

## 10.0 Financial Considerations

This chapter provides a summary of the financial considerations for the Bottineau Transitway alternatives, including a summary of capital costs, operations and maintenance (O&M) costs, and sources of funding.

### 10.1 Capital Cost Estimate

This section presents the capital cost estimates for the four light rail transit (LRT) alternatives under evaluation in this Draft Environmental Impact Statement (EIS). The capital cost estimates were developed based on the conceptual engineering plans dated September 5, 2012. [Table 10.1-1](#) provides a summary of the capital costs for each alternative evaluated.

#### 10.1.1 Projected Capital Expenditures

Capital cost estimates were prepared using the format and procedures currently required for project evaluation by the Federal Transit Administration (FTA). Standard cost categories (SCC) were used to group costs by various components such as guideway, stations, operations and maintenance facilities, site work, signalization and communications systems, right-of-way acquisition, and vehicles. “Soft costs or professional/technical services” are included for items such as engineering, construction services, insurance, and owner’s costs. Cost contingencies for uncertainty in both the estimating process and the scope of the project are also included.

##### Base Parameters

- Base Year – Year 2013
- Forecast Year – Year 2017 (approximate midpoint of the capital cost expenditures)
- 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 design development. The level of allocated contingency applied to each cost category reflects the relative potential variability of those estimates. The following allocated contingencies were applied to the capital cost estimates:
  - SCC 10 – SCC 50: Infrastructure – 20 percent
  - SCC 60: Right-of-Way – 30 percent
  - SCC 70: Vehicles – five percent
- Unallocated Contingency – An unallocated contingency of 25 percent is included in the capital cost estimates. This contingency is applied to the total estimated capital cost for each alternative (SCC 10 through 70) and is added to any specific estimating contingencies that are included or allocated to the various cost categories.
- Escalation Factor – An annual escalation factor of three percent is used to inflate capital cost estimates from the base year to the forecast year.

**Table 10.1-1. Capital Cost Estimate Summary ('000s)**

SCC <sup>1</sup>	Description	Cost (\$ Million)							
		LRT A-C-D1		LRT A-C-D2		LRT B-C-D1 (Preferred Alternative)		LRT B-C-D2	
		2013\$	2017\$	2013\$	2017\$	2013\$	2017\$	2013\$	2017\$
10	Guideway & Track Elements	170,251	191,619	176,202	198,316	145,908	164,221	151,859	170,919
20	Stations	30,900	34,778	36,091	40,621	30,900	34,778	36,091	40,621
30	Operations & Maintenance Facility	49,440	55,645	49,440	55,645	49,440	55,645	49,440	55,645
40	Sitework & Special Conditions	84,570	95,184	80,943	91,101	98,418	110,770	94,790	106,687
50	Systems	130,527	146,910	140,435	158,061	140,667	158,321	150,575	169,473
<b>Construction Subtotal (10 - 50)</b>		<b>465,688</b>	<b>524,136</b>	<b>483,111</b>	<b>543,745</b>	<b>465,333</b>	<b>523,736</b>	<b>482,755</b>	<b>543,346</b>
60	Right-of-Way	61,354	69,054	108,697	122,340	51,118	57,533	98,461	110,819
70	Vehicles (LRT)	92,036	103,587	104,040	117,098	104,040	117,098	112,044	126,106
80	Prof. Services	135,840	152,889	151,807	170,860	134,074	150,902	149,813	168,616
90	Unallocated Contingency <sup>2</sup>	130,730	147,138	146,323	164,688	131,546	148,056	146,186	164,534
100	Finance Charges	0	5,000	0	5,000	0	5,000	0	5,000
<b>Subtotal (10 - 90)</b>		<b>885,648</b>	<b>1,001,804</b>	<b>993,978</b>	<b>1,123,731</b>	<b>886,111</b>	<b>1,002,326</b>	<b>989,259</b>	<b>1,118,420</b>

<sup>1</sup>Standard Cost Categories (SCC)

<sup>2</sup>An unallocated contingency of 25% is included in the capital cost estimates. This contingency is applied to the total estimated capital cost before allocated contingencies are added to the various cost categories. The following allocated contingencies were also applied with the capital cost estimates:

- SCC 10 - 50: Infrastructure - 20%
- SCC 60: Right-of-Way - 30%
- SCC 70: Vehicles - 5%

## Construction Costs

Construction costs for project elements that are included in SCC 10 – 50 were developed by multiplying measured quantities by a unit cost. Allowances were created to develop costs for elements that are not fully designed at this stage of the project, such as utility and communication systems.

### ■ SCC 10 – Guideway

This category includes costs associated with track, civil, and structural elements that are directly associated with construction of the guideway structures, roadbed, pavement, or track.

- Ballasted track is provided on Alignments A, B, C, D1, the northerly portion of Alignment D2, and within the median on TH 55 (Alignment D Common Section).
- Embedded track is provided on the West Broadway and Penn Avenue portions of Alignment D2 and at all grade crossings.
- Direct fixation track is provided on aerial structures.
- Costs associated with relocating the existing BNSF track approximately 25 feet from its current location are included as part of the guideway cost.
- Guideway aerial structures are included as part of the guideway cost.

### ■ SCC 20 – Stations

This category includes costs associated with station platforms, ramps, platform fixtures, canopies, and passenger amenities, along with costs for vertical circulation (elevators, escalators, and stairs) to the platform.

### ■ SCC 30 – Support Facilities

This category includes costs associated with the construction of an operations and maintenance facility (OMF). Approximately 14 acres will be required on site for an OMF that is accessible for each LRT alternative evaluated.

### ■ SCC 40 – Sitework and Special Conditions

This category includes costs associated with roads, parking lots, retaining/sound walls, pedestrian/bike accessways, landscaping, utility work, environmental mitigation, hazardous material, and soil contamination.

SCC 40 costs for each alignment were calculated using the cost categories such as common excavation, contaminated soil removed, bridge modifications, landscaping, sidewalk, pavement, curb and gutter, fence, park-and-ride (surface and structured), and traffic control. Some of these categories were further defined as “high,” “medium,” and “low” costs to account for differences between the various alignment configurations. Within Alignment D1, the guideway conflicts with an existing Xcel Energy Transmission line. To the extent feasible at this time, Alignment D1 cost estimates include this potential utility line relocation.

### ■ SCC 50 – Systems

This category includes costs associated with train control signals, communication systems, central control hardware and software, traction power substations, overhead catenary systems (OCS), underground ductbanks, automated fare collection, grade crossing protection, and roadway traffic signal systems.

SCC 50 costs for each alignment were calculated using the cost categories identified below. These costs are based on either the route length or quantity of proposed signalized intersections.

- Signal System Allowance
- Signal/Communication Ductbank Allowance
- Grade Crossing Protection (LRT Only Crossings)
- Traffic Signal (Small, Medium, Large)
- BNSF Crossing Protection (Combined BNSF – LRT Crossings)
- Traction Power Substations (<sup>3</sup>/<sub>4</sub>- to 1-mile spacing)
- Traction Electrification Ductbank Allowance
- OCS Foundation Allowance
- OCS Simple Catenary Allowance
- Communications Allowance
- Station Communication Allowance
- Central Control Allowance

### Right-of-Way Costs

Right-of-way costs identified in SCC 60 were developed by reviewing tax-assessed values for each of the impacted properties throughout the corridor. Tax assessed values were increased to develop appropriate acquisition costs to account for relocation and potential damages costs for partial takes, full takes, and temporary easements. An appraisal was completed in 2012 to determine costs associated with constructing and operating within the BNSF right-of-way. These costs have been included in the updated capital cost estimate. The appraised value was based on an across the fence (ATF) value multiplied by a corridor enhancement factor, which is defined as the premium above and beyond the ATF value, to determine the right-of-way cost that was included in the capital cost estimate. The corridor enhancement factor is used to account for the advantages gained by a buyer through purchasing or locating on an existing corridor versus constructing a replacement corridor.

### Vehicles

The number of light rail vehicles purchased is based on the most current operating and ridership information and includes a 15 percent spare ratio.

### Professional Services

Costs for professional services were generated by applying the following percentages to the applicable SCC categories.

- SCC 10 – SCC 50: Infrastructure: – 30 percent
- SCC 60: Right-of-Way – 30 percent
- SCC 70: Vehicles – six percent

### 10.1.2 Refinements

Capital cost refinements will occur as the project progresses through development and into implementation. Capital cost estimates will be updated as assumptions and the proposed project elements are refined. Capital cost contingencies will also be revisited accordingly as the level of design advances.

## 10.2 Operations and Maintenance Costs

O&M costs include an estimation of the annual cost to operate, maintain, and administer a transit system for a given set of service indicators. O&M costs are expressed as the annual total of employee earnings and fringe benefits, contract services, materials and supplies, utilities, and other day-to-day expenses incurred in the operation and maintenance of a transit system. O&M costs for the Bottineau Transitway Project are described in this section.

### 10.2.1 Operations and Maintenance Costs

The FTA requires the use of a resource-driven allocated cost model for O&M cost estimates in a New Starts project. Resource-driven models assign specific costs to specific service characteristics (e.g., train operator costs assigned to annual revenue train-hours). Costs for that particular item (e.g., train operators) are then determined by each alternative's service characteristics (e.g., annual revenue train-hours).

Transit operations affected by the project alternatives include Metro Transit, Metropolitan Council-funded routes, and Maple Grove Transit.

#### Cost Model Parameters

Annual O&M costs were developed for the No-Build, Enhanced Bus/Transportation Systems Management (TSM), and Build alternatives using resource build-up cost models. These models were developed for the Bottineau Transitway Project based on 2010 actual expenditures for Metro Transit bus and LRT, Metropolitan Council-funded bus routes, and Maple Grove Transit bus service. Per FTA guidance, a detailed description of the O&M cost model is provided separately in the project's Operating & Maintenance Cost Methodology Report (Connetics Transportation Group, 2012).

O&M costs depicted in this section are based on actual 2010 expenses, consumption, and productivity factors (see the Operating & Maintenance Cost Results Report, Connetics Transportation Group, 2012) and inflated to 2013 dollars using an annual inflation factor of three percent.

#### Cost Model Inputs

Annual operating statistics (model inputs) were developed for the No-Build, Enhanced Bus/TSM, and Build alternatives for bus and LRT services based on the project's proposed operations plans and O&M cost methodology, as referenced above. Those operating statistics are presented in this project's Transit Operations Plans Report (Connetics Transportation Group, 2012). It is important to note that all model inputs for the alternatives reflect the Bottineau Transitway portion of regional transit, rather than system-wide service.

The Bottineau Transitway O&M cost includes the following bus and LRT inputs:

#### ■ Metro Transit Bus Input Variables

- Annual Revenue Bus-Hours (all buses)
- Annual Revenue Bus-Miles (non-articulated bus)
- Annual Revenue Bus-Miles (articulated bus)
- Peak Buses (all buses)
- Transit Centers
- Operating Garages (buses dispatched into service)
- Total Garages (includes heavy maintenance facility)

■ **Metro Transit LRT Input Variables**

- Peak Cars
- Annual Revenue Car-Miles
- Annual Revenue Train-Hours
- Passenger Stations (stations with, and without, park-and-ride facilities)
- End-of-Line Stations
- Fixed Guideway Directional Route Miles
- Maintenance Facilities

■ **Metropolitan Council-Funded Bus Input Variables**

- Annual Revenue Bus-Hours
- Annual Revenue Bus-Miles
- Peak Buses

■ **Maple Grove Transit Fixed Route Input Variables<sup>1</sup>**

- Annual Revenue Bus-Hours
- Annual Revenue Bus-Miles
- Peak Buses

**O&M Cost Estimate Summary**

**Table 10.2-1** summarizes the No-Build alternative’s cost. The No-Build alternative, with its modest service improvements, will add \$6.24 million over the annual O&M cost of existing service in the Bottineau Transitway.

**Table 10.2-1. No-Build Alternative Operations & Maintenance Cost (in 2013 dollars over Existing Service)**

Inputs	No-Build
Metro Transit Bus	\$4,769,208
Met Council (Contracted) Bus	\$243,982
Maple Grove Transit Bus	\$1,225,434
LRT <sup>2</sup> - Bottineau Transitway Only	\$0
<b>Total</b>	<b>\$6,238,624</b>

<sup>1</sup> O&M costs depicted in this section are based on actual 2010 expenses, consumption, and productivity factors and inflated to 2013 dollars using an annual inflation factor of three percent.

<sup>2</sup> Does not include costs related to Hiawatha LRT operations

**Table 10.2-2** summarizes cost estimates for the Enhanced Bus/TSM and Build alternatives by transit operator and mode, presented as an incremental cost over the No-Build alternative.

<sup>1</sup> Maple Grove Transit includes statistics for two contracted transit providers. Refer to the *O&M Cost Methodology Report* for more detail.

**Table 10.2-2. Operations & Maintenance Cost Summary (in 2013 dollars<sup>1</sup> over No-Build)**

Inputs	Enhanced Bus/TSM	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
Metro Transit Bus	\$14,188,393	\$3,617,476	\$3,617,476	\$2,314,283	\$2,314,283
Met Council (Contracted) Bus	\$876,646	\$1,005,793	\$1,005,793	\$876,646	\$876,646
Maple Grove Transit Bus	\$2,228,636	\$2,949,539	\$2,949,539	\$2,228,636	\$2,228,636
LRT <sup>2</sup> – Bottineau Transitway Only	\$0	\$25,201,860	\$26,657,641	\$27,120,249	\$28,254,739
<b>Total</b>	<b>\$17,293,675</b>	<b>\$32,774,668</b>	<b>\$34,230,449</b>	<b>\$32,539,814</b>	<b>\$33,674,304</b>

<sup>1</sup> O&M costs depicted in this section are based on actual 2010 expenses, consumption, and productivity factors and inflated to 2013 dollars using an annual inflation factor of three percent.

<sup>2</sup> Does not include costs related to Hiawatha LRT operations

### 10.3 Sources of Funding

This section presents a summary of the funding sources identified for the Bottineau Transitway as identified in this Draft EIS. The following provides a description of the federal, state, and local funding project partners, and the capacity of the partners to fund the project.

#### 10.3.1 Capital Funding

The Metropolitan Council's *2030 Transportation Policy Plan (TPP)* assumes that federal New Starts funding will be secured for 50 percent of the project cost. In addition to New Starts funding, it is anticipated that the remaining 50 percent of the project cost will be funded through the Counties Transit Improvement Board (CTIB) sales tax revenues (30 percent), State of Minnesota General Obligation bonds (10 percent), and the Hennepin County Regional Railroad Authority (HCRRA) (10 percent) (see [Table 10.3-1](#)).

**Table 10.3-1. Funding by Source**

Source	Share	Funding by Source (\$ Million)			
		A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
Federal Transit Administration (FTA)	50%	\$500,902	\$561,866	\$501,163	\$559,210
County Transit Improvement Board (CTIB)	30%	\$300,541	\$337,119	\$300,698	\$335,526
State of Minnesota	10%	\$100,180	\$112,373	\$100,233	\$111,842
Hennepin County Regional Railroad Authority (HCRRA)	10%	\$100,180	\$112,373	\$100,233	\$111,842
<b>Total</b>	<b>100%</b>	<b>\$1,001,804</b>	<b>\$1,123,731</b>	<b>\$1,002,326</b>	<b>\$1,118,420</b>

#### Federal Funding

HCRRA is intending to seek Capital Investment Grant Program (CIG) funding from FTA for the Preferred Alternative examined in this NEPA document. The CIG program, more commonly known as the New Starts, Small Starts, and Core Capacity program, involves a multi-year, multi-step process that project sponsors

must complete before a project is eligible for funding. The steps in the process and the basic requirements of the program can be found on FTA's website at [www.fta.dot.gov](http://www.fta.dot.gov).

FTA must evaluate and rate proposed projects seeking funding from the Capital Investment Grant Program on a set of project justification and local financial commitment criteria specified in law. The criteria evaluate the merits of the project and the projects sponsor's ability to build and operate it as well as the existing transit system. FTA assigns ratings from low to high based on information that project sponsors submit on the project cost, benefits, requested amount of Capital Investment Grant Program funds, and overall financial plan. Projects must receive a medium or better overall rating to advance through the steps in the process and be eligible for funding from the program. As projects proceed through the steps in the process, information concerning costs, benefits, and impacts is refined and the ratings are updated to reflect new information.

Changes in federal law instituted by MAP 21 will require FTA to evaluate and rate the project for federal funding after the completion of the NEPA process.

## State and Local Funding

### *State*

Transitway projects are funded through the state general fund and are made available through appropriations by the state legislature. The appropriations that are made available each year varies. General funds may be used for transitway operations but are typically not used for capital investments. Capital investments are funded through appropriations or State bonds. Specific Minnesota appropriation language may include additional restrictions on the uses of these funds.

### *CTIB*

In April 2008, a joint powers board, which was comprised of representatives from Anoka, Dakota, Hennepin, Ramsey, and Washington Counties, known as the Counties Transit Improvement Board (CTIB), was created under authorizing legislation contained in Minnesota Statute 297A.99. CTIB implemented a quarter-cent sales tax and a \$20 motor vehicle sales tax to fund transitway projects within these counties, which may be used for capital and operating costs. CTIB sales tax revenues cannot be used to fund more than 30 percent of total transitway capital costs, though an individual component of the overall project may receive more than 30 percent if approved by CTIB. A minimum of 10 percent local (non-state) match and 10 percent state match is required for CTIB funding.

A CTIB grant application was submitted in 2012 requesting a total of \$4.0 million, 60 percent (\$2.4 million) from CTIB and 40 percent (\$1.6 million) in local match funds. In the future, CTIB's financial contribution will be balanced at 30 percent of the overall Bottineau Transitway project cost.

### *Hennepin County Regional Railroad Authority*

Hennepin County Regional Railroad Authority (HCRRA) has the power to impose a property tax levy not to exceed 0.04835 percent of the market value of all taxable property within HCRRA boundary per Minnesota Statute 398A.04. Bonds, per Minnesota Statute 398A.07, may be issued by HCRRA to fulfill its purpose and provide funds for operating expenses in anticipation of revenues or for capital expenditures in anticipation of other funds.

HCRRA funds can be used for the Alternatives Analysis (AA) phase of development, environmental processes, and right-of-way acquisition, or for the local match in rail projects. However, pursuant to state statute, HCRRA funds will comprise no more than 10 percent of the Bottineau Transitway locally preferred alternative's total estimated capital costs.



### 10.3.2 Operations and Maintenance Funding

To finance the O&M of the Bottineau Transitway, the financial plan will estimate revenues from a variety of potential sources. Operating resources for the project will come from passenger fares, CTIB revenues, and state assistance. A plan for operating resources will be updated and included in the Final EIS.