,610	101,510	25	0.0858	8,711
70.02	Heavy Rail	-	-	-	-	-	25	0.0858	-
70.03	Commuter Rail	-	-	-	-	-	25	0.0858	-
70.04	Bus	40	14,786	-	3,540	18,326	12	0.1259	2,307
70.05	Other	-	-	-	-	-	12	0.1259	-
70.06	Non-revenue vehicles	-	2,655	-	636	3,291	12	0.1259	414
70.07	Spare parts	-	13,650	-	3,268	16,918	12	0.1259	2,130
80 PROFESSIONAL SERVICES			134,193						
80.01	Preliminary Engineering	-	8,321	-	-	-			
80.02	Final Design	-	23,088	-	-	-			
80.03	Project Management for Design and Construction	-	9,797	-	-	-			
80.04	Construction Administration & Management	-	33,418	-	-	-			
80.05	Insurance	-	16,642	-	-	-			
80.06	Legal, Permits, Review Fees by other agencies, cities, etc.	-	4,826	-	-	-			
80.07	Surveys, Testing, Investigation, Inspection	-	11,805	-	-	-			
80.08	Agency Force Account Work	-	26,295	-	-	-			
90 UNALLOCATED CONTINGENCY			162,938						
Subtotal (10-90)			977,630	134,193	162,938	977,630			78,835

Major Capital Project Costs - Annualized Cost

(Rev. 6, Feb 7, 2006)

Project		Southwest Transitway - Alternative LRT 3C						Date	10/17/06
Location		Hennepin County, MN						Base Year	2006
	Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Useful Life	Annualization Factor (7% rate)	Annualized Cost (X000)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	16.59	210,455		50,373	314,025			23,404	
10.01	Guideway: At-grade exclusive right-of-way	-	-	-	-	80	0.0703	-	
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	8.72	18,269	4,618	4,373	30	0.0806	2,197	
10.03	Guideway: At-grade in mixed traffic	1.60	2,466	623	590	20	0.0944	347	
10.04	Guideway: Aerial structure	1.15	46,398	11,728	11,105	80	0.0703	4,868	
10.05	Guideway: Built-up fill	-	-	-	-	80	0.0703	-	
10.06	Guideway: Underground cut & cover	0.64	54,335	13,734	13,005	70	0.0706	5,725	
10.07	Guideway: Underground tunnel	-	-	-	-	70	0.0706	-	
10.08	Guideway: Retained cut or fill	4.49	33,622	8,498	8,048	80	0.0703	3,527	
10.09	Track: Direct fixation	-	8,412	2,126	2,013	30	0.0806	1,012	
10.10	Track: Embedded	-	10,701	2,705	2,561	20	0.0944	1,507	
10.11	Track: Ballasted	-	27,801	7,027	6,654	35	0.0772	3,204	
10.12	Track: Special (switches, turnouts)	-	8,452	2,136	2,023	30	0.0806	1,016	
10.13	Track: Vibration and noise dampening	-	-	-	-	30	0.0806	-	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	20	60,808		14,555	90,732			6,580	
20.01	At-grade station, stop, shelter, mall, terminal, platform	18	25,740	6,506	6,161	70	0.0706	2,712	
20.02	Aerial station, stop, shelter, mall, terminal, platform	2	2,860	723	685	70	0.0706	301	
20.03	Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	70	0.0706	-	
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	70	0.0706	-	
20.05	Joint development	-	-	-	-	70	0.0706	-	
20.06	Automobile parking multi-story structure	-	25,266	6,386	6,047	50	0.0725	2,732	
20.07	Elevators, escalators	-	8,942	1,755	1,662	30	0.0806	835	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		50,694		12,134	75,642			5,427	
30.01	Administration Building: Office, sales, storage, revenue counting	-	-	-	-	50	0.0725	-	
30.02	Light Maintenance Facility	-	33,796	8,542	8,089	50	0.0725	3,654	
30.03	Heavy Maintenance Facility	-	-	-	-	50	0.0725	-	
30.04	Storage or Maintenance of Way Building	-	-	-	-	50	0.0725	-	
30.05	Yard and Yard Track	-	16,898	4,271	4,045	80	0.0703	1,773	
40 SITEWORK & SPECIAL CONDITIONS		142,905		34,205	213,231			18,104	
40.01	Demolition, Clearing, Earthwork	-	12,350	3,122	2,956	100	0.0701	1,291	
40.02	Site Utilities, Utility Relocation	-	40,790	10,310	9,763	100	0.0701	4,265	
40.03	Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	1,265	320	303	100	0.0701	132	
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	1,363	345	326	100	0.0701	143	
40.05	Site structures including retaining walls, sound walls	-	-	-	-	80	0.0703	-	
40.06	Pedestrian / bike access and accommodation, landscaping	-	24,928	6,301	5,967	20	0.0944	3,511	
40.07	Automobile, bus, van accessways including roads, parking lots	-	62,209	15,724	14,890	20	0.0944	8,762	
40.08	Temporary Facilities and other indirect costs during construction	-	-	-	-	100	0.0701	-	
50 SYSTEMS		134,838		32,274	201,195			16,493	
50.01	Train control and signals	-	40,535	10,246	9,702	30	0.0806	4,874	
50.02	Traffic signals and crossing protection	-	17,622	4,454	4,218	30	0.0806	2,119	
50.03	Traction power supply: substations	-	21,695	5,484	5,193	40	0.0750	2,428	
50.04	Traction power distribution: catenary and third rail	-	29,793	7,531	7,131	30	0.0806	3,582	
50.05	Communications	-	17,698	4,474	4,236	20	0.0944	2,493	
50.06	Fare collection system and equipment	-	4,641	1,173	1,111	20	0.0944	654	
50.07	Central Control	-	2,855	722	683	30	0.0806	343	
Construction Subtotal (10-50)		599,700		143,541	894,825			70,008	
60 ROW, LAND, EXISTING IMPROVEMENTS		49,470		11,841	61,311			4,297	
60.01	Purchase or lease of real estate	-	49,470	-	11,841	100	0.0701	4,297	
60.02	Relocation (freight railroad traffic)	-	-	-	-	100	0.0701	-	
70 VEHICLES (number)	70	121,184		29,006	150,190			14,527	
70.01	Light Rail	28	88,200	-	21,111	25	0.0858	9,380	
70.02	Heavy Rail	-	-	-	-	25	0.0858	-	
70.03	Commuter Rail	-	-	-	-	25	0.0858	-	
70.04	Bus	42	15,525	-	3,716	12	0.1259	2,422	
70.05	Other	-	-	-	-	12	0.1259	-	
70.06	Non-revenue vehicles	-	2,759	-	660	12	0.1259	431	
70.07	Spare parts	-	14,700	-	3,519	12	0.1259	2,294	
80 PROFESSIONAL SERVICES		151,584							
80.01	Preliminary Engineering	-	9,226	-	-				
80.02	Final Design	-	25,621	-	-				
80.03	Project Management for Design and Construction	-	11,122	-	-				
80.04	Construction Administration & Management	-	37,152	-	-				
80.05	Insurance	-	16,452	-	-				
80.06	Legal, Permits, Review Fees by other agencies, cities, etc.	-	5,850	-	-				
80.07	Surveys, Testing, Investigation, Inspection	-	14,008	-	-				
80.08	Agency Force Account Work	-	30,152	-	-				
90 UNALLOCATED CONTINGENCY		184,388							
Subtotal (10-90)		1,106,326	151,584	184,388	1,106,326			88,832	

Major Capital Project Costs - Annualized Cost

(Rev. 6, Feb 7, 2006)

Project	Southwest Transitway - Alternative LRT 4C					Date	10/17/06	
Location	Hennepin County, MN					Base Year	2006	
	Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Useful Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)	9.96	137,714		32,999	204,601			15,247
10.01 Guideway: At-grade exclusive right-of-way	-	-	-	-	-	80	0.0703	-
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	5.42	12,843	3,160	3,077	19,081	30	0.0806	1,638
10.03 Guideway: At-grade in mixed traffic	1.40	2,169	531	517	3,207	20	0.0944	303
10.04 Guideway: Aerial structure	0.53	21,102	5,193	5,056	31,351	80	0.0703	2,204
10.05 Guideway: Built-up fill	-	-	-	-	-	80	0.0703	-
10.06 Guideway: Underground cut & cover	0.59	50,684	12,473	12,145	75,302	70	0.0706	5,318
10.07 Guideway: Underground tunnel	-	-	-	-	-	70	0.0706	-
10.08 Guideway: Retained cut or fill	2.02	15,623	3,845	3,744	23,212	80	0.0703	1,632
10.09 Track: Direct fixation	-	5,652	1,391	1,354	8,397	30	0.0806	677
10.10 Track: Embedded	-	9,744	2,398	2,335	14,477	20	0.0944	1,367
10.11 Track: Ballasted	-	14,839	3,652	3,556	22,046	35	0.0772	1,703
10.12 Track: Special (switches, turnouts)	-	5,067	1,247	1,214	7,520	30	0.0806	607
10.13 Track: Vibration and noise dampening	-	-	-	-	-	30	0.0806	-
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	14	26,962		6,461	40,058			2,932
20.01 At-grade station, stop, shelter, mall, terminal, platform	12	17,160	4,223	4,112	25,495	70	0.0706	1,800
20.02 Aerial station, stop, shelter, mall, terminal, platform	2	2,860	704	685	4,249	70	0.0706	300
20.03 Underground station, stop, shelter, mall, terminal, platform	-	-	-	-	-	70	0.0706	-
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-	-	-	70	0.0706	-
20.05 Joint development	-	-	-	-	-	70	0.0706	-
20.06 Automobile parking multi-story structure	-	-	-	-	-	50	0.0725	-
20.07 Elevators, escalators	-	6,942	1,708	1,663	10,314	30	0.0806	831
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMN. BLDGS		50,694		12,147	75,318			5,404
30.01 Administration Building: Office, sales, storage, revenue counting	-	-	-	-	-	50	0.0725	-
30.02 Light Maintenance Facility	-	33,796	8,317	8,098	50,211	50	0.0725	3,638
30.03 Heavy Maintenance Facility	-	-	-	-	-	50	0.0725	-
30.04 Storage or Maintenance of Way Building	-	-	-	-	-	50	0.0725	-
30.05 Yard and Yard Track	-	16,898	4,156	4,049	25,105	80	0.0703	1,765
40 SITEWORK & SPECIAL CONDITIONS		95,567		22,972	142,430			12,258
40.01 Demolition, Clearing, Earthwork	-	9,100	2,239	2,181	13,520	100	0.0701	947
40.02 Site Utilities, Utility Relocation	-	22,836	5,620	5,472	33,928	100	0.0701	2,378
40.03 Haz. matl, contam'd soil removal/mitigation, ground water treatments	-	342	84	82	508	100	0.0701	36
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	-	563	136	133	822	100	0.0701	68
40.05 Site structures including retaining walls, sound walls	-	-	-	-	-	80	0.0703	-
40.06 Pedestrian / bike access and accommodation, landscaping	-	18,708	4,604	4,483	27,795	20	0.0944	2,624
40.07 Automobile, bus, van accessways including roads, parking lots	-	44,327	10,908	10,622	65,857	20	0.0944	6,216
40.08 Temporary Facilities and other indirect costs during construction	-	-	-	-	-	100	0.0701	-
50 SYSTEMS		80,407		19,267	119,461			9,805
50.01 Train control and signals	-	24,270	5,972	5,016	36,059	30	0.0806	2,906
50.02 Traffic signals and crossing protection	-	9,646	2,374	2,311	14,331	30	0.0806	1,159
50.03 Traction power supply: substations	-	12,989	3,196	3,113	19,299	40	0.0750	1,448
50.04 Traction power distribution: catenary and third rail	-	17,881	4,400	4,285	26,566	30	0.0806	2,141
50.05 Communications	-	10,597	2,608	2,539	15,744	20	0.0944	1,486
50.06 Fare collection system and equipment	-	3,315	816	794	4,925	20	0.0944	463
50.07 Central Control	-	1,709	421	410	2,639	30	0.0806	205
Construction Subtotal (10-50)		391,643		93,846	581,996			45,746
60 ROW, LAND, EXISTING IMPROVEMENTS		14,461		3,465	17,927			1,256
60.01 Purchase or lease of real estate	-	14,461	-	3,465	17,927	100	0.0701	1,256
60.02 Relocation (freight railroad traffic)	-	-	-	-	-	100	0.0701	-
70 VEHICLES (number)	61	80,396		19,264	99,660			9,886
70.01 Light Rail	17	53,550	-	12,832	66,382	25	0.0858	5,696
70.02 Heavy Rail	-	-	-	-	-	25	0.0858	-
70.03 Commuter Rail	-	-	-	-	-	25	0.0858	-
70.04 Bus	44	16,264	-	3,897	20,162	12	0.1259	2,530
70.05 Other	-	-	-	-	-	12	0.1259	-
70.06 Non-revenue vehicles	-	1,657	-	397	2,053	12	0.1259	259
70.07 Spare parts	-	8,925	-	2,139	11,064	12	0.1259	1,393
80 PROFESSIONAL SERVICES		96,377						
80.01 Preliminary Engineering	-	5,025	-	-	-	-	-	-
80.02 Final Design	-	16,667	-	-	-	-	-	-
80.03 Project Management for Design and Construction	-	7,008	-	-	-	-	-	-
80.04 Construction Administration & Management	-	24,173	-	-	-	-	-	-
80.05 Insurance	-	12,051	-	-	-	-	-	-
80.06 Legal; Permits; Review Fees by other agencies, cities, etc.	-	3,374	-	-	-	-	-	-
80.07 Surveys; Testing; Investigation; Inspection	-	8,280	-	-	-	-	-	-
80.08 Agency Force Account Work	-	18,799	-	-	-	-	-	-
90 UNALLOCATED CONTINGENCY		116,575						
Subtotal (10-90)		699,453	96,377	116,575	699,453			56,888