

Operating & Maintenance Cost Methodology Report

Bottineau Transitway

DRAFT ENVIRONMENTAL IMPACT STATEMENT

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Authority

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Hennepin County
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APPENDIX A: Metro Transit 2010 Actual Expenses Allocated by Mode

1.0 INTRODUCTION

The Bottineau Transitway project area extends approximately 13 miles northwest from downtown Minneapolis through the neighborhoods of north Minneapolis, and into the communities of Golden Valley, Robbinsdale, Crystal, Brooklyn Park, and Maple Grove in Hennepin County, Minnesota. For more than 20 years, agencies in the region have conducted various studies related to establishing a transitway to serve the corridor. Prior studies by the Minnesota Department of Transportation (MnDOT), Hennepin County Regional Railroad Authority (HCRRA), the Metropolitan Council, and Metro Transit evaluated a range of transit options including light rail, commuter rail, and bus rapid transit.

Most recently, the Bottineau Transitway Alternatives Analysis Study (2008 to 2010) developed and analyzed alternatives for the corridor, focusing on potential transit modes and alignments. The evaluation of modes included baseline improvements to the existing bus system, light rail transit (LRT), bus rapid transit (BRT), and commuter rail. Various alignments were studied to identify the location of transitway investments (e.g., station facilities) with respect to existing infrastructure and land use. Alternatives that have been advanced to the current Draft Environmental Impact Statement (DEIS) stage of the project included the No-Build condition, which is limited to committed improvements to the current bus system, the Baseline condition, which includes optimizing the existing bus system based on corridor travel needs but short of a transitway investment, and “Transitway Build” alternatives including BRT and LRT on a combination of four primary alignments in the Bottineau Transitway project area.

This report presents the process by which annual operations and maintenance (O&M) costs are to be estimated for the transit alternatives under study for the Bottineau Transitway DEIS. The proposed alternatives affect Metro Transit’s existing bus and LRT systems as well as Maple Grove Transit and some Metropolitan Council-funded bus operations.

Contents of this report are as follows:

- Section 1 serves as an introduction to this document by providing background information and a brief description of the alternatives for the Bottineau Transitway.
- Section 2 offers a general description of the O&M cost estimating process, Federal Transit Administration (FTA) guidelines and an overview of the typical structure of cost estimating equations.
- Section 3 presents methodology used to estimate Metro Transit’s annual bus operating expenses for the project alternatives.
- Section 4 presents methodology used to estimate the annual O&M expenses of Metro Transit’s light rail system.
- Section 5 presents methodology used to estimate bus rapid transit O&M expenses.
- Section 6 presents methodology used to estimate the annual O&M expenses of the Maple Grove Transit fixed-route system.
- Section 7 presents methodology for estimating annual operating costs related to Metropolitan Council-funded bus routes that currently serve the Bottineau corridor.

As documented in the project's May 2012 *Transit Operations Plans Report (Final)*, project scenarios being evaluated are:

- No-Build Alternative
- Baseline Alternative
- LRT Alternatives
 - A-C-D1
 - A-C-D2
 - B-C-D1
 - B-C-D2
- BRT Alternative

All alternatives have been defined for the Horizon Year 2030. Transit operations affected by the project alternatives include Metro Transit, Metropolitan Council-funded routes, and Maple Grove Transit.

1.1 No-Build Alternative

Consistent with FTA guidelines, the No-Build alternative reflects existing service plus committed transit improvements to the regional transit network. Major regional transit projects include new park-and-ride facilities at various locations outside the Bottineau Transitway project area, LRT and bus service changes in other corridors, and various service frequency improvements throughout the regional transit network. In addition to regional transit projects, the No-Build alternative includes modest service improvements within the Bottineau Transitway project area.

1.2 Baseline Alternative

The Baseline Alternative is intended to represent an investment in bus service that addresses corridor transit needs, short of a major capital investment. As such, the Baseline is developed to be as parallel to the Build Alternative as possible and focused on serving the same travel markets that are addressed in the Build Alternatives. For this project, one Baseline Alternative has been defined for the travel markets served by all variations of the Build Alternatives. This Baseline Alternative definition may need to be updated once a preferred Build Alternative has been determined.

Building upon improvements identified for the No-Build alternative, the Baseline alternative incorporates the following:

- A new transit center and park-and-ride lot at 97th Avenue/West Broadway Avenue (near the Target Northern Campus in Brooklyn Park).
- Two limited-stop bus routes in the Bottineau Corridor that would operate in general purpose traffic lanes along Bottineau Boulevard (County Road 81), with stops at approximately the same locations as proposed in the Build Alternatives. One route would start at the proposed 97th Avenue Transit Center, the other at the Maple Grove Transit Station. Both routes would converge at Starlite Transit Center (near Brooklyn Boulevard and County Road 81), and continue to downtown Minneapolis. Both routes would operate every 15 minutes during peak periods and at 20-minute frequencies during the midday in both directions. These two routes would provide a combined 7.5-minute peak and 10-minute midday frequency south of the Starlite Transit Center, which is comparable to proposed LRT and BRT frequencies in the Build alternatives.
- Service changes to the background bus network that affect specific local and express Metro Transit routes, Metropolitan Council-funded routes, and Maple Grove Transit routes.

1.3 LRT Build Alternatives

The Bottineau Transitway Draft EIS is evaluating four potential LRT alternatives. There are two alignment options at the north end of the corridor. Alignment “A” travels west from the BNSF railroad corridor to Maple Grove along Elm Creek Boulevard and a to-be-built arterial, terminating at Hemlock Lane. Alignment “B” travels north from the BNSF railroad corridor along West Broadway Avenue to a proposed end-of-line station at 97th Avenue (near the Target Northern Campus). South of the “A” and “B” alignments, there is a common trunk alignment along the BNSF railroad alignment (adjacent to Bottineau Boulevard). This segment has been labeled Alignment C. There are two alignments under consideration south of 36th Avenue in Robbinsdale into downtown Minneapolis. Alignment “D1” continues along the BNSF railroad alignment to Olson Memorial Highway (TH 55), and then follows Olson Highway to downtown. Alignment “D2” cuts over via 34th Avenue to West Broadway to Penn Avenue to Olson Highway, and then follows Olson Highway into downtown. Thus, the four LRT alternatives presently under consideration in this DEIS are as follows:

- **A-C-D1** - The A-C-D1 alignment connects Maple Grove and Target Field, with LRT service continuing via the existing Hiawatha line. Ten rail stations (not including the existing station at The Interchange in downtown Minneapolis) are proposed for the 12.62-mile alignment, which includes four stations with park-and-ride facilities.
- **A-C-D2** - The A-C-D2 alignment also connects Maple Grove and Target Field but follows a different routing between Robbinsdale and downtown Minneapolis (via West Broadway and Penn Avenue). eleven stations (not including the existing station at The Interchange in downtown Minneapolis) are proposed for the 12.61-mile alignment, which includes four stations with park-and-ride facilities.
- **B-C-D1** - This alternative begins at 97th Avenue (alignment “B”), and follows the BNSF railroad and Olson Highway to downtown Minneapolis (alignment “D1”). Ten rail stations (not including the existing station at The Interchange in downtown Minneapolis) are proposed for the 12.45-mile alignment, which includes four stations with park-and-ride facilities.
- **B-C-D2** - This alternative also begins at 97th Avenue but follows West Broadway, Penn Avenue and Olson Highway to downtown Minneapolis (alignment “D2”). There are 11 stations (not including the existing station at The Interchange in downtown Minneapolis) along this 12.44-mile alignment, of which four stations include park-and-ride facilities.

All rail alternatives assume Bottineau LRT service is interlined with Hiawatha trains. Thus, Bottineau service frequencies are determined by Hiawatha frequencies, which are 7.5 minutes during weekday peak periods, and 10 minutes during all other service periods on weekdays, Saturdays, and Sundays, with less frequent service during early morning and late night periods. In addition, background and connecting bus services have been modified to support each alternative in ways that are respectively parallel with the Baseline alternative. This project’s Operations Plan Report describes the bus assumptions by route for each LRT alternative.

1.4 BRT Build Alternative

The Bottineau Transitway Draft EIS process also evaluated a BRT alternative, which assumes a dedicated busway alignment from 97th Avenue (near the Target Northern Campus) to Border Avenue, near Target Field. The dedicated busway would follow the LRT B-C-D1 alignment. BRT station locations along the busway are at the same locations proposed for LRT B-C-D1, except that the station serving the Interchange area would be located at Border Avenue. Beginning at Border Avenue, buses would operate in mixed traffic and along the Marquette/2nd Avenue transit lanes, with service ending at the Leamington Ramp. A total of 11 stations are proposed along the dedicated alignment, with additional stops in downtown Minneapolis.

Following the technical analysis conducted and public input received during the Scoping process, the HCRRA determined that the BRT alternative will not be studied in the Draft EIS process. Additional information regarding the decision not to carry the BRT alternative forward is documented in this project's *Scoping Decision Document*, available on the project website at www.bottineautransitway.org.

Although the BRT alternative will not be carried forward for study in the Draft EIS, the details of its O&M costs are included in this report for the purpose of fully documenting the assumptions that were included in the alternative.

2.0 INTRODUCTION TO O&M COSTING

O&M cost estimates are important in the planning process for New Starts projects because design-year projections are one of the inputs required to determine New Starts measures of cost effectiveness. An O&M cost model estimates 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.

In general, steps of the O&M cost estimating process are:

- Develop methodology for estimating O&M costs
- Develop appropriate cost model(s) to evaluate alternatives
- Calibrate the model for current year operations
- Generate operating plans and statistics for each study alternative
- Estimate annual transit operating and maintenance costs for each study alternative

This report documents the first three steps as they have been applied to the Bottineau Transitway DEIS. The operating plans and cost estimates referred to in the last two steps will be documented separately, after completion and review of ridership forecasts to determine appropriate adjustments to each alternative's service plan definition. Capital cost estimates, for construction and equipment purchases, are not part of the O&M cost estimating process.

FTA believes the fully-allocated cost model is the best approach to O&M costing because it is:

- Able to reflect cost differences by mode and service type
- Structured based on actual operating experience
- Sensitive to future changes in cost factors

FTA has issued guidelines that specify the following methodology for calculating O&M costs:

- Compute costs by estimating labor and materials needed to provide a current level of service, and then apply unit costs to the estimated future labor and material cost items;
- Calculate costs based on operating characteristics by mode (e.g., LRT train-hours) rather than for all modes combined (e.g., system-wide passengers);
- Model each reported labor and non-labor expense separately to ensure that equations are mutually exclusive and cover all operating costs; and
- Model expense items as variable, meaning that cost estimates will change with projected changes in service.

A cost allocation model assumes that each expense incurred by a transit system is 'driven' by a key supply variable such as revenue-hours, revenue-miles, or the number of peak vehicles. Combining recent actual O&M costs with the quantity of relevant supply variables establishes unit costs and productivity ratios that can then be applied to a different set of service indicators (such as projected future expansions or cut-backs). The result is an estimated annual cost specifically for the test scenario—in this case, the Bottineau Transitway Build alternatives.

2.1 General Model Structure

The structure of the Bottineau Transitway's O&M cost models is consistent with the spreadsheet table exhibits presented in Chapter 4, Operating and Maintenance Costs, of the FTA's Procedures and Technical Methods for Transit Project Planning (Draft Version 3). The model's data and calculations progress from the base year expense items and amounts on the left side of the spreadsheet, through the assignment of driving variables, to productivity and inflation, and end with the estimated incremental cost of a study alternative on the right side of the spreadsheet.

- **Line Items and Base Year Costs:** At a minimum, the first section of a cost model contains O&M expense line items, a recent annual expense for each item and a column for noting whether a line item's existing unit cost is adjusted in the model or a new unit cost has been added.
- **Base Year Unit Costs:** As pointed out in the FTA guidelines, O&M costs are related to (or 'driven' by) different supply variables. Supply variables can be considered causal because as they increase, so do the related expense items. The second section of a spreadsheet model is for the supply variable unit cost rates; one column is designated for each variable used as a driver for estimating the cost of a project alternative. Usually, unit rates are calculated by dividing the actual annual expense for the line item by the value of the relevant supply variable. For example, if operators' regular salaries and wages cost the transit agency \$21,000,000 annually, and 1,063,300 revenue hours of service is the associated supply variable, then the unit cost rate for operators' regular salaries and wages would be \$19.75 per revenue hour. In other words, the model would adjust this line item by \$19.75 for each revenue hour of service that is added or cut from the system in a tested scenario.
- **Productivity Ratios:** Line item productivity ratios are calculated in the third section of the model with columns that display the resource variable used for the calculation (may be the line item's supply variable, or it may be something else related to the supply variable, such as work hours for salary and wage expenses), the value of the resource variable, and the factor that results from dividing the resource value by the supply value.
- **Estimated Cost of a Test Scenario:** For each line item expense, the last columns in the spreadsheet contain the base year resource unit cost (supply variable unit cost divided by resource/supply factor), an inflation factor, and the model estimates of resource unit cost and annual cost. The Bottineau DEIS project models are designed to allow inflation of the 2010 Base Year expenses to represent 2011 dollars using the Bureau of Labor Statistics' Consumer Price Index (CPI-U) for the Minneapolis/St. Paul region.

2.2 Bottineau Corridor O&M Models

The Bottineau Draft EIS project alternatives require O&M costs to be estimated for Metro Transit bus and light rail, Maple Grove Transit bus, and Metropolitan Council-funded bus service. Since all of these modes are currently operated in the region, the models are based on the respective agencies' FY 2010 actual expenses, system characteristics, and service statistics.

The Bottineau Transitway process also includes a new mode that doesn't currently exist in the Twin Cities—a fixed-guideway BRT alternative. Although the BRT alternative was screened from further study during the Scoping process and is not being evaluated in the Draft EIS, O&M costs were developed for the alternative. A separate cost model has been prepared for BRT, using cost experiences for Metro Transit bus and light rail. Each model is described in the following sections of this document.

3.0 METRO TRANSIT BUS O&M COST METHODOLOGY

The Metro Transit bus O&M cost model is based on actual 2010 allocated bus expenses, by agency department, and service statistics. The cost data, provided by Metro Transit, allocates expenses to specific modes (bus, light rail, commuter rail), and to departments and cost centers. Labor and non-labor costs are further broken out by cost category. Appendix A presents the 2010 allocated cost data that was provided by Metro Transit.

The allocated cost data provided by Metro Transit was compared to allocated expenses reported to the National Transit Database (NTD) for the past three years. The numbers were found to vary slightly, as shown below in Table 3-1. Despite the difference, it is still preferable to use the cost data that was provided for this project because it enables development of a bus spreadsheet cost model that contains much more detail than the agency's NTD report. It is important to note that the model also includes leases and rental costs, which are not included in NTD's modal allocation of expenses.

Table 3-1
Comparison of Metro Transit-Supplied Allocated Cost Data vs. NTD-Reported Costs for Motor Bus

Report Year	Data Source	Costs
2010	NTD Report	\$240,242,682
	Metro-Supplied #'s	\$240,656,439
	Difference	-\$413,757
	% Difference	-0.2%
2009	NTD Report	\$237,818,021
	Metro-Supplied #'s	\$238,347,174
	Difference	-\$529,153
	% Difference	-0.2%
2008	NTD Report	\$229,035,325
	Metro-Supplied #'s	\$230,730,214
	Difference	-\$1,694,889
	% Difference	-0.7%

3.1 Key Supply Variables

After collection of financial and service data, preparation of the spreadsheet cost model began with the selection of key driving supply variables for the existing bus system. Variables selected were:

- **Annual Revenue Bus-Hours:** The hours that vehicles travel while in revenue service over the entire fiscal year. Revenue bus-hours include layover and schedule recovery but exclude time for deadhead, operator training and maintenance testing.
- **Annual Revenue Bus-Miles:** Non-Articulated and Articulated: The miles that vehicles travel while in revenue service over the entire fiscal year. Revenue bus-miles include layover and schedule recovery but exclude miles for deadhead, operator training and maintenance testing.
- **Peak Buses:** The maximum number of passenger service vehicles actually operated simultaneously on an average weekday. In some cases, peak buses may be used as a supply variable when the model needs to base line item expenses on overall bus system size.
- **Transit Centers:** The number of bus passenger transfer facilities.
- **Operating Garages:** The number of garages from which buses are dispatched into service. These garages also serve as general purpose maintenance facilities for inspecting, servicing and performing light maintenance work on buses.
- **Total Garages:** The number of operating garages plus heavy maintenance facilities, which provide unit rebuilds, engine overhauls, significant body repairs, and other major repairs.

Table 3-2 shows the key supply variables and values used to represent the model's base year (FY 2010) inputs.

Table 3-2
Metro Transit Bus Cost Model
Supply Variable Inputs

Bus	
Annual Revenue Bus-Hours (all buses)	1,943,037
Annual Revenue Bus-Miles -Non-Articulated Bus	22,526,881
Annual Revenue Bus-Miles - Articulated Bus	297,123
Peak Buses (all buses)	735
Transit Centers	15
Operating Garages (buses dispatched into svc)	6
Total Garages (includes heavy maint facility)	7

The transit centers included in the Base Year bus system are those shown as Metro Transit-operated facilities on its Transit System Map: Robbinsdale, Brooklyn Center, Louisiana Avenue, Plymouth Road, Southdale, South Bloomington, Northtown, Columbia Heights, Rosedale, Little Canada, Maplewood Mall, SunRay, Uptown, Chicago Lake and I-35W/46th.

3.2 Line Item Expenses

After selecting the key supply variables, the next step in model development was to record Metro Transit's bus expenses as a series of line items. Conversations with staff enabled some of the line items to be divided for more modeling detail. After the line items were established, each one was assigned a key supply variable as its most relevant cost driver, then unit costs and productivity ratios were calculated.

Cost data provided by Metro Transit breaks bus-related O&M costs into the following departments and cost categories:

- **Executive**
 - Internal Audit
 - Executive
 - Police/Security
 - Safety
- **Administrative**
 - Customer Relations
 - Transit Info Center
 - Marketing
 - Service Development
 - Finance
 - Purchasing
 - Human Resources
 - Information Services
- **Engineering and Facilities**
 - Engineering and Facilities
 - Systems Facilities Engineering
 - Garage Building Maintenance
 - Other Facilities Maintenance
 - Landscaping and Phone Administration
- **Bus Operations**
 - Bus Transportation – Administrative
 - Bus Transportation – Operating Divisions
 - Bus Transportation – District Street Supervision
 - Bus Transportation – Transit Control Center
 - Bus Transportation – Operator Instructions and Development
 - Bus Maintenance – Parts and Warranty Administrative
 - Bus Maintenance – Garage Maintenance Division
 - Bus Maintenance – Non-Revenue Vehicles
 - Bus Maintenance – Heavy Maintenance Functions
 - Risk Management

Cost information provided by Metro Transit Finance staff breaks labor costs into the following categories:

- Administrative – regular and overtime pay
- Clerical – regular and overtime pay
- Mechanic – regular and overtime pay
- Operator – regular and overtime pay

Metro Transit Finance staff were able to provide approximate average regular and overtime pay rates for each of these four labor categories. These average rates were used to estimate work hours for each labor category. The estimates of work hours were then adjusted to match labor work hours that were reported in Metro Transit's 2010 NTD. Fringe benefit cost estimates in the model also pivot off labor work hours.

Non-labor costs are defined by the following categories:

- Contract Services
- Materials & Supplies (including bus parts and tires, and fuel and lubricants)
- Utilities
- Miscellaneous
- Leases & Rentals
- Casualty & Liability

Finally, Metro Transit's cost data include Metropolitan (Met) Council labor and non-labor costs. Met Council provides support services to Metro Transit such as payroll, accounting and human resources that are allocated as a transit service-related expense. Labor work hours were not readily available for Met Council labor costs. Therefore, these costs have been assigned directly to supply variables.

The bus model developed for this project includes one unique cost adjustment. The cost model differentiates between standard and articulated bus costs for the following line items:

- Mechanics pay and fringe benefits in the Garage Maintenance and Heavy Maintenance divisions
- Fuel and lubricants costs in the Garage Maintenance division
- Bus parts and tires in the Garage Maintenance and Heavy Maintenance divisions

All other line item costs that are driven by bus-miles do not differentiate between the type of bus. This feature was added to capture the higher operations and maintenance costs associated with articulated buses (e.g., additional mechanic hours to maintain the bus, higher fuel usage, etc.). A 20 percent premium for articulated buses is a commonly used assumption in the industry, and has been assumed in this cost model.

Table 3-3 summarizes the dollar impact that each of the bus model's key supply variables has on the calibration (base year) system. The unit costs in this table reflect the dollar amount the model will adjust for each added or deleted unit of a supply variable – the incremental change from the calibration bus system. In other words, for each revenue bus-mile added, the model will increase its total estimate by \$2.99; for each revenue bus-hour deleted, the model will subtract \$62.14 from its estimate, and so forth.

Table 3-3
Metro Transit Bus Cost Model
Supply Variable Impacts for the 2010 Calibration Bus System
(in 2010 dollars)

Key Supply Variable	Share of Total O&M Cost		Unit Cost
	Dollar Amount	Percentage	
Annual Revenue Bus-Hours (all buses)	\$120,742,954	50%	\$62.14
Annual Revenue Bus-Miles -Non-Articulated Bus	\$67,393,188	28%	\$2.99
Annual Revenue Bus-Miles - Articulated Bus	\$1,030,072	0%	\$3.47
Peak Buses (all buses)	\$26,535,187	11%	\$36,102
Transit Centers	\$8,828,699	4%	\$588,580
Operating Garages (buses dispatched into svc)	\$6,604,301	3%	\$1,100,717
Total Garages (includes heavy maint facility)	\$10,017,587	4%	\$1,431,084
Total	\$241,151,989	100%	

Table 3-4 presents the Metro Transit Bus O&M cost model worksheet for the 2010 base year (that has not been inflated to 2011 dollars). A tabular summary of a model run's expenses by Metro Transit division/department is presented in Table 3-5.

Two prior years of bus operating statistics were applied to the bus cost model to compare model results to Metro Transit-reported costs. Cost results from the model were deflated based on the consumer price index-reported inflation factor for the Minneapolis-St. Paul region. Results from running the model for the past two years are presented in Table 3-6. The prior two years is considered the most meaningful historical comparison of model performance; further back in time and other factors not applicable in the base year calibration are more likely to have a cumulative effect on the model results (e.g., inflation rates different than the CPI rate, different organizational structure, superceded union contracts, substantially more of the revenue fleet either older or newer than is currently the case, etc.).

**Table 3-4
Metro Transit Bus Cost Model**

**METRO TRANSIT
Fully-Allocated Bus Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Bus Expenses	Existing Unit Cost Adjusted	Bus Supply Variable Unit Cost Rate (\$2010)							Productivity Ratio			Base Year Resource Unit Cost	Inflation Factor: 1.000				
			Revenue Bus-Hours	Non-Articulated Bus-Miles	Articulated Bus-Miles	Peak Buses	Operating Garages	Total Garages	Transit Centers	Resource Variable	Resource Value	Resource/Supply		Inflation Factor	Year of \$:			
															2010 Resource Unit Cost	Estimated Annual Cost		
EXECUTIVE																		
Internal Audit																		
Met Council Labor & Fringe Benefits	\$208,111					\$283						Peak Buses	735	1.000	\$283	1.000	\$283	\$208,111
Met Council Other Expenses	\$8,766					\$11.93						Peak Buses	735	1.000	\$11.93	1.000	\$11.93	\$8,766
Executive																		
Administrative Regular Pay	\$651,362					\$886						Work Hours	24,268	33.018	\$26.84	1.000	\$26.84	\$651,362
Administrative Overtime	\$11,135					\$15.15						Work Hours	351	0.477	\$31.75	1.000	\$31.75	\$11,135
Fringe Benefits	\$557,917					\$759						Work Hours	24,619	33.495	\$22.66	1.000	\$22.66	\$557,917
Met Council Labor & Fringe Benefits	\$1,144,373					\$1,557						Peak Buses	735	1.000	\$1,557	1.000	\$1,557	\$1,144,373
Met Council Other Expenses	\$1,507,189					\$2,051						Peak Buses	735	1.000	\$2,051	1.000	\$2,051	\$1,507,189
Contract Services	\$91,518					\$125						Peak Buses	735	1.000	\$125	1.000	\$125	\$91,518
Materials & Supplies	\$112,264					\$153						Peak Buses	735	1.000	\$153	1.000	\$153	\$112,264
Utilities	\$474,476					\$646						Peak Buses	735	1.000	\$646	1.000	\$646	\$474,476
Miscellaneous/Other	\$1,222,530					\$1,663						Peak Buses	735	1.000	\$1,663	1.000	\$1,663	\$1,222,530
Police/Security																		
Administrative Regular Pay (50%) - Hours Driven	\$1,526,837		\$0.79									Work Hours	56,887	0.029	\$26.84	1.000	\$26.84	\$1,526,837
Administrative Regular Pay (50%) - Peak Bus Driven	\$1,526,837					\$2,077						Work Hours	56,887	77.397	\$26.84	1.000	\$26.84	\$1,526,837
Administrative Overtime (50%) - Hours Driven	\$126,254		\$0.06									Work Hours	3,977	0.002	\$31.75	1.000	\$31.75	\$126,254
Administrative Overtime (50%) - Peak Bus Driven	\$126,254					\$172						Work Hours	3,977	5.411	\$31.75	1.000	\$31.75	\$126,254
Fringe Benefits (50%) - Hours Driven	\$814,806		\$0.42									Work Hours	60,863	0.031	\$13.39	1.000	\$13.39	\$814,806
Fringe Benefits (50%) - Peak Bus Driven	\$814,806					\$1,109						Work Hours	60,863	82.807	\$13.39	1.000	\$13.39	\$814,806
Contract Services	\$136,037							\$19,434				Total Garages	7	1.000	\$19,434	1.000	\$19,434	\$136,037
Materials & Supplies	\$72,844					\$99.11						Peak Buses	735	1.000	\$99.11	1.000	\$99.11	\$72,844
Utilities	\$37,043					\$50.40						Peak Buses	735	1.000	\$50.40	1.000	\$50.40	\$37,043
Miscellaneous/Other	\$18,680					\$25.41						Peak Buses	735	1.000	\$25.41	1.000	\$25.41	\$18,680
Safety																		
Administrative Regular Pay (50%) - Miles Driven	\$243,646			\$0.01	\$0.01							Work Hours	9,078	0.000	\$26.84	1.000	\$26.84	\$243,646
Administrative Regular Pay (50%) - Peak Bus Driven	\$243,646					\$331.49						Work Hours	9,078	12.351	\$26.84	1.000	\$26.84	\$243,646
Administrative Overtime (50%) - Miles Driven	\$17,108			\$0.001	\$0.001							Work Hours	539	0.000	\$31.75	1.000	\$31.75	\$17,108
Administrative Overtime (50%) - Peak Bus Driven	\$17,108					\$23.28						Work Hours	539	0.733	\$31.75	1.000	\$31.75	\$17,108
Fringe Benefits (50%) - Miles Driven	\$175,576			\$0.01	\$0.01							Work Hours	9,617	0.000	\$18.26	1.000	\$18.26	\$175,576
Fringe Benefits (50%) - Peak Bus Driven	\$175,576					\$239						Work Hours	9,617	13.084	\$18.26	1.000	\$18.26	\$175,576
Contract Services	\$5,513					\$7.50						Peak Buses	735	1.000	\$7.50	1.000	\$7.50	\$5,513
Materials & Supplies	\$3,619					\$4.92						Peak Buses	735	1.000	\$4.92	1.000	\$4.92	\$3,619
Utilities	\$422					\$0.57						Peak Buses	735	1.000	\$0.57	1.000	\$0.57	\$422
Miscellaneous/Other	\$21,257					\$28.92						Peak Buses	735	1.000	\$28.92	1.000	\$28.92	\$21,257
ADMINISTRATIVE																		
Customer Relations																		
Administrative Regular Pay	\$208,309					\$283						Work Hours	7,761	10.559	\$26.84	1.000	\$26.84	\$208,309
Administrative Overtime	\$1,247					\$1.70						Work Hours	39	0.053	\$31.75	1.000	\$31.75	\$1,247
Clerical Regular Pay	\$143,655					\$195						Work Hours	7,010	9.538	\$20.49	1.000	\$20.49	\$143,655
Clerical Overtime	\$1,729					\$2.35						Work Hours	54	0.073	\$32.30	1.000	\$32.30	\$1,729
Fringe Benefits	\$231,178					\$315						Work Hours	14,864	20.223	\$15.55	1.000	\$15.55	\$231,178
Contract Services	\$1,625					\$2.21						Peak Buses	735	1.000	\$2.21	1.000	\$2.21	\$1,625
Materials & Supplies	\$8,977					\$12.21						Peak Buses	735	1.000	\$12.21	1.000	\$12.21	\$8,977
Miscellaneous/Other	\$7,134					\$9.71						Peak Buses	735	1.000	\$9.71	1.000	\$9.71	\$7,134

**Table 3-4
Metro Transit Bus Cost Model**

**METRO TRANSIT
Fully-Allocated Bus Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Bus Expenses	Existing Unit Cost Adjusted	Bus Supply Variable Unit Cost Rate (\$2010)							Productivity Ratio			Base Year Resource Unit Cost	Inflation Factor: 1.000			
			Revenue Bus-Hours	Non-Artic Bus-Miles	Articulated Bus-Miles	Peak Buses	Operating Garages	Total Garages	Transit Centers	Resource Variable	Resource Value	Resource/ Supply		Inflation Factor	Year of \$:		
															2010 Resource Unit Cost	Estimated Annual Cost	
ADMINISTRATIVE																	
Transit Info Center																	
Administrative Regular Pay	\$424,400									\$28,293	Work Hours	15,812	1,054,147	\$26.84	1.000	\$26.84	\$424,400
Administrative Overtime	\$8,492									\$566	Work Hours	267	17,831	\$31.75	1.000	\$31.75	\$8,492
Clerical Regular Pay	\$1,127,895									\$75,193	Work Hours	55,040	3,669,347	\$20.49	1.000	\$20.49	\$1,127,895
Clerical Overtime	\$39,993									\$2,666	Work Hours	1,238	82,545	\$32.30	1.000	\$32.30	\$39,993
Fringe Benefits	\$1,154,700									\$76,980	Work Hours	72,358	4,823,870	\$15.96	1.000	\$15.96	\$1,154,700
Contract Services	\$40,175									\$2,678	Transit Centers	15	1.000	\$2,678	1.000	\$2,678	\$40,175
Materials & Supplies	\$214,660									\$14,311	Transit Centers	15	1.000	\$14,311	1.000	\$14,311	\$214,660
Utilities	\$1,018									\$67.85	Transit Centers	15	1.000	\$68	1.000	\$67.85	\$1,018
Miscellaneous/Other	\$3,201									\$213	Transit Centers	15	1.000	\$213	1.000	\$213	\$3,201
Leases & Rentals	\$2,077									\$138	Transit Centers	15	1.000	\$138	1.000	\$138	\$2,077
Marketing																	
Administrative Regular Pay (25%) - T Ctr Driven	\$165,809									\$11,054	Work Hours	6,178	411,846	\$26.84	1.000	\$26.84	\$165,809
Administrative Regular Pay (75%) - Peak Bus Driven	\$497,427					\$677					Work Hours	18,533	25,215	\$26.84	1.000	\$26.84	\$497,427
Administrative Overtime (25%) - T Ctr Driven	\$2,293									\$153	Work Hours	72	4,815	\$31.75	1.000	\$31.75	\$2,293
Administrative Overtime (25%) - Peak Bus Driven	\$6,878					\$9.36					Work Hours	217	0.295	\$31.75	1.000	\$31.75	\$6,878
Clerical Regular Pay (25%) - T Ctr Driven	\$9,181									\$612	Work Hours	448	29,867	\$20.49	1.000	\$20.49	\$9,181
Clerical Regular Pay (75%) - Peak Bus Driven	\$27,542					\$37.47					Work Hours	1,344	1,829	\$20.49	1.000	\$20.49	\$27,542
Clerical Overtime (25%) - T Ctr Driven	\$13									\$0.90	Work Hours	0	0.028	\$32.30	1.000	\$32.30	\$13
Clerical Overtime (75%) - Peak Bus Driven	\$40					\$0.05					Work Hours	1	0.002	\$32.30	1.000	\$32.30	\$40
Fringe Benefits (25%) - T Ctr Driven	\$104,657									\$6,977	Work Hours	6,698	446,555	\$15.62	1.000	\$15.62	\$104,657
Fringe Benefits (75%) - Peak Bus Driven	\$313,970					\$427					Work Hours	20,095	27,340	\$15.62	1.000	\$15.62	\$313,970
Met Council Labor & Fringe Benefits (25%)	\$28,730									\$1,915	Transit Centers	15	1.000	\$1,915	1.000	\$1,915	\$28,730
Met Council Labor & Fringe Benefits (75%)	\$86,190					\$117					Peak Buses	735	1.000	\$117	1.000	\$117	\$86,190
Met Council Other Expenses (25%) - T Ctr Driven	\$9,824									\$655	Transit Centers	15	1.000	\$655	1.000	\$655	\$9,824
Met Council Other Expenses (75%) - Peak Bus Driven	\$29,471					\$40.10					Peak Buses	735	1.000	\$40.10	1.000	\$40.10	\$29,471
Contract Services	\$1,214,269					\$1,652					Peak Buses	735	1.000	\$1,652	1.000	\$1,652	\$1,214,269
Materials & Supplies	\$486,558					\$662					Peak Buses	735	1.000	\$662	1.000	\$662	\$486,558
Advertising/Promo/Media	\$675,013					\$918					Peak Buses	735	1.000	\$918	1.000	\$918	\$675,013
Other Miscellaneous/Other Expenses	\$402,367					\$547					Peak Buses	735	1.000	\$547	1.000	\$547	\$402,367
Leases & Rentals	\$65,209					\$88.72					Peak Buses	735	1.000	\$88.72	1.000	\$88.72	\$65,209
Service Development																	
Administrative Regular Pay (50%) - Peak Bus Driven	\$523,275					\$712					Work Hours	19,496	26,525	\$26.84	1.000	\$26.84	\$523,275
Administrative Regular Pay (50%) - Bus-Hrs Driven	\$523,275		\$0.27								Work Hours	19,496	0.010	\$26.84	1.000	\$26.84	\$523,275
Administrative Overtime (50%) - Peak Bus Driven	\$11,777					\$16.02					Work Hours	371	0.505	\$31.75	1.000	\$31.75	\$11,777
Administrative Overtime (50%) - Bus-Hrs Driven	\$11,777		\$0.01								Work Hours	371	0.000	\$31.75	1.000	\$31.75	\$11,777
Clerical Regular Pay (50%) - Peak Bus Driven	\$173,331					\$236					Work Hours	8,458	11,508	\$20.49	1.000	\$20.49	\$173,331
Clerical Regular Pay (50%) - Bus Hrs Driven	\$173,331		\$0.09								Work Hours	8,458	0.004	\$20.49	1.000	\$20.49	\$173,331
Clerical Overtime (50%) - Peak Bus Driven	\$3,163					\$4.30					Work Hours	98	0.133	\$32.30	1.000	\$32.30	\$3,163
Clerical Overtime (50%) - Bus Hrs Driven	\$3,163		\$0.002								Work Hours	98	0.000	\$32.30	1.000	\$32.30	\$3,163
Fringe Benefits (50%) - Peak Bus Driven	\$437,405					\$595					Work Hours	28,423	38,671	\$15.39	1.000	\$15.39	\$437,405
Fringe Benefits (50%) - Bus Hrs Driven	\$437,405		\$0.23								Work Hours	28,423	0.015	\$15.39	1.000	\$15.39	\$437,405
Contract Services	\$32,070					\$43.63					Peak Buses	735	1.000	\$43.63	1.000	\$43.63	\$32,070
Materials & Supplies	\$937					\$1.27					Peak Buses	735	1.000	\$1.27	1.000	\$1.27	\$937
Utilities	\$1,198					\$1.63					Peak Buses	735	1.000	\$1.63	1.000	\$1.63	\$1,198
Miscellaneous/Other	\$5,450					\$7.42					Peak Buses	735	1.000	\$7.42	1.000	\$7.42	\$5,450

**Table 3-4
Metro Transit Bus Cost Model**

**METRO TRANSIT
Fully-Allocated Bus Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Bus Expenses	Existing Unit Cost Adjusted	Bus Supply Variable Unit Cost Rate (\$2010)							Productivity Ratio			Base Year Resource Unit Cost	Inflation Factor: 1.000			
			Revenue Bus-Hours	Non-Artic Bus-Miles	Articulated Bus-Miles	Peak Buses	Operating Garages	Total Garages	Transit Centers	Resource Variable	Resource Value	Resource/ Supply		Inflation Factor	Year of \$:		
															2010 Resource Unit Cost	Estimated Annual Cost	
ADMINISTRATIVE																	
Finance																	
Mechanics Regular Pay (50%) - Peak Bus Driven	\$481,236					\$655					Work Hours	22,682	30.860	\$21.22	1.000	\$21.22	\$481,236
Mechanics Regular Pay (50%) - Bus Hrs Driven	\$481,236		\$0.25								Work Hours	22,682	0.012	\$21.22	1.000	\$21.22	\$481,236
Mechanics Overtime (50%) - Peak Bus Driven	\$28,128					\$38.27					Work Hours	865	1.176	\$32.54	1.000	\$32.54	\$28,128
Mechanics Overtime (50%) - Bus Hrs Driven	\$28,128		\$0.01								Work Hours	865	0.000	\$32.54	1.000	\$32.54	\$28,128
Administrative Regular Pay (50%) - Peak Bus Driven	\$906,381					\$1,233					Work Hours	33,770	45.945	\$26.84	1.000	\$26.84	\$906,381
Administrative Regular Pay (50%) - Bus-Hrs Driven	\$906,381		\$0.47								Work Hours	33,770	0.017	\$26.84	1.000	\$26.84	\$906,381
Administrative Overtime (50%) - Peak Bus Driven	\$22,743					\$30.94					Work Hours	716	0.975	\$31.75	1.000	\$31.75	\$22,743
Administrative Overtime (50%) - Bus-Hrs Driven	\$22,743		\$0.01								Work Hours	716	0.000	\$31.75	1.000	\$31.75	\$22,743
Clerical Regular Pay (50%) - Peak Bus Driven	\$755,115					\$1,027					Work Hours	36,849	50.135	\$20.49	1.000	\$20.49	\$755,115
Clerical Regular Pay (50%) - Bus Hrs Driven	\$755,115		\$0.39								Work Hours	36,849	0.019	\$20.49	1.000	\$20.49	\$755,115
Clerical Overtime (50%) - Peak Bus Driven	\$68,776					\$94					Work Hours	2,129	2.897	\$32.30	1.000	\$32.30	\$68,776
Clerical Overtime (50%) - Bus Hrs Driven	\$68,776		\$0.04								Work Hours	2,129	0.001	\$32.30	1.000	\$32.30	\$68,776
Fringe Benefits (50%) - Peak Bus Driven	\$1,547,341					\$2,105					Work Hours	97,011	131.988	\$15.95	1.000	\$15.95	\$1,547,341
Fringe Benefits (50%) - Bus Hrs Driven	\$1,547,341		\$0.80								Work Hours	97,011	0.050	\$15.95	1.000	\$15.95	\$1,547,341
Met Council Labor & Fringe Benefits (50%) - Pk Bus Driven	\$390,378					\$531					Peak Buses	735	1.000	\$531.13	1.000	\$531.13	\$390,378
Met Council Labor & Fringe Benefits (50%) - Bus Hrs Driven	\$390,378		\$0.20								Revenue Hours	1,943,037	1.000	\$0.20	1.000	\$0.201	\$390,378
Met Council Other Expenses (50%) - Pk Bus Driven	\$83,017					\$113					Peak Buses	735	1.000	\$113	1.000	\$113	\$83,017
Met Council Other Expenses (50%) - Bus Hrs Driven	\$83,017		\$0.04								Revenue Hours	1,943,037	1.000	\$0.04	1.000	\$0.043	\$83,017
Contract Services (50%) - Peak Bus Driven	\$276,164					\$376					Peak Buses	735	1.000	\$376	1.000	\$376	\$276,164
Contract Services (50%) - Bus Hrs Driven	\$276,164		\$0.14								Revenue Hours	1,943,037	1.000	\$0.14	1.000	\$0.142	\$276,164
Other Materials & Supplies (50%) - Peak Bus Driven	\$408,235					\$555					Peak Buses	735	1.000	\$555	1.000	\$555	\$408,235
Other Materials & Supplies (50%) - Bus Hrs Driven	\$408,235		\$0.21								Revenue Hours	1,943,037	1.000	\$0.21	1.000	\$0.210	\$408,235
Utilities	\$62,819					\$85.47					Peak Buses	735	1.000	\$85.47	1.000	\$85.47	\$62,819
Miscellaneous/Other	\$10,027					\$13.64					Peak Buses	735	1.000	\$13.64	1.000	\$13.64	\$10,027
Leases & Rentals	\$67,837					\$92.29					Peak Buses	735	1.000	\$92.29	1.000	\$92.29	\$67,837
Purchasing																	
Administrative Regular Pay (50%) - Miles Driven	\$155,896			\$0.01	\$0.01						Work Hours	5,808	0.000	\$26.84	1.000	\$26.84	\$155,896
Administrative Regular Pay (50%) - Tot Gar Driven	\$155,896							\$22,271			Work Hours	5,808	829.765	\$26.84	1.000	\$26.84	\$155,896
Administrative Overtime (50%) - Miles Driven	\$1,345			\$0.0001	\$0.0001						Work Hours	42	0.000	\$31.75	1.000	\$31.75	\$1,345
Administrative Overtime (50%) - Tot Garage Driven	\$1,345							\$192			Work Hours	42	6.054	\$31.75	1.000	\$31.75	\$1,345
Clerical Regular Pay (50%) - Miles Driven	\$23,481			\$0.001	\$0.001						Work Hours	1,146	0.000	\$20.49	1.000	\$20.49	\$23,481
Clerical Regular Pay (50%) - Tot Garage Driven	\$23,481							\$3,354			Work Hours	1,146	163.693	\$20.49	1.000	\$20.49	\$23,481
Fringe Benefits (50%) - Miles Driven	\$120,123			\$0.005	\$0.005						Work Hours	6,997	0.000	\$17.17	1.000	\$17.17	\$120,123
Fringe Benefits (50%) - Tot Garage Driven	\$120,123							\$17,160			Work Hours	6,997	999.512	\$17.17	1.000	\$17.17	\$120,123
Met Council Labor & Fringe Benefits (50%)	\$96,503			\$0.004	\$0.004						Total Miles	22,824,004	1.000	\$0.00	1.000	\$0.00	\$96,503
Met Council Labor & Fringe Benefits (50%)	\$96,503							\$13,786			Total Garages	7	1.000	\$13,786	1.000	\$13,786	\$96,503
Contract Services	\$4,002							\$572			Total Garages	7	1.000	\$572	1.000	\$572	\$4,002
Materials & Supplies	\$6,912							\$987			Total Garages	7	1.000	\$987	1.000	\$987	\$6,912
Utilities	\$0							\$0			Total Garages	7	1.000	\$0	1.000	\$0	\$0
Miscellaneous/Other	\$24,316							\$3,474			Total Garages	7	1.000	\$3,474	1.000	\$3,474	\$24,316

**Table 3-4
Metro Transit Bus Cost Model**

**METRO TRANSIT
Fully-Allocated Bus Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Bus Expenses	Existing Unit Cost Adjusted	Bus Supply Variable Unit Cost Rate (\$2010)							Productivity Ratio			Base Year Resource Unit Cost	Inflation Factor: 1.000			
			Revenue Bus-Hours	Non-Artic Bus-Miles	Articulated Bus-Miles	Peak Buses	Operating Garages	Total Garages	Transit Centers	Resource Variable	Resource Value	Resource/Supply		Inflation Factor	Year of \$:		
															2010 Resource Unit Cost	2010 Estimated Annual Cost	
ADMINISTRATIVE																	
Human Resources																	
Met Council Labor & Fringe Benefits (50%)	\$1,026,641			\$0.04	\$0.04						Total Miles	22,824,004	1.000	\$0.04	1.000	\$0.04	\$1,026,641
Met Council Labor & Fringe Benefits (50%)	\$1,026,641		\$0.53								Revenue Hours	1,943,037	1.000	\$0.53	1.000	\$0.53	\$1,026,641
Met Council Other Expenses (50%)	\$378,173			\$0.02	\$0.02						Total Miles	22,824,004	1.000	\$0.02	1.000	\$0.02	\$378,173
Met Council Other Expenses (50%)	\$378,173		\$0.19								Revenue Hours	1,943,037	1.000	\$0.19	1.000	\$0.19	\$378,173
Contract Services	(\$201)										Total Garages	7	1.000	(\$28.71)	1.000	(\$28.71)	(\$201)
Other Materials & Supplies	\$373										Total Garages	7	1.000	\$53.26	1.000	\$53.26	\$373
Information Services																	
Met Council Labor & Fringe Benefits (50%)	\$1,619,963			\$0.07	\$0.07						Total Miles	22,824,004	1.000	\$0.07	1.000	\$0.07	\$1,619,963
Met Council Labor & Fringe Benefits (50%)	\$1,619,963		\$0.83								Revenue Hours	1,943,037	1.000	\$0.83	1.000	\$0.83	\$1,619,963
Met Council Other Expenses (50%)	\$1,406,274			\$0.06	\$0.06						Total Miles	22,824,004	1.000	\$0.06	1.000	\$0.06	\$1,406,274
Met Council Other Expenses (50%)	\$1,406,274		\$0.72								Revenue Hours	1,943,037	1.000	\$0.72	1.000	\$0.72	\$1,406,274
Miscellaneous/Other	\$905								\$60.33		Transit Centers	15	1.000	\$60.33	1.000	\$60.33	\$905
ENGINEERING & FACILITIES																	
Engineering & Facilities																	
Administrative Regular Pay (50%) - T Center Driven	\$113,828									\$7,589	Work Hours	4,241	282.732	\$26.84	1.000	\$26.84	\$113,828
Administrative Regular Pay (50%) - Tot Gar Driven	\$113,828								\$16,261		Work Hours	4,241	605.854	\$26.84	1.000	\$26.84	\$113,828
Administrative Overtime (50%) - T Center Driven	\$6,089									\$406	Work Hours	192	12.786	\$31.75	1.000	\$31.75	\$6,089
Administrative Overtime (50%) - Tot Gar Driven	\$6,089								\$870		Work Hours	192	27.399	\$31.75	1.000	\$31.75	\$6,089
Fringe Benefits (50%) - T Center Driven	\$171,845									\$11,456	Work Hours	4,433	295.518	\$38.77	1.000	\$38.77	\$171,845
Fringe Benefits (50%) - Tot Garage Driven	\$171,845								\$24,549		Work Hours	4,433	633.253	\$38.77	1.000	\$38.77	\$171,845
Contract Services	\$23,767								\$3,395		Total Garages	7	1.000	\$3,395	1.000	\$3,395	\$23,767
Materials & Supplies	\$14,943								\$2,135		Total Garages	7	1.000	\$2,135	1.000	\$2,135	\$14,943
Utilities	\$17,533								\$2,505		Total Garages	7	1.000	\$2,505	1.000	\$2,505	\$17,533
Miscellaneous/Other	\$10,181								\$1,454		Total Garages	7	1.000	\$1,454	1.000	\$1,454	\$10,181
Leases & Rentals	\$18,861								\$2,694		Total Garages	7	1.000	\$2,694	1.000	\$2,694	\$18,861
System Facilities Engineering																	
Contract Services	\$298,276								\$42,611		Total Garages	7	1.000	\$42,611	1.000	\$42,611	\$298,276
Materials & Supplies	\$62,984								\$8,998		Total Garages	7	1.000	\$8,998	1.000	\$8,998	\$62,984
Utilities	\$8,701								\$1,243		Total Garages	7	1.000	\$1,243	1.000	\$1,243	\$8,701
Miscellaneous/Other	\$2,806								\$401		Total Garages	7	1.000	\$401	1.000	\$401	\$2,806
Leases & Rentals	\$8,978								\$1,283		Total Garages	7	1.000	\$1,283	1.000	\$1,283	\$8,978
Garage Building Maintenance																	
Mechanics Regular Pay	\$1,502,975								\$214,711		Work Hours	70,839	10,119.922	\$21.22	1.000	\$21.22	\$1,502,975
Mechanics Overtime	\$206,135								\$29,448		Work Hours	6,336	905.089	\$32.54	1.000	\$32.54	\$206,135
Fringe Benefits	\$1,309,907								\$187,130		Work Hours	77,175	11,025.011	\$16.97	1.000	\$16.97	\$1,309,907
Contract Services	\$455,566								\$65,081		Total Garages	7	1.000	\$65,081	1.000	\$65,081	\$455,566
Materials & Supplies	\$545,487								\$77,927		Total Garages	7	1.000	\$77,927	1.000	\$77,927	\$545,487
Utilities	\$79,346								\$11,335		Total Garages	7	1.000	\$11,335	1.000	\$11,335	\$79,346
Miscellaneous/Other	\$11,096								\$1,585		Total Garages	7	1.000	\$1,585	1.000	\$1,585	\$11,096
Leases & Rentals	\$4,644								\$663		Total Garages	7	1.000	\$663	1.000	\$663	\$4,644

**Table 3-4
Metro Transit Bus Cost Model**

**METRO TRANSIT
Fully-Allocated Bus Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Bus Expenses	Existing Unit Cost Adjusted	Bus Supply Variable Unit Cost Rate (\$2010)							Productivity Ratio			Base Year Resource Unit Cost	Inflation Factor: 1.000		
			Revenue Bus-Hours	Non-Artic Bus-Miles	Articulated Bus-Miles	Peak Buses	Operating Garages	Total Garages	Transit Centers	Resource Variable	Resource Value	Resource/Supply		Inflation Factor	Year of \$: 2010	
															Resource Unit Cost	Estimated Annual Cost
ENGINEERING & FACILITIES																
Other Facilities Maintenance																
Mechanics Regular Pay	\$651,310								\$43,421	Work Hours	30,698	2,046,538	\$21.22	1.000	\$21.22	\$651,310
Mechanics Overtime	\$38,069								\$2,538	Work Hours	1,170	78,004	\$32.54	1.000	\$32.54	\$38,069
Fringe Benefits	\$528,291								\$35,219	Work Hours	31,868	2,124,542	\$16.58	1.000	\$16.58	\$528,291
Other Contract Services	\$760,207								\$50,680	Transit Centers	15	1.000	\$50,680	1.000	\$50,680	\$760,207
Materials & Supplies	\$149,648								\$9,977	Transit Centers	15	1.000	\$9,977	1.000	\$9,977	\$149,648
Utilities	\$753,990								\$50,266	Transit Centers	15	1.000	\$50,266	1.000	\$50,266	\$753,990
Miscellaneous/Other	\$1,613								\$108	Transit Centers	15	1.000	\$108	1.000	\$108	\$1,613
Other Leases & Rentals	\$258,149								\$17,210	Transit Centers	15	1.000	\$17,210	1.000	\$17,210	\$258,149
Landscaping & Phone Administration																
Other Leases & Rentals	\$8,928								\$595	Transit Centers	15	1.000	\$595	1.000	\$595	\$8,928
Met Council Labor & Fringe Benefits	\$3,614								\$241	Transit Centers	15	1.000	\$241	1.000	\$241	\$3,614
Met Council Other Expenses	\$2,031								\$135	Transit Centers	15	1.000	\$135	1.000	\$135	\$2,031
Miscellaneous/Other	\$1,494								\$100	Transit Centers	15	1.000	\$100	1.000	\$100	\$1,494
BUS OPERATIONS																
BUS TRANSPORTATION																
Bus Transportation Administrative																
Administrative Regular Pay (25%) - Hours Driven	\$96,133		\$0.05							Work Hours	3,582	0.002	\$26.84	1.000	\$26.84	\$96,133
Administrative Regular Pay (75%) - Oper Gar Driven	\$288,400						\$48,067			Work Hours	10,745	1,790.862	\$26.84	1.000	\$26.84	\$288,400
Administrative Overtime (25%) - Hours Driven	\$584		\$0.0003							Work Hours	18	0.000	\$31.7480	1.000	\$31.75	\$584
Administrative Overtime (75%) - Oper Gar Driven	\$1,752						\$292			Work Hours	55	9.199	\$32	1.000	\$32	\$1,752
Fringe Benefits (25%) - Hours Driven	\$52,067		\$0.03							Work Hours	3,600	0.002	\$14.46	1.000	\$14.46	\$52,067
Fringe Benefits (75%) - Oper Gar Driven	\$156,200						\$26,033			Work Hours	10,800	1,800.061	\$14.46	1.000	\$14.46	\$156,200
Contract Services	\$72,926						\$12,154			Oper Garages	6	1.000	\$12,154	1.000	\$12,154	\$72,926
Materials & Supplies	\$45,725						\$7,621			Oper Garages	6	1.000	\$7,621	1.000	\$7,621	\$45,725
Utilities	\$29,535						\$4,923			Oper Garages	6	1.000	\$4,923	1.000	\$4,923	\$29,535
Miscellaneous/Other	\$72,993						\$12,165			Oper Garages	6	1.000	\$12,165	1.000	\$12,165	\$72,993
Facility Leases	\$13,232						\$2,205			Oper Garages	6	1.000	\$2,205	1.000	\$2,205	\$13,232
Operating Divisions (Garages)																
Driver Regular Pay	\$53,083,372		\$27.32							Work Hours	2,610,024	1.343	\$20.34	1.000	\$20.34	\$53,083,372
Driver Overtime	\$8,019,641		\$4.13							Work Hours	256,258	0.132	\$31.30	1.000	\$31.30	\$8,019,641
Administrative Regular Pay (25%) - Hours Driven	\$347,350		\$0.18							Work Hours	12,942	0.007	\$26.84	1.000	\$26.84	\$347,350
Administrative Regular Pay (75%) - Oper Gar Driven	\$1,042,051						\$173,675			Work Hours	38,825	6,470.761	\$26.84	1.000	\$26.84	\$1,042,051
Administrative Overtime (25%) - Hours Driven	\$13,732		\$0.01							Work Hours	433	0.000	\$31.75	1.000	\$31.75	\$13,732
Administrative Overtime (75%) - Oper Gar Driven	\$41,196						\$6,866			Work Hours	1,298	216.266	\$31.75	1.000	\$31.75	\$41,196
Clerical Regular Pay	\$1,786,910						\$297,818			Work Hours	87,199	14,533.246	\$20.49	1.000	\$20.49	\$1,786,910
Clerical Overtime	\$531,596						\$88,599			Work Hours	16,458	2,742.983	\$32.30	1.000	\$32.30	\$531,596
Fringe Benefits - Hours Driven	\$43,426,372		\$22.35							Work Hours	2,879,656	1.482	\$15.08	1.000	\$15.08	\$43,426,372
Fringe Benefits - Operating Garages Driven	\$2,403,449						\$400,575			Work Hours	143,780	23,963.256	\$17	1.000	\$17	\$2,403,449
Contract Services	\$208						\$35			Oper Garages	6	1.000	\$34.58	1.000	\$34.58	\$208
Materials & Supplies	\$109,490						\$18,248			Oper Garages	6	1.000	\$18,248	1.000	\$18,248	\$109,490
Utilities	\$3,529						\$588			Oper Garages	6	1.000	\$588	1.000	\$588	\$3,529
Miscellaneous/Other	\$5,110						\$852			Oper Garages	6	1.000	\$852	1.000	\$852	\$5,110

**Table 3-4
Metro Transit Bus Cost Model**

**METRO TRANSIT
Fully-Allocated Bus Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Bus Expenses	Existing Unit Cost Adjusted	Bus Supply Variable Unit Cost Rate (\$2010)							Productivity Ratio			Base Year Resource Unit Cost	Inflation Factor: 1.000			
			Revenue Bus-Hours	Non-Artic Bus-Miles	Articulated Bus-Miles	Peak Buses	Operating Garages	Total Garages	Transit Centers	Resource Variable	Resource Value	Resource/Supply		Inflation Factor	Year of \$:		
															2010 Resource Unit Cost	Estimated Annual Cost	
BUS OPERATIONS																	
District Street Supervision																	
Administrative Regular Pay (25%) - Hours Driven	\$371,554		\$0.19								Work Hours	13,843	0.007	\$26.84	1.000	\$26.84	\$371,554
Administrative Regular Pay (75%) - T Ctr Driven	\$1,114,662								\$74,311		Work Hours	41,530	2,768.661	\$26.84	1.000	\$26.84	\$1,114,662
Administrative Overtime (25%) - Hours Driven	\$68,869		\$0.04								Work Hours	2,169	0.001	\$31.75	1.000	\$31.75	\$68,869
Administrative Overtime (75%) - T Ctr Driven	\$206,608								\$13,774		Work Hours	6,508	433.849	\$31.75	1.000	\$31.75	\$206,608
Fringe Benefits - Hours Driven	\$224,554		\$0.12								Work Hours	16,013	0.008	\$14.02	1.000	\$14.02	\$224,554
Fringe Benefits - T Center Driven	\$673,663								\$44,911		Work Hours	48,038	3,202.510	\$14.02	1.000	\$14.02	\$673,663
Contract Services	\$11,725								\$782		Transit Centers	15	1.000	\$782	1.000	\$782	\$11,725
Materials & Supplies	\$17,706								\$1,180		Transit Centers	15	1.000	\$1,180	1.000	\$1,180	\$17,706
Utilities	\$13,540								\$903		Transit Centers	15	1.000	\$903	1.000	\$903	\$13,540
Miscellaneous/Other	\$1,184								\$78.93		Transit Centers	15	1.000	\$78.93	1.000	\$78.93	\$1,184
Leases & Rentals	\$2,483								\$166		Transit Centers	15	1.000	\$166	1.000	\$166	\$2,483
Transit Control Center																	
Administrative Regular Pay (75%) - Peak Bus Driven	\$1,001,491						\$1,363				Work Hours	37,313	50.767	\$26.84	1.000	\$26.84	\$1,001,491
Administrative Regular Pay (25%) - Hours Driven	\$333,830		\$0.17								Work Hours	12,438	0.006	\$26.84	1.000	\$26.84	\$333,830
Administrative Overtime (75%) - Peak Bus Driven	\$136,368						\$186				Work Hours	4,295	5.844	\$31.75	1.000	\$31.75	\$136,368
Administrative Overtime (25%) - Hours Driven	\$45,456		\$0.02								Work Hours	1,432	0.001	\$31.75	1.000	\$31.75	\$45,456
Fringe Benefits - Peak Bus Driven	\$655,272						\$892				Work Hours	41,609	56.610	\$15.75	1.000	\$15.75	\$655,272
Fringe Benefits - Hours Driven	\$218,424		\$0.11								Work Hours	13,870	0.007	\$15.75	1.000	\$15.75	\$218,424
Contract Services	\$1,050		\$0.0005								Revenue Hours	1,943,037	1.000	\$0.0005	1.000	\$0.0005	\$1,050
Materials & Supplies	\$7,782		\$0.004								Revenue Hours	1,943,037	1.000	\$0.004	1.000	\$0.004	\$7,782
Utilities	\$51,181		\$0.03								Revenue Hours	1,943,037	1.000	\$0.03	1.000	\$0.03	\$51,181
Miscellaneous/Other	\$4,850		\$0.002								Revenue Hours	1,943,037	1.000	\$0.002	1.000	\$0.002	\$4,850
Operator Instruction & Development																	
Administrative Regular Pay	\$128,988		\$0.07								Work Hours	4,806	0.002	\$26.84	1.000	\$26.84	\$128,988
Clerical Regular Pay	\$569,006		\$0.29								Work Hours	27,767	0.014	\$20.49	1.000	\$20.49	\$569,006
Clerical Overtime	\$37,529		\$0.02								Work Hours	1,162	0.001	\$32.30	1.000	\$32.30	\$37,529
Fringe Benefits	\$596,166		\$0.31								Work Hours	33,735	0.017	\$17.67	1.000	\$17.67	\$596,166
Contract Services	\$3,840		\$0.002								Revenue Hours	1,943,037	1.000	\$0.002	1.000	\$0.002	\$3,840
Materials & Supplies	\$11,890		\$0.01								Revenue Hours	1,943,037	1.000	\$0.01	1.000	\$0.01	\$11,890
Utilities	\$26		\$0.00001								Revenue Hours	1,943,037	1.000	\$0.00001	1.000	\$0.00001	\$26
Miscellaneous/Other	\$11,920		\$0.01								Revenue Hours	1,943,037	1.000	\$0.01	1.000	\$0.01	\$11,920
Leases & Rentals	\$1,373		\$0.001								Revenue Hours	1,943,037	1.000	\$0.001	1.000	\$0.001	\$1,373

Table 3-4 Metro Transit Bus Cost Model

METRO TRANSIT
Fully-Allocated Bus Cost Model
Expense Line Item Worksheet

Expense Line Item	2010 Bus Expenses	Existing Unit Cost Adjusted	Bus Supply Variable Unit Cost Rate (\$2010)							Productivity Ratio			Inflation Factor: 1.000				
			Revenue Bus-Hours	Non-Artic Bus-Miles	Articulated Bus-Miles	Peak Buses	Operating Garages	Total Garages	Transit Centers	Resource Variable	Resource Value	Resource/Supply	Base Year Resource Unit Cost	Year of \$: 2010			
														Inflation Factor	Resource Unit Cost	Estimated Annual Cost	
BUS OPERATIONS																	
BUS MAINTENANCE																	
Parts & Warranty Administrative																	
Mechanic Labor (75%) - Peak Bus Driven	\$3,488					\$4.75					Work Hours	164	0.224	\$21.217	1.000	\$21.217	\$3,488
Mechanic Labor (25%) - Tot Garage Driven	\$1,163							\$166			Work Hours	55	7.828	\$21.217	1.000	\$21.217	\$1,163
Administrative Regular Pay (75%) - Pk Bus Driven	\$765,458					\$1,041					Work Hours	28,519	38.802	\$26.840	1.000	\$26.840	\$765,458
Administrative Regular Pay (25%) - Tot Gar Driven	\$255,153							\$36,450			Work Hours	9,506	1,358.062	\$26.840	1.000	\$26.840	\$255,153
Administrative Overtime (75%) - Peak Bus Driven	\$19,449					\$26.46					Work Hours	613	0.833	\$31.748	1.000	\$31.748	\$19,449
Administrative Overtime (25%) - Tot Garage Driven	\$6,483							\$926			Work Hours	204	29.171	\$31.748	1.000	\$31.748	\$6,483
Clerical Regular Pay (75%) - Peak Bus Driven	\$940,558					\$1,280					Work Hours	45,898	62.447	\$20.492	1.000	\$20.492	\$940,558
Clerical Regular Pay (25%) - Tot Garage Driven	\$313,519							\$44,788			Work Hours	15,299	2,185.633	\$20.492	1.000	\$20.492	\$313,519
Clerical Overtime (75%) - Peak Bus Driven	\$243,461					\$331					Work Hours	7,537	10.255	\$32.300	1.000	\$32.300	\$243,461
Clerical Overtime (25%) - Tot Garage Driven	\$81,154							\$11,593			Work Hours	2,512	358.924	\$32.300	1.000	\$32.300	\$81,154
Fringe Benefits - Peak Bus Driven	\$1,389,909					\$1,891					Work Hours	82,732	112.561	\$16.80	1.000	\$16.80	\$1,389,909
Fringe Benefits - Total Garage Driven	\$463,303							\$66,186			Work Hours	27,577	3,939.618	\$16.80	1.000	\$16.80	\$463,303
Contract Services	\$22,843							\$3,263			Total Garages	7	1.000	\$3,263	1.000	\$3,263	\$22,843
Bus Parts & Tires	\$180,140							\$25,734			Total Garages	7	1.000	\$25,734	1.000	\$25,734	\$180,140
Other Materials & Supplies	\$36,305							\$5,186			Total Garages	7	1.000	\$5,186	1.000	\$5,186	\$36,305
Utilities	\$3,019							\$431			Total Garages	7	1.000	\$431	1.000	\$431	\$3,019
Miscellaneous/Other	\$20,017							\$2,860			Total Garages	7	1.000	\$2,860	1.000	\$2,860	\$20,017
Garage Maintenance Divisions																	
Mechanics Regular Pay - Non-Articulated Bus	\$10,617,942					\$0.47					Work Hours	500,454	0.022	\$21.22	1.000	\$21.22	\$10,617,942
Mechanics Regular Pay - Articulated Bus	\$168,057	X				\$0.57					Work Hours	7,921	0.022	\$25.46	1.000	\$25.46	\$168,057
Mechanics Overtime - Non-Articulated Bus	\$1,249,817					\$0.06					Work Hours	38,414	0.002	\$32.54	1.000	\$32.54	\$1,249,817
Mechanics Overtime - Articulated Bus	\$19,782	X				\$0.07					Work Hours	608	0.002	\$39.04	1.000	\$39.04	\$19,782
Administrative Regular Pay (75%) - Total Miles Driven	\$1,365,358					\$0.06	\$0.06				Work Hours	50,870	0.002	\$26.84	1.000	\$26.84	\$1,365,358
Administrative Regular Pay (25%) - Tot Gar Driven	\$455,119							\$65,017			Work Hours	16,957	2,422.395	\$26.84	1.000	\$26.84	\$455,119
Administrative Overtime (75%) - Total Miles Driven	\$55,137					\$0.002	\$0.002				Work Hours	1,737	0.000	\$31.75	1.000	\$31.75	\$55,137
Administrative Overtime (25%) - Tot Gar Driven	\$18,379							\$2,626			Work Hours	579	82.701	\$31.75	1.000	\$31.75	\$18,379
Clerical Regular Pay	\$186,552							\$26,650			Work Hours	9,104	1,300.507	\$20.49	1.000	\$20.49	\$186,552
Clerical Overtime	\$6,280							\$897			Work Hours	194	27.773	\$32.30	1.000	\$32.30	\$6,280
Fringe Benefits - Non-Articulated Miles Driven	\$8,675,707	X				\$0.39					Work Hours	538,867	0.024	\$16.10	1.000	\$16.10	\$8,675,707
Fringe Benefits - Articulated Miles Driven	\$137,316	X				\$0.46					Work Hours	8,529	0.029	\$16.10	1.000	\$16.10	\$137,316
Fringe Benefits - Total Miles Driven	\$1,038,427					\$0.05	\$0.05				Work Hours	52,607	0.002	\$19.74	1.000	\$19.74	\$1,038,427
Fringe Benefits - Tot Garages Driven	\$487,108							\$69,587			Work Hours	26,834	3,833.376	\$18	1.000	\$18	\$487,108
Contract Services	\$45,193							\$6,456			Total Garages	7	1.000	\$6,456	1.000	\$6,456	\$45,193
Fuel & Lubricants - Non-Articulated Bus	\$20,417,105	X				\$0.91					Gallons	7,054,212	0.313	\$2.89	1.000	\$2.89	\$20,417,105
Fuel & Lubricants - Articulated Bus	\$323,154	X				\$1.09					Gallons	111,651	0.376	\$2.89	1.000	\$2.89	\$323,154
Bus Parts & Tires - Non-Articulated Bus	\$9,289,166	X				\$0.41					Non-Artic Miles	22,526,881	1.000	\$0.41	1.000	\$0.41	\$9,289,166
Bus Parts & Tires - Articulated Bus	\$147,025	X				\$0.49					Artic Miles	297,123	1.000	\$0.49	1.000	\$0.49	\$147,025
Other Materials & Supplies	\$995,365							\$1,354			Peak Buses	735	1.000	\$1,354	1.000	\$1,354	\$995,365
Utilities	\$1,990,134							\$284,305			Total Garages	7	1.000	\$284,305	1.000	\$284,305	\$1,990,134
Miscellaneous/Other - Total Miles Driven	\$6,304					\$0.00	\$0.00				Total Miles	22,824,004	1.000	\$0.00	1.000	\$0.00	\$6,304
Leases & Rentals	\$2,993							\$428			Total Garages	7	1.000	\$428	1.000	\$428	\$2,993

**Table 3-4
Metro Transit Bus Cost Model**

**METRO TRANSIT
Fully-Allocated Bus Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Bus Expenses	Existing Unit Cost Adjusted	Bus Supply Variable Unit Cost Rate (\$2010)							Productivity Ratio			Inflation Factor: 1.000						
			Revenue Bus-Hours	Non-Artic Bus-Miles	Articulated Bus-Miles	Peak Buses	Operating Garages	Total Garages	Transit Centers	Resource Variable	Resource Value	Resource/Supply	Base Year Resource Unit Cost	Year of \$: 2010					
														Inflation Factor	Resource Unit Cost	Estimated Annual Cost			
BUS OPERATIONS																			
Non-Revenue Vehicles																			
Mechanics Regular Pay	\$302,554					\$412						Work Hours	14,260	19,402	\$21.22	1.000	\$21.22	\$302,554	
Mechanics Overtime	\$4,589					\$6.24						Work Hours	141	0.192	\$32.54	1.000	\$32.54	\$4,589	
Administrative Regular Pay	\$40,373			\$0.002	\$0.002							Work Hours	1,504	0.000	\$26.84	1.000	\$26.84	\$40,373	
Fringe Benefits - Bus-Miles Driven	\$250,399			\$0.011	\$0.011							Work Hours	1,504	0.000	\$166.47	1.000	\$166.47	\$250,399	
Fringe Benefits - Peak Buses Driven	\$32,914					\$45						Work Hours	14,401	19,594	\$2.29	1.000	\$2.29	\$32,914	
Contract Services	\$10,635					\$14.47						Peak Buses	735	1.000	\$14.47	1.000	\$14.47	\$10,635	
Bus Parts & Tires	\$9					\$0.01						Peak Buses	735	1.000	\$0.01	1.000	\$0.01	\$9	
Other Materials & Supplies	\$274,386					\$373						Peak Buses	735	1.000	\$373	1.000	\$373	\$274,386	
Miscellaneous/Other	\$121					\$0.16						Peak Buses	735	1.000	\$0.16	1.000	\$0.16	\$121	
Leases & Rentals	\$326					\$0.44						Peak Buses	735	1.000	\$0.44	1.000	\$0.44	\$326	
Heavy Maintenance Functions																			
Mechanics Regular Pay - Non-Articulated Bus	\$3,028,506	X		\$0.13								Work Hours	142,742	0.006	\$21.22	1.000	\$21.22	\$3,028,506	
Mechanics Regular Pay - Articulated Bus	\$47,934	X			\$0.16							Work Hours	2,259	0.006	\$25.46	1.000	\$25.46	\$47,934	
Mechanics Overtime - Non-Articulated Bus	\$81,692	X		\$0.004								Work Hours	2,511	0.000	\$32.536	1.000	\$32.54	\$81,692	
Mechanics Overtime - Articulated Bus	\$1,293	X			\$0.004							Work Hours	40	0.000	\$39.043	1.000	\$39.04	\$1,293	
Administrative Regular Pay - Total Miles Driven	\$240,732			\$0.01	\$0.01							Work Hours	8,969	0.000	\$26.84	1.000	\$26.84	\$240,732	
Administrative Overtime - Total Miles Driven	\$2,725			\$0.0001	\$0.0001							Work Hours	86	0.000	\$31.7480	1.000	\$31.75	\$2,725	
Clerical Regular Pay - Total Miles Driven	\$38,743			\$0.0017	\$0.0017							Work Hours	1,891	0.000	\$20.4922	1.000	\$20.49	\$38,743	
Clerical Overtime - Total Miles Driven	\$2,740			\$0.0001	\$0.0001							Work Hours	85	0.000	\$32.3004	1.000	\$32.30	\$2,740	
Fringe Benefits - Non-Articulated Miles Driven	\$2,598,774	X		\$0.12								Work Hours	145,253	0.006	\$17.89	1.000	\$17.89	\$2,598,774	
Fringe Benefits - Articulated Miles Driven	\$41,132	X			\$0.14							Work Hours	2,299	0.008	\$17.89	1.000	\$17.89	\$41,132	
Fringe Benefits - Total Miles Driven	\$238,086			\$0.01	\$0.01							Work Hours	11,030	0.000	\$21.58	1.000	\$21.58	\$238,086	
Contract Services - Total Miles Driven	\$176,122			\$0.01	\$0.01							Total Miles	22,824,004	1.000	\$0.01	1.000	\$0.01	\$176,122	
Bus Parts & Tires - Non-Articulated Bus	(\$2,440,818)	X		(\$0.11)								Non-Artic Miles	22,526,881	1.000	(\$0.11)	1.000	(\$0.11)	(\$2,440,818)	
Bus Parts & Tires - Articulated Bus	(\$38,632)	X			(\$0.13)							Artic Miles	297,123	1.000	(\$0.13)	1.000	(\$0.13)	(\$38,632)	
Other Materials & Supplies - Total Miles Driven	\$494,358			\$0.02	\$0.02							Total Miles	22,824,004	1.000	\$0.02	1.000	\$0.02	\$494,358	
Utilities - Total Miles Driven	\$562,697			\$0.02	\$0.02							Total Miles	22,824,004	1.000	\$0.02	1.000	\$0.02	\$562,697	
Miscellaneous/Other - Total Miles Driven	\$3,623			\$0.0002	\$0.0002							Total Miles	22,824,004	1.000	\$0.0002	1.000	\$0.00	\$3,623	
Leases & Rentals - Total Miles Driven	\$31,559			\$0.001	\$0.001							Total Miles	22,824,004	1.000	\$0.001	1.000	\$0.00	\$31,559	
RISK MANAGEMENT																			
Met Council Labor & Fringe Benefits - Tot Miles Driven	\$968,207			\$0.042	\$0.042							Total Miles	22,824,004	1.000	\$0.04	1.000	\$0.04	\$968,207	
Met Council Other Expenses - Total Miles Driven	\$163,962			\$0.007	\$0.007							Total Miles	22,824,004	1.000	\$0.01	1.000	\$0.01	\$163,962	
Contract Services - Total Miles Driven	\$685,257			\$0.030	\$0.030							Total Miles	22,824,004	1.000	\$0.03	1.000	\$0.03	\$685,257	
Casualty & Liability - Total Miles Driven	\$2,428,771			\$0.106	\$0.106							Total Miles	22,824,004	1.000	\$0.11	1.000	\$0.11	\$2,428,771	
TOTALS	\$241,151,989			\$62.14	\$2.99	\$3.47	\$36.102	\$1,100,717	\$1,431,084	\$588,580								\$241,151,989	
2010 Resource Variable Values				1,943,037	22,526,881	297,123	735	6	7	15									
Notes:																			
1. Select articulated bus-related expenses reflect 20% additional cost over non-articulated buses.																			
																		Revenue Hours (all buses)	1,943,037
																		Revenue Miles - Non-Articulated	22,526,881
																		Revenue Miles - Articulated	297,123
																		Peak Buses (Non-Artic + Artic)	735
																		Operating Garages	6
																		Total Garages (incl. heavy maint.)	7
																		Transit Centers	15

**Table 3-5
Metro Transit Bus Cost Model – Cost Summary Table**

Division	Department	Labor	Fringe Benefits	Met Council Labor/Fringe	Contract Services	Materials & Supplies	Utilities	Misc.	Leases & Rentals	Casualty & Liability	Met Council Non-Labor	TOTAL COSTS	
Executive	Internal Audit	\$208,111										\$8,766	\$216,877
	Executive	\$662,497	\$557,917	\$1,144,373	\$91,518	\$112,264	\$474,476	\$1,222,530			\$1,507,189	\$5,772,764	
	Police/Security	\$3,306,182	\$1,629,612		\$136,037	\$72,844	\$37,043	\$18,680				\$5,200,398	
	Safety	\$521,508	\$351,151		\$5,513	\$3,619	\$422	\$21,257				\$903,469	
Administrative	Customer Relations	\$354,940	\$231,178		\$1,625	\$8,977		\$7,134				\$603,855	
	Transit Info Ctr.	\$1,600,780	\$1,154,700		\$40,175	\$214,660	\$1,018	\$3,201	\$2,077			\$3,016,611	
	Marketing	\$709,184	\$418,627	\$114,919	\$1,214,269	\$486,558		\$1,077,381	\$65,209		\$39,294	\$4,125,440	
	Service Development	\$1,423,093	\$874,811		\$32,070	\$937	\$1,198	\$5,450				\$2,337,558	
	Finance	\$4,524,757	\$3,094,681	\$780,757	\$552,327	\$816,471	\$62,819	\$10,027	\$67,837		\$166,034	\$10,075,710	
	Purchasing	\$361,445	\$240,245	\$193,005	\$4,002	\$6,912	\$0	\$24,316				\$829,925	
	Human Resources			\$2,053,282	-\$201	\$373					\$756,346	\$2,809,800	
Information Services			\$3,239,926				\$905			\$2,812,547	\$6,053,378		
Engineering & Facilities	Eng. & Facilities	\$239,834	\$343,689		\$23,767	\$14,943	\$17,533	\$10,181	\$18,861			\$668,808	
	System facilities Eng.				\$298,276	\$62,984	\$8,701	\$2,806	\$8,978			\$381,744	
	Garage Bldg. Maint.	\$1,709,109	\$1,309,907		\$455,566	\$545,487	\$79,346	\$11,096	\$4,644			\$4,115,154	
	Other Fac. Maint.	\$689,379	\$528,291		\$760,207	\$149,648	\$753,990	\$1,613	\$258,149			\$3,141,277	
	Landscaping/Phone Admin.			\$3,614				\$1,494	\$8,928		\$2,031	\$16,067	
Bus Operations	Bus Transp. Admin.	\$386,870	\$208,267		\$72,926	\$45,725	\$29,535	\$72,993	\$13,232			\$829,549	
	Operating Divisions	\$64,865,849	\$45,829,821		\$208	\$109,490	\$3,529	\$5,110				\$110,814,005	
	District Street Superv.	\$1,761,693	\$898,217		\$11,725	\$17,706	\$13,540	\$1,184	\$2,483			\$2,706,549	
	Transit Control Ctr.	\$1,517,145	\$873,696		\$1,050	\$7,782	\$51,181	\$4,850				\$2,455,705	
	Oper. Instruct. & Dev.	\$735,523	\$596,166		\$3,840	\$11,890	\$26	\$11,920	\$1,373			\$1,360,738	
	Parts & Warranty Admin.	\$2,629,883	\$1,853,212		\$22,843	\$216,445	\$3,019	\$20,017				\$4,745,419	
	Garage Maint. Divisions	\$14,142,423	\$10,338,558		\$45,193	\$31,171,815	\$1,990,134	\$6,304	\$2,993			\$57,697,420	
	Non-Rev. Vehicles	\$347,515	\$283,313		\$10,635	\$274,395		\$121	\$326			\$916,306	
	Heavy Maint. Functions	\$3,444,366	\$2,877,992		\$176,122	-\$1,985,093	\$562,697	\$3,623	\$31,559			\$5,111,267	
	Risk Mgmt.			\$968,207	\$685,257					\$2,428,771	\$163,962	\$4,246,197	
TOTAL COSTS		\$105,933,975	\$74,494,053	\$8,706,194	\$4,644,948	\$32,366,831	\$4,090,205	\$2,544,192	\$486,648	\$2,428,771	\$5,456,170	\$241,151,989	

Table 3-6
Application of Metro Transit Bus Cost Model
With Prior Year Operating Statistics

Department	Cost Model Estimate for:		
	2010	2009	2008
Executive	\$12,093,507	\$11,843,709	\$12,088,492
Administrative	\$29,852,276	\$29,281,512	\$29,683,836
Engineering & Facilities	\$8,323,051	\$8,133,759	\$7,990,261
Bus Operations	\$190,883,154	\$187,509,980	\$191,887,481
Rail Operations	\$0	\$0	\$0
Total	\$241,151,989	\$236,768,959	\$241,650,070
% Diff. from Actual	0.0%	-0.9%	4.4%

4.0 METRO TRANSIT LIGHT RAIL O&M COST METHODOLOGY

The Metro Transit light rail transit (LRT) O&M cost model is based on actual 2010 allocated light rail expenses, by agency department, and service statistics that were provided by Metro Transit. The agency's financial data allocates costs to specific modes (bus, light rail, commuter rail), and to departments and cost centers. Labor and non-labor costs are further broken out by cost category. Appendix A presents the 2010 allocated cost data that Metro Transit provided. These data were compared to allocated costs reported to the NTD for the past three years. The numbers were found to vary slightly, as shown below in Table 4-1. Despite this slight difference, it is still preferable to use the financial data provided for this project because the level of detail exceeds that required for the NTD and enables a correspondingly more detailed spreadsheet cost model. It is important to note that the model also includes leases and rental costs, which are not included in NTD's modal allocation of expenses.

Table 4-1
Comparison of Metro Transit-Supplied Allocated Cost Data vs. NTD-Reported Allocated Costs for Light Rail Transit

Report Year	Data Source	Costs
2010	NTD Report	\$25,736,123
	Metro-Supplied #'s	\$25,780,929
	Difference	-\$44,806
	% Difference	-0.2%
2009	NTD Report	\$25,002,424
	Metro-Supplied #'s	25,200,459
	Difference	-\$198,035
	% Difference	-0.8%
2008	NTD Report	\$23,697,504
	Metro-Supplied #'s	23,745,119
	Difference	-\$47,615
	% Difference	-0.2%

4.1 Key Supply Variables

After collection of financial and service data, modeling proceeded with selecting the key driving supply variables for the existing light rail system:

- **Peak Cars:** The maximum number of passenger service vehicles actually operated simultaneously on an average weekday. The model may use peak cars as a variable when it needs to estimate a line item cost based on overall rail system size.
- **Annual Revenue Car-Miles:** Consistent with the NTD, this variable is defined as the miles that passenger vehicles travel while in revenue service over an entire fiscal year. Revenue car-miles include layover and schedule recovery but exclude miles for deadhead, operator training and maintenance testing.
- **Annual Revenue Train-Hours:** The hours that trains, of any number of passenger cars, travel while in revenue service over the entire fiscal year. Revenue train-hours include layover and schedule recovery but exclude time for deadhead, operator training and maintenance testing.
- **Passenger Stations:** Stations are passenger boarding/alighting facilities with a platform which may include stairs, escalators, canopies, wind shelters, lighting, ticket machines and signage. For this project, the cost model was developed to distinguish between passenger stations with and without park-and-ride lots, primarily for purposes of costing out differences in security and facilities maintenance costs. A more in-depth discussion of these cost differences is provided later in this section of the report.
- **End-of-Line Stations:** Although included in the total station count for most line items related to passenger stations, there are some functions unique to end-of-line stations in a multi-line light rail system (e.g., supervision of operations).
- **Fixed Guideway Directional Route Miles:** The mileage in each direction over which trains travel in revenue service. Directional route miles exclude staging or storage tracks at the beginning or end of a rail line. From a maintenance perspective, the guideway includes all buildings and structures dedicated to the operation of transit including track, tunnels, bridges, and the electrification system.
- **Maintenance Facilities:** The sites, usually comprised of storage yards and shops, where light rail vehicles are inspected, repaired, maintained and stored. It is not unusual for both heavy and light maintenance activities to occur in the same facility.

Table 4-2 shows the key supply variables and values used to represent the model's base year (FY 2010) inputs.

Table 4-2
Metro Transit Light Rail Cost Model
Supply Variable Inputs

Light Rail	
Peak Cars	24
Annual Revenue Car-Miles	2,013,961
Annual Revenue Train-Hours	69,586
Passenger Stations	
Stations with Park-and-Ride	3
Stations without Park-and-Ride	16
End-of-Line Stations	1
Fixed Guideway Directional Route Miles	24.7
Maintenance Facilities	1

The stations with park-and-ride lots included in the Base Year light rail system are Fort Snelling, Lake Street/Midtown and 28th Avenue.

4.2 Line Item Expenses

After selecting the key supply variables, the next step in model development was to record Metro Transit's light rail expenses as a series of line items. Conversations with staff enabled some of the line items to be divided for more modeling detail. After the line items were established, each one was assigned a key supply variable as its most relevant cost driver, and unit costs and productivity ratios were calculated.

Cost data provided by Metro Transit breaks rail-related O&M costs into the following categories:

- **Executive**
 - Executive
 - Police/Security
- **Administrative**
 - Customer Relations
 - Transit Info Center
 - Marketing
 - Service Development
- **Rail Operations**
 - AGM Rail Operations
 - Rail Transportation Administrative
 - Rail Operators
 - Hiawatha (HLRT) Vehicle Maintenance
 - HLRT System Maintenance
 - Stores
 - Rail Facility Maintenance
 - Janitors
 - Bus Operations Direct Charged

Cost data provided by Metro Transit Finance staff breaks labor costs into the following categories:

- Administrative – regular and overtime pay
- Clerical – regular and overtime pay
- Mechanic – regular and overtime pay
- Operator – regular and overtime pay

Metro Transit Finance staff provided approximate regular and overtime pay rates for each of these four labor categories. These approximate rates were used to estimate work hours for each category. The estimate of work hours was then adjusted to match labor work hours that were reported in Metro Transit's 2010 NTD. Fringe benefit cost estimates in the model pivot off labor work hours.

Non-labor costs are defined by the following categories:

- Contract Services
- Materials & Supplies (including bus parts and tires, and fuel and lubricants)
- Utilities
- Miscellaneous
- Leases & Rentals
- Casualty & Liability

Finally, cost data provided by Metro Transit includes Met Council labor and non-labor costs. As noted for the bus cost model, Met Council provides services to Metro Transit such as payroll, accounting and human resources that are allocated as a transit service-related expense. Since work hours were not readily available for Met Council labor costs, these expenses have been assigned directly to supply variables.

The LRT cost model developed for this project includes one unique cost adjustment – it differentiates between stations with and without park-and-ride facilities. Although Metro Transit operating expenses do not distinguish between maintenance costs for stations with and without park-and-rides, it is assumed that stations with park-and-ride facilities have higher maintenance costs, for parking lots/structures such as additional lighting (i.e., utility costs), snow removal and periodic maintenance (e.g., filling potholes, periodic re-striping, pavement sweeping). For purposes of this project, it has been assumed that stations with park-and-ride facilities have twice the maintenance costs as stations without park-and-rides. With regard to Metro Transit’s existing Hiawatha Line, three stations have existing park-and-ride facilities: 28th Avenue Station, Fort Snelling Station and Lake Street/Midtown Station.

Line items that have been adjusted to reflect differences in LRT stations with and without park-and-ride lots are as follows:

- Station utilities
- Janitorial labor and fringe benefit costs
- Janitorial materials and supplies

All other line item costs that are driven by stations do not differentiate between the type of station.

Table 4-3 summarizes the dollar impact that each of the LRT cost model’s key supply variables has on the calibration (base year) system. The unit costs in this table reflect the dollar amount the model will adjust for each added or deleted unit of a supply variable – the incremental change from the calibration bus system. In other words, for each revenue car-mile added, the model will increase its total estimate by \$2.92; for each revenue train-hour deleted, the model will subtract \$131.91 from its estimate, and so forth.

Table 4-3
Metro Transit LRT Cost Model
Supply Variable Impacts for the 2010 Calibration Light Rail System
(in 2010 dollars)

Key Supply Variable	Share of Total O&M Cost		Unit Cost
	Dollar Amount	Percentage	
Peak Cars	\$1,435,248	6%	\$59,802
Annual Revenue Car-Miles	\$5,874,151	23%	\$2.92
Annual Revenue Train-Hours	\$9,179,170	36%	\$131.91
Passenger Stations			
Stations with Park-and-Ride	\$452,339	2%	\$150,780
Stations without Park-and-Ride	\$1,024,386	4%	\$64,024
End-of-Line Stations	\$180,098	1%	\$180,098
Fixed Guideway Directional Route Miles	\$4,680,372	18%	\$189,489
Maintenance Facilities	\$3,014,567	12%	\$3,014,567
Total	\$25,840,332	100%	

Table 4-4 presents the light rail O&M cost model worksheet, created with the base year supply variable inputs from Table 4-1. Note that the results in the sample model represent 2010 dollars (i.e., the costs have not been inflated to 2011 dollars). A tabular summary of the model run's expenses by Metro Transit division/department is presented in Table 4-5.

As with the bus cost model, operating statistics for the two prior years were applied to the LRT cost model in order to compare model results to actual Metro Transit-reported costs. Model results were deflated based on the consumer price index-reported inflation factor for the Minneapolis-St. Paul region. Results from this comparison of historical costs are presented in Table 4-6.

**Table 4-4
Metro Transit LRT Cost Model**

**METRO TRANSIT
Fully-Allocated LRT Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Rail Expenses	Existing Unit Cost Adjusted	LRT Supply Variable Unit Cost Rate (\$2010)										Productivity Ratio			Inflation Factor: 1.000			
			Revenue Train-Hours	Revenue Car-Miles	Peak Cars	Yards	Directional Route Miles	Stations with PnR	Stations w/o PnR	End-of-Line Stations	Resource Variable	Resource Value	Resource/Supply	Base Year Resource Unit Cost	Inflation Factor	Year of \$:	2010 Resource Unit Cost	Estimated Annual Cost	
EXECUTIVE																			
Executive																			
Administrative Regular Pay	\$36,432				\$1,518								Work Hours	975	40.615	\$37.37	1.000	\$37.37	\$36,432
Administrative Overtime	\$623				\$25.95								Work Hours	14	0.567	\$45.75	1.000	\$45.75	\$623
Fringe Benefits	\$31,205				\$1,300								Work Hours	988	41.182	\$31.57	1.000	\$31.57	\$31,205
Met Council Labor & Fringe Benefits	\$64,007				\$2,667								Peak Cars	24	1.000	\$2,667	1.000	\$2,667	\$64,007
Met Council Other Expenses	\$84,300				\$3,512								Peak Cars	24	1.000	\$3,512	1.000	\$3,512	\$84,300
Contract Services	\$5,119		\$0.07										Train Hours	69,586	1.000	\$0.07	1.000	\$0.07	\$5,119
Materials & Supplies	\$6,279				\$262								Peak Cars	24	1.000	\$262	1.000	\$262	\$6,279
Utilities	\$26,538					\$26,538							Yards	1	1.000	\$26,538	1.000	\$26,538	\$26,538
Miscellaneous/Other	\$68,378				\$2,849								Peak Cars	24	1.000	\$2,849	1.000	\$2,849	\$68,378
Police/Security																			
Administrative Regular Pay (50%) - Train Hr Driven	\$699,574		\$10.05										Work Hours	18,718	0.269	\$37.37	1.000	\$37.37	\$699,574
Administrative Regular Pay (25%) - Track Mi Driven	\$349,787					\$14,161							Work Hours	9,359	378.902	\$37.37	1.000	\$37.37	\$349,787
Administrative Regular Pay (25%) - Stations Driven	\$349,787						\$18,410	\$18,410					Work Hours	9,359	492.572	\$37.37	1.000	\$37.37	\$349,787
Administrative Overtime (50%) - Train Hr Driven	\$57,848		\$0.83										Work Hours	1,264	0.018	\$45.75	1.000	\$45.75	\$57,848
Administrative Overtime (25%) - Track Mi Driven	\$28,924					\$1,171							Work Hours	632	25.594	\$45.75	1.000	\$45.75	\$28,924
Administrative Overtime (25%) - Stations Driven	\$28,924						\$1,522	\$1,522					Work Hours	632	33.272	\$45.75	1.000	\$45.75	\$28,924
Fringe Benefits - Train Hour Driven	\$373,332		\$5.37										Work Hours	19,982	0.287	\$18.68	1.000	\$18.68	\$373,332
Fringe Benefits - Track Mile Driven	\$186,666					\$7,557							Work Hours	9,991	404.496	\$18.68	1.000	\$18.68	\$186,666
Fringe Benefits - Stations Driven	\$186,666						\$9,825	\$9,825					Work Hours	9,991	525.845	\$18.68	1.000	\$18.68	\$186,666
Contract Services (50%) - Train Hours Driven	\$31,165		\$0.45										Train Hours	69,586	1.000	\$0.45	1.000	\$0.45	\$31,165
Contract Services (25%) - Track Mile Driven	\$15,583					\$631							Track Miles	25	1.000	\$631	1.000	\$631	\$15,583
Contract Services (25%) - Stations Driven	\$15,583						\$820	\$820					Stations	19	1.000	\$820	1.000	\$820	\$15,583
Materials & Supplies (50%) - Train Hours Driven	\$16,688		\$0.24										Train Hours	69,586	1.000	\$0.24	1.000	\$0.24	\$16,688
Materials & Supplies (25%) - Track Miles Driven	\$8,344					\$338							Track Miles	25	1.000	\$338	1.000	\$338	\$8,344
Materials & Supplies (25%) - Stations Driven	\$8,344						\$439	\$439					Stations	19	1.000	\$439	1.000	\$439	\$8,344
Utilities	\$16,972					\$16,972							Yards	1	1.000	\$16,972	1.000	\$16,972.33	\$16,972
Miscellaneous/Other	\$8,559		\$0.12										Train Hours	69,586	1.000	\$0.12	1.000	\$0.12	\$8,559
ADMINISTRATIVE																			
Customer Relations																			
Administrative Regular Pay	\$34,511		\$0.50										Work Hours	923	0.013	\$37.37	1.000	\$37.37	\$34,511
Administrative Overtime	\$207		\$0.003										Work Hours	5	0.000	\$45.75	1.000	\$45.75	\$207
Clerical Regular Pay	\$23,799		\$0.34										Work Hours	814	0.012	\$29.24	1.000	\$29.24	\$23,799
Clerical Overtime	\$286		\$0.004										Work Hours	7	0.000	\$43.73	1.000	\$43.73	\$286
Fringe Benefits	\$38,299		\$0.55										Work Hours	1,748	0.025	\$21.91	1.000	\$21.91	\$38,299
Contract Services	\$269		\$0.004										Train Hours	69,586	1.000	\$0.00	1.000	\$0.00	\$269
Materials & Supplies	\$1,487		\$0.02										Train Hours	69,586	1.000	\$0.02	1.000	\$0.02	\$1,487
Miscellaneous/Other	\$1,182		\$0.02										Train Hours	69,586	1.000	\$0.02	1.000	\$0.02	\$1,182
Transit Info Center																			
Administrative Regular Pay	\$20,437									\$20,437			Work Hours	547	546.801	\$37.37	1.000	\$37.37	\$20,437
Administrative Overtime	\$409									\$409			Work Hours	9	8.937	\$45.75	1.000	\$45.75	\$409
Clerical Regular Pay	\$54,313									\$54,313			Work Hours	1,857	1,857.433	\$29.24	1.000	\$29.24	\$54,313
Clerical Overtime	\$1,926									\$1,926			Work Hours	44	44.036	\$43.73	1.000	\$43.73	\$1,926
Fringe Benefits	\$55,604									\$55,604			Work Hours	2,457	2,457.207	\$22.63	1.000	\$22.63	\$55,604
Contract Services	\$1,935									\$1,935			End-of-Line Stat.	1	1.000	\$1,935	1.000	\$1,935	\$1,935
Materials & Supplies	\$10,337									\$10,337			End-of-Line Stat.	1	1.000	\$10,337	1.000	\$10,337	\$10,337
Utilities	\$49									\$49.01			End-of-Line Stat.	1	1.000	\$49.01	1.000	\$49	\$49
Miscellaneous/Other	\$154									\$154			End-of-Line Stat.	1	1.000	\$154.13	1.000	\$154	\$154
Leases & Rentals	\$100									\$100			End-of-Line Stat.	1	1.000	\$100.03	1.000	\$100	\$100

**Table 4-4
Metro Transit LRT Cost Model**

METRO TRANSIT
Fully-Allocated LRT Cost Model
Expense Line Item Worksheet

Expense Line Item	2010 Rail Expenses	Existing Unit Cost Adjusted	LRT Supply Variable Unit Cost Rate (\$2010)									Productivity Ratio			Inflation Factor: 1.000				
			Revenue Train-Hours	Revenue Car-Miles	Peak Cars	Yards	Directional Route Miles	Stations with PnR	Stations w/o PnR	End-of-Line Stations	Resource Variable	Resource Value	Resource/Supply	Base Year Resource Unit Cost	Inflation Factor	Year of \$: Resource Unit Cost	2010 Estimated Annual Cost		
ADMINISTRATIVE																			
Marketing																			
Administrative Regular Pay (25%) - E of L Sta Driven	\$18,022											\$18,022	Work Hours	482	482.191	\$37.37	1.000	\$37.37	\$18,022
Administrative Regular Pay (75%) - Peak Car Driven	\$54,066			\$2,253									Work Hours	1,447	60.274	\$37.37	1.000	\$37.37	\$54,066
Administrative Overtime (25%) - E of L Sta Driven	\$249										\$249	Work Hours	5	5.447	\$45.75	1.000	\$45.75	\$249	
Administrative Overtime (75%) - Peak Car Driven	\$748			\$31.15								Work Hours	16	0.681	\$45.75	1.000	\$45.75	\$748	
Clerical Regular Pay (25%) - End-of-Line Sta Driven	\$998									\$998	Work Hours	34	34.125	\$29.24	1.000	\$29.24	\$998		
Clerical Regular Pay (75%) - Peak Car Driven	\$2,994			\$125							Work Hours	102	4.266	\$29.24	1.000	\$29.24	\$2,994		
Clerical Overtime (25%) - End-of-Line Sta Driven	\$1								\$1.46	Work Hours	0	0.033	\$43.73	1.000	\$43.73	\$1			
Clerical Overtime (75%) - Peak Car Driven	\$4			\$0.18						Work Hours	0	0.004	\$43.73	1.000	\$43.73	\$4			
Fringe Benefits - End-of-Line Station Driven	\$11,375									\$11,375	Work Hours	522	521.796	\$21.80	1.000	\$21.80	\$11,375		
Fringe Benefits - Peak Car Driven	\$34,126			\$1,422							Work Hours	1,565	65.225	\$21.80	1.000	\$21.80	\$34,126		
Met Council Labor & Fringe Benefits (25%)	\$3,123								\$3,123	End-of-Line Stat.	1	1.000	\$3,123	1.000	\$3,123	\$3,123			
Met Council Labor & Fringe Benefits (75%)	\$9,368			\$390						Peak Cars	24	1.000	\$390	1.000	\$390	\$9,368			
Met Council Other Expenses (25%) E of L Station	\$1,068								\$1,068	End-of-Line Stat.	1	1.000	\$1,068	1.000	\$1,068	\$1,068			
Met Council Other Expenses (75%) Peak Car	\$3,203			\$133						Peak Cars	24	1.000	\$133	1.000	\$133	\$3,203			
Contract Services	\$131,979			\$5,499						Peak Cars	24	1.000	\$5,499	1.000	\$5,499	\$131,979			
Materials & Supplies	\$52,884			\$2,204						Peak Cars	24	1.000	\$2,204	1.000	\$2,204	\$52,884			
Advertising/Promo/Media	\$73,367			\$3,057						Peak Cars	24	1.000	\$3,057	1.000	\$3,057	\$73,367			
Other Miscellaneous/Other Expenses	\$43,733			\$1,822						Peak Cars	24	1.000	\$1,822	1.000	\$1,822	\$43,733			
Leases & Rentals	\$7,088			\$295						Peak Cars	24	1.000	\$295	1.000	\$295	\$7,088			
Service Development																			
Administrative Regular Pay	\$55,181			\$2,299								Work Hours	1,476	61.518	\$37.37	1.000	\$37.37	\$55,181	
Administrative Overtime	\$1,242			\$51.75								Work Hours	27	1.131	\$45.75	1.000	\$45.75	\$1,242	
Clerical Regular Pay	\$18,278			\$762								Work Hours	625	26.046	\$29.24	1.000	\$29.24	\$18,278	
Clerical Overtime	\$334			\$13.90								Work Hours	8	0.318	\$43.73	1.000	\$43.73	\$334	
Fringe Benefits	\$46,126			\$1,922								Work Hours	2,136	89.012	\$21.59	1.000	\$21.59	\$46,126	
Contract Services	\$1,691			\$70.46								Peak Cars	24	1.000	\$70.46	1.000	\$70.46	\$1,691	
Materials & Supplies	\$49			\$2.06								Peak Cars	24	1.000	\$2.06	1.000	\$2.06	\$49	
Utilities	\$63			\$2.63								Peak Cars	24	1.000	\$2.63	1.000	\$2.63	\$63	
Miscellaneous/Other	\$287			\$11.97								Peak Cars	24	1.000	\$11.97	1.000	\$11.97	\$287	
RAIL OPERATIONS																			
AGM Rail Operations																			
Administrative Regular Pay (50%) - Train Hr Driven	\$135,873		\$1.95									Work Hours	3,635	0.052	\$37.37	1.000	\$37.37	\$135,873	
Administrative Regular Pay (50%) - Peak Car Driven	\$135,873			\$5,661								Work Hours	3,635	151.475	\$37.37	1.000	\$37.37	\$135,873	
Administrative Overtime (50%) - Train Hr Driven	\$5,283		\$0.08									Work Hours	115	0.002	\$45.75	1.000	\$45.75	\$5,283	
Administrative Overtime (50%) - Pk Car Driven	\$5,283			\$220								Work Hours	115	4.811	\$45.75	1.000	\$45.75	\$5,283	
Clerical Regular Pay	\$103,024				\$103,024							Work Hours	3,523	3,523.274	\$29.24	1.000	\$29.24	\$103,024	
Clerical Overtime	\$17,038				\$17,038							Work Hours	390	389.593	\$43.73	1.000	\$43.73	\$17,038	
Fringe Benefits - Train Hour Driven	\$98,730		\$1.42									Work Hours	3,751	0.054	\$26.32	1.000	\$26.32	\$98,730	
Fringe Benefits - Peak Car Driven	\$98,730			\$4,114								Work Hours	3,751	156.286	\$26.32	1.000	\$26.32	\$98,730	
Fringe Benefits - Yard Driven	\$83,976				\$83,976							Work Hours	3,913	3,912.867	\$21.46	1.000	\$21.46	\$83,976	
Contract Services (50%) - Train Hours Driven	\$20,654		\$0.30									Train Hours	69,586	1.000	\$0.30	1.000	\$0.30	\$20,654	
Contract Services (50%) - Peak Cars Driven	\$20,654			\$861								Peak Cars	24	1.000	\$861	1.000	\$861	\$20,654	
Materials & Supplies	\$6,426				\$6,426							Yards	1	1.000	\$6,426	1.000	\$6,426	\$6,426	
Utilities (80%) - Yard Driven	\$656,409				\$656,409							Yards	1	1.000	\$656,409	1.000	\$656,409	\$656,409	
Utilities - Station With Driven	\$44,755	X						\$14,918				Station With	3	1.000	\$14,918	1.000	\$14,918	\$44,755	
Utilities - Station Without Driven	\$119,347	X							\$7,459			Station Without	16	1.000	\$7,459	1.000	\$7,459	\$119,347	
Miscellaneous/Other (50%) - Train Hr Driven	\$60,892		\$0.88									Train Hours	69,586	1.000	\$0.88	1.000	\$0.88	\$60,892	
Miscellaneous/Other (50%) - Peak Car Driven	\$60,892			\$2,537								Peak Cars	24	1.000	\$2,537	1.000	\$2,537	\$60,892	
Leases & Rentals	\$17,848				\$17,848							Yards	1	1.000	\$17,848	1.000	\$17,848	\$17,848	

**Table 4-4
Metro Transit LRT Cost Model**

**METRO TRANSIT
Fully-Allocated LRT Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Rail Expenses	Existing Unit Cost Adjusted	LRT Supply Variable Unit Cost Rate (\$2010)									Productivity Ratio			Base Year		Inflation Factor: 1.000		
			Revenue Train-Hours	Revenue Car-Miles	Peak Cars	Yards	Directional Route Miles	Stations with PnR	Stations w/o PnR	End-of-Line Stations	Resource Variable	Resource Value	Resource/Supply	Resource Unit Cost	Inflation Factor	Year of \$: 2010	Estimated Annual Cost		
RAIL OPERATIONS																			
Rail Transportation Administrative																			
Administrative Regular Pay (50%) - Yard Driven	\$489,946				\$489,946								Work Hours	13,109	13,108,938	\$37.37	1.000	\$37.37	\$489,946
Administrative Regular Pay (50%) - Train Hr Driven	\$489,946		\$7.04										Work Hours	13,109	0.188	\$37.37	1.000	\$37.37	\$489,946
Administrative Overtime (50%) - Yard Driven	\$74,003				\$74,003								Work Hours	1,617	1,617,457	\$45.75	1.000	\$45.75	\$74,003
Administrative Overtime (50%) - Train Hr Driven	\$74,003		\$1.06										Work Hours	1,617	0.023	\$45.75	1.000	\$45.75	\$74,003
Fringe Benefits - Yard Driven	\$443,252				\$443,252								Work Hours	14,726	14,726,395	\$30.10	1.000	\$30.10	\$443,252
Fringe Benefits - Train Hour Driven	\$443,252		\$6.37										Work Hours	14,726	0.212	\$30.10	1.000	\$30.10	\$443,252
Contract Services	\$1,986		\$0.03										Train Hours	69,586	1.000	\$0.03	1.000	\$0.03	\$1,986
Materials & Supplies (50%) - Yard Driven	\$19,574				\$19,574								Yards	1	1.000	\$19,574	1.000	\$19,574	\$19,574
Materials & Supplies (50%) - Train Hour Driven	\$19,574		\$0.28										Train Hours	69,586	1.000	\$0.28	1.000	\$0.28	\$19,574
Miscellaneous/Other	\$1,387		\$0.02										Train Hours	69,586	1.000	\$0.02	1.000	\$0.02	\$1,387
Rail Operators																			
Driver Regular Pay	\$2,088,045		\$30.01										Work Hours	77,732	1.117	\$26.86	1.000	\$26.86	\$2,088,045
Driver Overtime	\$351,357		\$5.05										Work Hours	8,882	0.128	\$39.56	1.000	\$39.56	\$351,357
Clerical Regular Pay	\$65,509				\$65,509								Work Hours	2,240	2,240,334	\$29.24	1.000	\$29.24	\$65,509
Clerical Overtime	\$10,884				\$10,884								Work Hours	249	248,860	\$43.73	1.000	\$43.73	\$10,884
Fringe Benefits - Train Hour Driven	\$2,080,942		\$29.90										Work Hours	86,614	1.245	\$24.03	1.000	\$24.03	\$2,080,942
Fringe Benefits - Yard Driven	\$65,167				\$65,167								Work Hours	2,489	2,489,194	\$26.18	1.000	\$26.18	\$65,167
Contract Services	\$1,599		\$0.02										Train Hours	69,586	1.000	\$0.02	1.000	\$0.02	\$1,599
LRV Propulsion (80%) - Car Mile Driven	\$1,143,128			\$0.57									kwh	13,776,000	6.840	\$0.08	1.000	\$0.08	\$1,143,128
LRV Propulsion (20%) - Peak Car Driven	\$285,782				\$11,908								kwh	3,444,000	143,500	\$0.08	1.000	\$0.08	\$285,782
Materials & Supplies	\$12,180		\$0.18										Train Hours	69,586	1.000	\$0.18	1.000	\$0.18	\$12,180
Miscellaneous/Other	\$74		\$0.00										Train Hours	69,586	1.000	\$0.00	1.000	\$0.00	\$74
HLRT Vehicle Maintenance																			
Mechanics Regular Pay	\$1,225,663			\$0.61									Work Hours	42,661	0.021	\$28.73	1.000	\$28.73	\$1,225,663
Mechanics Overtime	\$236,963			\$0.12									Work Hours	5,208	0.003	\$45.50	1.000	\$45.50	\$236,963
Administrative Regular Pay	\$392,861			\$0.20									Work Hours	10,511	0.005	\$37.37	1.000	\$37.37	\$392,861
Administrative Overtime	\$25,212			\$0.01									Work Hours	551	0.000	\$45.75	1.000	\$45.75	\$25,212
Clerical Regular Pay	\$38,034			\$0.02									Work Hours	1,301	0.001	\$29.24	1.000	\$29.24	\$38,034
Clerical Overtime	\$188			\$0.00									Work Hours	4	0.000	\$43.73	1.000	\$43.73	\$188
Fringe Benefits	\$1,639,205			\$0.81									Work Hours	60,237	0.030	\$27.21	1.000	\$27.21	\$1,639,205
Contract Services	\$62,608			\$0.03									Car Miles	2,013,961	1.000	\$0.03	1.000	\$0.03	\$62,608
Parts & Inventory	\$588,952			\$0.29									Car Miles	2,013,961	1.000	\$0.29	1.000	\$0.29	\$588,952
Other Materials & Supplies	\$517,385			\$0.26									Car Miles	2,013,961	1.000	\$0.26	1.000	\$0.26	\$517,385
Miscellaneous/Other	\$3,952			\$0.00									Car Miles	2,013,961	1.000	\$0.00	1.000	\$0.00	\$3,952
HLRT System Maintenance																			
Mechanics Regular Pay	\$1,186,357					\$48,031							Work Hours	41,293	1,671,777	\$28.73	1.000	\$28.73	\$1,186,357
Mechanics Overtime	\$249,108					\$10,085							Work Hours	5,475	221,669	\$45.50	1.000	\$45.50	\$249,108
Administrative Regular Pay	\$496,342					\$20,095							Work Hours	13,280	537,655	\$37.37	1.000	\$37.37	\$496,342
Administrative Overtime	\$26,626					\$1,078							Work Hours	582	23,561	\$45.75	1.000	\$45.75	\$26,626
Fringe Benefits	\$1,463,185					\$59,238							Work Hours	60,630.1	2,454,661	\$24.13	1.000	\$24.13	\$1,463,185
Contract Services	\$281,206					\$11,385							Track Miles	24.7	1.000	\$11,385	1.000	\$11,385	\$281,206
Other Materials & Supplies	\$371,406					\$15,037							Track Miles	24.7	1.000	\$15,037	1.000	\$15,037	\$371,406
Miscellaneous/Other	\$10,299					\$417							Track Miles	24.7	1.000	\$417	1.000	\$417	\$10,299
Leases & Rentals	\$6,541					\$265							Track Miles	24.7	1.000	\$265	1.000	\$265	\$6,541

**Table 4-4
Metro Transit LRT Cost Model**

**METRO TRANSIT
Fully-Allocated LRT Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Rail Expenses	Existing Unit Cost Adjusted	LRT Supply Variable Unit Cost Rate (\$2010)								Productivity Ratio			Base Year		Inflation Factor: 1.000									
			Revenue Train-Hours	Revenue Car-Miles	Peak Cars	Yards	Directional Route Miles	Stations with PnR	Stations w/o PnR	End-of-Line Stations	Resource Variable	Resource Value	Resource/Supply	Resource Unit Cost	Inflation Factor	Year of \$:	2010 Resource Unit Cost	Estimated Annual Cost							
RAIL OPERATIONS																									
Stores																									
Administrative Regular Pay	\$58,924					\$58,924						Work Hours	1,577	1,576.575	\$37.37	1.000	\$37.37	\$58,924							
Clerical Regular Pay	\$90,807					\$90,807						Work Hours	3,105	3,105.478	\$29.24	1.000	\$29.24	\$90,807							
Clerical Overtime	\$43,412					\$43,412						Work Hours	993	992.647	\$43.73	1.000	\$43.73	\$43,412							
Fringe Benefits	\$160,742					\$160,742						Work Hours	5,675	5,674.700	\$28.33	1.000	\$28.33	\$160,742							
Miscellaneous/Other	(\$97)					(\$97)						Yards	1	1.000	(\$97.24)	1.000	(\$97.24)	(\$97)							
Rail Facility Maintenance																									
Mechanics Regular Pay	\$171,270					\$171,270						Work Hours	5,961	5,961.318	\$28.73	1.000	\$28.73	\$171,270							
Mechanics Overtime	\$24,292					\$24,292						Work Hours	534	533.921	\$45.50	1.000	\$45.50	\$24,292							
Fringe Benefits	\$163,761					\$163,761						Work Hours	6,495	6,495.239	\$25.21	1.000	\$25.21	\$163,761							
Contract Services	\$64,642					\$64,642						Yards	1	1.000	\$64,642	1.000	\$64,642	\$64,642							
Materials & Supplies	\$129,874					\$129,874						Yards	1	1.000	\$129,874	1.000	\$129,874	\$129,874							
Utilities	\$10,372					\$10,372						Yards	1	1.000	\$10,372	1.000	\$10,372	\$10,372							
Janitors																									
Mechanics Regular Pay - Sta With Driven	\$63,632	X					\$21,211					Work Hours	2,215	738.263	\$28.73	1.000	\$28.73	\$63,632							
Mechanics Regular Pay - Sta Without Driven	\$169,684	X						\$10,605				Work Hours	5,906	369.131	\$28.73	1.000	\$28.73	\$169,684							
Mechanics Overtime - Sta With Driven	\$6,072	X					\$2,024					Work Hours	133	44.483	\$45.50	1.000	\$45.50	\$6,072							
Mechanics Overtime - Sta Without Driven	\$16,191	X						\$1,012				Work Hours	356	22.241	\$45.50	1.000	\$45.50	\$16,191							
Fringe Benefits - Station With Driven	\$62,914	X					\$20,971					Work Hours	2,348	782.745	\$26.79	1.000	\$26.79	\$62,914							
Fringe Benefits - Station Without Driven	\$167,770	X						\$10,486				Work Hours	6,262	391.373	\$26.79	1.000	\$26.79	\$167,770							
Contract Services	\$154,687						\$51,562					Station With	3	1.000	\$51,562	1.000	\$51,562	\$154,687							
Materials & Supplies - Sta With Driven	\$20,677	X					\$6,892					Station With	3	1.000	\$6,892	1.000	\$6,892	\$20,677							
Materials & Supplies - Sta Without Driven	\$55,138	X						\$3,446				Station Without	16	1.000	\$3,446	1.000	\$3,446	\$55,138							
Utilities	\$2,901							\$967				Station With	3	1.000	\$967	1.000	\$967	\$2,901							
Leases & Rentals	\$3,654						\$1,218					Station With	3	1.000	\$1,218	1.000	\$1,218	\$3,654							
Bus Operations Direct Charged																									
Mechanic Regular Pay	\$50,259		\$0.72									Work Hours	1,749	0.025	\$28.73	1.000	\$28.73	\$50,259							
Mechanic Overtime	\$22,567		\$0.32									Work Hours	496	0.007	\$45.50	1.000	\$45.50	\$22,567							
Administrative Regular Pay	\$234,631		\$3.37									Work Hours	6,278	0.090	\$37.37	1.000	\$37.37	\$234,631							
Administrative Overtime	\$17,178		\$0.25									Work Hours	375	0.005	\$45.75	1.000	\$45.75	\$17,178							
Fringe Benefits	\$201,707		\$2.90									Work Hours	8,899	0.128	\$22.67	1.000	\$22.67	\$201,707							
Met Council Labor & Fringe Benefits	\$574,218		\$8.25									Train-Hours	69,586	1.000	\$8.25	1.000	\$8.25	\$574,218							
Met Council Other Expenses	\$221,051		\$3.18									Train-Hours	69,586	1.000	\$3.18	1.000	\$3.18	\$221,051							
Contract Services	\$114,917		\$1.65									Train-Hours	69,586	1.000	\$1.65	1.000	\$1.65	\$114,917							
Materials & Supplies	\$238,235		\$3.42									Train-Hours	69,586	1.000	\$3.42	1.000	\$3.42	\$238,235							
Casualty & Liability	\$294,568		\$4.23									Train-Hours	69,586	1.000	\$4.23	1.000	\$4.23	\$294,568							
Miscellaneous/Other	\$378		\$0.01									Train-Hours	69,586	1.000	\$0.01	1.000	\$0.01	\$378							
Leases & Rentals	\$31,360		\$0.45									Train-Hours	69,586	1.000	\$0.45	1.000	\$0.45	\$31,360							
TOTALS	\$25,840,332		\$132	\$2.92	\$59,802	\$3,014,567	\$189,489	\$150,780	\$64,024	\$180,098								\$25,840,332							
2010 Resource Variable Values			69,586	2,013,961	24	1	24.7	3	16	1															
Notes:																									
1. The total number of stations is the sum of stations with park-rides and stations without park-rides. Stations designated as End-of-Line stations are included in the total station count (for facilities maintenance), but modeled separately in some line items because of their unique role in the deployment of operating staff.																									
2. Stations w/ park-and-ride lots reflect twice the cost as stations without park-and-ride lots for select line item expenses.																									
																		Train-Hours	69,586						
																			Car-Miles	2,013,961					
																				Peak Cars	24				
																					Yards	1			
																						Track Miles	24.7		
																							Station w P-R	3	
																								Station w/o P-R	16
																								Term Stations	1

Table 4-5
Metro Transit LRT Cost Model – Summary of O&M Costs

Division	Department	Labor	Fringe Benefits	Met Council Labor/Fringe	Contract Services	Materials & Supplies	Utilities	Misc.	Leases & Rentals	Casualty & Liability	Met Council Non-Labor	TOTAL COSTS
Executive	Executive	\$37,055	\$31,205	\$64,007	\$5,119	\$6,279	\$26,538	\$68,378			\$84,300	\$322,880
	Police/Security	\$1,514,843	\$746,664		\$62,330	\$33,376	\$16,972	\$8,559				\$2,382,745
Administrative	Customer Relations	\$58,803	\$38,299		\$269	\$1,487		\$1,182				\$100,040
	Transit Info Ctr.	\$77,084	\$55,604		\$1,935	\$10,337	\$49	\$154	\$100			\$145,263
	Marketing	\$77,081	\$45,501	\$12,491	\$131,979	\$52,884		\$117,101	\$7,088		\$4,271	\$448,396
	Service Development	\$75,035	\$46,126		\$1,691	\$49	\$63	\$287				\$123,252
Rail Operations	AGM Rail Operations	\$402,374	\$281,436		\$41,307	\$6,426	\$820,512	\$121,784	\$17,848			\$1,691,687
	Rail Transportation Admin.	\$1,127,897	\$886,504		\$1,986	\$39,149		\$1,387				\$2,056,923
	Rail Operators	\$2,515,795	\$2,146,109		\$1,599	\$12,180	\$1,428,911	\$74				\$6,104,668
	HLRT Vehicle Maintenance	\$1,918,921	\$1,639,205		\$62,608	\$1,106,337		\$3,952				\$4,731,023
	HLRT System Maintenance	\$1,958,433	\$1,463,185		\$281,206	\$371,406		\$10,299	\$6,541			\$4,091,069
	Stores	\$193,143	\$160,742					-\$97				\$353,788
	Rail Facility Maintenance	\$195,563	\$163,761		\$64,642	\$129,874	\$10,372					\$564,212
	Janitors	\$255,578	\$230,684		\$154,687	\$75,815	\$2,901		\$3,654			\$723,319
Bus Op's Direct Charged	\$324,636	\$201,707	\$574,218	\$114,917	\$238,235		\$378	\$31,360	\$294,568	\$221,051	\$2,001,069	
TOTAL COSTS		\$10,732,240	\$8,136,732	\$650,715	\$926,275	\$2,083,834	\$2,306,319	\$333,438	\$66,590	\$294,568	\$309,621	\$25,840,332

Table 4-6
Application of Metro Transit Light Rail Cost Model
With Prior Year Operating Statistics

Department	Cost Model Estimate for:		
	2010	2009	2008
Executive	\$2,705,625	\$2,629,037	\$2,630,984
Administrative	\$816,950	\$797,107	\$806,392
Engineering & Facilities	\$0	\$0	\$0
Bus Operations	\$0	\$0	\$0
Rail Operations	\$22,317,757	\$21,542,746	\$21,808,531
Total	\$25,840,332	\$24,968,890	\$25,245,907
% Diff. from Actual	0.0%	-1.2%	5.9%

5.0 BUS RAPID TRANSIT O&M COST METHODOLOGY

As noted in the Introduction to this report, the Bottineau Transitway DEIS process initially included a bus rapid transit (BRT) alternative. The alternative includes a BRT guideway from 97th Avenue/West Broadway (near the Target North Campus) to Olson Memorial Highway/Border Avenue, with BRT stations at the same locations as proposed in LRT Alternative B-C-D1, (except for the Border Avenue station serving the Interchange area). Within downtown, the BRT alignment operates in mixed traffic along the following streets: 5th Street, 2nd Avenue, 4th Street, Marquette, 12th Street and 3rd Avenue to the Leamington Ramp. Outbound routing follows 11th Street, 2nd Avenue, 3rd Street, Hennepin Avenue, and 5th Street back to 6th Avenue and Olson Memorial Highway.

Two BRT routes would be included. Route 731 would operate from 97th Avenue to downtown Minneapolis via the BRT transitway, with service continuing in mixed traffic from Border Avenue to the Leamington Ramp. Route 732 would operate from the Maple Grove Transit Station, with peak period service following Elm Creek Boulevard and the BRT transitway to downtown Minneapolis. Off-peak service on Route 732 would operate only along Elm Creek Boulevard to the proposed Brooklyn Boulevard/West Broadway BRT station, where passengers would transfer to Route 731.

BRT vehicle O&M costs are anticipated to be similar to typical Metro Transit bus O&M costs. Therefore, the BRT cost model uses many of the line item unit costs that are in the bus O&M cost model. However, the BRT Alternative also includes facilities that are not part of the existing bus system which must be maintained (BRT stations and the transitway). Further, a higher level of police/security service will be required (e.g., for fare enforcement and maintaining a security presence at BRT facilities). For these reasons, the BRT cost model includes some line item unit costs that are consistent with the LRT cost model.

5.1 Key Supply Variables

After collection of financial and service data, modeling proceeded with selecting the key driving supply variables for a potential BRT system in the Bottineau Corridor:

- **Annual Revenue BRT-Hours:** The hours that BRT vehicles travel while in revenue service over the entire fiscal year. Revenue bus-hours include layover and schedule recovery but exclude time for deadhead, operator training and maintenance testing.
- **Annual Revenue BRT-Miles:** Non-Articulated and Articulated: The miles that BRT vehicles travel while in revenue service over the entire fiscal year. Revenue bus-miles include layover and schedule recovery but exclude miles for deadhead, operator training and maintenance testing. The BRT cost model allows for input of both articulated and non-articulated BRT bus-miles. For this project, it is anticipated that all BRT bus-miles will be associated with articulated buses.
- **Peak BRT Vehicles:** The maximum number of BRT vehicles actually operated simultaneously on an average weekday.

- **BRT Passenger Stations:** BRT stations are passenger boarding/alighting facilities located on the fixed guideway with a platform which may include stairs, escalators, canopies, wind shelters, lighting, ticket machines and signage. For this project, the cost model was developed to distinguish between passenger stations with and without park-and-ride facilities, primarily for purposes of costing out differences in security and facilities maintenance costs. A more in-depth discussion of these cost differences is provided later in this section of the report.
- **BRT On-Street Station Stops:** The BRT Alternative will include some on-street stops along Elm Creek Boulevard, and select stops in downtown Minneapolis. These stops will not have all amenities as stations along the transitway, but will include additional facilities that require on-going maintenance. A more in-depth discussion of anticipated costs for these station stops is provided later in this section of the report.
- **BRT Transitway Directional Lane Miles:** The mileage in each direction for the transitway over which BRT vehicles travel in revenue service.

The Metro Transit bus cost model includes the following variables that are not included in the BRT cost model: transit centers, operating garages and total garages. It is assumed that BRT vehicles would be stored and maintained at Metro Transit garages. If there is a need to add a garage in a project alternative (e.g., due to existing bus garage capacity constraints), that additional O&M cost will be estimated with the Metro Transit bus cost model (described in Section 3.0), and not with this BRT O&M cost model. Similarly, any potential change in the number of transit centers in any particular alternative will also be captured in the Metro Transit bus cost model.

5.2 Line Item Expenses

After selecting the key supply variables, the next step in model development was to identify line item costs from the Metro Transit bus and light rail cost models that are also applicable to BRT. It is anticipated that BRT buses will have similar O&M cost characteristics as regular Metro Transit bus service, with the following exceptions:

- Police/Security Services
- BRT Station Maintenance
- BRT Transitway Maintenance

Therefore, the BRT cost model includes all line items and unit costs in the Metro Transit bus cost model that are driven by peak buses, revenue bus-hours and revenue bus-miles, with the exception of line items under Police/Security Services.

For Police/Security services, it is anticipated that BRT service would necessitate a higher level of effort than what is provided for regular Metro Transit bus service. There are additional passenger facilities to patrol, and fare enforcement security will be required (pre-boarding fare collection with on-board proof-of-payment is proposed in the BRT alternative). Thus, the BRT cost model assumes BRT police/security costs will be similar to those presently incurred for the Hiawatha LRT Line, which incorporates similar operations and security needs, including special event traffic. Some of the LRT Police/Security costs are driven by train-hours and those line item unit costs have been reduced by a factor of 1/3 to reflect differences between LRT and BRT bus passenger capacities (i.e., a LRT train-hour is assumed to be equivalent to about three BRT bus-hours, thus costs driven in the LRT cost model by train-hours have been reduced by 1/3 to reflect this capacity difference).

Transitway BRT stations are anticipated to have the same amenities as LRT stations. These stations will have platforms with passenger amenities (benches, shelters, trash receptacles, electronic information signage, etc.). They also will be equipped with TVMs for pre-boarding fare collection. Select stations will include park-and-rides. Therefore, the cost model includes station-related line item costs from the LRT cost model, and applies the same unit costs that are used in the LRT cost model.

The BRT Alternative will also include on-street stations with nine-inch curb height (consistent with assumptions used in Metro Transit's 2011 *Arterial Transitways Corridor Study*) and with enhanced amenities (e.g., along Elm Creek Blvd.). These stops are anticipated to require a higher level of on-going maintenance than a regular bus stop, for they will include TVMs, real time information signage and additional passenger amenities. Potential costs for these on-street stations is based on work recently completed for Metro Transit's 2011 *Arterial Transitway Corridors Study*. That project identified the following potential costs for on-street stations based on input from Metro Transit staff and current agency experiences:

- On-going Station Maintenance - \$80,000 for every 40-direction stops, or \$2,000 per directional stop
- TVM Maintenance/Revenue Collection - \$10,000 per TVM
- Station Snow Removal - \$3,500 per directional stop
- Real Time Signage Maintenance - \$2,600 per directional stop

The *Arterial Transitway Corridor Study* also identified additional costs for police/fare enforcement. However, police/fare enforcement costs are already captured by using LRT police/fare enforcement cost data, as noted earlier in this section.

It should also be noted that the Baseline Alternative may include on-street stops similar to those described in this section. These unit costs will also be applied to the Baseline Alternative's O&M cost estimate to capture these costs.

Finally, the BRT Alternative includes a dedicated bus transitway. This facility will require periodic maintenance (snow removal, landscape maintenance along the right-of-way, periodic repaving, etc.). This project's prior Alternatives Analysis used a maintenance cost of \$30,000 per lane-mile. This unit cost has been carried forward and used in this DEIS.

Table 5-1 presents the BRT O&M cost model worksheet that is proposed for use in this project. This table identifies sources for each line item cost (e.g., from bus cost model vs. LRT cost model vs. other). Base year model results are not calculated in the model because BRT service, as envisioned in this alternative, is a new transit mode that did not operate in the region's 2010 transit system.

**Table 5-1
Metro Transit BRT Cost Model**

**METRO TRANSIT
Fully-Allocated BRT Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Expenses	Unit Cost Source	BRT Supply Variable Unit Cost Rate (\$2010)								Productivity Ratio			Base Year Resource Unit Cost	Inflation - 2010					
			Revenue BRT-Hours	Non-Artic BRT-Miles	Articulated BRT-Miles	Peak BRT Buses	BRT Stations w/ PnR	BRT Stations w/o PnR	On-Street BRT Stations	Dir. Lane Miles	Resource Variable	Resource Value	Resource/Supply		Inflation Factor	Year of \$:	2010			
																Resource Unit Cost	Estimated Annual Cost			
EXECUTIVE																				
Internal Audit																				
Met Council Labor & Fringe Benefits	\$208,111	Bus				\$283								Peak Buses	735	1,000	\$283	1,000	\$283	\$0
Met Council Other Expenses	\$8,766	Bus				\$11.93								Peak Buses	735	1,000	\$11.93	1,000	\$11.93	\$0
Executive																				
Administrative Regular Pay	\$651,362	Bus				\$886								Work Hours	24,268	33,018	\$26.84	1,000	\$26.84	\$0
Administrative Overtime	\$11,135	Bus				\$15.15								Work Hours	351	0,477	\$31.75	1,000	\$31.75	\$0
Fringe Benefits	\$557,917	Bus				\$759								Work Hours	24,619	33,495	\$22.66	1,000	\$22.66	\$0
Met Council Labor & Fringe Benefits	\$1,144,373	Bus				\$1,557								Peak Buses	735	1,000	\$1,557	1,000	\$1,557	\$0
Met Council Other Expenses	\$1,507,189	Bus				\$2,051								Peak Buses	735	1,000	\$2,051	1,000	\$2,051	\$0
Contract Services	\$91,518	Bus				\$125								Peak Buses	735	1,000	\$125	1,000	\$125	\$0
Materials & Supplies	\$112,264	Bus				\$153								Peak Buses	735	1,000	\$153	1,000	\$153	\$0
Utilities	\$474,476	Bus				\$646								Peak Buses	735	1,000	\$646	1,000	\$646	\$0
Miscellaneous/Other	\$1,222,530	Bus				\$1,663								Peak Buses	735	1,000	\$1,663	1,000	\$1,663	\$0
Safety																				
Administrative Regular Pay (50%) - Miles Driven	\$243,646	Bus		\$0.01	\$0.01									Work Hours	9,078	0,000	\$26.84	1,000	\$26.84	\$0
Administrative Regular Pay (50%) - Peak Bus Driven	\$243,646	Bus				\$331.49								Work Hours	9,078	12,351	\$26.84	1,000	\$26.84	\$0
Administrative Overtime (50%) - Miles Driven	\$17,108	Bus		\$0.001	\$0.001									Work Hours	539	0,000	\$31.75	1,000	\$31.75	\$0
Administrative Overtime (50%) - Peak Bus Driven	\$17,108	Bus				\$23.28								Work Hours	539	0,733	\$31.75	1,000	\$31.75	\$0
Fringe Benefits (50%) - Miles Driven	\$175,576	Bus		\$0.01	\$0.01									Work Hours	9,617	0,000	\$18.26	1,000	\$18.26	\$0
Fringe Benefits (50%) - Peak Bus Driven	\$175,576	Bus				\$239								Work Hours	9,617	13,084	\$18.26	1,000	\$18.26	\$0
Contract Services	\$5,513	Bus				\$7.50								Peak Buses	735	1,000	\$7.50	1,000	\$7.50	\$0
Materials & Supplies	\$3,619	Bus				\$4.92								Peak Buses	735	1,000	\$4.92	1,000	\$4.92	\$0
Utilities	\$422	Bus				\$0.57								Peak Buses	735	1,000	\$0.57	1,000	\$0.57	\$0
Miscellaneous/Other	\$21,257	Bus				\$28.92								Peak Buses	735	1,000	\$28.92	1,000	\$28.92	\$0
ADMINISTRATIVE																				
Customer Relations																				
Administrative Regular Pay	\$208,309	Bus				\$283								Work Hours	7,761	10,559	\$26.84	1,000	\$26.84	\$0
Administrative Overtime	\$1,247	Bus				\$1.70								Work Hours	39	0,053	\$31.75	1,000	\$31.75	\$0
Clerical Regular Pay	\$143,655	Bus				\$195								Work Hours	7,010	9,538	\$20.49	1,000	\$20.49	\$0
Clerical Overtime	\$1,729	Bus				\$2.35								Work Hours	54	0,073	\$32.30	1,000	\$32.30	\$0
Fringe Benefits	\$231,178	Bus				\$315								Work Hours	14,864	20,223	\$15.55	1,000	\$15.55	\$0
Contract Services	\$1,625	Bus				\$2.21								Peak Buses	735	1,000	\$2.21	1,000	\$2.21	\$0
Materials & Supplies	\$8,977	Bus				\$12.21								Peak Buses	735	1,000	\$12.21	1,000	\$12.21	\$0
Miscellaneous/Other	\$7,134	Bus				\$9.71								Peak Buses	735	1,000	\$9.71	1,000	\$9.71	\$0
Marketing																				
Administrative Regular Pay (75%) - Peak Bus Driven	\$497,427	Bus				\$677								Work Hours	18,533	25,215	\$26.84	1,000	\$26.84	\$0
Administrative Overtime (25%) - Peak Bus Driven	\$6,878	Bus				\$9.36								Work Hours	217	0,295	\$31.75	1,000	\$31.75	\$0
Clerical Regular Pay (75%) - Peak Bus Driven	\$27,542	Bus				\$37.47								Work Hours	1,344	1,829	\$20.49	1,000	\$20.49	\$0
Clerical Overtime (75%) - Peak Bus Driven	\$40	Bus				\$0.05								Work Hours	1	0,002	\$32.30	1,000	\$32.30	\$0
Fringe Benefits (75%) - Peak Bus Driven	\$313,970	Bus				\$427								Work Hours	20,095	27,340	\$15.62	1,000	\$15.62	\$0
Met Council Labor & Fringe Benefits (75%)	\$86,190	Bus				\$117								Peak Buses	735	1,000	\$117	1,000	\$117	\$0
Met Council Other Expenses (75%) - Peak Bus Driven	\$29,471	Bus				\$40.10								Peak Buses	735	1,000	\$40.10	1,000	\$40.10	\$0
Contract Services	\$1,214,269	Bus				\$1,652								Peak Buses	735	1,000	\$1,652	1,000	\$1,652	\$0
Materials & Supplies	\$486,558	Bus				\$662								Peak Buses	735	1,000	\$662	1,000	\$662	\$0
Advertising/Promo/Media	\$675,013	Bus				\$918								Peak Buses	735	1,000	\$918	1,000	\$918	\$0
Other Miscellaneous/Other Expenses	\$402,367	Bus				\$547								Peak Buses	735	1,000	\$547	1,000	\$547	\$0
Leases & Rentals	\$65,209	Bus				\$88.72								Peak Buses	735	1,000	\$88.72	1,000	\$88.72	\$0

**Table 5-1
Metro Transit BRT Cost Model**

**METRO TRANSIT
Fully-Allocated BRT Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Expenses	Unit Cost Source	BRT Supply Variable Unit Cost Rate (\$2010)							Productivity Ratio			Base Year Resource Unit Cost	Inflation - 2010				
			Revenue BRT-Hours	Non-Artic BRT-Miles	Articulated BRT-Miles	Peak BRT Buses	BRT Stations w/ PnR	BRT Stations w/o PnR	On-Street BRT Stations	Dir. Lane Miles	Resource Variable	Resource Value		Resource/Supply	Inflation Factor	Year of \$:	2010 Estimated Annual Cost	
ADMINISTRATIVE																		
Service Development																		
Administrative Regular Pay (50%) - Peak Bus Driven	\$523,275	Bus				\$712						Work Hours	19,496	26,525	\$26.84	1.000	\$26.84	\$0
Administrative Regular Pay (50%) - Bus-Hrs Driven	\$523,275	Bus	\$0.27									Work Hours	19,496	0.010	\$26.84	1.000	\$26.84	\$0
Administrative Overtime (50%) - Peak Bus Driven	\$11,777	Bus				\$16.02						Work Hours	371	0.505	\$31.75	1.000	\$31.75	\$0
Administrative Overtime (50%) - Bus-Hrs Driven	\$11,777	Bus	\$0.01									Work Hours	371	0.000	\$31.75	1.000	\$31.75	\$0
Clerical Regular Pay (50%) - Peak Bus Driven	\$173,331	Bus				\$236						Work Hours	8,458	11,508	\$20.49	1.000	\$20.49	\$0
Clerical Regular Pay (50%) - Bus Hrs Driven	\$173,331	Bus	\$0.09									Work Hours	8,458	0.004	\$20.49	1.000	\$20.49	\$0
Clerical Overtime (50%) - Peak Bus Driven	\$3,163	Bus				\$4.30						Work Hours	98	0.133	\$32.30	1.000	\$32.30	\$0
Clerical Overtime (50%) - Bus Hrs Driven	\$3,163	Bus	\$0.002									Work Hours	98	0.000	\$32.30	1.000	\$32.30	\$0
Fringe Benefits (50%) - Peak Bus Driven	\$437,405	Bus				\$595						Work Hours	28,423	38,671	\$15.39	1.000	\$15.39	\$0
Fringe Benefits (50%) - Bus Hrs Driven	\$437,405	Bus	\$0.23									Work Hours	28,423	0.015	\$15.39	1.000	\$15.39	\$0
Contract Services	\$32,070	Bus				\$43.63						Peak Buses	735	1.000	\$43.63	1.000	\$43.63	\$0
Materials & Supplies	\$937	Bus				\$1.27						Peak Buses	735	1.000	\$1.27	1.000	\$1.27	\$0
Utilities	\$1,198	Bus				\$1.63						Peak Buses	735	1.000	\$1.63	1.000	\$1.63	\$0
Miscellaneous/Other	\$5,450	Bus				\$7.42						Peak Buses	735	1.000	\$7.42	1.000	\$7.42	\$0
Finance																		
Mechanics Regular Pay (50%) - Peak Bus Driven	\$481,236	Bus				\$655						Work Hours	22,682	30,860	\$21.22	1.000	\$21.22	\$0
Mechanics Regular Pay (50%) - Bus Hrs Driven	\$481,236	Bus	\$0.25									Work Hours	22,682	0.012	\$21.22	1.000	\$21.22	\$0
Mechanics Overtime (50%) - Peak Bus Driven	\$28,128	Bus				\$38.27						Work Hours	865	1.176	\$32.54	1.000	\$32.54	\$0
Mechanics Overtime (50%) - Bus Hrs Driven	\$28,128	Bus	\$0.01									Work Hours	865	0.000	\$32.54	1.000	\$32.54	\$0
Administrative Regular Pay (50%) - Peak Bus Driven	\$906,381	Bus				\$1,233						Work Hours	33,770	45,945	\$26.84	1.000	\$26.84	\$0
Administrative Regular Pay (50%) - Bus Hrs Driven	\$906,381	Bus	\$0.47									Work Hours	33,770	0.017	\$26.84	1.000	\$26.84	\$0
Administrative Overtime (50%) - Peak Bus Driven	\$22,743	Bus				\$30.94						Work Hours	716	0.975	\$31.75	1.000	\$31.75	\$0
Administrative Overtime (50%) - Bus Hrs Driven	\$22,743	Bus	\$0.01									Work Hours	716	0.000	\$31.75	1.000	\$31.75	\$0
Clerical Regular Pay (50%) - Peak Bus Driven	\$755,115	Bus				\$1,027						Work Hours	36,849	50,135	\$20.49	1.000	\$20.49	\$0
Clerical Regular Pay (50%) - Bus Hrs Driven	\$755,115	Bus	\$0.39									Work Hours	36,849	0.019	\$20.49	1.000	\$20.49	\$0
Clerical Overtime (50%) - Peak Bus Driven	\$68,776	Bus				\$94						Work Hours	2,129	2,897	\$32.30	1.000	\$32.30	\$0
Clerical Overtime (50%) - Bus Hrs Driven	\$68,776	Bus	\$0.04									Work Hours	2,129	0.001	\$32.30	1.000	\$32.30	\$0
Fringe Benefits (50%) - Peak Bus Driven	\$1,547,341	Bus				\$2,105						Work Hours	97,011	131,988	\$15.95	1.000	\$15.95	\$0
Fringe Benefits (50%) - Bus Hrs Driven	\$1,547,341	Bus	\$0.80									Work Hours	97,011	0.050	\$15.95	1.000	\$15.95	\$0
Met Council Labor & Fringe Benefits (50%) - Pk Bus Driven	\$390,378	Bus				\$531						Peak Buses	735	1.000	\$531.13	1.000	\$531.13	\$0
Met Council Labor & Fringe Benefits (50%) - Bus Hrs Driven	\$390,378	Bus	\$0.20									Revenue Hours	1,943,037	1.000	\$0.20	1.000	\$0.20	\$0
Met Council Other Expenses (50%) - Pk Bus Driven	\$83,017	Bus				\$113						Peak Buses	735	1.000	\$113	1.000	\$113	\$0
Met Council Other Expenses (50%) - Bus Hrs Driven	\$83,017	Bus	\$0.04									Revenue Hours	1,943,037	1.000	\$0.04	1.000	\$0.04	\$0
Contract Services (50%) - Peak Bus Driven	\$276,164	Bus				\$376						Peak Buses	735	1.000	\$376	1.000	\$376	\$0
Contract Services (50%) - Bus Hrs Driven	\$276,164	Bus	\$0.14									Revenue Hours	1,943,037	1.000	\$0.14	1.000	\$0.14	\$0
Other Materials & Supplies (50%) - Peak Bus Driven	\$408,235	Bus				\$555						Peak Buses	735	1.000	\$555	1.000	\$555	\$0
Other Materials & Supplies (50%) - Bus Hrs Driven	\$408,235	Bus	\$0.21									Revenue Hours	1,943,037	1.000	\$0.21	1.000	\$0.21	\$0
Utilities	\$62,819	Bus				\$85.47						Peak Buses	735	1.000	\$85.47	1.000	\$85.47	\$0
Miscellaneous/Other	\$10,027	Bus				\$13.64						Peak Buses	735	1.000	\$13.64	1.000	\$13.64	\$0
Leases & Rentals	\$67,837	Bus				\$92.29						Peak Buses	735	1.000	\$92.29	1.000	\$92.29	\$0
Purchasing																		
Administrative Regular Pay (50%) - Miles Driven	\$155,896	Bus		\$0.01	\$0.01							Work Hours	5,808	0.000	\$26.84	1.000	\$26.84	\$0
Administrative Overtime (50%) - Miles Driven	\$1,345	Bus		\$0.0001	\$0.0001							Work Hours	42	0.000	\$31.75	1.000	\$31.75	\$0
Clerical Regular Pay (50%) - Miles Driven	\$23,481	Bus		\$0.001	\$0.001							Work Hours	1,146	0.000	\$20.49	1.000	\$20.49	\$0
Fringe Benefits (50%) - Miles Driven	\$120,123	Bus		\$0.005	\$0.005							Work Hours	6,997	0.000	\$17.17	1.000	\$17.17	\$0
Met Council Labor & Fringe Benefits (50%)	\$96,503	Bus		\$0.004	\$0.004							Total Miles	22,824,004	1.000	\$0.00	1.000	\$0.00	\$0
Human Resources																		
Met Council Labor & Fringe Benefits (50%)	\$1,026,641	Bus		\$0.04	\$0.04							Total Miles	22,824,004	1.000	\$0.04	1.000	\$0.04	\$0
Met Council Labor & Fringe Benefits (50%)	\$1,026,641	Bus	\$0.53									Revenue Hours	1,943,037	1.000	\$0.53	1.000	\$0.53	\$0
Met Council Other Expenses (50%)	\$378,173	Bus		\$0.02	\$0.02							Total Miles	22,824,004	1.000	\$0.02	1.000	\$0.02	\$0
Met Council Other Expenses (50%)	\$378,173	Bus	\$0.19									Revenue Hours	1,943,037	1.000	\$0.19	1.000	\$0.19	\$0

**Table 5-1
Metro Transit BRT Cost Model**

**METRO TRANSIT
Fully-Allocated BRT Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Expenses	Unit Cost Source	BRT Supply Variable Unit Cost Rate (\$2010)								Productivity Ratio			Base Year Resource Unit Cost	Inflation - 2010					
			Revenue BRT-Hours	Non-Artic BRT-Miles	Articulated BRT-Miles	Peak BRT Buses	BRT Stations w/ PnR	BRT Stations w/o PnR	On-Street BRT Stations	Dir. Lane Miles	Resource Variable	Resource Value	Resource/Supply		Year of \$:	2010				
															Inflation Factor	Resource Unit Cost	Estimated Annual Cost			
ADMINISTRATIVE																				
Information Services																				
Met Council Labor & Fringe Benefits (50%)	\$1,619,963	Bus		\$0.07	\$0.07									Total Miles	22,824,004	1,000	\$0.07	1,000	\$0.07	\$0
Met Council Labor & Fringe Benefits (50%)	\$1,619,963	Bus	\$0.83											Revenue Hours	1,943,037	1,000	\$0.83	1,000	\$0.83	\$0
Met Council Other Expenses (50%)	\$1,406,274	Bus		\$0.06	\$0.06									Total Miles	22,824,004	1,000	\$0.06	1,000	\$0.06	\$0
Met Council Other Expenses (50%)	\$1,406,274	Bus	\$0.72											Revenue Hours	1,943,037	1,000	\$0.72	1,000	\$0.72	\$0
BRT BUS OPERATIONS																				
BUS TRANSPORTATION																				
Bus Transportation Administrative																				
Administrative Regular Pay (25%) - Hours Driven	\$96,133	Bus	\$0.05											Work Hours	3,582	0.002	\$26.84	1,000	\$26.84	\$0
Administrative Overtime (25%) - Hours Driven	\$584	Bus	\$0.0003											Work Hours	18	0.000	\$31,7480	1,000	\$31.75	\$0
Fringe Benefits (25%) - Hours Driven	\$52,067	Bus	\$0.03											Work Hours	3,600	0.002	\$14.46	1,000	\$14.46	\$0
Operating Divisions (Garages)																				
Driver Regular Pay	\$53,083,372	Bus	\$27.32											Work Hours	2,610,024	1,343	\$20.34	1,000	\$20.34	\$0
Driver Overtime	\$8,019,641	Bus	\$4.13											Work Hours	256,258	0.132	\$31.30	1,000	\$31.30	\$0
Administrative Regular Pay (25%) - Hours Driven	\$347,350	Bus	\$0.18											Work Hours	12,942	0.007	\$26.84	1,000	\$26.84	\$0
Administrative Overtime (25%) - Hours Driven	\$13,732	Bus	\$0.01											Work Hours	433	0.000	\$31.75	1,000	\$31.75	\$0
Fringe Benefits - Hours Driven	\$43,426,372	Bus	\$22.35											Work Hours	2,879,656	1,482	\$15.08	1,000	\$15.08	\$0
District Street Supervision																				
Administrative Regular Pay (25%) - Hours Driven	\$371,554	Bus	\$0.19											Work Hours	13,843	0.007	\$26.84	1,000	\$26.84	\$0
Administrative Overtime (25%) - Hours Driven	\$68,869	Bus	\$0.04											Work Hours	2,169	0.001	\$31.75	1,000	\$31.75	\$0
Fringe Benefits - Hours Driven	\$224,554	Bus	\$0.12											Work Hours	16,013	0.008	\$14.02	1,000	\$14.02	\$0
Transit Control Center																				
Administrative Regular Pay (75%) - Peak Bus Driven	\$1,001,491	Bus				\$1,363								Work Hours	37,313	50.767	\$26.84	1,000	\$26.84	\$0
Administrative Regular Pay (25%) - Hours Driven	\$333,830	Bus	\$0.17											Work Hours	12,438	0.006	\$26.84	1,000	\$26.84	\$0
Administrative Overtime (75%) - Peak Bus Driven	\$136,368	Bus				\$186								Work Hours	4,295	5.844	\$31.75	1,000	\$31.75	\$0
Administrative Overtime (25%) - Hours Driven	\$45,456	Bus	\$0.02											Work Hours	1,432	0.001	\$31.75	1,000	\$31.75	\$0
Fringe Benefits - Peak Bus Driven	\$655,272	Bus				\$892								Work Hours	41,609	56.610	\$15.75	1,000	\$15.75	\$0
Fringe Benefits - Hours Driven	\$218,424	Bus	\$0.11											Work Hours	13,870	0.007	\$15.75	1,000	\$15.75	\$0
Contract Services	\$1,050	Bus	\$0.0005											Revenue Hours	1,943,037	1,000	\$0.0005	1,000	\$0.0005	\$0
Materials & Supplies	\$7,782	Bus	\$0.004											Revenue Hours	1,943,037	1,000	\$0.004	1,000	\$0.004	\$0
Utilities	\$51,181	Bus	\$0.03											Revenue Hours	1,943,037	1,000	\$0.03	1,000	\$0.03	\$0
Miscellaneous/Other	\$4,850	Bus	\$0.002											Revenue Hours	1,943,037	1,000	\$0.002	1,000	\$0.002	\$0
Operator Instruction & Development																				
Administrative Regular Pay	\$128,988	Bus	\$0.07											Work Hours	4,806	0.002	\$26.84	1,000	\$26.84	\$0
Clerical Regular Pay	\$569,006	Bus	\$0.29											Work Hours	27,767	0.014	\$20.49	1,000	\$20.49	\$0
Clerical Overtime	\$37,529	Bus	\$0.02											Work Hours	1,162	0.001	\$32.30	1,000	\$32.30	\$0
Fringe Benefits	\$596,166	Bus	\$0.31											Work Hours	33,735	0.017	\$17.67	1,000	\$17.67	\$0
Contract Services	\$3,840	Bus	\$0.002											Revenue Hours	1,943,037	1,000	\$0.002	1,000	\$0.002	\$0
Materials & Supplies	\$11,890	Bus	\$0.01											Revenue Hours	1,943,037	1,000	\$0.01	1,000	\$0.01	\$0
Utilities	\$26	Bus	\$0.00001											Revenue Hours	1,943,037	1,000	\$0.00001	1,000	\$0.00001	\$0
Miscellaneous/Other	\$11,920	Bus	\$0.01											Revenue Hours	1,943,037	1,000	\$0.01	1,000	\$0.01	\$0
Leases & Rentals	\$1,373	Bus	\$0.001											Revenue Hours	1,943,037	1,000	\$0.001	1,000	\$0.001	\$0

**Table 5-1
Metro Transit BRT Cost Model**

**METRO TRANSIT
Fully-Allocated BRT Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Expenses	Unit Cost Source	BRT Supply Variable Unit Cost Rate (\$2010)							Productivity Ratio			Base Year Resource Unit Cost	Inflation - 2010		1.000			
			Revenue BRT-Hours	Non-Artic BRT-Miles	Articulated BRT-Miles	Peak BRT Buses	BRT Stations w/ PnR	BRT Stations w/o PnR	On-Street BRT Stations	Dir. Lane Miles	Resource Variable	Resource Value		Resource/Supply	Year of \$:	2010	Resource Unit Cost	Estimated Annual Cost	
BRT BUS OPERATIONS																			
BUS MAINTENANCE																			
Parts & Warranty Administrative																			
Mechanic Labor (75%) - Peak Bus Driven	\$3,488	Bus				\$4.75							Work Hours	164	0.224	\$21.217	1.000	\$21.217	\$0
Administrative Regular Pay (75%) - Pk Bus Driven	\$765,458	Bus				\$1,041							Work Hours	28,519	38.802	\$26.840	1.000	\$26.840	\$0
Administrative Overtime (75%) - Peak Bus Driven	\$19,449	Bus				\$26.46							Work Hours	613	0.833	\$31.748	1.000	\$31.748	\$0
Clerical Regular Pay (75%) - Peak Bus Driven	\$940,558	Bus				\$1,280							Work Hours	45,898	62.447	\$20.492	1.000	\$20.492	\$0
Clerical Overtime (75%) - Peak Bus Driven	\$243,461	Bus				\$331							Work Hours	7,537	10.255	\$32.300	1.000	\$32.300	\$0
Fringe Benefits - Peak Bus Driven	\$1,389,909	Bus				\$1,891							Work Hours	82,732	112.561	\$16.80	1.000	\$16.80	\$0
Garage Maintenance Divisions																			
Mechanics Regular Pay - Non-Articulated Bus	\$10,617,942	Bus		\$0.47									Work Hours	500,454	0.022	\$21.22	1.000	\$21.22	\$0
Mechanics Regular Pay - Articulated Bus	\$168,057	Bus			\$0.57								Work Hours	7,921	0.022	\$25.46	1.000	\$25.46	\$0
Mechanics Overtime - Non-Articulated Bus	\$1,249,817	Bus		\$0.06									Work Hours	38,414	0.002	\$32.54	1.000	\$32.54	\$0
Mechanics Overtime - Articulated Bus	\$19,782	Bus			\$0.07								Work Hours	608	0.002	\$39.04	1.000	\$39.04	\$0
Administrative Regular Pay (75%) - Total Miles Driven	\$1,365,358	Bus		\$0.06	\$0.06								Work Hours	50,870	0.002	\$26.84	1.000	\$26.84	\$0
Administrative Overtime (75%) - Total Miles Driven	\$55,137	Bus		\$0.002	\$0.002								Work Hours	1,737	0.000	\$31.75	1.000	\$31.75	\$0
Fringe Benefits - Non-Articulated Miles Driven	\$8,675,707	Bus		\$0.39									Work Hours	538,867	0.024	\$16.10	1.000	\$16.10	\$0
Fringe Benefits - Articulated Miles Driven	\$137,316	Bus			\$0.46								Work Hours	8,529	0.029	\$16.10	1.000	\$16.10	\$0
Fringe Benefits - Total Miles Driven	\$1,038,427	Bus		\$0.05	\$0.05								Work Hours	52,607	0.002	\$19.74	1.000	\$19.74	\$0
Fuel & Lubricants - Non-Articulated Bus	\$20,417,105	Bus		\$0.91									Gallons	7,054,212	0.313	\$2.89	1.000	\$2.89	\$0
Fuel & Lubricants - Articulated Bus	\$323,154	Bus			\$1.09								Gallons	111,651	0.376	\$2.89	1.000	\$2.89	\$0
Bus Parts & Tires - Non-Articulated Bus	\$9,289,166	Bus		\$0.41									Non-Artic Miles	22,526,881	1.000	\$0.41	1.000	\$0.41	\$0
Bus Parts & Tires - Articulated Bus	\$147,025	Bus			\$0.49								Artic Miles	297,123	1.000	\$0.49	1.000	\$0.49	\$0
Other Materials & Supplies	\$995,365	Bus				\$1.354							Peak Buses	735	1.000	\$1.354	1.000	\$1.354	\$0
Miscellaneous/Other - Total Miles Driven	\$6,304	Bus		\$0.00	\$0.00								Total Miles	22,824,004	1.000	\$0.00	1.000	\$0.00	\$0
Non-Revenue Vehicles																			
Mechanics Regular Pay	\$302,554	Bus				\$412							Work Hours	14,260	19.402	\$21.22	1.000	\$21.22	\$0
Mechanics Overtime	\$4,589	Bus				\$6.24							Work Hours	141	0.192	\$32.54	1.000	\$32.54	\$0
Administrative Regular Pay	\$40,373	Bus		\$0.002	\$0.002								Work Hours	1,504	0.000	\$26.84	1.000	\$26.84	\$0
Fringe Benefits - Bus-Miles Driven	\$250,399	Bus		\$0.011	\$0.011								Work Hours	1,504	0.000	\$166.47	1.000	\$166.47	\$0
Fringe Benefits - Peak Buses Driven	\$32,914	Bus				\$45							Work Hours	14,401	19.594	\$2.29	1.000	\$2.29	\$0
Contract Services	\$10,635	Bus				\$14.47							Peak Buses	735	1.000	\$14.47	1.000	\$14.47	\$0
Bus Parts & Tires	\$9	Bus				\$0.01							Peak Buses	735	1.000	\$0.01	1.000	\$0.01	\$0
Other Materials & Supplies	\$274,386	Bus				\$373							Peak Buses	735	1.000	\$373	1.000	\$373	\$0
Miscellaneous/Other	\$121	Bus				\$0.16							Peak Buses	735	1.000	\$0.16	1.000	\$0.16	\$0
Leases & Rentals	\$326	Bus				\$0.44							Peak Buses	735	1.000	\$0.44	1.000	\$0.44	\$0

**Table 5-1
Metro Transit BRT Cost Model**

METRO TRANSIT
Fully-Allocated BRT Cost Model
Expense Line Item Worksheet

Expense Line Item	2010 Expenses	Unit Cost Source	BRT Supply Variable Unit Cost Rate (\$2010)								Productivity Ratio			Inflation - 2010					
			Revenue	Non-Artic	Articulated	Peak	BRT Stations	BRT Stations	On-Street	Dir. Lane	Resource	Resource	Resource/	Base Year	Year of \$:				
			BRT-Hours	BRT-Miles	BRT-Miles	BRT Buses	w/ PnR	w/o PnR	BRT Stations	Miles	Variable	Value	Supply	Resource	Inflation	Resource	2010		
												Unit Cost	Factor	Unit Cost	Estimated Annual Cost				
BRT BUS OPERATIONS																			
BUS MAINTENANCE																			
Heavy Maintenance Functions																			
Mechanics Regular Pay - Non-Articulated Bus	\$3,028,506	Bus		\$0.13									Work Hours	142,742	0.006	\$21.22	1.000	\$21.22	\$0
Mechanics Regular Pay - Articulated Bus	\$47,934	Bus			\$0.16								Work Hours	2,259	0.006	\$25.46	1.000	\$25.46	\$0
Mechanics Overtime - Non-Articulated Bus	\$81,692	Bus		\$0.004									Work Hours	2,511	0.000	\$32.536	1.000	\$32.54	\$0
Mechanics Overtime - Articulated Bus	\$1,293	Bus			\$0.004								Work Hours	40	0.000	\$39.043	1.000	\$39.04	\$0
Administrative Regular Pay - Total Miles Driven	\$240,732	Bus		\$0.01	\$0.01								Work Hours	8,969	0.000	\$26.84	1.000	\$26.84	\$0
Administrative Overtime - Total Miles Driven	\$2,725	Bus		\$0.0001	\$0.0001								Work Hours	86	0.000	\$31.7480	1.000	\$31.75	\$0
Clerical Regular Pay - Total Miles Driven	\$38,743	Bus		\$0.0017	\$0.0017								Work Hours	1,891	0.000	\$20.4922	1.000	\$20.49	\$0
Clerical Overtime - Total Miles Driven	\$2,740	Bus		\$0.0001	\$0.0001								Work Hours	85	0.000	\$32.3004	1.000	\$32.30	\$0
Fringe Benefits - Non-Articulated Miles Driven	\$2,598,774	Bus		\$0.12									Work Hours	145,253	0.006	\$17.89	1.000	\$17.89	\$0
Fringe Benefits - Articulated Miles Driven	\$41,132	Bus			\$0.14								Work Hours	2,299	0.008	\$17.89	1.000	\$17.89	\$0
Fringe Benefits - Total Miles Driven	\$238,086	Bus		\$0.01	\$0.01								Work Hours	11,030	0.000	\$21.58	1.000	\$21.58	\$0
Contract Services - Total Miles Driven	\$176,122	Bus		\$0.01	\$0.01								Total Miles	22,824,004	1.000	\$0.01	1.000	\$0.01	\$0
Bus Parts & Tires - Non-Articulated Bus	(\$2,440,818)	Bus			(\$0.11)								Non-Artic Miles	22,526,881	1.000	(\$0.11)	1.000	(\$0.11)	\$0
Bus Parts & Tires - Articulated Bus	(\$38,632)	Bus			(\$0.13)								Artic Miles	297,123	1.000	(\$0.13)	1.000	(\$0.13)	\$0
Other Materials & Supplies - Total Miles Driven	\$494,358	Bus		\$0.02	\$0.02								Total Miles	22,824,004	1.000	\$0.02	1.000	\$0.02	\$0
Utilities - Total Miles Driven	\$562,697	Bus		\$0.02	\$0.02								Total Miles	22,824,004	1.000	\$0.02	1.000	\$0.02	\$0
Miscellaneous/Other - Total Miles Driven	\$3,623	Bus		\$0.0002	\$0.0002								Total Miles	22,824,004	1.000	\$0.0002	1.000	\$0.00	\$0
Leases & Rentals - Total Miles Driven	\$31,559	Bus		\$0.001	\$0.001								Total Miles	22,824,004	1.000	\$0.001	1.000	\$0.00	\$0
RISK MANAGEMENT																			
Met Council Labor & Fringe Benefits - Tot Miles Driven	\$968,207	Bus		\$0.042	\$0.042								Total Miles	22,824,004	1.000	\$0.04	1.000	\$0.04	\$0
Met Council Other Expenses - Total Miles Driven	\$163,962	Bus		\$0.007	\$0.007								Total Miles	22,824,004	1.000	\$0.01	1.000	\$0.01	\$0
Contract Services - Total Miles Driven	\$685,257	Bus		\$0.030	\$0.030								Total Miles	22,824,004	1.000	\$0.03	1.000	\$0.03	\$0
Casualty & Liability - Total Miles Driven	\$2,428,771	Bus		\$0.106	\$0.106								Total Miles	22,824,004	1.000	\$0.11	1.000	\$0.11	\$0
BRT-SPECIFIC O&M COSTS																			
BRT Station Maintenance (from Metro Transit LRT cost data)																			
Mechanics Regular Pay - Sta With Driven	\$63,632	Rail						\$21,211					Work Hours	2,215	738.263	\$28.73	1.000	\$28.73	\$0
Mechanics Regular Pay - Sta Without Driven	\$169,684	Rail							\$10,605				Work Hours	5,906	369.131	\$28.73	1.000	\$28.73	\$0
Mechanics Overtime - Sta With Driven	\$6,072	Rail						\$2,024					Work Hours	133	44.483	\$45.50	1.000	\$45.50	\$0
Mechanics Overtime - Sta Without Driven	\$16,191	Rail							\$1,012				Work Hours	356	22.241	\$45.50	1.000	\$45.50	\$0
Fringe Benefits - Station With Driven	\$62,914	Rail						\$20,971					Work Hours	2,348	782.745	\$26.79	1.000	\$26.79	\$0
Fringe Benefits - Station Without Driven	\$167,770	Rail							\$10,486				Work Hours	6,262	391.373	\$26.79	1.000	\$26.79	\$0
Contract Services	\$154,687	Rail						\$51,562					Station With	3	1.000	\$51,562	1.000	\$51,562	\$0
Materials & Supplies - Sta With Driven	\$20,677	Rail						\$6,892					Station With	3	1.000	\$6,892	1.000	\$6,892	\$0
Materials & Supplies - Sta Without Driven	\$55,138	Rail							\$3,446				Station Without	16	1.000	\$3,446	1.000	\$3,446	\$0
Utilities	\$2,901	Rail						\$967					Station With	3	1.000	\$967	1.000	\$967	\$0
Leases & Rentals	\$3,654	Rail						\$1,218					Station With	3	1.000	\$1,218	1.000	\$1,218	\$0
BRT On-Street Station Maintenance																			
On-Street Station Maintenance	\$2,000	Other								\$2,000			On-Street Station	n/a	1.000	\$2,000	1.000	\$2,000	\$0
On-Street Station TVM Maintenance	\$10,000	Other								\$10,000			On-Street Station	n/a	1.000	\$10,000	1.000	\$10,000	\$0
On-Street Snow Removal	\$3,500	Other								\$3,500			On-Street Station	n/a	1.000	\$3,500	1.000	\$3,500	\$0
On-Street ITS Signage Maintenance	\$2,600	Other								\$2,600			On-Street Station	n/a	1.000	\$2,600	1.000	\$2,600	\$0

**Table 5-1
Metro Transit BRT Cost Model**

**METRO TRANSIT
Fully-Allocated BRT Cost Model
Expense Line Item Worksheet**

Expense Line Item	2010 Expenses	Unit Cost Source	BRT Supply Variable Unit Cost Rate (\$2010)								Productivity Ratio			Base Year Resource Unit Cost	Inflation - 2010			
			Revenue BRT-Hours	Non-Artic BRT-Miles	Articulated BRT-Miles	Peak BRT Buses	BRT Stations w/ PnR	BRT Stations w/o PnR	On-Street BRT Stations	Dir. Lane Miles	Resource Variable	Resource Value	Resource/ Supply		Inflation Factor	Year of \$:		
																2010 Resource Unit Cost	Estimated Annual Cost	
BRT-SPECIFIC O&M COSTS																		
Station Utilities (from Metro Transit LRT cost data)																		
Utilities - Station With Driven	\$44,755	Rail					\$14,918					Station With	3	1,000	\$14,918	1,000	\$14,918	\$0
Utilities - Station Without Driven	\$119,347	Rail						\$7,459				Station Without	16	1,000	\$7,459	1,000	\$7,459	\$0
Police/Security (from Metro Transit LRT cost data)																		
Administrative Regular Pay (50%) - BRT Hr Driven	\$699,574	Rail/3	\$3.35									Work Hours	18,718	0.269	\$12.46	1,000	\$12.46	\$0
Administrative Regular Pay (25%) - Dir. Lane Miles Driven	\$349,787	Rail								\$14,161		Work Hours	9,359	378.902	\$37.37	1,000	\$37.37	\$0
Administrative Regular Pay (25%) - Stations Driven	\$349,787	Rail					\$18,410	\$18,410				Work Hours	9,359	492.572	\$37.37	1,000	\$37.37	\$0
Administrative Overtime (50%) - BRT Hr Driven	\$57,848	Rail/3	\$0.28									Work Hours	1,264	0.018	\$15.25	1,000	\$15.25	\$0
Administrative Overtime (25%) - Dir. Lane Miles Driven	\$28,924	Rail								\$1,171		Work Hours	632	25.594	\$45.75	1,000	\$45.75	\$0
Administrative Overtime (25%) - Stations Driven	\$28,924	Rail					\$1,522	\$1,522				Work Hours	632	33.272	\$45.75	1,000	\$45.75	\$0
Fringe Benefits - BRT Hour Driven	\$373,332	Rail/3	\$1.79									Work Hours	19,982	0.287	\$6.23	1,000	\$6.23	\$0
Fringe Benefits - Dir. Lane Miles Driven	\$186,666	Rail								\$7,557		Dir. Lane Miles	9,991	404.496	\$18.68	1,000	\$18.68	\$0
Fringe Benefits - Stations Driven	\$186,666	Rail					\$9,825	\$9,825				Work Hours	9,991	525.845	\$18.68	1,000	\$18.68	\$0
Contract Services (50%) - BRT Hours Driven	\$31,165	Rail/3	\$0.15									BRT Hours	69,586	1,000	\$0.15	1,000	\$0.15	\$0
Contract Services (25%) - Dir. Lane Miles Driven	\$15,583	Rail								\$631		Dir. Lane Miles	25	1,000	\$630.87	1,000	\$631	\$0
Contract Services (25%) - Stations Driven	\$15,583	Rail					\$820	\$820				Stations	19	1,000	\$820	1,000	\$820	\$0
Materials & Supplies (50%) - BRT Hours Driven	\$16,688	Rail/3	\$0.08									BRT Hours	69,586	1,000	\$0.08	1,000	\$0.08	\$0
Materials & Supplies (25%) - Dir. Lane Miles Driven	\$8,344	Rail								\$338		Dir. Lane Miles	25	1,000	\$337.81	1,000	\$338	\$0
Materials & Supplies (25%) - Stations Driven	\$8,344	Rail					\$439	\$439				Stations	19	1,000	\$439	1,000	\$439	\$0
Miscellaneous/Other	\$8,559	Rail/3	\$0.04									BRT Hours	69,586	1,000	\$0.04	1,000	\$0.04	\$0
BRT Guideway Maintenance (from AA assumptions)																		
Contract Services?	n/a	Other								\$15,000		Dir. Lane Miles	n/a	1,000	\$15,000	1,000	\$15,000	\$0
TOTALS			\$66.56	\$2.99	\$3.47	\$32,570	\$150,780	\$64,024	\$18,100	\$38,858								\$0
2010 Resource Variable Values			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a								\$0
Notes:																		
1. Select articulated bus-related expenses reflect 20% additional cost over non-articulated buses.																		
2. BRT Station Maintenance costs reflect Metro Transit LRT station unit costs.																		
3. BRT On-Street Maintenance costs consistent with unit costs used in Metro Transit Arterial Transitway Corridors Study.																		
4. BRT guideway maintenance unit cost consistent with prior Bottineau Alternatives Analysis assumptions.																		
BRT Revenue Hours																		
BRT Revenue Miles - Non-Artic																		
BRT Revenue Miles - Articulated																		
BRT Peak Buses (Non-Artic + Artic)																		
BRT Stations w/ PnR																		
BRT Stations w/o PnR																		
On-Street BRT Stations																		
BRT Dir. Lane Miles																		

6.0 MAPLE GROVE TRANSIT FIXED-ROUTE O&M COST METHODOLOGY

The City of Maple Grove established Maple Grove Transit (MGT) in June 1990 under the Replacement Transit Service Demonstration legislation. The City contracts with transit companies to operate the services, while the City's Transit Administrator is responsible for transit planning, administration, customer service and marketing. MGT has an eight-member Transit Commission to provide input into the operation and planning of the system. MGT's bus system provides commuter express service to and from Minneapolis with six routes operated by Metro Transit that serve five park-and-rides, and two suburban local fixed routes operated by Midwest Paratransit.

The Maple Grove Transit bus O&M cost model is based on actual 2010 allocated bus expenses and service statistics that were provided by the City of Maple Grove for use in this study. Specific cost and service information provided was as follows:

- Maple Grove Transit, 2010 NTD Reporting Forms to Met Council, Revision_1; and
- Midwest Paratransit, 2010 NTD Summary Report, Routes 787 and 788.

The O&M cost model was calibrated with costs provided by Maple Grove Transit and service statistics provided by Met Council.

6.1 Key Supply Variables

After collection of financial and service data, development of the spreadsheet cost model proceeded with the selection of key driving supply variables for the existing fixed-route system. Variables selected for each service provider were:

- **Annual Revenue Bus-Hours:** The total hours that vehicles travel over the entire fiscal year. Total bus-hours includes layover, schedule recovery, and deadhead time
- **Annual Revenue Bus-Miles:** The miles that vehicles travel over the entire fiscal year. Total bus-miles includes layover, schedule recovery, and deadhead mileage
- **Peak Buses:** The maximum number of passenger service vehicles actually operated simultaneously on an average weekday.

Table 6-1 shows the key supply variables and values used to represent the model's base year (FY 2010) inputs.

**Table 6-1
Maple Grove Transit Fixed-Route Cost Model
Supply Variable Inputs**

Purchased Transportation - Metro Transit	
Annual Revenue MT Bus-Hours	18,291
Annual Revenue MT Bus-Miles	432,302
MT Peak Buses	28
Purchased Transportation - Midwest Paratransit	
Annual Rev. MP Vehicle-Hours	982
Annual Rev. MP Vehicle-Miles	10,748
MP Peak Vehicles	1

6.2 Line Item Expenses

After selecting the key supply variables, the next step in model development was to record Maple Grove Metro Transit’s fixed-route expenses as a series of line items. Because the financial information was in an aggregated format, so is the Line Item Detail. After the line items were established, each one was assigned a key supply variable as its most relevant cost driver, unit costs and productivity ratios were calculated.

Cost data provided by Maple Grove Transit breaks fixed-route O&M costs into the following categories:

- **Purchased Transportation – Metro Transit**
 - Vehicle Operations
 - Vehicle Maintenance
 - Maple Grove Transit Administration

- **Purchased Transportation – Midwest Paratransit**
 - Vehicle Operations
 - Vehicle Maintenance
 - Maple Grove Transit Administration

- **Non-Vehicle Maintenance**

Maple Grove Transit’s cost information did not separate labor and non-labor expenses within the categories.

Table 6-2 summarizes the dollar impact that each of the fixed-route model’s key supply variables has on the calibration (base year) system. The unit costs in this table reflect the dollar amount the model will adjust for each added or deleted unit of a supply variable – the incremental change from the calibration fixed-route system. In other words, for each Metro Transit bus-mile added, the model will increase its total estimate by \$0.46; for each Midwest Paratransit vehicle-hour deleted, the model will subtract \$0.38 from its estimate, and so forth.

Table 6-2
Maple Grove Transit Fixed-Route Cost Model
Supply Variable Impacts for the 2010 Calibration Bus System
(in 2010 dollars)

Key Supply Variable	Share of Total O&M Cost		Unit Cost
	Dollar Amount	Percentage	
Metro Transit			
Annual Revenue MT Bus-Hours	\$2,634,961	81%	\$144.06
Annual Revenue MT Bus-Miles	\$198,330	6%	\$0.46
MT Peak Buses	\$306,852	9%	\$10,959
Midwest Paratransit			
Annual Revenue MP Vehicle-Hours	\$95,811	3%	\$97.57
Annual Revenue MP Vehicle-Miles	\$4,065	0.13%	\$0.38
MP Peak Vehicles	\$10,959	0%	\$10,959
Total	\$3,250,978	100.00%	

Table 6-3 presents the Maple Grove Transit fixed-route O&M cost model worksheet for the 2010 base year (that has not been inflated to 2011 dollars).

**Table 6-3
Maple Grove Transit Fixed-Route Cost Model**

Maple Grove Transit
Bottineau Corridor Project
O&M Cost Model
BUS LINE ITEM DETAIL

Expense Line Item	2010 Bus Expenses	Existing Unit Cost Adjusted	New Unit Cost Added	Bus Supply Variable Unit Cost Rate (\$2010)						Productivity Ratio			Base Year Resource Unit Cost	Inflation - 2010		Year of \$: Resource Unit Cost	2010 Estimated Annual Cost			
				MT Total	MP Total	MT Total	MP Total	MT Peak	MP Peak	Resource	Resource	Resource/		Inflation	Factor					
				Bus Hours	Veh Hours	Bus Miles	Veh Miles	Buses	Vehicles	Variable	Value	Supply								
PURCHASED TRANSPORTATION - METRO TRANSIT																				
VEHICLE OPERATION	\$2,634,961			\$79.94							MT Hours	32,961	1.000	\$79.94	1.000	\$79.94	\$2,634,961			
VEHICLE MAINTENANCE	\$198,330					\$0.22					MT Miles	889,818	1.000	\$0.22	1.000	\$0.22	\$198,330			
MAPLE GROVE TRANSIT ADMINISTRATION	\$144,541							\$5,162			MT Peak Buses	28	1.0	\$5,162	1.000	\$5,162	\$144,541			
PURCHASED TRANSPORTATION - MIDWEST PARATRANSIT																				
VEHICLE OPERATION	\$95,811				\$88.34						MP Hours	1,085	1.000	\$88.34	1.000	\$88.34	\$95,811			
VEHICLE MAINTENANCE	\$4,065						\$1.00				MP Miles	4,064	1.000	\$1.00	1.000	\$1.00	\$4,065			
MAPLE GROVE TRANSIT ADMINISTRATION	\$10,324								\$5,162		MP Peak Vehicles	2	1.000	\$5,162	1.000	\$5,162.17	\$10,324			
NON-VEHICLE MAINTENANCE																				
MAPLE GROVE TRANSIT - MT Peak Bus driven	\$152,083							\$5,432			MT Peak Buses	28	1.0	\$5,432	1.000	\$5,431.53	\$152,083			
MAPLE GROVE TRANSIT - MP Peak Vehicle driven	\$10,863								\$5,432		MP Peak Vehicles	2	1.000	\$5,432	1.000	\$5,431.53	\$10,863			
TOTALS	\$3,250,978			\$79.94	\$88.34	\$0.22	\$1.00	\$10,594	\$10,594								\$3,250,978			
2010 Resource Variable Values																				
													MT Hours		32,961					
													MP Hours		1,085					
													MT Miles		889,818					
													MP Miles		4,064					
													MT Peak Buses		28					
													MP Peak Veh		2					

7.0 MET COUNCIL-FUNDED BUS O&M COST METHODOLOGY

The Metropolitan (Met) Council is the regional planning agency serving the Twin Cities seven-county metropolitan area. Among the essential services the Council is responsible for is the largest transit system in the region, Metro Transit. Prior sections of this report have described O&M cost models for Metro Transit and Maple Grove Transit, two of the agencies that operate on behalf of Met Council. This section documents the O&M cost model for six additional bus routes that operate in the Bottineau Corridor and are funded by Met Council:

- 705
- 716
- 717
- 721
- 722
- 723

These bus routes operate by contract, in primarily suburban environments, and are more heavily subsidized by Met Council than the fixed-route bus services provided by Metro Transit and Maple Grove Transit.

The O&M cost model for Met Council-funded route is based on actual 2010 expenses and service statistics that were provided by the Council in the form of an untitled spreadsheet (transmitted electronically as “Bus Book3”) for use in this study. Operating data provided are at the route level and include total annual revenue-miles, total annual revenue-hours, total annual in-service hours and maximum vehicle requirements. Financial data are also by route and include annual operating expenses for vehicle operations, vehicle maintenance, non-vehicle maintenance and general administration.

7.1 Key Supply Variables

After collection of financial and service data, development of the spreadsheet cost model proceeded with the selection of key driving supply variables for the existing Council-funded routes. Variables selected for each service provider were:

- **Annual Revenue Vehicle-Hours:** The hours that vehicles travel while in revenue service over the entire fiscal year. Revenue bus-hours include layover and schedule recovery but exclude time for deadhead, operator training and maintenance testing.
- **Annual Revenue Vehicle-Miles:** The miles that vehicles travel while in revenue service over the entire fiscal year. Revenue bus-miles include layover and schedule recovery but exclude miles for deadhead, operator training and maintenance testing.
- **Peak Vehicles:** The maximum number of passenger service vehicles actually operated simultaneously on an average weekday.

Table 7-1 shows the key supply variables and values used to represent the model's base year (FY 2010) inputs.

Table 7-1
Met Council-Funded Routes Cost Model
Supply Variable Inputs

Met Council-Funded Routes	
Total Annual Bus-Hours	31,183
Total Annual Bus-Miles	429,892
Peak Buses	14

7.2 Line Item Expenses

After selecting the key supply variables, the next step in model development was to record Met Council-funded route expenses as a series of line items. Because the financial information was in an aggregated format, so is the Line Item Detail. After the line items were established, each one was assigned a key supply variable as its most relevant cost driver. Unit costs and productivity ratios were then calculated.

Cost data provided by Met Council breaks annual O&M costs for the relevant routes into the following categories:

- Vehicle Operations
- Vehicle Maintenance
- Non-Vehicle Maintenance
- General Administration

Met Council's cost information did not separate labor and non-labor expenses within the categories.

Table 7-2 summarizes the dollar impact that each of the model's key supply variables has on the calibration (base year) system. The unit costs in this table reflect the dollar amount the model will adjust for each added or deleted unit of a supply variable – the incremental change from the calibration fixed-route system. In other words, for each revenue bus-mile added, the model will increase its total estimate by \$0.78; for each revenue vehicle-hour deleted, the model will subtract \$34.09 from its estimate, and so forth.

Table 7-2
Met Council-Funded Routes Cost Model
Supply Variable Impacts for the 2010 Calibration Bus System
(in 2010 dollars)

Key Supply Variable	Share of Total O&M Cost		Unit Cost
	Dollar Amount	Percentage	
Total Annual Vehicle Revenue-Hours	\$1,062,995	57%	\$34.09
Total Annual Vehicle Revenue-Miles	\$333,672	18%	\$0.78
Peak Vehicles	\$477,466	25%	\$34,105
Total	\$1,874,133	100%	

Table 7-3 presents the Met Council-funded routes O&M cost model worksheet for the 2010 base year (that has not been inflated to 2011 dollars).

**Table 7-3
Met Council-Funded Routes Cost Model**

Met Council-Funded Routes
Bottineau Corridor Project
O&M Cost Model
BUS LINE ITEM DETAIL

Expense Line Item	2010 Bus Expenses	Existing Unit Cost Adjusted	New Unit Cost Added	Supply Variable Unit Costs (\$2010)			Productivity Ratio			Base Year Resource Unit Cost	Inflation - 2010		2010 Estimated Annual Cost		
				Revenue Veh-Hours	Revenue Veh-Miles	Peak Vehicles	Resource Variable	Resource Value	Resource/ Supply		Inflation Factor	Year of \$:			
												2010			
VEHICLE OPERATION	\$1,062,995			\$34.09			Revenue Hours	31,183	1.000	\$34.09	1.000	\$34.09	\$1,062,995		
VEHICLE MAINTENANCE	\$333,672				\$0.78		Revenue Miles	429,892	1.000	\$0.78	1.000	\$0.78	\$333,672		
NON-VEHICLE MAINTENANCE	\$5,573					\$398.10	Peak Vehicles	14	1.000	\$398.10	1.000	\$398.10	\$5,573		
GENERAL ADMINISTRATION	\$471,893					\$33,707	Peak Vehicles	14	1.000	\$33,707	1.000	\$33,707	\$471,893		
TOTALS	\$1,874,133			\$34.09	\$0.78	\$34,105							\$1,874,133		
2010 Resource Variable Values				31,183	429,892	14									
													Veh-Hours	31,183	
														Veh-Miles	429,892
														Peak Vehicles	14

APPENDIX A:
METRO TRANSIT 2010 ACTUAL EXPENSES
ALLOCATED BY MODE

METRO TRANSIT
O&M Cost Models
2010 Actual Expenses, Allocated by Mode

Department & Expense Line Item	Dept	Type	Cost Type	2010 Bus Expenses	Modal Alloc. Split			Modal Allocation Dollars			2010 Rail Expenses	Total Allocated 2010 Actual Costs			
					Bus	Light Rail	C. Rail	Bus	Light Rail	C. Rail		Bus	Light Rail	C. Rail	Total
1. Executive															
Internal Audit															
Met Council Labor & Fringe Benefits	101	12	LABOR-COUNCIL	\$208,111	100.00%	0.00%	0.00%	\$208,111	\$0	\$0	\$0	\$208,111	\$0	\$0	\$208,111
Met Council Other Expenses	101	19	OTHER-COUNCIL	\$8,766	100.00%	0.00%	0.00%	\$8,766	\$0	\$0	\$0	\$8,766	\$0	\$0	\$8,766
Executive															
Administrative Regular Pay	102	10	LABOR	\$696,482	93.52%	5.23%	1.25%	\$651,362	\$36,432	\$8,688	\$0	\$651,362	\$36,432	\$8,688	\$696,482
Administrative Overtime	102	10	LABOR	\$11,906	93.52%	5.23%	1.25%	\$11,135	\$623	\$149	\$0	\$11,135	\$623	\$149	\$11,906
Fringe Benefits	102	11	LABOR	\$596,564	93.52%	5.23%	1.25%	\$557,917	\$31,205	\$7,442	\$0	\$557,917	\$31,205	\$7,442	\$596,564
Met Council Labor & Fringe Benefits	102	12	LABOR-COUNCIL	\$1,223,643	93.52%	5.23%	1.25%	\$1,144,373	\$64,007	\$15,264	\$0	\$1,144,373	\$64,007	\$15,264	\$1,223,643
Met Council Other Expenses	102	19	OTHER-COUNCIL	\$1,611,592	93.52%	5.23%	1.25%	\$1,507,189	\$84,300	\$20,103	\$0	\$1,507,189	\$84,300	\$20,103	\$1,611,592
Contract Services	102	13	SERV	\$97,857	93.52%	5.23%	1.25%	\$91,518	\$5,119	\$1,221	\$0	\$91,518	\$5,119	\$1,221	\$97,857
Materials & Supplies	102	14	MATL	\$120,040	93.52%	5.23%	1.25%	\$112,264	\$6,279	\$1,497	\$0	\$112,264	\$6,279	\$1,497	\$120,040
Utilities	102	15	UTIL	\$507,342	93.52%	5.23%	1.25%	\$474,476	\$26,538	\$6,329	\$0	\$474,476	\$26,538	\$6,329	\$507,342
Miscellaneous/Other	102	16	MISC	\$1,307,214	93.52%	5.23%	1.25%	\$1,222,530	\$68,378	\$16,306	\$0	\$1,222,530	\$68,378	\$16,306	\$1,307,214
Leases & Rentals	102	17	LEASE	\$0	93.52%	5.23%	1.25%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Police/Security															
Administrative Regular Pay	103	10	LABOR	\$4,786,483	63.80%	29.23%	6.97%	\$3,053,674	\$1,399,148	\$333,660	\$0	\$3,053,674	\$1,399,148	\$333,660	\$4,786,483
Administrative Overtime	103	10	LABOR	\$395,793	63.80%	29.23%	6.97%	\$252,508	\$115,695	\$27,590	\$0	\$252,508	\$115,695	\$27,590	\$395,793
Fringe Benefits	103	11	LABOR	\$2,554,336	63.80%	29.23%	6.97%	\$1,629,612	\$746,664	\$178,060	\$0	\$1,629,612	\$746,664	\$178,060	\$2,554,336
Contract Services	103	13	SERV	\$213,232	63.80%	29.23%	6.97%	\$136,037	\$62,330	\$14,864	\$0	\$136,037	\$62,330	\$14,864	\$213,232
Materials & Supplies	103	14	MATL	\$114,179	63.80%	29.23%	6.97%	\$72,844	\$33,376	\$7,959	\$0	\$72,844	\$33,376	\$7,959	\$114,179
Utilities	103	15	UTIL	\$58,062	63.80%	29.23%	6.97%	\$37,043	\$16,972	\$4,047	\$0	\$37,043	\$16,972	\$4,047	\$58,062
Miscellaneous/Other	103	16	MISC	\$29,279	63.80%	29.23%	6.97%	\$18,680	\$8,559	\$2,041	\$0	\$18,680	\$8,559	\$2,041	\$29,279
Leases & Rentals	103	17	LEASE	\$0	63.80%	29.23%	6.97%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Safety															
Administrative Regular Pay	104	10	LABOR	\$487,293	100.00%	0.00%	0.00%	\$487,293	\$0	\$0	\$0	\$487,293	\$0	\$0	\$487,293
Administrative Overtime	104	10	LABOR	\$34,215	100.00%	0.00%	0.00%	\$34,215	\$0	\$0	\$0	\$34,215	\$0	\$0	\$34,215
Fringe Benefits	104	11	LABOR	\$351,151	100.00%	0.00%	0.00%	\$351,151	\$0	\$0	\$0	\$351,151	\$0	\$0	\$351,151
Contract Services	104	13	SERV	\$5,513	100.00%	0.00%	0.00%	\$5,513	\$0	\$0	\$0	\$5,513	\$0	\$0	\$5,513
Materials & Supplies	104	14	MATL	\$3,619	100.00%	0.00%	0.00%	\$3,619	\$0	\$0	\$0	\$3,619	\$0	\$0	\$3,619
Utilities	104	15	UTIL	\$422	100.00%	0.00%	0.00%	\$422	\$0	\$0	\$0	\$422	\$0	\$0	\$422
Miscellaneous/Other	104	16	MISC	\$21,257	100.00%	0.00%	0.00%	\$21,257	\$0	\$0	\$0	\$21,257	\$0	\$0	\$21,257
2. Administration															
Customer Svc. & Public Relations															
Customer Relations															
Administrative Regular Pay	201	10	LABOR	\$251,050	82.98%	13.75%	3.28%	\$208,309	\$34,511	\$8,230	\$0	\$208,309	\$34,511	\$8,230	\$242,820
Administrative Overtime	201	10	LABOR	\$1,503	82.98%	13.75%	3.28%	\$1,247	\$207	\$49	\$0	\$1,247	\$207	\$49	\$1,453
Clerical Regular Pay	201	10	LABOR	\$173,130	82.98%	13.75%	3.28%	\$143,655	\$23,799	\$5,676	\$0	\$143,655	\$23,799	\$5,676	\$167,455
Clerical Overtime	201	10	LABOR	\$2,083	82.98%	13.75%	3.28%	\$1,729	\$286	\$68	\$0	\$1,729	\$286	\$68	\$2,015
Fringe Benefits	201	11	LABOR	\$278,611	82.98%	13.75%	3.28%	\$231,178	\$38,299	\$9,133	\$0	\$231,178	\$38,299	\$9,133	\$269,478
Contract Services	201	13	SERV	\$1,958	82.98%	13.75%	3.28%	\$1,625	\$269	\$64	\$0	\$1,625	\$269	\$64	\$1,894
Materials & Supplies	201	14	MATL	\$10,819	82.98%	13.75%	3.28%	\$8,977	\$1,487	\$355	\$0	\$8,977	\$1,487	\$355	\$10,464
Utilities	201	15	UTIL	\$0	82.98%	13.75%	3.28%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous/Other	201	16	MISC	\$8,598	82.98%	13.75%	3.28%	\$7,134	\$1,182	\$282	\$0	\$7,134	\$1,182	\$282	\$8,316
Transit Info Center															
Administrative Regular Pay	202	10	LABOR	\$449,710	94.37%	4.54%	1.08%	\$424,400	\$20,437	\$4,874	\$0	\$424,400	\$20,437	\$4,874	\$444,836
Administrative Overtime	202	10	LABOR	\$8,998	94.37%	4.54%	1.08%	\$8,492	\$409	\$98	\$0	\$8,492	\$409	\$98	\$8,900
Clerical Regular Pay	202	10	LABOR	\$1,195,161	94.37%	4.54%	1.08%	\$1,127,895	\$54,313	\$12,952	\$0	\$1,127,895	\$54,313	\$12,952	\$1,182,208
Clerical Overtime	202	10	LABOR	\$42,378	94.37%	4.54%	1.08%	\$39,993	\$1,926	\$459	\$0	\$39,993	\$1,926	\$459	\$41,919
Fringe Benefits	202	11	LABOR	\$1,223,564	94.37%	4.54%	1.08%	\$1,154,700	\$55,604	\$13,260	\$0	\$1,154,700	\$55,604	\$13,260	\$1,210,304
Contract Services	202	13	SERV	\$42,571	94.37%	4.54%	1.08%	\$40,175	\$1,935	\$461	\$0	\$40,175	\$1,935	\$461	\$42,109
Materials & Supplies	202	14	MATL	\$227,462	94.37%	4.54%	1.08%	\$214,660	\$10,337	\$2,465	\$0	\$214,660	\$10,337	\$2,465	\$224,997
Utilities	202	15	UTIL	\$1,078	94.37%	4.54%	1.08%	\$1,018	\$49	\$12	\$0	\$1,018	\$49	\$12	\$1,067
Miscellaneous/Other	202	16	MISC	\$3,392	94.37%	4.54%	1.08%	\$3,201	\$154	\$37	\$0	\$3,201	\$154	\$37	\$3,355
Leases & Rentals	202	17	LEASE	\$2,201	94.37%	4.54%	1.08%	\$2,077	\$100	\$24	\$0	\$2,077	\$100	\$24	\$2,177
Marketing															
Administrative Regular Pay	203	10	LABOR	\$752,515	88.14%	9.58%	2.28%	\$663,236	\$72,087	\$17,191	\$0	\$663,236	\$72,087	\$17,191	\$735,324
Administrative Overtime	203	10	LABOR	\$10,406	88.14%	9.58%	2.28%	\$9,171	\$997	\$238	\$0	\$9,171	\$997	\$238	\$10,168
Clerical Regular Pay	203	10	LABOR	\$41,666	88.14%	9.58%	2.28%	\$36,722	\$3,991	\$952	\$0	\$36,722	\$3,991	\$952	\$40,714
Clerical Overtime	203	10	LABOR	\$61	88.14%	9.58%	2.28%	\$54	\$6	\$1	\$0	\$54	\$6	\$1	\$60
Fringe Benefits	203	11	LABOR	\$474,978	88.14%	9.58%	2.28%	\$418,627	\$45,501	\$10,851	\$0	\$418,627	\$45,501	\$10,851	\$464,127
Met Council Labor & Fringe Benefits	203	12	LABOR-COUNCIL	\$130,389	88.14%	9.58%	2.28%	\$114,919	\$12,491	\$2,979	\$0	\$114,919	\$12,491	\$2,979	\$127,410
Met Council Other Expenses	203	19	OTHER-COUNCIL	\$44,583	88.14%	9.58%	2.28%	\$39,294	\$4,271	\$1,018	\$0	\$39,294	\$4,271	\$1,018	\$43,565
Contract Services	203	13	SERV	\$1,377,722	88.14%	9.58%	2.28%	\$1,214,269	\$131,979	\$31,474	\$0	\$1,214,269	\$131,979	\$31,474	\$1,346,248
Materials & Supplies	203	14	MATL	\$552,054	88.14%	9.58%	2.28%	\$486,558	\$52,884	\$12,611	\$0	\$486,558	\$52,884	\$12,611	\$539,442
Utilities	203	15	UTIL	\$0	88.14%	9.58%	2.28%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Advertising/Promo/Media	203	16	MISC	\$765,877	88.14%	9.58%	2.28%	\$675,013	\$73,367	\$17,496	\$0	\$675,013	\$73,367	\$17,496	\$748,381
Other Miscellaneous/Other Expenses	203	16	MISC	\$456,530	88.14%	9.58%	2.28%	\$402,367	\$43,733	\$10,429	\$0	\$402,367	\$43,733	\$10,429	\$446,101
Leases & Rentals	203	17	LEASE	\$73,987	88.14%	9.58%	2.28%	\$65,209	\$7,088	\$1,690	\$0	\$65,209	\$7,088	\$1,690	\$72,297

**METRO TRANSIT
O&M Cost Models
2010 Actual Expenses, Allocated by Mode**

Department & Expense Line Item	Dept	Type	Cost Type	2010 Bus Expenses	Modal Alloc. Split			Modal Allocation Dollars			2010 Rail Expenses	Total Allocated 2010 Actual Costs			
					Bus	Light Rail	C. Rail	Bus	Light Rail	C. Rail		Bus	Light Rail	C. Rail	Total
2. Administration															
Service Development															
Administrative Regular Pay	204	10	LABOR	\$1,114,889	93.87%	4.95%	1.18%	\$1,046,549	\$55,181	\$13,159	\$0	\$1,046,549	\$55,181	\$13,159	\$1,101,730
Administrative Overtime	204	10	LABOR	\$25,092	93.87%	4.95%	1.18%	\$23,554	\$1,242	\$296	\$0	\$23,554	\$1,242	\$296	\$24,796
Clerical Regular Pay	204	10	LABOR	\$369,300	93.87%	4.95%	1.18%	\$346,663	\$18,278	\$4,359	\$0	\$346,663	\$18,278	\$4,359	\$364,941
Clerical Overtime	204	10	LABOR	\$6,740	93.87%	4.95%	1.18%	\$6,326	\$334	\$80	\$0	\$6,326	\$334	\$80	\$6,660
Fringe Benefits	204	11	LABOR	\$931,937	93.87%	4.95%	1.18%	\$874,811	\$46,126	\$11,000	\$0	\$874,811	\$46,126	\$11,000	\$920,937
Contract Services	204	13	SERV	\$34,164	93.87%	4.95%	1.18%	\$32,070	\$1,691	\$403	\$0	\$32,070	\$1,691	\$403	\$33,761
Materials & Supplies	204	14	MATL	\$998	93.87%	4.95%	1.18%	\$937	\$49	\$12	\$0	\$937	\$49	\$12	\$986
Utilities	204	15	UTIL	\$1,276	93.87%	4.95%	1.18%	\$1,198	\$63	\$15	\$0	\$1,198	\$63	\$15	\$1,261
Miscellaneous/Other	204	16	MISC	\$5,806	93.87%	4.95%	1.18%	\$5,450	\$287	\$69	\$0	\$5,450	\$287	\$69	\$5,737
Finance															
Mechanics Regular Pay	205	10	LABOR	\$962,472	100.00%	0.00%	0.00%	\$962,472	\$0	\$0	\$0	\$962,472	\$0	\$0	\$962,472
Mechanics Overtime	205	10	LABOR	\$56,256	100.00%	0.00%	0.00%	\$56,256	\$0	\$0	\$0	\$56,256	\$0	\$0	\$56,256
Administrative Regular Pay	205	10	LABOR	\$1,812,762	100.00%	0.00%	0.00%	\$1,812,762	\$0	\$0	\$0	\$1,812,762	\$0	\$0	\$1,812,762
Administrative Overtime	205	10	LABOR	\$45,486	100.00%	0.00%	0.00%	\$45,486	\$0	\$0	\$0	\$45,486	\$0	\$0	\$45,486
Clerical Regular Pay	205	10	LABOR	\$1,510,230	100.00%	0.00%	0.00%	\$1,510,230	\$0	\$0	\$0	\$1,510,230	\$0	\$0	\$1,510,230
Clerical Overtime	205	10	LABOR	\$137,553	100.00%	0.00%	0.00%	\$137,553	\$0	\$0	\$0	\$137,553	\$0	\$0	\$137,553
Fringe Benefits	205	11	LABOR	\$3,094,681	100.00%	0.00%	0.00%	\$3,094,681	\$0	\$0	\$0	\$3,094,681	\$0	\$0	\$3,094,681
Met Council Labor & Fringe Benefits	205	12	LABOR-COUNCIL	\$780,757	100.00%	0.00%	0.00%	\$780,757	\$0	\$0	\$0	\$780,757	\$0	\$0	\$780,757
Met Council Other Expenses	205	19	OTHER-COUNCIL	\$166,034	100.00%	0.00%	0.00%	\$166,034	\$0	\$0	\$0	\$166,034	\$0	\$0	\$166,034
Contract Services	205	13	SERV	\$552,327	100.00%	0.00%	0.00%	\$552,327	\$0	\$0	\$0	\$552,327	\$0	\$0	\$552,327
Other Materials & Supplies	205	14	MATL	\$816,471	100.00%	0.00%	0.00%	\$816,471	\$0	\$0	\$0	\$816,471	\$0	\$0	\$816,471
Utilities	205	15	UTIL	\$62,819	100.00%	0.00%	0.00%	\$62,819	\$0	\$0	\$0	\$62,819	\$0	\$0	\$62,819
Miscellaneous/Other	205	16	MISC	\$10,027	100.00%	0.00%	0.00%	\$10,027	\$0	\$0	\$0	\$10,027	\$0	\$0	\$10,027
Leases & Rentals	205	17	LEASE	\$67,837	100.00%	0.00%	0.00%	\$67,837	\$0	\$0	\$0	\$67,837	\$0	\$0	\$67,837
Purchasing															
Administrative Regular Pay	206	10	LABOR	\$311,792	100.00%	0.00%	0.00%	\$311,792	\$0	\$0	\$0	\$311,792	\$0	\$0	\$311,792
Administrative Overtime	206	10	LABOR	\$2,691	100.00%	0.00%	0.00%	\$2,691	\$0	\$0	\$0	\$2,691	\$0	\$0	\$2,691
Clerical Regular Pay	206	10	LABOR	\$46,962	100.00%	0.00%	0.00%	\$46,962	\$0	\$0	\$0	\$46,962	\$0	\$0	\$46,962
Clerical Overtime	206	10	LABOR	\$0	100.00%	0.00%	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fringe Benefits	206	11	LABOR	\$240,245	100.00%	0.00%	0.00%	\$240,245	\$0	\$0	\$0	\$240,245	\$0	\$0	\$240,245
Met Council Labor & Fringe Benefits	206	12	LABOR-COUNCIL	\$193,005	100.00%	0.00%	0.00%	\$193,005	\$0	\$0	\$0	\$193,005	\$0	\$0	\$193,005
Contract Services	206	13	SERV	\$4,002	100.00%	0.00%	0.00%	\$4,002	\$0	\$0	\$0	\$4,002	\$0	\$0	\$4,002
Materials & Supplies	206	14	MATL	\$6,912	100.00%	0.00%	0.00%	\$6,912	\$0	\$0	\$0	\$6,912	\$0	\$0	\$6,912
Utilities	206	15	UTIL	\$0	100.00%	0.00%	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous/Other	206	16	MISC	\$24,316	100.00%	0.00%	0.00%	\$24,316	\$0	\$0	\$0	\$24,316	\$0	\$0	\$24,316
Human Resources															
Met Council Labor & Fringe Benefits	207	12	LABOR-COUNCIL	\$2,053,282	100.00%	0.00%	0.00%	\$2,053,282	\$0	\$0	\$0	\$2,053,282	\$0	\$0	\$2,053,282
Met Council Other Expenses	207	19	OTHER-COUNCIL	\$756,346	100.00%	0.00%	0.00%	\$756,346	\$0	\$0	\$0	\$756,346	\$0	\$0	\$756,346
Contract Services	207	13	SERV	(\$201)	100.00%	0.00%	0.00%	(\$201)	\$0	\$0	\$0	(\$201)	\$0	\$0	(\$201)
Other Materials & Supplies	207	14	MATL	\$373	100.00%	0.00%	0.00%	\$373	\$0	\$0	\$0	\$373	\$0	\$0	\$373
Information Services															
Met Council Labor & Fringe Benefits	208	12	LABOR-COUNCIL	\$3,239,926	100.00%	0.00%	0.00%	\$3,239,926	\$0	\$0	\$0	\$3,239,926	\$0	\$0	\$3,239,926
Met Council Other Expenses	208	19	OTHER-COUNCIL	\$2,812,547	100.00%	0.00%	0.00%	\$2,812,547	\$0	\$0	\$0	\$2,812,547	\$0	\$0	\$2,812,547
Miscellaneous/Other	208	16	MISC	\$905	100.00%	0.00%	0.00%	\$905	\$0	\$0	\$0	\$905	\$0	\$0	\$905

**METRO TRANSIT
O&M Cost Models
2010 Actual Expenses, Allocated by Mode**

Department & Expense Line Item	Dept	Type	Cost Type	2010 Bus Expenses	Modal Alloc. Split			Modal Allocation Dollars			2010 Rail Expenses	Total Allocated 2010 Actual Costs			
					Bus	Light Rail	C. Rail	Bus	Light Rail	C. Rail		Bus	Light Rail	C. Rail	Total
3. Engineering & Facilities															
Engineering & Facilities Admin.															
Administrative Regular Pay	301	10	LABOR	\$227,656	100.00%	0.00%	0.00%	\$227,656	\$0	\$0	\$0	\$227,656	\$0	\$0	\$227,656
Administrative Overtime	301	10	LABOR	\$12,178	100.00%	0.00%	0.00%	\$12,178	\$0	\$0	\$0	\$12,178	\$0	\$0	\$12,178
Fringe Benefits	301	11	LABOR	\$343,689	100.00%	0.00%	0.00%	\$343,689	\$0	\$0	\$0	\$343,689	\$0	\$0	\$343,689
Contract Services	301	13	SERV	\$23,767	100.00%	0.00%	0.00%	\$23,767	\$0	\$0	\$0	\$23,767	\$0	\$0	\$23,767
Materials & Supplies	301	14	MATL	\$14,943	100.00%	0.00%	0.00%	\$14,943	\$0	\$0	\$0	\$14,943	\$0	\$0	\$14,943
Utilities	301	15	UTIL	\$17,533	100.00%	0.00%	0.00%	\$17,533	\$0	\$0	\$0	\$17,533	\$0	\$0	\$17,533
Miscellaneous/Other	301	16	MISC	\$10,181	100.00%	0.00%	0.00%	\$10,181	\$0	\$0	\$0	\$10,181	\$0	\$0	\$10,181
Leases & Rentals	301	17	LEASE	\$18,861	100.00%	0.00%	0.00%	\$18,861	\$0	\$0	\$0	\$18,861	\$0	\$0	\$18,861
System Facilities Engineering															
Contract Services	302	13	SERV	\$298,276	100.00%	0.00%	0.00%	\$298,276	\$0	\$0	\$0	\$298,276	\$0	\$0	\$298,276
Materials & Supplies	302	14	MATL	\$62,984	100.00%	0.00%	0.00%	\$62,984	\$0	\$0	\$0	\$62,984	\$0	\$0	\$62,984
Utilities	302	15	UTIL	\$8,701	100.00%	0.00%	0.00%	\$8,701	\$0	\$0	\$0	\$8,701	\$0	\$0	\$8,701
Miscellaneous/Other	302	16	MISC	\$2,806	100.00%	0.00%	0.00%	\$2,806	\$0	\$0	\$0	\$2,806	\$0	\$0	\$2,806
Leases & Rentals	302	17	LEASE	\$8,978	100.00%	0.00%	0.00%	\$8,978	\$0	\$0	\$0	\$8,978	\$0	\$0	\$8,978
Garage Building Maintenance															
Mechanics Regular Pay	303	10	LABOR	\$1,502,975	100.00%	0.00%	0.00%	\$1,502,975	\$0	\$0	\$0	\$1,502,975	\$0	\$0	\$1,502,975
Mechanics Overtime	303	10	LABOR	\$206,135	100.00%	0.00%	0.00%	\$206,135	\$0	\$0	\$0	\$206,135	\$0	\$0	\$206,135
Fringe Benefits	303	11	LABOR	\$1,309,907	100.00%	0.00%	0.00%	\$1,309,907	\$0	\$0	\$0	\$1,309,907	\$0	\$0	\$1,309,907
Contract Services	303	13	SERV	\$455,566	100.00%	0.00%	0.00%	\$455,566	\$0	\$0	\$0	\$455,566	\$0	\$0	\$455,566
Materials & Supplies	303	14	MATL	\$545,487	100.00%	0.00%	0.00%	\$545,487	\$0	\$0	\$0	\$545,487	\$0	\$0	\$545,487
Utilities	303	15	UTIL	\$79,346	100.00%	0.00%	0.00%	\$79,346	\$0	\$0	\$0	\$79,346	\$0	\$0	\$79,346
Miscellaneous/Other	303	16	MISC	\$11,096	100.00%	0.00%	0.00%	\$11,096	\$0	\$0	\$0	\$11,096	\$0	\$0	\$11,096
Leases & Rentals	303	17	LEASE	\$4,644	100.00%	0.00%	0.00%	\$4,644	\$0	\$0	\$0	\$4,644	\$0	\$0	\$4,644
Other Facilities Maintenance															
Mechanics Regular Pay	304	10	LABOR	\$651,310	100.00%	0.00%	0.00%	\$651,310	\$0	\$0	\$0	\$651,310	\$0	\$0	\$651,310
Mechanics Overtime	304	10	LABOR	\$38,069	100.00%	0.00%	0.00%	\$38,069	\$0	\$0	\$0	\$38,069	\$0	\$0	\$38,069
Fringe Benefits	304	11	LABOR	\$528,291	100.00%	0.00%	0.00%	\$528,291	\$0	\$0	\$0	\$528,291	\$0	\$0	\$528,291
Other Contract Services	304	13	SERV	\$760,207	100.00%	0.00%	0.00%	\$760,207	\$0	\$0	\$0	\$760,207	\$0	\$0	\$760,207
Materials & Supplies	304	14	MATL	\$149,648	100.00%	0.00%	0.00%	\$149,648	\$0	\$0	\$0	\$149,648	\$0	\$0	\$149,648
Utilities	304	15	UTIL	\$753,990	100.00%	0.00%	0.00%	\$753,990	\$0	\$0	\$0	\$753,990	\$0	\$0	\$753,990
Miscellaneous/Other	304	16	MISC	\$1,613	100.00%	0.00%	0.00%	\$1,613	\$0	\$0	\$0	\$1,613	\$0	\$0	\$1,613
Other Leases & Rentals	304	17	LEASE	\$258,149	100.00%	0.00%	0.00%	\$258,149	\$0	\$0	\$0	\$258,149	\$0	\$0	\$258,149
Landscaping & Phone Admin															
Other Leases & Rentals	305	17	LEASE	\$8,928	100.00%	0.00%	0.00%	\$8,928	\$0	\$0	\$0	\$8,928	\$0	\$0	\$8,928
Met Council Labor & Fringe Benefits	305	12	LABOR-COUNCIL	\$3,614	100.00%	0.00%	0.00%	\$3,614	\$0	\$0	\$0	\$3,614	\$0	\$0	\$3,614
Met Council Other Expenses	305	19	OTHER-COUNCIL	\$2,031	100.00%	0.00%	0.00%	\$2,031	\$0	\$0	\$0	\$2,031	\$0	\$0	\$2,031
Miscellaneous/Other	305	16	MISC	\$1,494	100.00%	0.00%	0.00%	\$1,494	\$0	\$0	\$0	\$1,494	\$0	\$0	\$1,494
4. Bus Operations															
Bus Transportation															
Bus Transportation Administration															
Administrative Regular Pay	401	10	LABOR	\$384,534	100.00%	0.00%	0.00%	\$384,534	\$0	\$0	\$0	\$384,534	\$0	\$0	\$384,534
Administrative Overtime	401	10	LABOR	\$2,336	100.00%	0.00%	0.00%	\$2,336	\$0	\$0	\$0	\$2,336	\$0	\$0	\$2,336
Fringe Benefits	401	11	LABOR	\$208,267	100.00%	0.00%	0.00%	\$208,267	\$0	\$0	\$0	\$208,267	\$0	\$0	\$208,267
Contract Services	401	13	SERV	\$72,926	100.00%	0.00%	0.00%	\$72,926	\$0	\$0	\$0	\$72,926	\$0	\$0	\$72,926
Materials & Supplies	401	14	MATL	\$45,725	100.00%	0.00%	0.00%	\$45,725	\$0	\$0	\$0	\$45,725	\$0	\$0	\$45,725
Utilities	401	15	UTIL	\$29,535	100.00%	0.00%	0.00%	\$29,535	\$0	\$0	\$0	\$29,535	\$0	\$0	\$29,535
Miscellaneous/Other	401	16	MISC	\$72,993	100.00%	0.00%	0.00%	\$72,993	\$0	\$0	\$0	\$72,993	\$0	\$0	\$72,993
Facility Leases	401	17	LEASE	\$13,232	100.00%	0.00%	0.00%	\$13,232	\$0	\$0	\$0	\$13,232	\$0	\$0	\$13,232

**METRO TRANSIT
O&M Cost Models
2010 Actual Expenses, Allocated by Mode**

Department & Expense Line Item	Dept	Type	Cost Type	2010 Bus Expenses	Modal Alloc. Split			Modal Allocation Dollars			2010 Rail Expenses	Total Allocated 2010 Actual Costs			
					Bus	Light Rail	C. Rail	Bus	Light Rail	C. Rail		Bus	Light Rail	C. Rail	Total
4. Bus Operations															
Operating Divisions (Garages)															
Driver Regular Pay	402	10	LABOR	\$53,083,372	100.00%	0.00%	0.00%	\$53,083,372	\$0	\$0	\$0	\$53,083,372	\$0	\$0	\$53,083,372
Driver Overtime	402	10	LABOR	\$8,019,641	100.00%	0.00%	0.00%	\$8,019,641	\$0	\$0	\$0	\$8,019,641	\$0	\$0	\$8,019,641
Administrative Regular Pay	402	10	LABOR	\$1,389,402	100.00%	0.00%	0.00%	\$1,389,402	\$0	\$0	\$0	\$1,389,402	\$0	\$0	\$1,389,402
Administrative Overtime	402	10	LABOR	\$54,928	100.00%	0.00%	0.00%	\$54,928	\$0	\$0	\$0	\$54,928	\$0	\$0	\$54,928
Clerical Regular Pay	402	10	LABOR	\$1,786,910	100.00%	0.00%	0.00%	\$1,786,910	\$0	\$0	\$0	\$1,786,910	\$0	\$0	\$1,786,910
Clerical Overtime	402	10	LABOR	\$531,596	100.00%	0.00%	0.00%	\$531,596	\$0	\$0	\$0	\$531,596	\$0	\$0	\$531,596
Fringe Benefits	402	11	LABOR	\$45,829,821	100.00%	0.00%	0.00%	\$45,829,821	\$0	\$0	\$0	\$45,829,821	\$0	\$0	\$45,829,821
Contract Services	402	13	SERV	\$208	100.00%	0.00%	0.00%	\$208	\$0	\$0	\$0	\$208	\$0	\$0	\$208
Materials & Supplies	402	14	MATL	\$109,490	100.00%	0.00%	0.00%	\$109,490	\$0	\$0	\$0	\$109,490	\$0	\$0	\$109,490
Utilities	402	15	UTIL	\$3,529	100.00%	0.00%	0.00%	\$3,529	\$0	\$0	\$0	\$3,529	\$0	\$0	\$3,529
Miscellaneous/Other	402	16	MISC	\$5,110	100.00%	0.00%	0.00%	\$5,110	\$0	\$0	\$0	\$5,110	\$0	\$0	\$5,110
District Street Supervision															
Administrative Regular Pay	403	10	LABOR	\$1,486,217	100.00%	0.00%	0.00%	\$1,486,217	\$0	\$0	\$0	\$1,486,217	\$0	\$0	\$1,486,217
Administrative Overtime	403	10	LABOR	\$275,477	100.00%	0.00%	0.00%	\$275,477	\$0	\$0	\$0	\$275,477	\$0	\$0	\$275,477
Clerical Regular Pay	403	10	LABOR	\$0	100.00%	0.00%	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fringe Benefits	403	11	LABOR	\$898,217	100.00%	0.00%	0.00%	\$898,217	\$0	\$0	\$0	\$898,217	\$0	\$0	\$898,217
Contract Services	403	13	SERV	\$11,725	100.00%	0.00%	0.00%	\$11,725	\$0	\$0	\$0	\$11,725	\$0	\$0	\$11,725
Materials & Supplies	403	14	MATL	\$17,706	100.00%	0.00%	0.00%	\$17,706	\$0	\$0	\$0	\$17,706	\$0	\$0	\$17,706
Utilities	403	15	UTIL	\$13,540	100.00%	0.00%	0.00%	\$13,540	\$0	\$0	\$0	\$13,540	\$0	\$0	\$13,540
Miscellaneous/Other	403	16	MISC	\$1,184	100.00%	0.00%	0.00%	\$1,184	\$0	\$0	\$0	\$1,184	\$0	\$0	\$1,184
Leases & Rentals	403	17	LEASE	\$2,483	100.00%	0.00%	0.00%	\$2,483	\$0	\$0	\$0	\$2,483	\$0	\$0	\$2,483
Transit Control Center															
Administrative Regular Pay	404	10	LABOR	\$1,335,321	100.00%	0.00%	0.00%	\$1,335,321	\$0	\$0	\$0	\$1,335,321	\$0	\$0	\$1,335,321
Administrative Overtime	404	10	LABOR	\$181,824	100.00%	0.00%	0.00%	\$181,824	\$0	\$0	\$0	\$181,824	\$0	\$0	\$181,824
Clerical Regular Pay	404	10	LABOR	\$0	100.00%	0.00%	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Clerical Overtime	404	10	LABOR	\$0	100.00%	0.00%	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fringe Benefits	404	11	LABOR	\$873,696	100.00%	0.00%	0.00%	\$873,696	\$0	\$0	\$0	\$873,696	\$0	\$0	\$873,696
Contract Services	404	13	SERV	\$1,050	100.00%	0.00%	0.00%	\$1,050	\$0	\$0	\$0	\$1,050	\$0	\$0	\$1,050
Materials & Supplies	404	14	MATL	\$7,782	100.00%	0.00%	0.00%	\$7,782	\$0	\$0	\$0	\$7,782	\$0	\$0	\$7,782
Utilities	404	15	UTIL	\$51,181	100.00%	0.00%	0.00%	\$51,181	\$0	\$0	\$0	\$51,181	\$0	\$0	\$51,181
Miscellaneous/Other	404	16	MISC	\$4,850	100.00%	0.00%	0.00%	\$4,850	\$0	\$0	\$0	\$4,850	\$0	\$0	\$4,850
Operator Instruct. & Development															
Administrative Regular Pay	405	10	LABOR	\$128,988	100.00%	0.00%	0.00%	\$128,988	\$0	\$0	\$0	\$128,988	\$0	\$0	\$128,988
Clerical Regular Pay	405	10	LABOR	\$569,006	100.00%	0.00%	0.00%	\$569,006	\$0	\$0	\$0	\$569,006	\$0	\$0	\$569,006
Clerical Overtime	405	10	LABOR	\$37,529	100.00%	0.00%	0.00%	\$37,529	\$0	\$0	\$0	\$37,529	\$0	\$0	\$37,529
Fringe Benefits	405	11	LABOR	\$596,166	100.00%	0.00%	0.00%	\$596,166	\$0	\$0	\$0	\$596,166	\$0	\$0	\$596,166
Contract Services	405	13	SERV	\$3,840	100.00%	0.00%	0.00%	\$3,840	\$0	\$0	\$0	\$3,840	\$0	\$0	\$3,840
Materials & Supplies	405	14	MATL	\$11,890	100.00%	0.00%	0.00%	\$11,890	\$0	\$0	\$0	\$11,890	\$0	\$0	\$11,890
Utilities	405	15	UTIL	\$26	100.00%	0.00%	0.00%	\$26	\$0	\$0	\$0	\$26	\$0	\$0	\$26
Miscellaneous/Other	405	16	MISC	\$11,920	100.00%	0.00%	0.00%	\$11,920	\$0	\$0	\$0	\$11,920	\$0	\$0	\$11,920
Leases & Rentals	405	17	LEASE	\$1,373	100.00%	0.00%	0.00%	\$1,373	\$0	\$0	\$0	\$1,373	\$0	\$0	\$1,373

METRO TRANSIT
O&M Cost Models
2010 Actual Expenses, Allocated by Mode

Department & Expense Line Item	Dept	Type	Cost Type	2010 Bus Expenses	Modal Alloc. Split			Modal Allocation Dollars			2010 Rail Expenses	Total Allocated 2010 Actual Costs			
					Bus	Light Rail	C. Rail	Bus	Light Rail	C. Rail		Bus	Light Rail	C. Rail	Total
4. Bus Operations															
Bus Maintenance															
Parts Warranty Administration															
Mechanic Labor	406	10	LABOR	\$4,650	100.00%	0.00%	0.00%	\$4,650	\$0	\$0	\$0	\$4,650	\$0	\$0	\$4,650
Administrative Regular Pay	406	10	LABOR	\$1,020,610	100.00%	0.00%	0.00%	\$1,020,610	\$0	\$0	\$0	\$1,020,610	\$0	\$0	\$1,020,610
Administrative Overtime	406	10	LABOR	\$25,932	100.00%	0.00%	0.00%	\$25,932	\$0	\$0	\$0	\$25,932	\$0	\$0	\$25,932
Clerical Regular Pay	406	10	LABOR	\$1,254,077	100.00%	0.00%	0.00%	\$1,254,077	\$0	\$0	\$0	\$1,254,077	\$0	\$0	\$1,254,077
Clerical Overtime	406	10	LABOR	\$324,615	100.00%	0.00%	0.00%	\$324,615	\$0	\$0	\$0	\$324,615	\$0	\$0	\$324,615
Fringe Benefits	406	11	LABOR	\$1,853,212	100.00%	0.00%	0.00%	\$1,853,212	\$0	\$0	\$0	\$1,853,212	\$0	\$0	\$1,853,212
Contract Services	406	13	SERV	\$22,843	100.00%	0.00%	0.00%	\$22,843	\$0	\$0	\$0	\$22,843	\$0	\$0	\$22,843
Bus Parts & Tires	406	14	MATL	\$180,140	100.00%	0.00%	0.00%	\$180,140	\$0	\$0	\$0	\$180,140	\$0	\$0	\$180,140
Other Materials & Supplies	406	14	MATL	\$36,305	100.00%	0.00%	0.00%	\$36,305	\$0	\$0	\$0	\$36,305	\$0	\$0	\$36,305
Utilities	406	15	UTIL	\$3,019	100.00%	0.00%	0.00%	\$3,019	\$0	\$0	\$0	\$3,019	\$0	\$0	\$3,019
Miscellaneous/Other	406	16	MISC	\$20,017	100.00%	0.00%	0.00%	\$20,017	\$0	\$0	\$0	\$20,017	\$0	\$0	\$20,017
Garage Maintenance Divisions															
Mechanics Regular Pay	407	10	LABOR	\$10,785,999	100.00%	0.00%	0.00%	\$10,785,999	\$0	\$0	\$0	\$10,785,999	\$0	\$0	\$10,785,999
Mechanics Overtime	407	10	LABOR	\$1,269,599	100.00%	0.00%	0.00%	\$1,269,599	\$0	\$0	\$0	\$1,269,599	\$0	\$0	\$1,269,599
Administrative Regular Pay	407	10	LABOR	\$1,820,478	100.00%	0.00%	0.00%	\$1,820,478	\$0	\$0	\$0	\$1,820,478	\$0	\$0	\$1,820,478
Administrative Overtime	407	10	LABOR	\$73,516	100.00%	0.00%	0.00%	\$73,516	\$0	\$0	\$0	\$73,516	\$0	\$0	\$73,516
Clerical Regular Pay	407	10	LABOR	\$186,552	100.00%	0.00%	0.00%	\$186,552	\$0	\$0	\$0	\$186,552	\$0	\$0	\$186,552
Clerical Overtime	407	10	LABOR	\$6,280	100.00%	0.00%	0.00%	\$6,280	\$0	\$0	\$0	\$6,280	\$0	\$0	\$6,280
Fringe Benefits	407	11	LABOR	\$10,338,558	100.00%	0.00%	0.00%	\$10,338,558	\$0	\$0	\$0	\$10,338,558	\$0	\$0	\$10,338,558
Contract Services	407	13	SERV	\$45,193	100.00%	0.00%	0.00%	\$45,193	\$0	\$0	\$0	\$45,193	\$0	\$0	\$45,193
Fuel & Lubricants	407	14	MATL	\$20,740,259	100.00%	0.00%	0.00%	\$20,740,259	\$0	\$0	\$0	\$20,740,259	\$0	\$0	\$20,740,259
Bus Parts & Tires	407	14	MATL	\$9,436,191	100.00%	0.00%	0.00%	\$9,436,191	\$0	\$0	\$0	\$9,436,191	\$0	\$0	\$9,436,191
Other Materials & Supplies	407	14	MATL	\$995,365	100.00%	0.00%	0.00%	\$995,365	\$0	\$0	\$0	\$995,365	\$0	\$0	\$995,365
Utilities	407	15	UTIL	\$1,990,134	100.00%	0.00%	0.00%	\$1,990,134	\$0	\$0	\$0	\$1,990,134	\$0	\$0	\$1,990,134
Miscellaneous/Other	407	16	MISC	\$6,304	100.00%	0.00%	0.00%	\$6,304	\$0	\$0	\$0	\$6,304	\$0	\$0	\$6,304
Leases & Rentals	407	17	LEASE	\$2,993	100.00%	0.00%	0.00%	\$2,993	\$0	\$0	\$0	\$2,993	\$0	\$0	\$2,993
Non-Revenue Vehicles															
Mechanics Regular Pay	408	10	LABOR	\$302,554	100.00%	0.00%	0.00%	\$302,554	\$0	\$0	\$0	\$302,554	\$0	\$0	\$302,554
Mechanics Overtime	408	10	LABOR	\$4,589	100.00%	0.00%	0.00%	\$4,589	\$0	\$0	\$0	\$4,589	\$0	\$0	\$4,589
Administrative Regular Pay	408	10	LABOR	\$40,373	100.00%	0.00%	0.00%	\$40,373	\$0	\$0	\$0	\$40,373	\$0	\$0	\$40,373
Clerical Regular Pay	408	10	LABOR	\$0	100.00%	0.00%	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Clerical Overtime	408	10	LABOR	\$0	100.00%	0.00%	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fringe Benefits	408	11	LABOR	\$283,313	100.00%	0.00%	0.00%	\$283,313	\$0	\$0	\$0	\$283,313	\$0	\$0	\$283,313
Contract Services	408	13	SERV	\$10,635	100.00%	0.00%	0.00%	\$10,635	\$0	\$0	\$0	\$10,635	\$0	\$0	\$10,635
Bus Parts & Tires	408	14	MATL	\$9	100.00%	0.00%	0.00%	\$9	\$0	\$0	\$0	\$9	\$0	\$0	\$9
Other Materials & Supplies	408	14	MATL	\$274,386	100.00%	0.00%	0.00%	\$274,386	\$0	\$0	\$0	\$274,386	\$0	\$0	\$274,386
Utilities	408	15	UTIL	\$0	100.00%	0.00%	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous/Other	408	16	MISC	\$121	100.00%	0.00%	0.00%	\$121	\$0	\$0	\$0	\$121	\$0	\$0	\$121
Leases & Rentals	408	17	LEASE	\$326	100.00%	0.00%	0.00%	\$326	\$0	\$0	\$0	\$326	\$0	\$0	\$326
Heavy Maintenance Functions															
Mechanics Regular Pay	409	10	LABOR	\$3,076,440	100.00%	0.00%	0.00%	\$3,076,440	\$0	\$0	\$0	\$3,076,440	\$0	\$0	\$3,076,440
Mechanics Overtime	409	10	LABOR	\$82,985	100.00%	0.00%	0.00%	\$82,985	\$0	\$0	\$0	\$82,985	\$0	\$0	\$82,985
Administrative Regular Pay	409	10	LABOR	\$240,732	100.00%	0.00%	0.00%	\$240,732	\$0	\$0	\$0	\$240,732	\$0	\$0	\$240,732
Administrative Overtime	409	10	LABOR	\$2,725	100.00%	0.00%	0.00%	\$2,725	\$0	\$0	\$0	\$2,725	\$0	\$0	\$2,725
Clerical Regular Pay	409	10	LABOR	\$38,743	100.00%	0.00%	0.00%	\$38,743	\$0	\$0	\$0	\$38,743	\$0	\$0	\$38,743
Clerical Overtime	409	10	LABOR	\$2,740	100.00%	0.00%	0.00%	\$2,740	\$0	\$0	\$0	\$2,740	\$0	\$0	\$2,740
Fringe Benefits	409	11	LABOR	\$2,877,992	100.00%	0.00%	0.00%	\$2,877,992	\$0	\$0	\$0	\$2,877,992	\$0	\$0	\$2,877,992
Contract Services	409	13	SERV	\$176,122	100.00%	0.00%	0.00%	\$176,122	\$0	\$0	\$0	\$176,122	\$0	\$0	\$176,122
Bus Parts & Tires	409	14	MATL	(\$2,479,450)	100.00%	0.00%	0.00%	(\$2,479,450)	\$0	\$0	\$0	(\$2,479,450)	\$0	\$0	(\$2,479,450)
Other Materials & Supplies	409	14	MATL	\$494,358	100.00%	0.00%	0.00%	\$494,358	\$0	\$0	\$0	\$494,358	\$0	\$0	\$494,358
Utilities	409	15	UTIL	\$562,697	100.00%	0.00%	0.00%	\$562,697	\$0	\$0	\$0	\$562,697	\$0	\$0	\$562,697
Miscellaneous/Other	409	16	MISC	\$3,623	100.00%	0.00%	0.00%	\$3,623	\$0	\$0	\$0	\$3,623	\$0	\$0	\$3,623
Leases & Rentals	409	17	LEASE	\$31,559	100.00%	0.00%	0.00%	\$31,559	\$0	\$0	\$0	\$31,559	\$0	\$0	\$31,559
Risk Management															
Met Council Labor & Fringe Benefits	410	12	LABOR-COUNCIL	\$968,207	100.00%	0.00%	0.00%	\$968,207	\$0	\$0	\$0	\$968,207	\$0	\$0	\$968,207
Met Council Other Expenses	410	19	OTHER-COUNCIL	\$163,962	100.00%	0.00%	0.00%	\$163,962	\$0	\$0	\$0	\$163,962	\$0	\$0	\$163,962
Contract Services	410	13	SERV	\$685,257	100.00%	0.00%	0.00%	\$685,257	\$0	\$0	\$0	\$685,257	\$0	\$0	\$685,257
Casualty & Liability	410	18	INSUR	\$2,428,771	100.00%	0.00%	0.00%	\$2,428,771	\$0	\$0	\$0	\$2,428,771	\$0	\$0	\$2,428,771

METRO TRANSIT
O&M Cost Models
2010 Actual Expenses, Allocated by Mode

Department & Expense Line Item	Dept	Type	Cost Type	2010 Bus Expenses	Modal Alloc. Split			Modal Allocation Dollars			2010 Rail Expenses	Total Allocated 2010 Actual Costs			
					Bus	Light Rail	C. Rail	Bus	Light Rail	C. Rail		Bus	Light Rail	C. Rail	Total
5. Light Rail Expenses															
Rail Operations															
AGM Rail Operations															
Administrative Regular Pay	501	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$271,746	\$0	\$271,746	\$0	\$271,746
Administrative Overtime	501	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$10,565	\$0	\$10,565	\$0	\$10,565
Clerical Regular Pay	501	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$103,024	\$0	\$103,024	\$0	\$103,024
Clerical Overtime	501	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$17,038	\$0	\$17,038	\$0	\$17,038
Fringe Benefits	501	11	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$281,436	\$0	\$281,436	\$0	\$281,436
Contract Services	501	13	SERV	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$41,307	\$0	\$41,307	\$0	\$41,307
Materials & Supplies	501	14	MATL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$6,426	\$0	\$6,426	\$0	\$6,426
Utilities	501	15	UTIL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$820,512	\$0	\$820,512	\$0	\$820,512
Miscellaneous/Other	501	16	MISC	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$121,784	\$0	\$121,784	\$0	\$121,784
Leases & Rentals	501	17	LEASE	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$17,848	\$0	\$17,848	\$0	\$17,848
Rail Transportation Administration															
Administrative Regular Pay	502	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$979,891	\$0	\$979,891	\$0	\$979,891
Administrative Overtime	502	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$148,006	\$0	\$148,006	\$0	\$148,006
Fringe Benefits	502	11	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$886,504	\$0	\$886,504	\$0	\$886,504
Contract Services	502	13	SERV	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$1,986	\$0	\$1,986	\$0	\$1,986
Materials & Supplies	502	14	MATL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$39,149	\$0	\$39,149	\$0	\$39,149
LRV Propulsion	502	15	UTIL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous/Other	502	16	MISC	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$1,387	\$0	\$1,387	\$0	\$1,387
Rail Operators															
Driver Regular Pay	503	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$2,088,045	\$0	\$2,088,045	\$0	\$2,088,045
Driver Overtime	503	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$351,357	\$0	\$351,357	\$0	\$351,357
Clerical Regular Pay	503	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$65,509	\$0	\$65,509	\$0	\$65,509
Clerical Overtime	503	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$10,884	\$0	\$10,884	\$0	\$10,884
Fringe Benefits	503	11	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$2,146,109	\$0	\$2,146,109	\$0	\$2,146,109
Contract Services	503	13	SERV	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$1,599	\$0	\$1,599	\$0	\$1,599
LRV Propulsion	503	15	UTIL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$1,428,911	\$0	\$1,428,911	\$0	\$1,428,911
Materials & Supplies	503	14	MATL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$12,180	\$0	\$12,180	\$0	\$12,180
Miscellaneous/Other	503	16	MISC	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$74	\$0	\$74	\$0	\$74
HLRT Vehicle Maintenance															
Mechanics Regular Pay	504	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$1,225,663	\$0	\$1,225,663	\$0	\$1,225,663
Mechanics Overtime	504	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$236,963	\$0	\$236,963	\$0	\$236,963
Administrative Regular Pay	504	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$392,861	\$0	\$392,861	\$0	\$392,861
Administrative Overtime	504	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$25,212	\$0	\$25,212	\$0	\$25,212
Clerical Regular Pay	504	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$38,034	\$0	\$38,034	\$0	\$38,034
Clerical Overtime	504	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$188	\$0	\$188	\$0	\$188
Fringe Benefits	504	11	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$1,639,205	\$0	\$1,639,205	\$0	\$1,639,205
Contract Services	504	13	SERV	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$62,608	\$0	\$62,608	\$0	\$62,608
Parts & Inventory	504	14	MATL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$588,952	\$0	\$588,952	\$0	\$588,952
Other Materials & Supplies	504	14	MATL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$517,385	\$0	\$517,385	\$0	\$517,385
Utilities	504	15	UTIL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous/Other	504	16	MISC	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$3,952	\$0	\$3,952	\$0	\$3,952
HLRT System Maintenance															
Mechanics Regular Pay	505	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$1,186,357	\$0	\$1,186,357	\$0	\$1,186,357
Mechanics Overtime	505	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$249,108	\$0	\$249,108	\$0	\$249,108
Administrative Regular Pay	505	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$496,342	\$0	\$496,342	\$0	\$496,342
Administrative Overtime	505	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$26,626	\$0	\$26,626	\$0	\$26,626
Fringe Benefits	505	11	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$1,463,185	\$0	\$1,463,185	\$0	\$1,463,185
Contract Services	505	13	SERV	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$281,206	\$0	\$281,206	\$0	\$281,206
Rail Parts	505	14	MATL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Materials & Supplies	505	14	MATL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$371,406	\$0	\$371,406	\$0	\$371,406
Utilities	505	15	UTIL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous/Other	505	16	MISC	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$10,299	\$0	\$10,299	\$0	\$10,299
Leases & Rentals	505	17	LEASE	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$6,541	\$0	\$6,541	\$0	\$6,541

METRO TRANSIT
O&M Cost Models
2010 Actual Expenses, Allocated by Mode

Department & Expense Line Item	Dept	Type	Cost Type	2010 Bus Expenses	Modal Alloc. Split			Modal Allocation Dollars			2010 Rail Expenses	Total Allocated 2010 Actual Costs			
					Bus	Light Rail	C. Rail	Bus	Light Rail	C. Rail		Bus	Light Rail	C. Rail	Total
5. Light Rail Expenses															
Stores															
Administrative Regular Pay	506	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$58,924	\$0	\$58,924	\$0	\$58,924
Clerical Regular Pay	506	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$90,807	\$0	\$90,807	\$0	\$90,807
Clerical Overtime	506	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$43,412	\$0	\$43,412	\$0	\$43,412
Fringe Benefits	506	11	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$160,742	\$0	\$160,742	\$0	\$160,742
Materials & Supplies	506	14	MATL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous/Other	506	16	MISC	\$0	n/a	n/a	n/a	\$0	\$0	\$0	(\$97)	\$0	(\$97)	\$0	(\$97)
Rail Facility Maintenance															
Mechanics Regular Pay	507	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$171,270	\$0	\$171,270	\$0	\$171,270
Mechanics Overtime	507	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$24,292	\$0	\$24,292	\$0	\$24,292
Fringe Benefits	507	11	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$163,761	\$0	\$163,761	\$0	\$163,761
Contract Services	507	13	SERV	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$64,642	\$0	\$64,642	\$0	\$64,642
Other Service Fees	507	13	SERV	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Materials & Supplies	507	14	MATL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$129,874	\$0	\$129,874	\$0	\$129,874
Utilities	507	15	UTIL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$10,372	\$0	\$10,372	\$0	\$10,372
Janitors															
Mechanics Regular Pay	508	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$233,316	\$0	\$233,316	\$0	\$233,316
Mechanics Overtime	508	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$22,262	\$0	\$22,262	\$0	\$22,262
Fringe Benefits	508	11	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$230,684	\$0	\$230,684	\$0	\$230,684
Contract Services	508	13	SERV	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$154,687	\$0	\$154,687	\$0	\$154,687
Materials & Supplies	508	14	MATL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$75,815	\$0	\$75,815	\$0	\$75,815
Utilities	508	15	UTIL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$2,901	\$0	\$2,901	\$0	\$2,901
Miscellaneous/Other	508	16	MISC	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Leases & Rentals	508	17	LEASE	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$3,654	\$0	\$3,654	\$0	\$3,654
Bus Operations Direct Charged															
Mechanic Regular Pay	509	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$50,259	\$0	\$50,259	\$0	\$50,259
Mechanic Overtime	509	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$22,567	\$0	\$22,567	\$0	\$22,567
Administrative Regular Pay	509	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$234,631	\$0	\$234,631	\$0	\$234,631
Administrative Overtime	509	10	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$17,178	\$0	\$17,178	\$0	\$17,178
Fringe Benefits	509	11	LABOR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$201,707	\$0	\$201,707	\$0	\$201,707
Met Council Labor & Fringe Benefits	509	12	LABOR-COUNCIL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$574,218	\$0	\$574,218	\$0	\$574,218
Met Council Other Expenses	509	19	OTHER-COUNCIL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$221,051	\$0	\$221,051	\$0	\$221,051
Contract Services	509	13	SERV	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$114,917	\$0	\$114,917	\$0	\$114,917
Materials & Supplies	509	14	MAT	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$238,235	\$0	\$238,235	\$0	\$238,235
Utilities	509	15	UTIL	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Casualty & Liability	509	18	INSUR	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$294,568	\$0	\$294,568	\$0	\$294,568
Miscellaneous/Other	509	16	MISC	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$378	\$0	\$378	\$0	\$378
Leases & Rentals	509	17	LEASE	\$0	n/a	n/a	n/a	\$0	\$0	\$0	\$31,360	\$0	\$31,360	\$0	\$31,360
TOTAL AMOUNTS:				\$245,514,605				\$3,522,575			\$22,317,757	\$241,151,989	\$25,840,332	\$267,637,541	