

REVIEW OF THE HIAWATHA CORRIDOR LIGHT RAIL TRANSIT PROJECT

Federal Transit Administration

Report Number: IN-2002-078

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Memorandum


U.S. Department of
Transportation

Office of the Secretary
of Transportation

Office of Inspector General

Subject: **INFORMATION**: Final Report on the Hiawatha
Corridor Light Rail Transit Project
Report No. IN-2002-078

Date: February 12, 2002

From: Alexis M. Stefani 
Assistant Inspector General for Auditing

Reply to
Attn. of: JA-30

To: Federal Transit Administrator

This report presents the results of our review of the Hiawatha Corridor Light Rail Transit Project (Hiawatha Project). This 11.6-mile, 17-station project will provide service from downtown Minneapolis, through the Minneapolis-St. Paul International Airport, to the Mall of America in Bloomington, Minnesota. The Metropolitan Council of Minneapolis-St. Paul (Council), the project's Federal grantee, began construction immediately after the Federal Transit Administration (FTA) executed a Full Funding Grant Agreement for the project in January 2001. The objectives of our review were to determine the current status, estimated cost, funding sources, and completion schedule of the Hiawatha Project, and to identify issues that may affect the project.

RESULTS IN BRIEF

Work is well underway on four major contracts for core light rail facilities and systems, tunnel and station facilities on airport property, light rail vehicles, and project management services. These contracts total more than \$500 million of the project's \$675.5 million budget. Through December 2001, expenditures totaled \$209.3 million and the project has not encountered any significant construction problems. The design-build contract for core light rail facilities and systems is more than 30 percent complete; the contract for tunneling at the airport is about 34 percent complete; and the contract for light rail vehicles is about 21 percent complete. Overall, the project, which is planned to be fully operational in December 2004, is on schedule and 32 percent complete as of the end of December 2001.

The Council expects to encounter temporary cash flow shortfalls when costs exceed reimbursements during project construction. These shortfalls are projected to begin at about \$21 million in September 2002, increase to more than \$65 million in March 2004, and recede to zero in April 2005, when the Council receives the last of its scheduled Federal allocations. When we issued our draft report in mid-June 2001, the Council did not have specific plans or agreements to deal with cash flow problems during construction. FTA discussed and confirmed our findings with the Council and, in response to our recommendation, directed the Council to develop a plan, including milestones for securing agreements and debt instruments, to cover the expected shortfalls. In November 2001, the Council's governing board adopted a cash flow management plan for the project.

Our work found that current schedule and cost data are reasonable. However, tunnel construction, relocation of private utilities, and post-September 11, 2001 concerns about security could affect the project's schedule and/or costs. The project includes a 1.8 mile tunnel under the airport. Past experience with other projects shows that tunneling involves risks that may lead to delays and cost increases. Although the Metropolitan Airport Commission (MAC) has taken steps to mitigate risks, such as performing extensive boring to identify soil conditions before tunneling began, MAC officials have expressed concern that unknown conditions could still lead to delays and associated cost increases.

Tunnel construction began in mid-October 2001. The tunnel is scheduled to be available to the design-build contractor for installing core light rail facilities and systems in August 2002. If the tunnel is not available on schedule, subsequent work on core light rail facilities and systems could encounter delays and cost increases. To ensure the tunnel is available on schedule, a special task force of representatives from the Hiawatha Project Office, MAC, and the contractors was formed in December 2001 to monitor and address concerns and schedules of all parties involved in tunnel work. The task force will remain in place until tunnel work is complete.

We also found that a dispute over who will pay to relocate private utilities could potentially affect project costs. Relocation efforts were on schedule at the end of December, and a court hearing is set for March 2002 to resolve the issue of who will pay disputed costs. Because of the pending litigation, project managers were unable to provide us with cost information for relocating private utilities.

Further, the events of September 11, 2001 could affect the project. At the end of December, MAC was reevaluating airport and tunnel security measures with the Federal Aviation Administration (FAA). Also, a security consultant is performing an analysis of the project's alignment, systems, stations, and maintenance facility and yard for the Council. Project managers expect to determine the impact, if any,

on project schedule and costs in February after the evaluations are finalized. If security enhancements are warranted, project costs will increase and decisions will need to be made as to who will pay the additional costs.

The Council has funding commitments to construct the project at current cost estimates, but does not have specific plans and agreements to obtain additional funds if project costs exceed \$675.5 million. This issue is of particular concern for work on airport property. MAC officials advised us throughout our review that they do not intend to exceed their \$87 million commitment to the project. The general airport revenues that MAC is using to fund their part of the project are declining. According to MAC officials, general airport revenue will be approximately \$7 million less than originally expected for the year ended December 31, 2001. Of the \$7 million reduction, \$5 million can be attributed to the events of September 11, 2001 and \$2 million can be attributed to the declining economy. MAC projects an additional \$8.5 million reduction for 2002.

The Council is taking actions to ensure that sufficient funds will be available to operate and maintain light rail transit after the Hiawatha Project is completed in December 2004. In September 2000, FTA's Financial Management Oversight consultant indicated that the Council's projected revenues and expenses for bus and light rail services were reasonable. However, the consultant cautioned that operating reserves could face risks if fare increases for bus service do not occur as scheduled or to the extent projected, or if operating and maintenance costs increase more than the Council anticipates. At the end of 2000, operating reserves were \$7.8 million, which was less than one-half the target at that time for these reserves. In May 2001, the Council implemented the fare increase scheduled for 2003. Further, in response to a recommendation in our June 2001 draft report, the Council provided a written commitment in October 2001 to aggressively monitor costs and revenues of the existing bus system as light rail is phased in.

BACKGROUND

The Council, the Federal grantee for the Hiawatha Project, is partnering with the State of Minnesota and local government agencies to design, construct, and operate light rail transit in Minneapolis. The Minnesota Department of Transportation (MnDOT) is responsible for the design and construction of core light rail facilities and systems in the Hiawatha Corridor. MAC is responsible for design and construction of the tunnel and station facilities on airport property. Metro, the Council's transit operating arm, will acquire and test the transit vehicles and operate the line.

The 11.6-mile, \$675.5 million Hiawatha Project includes 17 stations, operations and maintenance facilities, park-and-ride facilities, and connections to bus routes.

The line runs south from Minneapolis' downtown Entertainment District to Fort Snelling, which is adjacent to the Minneapolis-St. Paul International Airport. The line then enters a 1.8-mile tunnel under the airport, continues to the Lindbergh Terminal station below airport runways and taxiways, and ascends to a surface station at the Humphrey Terminal station. From that point, the line continues to its southern terminus at the Mall of America. (A detailed map of the system is in Exhibit A of this report.)

Metro, the unit that operates the existing bus system for the Council, will operate 26 light rail cars at speeds of up to 55 miles per hour. Coupled as two-car trains, the vehicles will travel at 7.5-minute intervals during rush hours and at 10 to 30-minute intervals during nonpeak hours. Metro projects daily ridership to begin at 19,300 and increase to 24,800 in 2020. Table 1 summarizes cost, funding, completion schedule, and ridership information for the Hiawatha Project.

Table 1. Baseline Data for the Hiawatha Project	
Location	Minneapolis, Minnesota
Cost Estimate	\$675.5 million
Miles of Track	11.6
Number of Stations	17
Construction	
• Start	January 2001
• End	October 2004
Planned Start of Service	
• From downtown to Fort Snelling	October 2003
• From Fort Snelling to Mall of America	December 2004
Daily Ridership projections	
• Year 2005	19,300
• Year 2020	24,800
Vehicle Requirements	26 cars

RESULTS

Project Costs Increased \$77 Million When Council Refined Estimates and Negotiated Contracts

In September 2000, the Council revised estimated costs for the Hiawatha Project from \$598.5 million to \$675.5 million. This \$77 million increase occurred before the Council submitted its application for a grant agreement in October 2001, and after the Council and its partners refined cost estimates and negotiated four contracts totaling nearly \$501 million. These contracts covered core light rail facilities/systems and other related improvements in the Hiawatha Corridor; tunnel

and station facilities on airport property; light rail vehicles; and project management services.¹

Two of the project’s four major contracts accounted for more than \$56 million of the \$77 million increase in estimated project costs. First, costs to build core facilities and systems in the Hiawatha Corridor increased by \$31.3 million (\$15.1 million for system enhancements, including \$10.5 million for a 0.2 mile extension and station in the Entertainment District) and \$16.1 million for items that exceeded engineer estimates. Second, costs for facilities on airport property increased by \$25 million after bids exceeded engineers' estimates, particularly a \$16.5 million increase for an underground station. The \$21 million balance of the \$77 million increase is attributed to refined estimates for items such as contingencies, utility relocations, financing costs, and public art. Table 2 summarizes increases in cost estimates.

Table 2. Summary of Increases in Cost Estimates (\$ in millions)	
<u>Item</u>	<u>Increase</u>
MnDOT Design-Build Contract: Core Facilities and Systems	\$31.3
MAC Contract: Airport Facilities	25.0
Contingencies	11.1
Other Items (utility relocations, financing, art, etc.)	9.6
Total	\$77.0

The four contracts, which equal three-fourths of total estimated project costs, were negotiated under terms that preclude cost increases, barring unforeseen events such as design or requirement changes, uncontrollable natural events, and site accessibility problems outside the control of the contractor. Additional information about these contracts follows.

Core Facilities/Systems. Five firms responded to the Hiawatha Light Rail Transit Design-Build Request for Proposals. Design-build procurement is intended to substantially shift cost overrun risks from the Council to the contractor. MnDOT teams led a multi-agency evaluation of these responses in July 2000. The teams used six qualitative factors, the price proposals, and four pass/fail criteria to evaluate the responses. Only one response was scored acceptable in the price category.

¹ The balance of the \$675.5 million estimate provides for items such as preliminary engineering, insurance, contingencies, fare collection equipment, and finance costs.

MnDOT negotiated contract documents with the acceptable responder. In September 2000, the Council authorized \$291.3 million (\$31.3 million more than prior estimates) to design-build light rail facilities and systems and other improvements in the Hiawatha Corridor. The Council will use FTA funds for core facilities and systems, other than tunnel and station facilities on airport property; track work; traction power; signal and communication systems; a preemption system coordinated with existing traffic control/management systems; an operations and maintenance facility; and 15 passenger stations. In addition, Federal Highway Administration (FHWA) funds will be used for related improvements that include new and rehabilitated bridges, road/street repairs, retaining walls and ramps, and a parking facility.

The \$31.3 million increase includes \$15.1 million for system enhancements. These enhancements include \$10.5 million to extend the transit line 0.2 miles from the Central Business District to the Entertainment District and add another station. The balance, \$16.1 million, represents items that exceeded engineer estimates, particularly for labor and construction costs.

Airport Facilities. In September 2000, the Council authorized \$142 million (\$25 million more than prior estimates) for MAC's work on airport property, including a \$109.9 million contract for a tunnel and two stations. Previously, three pre-qualified companies submitted bids to construct these facilities. MAC and a consultant team determined that two of the three companies were responsive to specification requirements and MAC approved the lowest bid, \$109.9 million, which was \$24.4 million more than engineer estimates for the work. MAC attributes this increase to unanticipated labor and material costs, particularly for the underground station (Lindbergh Terminal) where costs exceeded engineer estimates by \$16.5 million.

Light Rail Vehicles. In August 2000, the Council authorized \$65 million to purchase 22 low-floor light rail vehicles. After extending the system to the Entertainment District, the Council revised its authorization for light rail vehicles to \$76 million, permitting Metro to purchase four additional vehicles. Metro will use 22 of the 26 vehicles to meet projected peak demand, leaving four spare vehicles for use during scheduled maintenance, malfunctions, and accidents. The Council's authorization is \$3.1 million less than the original estimate of \$79.1 million for light rail vehicles.

Project Management Services. In November 1999, MnDOT executed a \$32.4 million contract with Parsons Brinckerhoff, Quade & Douglas, Inc. (Parsons) to provide permanent project management and design/construction services for the Hiawatha Project. Previously, Parsons was providing temporary project management services under another contract, until such time that MnDOT could select a permanent project manager through

competitive bidding. FTA questioned the November 1999 contract, concluding that there was a conflict of interest during MnDOT's solicitation for a permanent project manager. As a result, Parsons had an unfair competitive advantage in the bidding process.

In June 2000, FTA informed the Council that it would not continue funding the Hiawatha Project unless MnDOT re-bid this critical contract. MnDOT re-bid the contract and two firms, neither of which had the initial contract, submitted proposals. The Council authorized \$15.4 million for the new contract after a team representing the Council, Metro, MnDOT, and Minnesota's Department of Administration evaluated the proposals. The new contract is less than the original contract because the Council determined that internal staff could provide more project management than previously planned. Currently, third-party project management services are estimated to cost \$23.4 million (\$8 million for expenditures under the original contract and \$15.4 million for the new contract), or \$9 million less than the initial \$32.4 million contract for these services.

Further, the Council refined cost estimates for other items. Specifically, the Council increased cost estimates by \$23.3 million for project administration, utility relocations, rights-of-way, insurance, contingencies, financing costs, and public art, while decreasing cost estimates by \$2.6 million for preliminary engineering, light rail vehicles and maintenance-of-way vehicles, and fare collection equipment.

Risks to the Current Cost Estimate

In our opinion, the \$675.5 million estimate for the Hiawatha Project is reasonable, given that most contracts have been awarded and no significant problems have been encountered to date. However, several issues presented potential risks to the project's cost estimate as of December 31, 2001.

- Design-work was complete when MAC negotiated the contract for work on the airport property. However, managers for MAC are concerned that there is no agreement as to who will pay additional costs if the on-airport work exceeds the budgeted amount. This concern is based on the experience of other transit projects with tunneling components in which the contractor encountered unforeseen conditions(s) that increased costs after tunneling began. While MAC has taken precautions, such as extensive boring on the alignment before tunneling began, to mitigate the possibility of unforeseen conditions, concerns persist about potential unknown conditions.

Tunneling on airport property began in mid-October 2001. Currently, the first segment of the tunnel is scheduled to be available to the design-build

contractor for installing core light rail facilities and systems in August 2002. To ensure tunneling is available on schedule, a special task force of representatives from the Hiawatha Project Office, MAC, and the contractors was formed in December 2001 to monitor and address concerns of all parties involved in tunnel work. The task force will remain in place until tunnel work is complete. If the tunnel is not available on schedule, subsequent work on core light rail facilities and systems could encounter delays and cost increases.

- A private utility initiated legal action against the project for relocation costs, which MnDOT and the Council previously determined, based on State statutes, to be the utility's responsibility. A subsequent court ruling required the utility to begin work on its relocations. Relocation efforts for private utilities are underway and on schedule, while project managers and the utilities work to resolve this issue. A court hearing is scheduled in March 2002 to resolve who will pay disputed costs.
- In light of the events of September 11, 2001, MAC and the Federal Aviation Administration (FAA) are conducting a comprehensive security review of the light rail interface with the airport. Also, a security consultant is performing an analysis of the alignment, systems, stations, and maintenance facility and yard. Final reports are expected for the project's consideration in February 2002. If security enhancements are warranted, project costs will increase and decisions will need to be made as to who will pay the additional costs.

Council has Funding Commitments to Construct Project at Current Cost

The Council has a combination of Federal, State, and local funding commitments to construct the \$675.5 million Hiawatha Project. The project's funding commitments have not changed since FTA executed a Full Funding Grant Agreement for the project. Federal funds total \$382.8 million or 57 percent of project costs, \$334.3 million in FTA funds and \$48.5 million in FHWA funds. State and local commitments total \$292.7 million or 43 percent of project costs. Table 3 shows funding commitments for the Hiawatha Project.

**Table 3. Hiawatha Project Funding Commitments
(\$ in millions)**

<u>Source of Funds</u>	<u>Amount</u>
Federal Funds	
FTA: Section 5309 New Starts Program	\$334.3
FHWA: Surface Transportation Program	43.0
FHWA: Congestion Mitigation and Air Quality	<u>5.5</u>
Total Federal Funds	\$382.8
State Funds	
General Obligation Bonds	100.0
Donated Rights-of-Way	<u>20.1</u>
Total State Funds	\$120.1
Local Funds	
Hennepin County Regional Rail Authority	
Tax Exempt Bonds/Property Taxes	70.0
Donated Rights-of-Way and Engineering Services	14.2
Metropolitan Airport Commission	
General Airport Revenues	87.0
Metropolitan Council of Minneapolis-St. Paul	<u>1.4</u>
Total Local Funds	\$172.6
Total	\$675.5

MAC managers have expressed concern about funding if tunneling costs are higher than expected. MAC officials told us that they remain committed to provide \$87 million to the project, but stated that they do not plan to provide additional funds to pay for increased costs should they occur. General airport revenues, the source of funds for MAC's share of the local commitment to the project, have been reduced as a result of the events of September 11, 2001 and the declining economy. According to MAC officials, general airport revenue will be approximately \$7 million less than originally expected (\$70 million collected versus \$76.5 million projected) for the year ended December 31, 2001, including \$5 million attributed to the events of September 11 and \$2 million attributed to the declining economy. For 2002, MAC projects an additional \$8.5 million reduction that can be attributed in its entirety to the events of September 11. Nonetheless, while MAC faces difficult funding decisions and is cutting its capital program for 2002, it is continuing as scheduled with construction that is substantially underway, including MAC's portion of the Hiawatha Project.

Federal Funds

When FTA executed the Full Funding Grant Agreement in January 2001, it committed \$334.3 million of Section 5309 New Starts funds to the project, subject to annual appropriations by Congress. FTA will credit prior appropriations, nearly \$169 million of Section 5309 funds through Fiscal Year (FY) 2002, for the project against the grant agreement. FTA and the Council anticipate that the balance, \$165.3 million, will be provided to the project during FYs 2003 through 2005.

This total includes \$60 million in 2003, \$75 million in 2004, and \$30.3 million in 2005. The Council will use FTA funds for core light rail facilities and systems not located on airport property, property acquisitions, and light rail vehicles.

Further, the State committed FHWA funds totaling \$48.5 million to the project. Specifically, MnDOT programmed \$43 million of Surface Transportation Program (STP) flexible funds to the project and secured grant approval for \$5.5 million of Congestion Mitigation and Air Quality (CMAQ) funds. The Council will use the STP funds for new and rehabilitated bridges, road and street repair, retaining walls, and ramps in the Hiawatha Corridor. Comparatively, the Council will use the CMAQ funds to improve a parking facility in the Hiawatha Corridor. Federal regulations permit states and localities to use flexible STP funds for highway projects, bridges on public roads, transit capital projects, and other activities and flexible CMAQ funds for projects that help reduce emissions, such as the parking facility.

State Funds

In addition to the FHWA funds, the State appropriated funds and donated property worth \$120.1 million to the Hiawatha Project. The State Legislature committed \$100 million in two actions, \$40 million in the 1998 session and \$60 million in the 1999 session. These funds are being obtained from State general obligation bonds. The Council has allocated the State appropriations to core light rail facilities and systems (\$92 million) and facilities on airport property (\$8 million).

Local Funds

Local commitments total \$172.6 million. This total includes \$87 million from MAC, \$84.2 million from the Hennepin County Regional Rail Authority (HCRRA), and \$1.4 million from the Council.

Metropolitan Airport Commission. MAC will contribute up to \$87 million of the \$142 million authorized by the Council for work on airport property. For the remaining \$55 million, the Council has allocated \$8 million of State funds and \$47 million of Hennepin County Regional Rail Authority (HCRRA) funds. MAC will use general airport revenues to pay its share of actual costs expended for design, utilities, building demolition, environmental mitigation, and construction of the station and tunnel facilities. In addition to the \$87 million in cash, MAC will provide an easement through airport property at no cost to the Hiawatha Project.

A financing agreement between the Council and MAC provides that, if it appears that the total cost of MAC work will exceed \$142 million, all parties to the construction agreement between MAC, the Council, and MnDOT shall discuss and agree upon a recommendation to pay for or reduce excess costs. However, even

before the events of September 11, 2001, MAC had indicated that it was unwilling to provide additional funding if airport work exceeded \$142 million.

When estimating its \$87 million contribution to the project, MAC followed an FAA directive that limits the use of general airport revenues. Specifically, Section 47133 of 49 United States Code provides that airport revenues may be used for the capital or operating costs of those portions of an airport ground access project that can be considered an airport capital project, or for the capital and operating costs of that part of a local facility that is related to the air transportation of passengers.

Additionally, FAA policy provides that making property available at less than fair market value for right-of-way is not a violation of Federal laws regarding airport revenue, if the transit system is publicly owned and operated, and if the facilities are directly and substantially related to the air transportation of passengers and property. In April 2000, FAA agreed that, to the extent used by airport passengers, MAC may consider those portions of the Hiawatha Project within airport boundaries as a capital project eligible for general airport revenues. Thus, FAA directed MAC to limit its contribution to:

- 100 percent of actual capital costs for the Lindbergh and Humphrey stations, because the stations have no purpose other than serving persons traveling to or from the airport or between the stations.
- 46 percent of actual capital costs for tunnel construction between the two stations and 14 percent of tunnel construction north of the Lindbergh Station, based on ridership forecasts developed by Metro through 2020.

Hennepin County Regional Rail Authority. HCRRA has committed \$84.2 million to the Hiawatha Project. This total includes \$70 million from accumulated property taxes and/or bond issues, which the Council has allocated to core facilities and systems (\$7 million), work on airport property (\$47 million), and light rail vehicles (\$16 million). Further, HCRRA has donated property and engineering services worth \$14.2 million to the project.

HCRRA's property tax levy is set at about \$5 million per year, significantly less than the authority's \$28 million annual cap on property taxes. The \$5 million levy, which should not be confused with the property tax levied by the Council to operate Metro, would capitalize \$45 million to \$50 million of debt at current tax-exempt rates. HCRRA contributed more than \$12 million of accumulated property taxes to the project through April 2001, while maintaining \$33 million in the account for these taxes.

Metropolitan Council. The Council will provide \$1.4 million as local-match for CMAQ funds committed to the project by the State.

Cash Flow Shortfalls are Anticipated

The Council expects to experience temporary cash flow shortfalls (expenditures exceed available funds) if it receives and expends Federal, State, and local funds in accordance with the project's current finance plan. In October 2001, the Council projected that cash shortfalls will begin at about \$21 million in September 2002, increase to more than \$65 million in March 2004, and recede to zero in April 2005 when the Council receives the last of its Federal funds.

The Council's projections assume that it will receive Federal appropriations by April 1 of each year, at funding levels included in FTA's approved grant agreement. In addition to appropriations totaling \$169 million through FY 2002, the Council expects to receive \$60 million in 2003, \$75 million in 2004, and \$30.3 million in 2005 after the project is completed. Earlier receipt of Federal funds will lessen finance costs. Later receipt, which has been the case with some transit projects, will increase finance costs.

The Council estimates that it will cost \$3.1 million to finance cash shortfalls, assuming an annual 5 percent tax-exempt interest rate for debt instruments. When we issued our draft report in June 2001, the Council did not have specific, written plans and agreements to handle the cash shortfalls. Without such plans and agreements, we felt cash flow problems could stall construction and system testing, and increase project-financing costs. FTA discussed and confirmed our findings with the Council. Thereafter, FTA directed the Council to develop a plan, including milestones for securing agreements and debt instruments, to cover the expected shortfalls. In response, the Council adopted a cash flow management plan for the project in November 2001.

Project's Schedule Revised Because Grant Agreement was Executed Later Than Anticipated

Project managers are revising certain acquisition and construction activities to meet planned milestones for service operations. The Council planned to proceed with major acquisitions and construction contracts shortly after FTA executed a grant agreement, which was initially expected in October 2000. However, FTA did not execute the grant agreement until January 2001 and, as a result, managers are now working to recover the slippage.

In mid-June 2000, the Council filed an application to establish FTA's maximum funding commitment to the Hiawatha Project, that is, the Full Funding Grant Agreement. At that time, the Council expected FTA to execute the grant agreement by early October 2000. However, various events kept the Council and FTA from meeting this milestone. Specifically, the Council:

- resolved concerns and protests over key contracts for project management services, core facilities and systems, and transit vehicles;
- revised cost estimates after receiving bids that exceeded engineer estimates, extending the proposed transit line 0.2 miles, and adding another station; and
- finalized agreements for financing, construction, and other activities.

In October 2000, the Council finalized its application for FTA funds. FTA sent the application to Congress for a 60-day review period after the Office of the Secretary of Transportation and the Office of Management and Budget reviewed the application. FTA executed the grant agreement on January 16, 2001, after the 60-day review period, 3 months later than initially expected by the Council.

While confident they can meet the December 2004 milestone for full operations of the Hiawatha Project, project managers recognize they must recover the slippage that occurred when acquisition and construction activities did not begin on schedule. MAC was scheduled to begin construction of airport facilities in October 2000, while MnDOT was scheduled to begin construction of core facilities and systems in December 2000. Instead, the Council and its partners began construction 3 months later than planned when they broke ground for the project on January 17, 2001 near downtown Minneapolis.

The design-build contractor does not expect slippage in its construction schedule. However, because of the delay, MAC's contractor scheduled the tunnel to be available 3 months later than MnDOT's design-build contractor needs access to install track, an electrification system, signal systems, communication control systems, and fare collection equipment. To recover slippage, MAC acquired a refurbished tunnel-boring machine, rather than acquire a new machine, and the contractor began tunneling in mid-October 2001, 1 month sooner than originally planned. Further, in December 2001, a task force of representatives from the Hiawatha Project, MAC, and the contractors was formed to monitor and address concerns and schedules of all parties involved in tunnel work. This group will remain in place until tunnel work is complete.

According to the project's current master schedule, maintenance facilities will be complete by September 2002; the first light rail car will be commissioned in April 2003; dynamic system testing will begin in August 2003; and revenue operations between downtown Minneapolis and Fort Snelling will start in October 2003. Further, construction for the entire line will be complete in October 2004 and the entire line will start revenue operations in December 2004.

Council Projects Sufficient Operating Revenues, but Must Closely Monitor Operating Reserves

The Council projects that it will have the financial capacity to operate its entire transit system at planned levels, fully fund a reserve targeted at 10 percent of operating expenses, finance selective bus service enhancements in 2005, and begin expanding bus service in 2010 (as shown in Table 4). While agreeing with the Council's assessment, FTA's Financial Management Oversight Consultant cautioned that Metro's operating reserves could face risks if planned fare increases do not go into effect; if fares increase less than projected; or if operating and maintenance costs increase more than expected. Subsequently, Metro accelerated the fare increase planned for 2003 to July 2001.

Table 4. Projected Revenues and Expenses for Transit Services for Calendar Years 2004 Through 2010					
(\$ in millions)					
Revenues and Expenses	2004	2005	2006	2007	2010
Revenues					
Passenger Fares and Other Operating Revenues	71.6	72.3	73.0	73.8	85.1
Property Tax Levy	82.8	86.9	91.3	95.8	110.9
State General Appropriations for Transit Operations	36.3	38.1	40.0	42.0	48.4
FTA Maintenance/Rehabilitation Funds	4.0	4.2	4.4	4.6	5.3
Congestion Mitigation and Air Quality (CMAQ) Funds	4.0	3.0	3.0	0	0
Miscellaneous	<u>6.7</u>	<u>6.9</u>	<u>7.1</u>	<u>7.3</u>	<u>8.0</u>
Total Revenue	\$205.4	\$211.4	\$218.8	\$223.5	\$257.7
Expenses					
Buses	188.3	193.9	199.7	205.7	224.8
Light Rail Transit	<u>15.6</u>	<u>16.1</u>	<u>16.6</u>	<u>17.1</u>	<u>18.6</u>
Total Expenses	\$203.9	\$210.0	\$216.3	\$222.8	\$243.4
Use of Systemwide Surplus					
Reserves	1.5	0.6	0.6	0.7	0.7
Available for Expanded Bus Operations	<u>0</u>	<u>0.8</u>	<u>1.9</u>	<u>0</u>	<u>13.6</u>
Total Surplus	\$1.5	\$1.4	\$2.5	\$0.7	\$14.3

Metro analyzed its financial capacity to operate its current bus system and add new service, such as light rail transit, without introducing new funding sources. Metro's September 2000 Financial Report showed that it expects to obtain more than 90 percent of its operating revenues from passenger fares, property taxes, and State appropriations. The remainder will come from Federal sources (FTA Section 5307 funds for capitalized bus maintenance and overhaul and CMAQ funds for new transit services) and miscellaneous revenues such as interest income. CMAQ funds will bolster operating revenues only during the first 3 years of light rail transit, during which time growth in the property tax levy is expected to eliminate the need for such gap-filling funds. Metro used the following assumptions to analyze its major sources of operating revenue as well as operating expenses.

- Bus ridership will grow 1 percent annually and bus fares will increase moderately (average 12.7 percent) in 2003, 2009, and 2015.
- Property tax revenue will increase 5 percent annually. The Council projects that revenues from property taxes, a dedicated region-wide source of funding for transit operations, will grow at an average annual rate of 5.2 percent during the 2000 through 2009 period.
- State general appropriations for transit operations will increase 5 percent annually. These funds, which are administered by the State legislature on a biennial basis, have grown significantly over the past several years. Appropriations for the 1996 through 1997 biennium were \$89 million. They grew 11 percent to \$98.7 million the following biennium and an additional 15 percent, to \$113.6 million for the 2000 through 2001 biennium.
- Operating and maintenance expenses for the bus system will increase at the rate of inflation, which Metro expects will be 3 percent annually.

Metro maintains a reserve fund for operations to cushion against unanticipated events, such as higher than expected cost increases, slower than expected growth in ridership, unexpected inflationary pressures, or less than expected operating subsidies. Metro used some of these reserves in 1999 to cover operating deficits and, as a result, the fund was \$7.8 million short of its \$16.9 million target (10 percent of operating expenses) at the end of 2000. However, Metro projected that it will fully fund the reserve by the end of 2004.

Metro also projects that it can finance selective bus service enhancements beginning in 2005, with prudent management of funds. Comparatively, Metro does not expect to have sufficient surpluses to expand bus service until after a general fare increase goes into effect in 2009. In 2010, Metro expects surpluses to total \$14.3 million, including \$13.6 million to expand bus service by 5 percent.

FTA's Financial Management Oversight Consultant for the Hiawatha Project analyzed the Council's financial condition and capacity. In September 2000, the consultant reported that the Council has the financial capacity to construct the Hiawatha Line; fund the operating costs of the light rail system when completed; and meet the financial requirements to operate, maintain, and preserve its existing plant and equipment. In addition, the consultant concluded that the Council has the financial capacity to complete the ongoing projects included in the rest of its organization. Nonetheless, the consultant cautioned that Metro's operating reserves could face risks if fare increases scheduled for 2003 and 2009 do not go into effect; if fare increases are less than projected; or if operating and maintenance costs increase more than Metro anticipates. Specifically, the consultant determined that:

- Without the scheduled fare increases and relying on only 1 percent annual natural growth in system-general revenue, Metro's reserve for operations will drop to a negative \$19.7 million by the end of 2009. On the other hand, the reserve will be sufficient, \$15.6 million, to meet annual operating requirements if scheduled fare increases yield one-half of what is projected.
- If operating and maintenance costs rise 4 percent annually, Metro's reserve for operations will drop to a negative \$53.5 million by the end of 2009.

The Council accelerated its schedule to increase bus fares. In February 2001, Metro proposed that the Council increase bus fares across-the-board by \$0.25 to a new base fare of \$1.25 for off-peak local rides, \$1.75 for peak local and off-peak express rides, and \$2.25 for peak express rides. In April, five public hearings were convened around the region on the proposed increase. In May, the Council authorized the proposed fare increase effective July 1, 2001.

RECOMMENDATIONS

To ensure that the Council maintains its financial capacity to build, operate, and maintain the Hiawatha light rail line as required by the Federal Transit Act, we recommended that FTA require the Council to:

1. Develop plans and obtain agreements to manage short-term cash flow problems expected during the construction of the Hiawatha Project and
2. Provide assurances that factors affecting operations and maintenance activities will be closely monitored and that actions will be taken to fully fund reserves for transit services if costs increase faster than revenues for any time period.

MANAGEMENT COMMENTS

FTA responded to our mid-June 2001 draft report on July 5, 2001 (Appendix 1). FTA agreed with our recommendations regarding cash flow shortfalls and operating reserves. To implement our recommendations, FTA directed the Council to develop a plan to deal with expected cash flow shortfalls, and provide milestones indicating when the Council will secure agreements and debt instruments to cover the shortfalls. Also, FTA required the Council to provide written assurance that it will closely monitor factors affecting operations and maintenance activities, and develop a plan describing what measures will be taken to cover cost increases and maintain reserves.

On December 21, 2001, FTA advised us (Appendix 2) that the Council had developed, approved, and adopted a management plan in November 2001 to deal

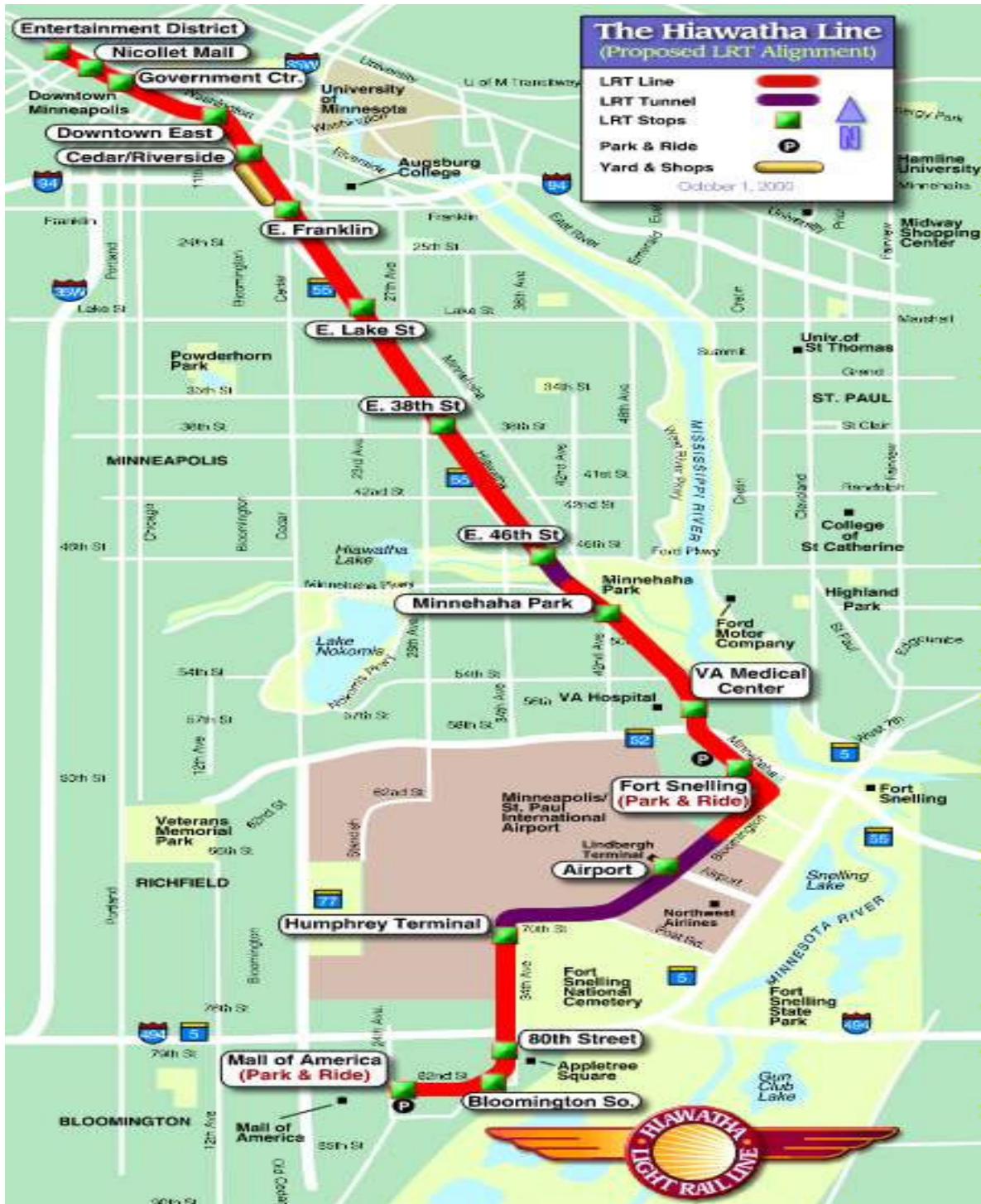
with projected short-term cash flow problems. In addition, the Council described to FTA the specific steps being taken to monitor costs and revenues of the existing bus system. Further, the Council noted its written commitment of October 2001 to aggressively monitor costs and revenues of the existing bus system as light rail is constructed and transitions to revenue operations.

OFFICE OF INSPECTOR GENERAL COMMENTS

FTA and the Council have taken the actions needed to implement our recommendations. As a result, the recommendations are considered closed.

We appreciate the courtesies and assistance extended to our staff during this review. If you have any questions please call me at (202) 366-1992 or Theodore P. Alves, Deputy Assistant Inspector General for National Transportation Infrastructure Activities, at (202) 493-0326.

Hiawatha Light Rail Line



Source: Metro Transit

EXHIBIT B

Objectives, Scope, and Methodology

The objectives of this review were to determine the current status, estimated cost, funding sources, and completion schedule of the Hiawatha Project, and identify issues that may affect the project. To this end, we obtained, analyzed, and discussed a wide array of information with Federal, State, and local project partners; project managers; and oversight consultants.

- To assess the status of light rail in the Minneapolis area, we analyzed and discussed information on State-enabling legislation, Environmental Impact Statements, market studies, planning reports, and progress reports/schedules.
- To determine whether the Council has reasonable and supportable cost estimates for the Hiawatha Project, we analyzed and discussed information concerning engineering capital cost estimates prepared by management consultants to the project, a financial capacity assessment conducted by FTA, monthly status reports that summarize project activities and update cost estimates and schedules, financial and expenditure reports, major contracts for the project, and documentation on bid protests and related contract issues.
- To determine whether the Council has the funds necessary to construct the Hiawatha Project, we analyzed and discussed information on capital finance plans, State appropriations, cooperative funding agreements between project partners, FTA grant agreements, bond ratings, cash flow analyses, and use of general airport revenues for the project.
- To determine whether the Council will have sufficient revenues to operate and maintain bus and light rail services at projected levels, we analyzed and discussed information concerning operating/maintenance funding plans, financial capacity analyses of the existing Metro bus system and projected light rail services, and risk management strategies for dealing with shortfalls if revenues do not materialize to the extent anticipated.

We conducted our audit between May 2000 and January 2002 in accordance with the Government Auditing Standards of the Comptroller General of the United States. We have not previously reviewed the Hiawatha Project.

Major Contributors to This Report

<u><i>Name</i></u>	<u><i>Title</i></u>
Theodore P. Alves	Deputy Assistant Inspector General for National Transportation Infrastructure Activities
Thomas J. Howard	Deputy Assistant Inspector General for Maritime and Highway Safety Programs
Leslie Smith	Program Director
James Diecker	Project Manager
Raymond Larpenteur	Senior Auditor
Diane Brattain	Auditor



Memorandum

U.S. Department
of Transportation
**Federal Transit
Administration**

Subject: **INFORMATION:** Response to Draft Report on the Hiawatha Corridor Light Rail Transit Project
No. 00R3006R000 Date:

From: *Dorrie Y. Aldrich*
Dorrie Y. Aldrich Reply to
Associate Administrator for Administration Attn. of:

To: Alexis M. Stefani
Assistant Inspector General for Auditing

The Federal Transit Administration (FTA) has reviewed the Office of Inspector General (OIG) Draft Report on the Review of The Hiawatha Corridor Light Rail Transit Project; Project No. 00R3006R000.

In general, FTA concurs with the report recommendations. The following are FTA's comments that address specific actions taken and include target dates for planned actions to implement the recommendations.

OIG Recommends that FTA require the Metropolitan Council to:

1. Develop plans and obtain agreements, including debt instruments used for short-term cash flow problems, to deal with cash shortfalls expected during construction of the Hiawatha Project.

FTA Comment

FTA agrees with the OIG recommendation. FTA has discussed the OIG's findings with the grantee. The grantee has confirmed in a letter dated June 28, 2001, cash flow shortages of \$20.8 million in September 2002 and \$62.2 million in March 2004. FTA is working with the grantee on this issue and we will notify the grantee in writing no later than July 6, 2001, to develop a plan within 120 days to deal with expected cash shortfalls expected during the construction of the Hiawatha Project. Additionally, the grantee will be required to provide a milestone schedule for when it will secure agreements, including debt instruments to cover short-term cash flow problems.

OIG Recommends that FTA require the Metropolitan Council to:

2. Provide assurances that factors affecting operations and maintenance activities will be closely monitored and, if costs increase faster than revenues for a period of time, action (increase fares or tax levies, adjust service levels, and/or obtain additional state appropriations) will be taken to fully fund reserves for transit services.

FTA Comments


FTA agrees with the OIG's recommendation. FTA will notify the grantee in writing no later than July 6, 2001, to provide written assurance (within 60 days) that factors affecting operations and maintenance activities will be closely monitored and, if costs increase faster than revenues, action will be taken to fully fund reserves for transit services. Additionally, FTA will require the grantee to develop a plan to describe what measures would be taken to cover cost increases and when actions will be placed into effect to maintain its reserves.



Memorandum

U.S. Department
of Transportation
**Federal Transit
Administration**

Subject: Response to Draft Report for Hiawatha Corridor LRT Program Date: December 21, 2001

From: Joel P. Ettinger  Regional Administrator, TRO-5 Reply to Attn. of:

To: Alexis M. Stefani
Assistant Inspector General

This memorandum provides the FTA's response to the subject audit report. We want to take this opportunity to thank you for allowing us the additional time needed to complete required resolution actions contained in the report.

We have now completed our review of the Metropolitan Council's response and determined that the response adequately addresses each of the recommendations included in the report.

In response to the first recommendation, MC indicated that a short-term cash flow management plan was being developed. The plan has been developed, and was approved and adopted by the MC's governing Board during the November council meeting. The adopted plan will be forwarded to FTA within the 120-day response time frame.

Regarding the second recommendation, MC described specific steps they are taking to monitor the costs and revenues of the existing bus system. Also, MC noted that they are fully committed to aggressively monitoring both costs and revenues of the existing bus system and long term as light rail transitions to revenue operations.

We will continue to monitor MC's ability to fully fund reserves for transit services during our quarterly review meetings. We now consider the recommendations to have been adequately addressed and this audit report to be resolved.

We look forward to receiving the final report.

Cc: Jim Diecker