Southwest Transitway Alternatives Analysis



Technical Memorandum No. 7 Capital Cost Estimate

Prepared for Hennepin County Regional Railroad Authority

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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 bidirectional 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

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) West Lake Street (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)
- 21st Street (P&R)
- Penn Avenue (P&R)
- Van White Boulevard
- 12th Street
- 8th Street
- 5th Street

Texas Avenue

• Hopkins

3

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-ofway 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-ofway 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) Beltline Boulevard (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)
- 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-ofway 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) West Lake Street (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)
- 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

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.

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

Table 2 Year 2006 Unit Prices – Guideway

Bridge Abutment Modification - BRT/LRT	EA	\$ 1	00,000	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	\$ 1	95,000	10.12
LRT Track Turnout	EA	\$ 1	00,000	10.12
LRT Crossing Diamond	EA	\$ 1	00,000	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	\$ 1	50,000	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.

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

Table 4 Year 2006 Unit Prices – Support Facilities

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.

Description	Unit	Unit Price		SCC Line
Station Site Preparation Allowance	LS	\$ 5	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

Table 5 Year 2006 Unit Prices – Sitework and Special Conditions

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	\$ 1	10,000	50.02
Major Traffic Signal System	EA	\$ 2	25,000	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.*

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	\$4,86	7,930	60.02

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

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
LRT Spare Parts Allowance BRT Spare Parts Allowance	EA	\$ 500,000 \$ 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.

Description	Construction	Right-	Vehicles	SCC
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%	

Table 9 Professional Services

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.

Stop Location	Buc Stop	Park-ar	nd-Ride
	Bus Stop	Surface	Structured
Mitchell Road	0	230	
SouthWest Station	0		675
Flying Cloud Drive	0		
US 212/Shady Oak Road	0	35	
Bren Road	0		
Shady Oak Road	0		
Hopkins	0	90	
TH 169	0		

Table 11 Enhanced Bus Improvements

Excelsior Boulevard	0		
Blake Road	0		
Texas Avenue	0	265	
Louisiana Avenue	0		
Wooddale Drive	0		

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 atgrade 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.

Station	Type	Vertical	Vertical Park-and-Ride		
Station	туре	Circulation	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	0	40		
Wooddale	At-Grade		85		
Beltline Road	At-Grade		25		
West Lake	At-Grade		150		
21st Street	At-Grade		30		
Penn Avenue	At-Grade	0	70		
Van White Boulevard	At-Grade				
12th Street	At-Grade				
8th Street	At-Grade				
4th Street	At-Grade				

Table 13 BRT 1 Stations

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

Table 14 BRT 2 Stations

Station	Туро	Vertical	Park-ar	nd-Ride
Station	Турс	Circulation	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	0	40	
Wooddale	At-Grade		90	
Beltline Road	At-Grade		25	
West Lake	At-Grade		145	
21st Street	At-Grade		30	

Penn Avenue	At-Grade	0	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 lowfloor 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 though 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

	over Valley View Road in Eden Prairie
	under TC&W Railroad in Minnetonka
LRT 1A	over Excelsior Boulevard in Hopkins
	over BNSF Railroad in Minneapolis
	under 7th Street in Minneapolis
	under Prairie Center Drive in Eden Prairie
	over 1H 5 in Eden Prairie
	over Valley View exit ramp in Eden Prairie
LRT 2A	over TH 62 in Eden Prairie
	over IC&W Railroad in Minnetonka
	over Excelsior Boulevard in Hopkins
	over BNSF Railroad in Minneapolis
	under 7 In Street in Minneapoils
	under Praine Genter Drive in Eden Praine
	over 1-494 III Eueli Plaine over Elving Cloud Drive in Eden Brairie
	over Flying Cloud Drive in Eden Praine
	over TH 212 III Eden Prairie
LRT 3A	under Smetene Reed in Minnetenke
	under CD Pailrand in Hanking
	over Excelsion Boulovard in Henkins
	over EXcessor Boulevalu III ropkins
	under 7th Street in Minneapolis
	aver Excelsion Boulovard in Henkins
	over BNSE Bailroad in Minneapolis
	under 7th Street in Minneapolis
	over Valley View Road in Eden Prairie
	under TC&W Railroad in Minnetonka
LRT 1C	over Excelsior Boulevard in Hopkins
	over Wooddale/CP Railroad in St. Louis Park
	Nicollet Avenue tunnel in Minneapolis
	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
LRI2C	over TC&W Railroad in Minnetonka
	over Excelsior Boulevard in Hopkins
	over Wooddale/CP Railroad in St. Louis Park
	Nicollet Avenue tunnel in Minneapolis
	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
L RT 3C	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
	over Excelsior Boulevard in Hopkins
LRT 4C	over Wooddale/CP Railroad in St. Louis Park
	Nicollet Avenue tunnel in Minneapolis

Source: Parsons Brinckerhoff, 2006.

Table 17 LRT 1A Stations

Station T	Tuno	Type Vertical Circulation	Park-and-Ride	
	туре		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	0	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	0	70	
Van White Boulevard	At-Grade			
Royalston Avenue	At-Grade			

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

Table 18 LRT 2A Stations

Station	Tuno	Vertical	Park-and-Ride		
Station	Type	Circulation	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	0	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	0	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		Park-and-Ride			
Station	туре	Circulation	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	0	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	0	70			
Van White Boulevard	At-Grade					
Royalston Avenue	At-Grade					

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

Table 20 LRT 4A Stations

Station	Tuno	Vertical	Park-and-Ride			
Station	туре	Circulation	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	0	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	0	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	Park-and-Ride			
Station	Type	Circulation	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	0	35			
Wooddale Avenue	At-Grade		80			
Beltline Boulevard	At-Grade		25			
West Lake Street	At-Grade		145			
Uptown	Open Cut	0				
Lyndale Avenue	Open Cut	0				
28th Street	Open Cut	0				
Franklin Avenue	Open Cut	0				
12th Street	At-Grade					
8th Street	At-Grade					
4th Street	At-Grade					

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

Table 22 LRT 2C Stations

		Vertical	Park-and-Ride			
Station	Туре	Circulatio n	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	0	40			
Wooddale Avenue	At-Grade		85			
Beltline Boulevard	At-Grade		25			
West Lake Street	At-Grade		150			
Uptown	Open Cut	0				
Lyndale Avenue	Open Cut	0				
28th Street	Open Cut	0				

Franklin Avenue	Open Cut	0				
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	Туре	Vertical	Park-and-Ride			
Station	Type	Circulation	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	0	40			
Wooddale Avenue	At-Grade		90			
Beltline Boulevard	At-Grade		25			
West Lake Street	At-Grade		145			
Uptown	Open Cut	0				
Lyndale Avenue	Open Cut	0				
28th Street	Open Cut	0				
Franklin Avenue	Open Cut	0				
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	Туро	Vertical	Park-and-Ride			
Station	Type	Circulation	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	0	35			
Wooddale Avenue	At-Grade		85			

Beltline Boulevard	At-Grade		25	
West Lake Street	At-Grade		115	
Uptown	Open Cut	0		
Lyndale Avenue	Open Cut	0		
28th Street	Open Cut	0		
Franklin Avenue	Open Cut	0		
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.

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

Table 25 LRT Vehicle Requirements

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.

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

Table 26 Summary of Total Capital Cost Estimates

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

	Longth		Capital Cost per Mile			
Alternative	(miles)	Stations	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

Table 27 Summary of per Mile Capital Cost Estimates

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.

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

Table 28 Summary of Annualized Capital Cost Estimates

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









Appendix B: FTA Standard Cost Category (SCC) Definitions

3 <u>1</u>		
Stand	ard 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. 0, 1	607,2000)	Include guideway and track costs for all transit modes (rail, bus, monorail, cable car
10 GUIDEWAY & TRACK ELEMENTS (route miles)		Include guideway and navk costs for an infrast information rules, information, 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 30 Support Facilities 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.
10.00	Cuideway Detained aut as fill	Include excavation, retaining walls, backfill, underground guideway structure and
10.08	Suideway. Retained cut or fill	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.
		As associated with stations, include costs for rough grading, excavation, ventilation
		structures and equipment, station power and lighting, public address/customer
20 STA	TIONS STOPS TERMINALS INTERMODAL (number)	information system, safety systems such as fire detection and prevention, security
20 011		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 10 Guideway & Track
		Elements 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.	
		Per the FTA Circular 5010.1C Grant Management Guidelines, "Joint development is
20.05	Joint development	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	
		As associated with support facilities, include costs for rough grading, excavation.
1		ventilation structures and equipment, facility power and lighting, safety systems such as
1		fire detection and prevention, security surveillance, access control, and life safety
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		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.
		Event for guideway and track appealded with a yord, include all guideway and track
		Except for guideway and track associated with a yard, include all guideway and track
		costs associated with support facilities in 10 Guideway & Track Elements above.
30.04	Administration Building: Office sales storage revenue counting	Exception guideway and track associated with a yard, include an guideway and track costs associated with support facilities in 10 Guideway & Track Elements above.
30.01	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility	Exception guideway and track associated with a yard, include an guideway and track costs associated with support facilities in 10 Guideway & Track Elements above.
30.01 30.02 30.03	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility Heavy Maintenance Facility	Exception guideway and nack associated with a yard, include an guideway and nack costs associated with support facilities in 10 Guideway & Track Elements above.
30.01 30.02 30.03 30.04	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility Heavy Maintenance Facility Storage or Maintenance of Way Building	Exception guideway and nack associated with a yard, include an guideway and nack costs associated with support facilities in 10 Guideway & Track Elements above.
30.01 30.02 30.03 30.04 30.05	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility Heavy Maintenance Facility Storage or Maintenance of Way Building Yard and Yard Track	Exception guideway and nack associated with a yard, include an guideway and nack costs associated with support facilities in 10 Guideway & Track Elements above. Include service, inspection, and storage facilities and equipment. Include heavy maintenance and overhaul facilities and equipment. Include yard construction, guideway and track associated with yard.
30.01 30.02 30.03 30.04 30.05 40 SITE	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility Heavy Maintenance Facility Storage or Maintenance of Way Building Yard and Yard Track WORK & SPECIAL CONDITIONS	Exception guideway and track associated with a yard, include an guideway and track costs associated with support facilities in 10 Guideway & Track Elements above. Include service, inspection, and storage facilities and equipment. Include heavy maintenance and overhaul facilities and equipment. Include yard construction, guideway and track associated with yard. Include all construction materials and labor regardless of who is performing the work.
30.01 30.02 30.03 30.04 30.05 40 SITE	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility Heavy Maintenance Facility Storage or Maintenance of Way Building Yard and Yard Track WORK & SPECIAL CONDITIONS Demolition. Clearing. Earthwork	Exception guideway and nack associated with a yard, include an guideway and nack costs associated with support facilities in 10 Guideway & Track Elements above.
30.01 30.02 30.03 30.04 30.05 40 SITE 40.01 40.01	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility Heavy Maintenance Facility Storage or Maintenance of Way Building Yard and Yard Track WORK & SPECIAL CONDITIONS Demolition, Clearing, Earthwork Site Utilities, Utility Relocation	Exception guideway and nack associated with a yard, include an guideway and nack costs associated with support facilities in 10 Guideway & Track Elements above.
30.01 30.02 30.03 30.04 30.05 40 SITE 40.01 40.02 40.03	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility Heavy Maintenance Facility Storage or Maintenance of Way Building Yard and Yard Track WORK & SPECIAL CONDITIONS Demolition, Clearing, Earthwork Site Utilities, Utility Relocation Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	Exception guideway and nack associated with a yard, include an guideway and nack costs associated with support facilities in 10 Guideway & Track Elements above. Include service, inspection, and storage facilities and equipment. Include heavy maintenance and overhaul facilities and equipment. Include yard construction, guideway and track associated with yard. Include all construction materials and labor regardless of who is performing the work. Include project-wide clearing, demolition and fine grading. Include all site utilities - storm, sewer, water, gas, electric. Include underground storage tanks, fuel tanks and other hazardous materials and
30.01 30.02 30.03 30.04 30.05 40 SITE 40.01 40.02 40.03	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility Heavy Maintenance Facility Storage or Maintenance of Way Building Yard and Yard Track WORK & SPECIAL CONDITIONS Demolition, Clearing, Earthwork Site Utilities, Utility Relocation Haz, mat'l, contam'd soil removal/mitigation, ground water treatments Environmental mitination, e.g. wetlands, historic/archeologic, party	Exception guideway and nack associated with a yard, include an guideway and nack costs associated with support facilities in 10 Guideway & Track Elements above. Include service, inspection, and storage facilities and equipment. Include heavy maintenance and overhaul facilities and equipment. Include heavy maintenance and overhaul facilities and equipment. Include yard construction, guideway and track associated with yard. Include all construction materials and labor regardless of who is performing the work. Include project-wide clearing, demolition and fine grading. Include underground storage tanks, fuel tanks and other hazardous materials and treatments not listed. Include other environmental mitigation pet listed
30.01 30.02 30.03 30.04 30.05 40 SITE 40.01 40.02 40.03 40.04	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility Heavy Maintenance Facility Storage or Maintenance of Way Building Yard and Yard Track WORK & SPECIAL CONDITIONS Demolition, Clearing, Earthwork Site Utilities, Utility Relocation Haz, mat'l, contam'd soil removal/mitigation, ground water treatments Environmental mitigation, e.g. wetlands, historic/archeologic, parks Site structures including relaining walls. sound walls	Exception guideway and nack associated with a yard, include an guideway and nack costs associated with support facilities in 10 Guideway & Track Elements above. Include service, inspection, and storage facilities and equipment. Include heavy maintenance and overhaul facilities and equipment. Include yard construction, guideway and track associated with yard. Include all construction materials and labor regardless of who is performing the work. Include project-wide clearing, demolition and fine grading. Include all site utilities - storm, sewer, water, gas, electric. Include underground storage tanks, fuel tanks and other hazardous materials and treatments not listed. Include other environmental mitigation not listed.
30.01 30.02 30.03 30.04 30.05 40 SITE 40.01 40.02 40.04 40.04 40.05	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility Heavy Maintenance Facility Storage or Maintenance of Way Building Yard and Yard Track WORK & SPECIAL CONDITIONS Demolition, Clearing, Earthwork Site Utilities, Utility Relocation Haz. mat'l, contam'd soil removal/mitigation, ground water treatments Environmental mitigation, e.g. wetlands, historic/archeologic, parks Site structures including retaining walls, sound walls Pedestrian / bike access and accommodation, landscaping	Exception guideway and nack associated with a yard, include an guideway and nack costs associated with support facilities in 10 Guideway & Track Elements above. Include service, inspection, and storage facilities and equipment. Include heavy maintenance and overhaul facilities and equipment. Include heavy maintenance and overhaul facilities and equipment. Include yard construction, guideway and track associated with yard. Include all construction materials and labor regardless of who is performing the work. Include project-wide clearing, demolition and fine grading. Include all site utilities - storm, sewer, water, gas, electric. Include underground storage tanks, fuel tanks and other hazardous materials and treatments not listed. Include other environmental mitigation not listed. Include sidewalks, paths, plazas, landscape, site and station furniture, site lighting, divergent public adjunct bile facilities promoved foreign.
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 40.08 Temporary Facilities 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.
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50 SYS	TEMS	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 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.
Constru	uction Subtotal (10 - 50)	
60 ROV	V, 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.
70 VEH	ICLES (number)	Include design and manufacturing costs associated with vehicles. Include warranty costs.
70.01	Light Rail	Include streetcar.
70.02	Heavy Rail	Include Lecomotive Discol Lecomotive Electric, Trailer Care, Solf Preveilled Electric
70.03	Commuter Rail	(EMU), Self-Propelled Diesel (DMU).
70.04	Bus	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, Monorall, Car/Inclined Railway, Ferry Boat, Transferred Vehicle
70.06	Non-revenue vehicles	
70.07	Spare parts	Include all professional technical and management convices (and related professional
80 PRO	FESSIONAL SERVICES	liability insurance costs) during the preliminary engineering, final design, and
80.01	Preliminary Engineering	construction phases of the project. This includes environmental work, design,
80.02	Final Design	engineering and architectural services; specialty services such as safety or security
80.03	Project Management for Design and Construction	After studies, ridership modeling and analyses, auditing, legal services, administration
80.04	Construction Administration & Management	and management, etc. by agency staff or outside consultants. As required, use back-up
80.05	Insurance	worksheets to track detailed costs within each of the line items.
00.00		enter preliminary engineering (PE), regardless of funding source, are not included in
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	an FFGA and therefore, should not be included in the Standard Cost Category
80.07	Surveys, Testing, Investigation, Inspection	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.)
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.
Subtota	al (10 - 80)	Includes unallocated contingency, project reserves. Desument ellocated contingency
90 UNA	LLOCATED CONTINGENCY	for individual line items on the Allocated Contingency worksheet.
Subtota	al (10 - 90)	
100 FI	NANCE CHARGES	Include finance charges expected to be paid by the project sponsor/grantee prior to either the completion of the project or the fulfiliment 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 P	roject Cost (10 - 100)	

Appendix C: Enhanced Bus Alternative

	Major Capital Project Costs - Main Worksheet						(Rev. 6, Feb 7, 2006)		
Project	Southwest Transitwa	y - Enhan	ced Bus Bas	seline			Date 10		10/17/06
Location	Hennep	in 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		<u>k</u>	Design Bid B	uild			Forecast Year	2015
		Quantity	Base Year Estimate	Base Year Allocated Contingency	Base Year Total	Base Year Unit Cost	Base Year Percentage of	Base Year Percentage of	Forecast Year Total
			(X000)	(X000)	(X000)	(x000)	Construction	Project Total	(X000)
10 GUIDEW/	A Y & TRACK ELEMENTS (route miles) Guideway: At-grade exclusive right-of-way	16.00	-	-	-		0%	0%	1.0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	-	-	12	-				
10.03	Guideway: At-grade in mixed traffic Guideway: Aerial structure	16.00		-	-	-			
10.05	Guideway: Built-up fill		-			253			
10.06	Guideway: Underground cut & cover Guideway: Underground tunnel	-	-	-	-	-			
10.08	Guideway: Retained cut or fill		-	-	-	-			
10.09	Track Direct fixation				-				
10.11	Track Ballasted		-	-	-				
10.12	Track Special (switches, turnouts)		-	-	-				
10.13 20 STATION	Track Vibration and noise dampening	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	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-					
20.05	Joint development			-	-				
20.06	Elevators, escalators		8,779	2,633	- 11,408				
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	16.00	-	143	-		0%	0%	-
30.01	Administration Building: Office, sales, storage, revenue counting Light Maintenance Eacility								
30.03	Heavy Maintenance Facility		<u> </u>	-	-				
30.04	Storage or Maintenance of Way Building Vard and Vard Track		-						
40 SITEWOR	RK & 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	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments								
40,04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		5		-				
40.05	Pedestrian / bike access and accommodation, landscaping								
40.07	Automobile, bus, van accessways including roads, parking lots		1,860	558	2,418				
40.08 50 SYSTEM	Temporary Facilities and other indirect costs during construction	16.00	65	- 20	85	5	0%	0%	107
50.01	Train control and signals		4	-					
50.02	Traffic signals and crossing protection Traction power supply substations		5	-					
50.04	Traction power distribution: catenary and third rail		Ū	-	-				
50.05 50.06	Communications		65	20	85				
50.07	Central Control		-	-	-				
Constructio	n Subtotal (10-50)	16.00	13,090	3,927	17,017	1,064	100%	27%	21,628
60 ROW, LA	Purchase or lease of real estate	16.00	5,416	5,416	10,832	6//		17%	13,/6/
60.02	Relocation (freight railroad traffic)		-	-	-				
70 VEHICLE 70.01	s (numper) Light Rail	49	17,250	863	18,113	370		29%	23,020
70.02	Heavy Rail				-	-			
70.03	Commuter Rail Bus	- 49	- 17.250	- 863	- 18 113	370			
70.05	Other	-	-	-	-	-			
70.06	Non-revenue vehicles				-	100			
80 PROFES	SIONAL SERVICES	16.00	6,414	121	6,414	401		10%	8,152
80.01	Preliminary Engineering		262		262				2
80.02	Project Management for Design and Construction		597	-	597				
80.04	Construction Administration & Management		1,101		1,101				
80.05	Insurance Legal: Permits: Review Fees by other agencies, cities, etc.		524 402	-	524 402				
80.07	Surveys, Testing, Investigation, Inspection		1,148		1,148				
80.08 Subtetal (10	Agency Force Account Work	16.00	1,327	10.206	1,327	3 273		83%	66 568
90 UNALLO	CATED CONTINGENCY	10.00	42,110	10,200	10,475	0,210		17%	13,314
Subtotal (10	-90) E CHA POES	16.00			62,851	3,928		100%	79,882
Total Projec	e one (10-100)	16.00			62,851	3,928		100%	79,882
Total Allocate	ed Contingency as % of Base Year Estimate				24%				
Total Conting	gency as % of Base Year Estimate				20,681 49%				
Total Contin	gency as % of Base Year Total (w/o Finance Charges)				33%				
Forecast Yea	gency as % of Base Year Total Project Cost ar Construction Cost per Mile				33%				1,352
Forecast Yea	ar Total Project Cost per Mile				000				4,993
11101C55101/a					30%				

Appendix D: BRT Alternatives

	Major Capital Project Costs - Main Worksheet (Rev. 6, Feb 7, 2006)								
Project	Southwest Transit	way - Alte	ernative BR1	1			Date		10/17/06
Location	Hennepi	in County,	MN					Base Year	2006
Project ID									
	(AA, PE, FD, Bld/Award, Construction, Rev Ops) Phase			AA				Revenue Ops	2015
	(Design Bid Build, Design Build, CM at Risk, etc) Contracting Method			Design Bid B	uild			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 GUIDEWA	Y & TRACK ELEMENTS (route miles)	13.86	54,305	16,291	70,596	5,094	31%	17%	89,725
10.01 10.02 10.03 10.04 10.05 10.06 10.07 10.08 10.09 10.10 10.11	Guideway, A-grade exclusive ingin-dr-way Guideway, A-grade exm-ixclusive (allows cross-traffic) Guideway, A-grade in mixed traffic Guideway, Built-up fill Guideway, Underground cut & cover Guideway, Underground tunnel Guideway, Underground tunnel Guideway, Underground tunnel Guideway, Realined cut or fill Track: Direct fixation Track: Baltsted	1129 1.41 0.24 - 0.92	39,239 742 6,353 - 7,971	11,772 223 1,906 - 2,391	61,010 965 8,259 - 10,362	4,518 606 34,499 - - 11,207			
10.12	Track: Special (switches, turnouts) Track: Vibration and noise dampening.				•				
20 STATIONS 20.01 20.02 20.03 20.04 20.05 20.06	R, STOPS, TERMINALS, INTERMODAL (number) Al-grade station, stop, shelter, mail, terminal, platform Aerai station, stop, shelter, mail, terminal, platform Underground station, stop, shelter, mail, terminal, platform Other stations, landings, terminalis. Intermodal, ferry, trolley, etc. Joint development Automobile parking multi-story structure	16 15 1 -	29,585 16,500 1,100 - - - 10,205	8,876 4,950 330 - - - 3,062	38,461 21,450 1,430 - - - 13.267	2,404 1,430 1,430	17%	9%	48,882
20.07 30 SUPPORT	Elevators, escalators 7 FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	13.86	1,780	534 3,293	2,314 14,269	1,030	6%	3%	18,136
30.01 30.02 30.03 30.04 30.05	Administration Building: Office, sales, storage, revenue counting Light Maintenance Facility Heavy Maintenance Facility Storage or Maintenance of Way Building Yard and Yard Track		10,976	- 3,293 - -	14,269				
40 SITEWOR	K & SPECIAL CONDITIONS	13.96	61,972	18,592	80,564	5,813	35%	19%	102,394
40.02 40.03 40.04 40.05 40.06 40.06	Site Utilities, Utility Relocation Haz, matt, contamits obi removal/mitigation, ground water treatments Environmertal mitigation, e.g. wetlands, historic/archeologic, parks Site structures including retaining walls, sound walls Pedestrian / Dike access and accommodation, landscaping Automobile, bus, van accessways including roads, parking lots		16,095 366 382 16,311 20,819	4,828 110 115 4,893 6,246	20,923 476 497 21,204 27,064				
50 SYSTEM	Temporary Facilities and other indirect costs during construction 5	13.86	21,187	6,356	27,542	1,987	12%	6%	35,006
50.01 50.02 50.03 50.04 50.05 50.06 50.07	Train control and signals Traffic signals and crossing protection Traction power supply: substations Traction power distribution: cateniary and third rail Communications Fare collection system and equipment Central Control		4,785 11,342 3,230 1,829	1,436 - - 3,403 969 549	6,221 14,745 4,199 2,378				
Construction	i Subtotal (10-50)	13.86	178,025	53,407	231,432	16,699	100%	54%	294,142
60.01	Purchase or lease of real estate	10.00	12,230	12,230	24,460	2,407		078	40,462
70 VEHICLES	Relocation (reight railroad traffic) S (number)	54	4,868	4,868 1,359	9,736 28,534	528		7%	36,265
70.01 70.02 70.03 70.04 70.05 70.06 70.07	Light Rail Heavy Rail Commuter Rail Bus Other (BRT) Non-revenue vehicles Spare parts	- - - 39 15	13,730 9,750 2,195 1,500	686 400 110 75	14,416 10,238 2,305 1,575	- - 370 603 -			
80 PROFESS 80.01	Preliminary Engineering	13.86	59,896 3,560	-	59,896 3,560	4,322		14%	76,125
80.02 80.03 80.04 80.05 80.06 80.06 80.07 80.08	Final Design Project Management for Design and Construction Construction Administration & Management Insurance Legal; Permits; Review Fees by other agencies, cities, etc. Surveys; Testing, Investigation, Inspection Agency Force Account Work		9,616 4,345 14,413 7,121 2,635 5,814 12,391		9,616 4,345 14,413 7,121 2,635 5,814 12,391				
Subtotal (10- 90 UNALLOC	80) ATED CONTINGENCY	13.86	282,193	71,864	354,057 70,811	25,547		83%	449,995 89,999
Subtotal (10-	80)	13.86			424,869	30,657		100%	539,994
Total Project	Cost (10-100)	13.86			424,869	30,657		100%	539,994
Total Allocate Total Conting Total Conting Total Conting Total Conting Forecast Yea Professional S	a Contingency as % of Base Year Estimate ercy (Allocated and Unallocated) gency as % of Base Year Estimate gency as % of Base Year Total (w/o Finance Charges) ercy as % of Base Year Total Project Cost r Construction Cost per Mile Services as % of Construction				25% 142,676 51% 34% 34%				21,224 38,964

	Major Capital Project Costs - Main Worksheet						(Rev. 6, Feb 7, 2006)		006)
Project	Southwest Transit	tway - Alte	mative BR1	2			Date		10/17/06
Location	Hennep	in County,	MN					Base Year	2006
Project ID									
100.00000000	(AA PE FD Bid/Award Construction Rev Ops) Phase			AA				Revenue Ons	2015
	(Dealers Bid Build, Dealers Build, CM of Diale, and Construction Mathem			Design Did D				Encount Voor	2010
	(Design Bid Bollo, Design Bollo, CM at Risk, etc). Contracting Method			Design bid bi	ulia			Porecast 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 GUIDEW	AY & TRACK ELEMENTS (route miles)	18.31	81,932	24,580	106,511	5,816	34%	19%	135,373
10.02	Guideway, Al-grade semi-exclusive (allows cross-traffic)	8.36	29,262	8,778	38,040	4,550			
10.03	Guideway. At-grade in mixed traffic	7.58	5,796	1,739	7,534	994			
10.04	Guideway, Aerial structure Guideway, Built-up fill	0.87	32,805	9,842	42,647	49,015			
10.06	Guideway, Underground cut & cover				-				
10.07	Guideway, Underground tunnel								
10.08	Guideway. Retained cut or fill Track. Direct fixation	1.51	14,070	4,221	18,290	12,141			
10.10	Track Embedded		-						
10.11	Track: Ballasted		-		-				
10 12	Tracic Special (switches, tumouts)		-	-	-				
20 STATION	IS, STOPS, TERMINALS, INTERMODAL (number)	19	42,765	12,830	55,595	2.926	18%	10%	70,659
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, mail, terminal, platform	1	1,100	330	1,430	1,430			
20.03	Other stations, landings, terminals, Intermodal, ferry, trolley, etc.								
20.05	Joint development					1			
20.06	Automobile parking multi-story structure		20,085	6,026	26,111				
20.07 30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN, BLDGS	18.31	1,780	4.351	2,314	1.030	6%	3%	23.965
30.01	Administration Building. Office, sales, storage, revenue counting	10000	-	-	-				
30.02	Light Maintenance Facility		14,504	4,351	18,856				
30.03	Heavy Maintenance Facility Storage or Maintenance of Way Building				-				
30.05	Yard and Yard Track			-	-	1			
40 SITEWOR	RK & SPECIAL CONDITIONS	18.31	75,299	22,590	97,888	5,345	31%	18%	124,413
40.01	Site Utilities Utility Relocation		9,500	2,850	26,895				
40.03	Haz. matl, 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	4 1			
40.05	Site structures including retaining walls, sound walls Pedestrian / bike access and accommodation, landscaning		15.685	4 705	20.390				
40.07	Automobile, bus, van accessways including roads, parking lots		28,044	8,413	36,457				
40.08	Temporary Facilities and other indirect costs during construction		-	-	-	4			
50 01	Train control and signals	18.31	28,694	8,608	37,302	2,037	12%	7%	47,410
50.02	Traffic signals and crossing protection		7,380	2,214	9,594				
50.03	Traction power supply: substations			-	-				
50.04	Traction power distribution: catenary and third rail		14 997	4 496	10.499				
50.06	Fare collection system and equipment		3,910	1,173	5,083				
50.07	Central Control		2,417	725	3,143				
Constructio	n Subtotal (10-60)	18.31	243,194	72,958	316,152	17,263	100%	57%	401,819
60.01	Purchase or lease of real estate	10.01	12,230	12,230	24,460	1,001			10,002
60.02	Relocation (freight railroad traffic)		4,868	4,868	9,736			-	
70 VEHICLE	iont Rail	57	30,130	1,507	31,637	555		6%	40,210
70.02	Heavy Rail	-	-						
70.03	Commuter Rall			+					
70.04	Bus Other (BRT)	39	13,730	686 585	14,416	370			
70.06	Non-revenue vehicles		2,901	145	3,046				
70.07	Spare parts		1,800	90	1,890				
80 PROFES	SIONAL SERVICES	18.31	79,594		79,594	4,346		14%	101,162
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				
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.		3,287	-	3,287				
80.07	Surveys, Testing, Investigation, Inspection		7,176		7,176				
Subtotal (10	Agency Force Account Work	18.31	370.017	91,563	461.580	25.204		83%	586.652
90 UNALLO	CATED CONTINGENCY				92,316			17%	117,330
Subtotal (10	0-80)	18.31			553,896	30,245		100%	703,983
Total Projec	t Cost (10-100)	18.31			553,896	30,245		100%	703,983
Total Allocat	ed Contingency as % of Base Year Estimate				25%				
Total Contine	gency (Allocated and Unallocated)				183,879				
Total Contin	igency as % of Base Year Total (w/o Finance Charges)				33%				
Total Contin	igency as % of Base Year Total Project Cost				33%				
Forecast Yes	ar Construction Cost per Mile ar Total Project Cost per Mile								21,941
Professional	Services as % of Construction				25%				00,441

	Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 20	006)
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 GUIDEW	AY & TRACK ELEMENTS (route miles)	2.20	8,492	2,548
10.01	Guideway: At-grade exclusive right-of-way		- 7.176	- 0.152
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	-		2,135
10.04	Guideway: Aerial structure	0.03	858	257
10.05	Guideway: Built-up fill	10 0	×	÷
10.06	Guideway: Underground cut & cover	8771	5	5
10.07	Guideway: Underground tunnel	0.00		-
10.08	Guideway, Retained cut or mi	0.06	408	137
10.03	Track: Embedded		-	-
10.11	Track: Ballasted			-
10.12	Track: Special (switches, tumouts)		×	
10.13	Track: Vibration and noise dampening			va
20 STATION	S, 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		2	2
20.03	Other stations, landings, terminals; Interminal, practorm		_	-
20.04	Joint development			-
20.06	Automobile parking multi-story structure	-	5	-
20.07	Elevators, escalators		2	57
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			
30.01	Administration Building: Office, sales, storage, revenue counting			2
30.02	Light Maintenance Facility			. E
30.03	Heavy Maintenance Facility Storage or Meintenance of Mau Ruilding	-		-
30.04	Yard and Yard Track	-		
40 SITEWOF	RK & 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	-	-	-
40.00	Automobile, bus, van accessways including roads, padving lots	-	2,090	602
40.08	Temporary facilities and other indirect costs during construction	-	- 2,000	
50 SYSTEM	S		2,371	711
50.01	Train control and signals		-	9
50.02	Traffic signals and crossing protection		110	33
50.03	Traction power supply: substations	-	-	-
50.04	raction power distribution: catenary and third rail	-	- 1 001	- E40
50.05	Eare collection system and equipment		1,001	540
50.00	Central Control		290	87
Constructio	n Subtotal (10-50)		19,605	5,882
60 ROW, LA	ND, 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, 20	06)
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)
GUIDEW	AY & TRACK ELEMENTS (route miles)	2.70	11,621	3,486
10.01	Guideway: At-grade exclusive right-of-way	-	2	
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	2.26	7,697	2,309
10.03	Guideway: At-grade in mixed traffic	1-		
10.04	Guideway, Aenal structure Guideway, Built-up fill		-	
10.05	Guideway Underground cut & cover	-	-	
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	0.44	3,924	1,17
10.09	Track: Direct fixation	-	2	
10.10	Track: Embedded			
10.11	Track: Ballasted		×	
10.12	Track: Special (switches, tumouts)		Ξ.	
10.13	Track: Vibration and noise dampening		-	
20.04	At grade station, stan, shelter, mall terminal platform	3	3,300	990
20.01	Acrial station, stop, shelter, mail, terminal, platform	2	5,500	99
20.02	Underground station, stop, shelter, mail, terminal, platform		-	
20.00	Other stations, landings, terminals: Intermodal, ferry trolley, etc.	-	-	
20.05	Joint development		-	
20.06	Automobile parking multi-story structure		-	
20.07	Elevators, escalators			
SUPPOR	T 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			44.050	2 5 5
40.01	Demolition Closting Eathwork	-	11,859	3,55
40.02	Site Utilities Utility Relocation		2.853	40 85
40.02	Haz mat'l contam'd soil removal/mitigation, ground water treatments		71	2
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		71	2
40.05	Site structures including retaining walls, sound walls		-	
40.06	Pedestrian / bike access and accommodation, landscaping		3,582	1,07
40.07	Automobile, bus, van accessways including roads, parking lots		3,782	1,13
40.08	Temporary facilities and other indirect costs during construction		44	
SYSTEM	S	_	3,627	1,08
50.01	Traffic signals and crossing protection		-	10
50.02	Traction power supply: substations		000	16
50.03	Traction power distribution: category and third rail	-		
50.04	Communications	-	2 211	66
50.06	Fare collection system and equipment		510	15
50.07	Central Control		357	10
onstructio	n Subtotal (10-50)		30,407	9,12
ROW, LA	ND, EXISTING IMPROVEMENTS		3,250	3,25
60.01	Purchase or lease of real estate		3,250	3,25

	Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2)	006)
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 GUIDEW	AY & TRACK ELEMENTS (route miles)	0.99	3,807	1,142
10.01	Guideway: At-grade exclusive right-of-way		2 907	- 1.140
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	-		
10.04	Guideway: Aerial structure		×	-
10.05	Guideway: Built-up fill		×	Э
10.06	Guideway: Underground cut & cover	8771	5	-
10.07	Guideway: Underground tunnel	3358 2	5	5
10.08	Guideway, Retained cut or mi	-	-	-
10.03	Track: Embedded		-	-
10.11	Track: Ballasted		*	=
10.12	Track: Special (switches, tumouts)		ж	-
10.13	Track: Vibration and noise dampening			
20 STATION	S, 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	Other stations, landings, terminals; Interminal, practorm		_	-
20.04	Joint development			-
20.06	Automobile parking multi-story structure	-		-
20.07	Elevators, escalators		2	5
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			
30.01	Administration Building: Office, sales, storage, revenue counting			12
30.02	Light Maintenance Facility			
30.03	Heavy Maintenance Facility Storage or Maintenance of Mau Ruilding			-
30.04	Yard and Yard Track	-		-
40 SITEWOR	RK & SPECIAL CONDITIONS		4,123	1.237
40.01	Demolition, Clearing, Earthwork		500	150
40.02	Site Utilities, Utility Relocation		1,041	312
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		26	8
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		26	8
40.05	Site structures including retaining walls, sound walls	-	-	- 250
40.00	Automobile, bus, van accesswavs including roads, padving lots	-	1,197	309
40.08	Temporary facilities and other indirect costs during construction			
50 SYSTEM	S		1,552	466
50.01	Train control and signals		<i></i>	9
50.02	Traffic signals and crossing protection		445	134
50.03	Traction power supply: substations		=	Ξ
50.04	raction power distribution: catenary and third rail		-	
50.05	Communications		8U/	242
50.00	Central Control		130	39
Construction	n Subtotal (10-50)		10,582	3,175
60 ROW, LA	ND, EXISTING IMPROVEMENTS		1,083	1,083
60.01	Purchase or lease of real estate		1,083	1,083
60.02	Relocation (freight railroad traffic)		5	-

	Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 2)	006)
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
				Base Year
		Quantity	Base Year Estimate (X000)	Allocated Contingency (X000)
10 GUIDEW/	AY & TRACK ELEMENTS (route miles)	0.16	542	163
10.01	Guideway: At-grade exclusive right-of-way	- 0.46	-	- 162
10.02	Guideway, At-grade semi-exclusive (allows cross-traffic)	0.16	542	105
10.03	Guideway Aeral structure		-	-
10.05	Guideway: Built-up fill			
10.06	Guideway: Underground cut & cover	6973		-
10.07	Guideway: Underground tunnel	8524		5
10.08	Guideway: Retained cut or fill	1428	2	2
10.09	Track: Direct fixation	-		~
10.10	Track: Embedded			-
10.11	Track, Ballasted Track, Special (cwitches, turnouts)	-	-	
10.12	Track: Vibration and noise dampening	-	-	
20 STATION	S. 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	2	<u></u>	<u></u>
20.03	Underground station, stop, shelter, mall, terminal, platform		2	2
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	×	÷	×
20.05	Joint development	-		=
20.06	Automobile parking multi-story structure	-	5	
30 SUPPOR	T FACILITIES: YARDS SHOPS ADMIN BLOGS			
30.01	Administration Building: Office sales storage revenue counting	-		-
30.02	Light Maintenance Facility		0	-
30.03	Heavy Maintenance Facility			÷
30.04	Storage or Maintenance of Way Building			
30.05	Yard and Yard Track			17
40 SITEWOR	RK & SPECIAL CONDITIONS		2,744	823
40.01	Demonition, Cleaning, Earthwork		500	150
40.02	Haz mattl contamid soil removal/mitigation, dround water treatmonte		801	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		<u> </u>	2
50 SYSTEM	S Train control and algorate		431	129
50.01	Traffic signals and crossing protection		- 110	- 22
50.02	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
Constructio	n Subtotal (10-50)		4,818	1,445
60 ROW, LA	ND, EXISTING IMPROVEMENTS	-	1,083	1,083
60.07	Purchase of lease of real estate		1,083	1,083
00.02	rxelocation (neight rainoad traino)		5	

	Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 20	006)
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 GUIDEW/	AY & TRACK ELEMENTS (route miles)	1.13	2,140	642
10.01	Guideway, At-grade exclusive right-or-way	0.38	1 201	- 397
10.02	Guideway: At-grade in mixed traffic	0.50	849	255
10.04	Guideway: Aerial structure	-	-	- 200
10.05	Guideway: Built-up fill		-	æ
10.06	Guideway: Underground cut & cover	6373	5	5
10.07	Guideway: Underground tunnel	12.5	ē	5
10.08	Guideway: Retained cut or fill	2424	<u> </u>	12
10.09	Track: Direct fixation		=	
10.10	Track: Embedded	-	-	-
10.11	Track, Dallasleu Track, Special (switches tumouts)			-
10.12	Track: Vibration and noise dampening	-		-
20 STATION	S, 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	2	<u></u>	-
20.03	Underground station, stop, shelter, mall, terminal, platform	-	9	14
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	÷	-
20.05	Joint development		=	
20.06	Automobile parking multi-story structure	-	5	5
20.07			୍ ଅ	5
30.01	Administration Building: Office sales storage revenue counting		5	
30.02	Light Maintenance Facility		-	-
30.03	Heavy Maintenance Facility			8
30.04	Storage or Maintenance of Way Building			=
30.05	Yard and Yard Track			-
40 SITEWOR	RK & SPECIAL CONDITIONS		3,223	967
40.01	Demolition, Clearing, Earthwork		500	150
40.02	Site Utilities, Utility Relocation		1,197	359
40.03	Haz, math, contamid soil removal/mitigation, ground water treatments	-	20	6
40.05	Site structures including retaining walls, sound walls	-	- 20	-
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		12	20
50 SYSTEM	S		1,472	441
50.01	Train control and signals		-	-
50.02	ratic signals and crossing protection		225	68
50.03	Traction power distribution: estensiv and third roll			
50.04	Communications		- 027	278
50.06	Fare collection system and equipment		170	.51
50.07	Central Control		150	45
Construction	n Subtotal (10-50)		7,934	2,380
60 ROW, LA	ND, EXISTING IMPROVEMENTS		1,083	1,083
60.01	Purchase or lease of real estate		1,083	1,083
60.02	Relocation (freight railroad traffic)		5	-

	Major Capital Project Costs - By Segment	i.	(Rev. 6, Feb 7, 2)	006)
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
		1		
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	2.93	23,016	6,905
10.01	Guideway: At-grade exclusive right-of-way			2
10.02	Guideway, At-grade semi-exclusive (allows cross-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	1071	5	5
10.07	Guideway: Underground tunnel	173	5	-
10.08	Guideway: Retained cut or fill	0.49	4,935	1,480
10.09	Track: Embedded	-	-	-
10.10	Track: Ballasted			-
10.12	Track: Special (switches, tumouts)		×	-
10.13	Track: Vibration and noise dampening			-
20 STATION	S, 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, sheller, mail, terminal, platform	-	-	-
20.03	Other stations, landings, terminals; Intermodal, ferry, trolley, etc.	-		-
20.05	Joint development		=	-
20.06	Automobile parking multi-story structure		5	=
20.07	Elevators, escalators	4	2	5
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			-
30.07	Light Maintenance Eacility	-		-
30.03	Heavy Maintenance Facility			-
30.04	Storage or Maintenance of Way Building			
30.05	Yard and Yard Track			
40 SITEWOP	RK & SPECIAL CONDITIONS		14,053	4,216
40.01	Demolition, Clearing, Earthwork		1,000	300
40.02	Bite Utilities, Utility Relocation Haz, matil, contam'd soil removal/mitigation, ground water treatments	-	4,700	1,410
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		310	93
40.05	Site structures including retaining walls, sound walls		5	
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	I emporary facilities and other indirect costs during construction		- E 770	4 7 20
50.01	Train control and signals	-	5,112	1,132
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		5	-
50.05	Communications		2,400	720
50.06	Fare collection system and equipment		510	153
Constructio	n Subtotal (10-50)	-	45 041	13 512
60 ROW, LA	ND, 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, 2)	006)
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 GUIDEW	AY & TRACK ELEMENTS (route miles)	5.13	22,041	6,612
10.01	Guideway: At-grade exclusive right-of-way	22	2	2
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	0.90	3,062	919
10.03	Guideway: At-grade in mixed traffic	3.33	3,104	931
10.04	Guideway: Aenal structure	0.30	10,330	3,099
10.05	Guideway: Built-up III		×	-
10.06	Guideway, Underground cut & cover	1073	5	
10.07	Guideway, Onderground turner	0.60	- E E A P	1 664
10.00	Trady: Direct fivation	0.00	0,040	1,004
10.03	Track: Embedded		-	
10.10	Track: Embedded			
10.11	Track: Special (switches, tumouts)			-
10.12	Track: Vibration and noise dampening		-	-
20 STATION	IS, 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	2		
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		5	
20.07	Elevators, escalators		2	
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			
30.01	Administration Building: Office, sales, storage, revenue counting			2
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 SITEWOF	RK & SPECIAL CONDITIONS		12,958	3,888
40.01	Demonition, Clearing, Earthwork		1,500	450
40.02	Site Utilities, Utility Relocation		3,705	1,111
40.03	Haz, mati, contamid soil removal/mitigation, ground water treatments	-	190	5/
40.04	Site structures including retaining walls, cound walls		190	51
40.05	Pedectrian / hike access and accommodation landscaping		- 2 856	- 057
40.00	Automobile, bus, van access and accommodation, landstapling	-	2,000 1,519	1 255
40.07	Temporary facilities and other indirect costs during construction	-	4,510	1,500
50 SYSTEM	S		5 831	1 7 4 9
50.01	Train control and signals		-	
50.02	Traffic signals and crossing protection		445	134
50.03	Traction power supply: substations		=	÷
50.04	Traction power distribution: catenary and third rail		5	-
50.05	Communications		4,199	1,260
50.06	Fare collection system and equipment		510	153
50.07	Central Control		677	203
Constructio	n Subtotal (10-50)		44,131	13,239
60 ROW, LA	ND, EXISTING IMPROVEMENTS		6,707	6,707
60.01	Purchase or lease of real estate		6,707	6,707
60.02	Relocation (freight railroad traffic)		55	ন

	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					
12-			Route Miles	1.56	
			Stations	1	
		Ì			
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)	
10 GUIDEW/	AY & TRACK ELEMENTS (route miles)	1.56	11,173	3,352	
10.01	Guideway. At-grade exclusive right-of-way Guideway: At-grade semi-exclusive (allows cross-traffic)	1 10	3.731	1 1 1 9	
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		Ψ	æ	
10.06	Guideway: Underground cut & cover	171	5		
10.07	Guideway: Retained cut or fill	0.34	3.060	918	
10.09	Track: Direct fixation		2		
10.10	Track: Embedded		2	2	
10.11	Track: Ballasted	-	×	8	
10.12	Track: Special (switches, turnouts)	-	×		
20 STATION	S. 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	2	=		
20.03	Underground station, stop, shelter, mall, terminal, platform	2	9	- -	
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-			
20.05	Joint development	-			
20.00	Elevators, escalators	-			
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				
30.01	Administration Building: Office, sales, storage, revenue counting			-	
30.02	Light Maintenance Facility			-	
30.03	Heavy Maintenance Facility	-		8	
30.04	Storage of Maintenance of Way Building	-			
40 SITEWOR	RK & 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	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		2	2	
50 SYSTEM	S		1,879	564	
50.01	Traffic signals and crossing protection		-	-	
50.02	Traction power supply: substations		- 223		
50.04	Traction power distribution: catenary and third rail		5		
50.05	Communications		1,278	383	
50.06	Fare collection system and equipment		170	51	
50.07	Central Control		206	62	
	ND EXISTING IMPROVEMENTS		19,583	5,875	
60.01	Purchase or lease of real estate		1.083	1.083	
60.02	Relocation (freight railroad traffic)		5		

	Major Capital Project Costs - By Segment	1	(Rev. 6, Feb 7, 20	006)
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
		1 I		Basa Voar
		Quantity	Base Year Estimate (X000)	Allocated Contingency (X000)
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	4.87	18,004	5,401
10.01	Guideway. At-grade exclusive right-or-way 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		ж	÷
10.06	Guideway: Underground cut & cover	873		
10.07	Guideway, Onderground turner	0.08	529	159
10.09	Track: Direct fixation		2	~
10.10	Track: Embedded		2	-
10.11	Track: Ballasted		×	8
10.12	Track: Special (switches, turnouts)	-	×	-
20 STATION	S STOPS TERMINALS INTERMODAL (number)	6	8 380	2 5 1 4
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	Automobile parking multi-story structure	-	=	-
20.07	Elevators, escalators		1,780	534
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			
30.01	Administration Building: Office, sales, storage, revenue counting			
30.02	Light Maintenance Facility			-
30.03	Heavy Maintenance Facility Storage or Maintenance of Way Building	-		-
30.04	Yard and Yard Track	-		-
40 SITEWOP	RK & 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, matil, contamid soil removal/mitigation, ground water treatments		129	39
40.04	Site structures including retaining walls, sound walls	-	- 129	
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 SYSTEM	S Train control and signals		6,431	1,929
50.07	Traffic signals and crossing protection		785	236
50.03	Traction power supply: substations		=	
50.04	Traction power distribution: catenary and third rail		5	-
50.05	Communications		3,984	1,195
50.06	Fare collection system and equipment		1,020	306
Constructio	n Subtotal (10-50)		50 822	193
60 ROW, LA	ND, 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, 2)	006)
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 GUIDEW	AY & TRACK ELEMENTS (route miles)	1.54	1,207	362
10.01	Guideway: At-grade exclusive right-of-way Guideway: At-grade comi exclusive (allows cross traffic)	0.14	-	- 140
10.02	Guideway: At-grade in mixed traffic	1.41	7403	223
10.03	Guideway Aerial structure			
10.05	Guideway: Built-up fill	100	-	-
10.06	Guideway: Underground cut & cover	100	5	=
10.07	Guideway: Underground tunnel	15	-	H
10.08	Guideway: Retained cut or fill	12	<u>2</u>	-
10.09	Track: Direct fixation	-	8	-
10.10	Track: Embedded	-	H	-
10.11	Track, Dallasleu	-	-	-
10.12	Track: Vibration and noise dampening	-	-	-
20 STATION	S, 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	2	2	2
20.03	Underground station, stop, shelter, mall, terminal, platform		н	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	×	-
20.05	Joint development		5	-
20.06	Automobile parking multi-story structure			ر ة.
20.07			-	-
30.01	Administration Building: Office sales storage revenue counting	1		
30.02	Light Maintenance Facility			-
30.03	Heavy Maintenance Facility			÷
30.04	Storage or Maintenance of Way Building			-
30.05	Yard and Yard Track			5
40 SITEWOR	RK & SPECIAL CONDITIONS	_	9,886	2,966
40.01	Demolition, Clearing, Earthwork		2,000	600
40.02	Site Utilities, Utility Relocation	-	3,088	926
40.05	Environmental mitigation, e.g. wetlands, bistoric/archeologic, parks	-	57	12
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		<u></u>	-
50 SYSTEM	S		5,326	1,598
50.01	Train control and signals		-	-
50.02	Traction power supply: substations	-	2,670	801
50.03	Traction power distribution: category 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
Constructio	n Subtotal (10-50)		20,819	6,246
60 ROW, LA	ND, EXISTING IMPROVEMENTS		2,481	2,481
60.01	Purchase or lease of real estate		2,481	2,481
60.02	Relocation (freight railroad traffic)		55	10

Appendix E: LRT Alternatives

	Major Capital Projec	t Costs - I	Main Works	heet				(Rev. 6, Feb 7, 2	2006)
Project	Southwest Transity	way - Alter	rnative LRT	1A				Date	10/17/06
Location	Hennepi	in County,	MN					Base Year	2006
Project ID			1106.024						
	(A.A. DE ED Bid/Award Construction Dev One) Desce			٨٨				Devenue Ons	2015
	(VX, PE, FD, bioXward, Construction, Rev Ops) Phase			~~				Revenue Ops	2015
	(Design Bid Build, Design Build, CM at Risk, etc.) Contracting Method		d and a second sec	Design Bid B	uild			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 GUIDEWA	Y & TRACK ELEMENTS (route miles)	13.78	63,070	18,921	81,991	5,952	23%	12%	104,208
10.01	Guideway: At-grade exclusive right-of-way Guideway: At-grade semi-exclusive (allows cross-traffic)	11.82	14,914	4.474	19.389	1.640			
10.03	Guideway: Al-grade in mixed traffic	0.23	279	84	362	1,544			
10.04	Guideway: Aerial structure Guideway: Built-up fill	0.34	9,011	2,703	11,714	34,925			
10.06	Guideway: Underground cut & cover	0.02	1,056	317	1,373	82,368			
10.07	Guideway: Underground tunnel	-	* 304.9	2,629	- 10.062	9,006			
10.08	Track: Direct fixation	1.57	775	2,526	1,007	0,006			
10.10	Track: Embedded		867	260	1,127				
10.11	Track: Ballasted Track: Special (switches turnouts)		22,572	6,772	29,344				
10.13	Track: Vibration and noise dampening		-	-	-				
20 STATIONS	S, STOPS, TERMINALS, INTERMODAL (number)	14	27,385	8,216	35,601	2,543	10%	5%	45,247
20.01	Argrade station, stop, shelter, mail, 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.	-							
20.06	Automobile parking multi-story structure		10,205	3,062	13,267				
20.07	Elevators, escalators	42.70	1,780	534	2,314	2,000	148	70	64.470
30.01	Administration Building: Office, sales, storage, revenue counting	10.70	00,000	11,000		0,000	14.8	13	04,400
30.02	Light Maintenance Facility		25,997	7,799	33,796				
30.03	Heavy Maintenance Facility Storage or Maintenance of Way Building								
30.05	Yand and Yand Track		12,998	3,900	16,898				
40 SITEWOR	K & SPECIAL CONDITIONS	13.78	66,475	19,942	86,417	6,273	24%	13%	109,833
40.02	Site Utilities, Utility Relocation		15,129	4,539	19,667				
40.03	Haz. matl, contam'd soil removal/mitigation, ground water treatments		364	109	473				
40.04	Environmental mitigation, e.g. webands, historic/archeologic, parks Site structures including retaining walls, sound walls		364	109	4/3				
40.06	Pedestrian / bike access and accommodation, landscaping		15,825	4,747	20,572				
40.07	Automobile, bus, van accessways including roads, parking lots Temporary Eaclities and other indirect costs during construction		27,794	8,338	36,132				
50 SYSTEM	S	13.78	77,475	23,243	100,718	7,311	28%	15%	128,009
50.01	Train control and signals Traffic signals and crossing protection		25,821	7,746	33,567				
50.03	Traction power supply: substations		13,819	4,146	17,965				
50.04	Traction power distribution: catenary and third rail		18,911	5,873	24,584				
50.05	Communications Fare collection system and equipment		8,256	2,477	10,733				
50.07	Central Control		1,818	546	2,364	ŝ			
Construction	n Subtotal (10-50)	13.78	273,400	82,020	355,420	25,801	100%	52% 5%	451,727
60.01	Purchase or lease of real estate	10.70	12,123	12,123	24,247	2,407		0.0	40,100
60.02	Relocation (freight railroad traffic)		4,868	4,060	9,736	1 510			100 510
70.01	Light Rail	19	57,000	2,850	59,850	3,150		13%	109,510
70.02	Heavy Rall		•		-	-			
70.03	Commuter Rall Bus	- 38	13 378	- 669	14 046	370			
70.05	Other				-	-			
70.06	Non-revenue vehicles		2,182	109	2,291				
80 PROFESS	Sional Services	13.78	9,500	4/2	91,220	6,622		13%	115,938
80.01	Preliminary Engineering		5,468		5,468				
80.02	Final Design Project Management for Design and Construction		6,798		10,481				
80.04	Construction Administration & Management		22,042		22,042				
80.05	Insurance Legal: Remits: Review Fees by other agencies, cities, etc.		10,936		10,936				
80.07	Surveys, Testing, investigation, inspection		8,808		8,808				
80.08	Agency Force Account Work	10.70	18,103	-	18,103			001	700.005
SO UNALLOC	CATED CONTINGENCY	10.78	490,971	100,114	113,367	41,142		17%	144,073
Subtotal (10-	80)	13.78			680,143	49,374		100%	864,438
Total Project	t Cost (10-100)	13.78			680,143	49.374		100%	864,438
Total Allocate	ed Contingency as % of Base Year Estimate				22%				
Total Conting	ency (Allocated and Unallocated)				216,471				
Total Conting	gency as % of Base Year Total (w/o Finance Charges)				32%				
Total Conting	gency as % of Base Year Total Project Cost				32%				20.700
Forecast Yea	ir Total Project Cost per Mile								62,752
Dratecolonal (Services as % of Construction				26%				200000000000

	Major Capital Projec	t Costs - I	Main Works	heet				(Rev. 6, Feb 7, 2	1006)
Project	Southwest Transit	way - Alte	rnative LRT	2A				Date	10/17/06
Location	Hennep	in County,	MN					Base Year	2006
Project ID							1		
	(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 B	uild			Forecast Year	2015
				5					
		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 GUIDEW 10.01	AY & TRACK ELEMENTS (route miles) Guideway, Al-grade exclusive right-of-way	15.10	84,385	25,316	109,701	7,263	27%	14%	139,426
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 Guideway: Aerial structure	0.23	18,239	5,472	23,711	37,834			
10.05	Guideway, Built-up fill	-		-		-			
10.06	Guldeway: Underground cut & cover Guldeway: Underground tunnel		3,348	1,004	4,352	82,368			
10.08	Guideway. Retained cut or fill	3.04	16,035	4,811	20,846	6,868			
10.09	Track: Direct fixation Track: Embedded	1	1,913	574	2,487				
10.11	Track Ballasted		24,298	7,289	31,587				
10.12	Track: Special (switches, turnouts) Track: Vibration and mise demonstration		4,990	1,497	6,487				
20 STATION	IS, STOPS, TERMINALS, INTERMODAL (number)	16	31,795	9,539	41,334	2,583	10%	5%	52,533
20.01	At-grade station, stop, shelter, mall, terminal, platform	15	16,500	4,950	21,450	1,430			
20.02	Aenal station, stop, shelter, mail, terminal, platform Underground station, stop, shelter, mail, terminal, platform	1	1,100	330	1,430	1,430			
20.04	Other stations, landings, terminals. Intermodal, ferry, trolley, etc.								
20.05	Joint development Automobile parking multi-story storeture		19,416	9.795	16.140				
20.05	Elevators, escalators		1,780	534	2,314				
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	15.10	38,995	11,699	50,694	3,356	12%	7%	64,430
30.01	Administration Building. Once, sales, storage, revenue counting Light Maintenance Facility		25,997	7,799	33,796				
30.03	Heavy Maintenance Facility				-				
30.04	Storage or Maintenance of Way Building Yard and Yard Track		12.998	3.900	16.898				
40 SITEWOI	RK & 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	Haz, matl, contam'd soil removal/mitigation, ground water treatments	3	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 Pedestrian / bike access and accommodation, landscaping		14,589	4.377	18,966				
40.07	Automobile, bus, van accessways including roads, parking lots		29,988	8,997	38,985				
40.08	Temporary Facilities and other indirect costs during construction	15.10	85,177	25.553	110,730	7,331	27%	14%	140.734
50.01	Train control and signals		28,312	8,493	36,805				1
50.02	Traffic signals and crossing protection Traction nower supply, substations		6,920	2,076	8,996				
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	Pare collection system and equipment Central Control		2,720	598	2,536				
Constructio	n Subtotal (10-50)	15.10	314,379	94,314	408,693	27,058	100%	53%	519,435
60 ROW, LA	ND, EXISTING IMPROVEMENTS Purchase or lease of real estate	15.10	19,826	19,826	39,651 29,915	2,625		5%	50,395
60.02	Relocation (freight railroad traffic)		4,868	4,868	9,736	-			
70 VEHICLE	S (number)	61	89,974	4,499	94,473	1,549		12%	120,072
70.02	Heavy Rail	21	63,000	5,100	00,100	5,130			
70.03	Commuter Rall		-	-	-				
70.04	Other	40	14,082	704	14,786	370			
70.06	Non-revenue vehicles		2,393	120	2,512				
70.07 80 PROFES	Spare parts SIONAL SERVICES	15.10	10,500	525	11,025	6.936		13%	133.147
80.01	Preliminary Engineering		6,288	-	6,288				
80.02	Final Design Protect Management for Design and Construction		17,717	-	17,717				
80.04	Construction Administration & Management		25,349	- ÷	25,349				
80.05	Insurance		12,575		12,575				
80.06	Legal, Permits, Review Pees by other agencies, cities, etc. Surveys, Testing, Investigation, Inspection		4,135		4,135				
80.08	Agency Force Account Work		20,845		20,845	-			
Subtotal (10	HEO) CATED CONTINGENCY	15.10	528,940	118,638	647,578	42,874		83%	823,049
Subtotal (10	-80)	15.10			777,093	51,448		100%	987,559
100 FINANC	E CHARGES	15.40			777.000	51.440		0%	-
Total Allocat	ed Contingency as % of Base Year Estimate	15.10			22%	51,448		100%	387,659
Total Contin	gency (Allocated and Unallocated)				248,154				
Total Contin	gency as % of Base Year Estimate gency as % of Base Year Total (w/o Finance Charges)				47% 32%				
Total Contin	gency as % of Base Year Total Project Cost				32%				
Forecast Ye Forecast Ye	ar Consudation Cost per Mile ar Total Project Cost per Mile								34,390 65,389
Professional	Services as % of Construction				26%				00,000

	Major Capital Projec	t Costs -	Main Works	heet				(Rev. 6, Feb 7, 2	2006)
Project	Southwest Transit	way - Alte	rnative LRT	3A				Date	10/17/06
Location	Hennep	in 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		J.	Desian Bid B	uild			Forecast Year	2015
				5				İ.	
		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 GUIDEW	AY & TRACK ELEMENTS (route miles) Guideway, At-orade exclusive right-of-way	15.73	100,025	30,008	130,033	8,267	28%	14%	165,267
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 Guideway: Aerial structure	0.43	27,569	8,271	670 35,840	1,544 38,905			
10.05	Guideway: Built-up fill	-	-	-	-	-			
10.06	Guideway. Underground cut & cover Guideway. Underground tunnel	0.06	3,864	1,109	0,023	62,368	e.		
10.08	Guideway. Retained cut or fill	3.34	19,011	5,703	24,714	7,407			
10.09	Track Direct fixation Track Embedded		2,898	481	2,083				
10.11	Track: Ballasted		24,642	7,393	32,034				
10.12	Track Special (switches, turnouts) Track Vibration and noise dampening		5,878	1,763	7,641				
20 STATION	IS, STOPS, TERMINALS, INTERMODAL (number)	17	40,565	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	Underground station, stop, shelter, mail, terminal, platform	-	1,100		1,430	1,430			
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	127		12		1 <u>2</u> 9			
20.05	Automobile parking multi-story structure		- 20.085	6.026	- 26,111				
20.07	Elevators, escalators		1,780	534	2,314				
30 SUPPOR 30.01	Administration Building: Office sales storage revenue counting	15.73	38,995	11,699	50,694	3,223	11%	6%	64,430
30.02	Light Maintenance Facility		25,997	7,799	33,796				
30.03	Heavy Maintenance Facility		-						
30.05	Yard and Yard Track		12,998	3,900	16,898				
40 SITEWOI	RK & SPECIAL CONDITIONS	15.73	86,884	26,065	112,949	7,181	24%	12%	143,554
40.01	Site Utilities, Utility Relocation		24,001	7,200	31,201				
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		950	285	1,235				
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks Site structures including retaining walls, sound walls		863	259	1,122				
40.06	Pedestrian / bike access and accommodation, landscaping		15,252	4,576	19,828				
40.07	Automobile, bus, van accessways including roads, parking lots Temporary Eacilities and other indirect costs during construction		37,817	11,345	49,163				
50 SYSTEM	n5	15.73	93,263	27,979	121,242	7,708	26%	13%	154,094
50.01 50.02	Train control and signals Traffic signals and crossing protection		29,566	8,870	38,436				
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				
50.06	Fare collection system and equipment		2,890	867	3,757				
50.07	Central Control	15.73	2,082	625	2,707	29 733	100%	51%	59/ 369
60 ROW, LA	ND, EXISTING IMPROVEMENTS	15.73	31,246	31,246	62,492	3,973	100 /8	7%	79,425
60.01	Purchase or lease of real estate		26,378	26,378	52,756				
70 VEHICLE	S (number)	66	4,000	5,064	106,341	1,611		12%	135,156
70.01	Light Rail	24	72,000	3,600	75,600	3,150			
70.02	Commuter Rall	-				-	8		
70.04	Bus	42	14,786	739	15,525	370			
70.05	Other Non-revenue vehicles		- 2 491	- 125	2.616		e.		
70.07	Spare parts		12,000	600	12,600	101			
80 PROFES	SIONAL SERVICES	15.73	122,357	-	122,357 7.195	7,779		13%	155,512
80.02	Final Design		20,325	-	20,325				
80.03	Project Management for Design and Construction		9,145	-	9,145				
80.05	Insurance		14,389		14,389				
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.		5,160	-	5,160				
80.07	Agency Force Account Work		24,709		24,709				
Subtotal (10		15.73	614,613	144,230	758,842	48,246		83%	964,463
Subtotal (10	Deo)	15.73			151,768 910.611	57.895		17%	192,893
100 FINANC	E CHARGES							0%	
Total Project	ed Contingency as % of Base Year Estimate	15.73			910,611 23%	57,895		100%	1,157,355
Total Contin	gency (Allocated and Unallocated)				295,998				
Total Contin	igency as % of Base Year Estimate idency as % of Base Year Total (w/o Finance Charges)				48%				
Total Contin	igency as % of Base Year Total Project Cost				33%				
Forecast Yes	ar Construction Cost per Mile ar Total Project Cost per Mile								37,789
Professional	Services as % of Construction				26%				10,080

	Major Capital Projec	t Costs - I	Main Works	heet		12	Sec.	(Rev. 6, Feb 7, 2	1006)
Project	Southwest Transity	way - Alte	rnative LRT	4A				Date	10/17/06
Location	Hennepi	in County,	MN					Dase Year	2006
Project ID									
	(AA PE ED Bid/Award Construction Rev Ons) Phase	-		۵۵				Revenue (îns	2015
	(A, PL, ID, DiaWard, Construction, Rev Op) Phase							evenue opa	2010
	(Design Bid Build, Design Build, CM at Risk, etc) Contracting Method			Design Bld B	ulla			Horecast 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 GUIDEW	AY & 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-or-way 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: Aenai structure Guideway: Built-up fill	0.31	8,111	2,433	10,544	39,345			
10.06	Guideway: Underground cut & cover	0.02	1,066	317	1,373	82,368	1		
10.07	Guideway: Underground tunnel Guideway: Retained cut or fill	- Л 86	5 166	- 1.550	6 715	7 788			
10.09	Track. Direct fixation	0.00	775	232	1,007	1,100			
10.10	Track. Embedded		867	260	1,127				
10.11	Track Balasted Track Special (switches, turnouts)		3,273	4,401	4,265				
10,13	Track. Vibration and noise dampening				-	2			
20 STATION 20.01	IS, STOPS, TERMINALS, INTERMODAL (number)	11	13,880	4,164	18,044	1,640	7%	4%	22,933
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	Uther stations, landings, terminals. Intermodal, terry, trolley, etc. Joint development				-				
20.06	Automobile parking multi-story structure								
20.07	Elevators, escalators	9.10	1,780	534	2,314	5 572	20%	10%	64.430
30.01	Administration Building: Office, sales, storage, revenue counting	5.10	-	-	-	0,012	2010	10.1	04,400
30.02	Light Maintenance Facility		25,997	7,799	33,796				
30.03	Storage or Maintenance of Way Building								
30.05	Yard and Yard Track		12,998	3,900	16,898				
40 SITEWOI	RK & SPECIAL CONDITIONS	9.10	50,746	15,224	65,969	7,250	25%	13%	83,845
40.02	Site Utilities, Utility Relocation		10,190	3,057	13,247				
40.03	Haz. mat1, contam'd soil removal/mitigation, ground water treatments	1	240	72	312				
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks Site structures including retaining walls, sound walls	3	240	72	312				
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				
50 SYSTEN	S	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 Traction power supply substations		5,220	2,738	6,786				
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	Central Control		1,870	360	1,561				
Constructio	n Subtotal (10-50)	9.10	199,083	59,725	258,808	28,445	100%	52%	328,937
60 ROW, LA	ND, EXISTING IMPROVEMENTS Purchase or lease of real estate	9.10	13,742	13,742	27,483	3,021		6%	34,930
60.02	Relocation (freight railroad traffic)		4,868	4,868	9,736				
70 VEHICLE	5 (number)	56	58,931	2,947	61,878	1,105		12%	78,644
70.01	Heavy Rail	12	36,000	1,800	37,800	3,150			
70.03	Commuter Rail	-							
70.04	Bus Other	44	15,490	774	16,264	370			
70.06	Non-revenue vehicles		1,441	72	1,513	-			
70.07	Spare parts	810	6,000	300	6,300	7.244		128	04 002
80.01	Preliminary Engineering	5.10	3,982		3,982	(,041		10 %	04,000
80.02	Final Design		11,270		11,270				
80.03	Project Management for Design and Construction	1	4,983		4,983				
80.05	Insurance		7,963		7,963				
80.06	Legal, Pemits, Review Fees by other agencies, cities, etc.		2,678	(4)	2,678				
80.07	Agency Force Account Work		13,319		6,534				
Subtotal (10	-80)	9.10	338,550	76,413	414,963	45,607		83%	527,404
Subtetal (10	CATED CONTINGENCY 980)	8.10			497 956	54 728		17%	105,481 632,885
100 FINANC	E CHARGES	0.15			-	04,120		0%	-
Total Projec	t Cost (10-100)	9.10			497,956	54,728	2	100%	632,885
Total Contin	gency (Allocated and Unallocated)				159,406				
Total Contin	gency as % of Base Year Estimate				47%				
Total Contin	gency as % of base year lotal (w/orinance Charges) gency as % of Base Year Total Project Cost				32%				
Forecast Yes	ar Construction Cost per Mile								36,152
Forecast Yes Protessional	ar Total Project Cost per Mile Services as % of Construction				26%				69,558

	Major Capital Projec	t Costs - I	Main Works	heet				(Rev. 6, Feb 7, 2	1006)
Project	southwest Transit	way - Alte	mative LRT	1C				Date	10/17/06
Location	Hennep	in County,	MN					Base Year	2006
Project IE)								
	(AA PE ED Bid/Award Construction Rev Ons) Phase			ΔΔ				Revenue Ons	2015
	(Project District Desire Desir				251121			Farmer and Service of	2015
_	(Design brubulu, Design bulu, Om ar Risk, etc.). Contracting method		4	Design Bld B				FUIELdsLifedi	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 GUIDEW	AY & 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 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 Guideway: Built up fill	0.56	17,132	5,140	22,272	39,608			
10.06	Guideway. Underground cut & cover	0.59	38,988	11,696	50,684	85,664			
10.07	Guideway: Underground tunnel	2			-				
10.08	Guideway, Retained cut or fill Track, Direct fivation	2.52	15,278	4,583	19,861	7,878			
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) Track: Vibration and poise dampening		5,795	1,738	7,533				
20 STATIO	NS, 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	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				
30 SUPP OF	RT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	14.64	38,995	11,699	50,694	3,463	10%	6%	64,430
30.01	Administration Building: Office, sales, storage, revenue counting	20080900			-		1		
30.02	Light Maintenance Facility		25,997	7,799	33,796				
30.04	Storage or Maintenance of Way Building				-				
30.05	Yard and Yard Track		12,998	3,900	16,898	100000000000000000000000000000000000000			-
40 SITEWO	RK & SPECIAL CONDITIONS	14.64	89,458	26,837	116,295	7,945	24%	13%	147,807
40.02	Site Utilities, Utility Relocation		22,505	6,751	29,256				
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		386	116	502				
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks Site structures including retaining walls, sound walls		549	165	714				
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	remporary Facilities and other indirect costs during construction	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			1000	
50.02	Traffic signals and crossing protection		8,670	2,601	11,271				
50.03	Traction power supply: substations Traction power distribution: catenary and third rail		20,175	4,405	26.227				
50.05	Communications		11,979	3,594	15,572				
50.06	Fare collection system and equipment		3,060	918	3,978				
C onstructio	on Subtotal (10-50)	14.64	374,461	112,338	486,799	33,259	100%	55%	618,705
60 ROW, LA	AND, 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				
70 VEHICLI	ES (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	(*)	-	(***) 1979		(*) (27			
70.03	Bus	38	13,378	669	14,046	370			
70.05	Other	(_)	-		-				
70.06	Non-revenue vehicles Snare narts		2,318	116	2,434	171			
80 PROFES	SIONAL SERVICES	14.64	120,467		120,467	8,230		14%	153,110
80.01	Preliminary Engineering		7,489		7,489				
80.02	Final Design Project Management for Design and Construction		20,822	-	20,822				
80.04	Construction Administration & Management		30,062		30,062				
80.05	Insurance		14,978		14,978				
80.07	Surveys, Testing, Investigation, Inspection		4,269	-	4,269				
80.08	Agency Force Account Work		23,516		23,516				
Subtotal (1)	0-80)	14.64	605,105	127,803	732,908	50,073		83%	931,501
Subtotal (1	0-80)	14.64			879,490	60,088		100%	1,117,801
100 FINANO	CE CHARGES							0%	
Total Proje	ct Cost (10-100) ted Contingency as % of Base Year Estimate	14.64			879,490	60,088		100%	1,117,801
Total Contin	igency (Allocated and Unallocated)				274,385				
Total Conti	ngency as % of Base Year Estimate				45%				
Total Contin	ngency as % of Base Year Total (w/o Finance Charges) ndency as % of Base Year Total Project Cost				31%				
Forecast Ye	ar Construction Cost per Mile				5.10				42,271
Forecast Ye	ear Total Project Cost per Mile				95%				76,370

	Major Capital Projec	t Costs - I	Main Works	heet				(Rev. 6, Feb 7, 2	2006)
Project	Southwest Transity	way - Alte	mative LRT	2C				Date	10/17/06
Location	Hennepi	in County,	MN					Base Year	2006
Project ID									
2244	(AA, PE, FD, Bid/Award, Construction, Rev Ops) Phase			AA				Revenue Ops	2015
	(Design Bid Build, Design Build, CM at Risk, etc.) Contracting Method			Desian Bid B	uild			Forecast Year	2015
				beeligii biu b				1	2010
		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 GUIDEW	AY & TRACK ELEMENTS (route miles)	15.97	146,249	43,875	190,124	11,908	35%	19%	241,641
10.01	Guideway, Al-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: Built-up fill	-	- 20,000	7,500		40,140			
10.06	Guideway. Underground cut & cover	0.63	41,280	12,384	53,664	85,474			
10.07	Guideway: Onderground tunnel 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				
10.12	Track Special (switches, turnouts)		5,614	1,684	7,298				
10.13	Track Vibration and noise dampening		-	-	-				
20 STATION 20.01	At-grade station, stop, shelter, mail, terminal, platform	19	38,200 18,700	11,460 5,610	49,660 24.310	2,614	9%	5%	63,116
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 Other stations, landings, terminals, Intermodal, femy, trolley, etc.	-	=	-	-	-			
20.04	Joint development								
20.06	Automobile parking multi-story structure		11,960	3,588	15,548				
20.07 30 SUPP OF	T FACILITIES: YARDS, SHOPS, ADMIN, BLDGS	15.97	5,340 38,995	1,602	6,942 50,694	3.175	9%	5%	64,430
30.01	Administration Building: Office, sales, storage, revenue counting		-	-	-				
30.02	Light Maintenance Facility Heavy Maintenance Facility		25,997	7,799	33,796				
30.04	Storage or Maintenance of Way Building		-						
30.05	Yard and Yard Track	12.07	12,998	3,900	16,898		0011	1011	100.000
40 STEWO 40.01	Demolition, Clearing, Earthwork	15.97	96,980	29,094	126,074	7,897	23%	13%	160,236
40.02	Site Utilities, Utility Relocation		28,441	8,532	36,974				
40.03	Haz, matil, contamid soil removal/mitigation, ground water treatments Environmental mitigation, e.g. wetlands, historic/archeologic, parks		508	153	661 759				
40.05	Site structures including retaining walls, sound walls		-	-					
40.06	Pedestrian / bike access and accommodation, landscaping		18,512	5,554	24,065				
40.07	Temporary Facilities and other indirect costs during construction		39,934	11,980	51,914				
50 SYSTEM	n5	15.97	95,636	28,691	124,327	7,787	23%	13%	158,015
50.01	Train control and signals Traffic signals and crossing protection		29,926	8,978	38,904				
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	Fare collection system and equipment		3,400	3,920	4,420				
50.07	Central Control		2,107	632	2,740				
Constructio	n Subtotal (10-50)	15.97	416,060	124,818	540,878	33,877	100%	55%	687,438
60.01	Purchase or lease of real estate	10.01	13,315	13,315	26,629	1,000		• *	00,040
60.02	Relocation (freight railroad traffic)		-	-	-	4 740		401	440.000
70.01	Light Rail	26	78,000	5,381 3,900	81,900	3,150		-12%	143,608
70.02	Heavy Rall	(=)	-	-	-	-			
70.03	Commuter Rail Bus	40	- 14 082	- 704	14 786	- 370			
70.05	Other		14,002	-	-				
70.06	Non-revenue vehicles		2,529	126	2,655	(B)			
80 PROFES	SIONAL SERVICES	15.97	13,000	650	13,650	8,405		14%	170,555
80.01	Preliminary Engineering		8,321		8,321				
80.02	Final Design Project Management for Design and Construction		23,088		23,088				
80.04	Construction Administration & Management		33,418	-	33,418				
80.05	Insurance		16,642	100	16,642				
80.07	Surveys, Testing, Investigation, Inspection		4,020		11,805				
80.08	Agency Force Account Work		26,295		26,295				
Subtotal (10	CATED CONTINGENCY	15.97	671,179	143,513	814,692	51,028		83%	1,035,446
Subtotal (1	0.00)	15.97			977,630	61,233		100%	1,242,535
100 FINANC	E CHARGES	45.07				04.000		0%	1 010 505
Total Alloca	ed Contingency as % of Base Year Estimate	15.97			977,630 21%	61,233		100%	1,242,535
Total Contin	gency (Allocated and Unallocated)				306,452				
Total Contin	igency as % of Base Year Estimate Intency as % of Base Year Total (w/o Finance Charnes)				46%				
Total Contin	igency as % of Base Year Total Project Cost				31%				
Forecast Ye	ar Construction Cost per Mile								43,057
Professiona	Services as % of Construction				25%				11,825

	Major Capital Projec	t Costs - I	Main Works	heet				(Rev. 6, Feb 7, 2	2006)
Project	Southwest Transity	way - Alte	mative LRT	3C				Date	10/17/06
Location	Hennepi	in County,	MN					Base Year	2006
Project ID									
250	(AA PE ED Bid/Award Construction Rev Ons) Phase			۵۵				Revenue Ons	2015
	(AA, T E, T D, Blak Wald, Constitution, (Cr Ops) Thase							Former of the open	2015
-	(Design Bid Build, Design Build, CM at Risk, etc). Contracting Method			Design Bid B				FUIELast 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 GUIDEW	AY & 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 Guideway: At-grade semi-exclusive (allows cross-traffic)	8.72	14,053	4,216	18,269	2,095	8		
10.03	Guideway: At-grade in mixed traffic	1.60	1,897	569	2,466	1,544			
10.04	Guideway: Aerial structure Guideway: Built-up fill	1.15	35,690	10,707	46,398	40,412	R		
10.06	Guideway. Underground cut & cover	0.64	41,796	12,539	54,335	85,434			
10.07	Guideway: Underground tunnel	-	-	7 750	- 22 622	- 7 499	2		
10.09	Track: Direct fixation	4.43	6,471	1,941	8,412	7,405	8		
10.10	Track Embedded		8,232	2,469	10,701				
10.11	Track Ballasted		21,385	6,416	27,801				
10.12	Track. Vibration and noise dampening			1,530	-				
20 STATION	NS, STOPS, TERMINALS, INTERMODAL (number)	20	46,775	14,033	60,808	3,040	10%	5%	77,284
20.01	At-grade station, stop, shelter, mail, terminal, platform	18	19,800	5,940	25,740	1,430			
20.02	Underground station, stop, shelter, mail, terminal, platform	-			-	-	6		
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	(2)	2	123		(2)			
20.05	Joint development Automobile parking multi-story structure		19 435	5.831	- 25.266				
20.07	Elevators, escalators		5,340	1,602	6,942				
30 SUPPOR	RT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	16.59	38,995	11,699	50,694	3,056	8%	5%	64,430
30.01	Light Maintenance Facility		25,997	7,799	33,796				
30.03	Heavy Maintenance Facility		1		-				
30.04	Storage or Maintenance of Way Building Yard and Yard Track		12 998	- 3 900	16 898				
40 SITEWO	RK & 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 Haz, matil, contam'd soil removal/mitigation, ground water treatments		31,377 973	9,413	40,790				
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	Automobile, bus, van accesswavs including roads, parking lots		47,853	14,356	62.209				
40.08	Temporary Facilities and other indirect costs during construction								
50 SYSTEM	Train control and signals	16.59	103,722	31,117	134,838	8,128	22%	12%	171,375
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	Communications		22,918	4 084	29,793				
50.06	Fare collection system and equipment		3,570	1,071	4,641				
50.07	Central Control	10 50	2,196	659	2,855	20 440	1008	EAU	760 400
60 ROW, LA	AND, EXISTING IMPROVEMENTS	16.59	24,735	24,735	49,470	2,982	100%	4%	62,875
60.01	Purchase or lease of real estate		24,735	24,735	49,470				
60.02 70 VEHICLE	Relocation (freight railroad traffic)	70	115 414	5 771	- 121 184	1.731		11%	154 021
70.01	Light Rail	28	84,000	4 200	88,200	3,150			104,021
70.02	Heavy Rall	(-)		-	-	-	8		
70.03	Bus	42	14,786	739	15.525	370	2		
70.05	Other	14	-	-		-			
70.06	Non-revenue vehicles		2,628	131	2,759	(7)	5		
80 PROFES	SIONAL SERVICES	16.59	151,584	-	151,584	9,137	8	14%	192,658
80.01	Preliminary Engineering		9,226		9,226				
80.02	Project Management for Design and Construction		11.122	-	11.122				
80.04	Construction Administration & Management		37,152	-	37,152				
80.05	Insurance		18,452	1.5	18,452				
80.07	Surveys, Testing, Investigation, Inspection		14,008		14,008				
80.08	Agency Force Account Work		30,152	-	30,152				
90 UNALI C	CATED CONTINGENCY	16.59	753,040	168,898	921,938 184,388	55,572		83%	234.351
Subtotal (10	0-90)	16.59			1,106,326	66,686		100%	1,406,103
100 FINANO	CE CHARGES	10 50			1 100 200	CC 000		0%	1 400 400
Total Allocat	ed Contingency as % of Base Year Estimate	10.53			22%	00,000		100 1	1,400,103
Total Contin	gency (Allocated and Unallocated)				353,286				
Total Contin	ngency as % of Base Year Estimate ngency as % of Base Year Total (w/o Finance Charges)				47%				
Total Contin	ngency as % of Base Year Total Project Cost				32%				
Forecast Ye	ar Construction Cost per Mile								45,943
Professiona	Services as % of Construction				25%				84,796

	Major Capital Projec	t Costs - I	Main Works	heet				(Rev. 6, Feb 7, 2	1006)
Project	Southwest Transit	way - Alte	mative LRT	4C				Date	10/17/06
Location	Hennep	in County,	MN					Base Year	2006
Project ID									
	(AA PE ED Bid/Award Construction Rev Ons) Phase			ΔΔ				Revenue Ons	2015
	(A, T E, T B, Blak Wald, Oshali delahi, (Cr Ops) Thase				contar			Farmer and Service of	2015
_	(Design bid buid, Design buid, CM at Risk, etc.). Contracting Method		2 	Design blu b	ulla			FUIELdsLifedi	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 GUIDEW	AY & 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-or-way 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 Guideway: Built-un fill	0.53	16,232	4,870	21,102	39,524			
10.06	Guideway. Underground cut & cover	0.59	38,988	11,696	50,684	85,664			
10.07	Guideway. Underground tunnel	-	-	-	-	-			
10.08	Guideway. Retained cut or fill Track: Direct fixation	2.02	4 348	3,605	15,623	7,753			
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) Track Vibration and noise dampening		3,898	1,169	5,067				
20 STATION	NS, STOPS, TERMINALS, INTERMODAL (number)	14	20,740	6,222	26,962	1,926	7%	4%	34,268
20.01	At-grade station, stop, shelter, mail, terminal, platform	12	13,200	3,960	17,160	1,430			
20.02	Underground station, stop, shelter, mail, terminal, platform	- 2	2,200		2,000	1,430			
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	121		12	-	(Q)			
20.05	Joint development Automobile parking multi-story structure		5	-					
20.07	Elevators, escalators		5,340	1,602	6,942				
30 SUPPOR	Administration Building: Office colors storage revenue counting	9.96	38,995	11,699	50,694	5,090	13%	7%	64,430
30.02	Light Maintenance Facility		25,997	7,799	33,796				
30.03	Heavy Maintenance Facility				-				
30.04	Storage or Maintenance of Way Building Yard and Yard Track		12 998	3 900	- 16.898				
40 SITEWO	RK & 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	Haz, mat'l, contam'd soil removal/mitigation, ground water treatments		263	5,270	22,836				
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		426	128	553				
40.05	Site structures including retaining walls, sound walls		-	-	-				
40.08	Automobile, bus, van accessways including roads, parking lots		34,098	10,229	44,327				
40.08	Temporary Facilities and other indirect costs during construction		-	12	-				
50 SYSTEM	Train control and signals	9.96	61,852 18,669	18,555	24.270	8,073	21%	11%	102,195
50.02	Traffic signals and crossing protection		7,420	2,226	9,646				
50.03	Traction power supply: substations Traction power distribution: category and third rail		9,992	2,998	12,989				
50.05	Communications		8,151	2,445	10,597				
50.06	Fare collection system and equipment		2,550	765	3,315				
Constructio	n Subtotal (10-50)	9.96	1,315 301,264	90,379	391,643	39.321	100%	56%	497,765
60 ROW, LA	ND, 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				
70 VEHICLE	ES (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	Commuter Rall			-		-			
70.04	Bus	44	15,490	774	16,264	370			
70.05	Other Non-revenue vehicles	-	- 1.578	- 79	- 1.657	-			
70.07	Spare parts		8,500	425	8,925				
80 PROFES	SIONAL SERVICES	9.96	96,377	121	96,377	9,676		14%	122,492
80.01	Final Design		16,025	-	16,667				
80.03	Project Management for Design and Construction		7,008	(in)	7,008				
80.04	Construction Administration & Management		24,173	-	24,173				
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.		3,374	-	3,374				
80.07	Surveys, Testing, Investigation, Inspection		8,280	1.00	8,280				
Subtotal (10	Agency Force Account work	9.96	481,439	101,438	582,877	58,522	-	83%	740,818
90 UNALLO	CATED CONTINGENCY				116,575			17%	148,164
Subtotal (10	D-90)	9.96			699,453	70,226		100%	888,981
Total Projec	ct Cost (10-100)	9.96			699,453	70,226		100%	888,981
Total Allocat	ed Contingency as % of Base Year Estimate				21%				
Total Contin	igency as % of Base Year Estimate				210,014				
Total Contin	ngency as % of Base Year Total (w/o Finance Charges)				31%				
Forecast Ye	igency as two of Base Year Total Project Cost ar Construction Cost per Mile				31%				49,976
Forecast Ye	ar Total Project Cost per Mile				2000				89,255
Proressional	services as % of Construction				25%				

	Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 20	06)
Project	Southwest Transitway - Segment LRT 1-1		Date	10/17/06
Location	Hennepin County, MN		Base Year	2006
Project ID	an (25)			
	1	-14	Route Miles	2.20
			Stations	1
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
0 GUIDEW	AY & TRACK ELEMENTS (route miles)	2.20	8,299	2,490
10.01	Guideway: At-grade exclusive right-of-way		-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	2.11	2,518	/56
10.03	Guideway, Aegrade In Mixed Iranic		-	- 270
10.05	Guideway: Built-up fill	-		- 270
10.06	Guideway: Underground cut & cover	-	-	-
10.07	Guideway: Underground tunnel	1	-	<u>-</u>
10.08	Guideway: Retained cut or fill	0.06	315	94
10.09	Track: Direct fixation		2	2
10.10	Track: Embedded			-
10.11	Track: Ballasted		3,719	1,116
10.12	Track. Special (Switches, tumouts) Track: Vibration and noise dampening		041	204
STATION	IS, 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	2	-	-
20.03	Underground station, stop, shelter, mall, terminal, platform	Ξ.		14
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	-
20.05	Joint development			5
20.06	Automobile parking multi-story structure			
	T FACILITIES: YARDS SHOPS ADMIN BLOGS	2	-	-
30.01	Administration Building: Office sales storage revenue counting			2
30.02	Light Maintenance Facility			14
30.03	Heavy Maintenance Facility			
30.04	Storage or Maintenance of Way Building			-
30.05	Yard and Yard Track			
SITEWOR	RK & SPECIAL CONDITIONS		7,603	2,281
40.01	Demolition, Clearing, Earthwork		500	150
40.02	Site Utilities, Utility Relocation Haz, mattl, contam'd soil removal/mitigation, ground water treatments		2,324	097
40.03	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		2,656	797
40.07	Automobile, bus, van accessways including roads, parking lots		2,007	602
40.08	Temporary facilities and other indirect costs during construction			
SYSTEM	S		11,867	3,560
50.01	Traffic cignals and crossing protection		4,125	1,238
50.02	Traction power supply: substations		200	C1 CAA
50.04	Traction power distribution: catenary and third rail		3 021	906
50.05	Communications		1.801	540
50.06	Fare collection system and equipment		170	51
50.07	Central Control		291	87
onstructio	n Subtotal (10-50)		28,869	8,661
ROW, LA	ND, EXISTING IMPROVEMENTS		1,083	1,083
60.01	Purchase or lease of real estate		1,083	1,083
60.02	Relocation (Treight railroad traffic)			-

	Major Capital Project Costs - By Segment	((Rev. 6, Feb 7, 20	06)
Project	Southwest Transitway - Segment LRT 1-2		Date	10/17/06
Location	Hennepin County, MN		Base Year	2006
Project ID				
		- 1 ₂	Route Miles	0.99
			Stations	1
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
GUIDEW	AY & TRACK ELEMENTS (route miles)	0.99	5,287	1,58
10.01	Guideway: At-grade exclusive right-of-way	12	2	
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	0.72	861	25
10.03	Guideway: At-grade in mixed traffic	1940 -	-	
10.04	Guideway: Aerial structure	(-)	-	
10.05	Guideway: Built-up fill	(=)		
10.00	Guideway, Underground cut & cover	17.	5	
10.07	Guideway, Onderground turner	0.26	2 210	66
10.00	Track: Direct fixation	0.20	- 2,210	00
10.10	Track: Embedded		-	
10.11	Track: Ballasted		1,670	50
10.12	Track: Special (switches, tumouts)		547	16
10.13	Track: Vibration and noise dampening		55	
STATION	S, STOPS, TERMINALS, INTERMODAL (number)	1	1,100	33
20.01	At-grade station, stop, shelter, mall, terminal, platform	1	1,100	33
20.02	Aerial station, stop, shelter, mall, terminal, platform		2	
20.03	Underground station, stop, shelter, mall, terminal, platform	¥ .	Ξ.	
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	×	
20.05	Joint development	-	5	
20.00	Elevators escalators			
SUPPOR	T 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			
SITEWOR	RK & SPECIAL CONDITIONS		3,618	1,08
40.01	Demolition, Clearing, Earthwork		500	15
40.02	Site Utilities, Utility Relocation	-	1,044	31
40.03	Haz, mat'l, contam'd soil removal/mitigation, ground water treatments	-	26	
40.04	Site structures including retaining walls, sound walls	-	20	
40.05	Pedestrian / bike access and accommodation Jandscaping	-	1.066	32
40.07	Automobile bus van accessways including roads parking lots	-	956	28
40.08	Temporary facilities and other indirect costs during construction			
SYSTEM	S		5,811	1,74
50.01	Train control and signals		1,853	55
50.02	Traffic signals and crossing protection		500	15
50.03	Traction power supply: substations		992	29
50.04	Traction power distribution: catenary and third rail		1,357	40
50.05			809	24
50.06	Fare collection system and equipment		170	5
00.07	n Subtotal (10.50)		130	3
ROW/ LA	ND EXISTING IMPROVEMENTS		10,810	4,74
60.01	Purchase or lease of real estate		1.083	1.00
			1,000	1,00

Major Capital Project Costs - By Segment (Rev. 6, Feb 7, 2006)06)	
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
				Rase Year
		Quantity	Base Year Estimate (X000)	Allocated Contingency (X000)
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	1.55	5,601	1,680
10.01	Guideway: At-grade exclusive right-of-way	225	2	2 <u>1</u>
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	1.38	1,739	522
10.03	Guideway, Al-grade in mixed traffic		_	-
10.04	Guideway: Built-up fill	-		
10.06	Guideway: Underground cut & cover	2771	=	
10.07	Guideway: Underground tunnel	18270		50
10.08	Guideway: Retained cut or fill	0.18	736	221
10.09	Track: Direct fixation	-	2	<u>~</u>
10.10	Track: Embedded	_	2 6 2 2	- 707
10.11	Track: Special (switches tumouts)	-	503	151
10.12	Track: Vibration and noise dampening			-
20 STATION	S, 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	2	2	14
20.03	Underground station, stop, shelter, mall, terminal, platform	9		12
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.			8
20.00	Automobile parking multi-story structure	-	-	-
20.07	Elevators, escalators			5
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			
30.01	Administration Building: Office, sales, storage, revenue counting			12
30.02	Light Maintenance Facility			3
30.03	Heavy Maintenance Facility	-	-	8
30.04	Storage of Waintenance of Way building Vard and Vard Track	-	-	
40 SITEWOF	RK & 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	-	- 1.747	-
40.00	Automobile, bus, van accessways including roads, parking lots	-	1,747	376
40.08	Temporary facilities and other indirect costs during construction	-	1,23,0	2
50 SYSTEM	S		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	Communications		1 2,131	2,81
50.06	Fare collection system and equipment		170	51
50.07	Central Control		205	61
Construction	n Subtotal (10-50)		20,667	6,200
60 ROW, LA	ND, EXISTING IMPROVEMENTS		1,083	1,083
60.01	Purchase or lease of real estate		1,083	1,083
60.02	Relocation (Treight railroad traffic)			5

Major Capital Project Costs - By Segment (Rev. 6, Feb 7, 2006			006)	
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 GUIDEW/	AY & TRACK ELEMENTS (route miles)	2.60	13,841	4,152
10.07	Guideway: Al-grade semi-evolusive (allows cross-traffic)	2.22	5 743	1 7 2 3
10.02	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	1973	5	
10.07	Guideway: Underground tunnel	872	5	5
10.08	Guideway: Retained cut or fill	0.36	2,145	643
10.09	Track: Direct fixation		-	-
10.10	Track. Embedded		- 4 401	- 1 3 20
10.11	Track: Special (switches furmouts)		4,401	240
10.12	Track: Vibration and noise dampening			- 240
20 STATION	S, 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	2	2	4
20.03	Underground station, stop, shelter, mall, terminal, platform			2
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.			8
20.05	Joint development	-	-	
20.00	Elevators escalators	-	-	
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			
30.01	Administration Building: Office, sales, storage, revenue counting			4
30.02	Light Maintenance Facility			2
30.03	Heavy Maintenance Facility			-
30.04	Storage or Maintenance of Way Building			3
30.05	Yard and Yard Track		7 757	0.007
40 SITEWOF	In a SPECIAL CONDITIONS	-	1,15/	2,321
40.01	Site Htilities Htility 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		5	3
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 SYSTEM	o Train control and signals		14,638	4,391
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
Constructio			38,436	11,531
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			006)	
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 GUIDEW	AY & TRACK ELEMENTS (route miles)	1.10	4,482	1,345
10.01	Guideway: At-grade exclusive right-of-way	-	-	-
10.02	Guideway, At-grade is mixed traffic	0.09	1,101	340
10.05	Guideway: Aegiade in mixed lianic	-		
10.05	Guideway: Built-up fill			
10.06	Guideway: Underground cut & cover	1373		-
10.07	Guideway: Underground tunnel	8574	2	5
10.08	Guideway: Retained cut or fill	0.21	865	260
10.09	Track: Direct fixation		2	4
10.10	Track: Embedded		-	-
10.11	Track: Ballasted	-	1,856	557
10.12	Track. Special (switches, turnous) Track: Vibration and point damponing	-	600	160
20 STATION	S. 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	2	2	~
20.03	Underground station, stop, shelter, mall, terminal, platform	-	ш	~
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		ж	÷
20.05	Joint development		=	
20.06	Automobile parking multi-story structure		5	
20.07	Elevators, escalators	-	2 2	5 241
30 SUPPOR	Administration Ruilding: Office, sales, storage, revenue counting	-		
30.02	Light Maintenance Eacility			
30.03	Heavy Maintenance Facility			-
30.04	Storage or Maintenance of Way Building			
30.05	Yard and Yard Track			
40 SITEWOR	RK & 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	Site structures including retaining walls, sound walls	-	- 29	9
40.05	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		<u>2</u>	2
50 SYSTEM	S		7,028	2,108
50.01	Train control and signals		2,059	618
50.02	Traffic signals and crossing protection		975	293
50.03	raction power supply: substations		1,102	331
50.04	Communications		800,1 200	402
50.00	Fare collection system and equipment		099 340	102
50.07	Central Control		145	44
Constructio	n Subtotal (10-50)		19,514	5,854
60 ROW, LA	ND, EXISTING IMPROVEMENTS		2,329	2,329
60.01	Purchase or lease of real estate		2,329	2,329
60.02	Relocation (freight railroad traffic)		5	

	Major Capital Project Costs - By Segment (Rev. 6, Feb 7, 2006			006)
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
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	3.42	30,420	9,126
10.01	Guideway: At-grade exclusive right-on-way	1.28	1 722	- 516
10.02	Guideway: At-grade in mixed traffic	-		
10.04	Guideway: Aerial structure	0.32	10,128	3,038
10.05	Guideway: Built-up fill			(A
10.06	Guideway: Underground cut & cover	0.04	2,292	688
10.07	Guideway: Underground tunnel	1.70	-	- 0.701
10.00	Guideway, Retained cut or mil	1.79	9,209	2,701
10.10	Track: Embedded		-	-
10.11	Track: Ballasted		5,258	1,577
10.12	Track: Special (switches, tumouts)		613	184
10.13	Track: Vibration and noise dampening		55	
20 STATION	S, STOPS, TERMINALS, INTERMODAL (number)	2	2,200	660
20.01	At-grade station, stop, shelter, mall, terminal, platform	2	2,200	660
20.02	Underground station stop shelter mall terminal platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		æ	э.
20.05	Joint development			-
20.06	Automobile parking multi-story structure		5	1
20.07	Elevators, escalators		5	5
30 SUPPOR	Administration Building: Office, sales, storage, revenue counting	-		
30.07	Linht Maintenance Facility	-		-
30.03	Heavy Maintenance Facility			
30.04	Storage or Maintenance of Way Building			
30.05	Yard and Yard Track			
40 SITEWOR	RK & SPECIAL CONDITIONS	-	12,385	3,715
40.01	Demolition, Clearing, Earthwork		1,000	300
40.02	Haz mat'l contam'd soil removal/mitigation, ground water treatments		1,042	2,113
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 SYSTEM	Train control and signals		18,351 6.410	5,505 1 972
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
Construction	n Subtotal (10-50)		451	135
60 ROW, LA	ND, EXISTING IMPROVEMENTS		2,672	2,672
60.01	Purchase or lease of real estate		2,672	2,672
60.02	Relocation (freight railroad traffic)			

Project Southwest Transitway - Segment LRT 3-1 Date 10/17/06 Locater Hennepin County, MN Base Year 2006 Project D Image: Second Se		Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 20	006)
Leaston Hennepin County, MN Image: State Sta	Project	Southwest Transitway - Segment LRT 3-1		Date	10/17/06
Project ID Route Miles 1.34 Route Miles 1 Ournity Base Year Estimate Base Year Allocated Contingency Contingency Estimate Base Year Estimate Base Year Estimate Base Year Estimate Base Year Allocated Base Year Estimate Base Year Estimate Base Year Allocated Base Year Allocated Base Year Estimate Base Year Allocated Base Year Allocate Base Ye	Location	Hennepin County, MN		Base Year	2006
Route Miles 1.34 Image: State of the state of	Project ID				
Image: state in the s				Route Miles	1.34
Quartity Base Year Estimate (x000) Base Year Allocated (x000) 10 GUIDEWAY & TRACK ELEMENTS (route miles) 10.01 Guideway, Ak-grade exclusive (allows cross-traffic) 10.02 1.34 9,341 2,802 (x000) 10.01 Guideway, Ak-grade exclusive (allows cross-traffic) 10.03 0.75 1.001 300 10.04 Guideway, Ak-grade inmixed traffic 0.75 1.001 300 10.05 Guideway, Varial structure 10.06 0.03 1.686 497 10.06 Guideway, Underground tunnel 10.07 - - - - 10.06 Guideway, Underground tunnel 10.08 - - - - 10.07 Guideway, Underground tunnel 10.08 - <td< td=""><td></td><td></td><td></td><td>Stations</td><td>1</td></td<>				Stations	1
10 GUIDEWAY & TRACK ELEMENTS (route miles) 1.34 9,341 2,802 10 01 Guideway A Lyade scaluse in planed ratio: 0.75 1,001 300 10 03 Guideway A Lyade scaluse in planed ratio: 0.75 1,001 300 10 04 Guideway A Lyade scaluse in mixed ratio: 0.03 1,656 407 10 05 Guideway Underground cut & cover 0.03 1,656 407 10 06 Guideway Underground cut & cover 0.03 1,656 407 10 07 Guideway Underground cut & cover 0.03 1,656 407 10 08 Guideway Retarde dut or fill 0.33 1,975 502 10 08 Track: Embedded 76 2 2 10 11 Track: Balasted 704 211 1,100 330 10 12 Track: Special (witches, turnouts) 1 1,000 330 10 12 Track: Special (witches, turnouts) 1 1,000 330 20 01 Advarde station, stop, shelter, mail, terminal, platform 1 1,000 330 20 02 Junderground station, stop, shelter, mail, terminal, platform - - - 20 0			Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
10.10 Guldeway AL-grade extractive lighted -way - </th <th>10 GUIDEWA</th> <th>AY & TRACK ELEMENTS (route miles)</th> <th>1.34</th> <th>9,341</th> <th>2,802</th>	10 GUIDEWA	AY & TRACK ELEMENTS (route miles)	1.34	9,341	2,802
Inclusion Challeway Aregulate seminascularly entratic 0.72 10.03 Cludeway Area Cludeway Area <th< td=""><td>10.01</td><td>Guideway: At-grade exclusive right-or-way</td><td>0.75</td><td>- 1.001</td><td>300</td></th<>	10.01	Guideway: At-grade exclusive right-or-way	0.75	- 1.001	300
10.04 Guideway, Aeral structure 0.04 1,110 333 10.05 Guideway, Underground tut & cover 0.03 1,655 497 10.08 Guideway, Underground tut & cover 0.03 1,655 497 10.08 Guideway, Vunderground tut & cover 0.03 1,655 497 10.09 Track: Direct fixation	10.02	Guideway: At-grade in mixed traffic	0.70	237	71
10.05 Guideway: Built-up fil - </td <td>10.04</td> <td>Guideway: Aerial structure</td> <td>0.04</td> <td>1,110</td> <td>333</td>	10.04	Guideway: Aerial structure	0.04	1,110	333
10.06 Guideway: Underground tunnel - <	10.05	Guideway: Built-up fill		=	-
10.07 Guideway: Underground tunnel - <	10.06	Guideway: Underground cut & cover	0.03	1,656	497
10.08 Guideway Retained cut or till 0.33 1,9/5 592 10.09 Track: Direct Nation - - 10.10 Track: Direct Nation - - 10.11 Track: Special (witches, turnouts) - 776 2211 10.12 Track: Moralisation and noise dampening - - - 20 STATIONS, STOPS, TERMINALS, INTERMODAL (number) 1 1,100 330 20.01 A-grade station, stop, shelter, mail, terminal, platform - - - 20.03 Underground station, stop, shelter, mail, terminal, platform - - - 20.04 Other stations, tenninals, intermodal, ferry, trolley, etc. - - - 20.05 Joint development - - - - 20.06 Automobile parking multi-story structure - - - - 20.01 Administration Building: Office, sales, storage, revenue counting - - - 30.01 Administration Building: Office, sales, storage, revenue counting	10.07	Guideway: Underground tunnel	82	~	50
10.10 Track Embedded - - 10.10 Track Embedded 1,923 6,777 10.12 Track: Special (switches, tumouts) 704 2211 10.13 Track: Witches, tumouts) 704 2211 10.13 Track: Stopecial (switches, tumouts) 704 2211 20.01 At-grade station, stop, shelter, mail, terminal, platform - - 20.03 Underground station, stop, shelter, mail, terminal, platform - - - 20.04 Other stations, andings, terminals: Intermodal, fery, trolley, etc. - - - - 20.05 Joint development - <	10.08	Guideway: Retained cut or fill	0.33	1,975	592
10.11 Track. Ballasted 1,923 57.7 10.12 Track. Special (switches, tumouts) 704 211 10.13 Track. Vibration and noise dampering - - 20 STATIONS, STOPS, TERMINALS, INTERMODAL (number) 1 1,100 330 20.01 Al-grade station, stop, shelter, mail, terminal, platform - - - 20.03 Underground station, stop, shelter, mail, terminal, platform - - - 20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc. - - - 20.05 Joint development - - - - - 20.07 Elevators, escalators - - - - - 30.01 Administration Building: Office, sales, storage, revenue counting - - - - 30.02 Light Maintenance Facility - - - - 30.03 Heavy Maintenance Facility - - - - - 30.04 Storage or Ma	10.09	Track: Embedded		736	- 221
10.12 Track: Special (switches, turnouts) 704 211 10.13 Track: Vibration and noise dampening - - 20 STATIONS, STOPS, TERNINALS, INTERMODAL (number) 1 1(100 330 20.01 Al-grade station, stop, shelter, mail, terminal, platform - - - 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 -	10.10	Track: Ballasted	-	1 923	577
10.13 Track: Vibration and noise dampening - - 20 STATIONS, STOPS, TERMINALS, INTERMODAL (number) 1 1,100 330 20.01 A-grade station, stop, shelter, mail, terminal, platform - - - 20.02 Aerial station, stop, shelter, mail, terminal, platform - - - - 20.03 Underground station, stop, shelter, mail, terminal, platform -	10.12	Track: Special (switches, turnouts)		704	211
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number) 1 1,100 330 20.01 Ak-grade station, stop, shelter, mail, terminal, platform 1 1,100 330 20.02 Aerial station, stop, shelter, mail, terminal, platform - - - 20.03 Underground station, stop, shelter, mail, terminal, platform - - - 20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc. - - - 20.05 Joint development - - - - - 20.07 Elevators, escelators -	10.13	Track: Vibration and noise dampening			a.
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, tandings, terminals: Intermodal, ferry, trolley, etc. - - - 20.05 Joint development - - - - - 20.06 Automobile parking multi-story structure -	20 STATION	S, STOPS, TERMINALS, INTERMODAL (number)	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 -	20.01	At-grade station, stop, shelter, mall, terminal, platform	1	1,100	330
20.03 Other stations, ladings, terminals: Intermodal, ferry, trolley, etc. -	20.02	Aerial station, stop, shelter, mall, terminal, platform	2	2	~
20.05 Joint development - - 20.05 Joint development - - 20.07 Elevators, escalators - - 30 SUPPORT FACILITIES; VARDS, SHOPS, ADMIN. BLDGS - - 30.01 Administration Building: Office, sales, storage, revenue counting - - 30.02 Light Maintenance Facility - - 30.03 Heavy Maintenance of Way Building - - 30.05 Yard and Yard Track - - 40 Othorities, Utility Relocation 2.754 8200 40.01 Demolition, Clearing, Earthwork 500 1500 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 1411 42 40.06 Pedestrian / bike access and accommodation, landscaping 1,271 381 40.07 Automobile, bus, van accessways including roads, parking lots 5,383 1,815 40.08 Temporary facilities and other indirect co	20.03	Other stations, landings, terminals, Intermodal, ferry, trolley, etc.		-	
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 3,067 40.01 Demolition, Clearing, Earthwork 500 1500 40.02 Site Utility Relocation 2,754 8268 40.03 Haz, mat1, contam'd soil removal/mitigation, ground water treatments 141 42 40.04 Environmental mitigation, e.g. wetlands, histor/archeologic, parks 1411 42 40.05 Site structures including retaining walls, sound walls - - 40.06 Pedestrian / bike access and accommodation, landscaping 1,271 381 40.07 Automobil	20.05	Joint development		-	-
20.07 Elevators, escalators - - 30 <support admin.="" bldgs<="" facilities:="" shops,="" td="" yards,=""> - - 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 StreeVORK & SPECIAL CONDITIONS 10,191 3,067 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, lands caping 1,271 3881 40.07 Automobile, bus, van accessways including roads, parking lots 5,383 1,616 5</support>	20.06	Automobile parking multi-story structure	-	-	-
30 SUPPORT FACLITIES: 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 VVay 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 accesswarys including construction - - 50.01 Tr	20.07	Elevators, escalators			57
30.01 Administration Building: Office, sales, storage, revenue counting	30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		1	
30.02 Light Maintenance Facility	30.01	Administration Building: Office, sales, storage, revenue counting	-		
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 1441 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 - - 50.02 Traffic signals and crossing protection 2,507 752 50.02 Traffic signals and crossing protection 2,960 888 50.03 Traction power supply: substations 1,342 4002 50.04 Traction power distribution: catenary and third rail 1,836 551	30.02	Light Maintenance Facility	-		~
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, mat1, 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 2,900 888 50.01 Train control and signals 2,507 752 50.02 Traffic signals and crossing protection 1,342 402 50.04 Traction power supply: substations 1,342 402 50.05 Communications 1,094 328 50.06 Fare colle	30.04	Storage or Maintenance of Way Building	-		-
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 - - 40.07 Automobile, bus, van accessways including roads, parking lots 5,383 1,615 40.08 Temporary facilities and other indirect costs during construction - - - 50.01 Train control and signals 2,507 752 2,960 888 50.02 Traffic signals and crossing protection 1,342 402 1,342 402 1,342 402 50.04 Traction power distribution: catenary and third rail 1,342 402 1,342 402 1,342 402 1,342 402 1,342 402 1,342 402 1,094 328	30.05	Yard and Yard Track			-
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 <td>40 SITEWOR</td> <td>K & SPECIAL CONDITIONS</td> <td></td> <td>10,191</td> <td>3,057</td>	40 SITEWOR	K & SPECIAL CONDITIONS		10,191	3,057
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 4002 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 61	40.01	Demolition, Clearing, Earthwork		500	150
40.05naz. mat., contam o soil removal/mugation, ground water treatments1414240.04Environmental mitigation, e.g. wetlands, historic/archeologic, parks1414240.05Site structures including retaining walls, sound walls40.06Pedestrian / bike access and accommodation, landscaping1,27138140.07Automobile, bus, van accessways including roads, parking lots5,3831,61540.08Temporary facilities and other indirect costs during construction50SYSTEMS10,0953,02650.01Train control and signals2,50775250.02Traffic signals and crossing protection1,34240250.03Traction power supply: substations1,34240250.04Traction power distribution: catenary and third rail1,83655150.05Communications1106150.06Fare collection system and equipment1706150.07Central Control30,7179,21560 ROW, LAND, EXISTING IMPROVEMENTS3,6633,6633,66360.02Relocation (freight railroad traffic)	40.02	Site Utilities, Utility Relocation	-	2,754	826
40.05 Site structures including retaining walls, sound walls - - 40.06 Pedestrian / bike access and accommodation, landscaping 1,271 381 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 177 63 50.07 Central Control 177 63 60.01 Purchase or lease of real estate 3,653 3,653 3,653 60.01 Purchase or lease of real estate 3,653 3,653 3,653 <td>40.03</td> <td>maz, main, contain a son removal/mugation, ground water treatments</td> <td></td> <td>141</td> <td>42</td>	40.03	maz, main, contain a son removal/mugation, ground water treatments		141	42
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 61 50.07 Central Control 177 53 Construction Subtotal (10-50) 30,717 9,215 60 ROW, LAND, EXISTING IMPROVEMENTS 3,653 3,653 3,653 60.01 Purchase or lease of real estate 3,653 3,653 3,653 60.02 Relocation (freight railroad traffic)	40.05	Site structures including retaining walls, sound walls		-	+2
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 5511 50.05 Communications 1,094 328 50.06 Fare collection system and equipment 1170 611 50.07 Central Control 177 53 Construction Subtotal (10-50) 30,717 9,215 60 ROW, LAND, EXISTING IMPROVEMENTS 3,653 3,653 3,653 60.01 Purchase or lease of real estate 3,653 3,653 3,653 60.02 Relocation (freight railroad traffic) - - -	40.06	Pedestrian / bike access and accommodation, landscaping	-	1,271	381
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 5511 50.05 Communications 1,094 3228 50.06 Fare collection system and equipment 1,094 3228 50.07 Central Control 177 53 Construction Subtotal (10-50) 30,717 9,215 60 ROW, LAND, EXISTING IMPROVEMENTS 3,653 3,653 3,653 60.01 Purchase or lease of real estate 3,653 3,653 3,653 60.02 Relocation (freight railroad traffic) - - -	40.07	Automobile, bus, van accessways including roads, parking lots		5,383	1,615
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 3,653 60.01 Purchase or lease of real estate 3,653 3,653 3,653 60.02 Relocation (freight railroad traffic) - - -	40.08	Temporary facilities and other indirect costs during construction		<u>12</u>	2
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 3,653 60.02 Relocation (freight railroad traffic) - -	50 SYSTEM	S Train control and signals	-	10,085	3,026
50.01 Traction power supply: substations 2,900 606 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) - -	50.01	Traffic signals and crossing protection	-	2,007	102
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)	50.02	Traction power supply: substations		1 342	402
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) - -	50.04	Traction power distribution: catenary and third rail		1,836	551
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) - -	50.05	Communications		1,094	328
50.07 Central Control 177 53 Construction Subtotal (10-50) 30,717 9,215 60 ROW, LAND, EXISTING IMPROVEMENTS 3,653	50.06	Fare collection system and equipment		170	51
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) - -	50.07	Central Control		177	53
60.01 Purchase or lease of real estate 3,653 3,653 60.02 Relocation (freight railroad traffic) - -	Construction			30,717	9,215
60.02 Relocation (freight railroad traffic)	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)				006)
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 GUIDEW	AY & TRACK ELEMENTS (route miles)	4.26	42,320	12,696
10.01	Guideway: At-grade exclusive right-of-way	1 72	-	-
10.02	Guideway. At-grade in mixed traffic	1.75	2,009	
10.04	Guideway: Aerial structure	0.58	18,348	5,504
10.05	Guideway: Built-up fill	199	=	-
10.06	Guideway: Underground cut & cover	0.02	1,152	346
10.07	Guideway: Underground tunnel	-	-	
10.08	Guideway. Retained cut or till Track: Direct fivation	1.94	11,005	3,302
10.03	Track: Embedded			
10.11	Track: Ballasted		6,302	1,891
10.12	Track: Special (switches, tumouts)		1,300	390
10.13	Track: Vibration and noise dampening		55	1
20 STATION	S, STOPS, TERMINALS, INTERMODAL (number)	3	3,300	990
20.01	Ac-grade station, stop, shelter, mail, terminal, platform	3	3,300	990
20.02	Underground station, stop, sheller, mail, terminal, platform	-	-	-
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	-	=
20.05	Joint development		5	-
20.06	Automobile parking multi-story structure			ē
20.07	Elevators, escalators	-	-	-
30 SUFFUR	Administration Building: Office sales storage revenue counting		-	<u>.</u>
30.02	Light Maintenance Facility			-
30.03	Heavy Maintenance Facility			-
30.04	Storage or Maintenance of Way Building			-
30.05	Yard and Yard Track		01.000	
40 SITE VUE	Demolition Clearing Earthwork		21,008	6,302
40.02	Site Utilities, Utility Relocation		8,864	2.659
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		455	136
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		455	136
40.05	Site structures including retaining walls, sound walls		=	-
40.06	Pedestrian / bike access and accommodation, landscaping		3,007	902
40.07	Temporary facilities and other indirect costs during construction		0,729	2,019
50 SYSTEM	S		25,096	7,529
50.01	Train control and signals		8,068	2,420
50.02	Traffic signals and crossing protection		2,200	660
50.03	I raction power supply: substations		4,318	1,295
50.04	Communications		2,909	1,773
50.06	Fare collection system and equipment		510	153
50.07	Central Control		568	170
Constructio	n Subtotal (10-50)		91,724	27,517
60 ROW, LA	ND, EXISTING IMPROVEMENTS		11,522	11,522
60.02	Hurchase of lease of real estate Relocation (freight railroad traffic)		11,522	11,522
00.02	relocation (neight railload traillo)		53	

	Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 20	006)
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	(=)
				Raco Voar
		Quantity	Base Year Estimate (X000)	Allocated Contingency (X000)
10 GUIDEW/	AY & TRACK ELEMENTS (route miles)	1.16	12,126	3,638
10.01	Guideway: At-grade exclusive right-of-way	224	<u>-</u>	22
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	1,240
10.05	Guideway: Underground cut & cover	0.04	2 340	702
10.07	Guideway: Underground tunnel	1.7	-	
10.08	Guideway: Retained cut or fill	0.36	2,121	636
10.09	Track: Direct fixation		465	140
10.10	Track: Embedded		-	14
10.11	Track: Ballasted		1,752	526
10.12	Track: Special (switches, tumouts)	-	513	154
10.13 20 STATION	S STORS TERMINALS INTERMODAL (number)			1
20.01	At-grade station stop shelter mail terminal platform	2000 A	- <u>7</u>	
20.02	Aerial station, stop, shelter, mall, terminal, platform	2	2	<u>2</u>
20.03	Underground station, stop, shelter, mall, terminal, platform	=	=	3
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-	×	
20.05	Joint development		=	8
20.06	Automobile parking multi-story structure		=	-
20.07	Elevators, escalators	-		55
30 SUPPOR	Administration Ruilding: Office, sales, storage, revenue counting	-		
30.07	Light Maintenance Facility	-		-
30.02	Heavy Maintenance Facility		((-
30.04	Storage or Maintenance of Way Building	-		
30.05	Yard and Yard Track			
40 SITEWOR	RK & SPECIAL CONDITIONS		7,220	2,166
40.01	Demolition, Clearing, Earthwork			
40.02	Site Utilities, Utility Relocation		2,395	718
40.03	Haz, mati, contam a soil removal/mitigation, ground water treatments	-	123	37
40.04	Site structures including retaining walls, sound walls	-	- 125	
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	-	2	22
50 SYSTEM	S		7,723	2,317
50.01	Train control and signals		2,180	654
50.02	Traction power supply substations	-	1,675	503
50.03	Traction power distribution: category and third rail		1,107	330
50.04	Communications		952	286
50.06	Fare collection system and equipment			
50.07	Central Control		154	46
Constructio	n Subtotal (10-50)		27,069	8,121
60 ROW, LA	ND, EXISTING IMPROVEMENTS		2,235	2,235
60.01	Purchase or lease of real estate		2,235	2,235
60.02	Relocation (freight railroad traffic)		5	97. 197

	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		
				Base Year	
		Quantity	Base Year Estimate (X000)	Allocated Contingency (X000)	
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	0.07	187	56	
10.01	Guideway: At-grade exclusive right-of-way	225	<u></u>	<u> </u>	
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 III Guideway, Underground cut & cover		-	-	
10.07	Guideway: Underground tunnel		-		
10.08	Guideway: Retained cut or fill	12	6	2	
10.09	Track: Direct fixation		2	~	
10.10	Track: Embedded		2	2	
10.11	Track: Ballasted		110	33	
10.12	Track: Special (switches, tumouts)		×		
10.13 20 STATION	rack: vibration and noise dampening S STORS TERMINALS INTERMODAL (number)		5	~	
20.01	At-grade station stop shelter mail terminal platform	<u> </u>	5 C	2	
20.02	Aerial station, stop, shelter, mall, terminal, platform	2	2	~	
20.03	Underground station, stop, shelter, mall, terminal, platform	-) =	2	
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		H	9	
20.05	Joint development		=	2	
20.06	Automobile parking multi-story structure		=	-	
20.07	Elevators, escalators		2 1	5	
30 SUPPOR	Administration Ruilding: Office sales storage revenue counting	-			
30.02	Light Maintenance Eacility	-		-	
30.03	Heavy Maintenance Facility			-	
30.04	Storage or Maintenance of Way Building	-			
30.05	Yard and Yard Track			-	
40 SITEWOR	RK & SPECIAL CONDITIONS		220	66	
40.01	Demolition, Clearing, Earthwork		-		
40.02	Site Utilities, Utility Relocation		69	21	
40.03	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		2		
50 SYSTEM	S	_	339	102	
50.01	I rain control and signals		122	37	
50.02	Traction power supply: substations		-	- 20	
50.03	Traction power distribution: catenary and third rail		89	20	
50.05	Communications		53	16	
50.06	Fare collection system and equipment		2	2	
50.07	Central Control		9	3	
Constructio	n Subtotal (10-50)		746	224	
60 ROW, LA	ND, EXISTING IMPROVEMENTS		-	-	
60.01	Purchase or lease of real estate		=	=	
00.02	ixerocation (neight rainoau traino)		5	(F)	

	Major Capital Project Costs - By Segment (Rev. 6, Feb 7, 2006			006)
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 GUIDEW/	AY & TRACK ELEMENTS (route miles)	2.71	15,359	4,608
10.01	Guideway: At-grade exclusive right-of-way Guideway: At-grade semi-exclusive (allows cross-traffic)	2.24	3 131	939
10.02	Guideway: At-grade in mixed traffic	-	-	-
10.04	Guideway: Aerial structure	0.13	4,134	1,240
10.05	Guideway: Built-up fill		ж.	(H
10.06	Guideway: Underground cut & cover	1.71		
10.07	Guideway: Underground tunnel	0.014	-	005
10.08	Guideway, Retained cut or nil	0.34	2,310	126
10.05	Track: Embedded	-		120
10.11	Track: Ballasted	-	4,381	1,314
10.12	Track: Special (switches, turnouts)		977	293
10.13	Track: Vibration and noise dampening		5	10
20 STATION	S, 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	2	2	~
20.03	Other stations, landings, terminals, Interminal, platform	-	-	-
20.04	Joint development	-	-	
20.06	Automobile parking multi-story structure	-	=	
20.07	Elevators, escalators		5	57
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		4	
30.01	Administration Building: Office, sales, storage, revenue counting			2
30.02	Light Maintenance Facility	-		
30.03	Heavy Maintenance Facility	-	2	-
30.04	Storage of Maintenance of Way building Vard and Vard Track	-	-	
40 SITEWOR	RK & SPECIAL CONDITIONS		12.012	3.604
40.01	Demolition, Clearing, Earthwork		1,500	450
40.02	Site Utilities, Utility Relocation		2,858	858
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		71	21
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		71	21
40.05	Site structures including retaining walls, sound walls	-	- 2 204	-
40.00	Automobile, bus, van accesswavs including roads, parking lots	-	4 207	1 262
40.08	Temporary facilities and other indirect costs during construction		-	
50 SYSTEM	S		16,513	4,954
50.01	Train control and signals		5,074	1,522
50.02	Traffic signals and crossing protection		1,925	578
50.03	Traction power supply: substations		2,715	815
50.04	Communications		3,716	1,115
50.05	Eare collection system and equipment	-	2,210	152
50.07	Central Control		357	107
Constructio	n Subtotal (10-50)		47,183	14,155
60 ROW, LA	ND, EXISTING IMPROVEMENTS		3,250	3,250
60.01	Purchase or lease of real estate		3,250	3,250
60.02	Relocation (freight railroad traffic)		55	-
	Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 20	006)
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Project	Southwest Transitway - Segment LRT A-1		Date	10/17/06
Location	Hennepin County, MN		Base Year	2006
Project ID		*		
		1.2	Route Miles	4.40
			Stations	6
		1		- 190 - 190
		Quantity	Base Year Estimate (X000)	Base Year Allocated Contingency (X000)
10 GUIDEW/	AY & TRACK ELEMENTS (route miles)	4.40	15,319	4,596
10.01	Guideway: At-grade exclusive right-of-way Guideway: At-grade semi-exclusive (allows cross-traffic)	1.23	- 5 304	- 1.501
10.02	Guideway. At-grade in mixed traffic	-		1,001
10.04	Guideway: Aerial structure	0.08	935	281
10.05	Guideway. Built-up fill	() -)	=	-
10.06	Guideway: Underground cut & cover	255	55	5
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill Treak: Direct fixetion	0.08	345	103
10.09	Track: Embedded		-	-
10.10	Track: Ballasted		7.429	2.229
10.12	Track: Special (switches, tumouts)		1,307	392
10.13	Track: Vibration and noise dampening			ল
20 STATION	S, 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	Other stations, landings, terminals, Interminal, platform			
20.04	Joint development	-	-	-
20.06	Automobile parking multi-story structure		=	
20.07	Elevators, escalators	-	1,780	534
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		-	-
30.01	Administration Building. Office, sales, storage, revenue counting			-
30.02	Light Maintenance Facility			-
30.03	Heavy Maintenance Facility Storage or Maintenance of May Building			-
30.04	Yard and Yard Track			-
40 SITEWOF	RK & 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		-	-
40.00	Automobile, bus, van accosswavs including roads, parking lots		3,102	1,549
40.08	Temporary facilities and other indirect costs during construction			
50 SYSTEM	S		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	raction power distribution: catenary and third rail		6,036	1,811
50.05	Communications		1 020	306
50.00	Central Control		580	174
Constructio	n Subtotal (10-50)		62,728	18.818
60 ROW, LA	ND, 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, 20	006)
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
				Baso Voar
		Quantity	Base Year Estimate (X000)	Allocated Contingency (X000)
10 GUIDEW/	AY & TRACK ELEMENTS (route miles)	1.93	13,204	3,961
10.01	Guideway: At-grade exclusive right-of-way		-	-
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	1.14	1,361	408
10.03	Guideway, At-grade in mixed tranic	0.23	279	012
10.04	Guideway Ruilt-up fill	0.10	- 3,042	915
10.06	Guideway: Underground cut & cover	0.02	1,056	317
10.07	Guideway: Underground tunnel	-	-	-
10.08	Guideway: Retained cut or fill	0.44	2,505	751
10.09	Track: Direct fixation		355	106
10.10	Track: Embedded		867	260
10.11	Track: Ballasted		2,750	825
10.12	Track: Special (switches, tumouts)		990	297
10.13	Frack: Vibration and holse dampening	2	2 200	660
20.01	At-grade station stop shelter mail terminal platform	2	2,200	660
20.02	Aerial station, stop, shelter, mall, terminal, platform	2	- 2,200	-
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		57	5
20.07	Elevators, escalators		-	<u>1</u>
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	-		
30.07	Administration Building. Onice, sales, storage, revenue counting			-
30.02	Light Maintenance Facility	-		
30.04	Storage or Maintenance of Way Building	-		-
30.05	Yard and Yard Track			-
40 SITEWOF	RK & SPECIAL CONDITIONS		16,284	4,885
40.01	Demolition, Clearing, Earthwork		1,000	300
40.02	Site Utilities, Utility Relocation		2,620	786
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		51	15
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		51	15
40.05	Site structures including retaining walls, sound walls	-	-	-
40.06	Automobile, bus, van accessways including roads, parking lots	-	1,009	3 202
40.07	Temporary facilities and other indirect costs during construction			
50 SYSTEM	S		12,222	3,667
50.01	Train control and signals		3,617	1,085
50.02	Traffic signals and crossing protection		1,845	554
50.03	Traction power supply: substations		1,936	581
50.04	Traction power distribution: catenary and third rail		2,649	795
50.05	Communications		1,579	474
50.06	Fare collection system and equipment		340	102
Construction	n Subtotal (10-50)		200 13 910	13 173
60 ROW, LA	ND. EXISTING IMPROVEMENTS		2.374	2.374
60.01	Purchase or lease of real estate		2,374	2,374
60.02	Relocation (freight railroad traffic)		5	

	Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 20	006)
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 GUIDEW	AY & TRACK ELEMENTS (route miles)	1.95	8,760	2,628
10.01	Guideway: At-grade exclusive right-of-way	- 1.02	-	-
10.02	Guideway, At-grade serii-exclusive (allows cross-traffic)	1.03	1,500	390
10.03	Guideway: A grade in mixed induce	-	- 1,000	
10.05	Guideway: Built-up fill	-	H	э.
10.06	Guideway: Underground cut & cover	1373	5	
10.07	Guideway: Underground tunnel	1877	ā	5
10.08	Guideway. Retained cut or fill	2424	8	82
10.09	Track: Direct fixation		-	
10.10	Track. Embedded	-	3,411	1,023
10.11	Track: Special (switches tumouts)		1,734	366
10.12	Track: Vibration and noise dampening	-	1,218	
20 STATION	S, 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		2	4
20.03	Underground station, stop, shelter, mall, terminal, platform		2	2
20.04	Other stations, landings, terminals: Intermodal, terry, trolley, etc.	-	H	-
20.05	Automobile parking multi-story structure		-	
20.07	Elevators, escalators			-
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			
30.01	Administration Building: Office, sales, storage, revenue counting			4
30.02	Light Maintenance Facility			2
30.03	Heavy Maintenance Facility			-
30.04	Storage or Maintenance or Way Building	-		
40 SITEWOR			24 575	7 372
40.01	Demolition, Clearing, Earthwork		1,500	450
40.02	Site Utilities, Utility Relocation		5,378	1,613
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		51	15
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		103	31
40.05	Site structures including retaining walls, sound walls		-	-
40.05	Pedestrian / bike access and accommodation, landscaping	-	2,477	/43
40.07	Temporary facilities and other indirect costs during construction	-	15,005	4,519
50 SYSTEM	S		13,280	3,984
50.01	Train control and signals		3,653	1,096
50.02	Traffic signals and crossing protection		2,560	768
50.03	Traction power supply: substations		1,955	587
50.04	Traction power distribution: catenary and third rail		2,749	825
50.05	Communications	-	1,595	4/9
50.06	Central Control		D10 057	77
Constructio	n Subtotal (10-50)		49.914	14.974
60 ROW, LA	ND, EXISTING IMPROVEMENTS		3,192	3,192
60.01	Purchase or lease of real estate		3,192	3,192
60.02	Relocation (freight railroad traffic)		5	

	Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 20	006)
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 GUIDEW/	AY & TRACK ELEMENTS (route miles)	6.16	83,889	25,167
10.01	Guideway, At-grade exclusive right-or-way Guideway, At-grade semi-eyclusive (allows cross-traffic)	3.12	6.671	2 001
10.02	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	()	н.	adama a da
10.06	Guideway: Underground cut & cover	0.59	38,988	11,696
10.07	Guideway: Underground tunnel	8.73		5
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: Enliged	-	5,090	2.077
10.11	Track: Special (switches tumouts)	-	1 441	432
10.12	Track: Vibration and noise dampening			402
20 STATION	S, 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	9	1 2	2
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	×	×	9
20.05	Joint development		5	2
20.06	Automobile parking multi-story structure	-	-	-
20.07	T FACILITIES: YARDS SHOPS ADMIN BLOGS	-	5,540	1,002
30.01	Administration Building: Office sales storage revenue counting			
30.02	Light Maintenance Facility	-	1	<u> </u>
30.03	Heavy Maintenance Facility	-		9
30.04	Storage or Maintenance of Way Building			
30.05	Yard and Yard Track			
40 SITEWOR	RK & 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, matil, contamid soil removal/mitigation, ground water treatments		163	49
40.04	Site structures including retaining walls, sound walls	-	525	30
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		2 C	2
50 SYSTEM	S		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	i raction power supply: substations		6,180	1,854
50.04	Communications		8,457	2,537
50.05	Eare collection system and equipment		0,042 1.530	1,013
50.00	Central Control		813	244
Construction	n Subtotal (10-50)		178,097	53,429
60 ROW, LA	ND, 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, 20	006)
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 GUIDEW	AY & 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, Aegrade in mixed iranic	1.05	1,221	500
10.05	Guideway: Nella substate	2-0		
10.06	Guideway: Underground cut & cover	873		-
10.07	Guideway: Underground tunnel	877	57	5
10.08	Guideway: Retained cut or fill	2424	2	2
10.09	Track: Direct fixation	-	2	
10.10	Track: Embedded		3,798	1,139
10.11	Track, Ballasled Track, Special (switches tumouts)		- 1.480	-
10.12	Track Vibration and noise dampening	-	1,400	
20 STATION	S, 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	2	2	2
20.03	Underground station, stop, shelter, mall, terminal, platform			2
20.04	Other stations, landings, terminals: Intermodal, terry, trolley, etc.	ж.		9
20.05	Joint development Automobile parking multi-story structure	-	5	2
20.07	Elevators, escalators			
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	·		
30.01	Administration Building: Office, sales, storage, revenue counting			4
30.02	Light Maintenance Facility			2
30.03	Heavy Maintenance Facility			
30.04	Storage or Maintenance of Way Building	-		8
40 SITEWOR			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		-	a:20:47
40.05	Automobile, but was accossively including reads, parking lots	-	3,391	1,017
40.07	Temporary facilities and other indirect costs during construction	-		1,044
50 SYSTEM	S		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	raction power distribution: catenary and third rail		1,492	448
50.05	Eare collection system and equipment		510	252
50.00	Central Control		136	41
Constructio	n Subtotal (10-50)		31,112	9,334
60 ROW, LA	ND, EXISTING IMPROVEMENTS		152	152
60.01	Purchase or lease of real estate		152	152
60.02	Relocation (freight railroad traffic)		5	

	Major Capital Project Costs - By Segment		(Rev. 6, Feb 7, 20	006)
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
				Deee Veer
		Quantity	Base Year Estimate (X000)	Allocated Contingency (X000)
10 GUIDEW/	AY & TRACK ELEMENTS (route miles)	1.62	5,969	1,791
10.01	Guideway: At-grade exclusive right-of-way			
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	- 160	-	- E70
10.03	Guideway, Aeral structure	1.62	1,920	516
10.04	Guideway: Built-up fill	1.00		
10.06	Guideway. Underground cut & cover	27	-	-
10.07	Guideway: Underground tunnel	-	=	H
10.08	Guideway: Retained cut or fill	22	-	4
10.09	Track: Direct fixation		-	-
10.10	Track: Embedded		3,253	976
10.11	Track: Ballasted		-	-
10.12	Track. Special (switches, turnouts)	-	790	231
20 STATION	S 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	2		
20.03	Underground station, stop, shelter, mall, terminal, platform			4
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	÷	×	÷
20.05	Joint development		=	-
20.06	Automobile parking multi-story structure			5
20.07	Elevators, escalators		-	-
30 SUPPOR	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			5
40 SITEWOF	RK & SPECIAL CONDITIONS		23,096	6,929
40.01	Demolition, Clearing, Earthwork		2,000	600
40.02	Site Utilities, Utility Relocation	-	5,736	1,/21
40.03	Haz, mail, contam d son removal/mugation, ground water treatments	-	43	13
40.05	Site structures including retaining walls, sound walls	-		
40.06	Pedestrian / bike access and accommodation, landscaping		2,782	835
40.07	Automobile, bus, van accessways including roads, parking lots		12,492	3,748
40.08	Temporary facilities and other indirect costs during construction		2	2
50 SYSTEM	S		11,561	3,468
50.01	Train control and signals		3,039	912
50.02	Traction power supply: substations		2,320	696
50.03	Traction power distribution: catenary and third rail		2 354	400
50.05	Communications		1.327	398
50.06	Fare collection system and equipment		680	204
50.07	Central Control		214	64
Construction	n Subtotal (10-50)		42,826	12,848
60 ROW, LA	ND, EXISTING IMPROVEMENTS		130	130
60.01	Purchase or lease of real estate		130	130
60.02	Relocation (freight railroad traffic)		57	5

Appendix F: Annualized Capital Costs

Major Capital Project Costs - Annualized Cost								(Rev. 6, Feb 7, 2	006)
Project	Southwest Transitwa	y - Enhand	ed Bus Bas	eline				Date	10/17/06
Location	Henner	in County.	MN					Base Year	2006
		Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Usefull Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	16.00	-				00	0.0702	
10.01	Guideway, At-grade exclusive right-on-way Guideway, At-grade semi-exclusive (allows cross-traffic)		-				30	0.0806	
10.03	Guideway: At-grade in mixed traffic	16.00	1.	-	-	())	20	0.0944	(e)
10.04	Guideway: Aerial structure	2	ш. Ц	-		-	80	0.0703	
10.05	Guideway, Built-up fill Guideway, Underground cut & cover						80	0.0703	
10.07	Guideway: Underground tunnel	-	-			-	70	0.0706	-
10.08	Guideway: Retained cut or fill	-	-	-	-		80	0.0703	200
10.09	Track Direct fixation		-	-	-	9	30	0.0806	-
10.10	Track Ballasted		5			(*) (2)	20	0.0944	(#) 500
10.12	Track Special (switches, turnouts)		-	283			30	0.0806	-
10.13	Track. Vibration and noise dampening		2	-	-	-	30	0.0806	(
20 STATION	IS, STOPS, TERMINALS, INTERMODAL (number)	13	11,915		2,715	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	Underground station, stop, shelter, mail, terminal, platform	-			2		70	0.0706	1
20.04	Other stations, landings, terminals. Intermodal, ferry, trolley, etc.	3	-		-	(Q)	70	0.0706	192
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
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN, BLDGS	-			-	-		0.0000	
30.01	Administration Building: Office, sales, storage, revenue counting		-	-	-		50	0.0725	0 7 4
30.02	Light Maintenance Facility		-		-	-	50	0.0725	
30.03	Heavy Maintenance Facility Storage of Maintenance of Mov Building	-		-			50	0.0725	-
30.04	Yard and Yard Track		-			2	80	0.0703	27
40 SITEWOP	RK & 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	375
40.03	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		-	-		-	100	0.0701	-
40.05	Site structures including retaining walls, sound walls		-	-	-		80	0.0703	(m)
40.06	Pedestrian / bike access and accommodation, landscaping		-	11	-	-	20	0.0944	-
40.07	Automobile, bus, van accessways including roads, parking lots	-	2,418	911	551	3,881	20	0.0944	366
50 SYSTEM	16 16 16 16 16 16 16 16 16 16 16 16 16 1		85	-	19	136	100	0.0701	13
50.01	Train control and signals		2		-	(L)	30	0.0806	10 - -1
50.02	Traffic signals and crossing protection			1.00		134	30	0.0806	100
50.03	Traction power supply: substations		-		-	140	40	0.0750	
50.04	Communications		- 85	32	- 19	136	30	0.0944	- 13
50.06	Fare collection system and equipment		2	1			20	0.0944	1
50.07	Central Control		-	-		-	30	0.0806	3)
Constructio	n Subtotal (10-50)		17,017		3,878	27,310			2,056
60.01	Purchase or lease of real estate		10,832		2,469	13,301	100	0.0701	932
60.02	Relocation (freight railroad traffic)						100	0.0701	
70 VEHICLE	S (number)	49	18,113		4,128	22,241			2,800
70.01	Light Rail Heavy Pail	-					25	0.0858	-
70.03	Commuter Rail	-	2				25	0.0858	12
70.04	Bus	49	18,113		4,128	22,241	12	0.1259	2,800
70.05	Other	2	2				12	0.1259	-
70.06	Spare parts					100	12	0.1259	
80 PROFESS	SIONAL SERVICES		6,414						
80.01	Preliminary Engineering		262						
80.02	Final Design Protect Management for Design and Construction	-	1,054						
80.03	Construction Administration & Management		1.101						
80.05	Insurance		524						
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.		402						
80.07	Surveys, Testing, Investigation, Inspection		1,148						
90 UNALL O	Agency Ford Account work		1,327						
Subtotal (10	1-80)		62,851	6,414	10,475	62,851			5,788

Project Southwest Transitway - Alternative BRT 1 Location Hennepin County, MN B Outstitut Base Year (X000) Distributed Professional Services (X000) Distributed Unallocated Distributed Unallocated (X000) Ease Year Total (X000) Years of Total (X000) Annu: Services (X000) 10 OUIDEWAY & TRACK ELEMENTS (route miles) 13.28 70.595 19.594 100.881 10.01 Guideway Abgrade exclusive right of way 10.02 - - - - 80 10.01 Guideway Abgrade exclusive right of way 10.02 - - - - - 80 10.02 Guideway Abgrade exclusive right of way 10.03 -	Date 10/17/06 Year 2006	Date Base Year				1	mative BRT	hway . Alte		
Location Hennepin County, MN Base Year Distributed Professional Services (X000) Distributed Unallocated Distributed Unallocated (X000) Base Year Total Unallocated Distributed Unallocated Distributed Unallocated Distributed Unallocated Services (X000) Base Year Total Unallocated Distributed Unallocated Distributed Unallocated Distributed Unallocated Distributed Unallocated Distributed Unallocated Distributed Unallocated Distributed Unallocated Distributed Unallocated Distributed Unallocated Distributed Distributed Distributed Unallocated Distribute	Year 2006	Base Year	<u></u>					tway - Alla	Southwest Transi	Projec
Distributed Professional Services (X000) Distributed Distributed Contingency (X000) Distributed Dualocated Contingency (X000) Base Year Total (X000) Years of Useful Life Annu: Family 10 Guideway Atgrade exclusive right-d-way 1002 1328 70.596 19.594 105,681 - 10 In 1001 Guideway Atgrade exclusive right-d-way 1002 - - - - - 80 1002 Guideway Atgrade exclusive right-d-way 1002 - - - - - 80 1003 Guideway Atgrade semic-sclusive (alows cross-traffic) 11.29 51.010 19.202 12.234 80 - 10.05 Guideway, Atgrade in mixed traffic 0.24 8.259 2.137 1.968 12.234 80 10.06 Guideway, Underground turel - - - - 70 - 10.07 Guideway, Netrained cut of fill 0.92 10.362 2,682 2,494 15,539 80 10.10 Track: Diret fixation - - - - - - -<							MN	in County,	Henner	Location
Joint Guideway. Al-grade exclusive right-of-way Joint (x000) Jistributed professional Services (x000) Distributed Contingence (x000) Jistributed Contingence (x000) <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>one consume</td><td>•</td><td>- Mark Ng Signal</td><td></td></t<>							one consume	•	- Mark Ng Signal	
Base Year Fortisional (X000) Distributed Professional Services Distributed Unalicated (X000) Base Year Total (X000) Years of Useful Life Annu: Fa (X000) 10 GUIDEWAY & TRACK ELEMENTS (route miles) 1328 70,596 16,994 105,891 - - - 8000 - - - 8000 - 001 003,202 11,29 51,010 13,202 12,279 76,491 - - - - - - 00 - - - 00 - - - 00 - 0.24 8,259 2,137 1,988 12,304 80 - - - 00 - 0.00 Cuideway, Arenal structure - - - - 000 - - - - 0.00 - - - 0.00 -										
Base Year (X000) Distributed Professional (X000) Distributed Unalicated (X000) Base Year Total (X000) Years of Useful Life Annu: Fa (X000) 10 GUIDEWAY & TRACK ELEMENTS (route miles) 1328 70,596 16,994 105,861 — 10.01 Guideway, At-grade exclusive right-of-way - - - 80 10.02 Guideway, At-grade semi-exclusive (allows cross-braffic) 11.29 51,010 19,202 12,279 76,491 30 10.03 Guideway, At-grade semi-exclusive (allows cross-braffic) 11.41 955 250 232 1,447 20 10.04 Guideway, At-grade in mixed traffic 141 955 250 232 1,447 20 10.05 Guideway, Underground tunel - - - 70 10 10.06 Guideway, Retained cut or fili 0.92 10,862 2,682 2,494 15,539 80 10.10 Track: Direct fixation - - - - 30 10.10 Track: Witches turnouts) - <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>										
Image: bit with the service ser			1					1		
Quantity Estimate (X000) Services (X000) Contingency (X000) Total (X000) Useful Life (X000) Fr (7% 10 GUIDEWAY & TRACK ELEMENTS (route miles) 1386 70,596 16,994 106,881 10.01 Guideway AL-grade exclusive right-of-way - 70 - - - 70 - - - - - - 70 - - - 70 - - - - 70 - - -	ation Annualized	Annualization	Years of	Base Year	Distributed Unallocated	Distributed Professional	Base Year			
Image: Content of Cuideway & TRACK ELEMENTS (route miles) 132.8 70,596 16,991 106,861 10.01 Guideway AL-grade exclusive right-of-way - - - - 80 10.02 Guideway AL-grade exclusive right-of-way - - - - 80 10.03 Guideway AL-grade exclusive right-of-way - - - - 80 10.03 Guideway AL-grade in mixed traffic 11,41 965 250 232 1,447 20 10.04 Guideway Anal structure 0.24 8,259 2,137 1,988 12,384 80 10.05 Guideway, Underground tunnel - - - 70 10.06 Guideway, Underground tunnel - - - 70 10.08 Guideway, Extended ut or till 0.92 2,662 2,494 15,339 80 10.09 Track: Embedded - - - - 30 10.10 Track: Embedded - - -	e) (X000)	Factor (7% rate)	Usefull Life	Total (X000)	Contingency	Services	Estimate (X000)	Quantity		
0.01 Guideway, AL-grade exclusive right-of-way 0.02 <th0.02< th=""> <th0.02< th=""> 0.02<td>8.264</td><td>NS YK</td><td></td><td>105.861</td><td>16,994</td><td>(1000)</td><td>70,596</td><td>13.86</td><td>AY & TRACK ELEMENTS (route miles)</td><td>10 GUIDEW</td></th0.02<></th0.02<>	8.264	NS YK		105.861	16,994	(1000)	70,596	13.86	AY & TRACK ELEMENTS (route miles)	10 GUIDEW
10.02 Guideway, AL-grade in mixed large traffic 11.29 51,010 13.202 12.273 76,491 30 10.03 Guideway, Alergade in mixed traffic 1.41 965 250 323 1.447 20 10.04 Guideway, Alergide in mixed traffic 0.24 8,259 2,137 1,988 12,384 80 10.05 Guideway, Underground turnel - - - - 70 10.06 Guideway, Underground turnel - - - - 70 10.08 Guideway, Underground turnel - - - - 70 10.08 Guideway, Extended turo rill 0.92 10,362 2,682 2,494 15,533 80 10.09 Track: Embedded - - - - 30 - - - 30 - - - 30 - - - 30 - - - 30 - - - 30 - - - 30 - - - 30 - - <	.703 -	0.0703	80	-	-	-	-	-	Guideway: At-grade exclusive right-of-way	10.01
10.03 Guideway, Areglade in Intel Latin. 11.41 9.00 2.00 2.02 1,447 2.00 10.04 Guideway, Areglade in Intel Latin. 0.24 8,259 2,137 1.988 12,384 80 10.05 Guideway, Pull-up fill - - - - - 600 10.06 Guideway, Underground cut & cover - - - - 70 10.07 Guideway, Retained cut or fill 0.92 10,362 2,682 2,494 15,539 80 10.09 Track: Embedded - - - - - 00 10.10 Track: Embedded - - - - 00 00 10.11 Track: Vibration and noise dampening - - - - 00 10.12 Track: Special (withthes, turnouts) - - - - 00 10.13 Track: Vibration and noise dampening - - - - 00 20.01 Abgrade station, stop, shelter, mail, terminal, platorm 16 21,450 5,551 <td>1806 6,164</td> <td>0.0806</td> <td>30</td> <td>76,491</td> <td>12,279</td> <td>13,202</td> <td>51,010</td> <td>11.29</td> <td>Guideway: At-grade semi-exclusive (allows cross-traffic)</td> <td>10.02</td>	1806 6,164	0.0806	30	76,491	12,279	13,202	51,010	11.29	Guideway: At-grade semi-exclusive (allows cross-traffic)	10.02
10.05 Guideway, Built-up fill - - - - - - 70 10.06 Guideway, Underground cut & cover - - - - 70 10.07 Guideway, Nedarground cut or fill 0.92 10,862 2,682 2,494 15,539 80 10.08 Guideway, Nedandcut or fill 0.92 10,862 2,682 2,494 15,539 80 10.09 Track: Direct fixation 0.92 10,862 2,682 2,494 15,539 80 10.10 Track: Enbedded - - - - 20 20 10.11 Track: Special (switches, turnouts) - - - 20 20 10.12 Track: Vibration and noise dampening - - - 30 20 20.01 Akegrade station, stop, shelter, mail, platform - - - 30 20 20.01 Akegrade station, stop, shelter, mail, terminal, platform 1 1,480 370 344 2,144 70 20.03 Undereground station, stop, shelter, mail, termi	344 137	0.0703	80	12,384	1,988	2,137	8,259	0.24	Guideway. Aerial structure	10.03
10.06 Guideway, Underground Lut & cover - - - - 70 10.07 Guideway, Underground Lunel - - - 70 10.08 Guideway, Retained cut or fill 0.92 10,362 2,682 2,494 15,539 60 10.09 Track: Direct fixation 0.92 10,362 2,682 2,494 15,539 60 10.10 Track: Enbedded - - - 30 20 10.11 Track: Special (switches, turnouts) - - - 30 20 10.12 Track: Vibrachina nd noise dampening - - - 30 30 20 STATIONS, STOPS, TERMINALS, INTERMODAL (number) 16 39,461 9,288 57,673 - 20.01 At-grade station, stop, shelter, mail, terminal, platform 1 1,430 370 344 2,144 70 20.03 Underground station, stop, shelter, mail, terminal, platform - - - 70 20.04 Other stations, indings, terminals: Intermodal, ferry, trolley, etc. - - 70 -	1703 -	0.0703	80		-		=	-	Guideway, Built-up fill	10.05
10.07 Guideway, Vonerground tunnel - - - - - - - - 10 10.08 Guideway, Vonerground tunnel 0.92 10,362 2,662 2,494 15,533 60 10.09 Track/ Embedded - - - - 30 10.10 Track/ Embedded - - - 30 10.11 Track/ Special (switches, turnouts) - - - 30 10.12 Track/ Vibration and noise, turnouts) - - - - 30 10.13 Track Vibration and noise, turnouts, stops, shelter, mail, terminal, platform 16 34,641 9,288 57,673 20.01 Akgrade station, stop, shelter, mail, terminal, platform 1 1,430 370 344 2,144 70 20.02 Achirations, top, shelter, mail, terminal, platform 1 1,430 370 344 2,144 70 20.03 Underground station, stop, shelter, mail, terminal, platform - - - 70 20.04 Other stations, top, shelter, mail, terminal, platform - - - 70 20.05 Joint development - - - 70	1706 -	0.0706	70			.+	-		Guideway, Underground cut & cover	10.06
10.09 Track Direct fixation - - - - 30 10.10 Track Embedded - - - - 20 20 10.11 Track Balasted - - - - 20 20 10.12 Track Balasted - - - - 30 10.12 Track Special (switches, turnouts) - - - 30 10.13 Track Special (switches, turnouts) - - - 30 20 STATIONS, STOPS, TERMINALS, INTERMODAL (number) 16 38,461 9,258 57,673 20.01 Abgrade station, stop, shelter, mail, terminal, platform 15 21,450 5,551 5,164 32,165 70 20.02 Aerial station, stop, shelter, mail, terminal, platform 1 1,430 370 344 2,144 70 20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc. - - - 70 20.05 Jolint development -	1.093	0.0706	70	15.539	2.494	2.682	10.362	0.92	Guideway, Onderground turner Guideway, Retained cut or fill	10.07
10.10 Track Embedded	1806 -	0.0806	30	10,000				0.02	Track. Direct fixation	10.09
Initial index special station - - - - - 35 10.12 Track: Special (switches, turnouts) - - - - 30 10.13 Track: Special (switches, turnouts) - - - 30 20 STATIONS, STOPS, TERMINALS, INTERMODAL (number) 16 38,461 9.288 57,673 - 20.01 A brgrads station, stop, shelter, mail, terminal, platform 15 21,450 5,551 6,164 32,165 70 20.02 Aerial station, stop, shelter, mail, terminal, platform 1 1,430 370 344 2,144 70 20.04 Other stations, indings, terminals: Intermodal, fery, trolley, etc. - - - 70 20.05 Joint development - - - 70 20.06 Automobile parking multi-story structure - - 70 20.07 Elevators, escalators 2,314 599 507 3,470 30	1944 -	0.0944	20	-	-		-		Track Embedded	10.10
10.13 Track Vibration and roise dampening 30 20 STATIONS, STOPS, TERMINALS, INTERMODAL (number) 16 38,461 9,288 57,673 20.01 At-grade station, stop, shelter, mail, terminal, platform 15 21,450 5,551 5,164 32,165 70 20.03 Aterial station, stop, shelter, mail, terminal, platform 1 1,430 370 344 2,114 70 20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc. - - - 70 20.05 Joint development - - - 70 20.06 Automobile parking multi-story structure 13,267 3,433 3,194 19,893 50 20.07 20,314 599 557 3,470 30 30	1112 -	0.0772	35	1	-		-		Track Special (switches turnouts)	10.11
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number) 16 38,461 9,258 57,673 20.01 A-bgrade station, stop, shetter, mail, terminal, platform 15 21,450 5,551 5,164 32,165 70 20.02 A-eraid station, stop, shetter, mail, terminal, platform 1 1,430 370 344 2,144 70 20.03 Underground station, stop, shetter, mail, terminal, platform - - - 70 20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc. - - 70 20.05 Joint development - - 70 20.06 Automobile parking multi-story structure 19,267 3,433 3,194 19,893 60 20.07 Evaluations 2,314 599 557 3,470 30	1806 -	0.0806	30	2			2	1	Track Vibration and noise dampening	10.12
20.01 A-bgrade station, stop, shelter, mail, terminal, platform 15 21,450 5,51 5,164 32,165 70 20.02 Aerial station, stop, shelter, mail, terminal, platform 1 1,430 370 344 2,144 70 20.03 Underground station, stop, shelter, mail, terminal, platform - - - 70 20.04 Other stations, landings, terminals, lintermodal, ferry, trolley, etc. - - - 70 20.05 Joint development - - - 70 20.06 Automobile parking multi-story structure 13,267 3,433 3,194 19,893 50 20.07 Elevators, escalators 2,314 599 557 3,470 30	4,144			57,673	9,258		38,461	16	IS, STOPS, TERMINALS, INTERMODAL (number)	20 STATIO
Could relation stop, stop, stop, and therman, production 1 1,430 370 3344 2,144 70 20.03 Underground stafon, stop, shatter, mail, terminal, platform - - - 70 20.04 Other stations, landings, terminals, intermodal, ferry, trolley, etc. - - - 70 20.05 Joint development - - - 70 20.06 Automobile parking multi-story structure 13,267 3,433 3,194 19,893 50 20.07 Elevators, escalators 2,314 599 557 3,470 30	1706 2,271	0.0706	70	32,165	5,164	5,551	21,450	15	At-grade station, stop, shelter, mall, terminal, platform	20.01
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc. - - - 70 20.05 Joint development - - - 70 20.06 Automobile parking multi-story structure 13,267 3,433 3,194 19,893 50 20.07 Elevators, escalators 2,314 599 557 3,470 30	1706 151	0.0706	70	2,144	- 344	- 370	1,430		Underground station, stop, shelter, mail, terminal, platform	20.02
20.05 Joint development - - - 70 20.06 Automobile parking multi-story structure 13,267 3,433 3,194 19,893 60 20.07 Elevators, escalators 2,314 599 557 3,470 30	1706 -	0.0706	70	120				- 20	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	20.04
20.00 Chromotopic parking multi-story structure 13/267 3/433 3/194 19/993 50 20.07 Elevators, escalators 2,314 599 557 3/470 30	1706 -	0.0706	70	-	-	-	-		Joint development	20.05
	125 1,441	0.0725	30	3 470	3,194	3,433	2 314	5	Elevators escalators	20.06
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS 14,269 3,435 21,397 4	1,550			21,397	3,435		14,269		T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	30 SUPPOR
30.01 Administration Building: Office, sales, storage, revenue counting		0.0725	50			-	-		Administration Building: Office, sales, storage, revenue counting	30.01
30.02 Light Maintenance Facility 14,269 3,693 3,435 21,397 50 50 50 50 50 50 50 50 50 50 50 50 50	1725 1,550	0.0725	50	21,397	3,435	3,693	14,269		Light Maintenance Facility Heavy Maintenance Facility	30.02
30.04 Storage of Maintenance of Way Building	1725 -	0.0725	50	-	-	-	-		Storage or Maintenance of Way Building	30.04
30.05 Yard and Yard Track 80		0.0703	80	~		1	-		Yard and Yard Track	30.05
40 STEWORK & SPECIAL CONDITIONS 80,564 19,394 120,808 10,664 19,394 120,808 10,664 19,394 120,808 10,664 19,394 120,808 10,664 19,394 120,808 10,664	10,226	0.0701	100	120,808	19,394	2.602	80,564		R & SPECIAL CONDITIONS	40 SITEWO
40.02 Site Utility Relication 2002 2,004 10,005 100	2,199	0.0701	100	31,375	5,037	5,415	20,923	5	Site Utilities, Utility Relocation	40.02
40.03 Haz. math. contam/d soil removal/mitigation, ground water treatments 476 123 114 713 100	1701 50	0.0701	100	713	114	123	476		Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	40.03
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks 497 129 120 745 100 90	1701 52	0.0701	100	745	120	129	497		Environmental mitigation, e.g. wetlands, historic/archeologic, parks	40.04
40.06 Pedestriar/bike access and accommodation, landscaping 21.204 5.488 5.104 31.796 20	3.001	0.0944	20	31.796	5.104	5.488	21,204		Pedestrian / bike access and accommodation. landscaping	40.05
40.07 Automobile, bus, van accessways including roads, parking lots 27,064 7,004 6,515 40,583 20	944 3,831	0.0944	20	40,583	6,515	7,004	27,064		Automobile, bus, van accessways including roads, parking lots	40.07
40.08 Temporary Facilities and other indirect costs during construction 100	1701 -	0.0701	100	-	-	14	-		Temporary Facilities and other indirect costs during construction	40.08
27,042 5,030 41,301 27,042 5,030 41,301 30 50.01 77ain control and signals	3,720	0.0806	30	41,301	6,630	-	21,542		Train control and signals	50.01
50.02 Traffic signals and crossing protection 6,221 1,610 1,497 9,328 30	1806 752	0.0806	30	9,328	1,497	1,610	6,221		Traffic signals and crossing protection	50.02
50.03 Traction powers upply, substations		0.0750	40	-		-			Traction power supply, substations	50.03
0.04 Inductin power unstrouture, cateriary and principal	1944 2.087	0.0806	20	22,110	3 549	3,816	14 745		Communications	50.04
50.06 Fare collection system and equipment 4.199 1.087 1.011 6.297 2.0	1944 594	0.0944	20	6,297	1,011	1,087	4,199		Fare collection system and equipment	50.06
60.07 Central Control 2.378 615 672 3,566 30	1806 287	0.0806	30	3,566	572	615	2,378		Central Control	50.07
Lonstruction subjects (10-00) 231,432 55,711 347,039 08 08 08 09 09 09 09 09 09 09 09 09 09 09 09 09	27,905			347,039	55,711		231,432		ND. EXISTING IMPROVEMENTS	60 ROW 1
60.01 Purchase of lease of real estate 24.460 5.688 30,348 100	1701 2,127	0.0701	100	30,348	5,888		24,460		Purchase or lease of real estate	60.01
00.02 Relocation (freight railroad traffic) 9,736 2,344 12,080 100	1701 847	0.0701	100	12,080	2,344		9,736		Relocation (freight railroad traffic)	60.02
1/0 VEHICLES (number) 54 28,634 6,869 36,402 70.01 internal	4,457	0.0858	.95	35,402	6,869		28,534	54	.s (number) Linht Rail	70 VEHICLI
70.02 Heavy Rail	1858 -	0.0858	25		-		2	-	Heavy Rail	70.02
70.03 Commuter Rall 25	1858 -	0.0858	25				-	2	Commuter Rall	70.03
70.04 EUS 39 14/16 3,470 17,886 12 17,086 12 17,086 12 14,094 10,094 10,095 10,	259 2,252	0.1259	12	17,886	3,470		14,416	39	Bus Other (BRT)	70.04
70.06 Non-revenue vehicles 2,305 555 2,860 12	1259 360	0.1259	12	2,860	2,404		2,305	15	Non-revenue vehicles	70.06
70.07 Spare parts 1,575 379 1,954 12	259 246	0.1259	12	1,954	379		1,575		Spare parts	70.07
130 PROFESSIONAL SERVICES 59,896 99.00 99.							59,896		SIONAL SERVICES	80 PROFES
80.02 Final Design							9,616		Final Design	80.02
80.03 Project Management for Design and Construction 4,345							4,345		Project Management for Design and Construction	80.03
80.04 Construction Administration & Management 14,413							14,413		Construction Administration & Management	80.04
00.06 Insulate //.121 00.06 Leait Pemits: Review Fees by other agencies, cities, etc. 2.635							2,635		Legal: Permits: Review Fees by other agencies, cities, etc.	80.05
80.07 Surveys, Testing, Investigation, Inspection 5,814							-,- 54		The first second s	00.07
80.08 Agency Force Account Work 12,391							5,814		Surveys, Testing, Investigation, Inspection	80.07
OPU INSERT 70,811 424,869 Stubbta (10.90) 424,869 55,896 70,811 424,869							5,814 12,391		Surveys, Testing, Investigation, Inspection Agency Force Account Work	80.07

	Major Capital Project Costs - Annualized Cost (Rev. 6, Feb 7, 200								
Proje	Southwest Transi	tway - Alte	mative BR1	2				Date	10/17/06
Locati	on Hennep	in County,	MN					Dase Year	2006
		Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Usefull Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDE	WAY & TRACK ELEMENTS (route miles)	18.31	106,511		25,741	159,068	90	0.0702	12,039
10.01	Guideway: Al-grade exclusive right-ul-way 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. Al-grade in mixed traffic	7.58	7,534	1,897	1,821	11,252	20	0.0944	1,062
10.04	Guideway: Aerial structure	0.87	42,647	10,737	10,307	63,690	80	0.0703	4,478
10.05	Guideway. Built-up fill	•		-		11 T	80	0.0703	
10.06	Guideway: Underground cut & cover Guideway: Underground trippel	-					70	0.0706	
10.07	Guideway: Retained cut or fill	1.51	18,290	4,605	4,420	27,316	70	0.0708	1,921
10.09	Track: Direct fixation			-	2. 2.		30	0.0806	2
10,10	Track. Embedded				-	-	20	0.0944	18
10.11	Track: Ballasted		-				35	0.0772	12
10.12	Track: Special (switches, turnouts) Track: Vibration and noise damnering		•		-		30	0.0806	
20 STATI	DNS, STOPS, TERMINALS, INTERMODAL (number)	19	55,595		13,436	83,027	30	0.0006	5,970
20.01	At-grade station, stop, shelter, mail, terminal, platform	18	25,740	6,480	6,221	38,441	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	Uther stations, landings, terminals: Intermodal, terry, trolley, etc.					*	70	0.0706	-
20.06	Automobile parking multi-story structure		26,111	6,574	6,310	38,994	50	0.0725	2,826
20.07	Elevators, escalators		2,314	583	559	3,456	30	0.0806	278
30 SUPP	DRT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		18,856		4,557	28,159			2,040
30.01	Administration Building: Office, sales, storage, revenue counting		10.050	4.747	4 667	-	50	0.0725	0.040
30.02	Heavy Maintenance Facility		10,000	4,141	4,007	20,109	50	0.0725	2,040
30.04	Storage or Maintenance of Way Building			-		-	50	0.0725	
30.05	Yard and Yard Track		2	-	-	-	80	0.0703	4
40 SITEW	ORK & SPECIAL CONDITIONS		97,888	0.100	23,657	146,190	100	0.0304	12,309
40.01	Ste Utilities, Utility Delocation		12,300	3,109	2,985	18,444	100	0.0701	1,293
40.03	Haz. matl, 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	254	244	1,508	100	0.0701	106
40.05	Site structures including retaining walls, sound walls		-	-		-	80	0.0703	-
40.06	Automobile, bus van access and accommodation, landscaping		20,390	5,133	4,928	30,451	20	0.0944	2,874
40.08	Temporary Facilities and other indirect costs during construction				0,011	-	100	0.0701	
50 SYST	EMS	1 1	37,302		9,015	65,709			4,996
50.01	Train control and signals			-	-		30	0.0806	
50.02	Traction power supply, substations		9,594	2,415	2,319	14,328	30	0.0806	1,155
50.03	Traction power distribution, catenary and third rail		-				40	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
60 ROW	LAND. EXISTING IMPROVEMENTS		34,196		8.264	4/2,152			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 VEHIC	LES (number)	57	31,637		7,646	39,283		0.0005	4,946
70.01	Heavy Rail	-					25	0.0858	
70.03	Commuter Rail					C. Starting	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 venicies Spare parts		3,046		736	3,782	12	0 1259	476
80 PROF	ESSIONAL SERVICES		79,594			4,041	12	0.1200	202
80.01	Preliminary Engineering		4,864						
80.02	Final Design		12,933						
80.03	Project wanagement for Design and Construction Construction Administration & Management		5,6/8						
80.05	Insurance		9,728						
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.		3,287						
80.07	Surveys, Testing, Investigation, Inspection		7,176						
80.08	Agency Fore Accourt Work		16,301						
Subtotal	10-80)		553,896	79,594	92,316	553,896	8		45,276

	Major Capital Projec		(Rev. 6, Feb 7, 2006)						
Project	Southwest Transit	way - Alter	native LRT	1A				Date	10/17/06
Location	Hennep	in County,	MN					Base Year	2006
		Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Usefull Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	13.78	81,991		19,544	122,578	80	0.0702	9,393
10.01	Guideway: At-grade semi-exclusive (allows cross-traffic)	11.82	19,389	4,976	4,622	28,986	30	0.0703	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	00	0.0703	1,231
10.05	Guideway: Built-up fill 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
10.11	Track Balasted		29,344	7,531	6,995	43,870	35	0.0772	3,388
10.12	Track Special (switches, turnouts)		6,722	1,725	1,602	10,050	30	0.0806	810
10.13	Track Vibration and noise dampening		-	-		-	30	0.0806	
20 STATIO	At grade station, stop, shelter, mail, terminal, platform	14	35,601	4 771	8,486	53,223	70	0.0706	3,830
20.02	Aerial station, stop, shelter, mail, 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	
20.06	Automobile parking multi-story structure	2	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 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		50,694		12,084	75,789		0.0705	5,437
30.01	Light Maintenance Facility		33 796	8.674	8 056	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	Pard and Yard Track		16,898	4,337	4,028	25,263	80	0.0703	1,776
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	4,600	29,403	100	0.0701	2,061
40.03	Haz, mat1, contam'd soil removal/mitigation, ground water treatments		473	121	113	707	100	0.0701	50
40.05	Site structures including retaining walls, sound walls		475	121		101	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
50 SYSTEM	remporary Facilities and other indirect costs during construction		100.718	*	24.007	150.575	100	0.0701	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 Traction power distribution: estenary and third rail		17,965	4,611	4,282	26,858	40	0.0750	2,015
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 Construction	Central Control		2,364	607	563 84 719	3,534	30	0.0006	285
60 ROW, L	ND, EXISTING IMPROVEMENTS		33,982		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)	87	9,736		2,321	12,057	100	0.0701	845
70.01	Light Rail	19	59,850		14,266	74,116	25	0.0050	6,360
70.02	Heavy Rail		-		-	-	25	0.0858	-
70.03	Commuter Rail Bus	- 30	14.046		9.940	17 995	25	0.0858	2 100
70.05	Other		14,040		0,040	11,050	12	0.1259	2,150
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
80.01	Preliminary Engineering		5,468						
80.02	Final Design		15,481						
80.03	Project Management for Design and Construction		6,798						
80.04	Insurance		10.936						
80.06	Legal, Permits, Review Fees by other agencies, cities, etc.		3,584						
80.07	Surveys, Testing, Investigation, Inspection		8,808						
BU UNALL C	Agency Police Account Work		113 367						
Subtotal (1	0.00)		680,143	91,220	113.357	690,143		1	55,457

	Major Capital Projec		(Rev. 6, Feb 7, 2006)						
Project	Southwest Transit	way - Alter	rnative LRT	2A				Date	10/17/06
Location	Hennep	in County,	MN					Base Year	2006
		Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Usefull Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	15.10	109,701		26,175	163,995	80	0.0702	12,339
10.01	Guideway: At-grade semi-exclusive (allows cross-traffic)	11.16	18,742	4,804	4,472	28,019	30	0.0703	2,258
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	00	0.0703	2,492
10.05	Guideway: Built-up fill 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	289	269	3,718	30	0.0806	300
10.11	Track Ballasted		31,587	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 STATIO	At-grade station stop shelter mail terminal platform	16	21,450	5 4 9 8	5.118	32.066	70	0.0706	2 265
20.02	Aerial station, stop, shelter, mail, terminal, platform	1	1,430	367	341	2,138	70	0.0706	151
20.03	Underground station, stop, sheiter, mail, terminal, platform	-	-		-		70	0.0706	
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	-					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 SUPPOR	Administration Building: Office cales starses reveals counting		50,694		12,096	76,784	60	0.0705	5,437
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	2
30.04	Storage or Maintenance of Way Building		-	-	-	-	50	0.0725	-
40 SITEWO	RK & SPECIAL CONDITIONS		96,235	4,331	22.962	143,864	00	0.0703	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		27,384	7,019	6,534	40,938	100	0.0701	2,869
40.03	Haz, man, contain a soil removal/mitigation, ground water treatments Environmental mitigation, e.g. wetlands, historic/archeologic, parks		631	162	151	944	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 Temporary Facilities and other indirect costs during construction	3	38,985	a'aa3	9,302	58,280	100	0.0944	5,501
50 SYSTEM	NS		110,730		26,420	165,533		C.C.C.	13,499
50.01	Train control and signals		36,805	9,434	8,782	55,021	30	0.0806	4,434
60.02	Traffic signals and crossing protection Traction power supply, substations		8,996	2,306	2,146	13,448	30	0.0806	1,084
50.04	Traction power distribution: catenary and third rail		26,956	6,910	6,432	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
Constructio	on Subtotal (10-50)		408,693	004	97,514	610,967	30	0.0000	47,906
60 ROW, L	AND, EXISTING IMPROVEMENTS		39,651		9,461	49,112			3,442
60.01	Purchase or lease of real estate		29,915		7,138	37,053	100	0.0701	2,597
70 VEHICLI	Es (number)	61	94,473		2,523	117,014	100	0.0701	11,447
70.01	Light Rail	21	66,150		15,703	81,933	25	0.0058	7,031
70.02	Heavy Rail		-		-		25	0.0858	-
70.03	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
80 PROFES	SIONAL SERVICES		104,760		2,031	10,000	12	0,1259	1,719
80.01	Preliminary Engineering		6,288						
80.02	Final Design Project Management for Design and Construction		17,717						
80.03	Construction Administration & Management		25.349						
00.05	Insurance		12,575						
80.06	Legal, Permits, Review Fees by other agencies, cities, etc.		4,135						
80.07	Agency Force Account Work		20.845						
SO UNALLO	CATED CONTINGENCY		129,516						
Subtotal (1)	0.80)		777.093	104,760	129.516	777.093			62,795

	Major Capital Project Costs - Annualized Cost								006)
Project	Southwest Transit	way - Alter	native LRT	3A				Date	10/17/06
Location	Hennep	in County,	MN					Base Year	2006
		Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Usefull Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	15.73	130,033		31,006	195,061		0.0700	14,607
10.01	Guideway: At-grade exclusive right-of-way Guideway: At-grade semi-exclusive (allows cross-traffic)	10.98	18,260	4,778	4,354	27,392	30	0.0703	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	00	0.0703	3,700
10.05	Guideway: Built-up fill Guideway: Underground put & cover	-		1.214	1 109	7.625	80	0.0703	-
10.07	Guideway. Underground tunnel			1,014	-	1,000	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	8 382	497	3,125	20	0.0944	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 STATIO	NS, STOPS, TERMINALS, INTERMODAL (number)	17	52,735	6 200.0	12,574	79,106		0.0300	5,693
20.01	At-grade station, stop, shelter, mail, terminal, platform	16	22,880	0,986	5,456	34,322	70	0.0706	2,424
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	2	-		-	-	70	0.0706	-
20.06	Elevators, escalators		2.314	605	552	33,165	30	0.0725	2,030
30 SUPPOR	RT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		50,694		12,088	76,046			5,456
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
30.04	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 SITEWO	RK & SPECIAL CONDITIONS		112,949		26,932	169,433			14,390
40.01	Site Utilities, Utility Relocation		10,400	2,721	2,480	46 804	100	0.0701	1,093
40.03	Haz. mat1, 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		10 000	6 100	4.790		80	0.0703	2 000
40.00	Automobile, bus, van accessways including roads, parking lots		49,163	12,863	11,723	73,748	20	0.0944	6.961
40.08	Temporary Facilities and other indirect costs during construction		-	+)	-	-	100	0.0701	(a)
50 SYSTEM	//5		121,242		28,910	181,873			14,829
50.01	Train control and signals Traffic signals and crossing protection		38,436	10,056	9,165	57,657	30	0.0806	4,646
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		28,150	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
50.05	Central Control		2,707	708	645	4 060	20	0.0806	327
Constructio	on Subtotal (10-50)		467,652		111,511	701,520			54,975
60 ROW, L	ND, EXISTING IMPROVEMENTS		62,492		14,901	77,393			5,424
60.01	Purchase or lease of real estate Relocation (freight railmad traffic)		9 736		12,580	65,336 12,057	100	0.0701	4,579
70 VEHICLI	ES (number)	66	106,341		25,357	101,698	100	0.0701	12,827
70.01	Light Rail	24	75,600		18,027	93,627	25	0.0058	8,034
70.02	Reavy Rall				•		25	0.0868	
70.03	Bus	42	15,525		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	408
80 PROFES	Spare parts		12,600		3,004	15,604	12	0.1259	1,965
80.01	Preliminary Engineering		7,195						
80.02	Final Design		20,325						
80.03	Project Management for Design and Construction		9,145						
80.05	Insurance		14,389						
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.		5,160						
80.07	Surveys, Testing, Investigation, Inspection		12,345						
SO UNALLO	ICATED CONTINGENCY		151,768						
Subtotal (1	0-00)		910.611	122.357	151,768	910.611			73.226

	Major Capital Project Costs - Annualized Cost (Rev. 6, Fi								006)
Project	Southwest Transitway - Alternative LRT 4A							Date	
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 Usefull Life	Annualization Factor (7% rate)	Annualized Cost (X000)
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	9.10	57,291		13,656	85,733		0.0705	6,558
10.01	Guideway. At-grade exclusive right-of-way Guideway. At-grade semi-exclusive (allows cross-traffic)	7.68	12,835	3.312	3.059	19,207	80	0.0703	1.648
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	00	0.0703	1,109
10.05	Guideway: Built-up fill Guideway: Undemmund cut & cover	0.02	1 373	354	- 327	2 054	80	0.0703	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
10.11	Track Balasted		19,072	4,922	4,546	28,540	35	0.0772	2,204
10.12	Track Special (switches, turnouts)		4,255	1,098	1,014	6,368	30	0.0806	513
10.13	Track. Vibration and noise dampening						30	0.0806	
20 STATIO	At grade station, stop, shelter, mall, tempoal, platform	11	18,044	9 691	4,301	27,002	70	0.0706	1,941
20.02	Aerial station, stop, shelter, mail, terminal, platform	1	1,430	369	341	2,140	70	0.0706	1,011
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	Automobile parking multi-story structure						70	0.0706	-
20.07	Elevators, escalators		2,314	597	552	3,463	30	0.0806	279
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		50,694	1.1.5%	12,084	75,861			5,443
30.01	Administration Building: Office, sales, storage, revenue counting			0.700	-		50	0.0725	-
30.02	Light Maintenance Facility Heavy Maintenance Facility		33,796	8,122	8,056	50,574	50	0.0725	3,665
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 SITEWO	Demolition Clearing Earthwork		65,969	1.845	16,726	98,720 10,700	100	0.0701	8,664
40.02	Site Utilities, Utility Relocation		13,247	3,419	3,158	19,824	100	0.0701	1,389
40.03	Haz. mat1, contam1d 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
40.06	Pedestrian / bike access and accommodation, landscaping		13,609	3,512	3,244	20,365	20	0.0944	1,922
40.07	Automobile, bus, van accessways including roads, parking lots		31,339	8,088	7,470	46,897	20	0.0944	4,427
40.08	Temporary Facilities and other indirect costs during construction			+)	-		100	0.0701	14
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	1,761	1,618	10,155	30	0.0806	818
90.03	Traction power supply: substations		11,866	3,062	2,829	17,757	40	0.0750	1,332
50.04	Traction power distribution: catenary and third rail		16,238	4,191	3,871	24,299	30	0.0806	1,958
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	100
Constructio	n Subtotal (10-50)		258,808		61,692	387,294			30,623
60.01	Purchase or lease of real estate		17.747		4,230	21,978	100	0.0701	2,385
60.02	Relocation (freight railroad traffic)		9,736		2,321	12,057	100	0.0701	845
70 VEHICLI	ES (number)	56	61,878		14,750	76,627		0.0007	7,771
70.01	Light Rail Heavy Rail	12	37,800		9,010	46,810	25	0.0050	4,017
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 Non-revenue vehicles		1.510		961	1.074	12	0.1259	296
70.07	Spare parts		6,300		1,502	7,802	12	0.1259	982
80 PROFES	SIONAL SERVICES		66,794						
80.01	Preliminary Engineering Einal Design		3,982						
80.02	Project Management for Design and Construction		4,983						
80.04	Construction Administration & Management		16,064						
00.05	Insurance		7,963						
80.07	Surveys Testing, investigation, inspection		2,6/8						
80.08	Agency Force Account Work		13,319						
SO UNALLO	CATED CONTINGENCY		82,993					-	
Subtotal (1)	3401		497.956	66,794	82,993	497,956			40,779

Major Capital Project Costs - Annualized Cost (Rev. 6, Feb 7, 2006)									006)	
Projec	Southwest Transitway - Alternative LRT 1C							Date		
Location	Hennepin County, MN							Dase Year	2006	
		Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Usefull Life	Annualization Factor (7% rate)	Annualized Cost (X000)	
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	14.64	162,414		38,872	241,478	90	0.0702	18,184	
10.01	Guideway: Al-grade exclusive right-driway Guideway: Al-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	2,159	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	2,328	
10.05	Guideway, Built-up fill Guideway, Undemround cut & cover	0.59	50 684	12.543	12 131	75 358	80	0.0703	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 Track Embedded		5,652	1,399	1,353	8,403	30	0.0806	677	
10.10	Track Balasted		25,111	6,214	6,010	37,335	20	0.0344	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 STATIO	At grade station stop shelter mail terminal nistform	17	43,082	5 202	10,311	64,055	70	0.0706	4,659	
20.02	Aerial station, stop, shelter, mail, 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	Automobile parking multi-story structure		11.830	2 928	2.831	17 589	70	0.0705	1 274	
20.07	Elevators, escalators		6,942	1,718	1,661	10,321	30	0.0806	832	
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		50,694		12,133	75,372			5,408	
30.01	Administration Building: Office, sales, storage, revenue counting		-		0.000	-	50	0.0725		
30.02	Heavy Maintenance Facility		33,796	0,000	0,005	50,240	50	0.0725	3,641	
30.04	Storage or Maintenance of Way Building		-	-		· · ·	50	0.0725		
30.05	Yard and Yard Track		16,898	4,182	4,044	25,124	80	0.0703	1,767	
40 SITEWO 40.01	Demolition Clearing Earthwork		116,295	2 735	27,834	172,908	100	0.0701	14,820	
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	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	6,891	
40.08	Temporary Facilities and other indirect costs during construction		-	-	-	-	100	0.0701	-	
50.01	Train control and signals		114,314	8.826	27,360	53,028	30	0.0806	13,940	
50.02	Traffic signals and crossing protection		11,271	2,789	2,698	16,758	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	
50.06	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	
Constructio	n Subtotal (10-50)		486,799		116,511	723,777			57,011	
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 VEHICLI	S (number)	62	104,681		25,054	129,735			12,578	
70.01	Light Rail Heavy Rail	24	75,600		18,094	93,694	25	0.0858	8,040	
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 Non-revenue vehicles		2 4 3 4		583	3.017	12	0.1259	380	
70.07	Spare parts		12,600		3,016	15,616	12	0.1259	1,966	
80 PROFES	SIONAL SERVICES		120,467							
80.01	Preliminary Engineering Einal Design		7,469							
80.02	Project Management for Design and Construction		8,801							
80.04	Construction Administration & Management		30,062							
80.05	Insurance		14,978							
80.06	Legal, Hemitis, Review Hees by other agencies, cities, etc. Surveys, Testing, Investigation, Inspection		4,269							
80.08	Agency Force Account Work		23,516							
90 UNALLO	CATED CONTINGENCY		146,582							
Subtotal (1	9-80)		879,490	120,467	146,582	879,490			71,409	

Major Capital Project Costs - Annualized Cost (Rev. 6, Feb 7, 2006)									006)	
Project	Southwest Transitway - Alternative LRT 2C							Date 10/1		
Location	Hennepin County, MN							Base Year	2006	
-		Ì		Bisbibisted	Distributed				o	
		Quantity	Base Year Estimate	Professional	Unallocated	Base Year Total	Years of	Annualization Eactor	Annualized	
		Guanny	(X000)	Services (X000)	Contingency (X000)	(X000)	Usefull Life	(7% rate)	(X000)	
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	15.97	190,124	38	45,523	282,817			21,125	
10.01	Guideway: At-grade exclusive right-of-way Guideway: At grade semi-exclusive (allows cross-traffic)	- 8.90	- 18 751	4 652	-	- 27 892	80	0.0703	- 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 Guideway, Underground tunnel	0.63	53,664	13,314	12,049	19,821	70	0.0706	5,637	
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: Special (switches, turnouts)		7,298	1,811	1,747	40,690	30	0.0806	3,143	
10.13	Track: Vibration and noise dampening			343	-		30	0.0806	200	
20 STATION	IS, STOPS, TERMINALS, INTERMODAL (number)	19	49,660	0.001	11,891	73,871	70	0.0700	5,362	
20.01	Acgrade station, stop, sneller, mail, terminal, platform	1/	24,310	5,031	5,821	36,162	70	0.0706	2,554	
20.02	Underground station, stop, shelter, mail, terminal, platform	- 14	-	-	-	-	70	0.0706	-	
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	2	9 1	1		(Q)	70	0.0706	12	
20.05	Joint development		15 549	- 2.967	- 2.700		70	0.0706	1.676	
20.00	Elevators, escalators		6,942	1,722	1,662	10,327	30	0.0806	832	
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		50,694		12,138	75,410			5,410	
30.01	Administration Building: Office, sales, storage, revenue counting		-	-	-	52,070	50	0.0725	-	
30.02	Light Maintenance Facility Heavy Maintenance Facility		33,796	8,385	8,092	50,273	50	0.0725	3,643	
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 SITEWOI	RK & SPECIAL CONDITIONS		126,074	2 903	2 801	187,540	100	0.0701	15,891	
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	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		-	121	-	-	100	0.0701	10 171	
50 STSTEN	Train control and signals		38 904	9.652	29,769	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	
50.06	Fare collection system and equipment		4,420	4,214	4,067	6,575	20	0.0944	2,385	
50.07	Central Control		2,740	680	656	4,075	30	0.0806	328	
Constructio	n Subtotal (10-50)		540,878		129,508	804,579			62,959	
60.01	Purchase or lease of real estate		26,629		6,376	33,006	100	0.0701	2,313	
60.02	Relocation (freight railroad traffic)						100	0.0701		
70 VEHICLE	S (number)	66	112,991		27,055	140,046		0.0007	13,562	
70.01	Light Rail Heavy Rail	26	81,900		19,610	101,510	25	0.0858	8,711	
70.03	Commuter Rall	E .	-			22	25	0.0858	12	
70.04	Bus	40	14,786		3,540	18,326	12	0.1259	2,307	
70.05	Other Non revenue vehicles	-	- 2.655		-	- 3 291	12	0.1259	- 414	
70.07	Spare parts		13,650		3,268	16,918	12	0.1259	2,130	
80 PROFES	SIONAL SERVICES		134,193							
80.01	Preliminary Engineering		8,321							
80.02	Project Management for Design and Construction		23,068							
80.04	Construction Administration & Management		33,418							
80.05	Insurance		16,642							
80.06	Legal, Permits; Review Fees by other agencies, cities, etc. Surveys, Testing, investigation, inspection		4,826							
80.08	Agency Force Account Work		26,295							
90 UNALLO	CATED CONTINGENCY		162,938							
Subtotal (10	0-90)		977,630	134,193	162,938	977,630			78,835	

Partal Southwest Transitivey - Atternative LKT SC ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	Major Capital Project Costs - Annualized Cost (Rev. 6, Feb 7, 2006)									006)	
Land Hennepin County, MN Description 2008 10 County State Vac (000) Description (000) <	Project	Southwest Transitway - Alternative LRT 3C							Date 1		
DUCENT V TIAC & LEMENT (read multiple) Doard (read multiple) Description Description <td>Location</td> <td colspan="7">Hennepin County, MN</td> <td colspan="2">Base Year</td>	Location	Hennepin County, MN							Base Year		
Res Dual N Res / Enclose Distriction Distriction <thdistrit< th=""> Distrit Distrit</thdistrit<>											
Description Description Search Profession Description Description <thdescription< th=""></thdescription<>											
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Inscription			Quantity	Base Year Estimate	Professional	Unallocated	Base Year Total	Years of	Annualization Factor	Annualized Cost	
19.0002447 x Track L LEUER (x use number) 19.00 <td></td> <td></td> <td></td> <td>(X 000)</td> <td>(X000)</td> <td>(X000)</td> <td>(X000)</td> <td>Useruli Lire</td> <td>(7% rate)</td> <td>(X000)</td>				(X 000)	(X000)	(X000)	(X000)	Useruli Lire	(7% rate)	(X000)	
Unit Dist Dist <thdis< th=""> Dist Dist D</thdis<>	10 GUIDEW	AY & TRACK ELEMENTS (route miles)	16.59	210,455		50,373	314,025		0.0700	23,404	
10.10 Culcure y, Agring structure 10.0 2.446 9.00 9.00 9.054 9.87 10.10 Culcure y, Aprix structure 10 6.00 0.00 <td< td=""><td>10.01</td><td>Guideway: At-grade exclusive right-of-way Guideway: At-grade semi-exclusive (allows cross-traffic)</td><td>- 8.72</td><td>- 18,269</td><td>4.618</td><td>4.373</td><td>27.259</td><td>80</td><td>0.0703</td><td>2.197</td></td<>	10.01	Guideway: At-grade exclusive right-of-way Guideway: At-grade semi-exclusive (allows cross-traffic)	- 8.72	- 18,269	4.618	4.373	27.259	80	0.0703	2.197	
10.16 outserwy, Areins struture 11.5 46,298 11.929 11.929 01.929 02.931 00 0.0708 46,888 10.27 outserwy, Uosgraphona me - 52.9 10.276 07.9 07.9 0.0708 46,888 10.07 outserwy, Uosgraphona me - 42.9 53.22 0.1026 0.0198 46,888 0.0108 0.0108 1.015 0.0198 0.0198 0.0108 0.0108 0.0108 1.015 10.08 Destination - 0.012 2.019 2.019 0.0108 0.0108 1.019 1.015 0.0108 0.0108 1.019 10.11 Traits: Expect (weithers, knrach) 0.0108<	10.03	Guideway. At-grade in mixed traffic	1.60	2,466	623	590	3,680	20	0.0944	347	
10.0 Codeway, But, But, But, But, Coll 0 0.010 0.0 0.010 0.0 0.010 0.0 0.010 0.0 0.010 0.0 0.010 0.0 0.010 0.0 0.010 0.0 0.010 0.0 0.0100 0.010 0.010 <t< td=""><td>10.04</td><td>Guideway: Aerial structure</td><td>1.15</td><td>46,398</td><td>11,728</td><td>11,105</td><td>69,231</td><td>80</td><td>0.0703</td><td>4,868</td></t<>	10.04	Guideway: Aerial structure	1.15	46,398	11,728	11,105	69,231	80	0.0703	4,868	
Loc Doc Doc <thdoc< th=""> <thdoc< th=""> <thdoc< th=""></thdoc<></thdoc<></thdoc<>	10.05	Guideway: Built-up fill Guideway: Llodemround cut & cover	-	- 54 995	19.794	-	91.074	80	0.0703	5 7 9 5	
10.00 Cuber System 448 33.622 64.88 64.98	10.00	Guideway, Underground tunnel				10,000	01,074	70	0.0706	0,720	
10.00 Track: Erect Houton 0.02 2.0100 2.0100	10.08	Guideway: Retained cut or fill	4.49	33,622	8,498	8,048	50,168	80	0.0703	3,527	
IDE IDE <td>10.09</td> <td>Track: Direct fixation</td> <td></td> <td>8,412</td> <td>2,126</td> <td>2,013</td> <td>12,552</td> <td>30</td> <td>0.0806</td> <td>1,012</td>	10.09	Track: Direct fixation		8,412	2,126	2,013	12,552	30	0.0806	1,012	
10.13 Track: Operating with the transk? 10.423 2.023 17.023 2.03 10.425 10.23 10.425 10.23 10.425 10.23 10.425 10.23 10.425 10.23 10.425 10.23 10.425 10.23 10.425 10.23 10.425	10.10	Track Embedded		10,701	2,705	2,561	15,967	20	0.0944	1,507	
10.19 Tack: 1 - - - - 00 0.0000 00000 30.11 Agrads stator, stop, stretz, mail, terminal, patrom 10 25,240 6,556 6,613 38,407 70 0.0076 22,120 20.12 Arring stretz, mail, terminal, patrom 10 25,240 6,258 6,613 38,407 70 0.0076 22,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0176 20,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0172 22,120 0.0172 22,120 0.0176 22,120 0.0172 22,120 0.0172 22,120 0.0176 22,120 0.0176 22,120 0.0176 22,120 0.0176 12,120 12,120 12,120	10.12	Track: Special (switches, turnouts)	4	8,452	2,136	2,023	12,612	35	0.0806	1,016	
200 TACH2. STOPS. TERMANLS. NTERMOOL (number) 20 66.060 61.072 0.072 0.072 201 Advance station, stop, stepting mail, terming patrom 2 2.060 7.20 0.076 0.0778 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0776 0.0777 0.0776 0.0776 <td>10.13</td> <td>Track: Vibration and noise dampening</td> <td></td> <td>2</td> <td>-,</td> <td>-</td> <td>-</td> <td>30</td> <td>0.0806</td> <td>1</td>	10.13	Track: Vibration and noise dampening		2	-,	-	-	30	0.0806	1	
Autor Autor <th< td=""><td>20 STATION</td><td>IS, STOPS, TERMINALS, INTERMODAL (number)</td><td>20</td><td>60,808</td><td>0.57</td><td>14,555</td><td>90,732</td><td></td><td>0.076</td><td>6,580</td></th<>	20 STATION	IS, STOPS, TERMINALS, INTERMODAL (number)	20	60,808	0.57	14,555	90,732		0.076	6,580	
20.03 Unsegroups distants, storp, sheet, mail, lemmas, patrom 2 20000 200000 20000	20.01	At-grade station, stop, shelter, mail, terminal, platform	18	25,740	6,506	6,161	38,407	70	0.0706	2,712	
20.04 Other Stations, Isterninais: Intermendat, feny, toiley, etc., - - - - 70 0.0706 - 20.06 Autom toile parking multi-story structure -	20.02	Underground station, stop, shelter, mail, terminal, platform	-	-				70	0.0706	-	
20.6 Jord everagnments - - - - - 7.0 0.0726 - 20.7 Elevators, escalation 30 0.026 - - - - - - 7.0 0.0726 - - 7.0 0.0726 - - - - - 0.0726 0.6427 - - - 0.0726 0.6427 0.0263 0.0726 0.6427 0.0263 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.0726 0.00171 1.0281 0.00171 1.0281 0.00171 1.0281 0.00171 1.0281 0.00171 1.0281 0.00171 1.0281 0.00171 1.0281 0.00171 1.0281 0.00171 1.0281 0.00171 1.0281 0.00171 1.0281 0.00171 1.0281 0.00171 1.0281 0.001	20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	- 27	2	120	6		70	0.0706	52	
0.007 Package 0.007 <	20.05	Joint development		-	-	-	-	70	0.0706		
Sour Process Facultures: vandos, storago, revenue counting 123.14 75.642 0 6.627 30.01 Administration Building, Chesning, Eskingung, revenue counting 33.926 6.92.2 6.089 0.0725 3.93.926 30.01 Administration Building, Chesning, Estingung, Factoria and Yaid Trait - - - 0.00725 3.93.926 30.01 Administration Building, Chesning, Estingung, Estingung, Factoria and Yaid Trait - - - 0.00725 - - 0.00725 - - - 0.00725 - - 1.00 0.00726 - - 1.00 0.00726 - - 1.00 0.00726 - - 1.00 0.00716 - 1.00 0.00716 - 1.00 0.00711 - 1.00 0.00711 - - - 0.00710 - 1.00 0.00711 - - - 0.00711 - - - - 0.00711 - - - - - 0.00711 - -<	20.08	Elevators, escalators		6,942	1.755	1.662	10.358	30	0.0806	835	
30 11 Administration pluining: Office, sales, storage, revenue counting 33.786 6.842 6.099 00.028 00 00.0725 - 30 14 bit Maintenance Facility 33.786 6.842 6.099 00.028 00 00.0725 - 00 00.0725 - 00 00.0725 - 16.869 00.0725 - 00 00.0725 - 16.869 00.0725 - 16.969 00.0725 - 16.969 00.0725 - 16.969 00.0725 - 16.969 00.0725 - 16.969 00.0726 - 16.969 00.0726 - 16.969 00.0718 17.973 17.973 17.973 17.973 17.973 17.973 17.973 19.969 00.0710 - - 0.0011 19.95 00.0011 19.95 00.0011 19.95 00.0011 19.92 00.0011 19.92 00.0011 19.92 00.0011 19.92 00.094 23.91 40.00 0.0011 19.92 00.094 2	30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		50,694		12,134	75,642			5,427	
30.20 Light Maintenance Facility 33,766 8.428 0.09 60 0.0725 3.684 30.31 Heavy Maintenance Facility - - - - 60 0.0725 - - 60 0.0725 - - 60 0.0725 - - 60 0.0725 - - 60 0.0725 - - 60 0.0725 - - 60 0.0725 - - 60 0.0725 - - 60 0.0725 - - 60 0.0705 1 1 60 0.0705 1 1 60 0.0701 1	30.01	Administration Building: Office, sales, storage, revenue counting		-				50	0.0725	100	
000000000000000000000000000000000000	30.02	Light Maintenance Facility	-	33,796	8,542	8,089	50,428	50	0.0725	3,654	
93.09 Yang and Yang Track 16.980 4.271 4.045 29.214 00 00.0703 1773 40.01 Demolition, Clearing, Eattwork 4.01 12.390 31.322 2.956 18.428 100 0.0701 1.236 40.02 Site Unites, Utility Free contin 30.01 37.63 30.03 1.887 100 0.0701 1.245 40.05 Site Unites, Utility Free contin a.30 303 1.887 100 0.0701 1.325 40.05 Site Unites, Utility Free contin a.330 303 1.887 100 0.0701 1.335 40.05 Site Structures inclusing relations in and examplify conting sonthy wats a.s. - - 0.00 0.0701 1.333 40.05 Site Structures and accommodation, isotaccompany a.s. - - - 0.00 0.0004 - - - 100 0.00704 - - - 100 0.0076 2.428 - - - - - - <td>30.03</td> <td>Storage or Maintenance of Way Building</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>50</td> <td>0.0725</td> <td></td>	30.03	Storage or Maintenance of Way Building						50	0.0725		
Hot December 3 SPECIAL CONDITIONS 142.905 34.205 213.231 Image: 181.04 40.10 Demotion, Clearing, Enthwork 1,253 3,122 2,556 18,428 100 0.0701 1,291 40.01 Demotion, Clearing, Enthwork 1,253 3,122 2,556 18,428 100 0.0701 1,291 40.01 Demotion, Clearing, Enthwork 1,333 3,763 50,864 100 0.0701 1,291 40.05 Structures incluing retaining wals, contravis soluting construction 34.355 32.00 1,383 35.22 2,034 100 0.0701 14.295 40.06 Pedestrian / bike access and accommodation, landscapping - - - - 0.00 0.0703 - 100 0.0701 1.291 40.07 Automolie, loss, vana conservasing incluing roads parking lots - - - - 100 0.0703 - 100 0.0701 1.291 50.07 Train control and signals - 1.42438 - - - 100 0.0706 - 1144381 <td>30.05</td> <td>Yard and Yard Track</td> <td></td> <td>16,898</td> <td>4,271</td> <td>4,045</td> <td>25,214</td> <td>80</td> <td>0.0703</td> <td>1,773</td>	30.05	Yard and Yard Track		16,898	4,271	4,045	25,214	80	0.0703	1,773	
44.01 Definition, Learning, attitution: 4.12490 3.122 2.956 18.429 100 0.0010 1.245 4003 Ste Utiles, Utility Rote: A contain solic emovalinity atom, ground water treatments 4.0790 10.3420 9.763 10.3420 10.0 0.0701 1.426 40.05 Ste structures including retaining valie, sound wate 1.266 3.02 2.030 1.877 100 0.0701 1.426 40.06 Predestrain / bits access way sincluding retaining valie, sound wate 1.266 3.02 2.030 1.877 100 0.0701 1.426 40.07 Automobile, law, van accessways including roats, paking lots - - - - 0.0000 - - 100 0.0701 1.426 40.07 Tain control and signals - - - - - 0.00000 - - - 100 0.0701 1.426 50.01 Train control and signals - - - - - - - - - - - - - - - - - -	40 SITEWO	RK & SPECIAL CONDITIONS		142,905	0.100	34,205	213,231	100	0.0704	18,104	
a0.03 Hz. mdt. contanti 3 oir em owalmitgation. ground water treatments a0.04 Externmental initigation. ground water treatments a0.05 Externmental initigation. ground water treatments a0.06 Externmental initigation. ground water treatments a0.07 Provide access and accommodation. Initications a0.08 Provide access ways in cluding roads. parting lots a0.08 Tran control and signals a0.07 Tran control and signals a0.08 Tran control and signals a0.08 Tran control and signals a0.09 Tran control and signals a0.00	40.01	Site Litilities Litility Relocation		12,350	3,122	2,956	18,428	100	0.0701	1,291	
40.04 Environmetrial mitigation, e.g., wetlands, histori/archeologic, parks 40.06 Feisenturums incluing retaining weils, sound walls 40.06 Pedestriar, histori/archeologic, parks 40.07 Attorn incluing retaining weils, sound walls 40.08 Feisentanian de services sing incluing roads, parking lots 40.08 Train control and signals 90.01 <	40.02	Haz, matil, contamid soil removal/mitigation, ground water treatments		1,265	320	303	1,887	100	0.0701	132	
40.06 Peters including retaining walls, sound walls	40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		1,363	345	326	2,034	100	0.0701	143	
40.07 24.923 6,001 3.71,93 20 0.0544 3.71,93 40.07 Automobile, bus, small accessways including roads, parking lots 62.203 1.5724 1.4690 92.623 20 0.0544 8.762 40.08 Temporary Facilities and diminifications of the indirect costs during construction 62.203 1.5724 1.4690 92.623 20 0.0544 8.762 60.01 Train control and signals 40.935 1.0246 9.702 66.483 30 0.0666 4.874 90.04 Traction power stuppy: substations 7.638 7.731 7.444 4.236 2.6408 20 0.0944 2.459 90.06 Fare collection system and equipment 2.875 7.22 6.844 5.193 0.0806 3.369 90.07 Central Control 2.9793 7.731 7.44455 30 0.0806 3.692 90.06 Fare collection system and equipment 2.655 7.22 6.844 5.921 0 0.0806 3.492 90.01 F	40.05	Site structures including retaining walls, sound walls				-	- 27.105	80	0.0703		
40.08 Temporary Facilities and other indirect costs during construction - - - - 100 0.0701 - 50 SYSTENS 50.11 Train control and signals 00.271 - - - - 100 0.0701 - 50.01 Train control and signals ont crossing protection - - - - - 100 0.0701 - - 164.838 302.274 201.955 - 164.874 50.03 Traction power supply, substations 21.695 - 44.44 4.218 26.238 30 0.0806 2.183 50.05 Communic attoms 29.793 7.531 7.131 44.455 30 0.0846 3.385 50.07 Central Cortrol 2.855 722 683 4.259 30 0.0846 3.485 50.07 Purchase of real estate 4.474 4.286 5.887 70.086 70.098 70.098 4.289 70.00 0.0701 4.287 70.00 <	40.08	Automobile, bus, van accesswavs including roads, parking lots		62,209	15,724	14,890	92,823	20	0.0944	8,762	
50 SYSTEMS 143,838 22,274 20,195 (mode) (fs,483) 50,01 Train control and signals and crossing protection 30,11 71,622 4,464 4,219 26,933 30 0.0806 4,219 50,03 Traction power upply, substations 12,665 5,484 4,219 26,933 30 0.0806 4,219 50,05 Communic atoms 22,973 7,531 7,131 44,455 30 0.0806 3,582 50,05 Communic atoms 4,641 1,173 1,111 6,225 20 0.0944 2,493 50,07 Central Control 2,955 722 683 4,259 30 0.0806 3,433 Construction Statistical (10-60) 599,700 143,541 894,220 7000 60,313 0.0070 4,297 60,01 Purchase or flease or fleas or fle	40.08	Temporary Facilities and other indirect costs during construction			1	-	100	100	0.0701		
50.01 Train control and signals 40,535 10,246 9,702 60,483 30 0.0066 4,874 50.02 Tratics ignals and crossing protection 47,652 4,454 4,216 26,293 30 0.0066 2,119 50.03 Traction power supply: substations 24,045 4,216 26,293 30 0.0066 2,219 50.04 Traction power subply: substations 21,095 5,484 4,213 4,455 30 0.0066 3,582 50.05 Communications 4,441 4,213 26,363 4,284 30 0.0066 3,582 50.07 Central Control 2,895 702 663 4,289 30 0.0066 3,433 60.01 Purchase or lease of real estate 49,470 11,841 61,311 42,875 70,000 11,841 61,311 100 0.0701 4,287 70.01 Light Rai - - - 1100 0.0701 4,287 70.02 Heavy Rai - - - 100 0.0701 4,287 70.0	50 SYSTEN	15		134,838		32,274	201,195			16,493	
30.02 Traction power distribution: catenary and third rail 1,022 4,404 4,404 4,404 4,404 20,253 20,000 2,170 50.03 Traction power distribution: catenary and third rail 21,695 5,464 5,193 2,1,313 44,445 5,00 0,0006 2,478 50.04 Traction power distribution: catenary and third rail 21,695 5,464 5,193 7,131 44,445 5,00 0,0006 3,582 50.05 Communications 4,641 1,173 1,114 6,925 20 0.0944 6,543 50.07 Cental Control 2,855 722 683 4,259 30 0.086 343 60.01 Purchase or lease of real estate 49,470 49,470 11,841 61,311 0 0.0701 4,297 60.02 Rumber 70 11,814 61,311 100 0.0701 4,297 60.02 Rumber 70 12,1184 61,311 0 0.0701 4,297 70.04	50.01	Train control and signals Traffic signals and crossing protection	-	40,535	10,246	9,702	60,483	30	0.0806	4,874	
90.4 Traction power distribution: catenary and third rail 29.793 7.531 7.131 44.455 90 0.0060 3.582 90.05 Communications 17.698 4.4474 4.236 26,408 20 0.0944 2,483 90.06 Fare collection system and equipment 2,855 722 663 4,259 30 0.0964 2,483 50.07 Central Control 2,855 722 663 4,259 30 0.0964 2,482 Construction Subtock (10-60) 599.700 143.541 694.825 700.008 70.008 60.01 Purchase or lease of real estate 49.470 11.841 61.311 0 0.0701 - 60.02 Relocation (reight rainoad trafte) - - 100 0.0701 - 70.01 Light Rail 61.311 00 0.0701 - - - 100 0.0701 - 70.04 Bus - - - 25 0.0868 -	50.03	Traction power supply: substations		21,695	5,484	5,193	32,371	40	0.0750	2,428	
50.05 Communications 17,698 4,474 4,285 26,008 20 0.0944 2,493 50.06 Fare collection system and equipment 2,855 722 683 4,269 30 0.0804 6,64 50.07 Central Control 2,855 722 683 4,259 30 0.0806 343 60 ROW, LAND, EXISTING IMPROVEMENTS 49,470 143,541 894,825 70008 70,008 60.01 Purchase or lease of real estate 49,470 11,841 61,311 100 0.0701 4,297 60.02 Relocation (relight ralioa trafic) - - 100 0.0701 4,297 70.01 Light Rail 28 88,200 - - - 100 0.0701 - 70.05 Cother - - - - 20 0.0858 - - - 12 0.1259 2,422 70.05 Other - - - 12 0.1259	50.04	Traction power distribution: catenary and third rail		29,793	7,531	7,131	44 455	30	0.0806	3,582	
Busice Fate culculum system and equipment 4,641 1,173 1,111 6,925 20 0.0944 6543 50.07 Central Corthol 2,855 722 683 4,259 30 0.00806 343 60.01 Purchase or lease of real estate 49,470 11,841 61,311 0 0.4297 60.02 Relocation (freight rainoad trafic) - 100 0.0701 4.297 70.01 Light Rail 28 88,200 - 100 0.0701 - 70.02 Heavy Rail - - 100 0.0701 - - 100 0.0701 - - 14,821 10.0 0.0701 - - - - - - 100 0.0701 -	50.05	Communications		17,698	4,474	4,236	26,408	20	0.0944	2,493	
Line Line Disc Line Disc Disc <thdisc< th=""> Disc Disc <thd< td=""><td>50.06</td><td>Fare conection system and equipment Central Control</td><td></td><td>4,641</td><td>1,1/3</td><td>1,111</td><td>6,925</td><td>20</td><td>0.0944</td><td>3/19</td></thd<></thdisc<>	50.06	Fare conection system and equipment Central Control		4,641	1,1/3	1,111	6,925	20	0.0944	3/19	
60 ROW, LAND, EXISTING IMPROVEMENTS 49,470 11,841 61,311 42,297 60.01 Purchase or lease or le	Constructio	n Subtotal (10-50)		599,700	122	143,541	894,825	50	0.0000	70,008	
60.01 Purchase or real estate 49,470 11,841 61,311 100 0.0701 4,297 60.02 Relocation (freight railroad traffic) - - 100 0.00701 4,297 70 VEHICLES (number) 70 121,184 61,311 100 0.0701 4,297 70.01 Light Rail 28 88,200 21,111 109,311 22 0.0866 9,380 70.02 Heavy Rail - - - 25 0.0866 9,380 70.03 Commuter Rail - - - 25 0.0868 - 70.04 Bus 42 15,525 - - 12 0.1259 2,422 70.05 Other - - - 12 0.1259 2,422 70.06 Non-revenue vehicles 114,700 3,519 18,219 12 0.1259 2,234 80.01 Preliminary Engineering 22,5621 161,584 9,226 3,519 18,219 12 0.1259 2,234 80.02 Final Design 25	60 ROW, LA	ND, EXISTING IMPROVEMENTS		49,470		11,841	61,311			4,297	
Concern (response model) (marked) - - 100 0.001 0.0010	60.01	Purchase or lease of real estate		49,470		11,841	61,311	100	0.0701	4,297	
70.01 Light Rail 28 68,200 70.01 Light Rail - - 70.02 Heavy Rail - - 70.03 Commuter Rail - - 70.04 Bus 42 15,525 70.05 Other - - 70.06 Non-revenue vehicles - - 70.06 Non-revenue vehicles - - 70.07 Spare parts 21,711 109,311 25 0.08658 80 POFCESSIONAL SERVICES - - - - 25 0.0858 9,380 80 01 Preliminary Engineering 9,226 - - 11,122 0,1259 2,294 80 01 Preliminary Engineering 9,226 - - - - - - 80 01 Preliminary Engineering 9,226 - - - - - - 80 02 Final Design 11,122 - - - - - - 80 05 Insurance - - - - - - - 80 06 Legal, Pernits, Review Fees by other agencies, cities, etc. - - - <td>70 VEHICLE</td> <td>S (number)</td> <td>70</td> <td>121,184</td> <td></td> <td>29,006</td> <td>150,190</td> <td>100</td> <td>0.0701</td> <td>14,527</td>	70 VEHICLE	S (number)	70	121,184		29,006	150,190	100	0.0701	14,527	
70.02 Heavy Rail - - 25 0.0868 - 70.03 Commuter Rail - - - 25 0.0868 - 70.04 Bus - - - 25 0.0868 - 70.04 Bus - - - 25 0.0868 - 70.05 Other - - - 12 0.1259 - 70.06 Non-revenue vehicles 2,759 660 3,420 12 0.1259 431 80.01 Preliminary Engineering 92,263 144,700 3,519 18,219 12 0.1259 2,294 80.02 Final Design 25,621 25,621 20,94 2,944	70.01	Light Rail	28	88,200		21,111	109,311	25	0.0858	9,380	
1/10/13 Commuter Rail - - 20 0.0088 - 70.04 Bus 42 15,525 3,716 19,241 12 0,1259 2,422 70.05 Other - - - 12 0,1259 2,422 70.06 Non-revenue vehicles 2,759 660 3,420 12 0,1259 2,431 80.01 Preliminary Engineering 116,884 180,219 12 0,1259 2,2294 80.01 Project Management for Design and Construction 11,122 2,256,21 3,519 180,219 12 0,1259 2,2294 80.03 Project Management for Design and Construction 11,122 3,519 180,219 12 0,1259 2,2294 80.05 Insurance 11,122 184,52 5,850 11,14,11 11,122 11,14,11 11,11,11 11,	70.02	Heavy Rail	-			-		25	0.0858		
No.1 Outor Outor <tho< td=""><td>70.03</td><td>Commuter Rail Bus</td><td></td><td>- 15 525</td><td></td><td>3 716</td><td>- 19 2/1</td><td>25</td><td>0.0858</td><td>- 2.400</td></tho<>	70.03	Commuter Rail Bus		- 15 525		3 716	- 19 2/1	25	0.0858	- 2.400	
70.06 Non-revenue vehicles 2.759 660 3.420 12 0.1259 431 80 PROFESSIONAL SERVICES 14,700 3,519 18,219 12 0.1259 2,294 80.01 Preliminary Engineering 9,226 9,226 11,122 0.1259 2,294 80.02 Final Design 256,621 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.026 11,122 0.036 11,122 0.04 0.051 11,122 0.05 11,122 0.05 11,122 0.05 11,122 0.05 11,122 0.05 11,122 0.05 11,122 0.05 11,122 0.016 0.016 0.016 0.0152 0.0162 0.0	70.05	Other		-		-	-	12	0.1259	-	
70.07 Spare parts 14,700 3,519 18,219 12 0.1269 2,294 80.01 Preliminary Engineering 9,226	70.06	Non-revenue vehicles		2,759		660	3,420	12	0.1259	431	
00.01 Preliminary Engineering 01.054 80.01 Preliminary Engineering 9.226 80.02 Final Design 25.621 80.03 Project Management for Design and Construction 11,122 80.04 Constructon Administration & Management 37,152 80.05 Insurance 18,452 80.06 Legal, Permits, Review Fees by other agencies, cities, etc. 5,860 80.07 Surveys, Testing, Investigation, Inspection 14,408 80.08 Agency Force Account Work 30,152 90 UNALLOCATED CONTINGENCY 124,388 1,106,326 88,832	70.07	Spare parts		14,700		3,519	18,219	12	0.1259	2,294	
80.02 Final Design 25.621 80.03 Project Maragement for Design and Construction 11,122 80.04 Construction Administration & Management 37,152 80.05 Insurance 18,452 80.06 Legal, Permits, Review Fees by other agencies, cities, etc. 5,860 80.07 Surveys, Testing, Investigation, Inspection 14,008 80.08 Agency Force Account Work 30,152 90 UNALLOCATED CONTINGENCY 124,388 1,106,326 58,832	80.01	Preliminary Engineering		9.226							
80.8 Project Management for Design and Construction 11.122 80.04 Construction Administration & Management 37,152 80.05 Insurance 18,452 80.06 Legal, Permits, Review Fees by other agencies, cities, etc. 5,850 80.06 Legal, Permits, Review Fees by other agencies, cities, etc. 5,850 80.06 Agency Force Accourt Work. 30,152 90 UNALLOCATED CONTINGENCY 184,388 1.106,326 50.ubtotal (10-60) 1,106,326 184,388 1.106,326	80.02	Final Design		25,621							
00.4 Construction Administration & Management 37,152 00.05 Insurance 18,452 00.06 Legal, Permits, Review Fees by other agencies, cities, etc. 5,850 00.07 Surveys, Testing, Investigation, Inspection 14,008 00.08 Agency Force Account Work 30,152 90 UNALLOCATED CONTINGENCY 184,388 1,106,326 5 Subtotal (10-60) 1,105,326 184,388	80.03	Project Management for Design and Construction		11,122							
80.06 Legal; Permits; Review Fees by other agencies; cities, etc. 56,860 80.07 Surveys; Testing, Investigation, Inspection 14,008 80.08 Agency Force Account Work 30,152 90 UNALLOCATED CONTINGENCY 184,388 1.106,326 88,832	80.04	Construction Administration & Management		37,152							
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	80.06	Legal; Permits; Review Fees by other agencies, cities, etc.		5,850							
80.08 Agency Force Account Work 30,152 90 UNALLOCATED CONTINGENCY 184,388 1106,326 88,832 Subtotal (10-80) 1,106,326 151,584 184,388 1,106,326 88,832	80.07	Surveys, Testing, Investigation, Inspection		14,008							
20 URALLOGA ED CONTINGENO 1 184,388 1 106,326 1 151,584 1 184,388 1 106,326 8 88,532	80.08	Agency Force Account Work		30,152							
	Subtotal (10	Den		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 Transit	way - Alter	native LRT	4C			Date		10/17/06	
Location	Hennep	Hennepin County, MN							2006	
		Quantity	Base Year Estimate (X000)	Distributed Professional Services (X000)	Distributed Unallocated Contingency (X000)	Base Year Total (X000)	Years of Usefull Life	Annualization Factor (7% rate)	Annualized Cost (X000)	
10 GUIDEW	AY & TRACK ELEMENTS (route miles)	9.96	137,714		32,999	204,601	90	0.0702	15,347	
10.02	Guideway: Al-grade semi-exclusive right-driway Guideway: Al-grade semi-exclusive (allows cross-traffic)	5.42	12,843	3,160	3,077	19,081	30	0.0806	1,538	
10.03	Guideway. Al-grade in mixed traffic	1.40	2,159	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 Guideway, Underground cut & cover	0.59	50 684	12.479	12 145	75 302	80	0.0703	5318	
10.07	Guideway: Underground tunnel	-				-	70	0.0706	-	
10.08	Guideway: Retained cut or fill	2.02	15,623	3,845	3,744	28,212	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 Enletted		9,744	2,398	2,335	14,477	20	0.0944	1,367	
10.12	Track: Special (switches, turnouts)		5,067	1,247	1,214	7,528	30	0.0806	607	
10.13	Track. Vibration and noise dampening		-	-	-	-	30	0.0806	-	
20 STATION	IS, STOPS, TERMINALS, INTERMODAL (number)	14	26,962		6,461	40,058			2,932	
20.01	At-grade station, stop, shelter, mail, terminal, platform	12	17,160	4,223	4,112	25,495	70	0.0706	1,800	
20.02	Underground station, stop, shelter, mail, terminal, platform	. 1	2,000	704		4,245	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 Elevators, escalators		6.942	1 708	1.663	10 314	50	0.0725	831	
30 SUPPOR	T FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		50,694	1,100	12,147	75,316		0.0000	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	Sterage or Maintenance - actify		-	-			50	0.0725		
30.04	Yard and Yard Track		16,898	4,158	4,049	25,105	80	0.0703	1,765	
40 SITEWO	RK & SPECIAL CONDITIONS		95,867		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 Haz, matt, contamid soil removal/mitigation, around water treatments		22,836	5,620	5,472	33,928	100	0.0701	2,378	
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		563	136	133	822	100	0.0701	58	
40.05	Site structures including retaining walls, sound walls		-	-		8	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	
50 SYSTEM	16 16 16 16 16 16 16 16 16 16 16 16 16 1		80,407		19,267	119,461	100	0.0701	9,805	
50.01	Train control and signals		24,270	5,972	5,016	36,058	30	0.0806	2,906	
50.02	Traffic signals and crossing protection		9,646	2,374	2,311	14,331	30	0.0806	1,155	
50.03	Traction power distribution: catenary and third rail		12,989	3,196	3,113	19,299	40	0.0750	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	465	
50.07 Construction	Central Control		1,709	421	410	2,539	30	0.0806	205	
60 ROW, LA	ND. EXISTING IMPROVEMENTS		14,461		3,465	17.927			40,/46	
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 VEHICLE	i (number)	61	80,396		19,264	55,660	30	0.0969	9,886	
70.02	Heavy Rail	-			12,032	00,002	25	0.0858	0,036	
70.03	Commuter Rall				· · · · · · · · ·		25	0.0858		
70.04	Bus	44	16,264		3,897	20,162	12	0.1259	2,538	
70.05	Non-revenue vehicles		1.657		397	2 053	12	0.1269	259	
70.07	Spare parts		8,925		2,139	11,064	12	0.1259	1,393	
80 PROFES	SIONAL SERVICES		96,377							
00.01	Preliminary Engineering		6,025							
80.02	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 Anency Force Account Work		8,280							
90 UNALLO	CATED CONTINGENCY		116,759							
Subtotal (10	9-80)		699,453	96,377	118,575	699,453	8 8		56,888	