Minnesota Regional Transit Board: Records.

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REGIONAL TRANSIT BOARD
Mears Park Centre, 230 East 5th Street
St. Paul, Minnesota 55101
612/229-2700

Meeting of the
REGIONAL TRANSIT BOARD
Mears Park Centre Chambers
Tuesday July 6, 1993
4 p.m.

AGENDA

1. **CALL TO ORDER AND ROLL CALL**

2. **APPROVAL OF AGENDA**

3. **APPROVAL OF MINUTES:**

   a. Administration and Finance Committee Minutes, June 14, 1993

4. **CHAIR'S REPORT**

   a. May Driver of the Month Award - Bryan Chinander, DARTS
   b. June Driver of the Month Award - Al Casperson, Yellow Taxi Service Corporation

5. **MEMBERS' REPORTS**

6. **EXECUTIVE DIRECTOR'S REPORT**

7. **REPORT OF THE COMMITTEE OF THE WHOLE**
   Val Higgins, Chair, Policy Committee

   a. Amendment to Competitive Transit Policy

8. **OTHER BUSINESS**

   a. Light Rail Transit Update

   b. Presentation of Comprehensive Operations Analysis

9. **PUBLIC COMMENT**

John H. Riley
Chairman

mff
June 30, 1993

REGIONAL TRANSIT BOARD
Mears Park Centre, 230 East 5th Street
St. Paul, Minnesota 55101
612/229-2700

Minutes of the Meeting of the REGIONAL TRANSIT BOARD July 6, 1993

MEMBERS PRESENT: John H. Riley, Chair; Michael Beard; Morgan Grant; Sharon Feess; Ruth Franklin; Val Higgins; James Hovland; Ruby Hunt; Dennis Schulstad

OTHERS PRESENT: Ferroll Robinson and Joe Kern, Strgar-Roscoe-Fausch, Inc.; Emil Brandt, Transportation Advisory Board; Tom Sather; Metropolitan Transit Commission; Arnie Entzel, Amalgamated Transit Union; Lisa Lee; Gregory L. Andrews, Judy Hollander, Howard Blin, Annette Keller, Dan Murray, Randy Rosvold, Mary Fitzgerald, RTB staff

CALL TO ORDER AND ROLL CALL

The meeting was called to order at 4:05 p.m. The chair said Member Hovland had been delayed and would arrive shortly.

APPROVAL OF AGENDA

Grant moved and Hunt seconded approval of the agenda; the motion carried unanimously (Hovland and Schulstad not present).

APPROVAL OF MINUTES

Franklin moved and Beard seconded approval of the minutes of the Administration and Finance Committee meeting on June 14, 1993. The motion was unanimously approved (Hovland and Schulstad no present).

CHAIR'S REPORT

May Driver of the Month Award - Bryan Chinander, DARTS

Mr. Chinander was unable to attend the meeting.

June Driver of the Month Award - Al Casperson, Yellow Taxi Service

Higgins presented the award and thanked Casperson for his service to the people who depend upon Metro Mobility.

Riley thanked everyone who was involved in the X2000 event last week. It was a great success, in part because the weather was fine. Everyone who rode the high speed train was impressed with the smooth and quiet operation. Nearly 2,000 people toured the train before they had to close the exhibit. High speed trains could allow a person to work in the Twin Cities and live in Rochester with a commute no longer than that of people who live in Twin Cities suburbs. (Schulstad and Hovland arrived.)

MEMBERS' REPORT

Hunt said she attended a conference at which House Minority Leader Swiggum indicated that he does not support transit because it is not efficient. He has noticed empty buses on the street. Hunt recommended that someone meet with him and explain how MTC operates. He does not understand the farebox percentage.

Representative Ozment is a firm supporter of RTB and transit, but has Metro Mobility concerns since Rosemount is not served. He asked about SMART DARTS. Riley said that is experimental technology for dispatching vehicles, similar to the PUSH program. Hunt suggested that Metro Mobility staff talk with him and explain.

EXECUTIVE DIRECTOR'S REPORT

Intermodal Surface Transportation Efficiency Act (ISTEA) Funding Applications

Andrews called upon Blin to review his July 6, 1993 memorandum. Because of the tight deadline for the funding applications, the issue was brought directly to the board. Riley noted that operation of new service can only be funded for two years. Regarding letters of support for other projects, Riley said that RTB must review them for consistency with its Five-Year Plan, but since we are competing for funds with those projects, we should not send letters of supportor opposition. Hunt moved and Beard seconded:

> That the Regional Transit Board authorize the executive director to submit the following applications to the Transportation Advisory Board:
>
> 1. I-394 Service Operations Costs (second year) - $2.4 million
>
> 2. Travel Demand Management Programs - $850,000

REPORT OF THE COMMITTEE OF THE WHOLE

AMENDMENT TO COMPETITIVE TRANSIT POLICY

Riley said at last week's meeting and the meeting week before, the board held the best discussion of policy he has heard since coming to the RTB. Higgins said that on June 28 Ed Kouneski and Len Simich brought a recommendation on competitive transit policies to the committee. He agreed with Riley that it was an especially good meeting with a great deal of input. The policy presented by staff contained five points. The committee amended the recommendation, deleting Item 3. Grant moved and Hunt seconded:

> That the Regional Transit Board adopt the following policies:
>
> The following policies apply to contract services for which the Metropolitan Transit Commission (MTC) and private operators are in competition and take effect for new contracts negotiated after the date of board approval.
>
> 1. Marginal cost proposals may be considered if:
>
>   a. Marginal costs fairly represent the actual costs that will be incurred as a result of providing that segment of service; and

b. The fully allocated costs of other segments of service will not increase as a result of providing that segment of service.

2. The MTC's limits for submitting proposals on a marginal cost basis are:

	Peak Vehicles	
	Number	Percent of Capacity
Single contract	45	5%
Cumulative Total	136	15%

Notes: In no event shall the MTC's system-wide peak vehicle capacity of 906 be exceeded for the purpose of preparing a marginal cost proposal. This policy will be reviewed for modification at any time the MTC's capacity changes in the future.

3. As part of its annual review of the MTC's budget, the RTB shall audit and approve the MTC's marginal pricing method.

4. The Regional Transit Board and communities that contract for service will exclude vehicle capital costs from consideration in the evaluation of proposals.

The motion was unanimously approved.

OTHER BUSINESS

Light Rail Transit Update

Eiler reviewed her June 25, 1993 report. Patronage and cost estimates are available for those who would like additional information. Since people have been working on light rail for 20 years, Higgins asked if there is any way to push it forward. Eiler said that this year significant progress has been made. Until the agreement on governance last year, everyone was operating independently. Riley said he is finding that a lot was spent on studies and on land, but no one was in charge of a "game plan" to ensure that all of the issues required by FTA were covered. We have gone back now and done it right. In the past questions on the validity of the figures delayed it. The weak ridership numbers require a leap of faith. Eiler said national experts and the Federal Transit Administration have reviewed and approved the methodology now being used.

Presentation of the Comprehensive Operations Analysis

Ferroll Robinson and Joe Kern used slides to review the summary of findings of the Comprehensive Operations Analysis. Robinson stressed that an evaluation process must be developed to deal with route changes and additions. This would serve to remove the service planning process from the political arena. The process of implementing the recommendations began in September and is continuing. In response to Franklin's question, Riley said staff is making every effort to meet the recommendations. The data will be the basis for continued route planning for the next several years. Blin said staff would like to report on progress annually during the budget process. The intention is to streamline and simplify route scheduling.

Appointment Process for Advisory Committees

Riley said that in the past the chair of the Transportation Accessibility Advisory Committee (TAAC) was nominated by the RTB chair. He intends to make that appointment after the members have been selected in the event his nomination is needed to balance TAAC membership between consumers and providers. Very shortly members will receive the application forms from their districts and are free as well to search for people in the districts and bring them into the process. Grant said that sometimes particular districts did not get applicants. He asked if board members can draw from other areas. There are active disability people who go into a variety of areas. Riley said legal counsel will be asked whether members are bound to select from within their districts and, secondly, can at-large members go outside and pick candidates from anywhere in the area. Andrews said board members selected people who lived or worked in their districts and then the three at-large members made their selection to maintain balance. Riley said he would prefer that members make their selections from their districts.

Hunt said she has questioned in the past why there are only one or two people with disabilities on TAAC. Perhaps Grant can suggest people from other districts. Higgins said he and Grant plan to wait to see who the other appointments are before they make their selection. Grant agreed with Hovland and Riley that members should caucus to discuss the candidates and the process should be expedited so that the new members will be involved in the system transition.

Responding to Hovland's question about the Comprehensive Operations Analysis (COA), Andrews said it cost $300,000. Robinson suggested that MTC do a continuous COA by sectors. Riley said the COA discusses structure and what should be done in the future. Hunt asked how the report relates to the Management Audit. Riley said the audit analyzed how the organization functions while the COA analyzed how the route system functions. Hovland said the COA focuses on making the system more economical, which is the heart of the charge to the agencies. He asked what is being done on the other side, that is, bringing in more money? Sather said RTB commissioned an extensive marketing study that was completed by Ilium and Associates in January 1992. It gave MTC and RTB a process for attracting ridership and the current ridership increases reflect the recommendations of that study.

There being no other business, Hovland moved and Franklin seconded that the meeting be adjourned. The motion was unanimously approved and the meeting adjourned at 5:35 p.m.

I hereby certify that the foregoing constitutes a true and accurate record of the Regional Transit Board's meeting on July 6, 1993.

Respectfully submitted,

Mary Fitzgerald

Mary Fitzgerald
Secretary

Approved by the Regional Transit Board on this 19th day of July 1993.

REGIONAL TRANSIT BOARD
Mears Park Centre, 230 East 5th Street
St. Paul, Minnesota 55101

REPORT OF THE COMMITTEE OF THE WHOLE

At its meeting of June 28, 1993, the committee approved the following recommendation:

AMENDMENT OF COMPETITIVE TRANSIT POLICY

That the Regional Transit Board adopt the following policies:

The following policies apply to contract services for which the Metropolitan Transit Commission (MTC) and private operators are in competition and take effect for new contracts negotiated after the date of board approval.

1. Marginal cost proposals may be considered if:

   a. Marginal costs fairly represent the actual costs that will be incurred as a result of providing that segment of service; and

   b. The fully allocated costs of other segments of service will not increase as a result of providing that segment of service.

2. The MTC's limits for submitting proposals on a marginal cost basis are:

	Peak Vehicles	
	Number	Percent of Capacity
Single contract	45	5%
Cumulative Total	136	15%

   Notes: In no event shall the MTC's system-wide peak vehicle capacity of 906 be exceeded for the purpose of preparing a marginal cost proposal. This policy will be reviewed for modification at any time the MTC's capacity changes in the future.

3. As part of its annual review of the MTC's budget, the RTB shall audit and approve the MTC's marginal pricing method.

4. The Regional Transit Board and communities that contract for service will exclude vehicle capital costs from consideration in the evaluation of proposals.

The next meeting of the committee will be July 26, 1993.

Val M. Higgins
Chair
Policy Committee

mff

April 30, 1993

REGIONAL TRANSIT BOARD

ROLL CALL AND ATTENDANCE SHEET

DATE: 7/6/93

Member Name	Present	Vote	Vote	Vote	Vote	Vote	Vote	Vote	Vote
ISSUE									
John Riley	✓								
Michael Beard	✓								
Sharon Feess	✓								
Ruth Franklin	✓								
Morgan Grant	✓								
Val M. Higgins	✓								
James Hovland	delayed								
Ruby Hunt	✓								
Sather									
Dennis Schulstad	—								

Visitors

T Sarhu
E Brott
Caspernz
Entzel
Joe Kern
Ferroll Robinson — S.R.F.

Staff

[illegible]
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mff

REGIONAL TRANSIT BOARD
Mears Park Centre
230 East 5th Street
St. Paul, Minnesota 55101
612/292-8789

Minutes of the ADMINISTRATION AND FINANCE COMMITTEE OF THE WHOLE June 14, 1993

MEMBERS PRESENT: Ruth Franklin, Chair; Michael Beard; Sharon Feess; Morgan Grant; Val Higgins; James Hovland; Ruby Hunt; John Riley

MEMBERS EXCUSED: Dennis Schulstad

OTHERS PRESENT: Rich Hadley, St. Paul Area Chamber of Commerce; Allen Lovejoy, City of St. Paul, Glenn Olson, Gerald Shapiro, Theresa Wernecke, Minneapolis TMO; Allyson Hartle, Bob Mairs, Debbie Alexander, Trish Moga, Metropolitan Transit Commission; Don Ahern, St. Paul Pioneer Press; Greg Andrews, Howard Blin, Suzanne Hanson, Judy Hollander, Clete Luberts, Paul Moline, Randy Rosvold, Dale Ulrich, Kathy Grochowski, Regional Transit Board staff

CALL TO ORDER

The chair called the meeting to order at 4:05 p.m.

APPROVAL OF THE AGENDA

Hunt moved and Feess seconded that the agenda be approved. The chair requested that the agenda be modified to accommodate persons wishing to testify. The motion was unanimously approved.

APRIL 1993 FINANCIAL STATEMENTS

Luberts reviewed the staff memo of May 25, 1993. Grant moved and Feess seconded:

> That the Regional Transit Board receive the April 1993, financial statements and direct that they be placed on file.

The motion was unanimously approved.

ST. PAUL CULTURAL AREA TROLLEY FUNDING PROPOSAL

Moline discussed the June 7, 1993 staff memo. Hunt moved and Beard seconded:

> That the Regional Transit Board authorize the executive director to enter into a funding agreement with the St. Paul Area Chamber of Commerce and the City of St. Paul to provide capital funding for the St. Paul Cultural

> Area Trolley proposal, in an amount not to exceed $360,000. Authorization of capital funds is contingent upon the City and the Chamber demonstrating the ability to provide operating funding for the first eighteen months of service.

Higgins asked where the money will come from. Moline said from the sale of bonds. Riley said that he liked the trolley proposal because it may help revitalize St. Paul by connecting the outlying employment bases. Grant asked if it was accessible as well as with low floors to avoid some of the problems the MTC's lift-equipped buses have experienced. Moline said yes, they're accessible but he would have to find out about the level of the floors. Riley suggested that Morgan be brought into the decision making process as it relates to accessibility. Higgins inquired when the trolley would be operational. Moline said hopefully next spring. Beard inquired about the time line of the project. Moline said about 18 months of service. Higgins was concerned about the trolley being such a different type of a vehicle, that if it fails within the first year will we be able to sell them off. Rich Hadley, St. Paul Chamber of Commerce said that these vehicles were in such great demand that we wouldn't have any trouble selling them. Hovland asked if they would be an all season vehicle. Hadley said yes, they will run year round.

The motion was unanimously approved.

DOWNTOWN MINNEAPOLIS TMO CONTRACT AMENDMENT

Blin reviewed the June 8, 1993 staff memo. Hunt moved and Beard seconded:

> That the Regional Transit Board approve providing $15,000 to the Minneapolis Downtown TMO for continued operations until federal funding is secured. In addition, the Regional Transit Board approve the following contract amendments:
>
> 1) Amend the existing contract with Mn/DOT to allow Mn/DOT to provide $30,000 in funding for the RTB to pass through to the Downtown Minneapolis TMO.
>
> 2) Amend the existing contract with the City of Minneapolis to provide a total of $45,000 ($30,000 Mn/DOT and $15,000 RTB funds) for TMO operations.

Theresa Wernecke, Minneapolis TMO was asked what techniques they've used to reduce single occupancy rides. She reported that they have established a community service center to provide information to groups, employers, potential employers and realtors about alternatives to single occupancy rides. Hovland asked if they could quantify their findings. Wernecke said not at this time. Higgins stated his concern over their two year existence and only meeting with a half dozen groups. Gerald Shapiro said that they have been very busy with other tasks and have only begun to meet with various groups. Feess questioned whether or not they were planning to have something on paper showing how many people they have convinced to use alternative methods of commuting. Wernecke said yes they were working on it. Hovland asked if the TMO was overlapping the MTC's marketing program. Wernecke replied no, not really.

Hunt was concerned about the long term maintenance of the TMO without a means of evaluating their progress; therefore offered an amendment to the original recommendation:

> ....Future funding is conditional upon the development of an evaluation tool to measure the effectiveness of the TMO activities.

Beard was in agreement; stating that we need some type of activity report. Hovland stated his concern over spending $60,000 on a service that perhaps staff at the RTB should be involved in. Blin said that there wasn't an overlap of duties because the MTC isn't as effective as the TMO is in getting through to the business community. He continued, saying that after this year the TMO will not need RTB funding, but will able to use ISTEA money instead. Blin also said that it was important for the board to understand that the Met Council required the development of the TMO to enable the City of Minneapolis to receive transit funding, and if the TMO were allowed to dissolve at this point, it would be very hard to recreate it later. Higgins noted that he was prepared to agree to the motion, but if the TMO needed funding next year, they will have to produce documentation of their activities.

The final motion was:

> That the Regional Transit Board approve providing $15,000 to the Minneapolis Downtown TMO for continued operations until federal funding is secured. In addition, the Regional Transit Board approve the following contract amendments:
>
> 1) Amend the existing contract with Mn/DOT to allow Mn/DOT to provide $30,000 in funding for the RTB to pass through to the Downtown Minneapolis TMO.
>
> 2) Amend the existing contract with the City of Minneapolis to provide a total of $45,000 ($30,000 Mn/DOT and $15,000 RTB funds) for TMO operations.
>
> Future funding is conditional upon the development of an evaluation tool to measure the effectiveness of the TMO activities.

The motion was unanimously approved.

1992 RTB AUDIT

James Johnson, McGladrey & Pullen reviewed the preliminary drafts of the 1992 RTB agency audit. Ulrich stated that the final version of the audit materials would be available next week. Hovland moved and Beard seconded:

> That the committee accept the draft reports of the 1992 agency audit.

The motion was unanimously approved.

1993 TRAVEL DEMAND MANAGEMENT CONTRACT

Hollander discussed the June 7, 1993 staff memo. Hovland moved and Feess seconded:

> That the Regional Transit Board authorize its executive director to enter into a contract for calendar year 1993 with the Metropolitan Transit Commission to provide rideshare services through Minnesota Rideshare in an amount not to exceed $599,928.

Beard asked what the MTC was doing in the Rideshare business. He was concerned about the bus company operating a van program, and whether it will continue into 1994. Hollander explained that the terms rideshare and Minnesota Rideshare are misleading. She said that van pooling is more successful if you deal with the employer, when the MTC meets with employers, we don't want them representing the bus company, but Minnesota Rideshare. Higgins asked what will the RTB get for $590,000. Hollander said 50,000 commuters per year. Higgins said that it was too late in 1993 not to fund the program, but we would really need to discuss it further to fund it in 1994. Hollander said that in the near future she will bring before the board, information that explains the program's direction.

The motion was unanimously approved.

NORTH SUBURBAN LINES 1993 CONTRACT AMENDMENT

Opatz reviewed the May 25, 1993 staff memo. Hunt moved and Grant seconded:

> That the Regional Transit Board authorize its executive director to amend the North Suburban Lines 1993 Contract (Contract No. 91/08/05-08) by $65,789 to an amount not to exceed $827,818.

Hovland questioned why the layover time wasn't included in the original contract. Opatz said it was inadvertently overlooked. Higgins expressed his concern that the board is being asked too often to amend contracts after the fact, stating that in the future he plans to get tougher on these matters. Hovland requested that this issue be tabled until the board can see the contract.

At which time, Hunt withdrew her motion, and Grant withdrew his second of the motion. Higgins then moved and Beard seconded:

> That the committee pass the staff recommendation onto the board without recommendation, pending additional information to be provided by the staff regarding contract language.

The motion was unanimously approved.

ROUTE 55 TWO-MONTH CONTRACT EXTENSION WITH MTC

Opatz reviewed the May 25, 1993 staff memo. Higgins moved and Grant seconded:

That the Regional Transit Board authorize its executive director to amend the Route 55 Contract (Contract No. 92/20/04-14) with the Metropolitan Transit Commission by a maximum of $119,640 to $834,949 for the period of April 1, 1992 through July 31, 1993.

The motion was unanimously approved.

AMENDMENT TO METROPOLITAN COUNCIL'S TRANSPORTATION GUIDE/POLICY PLAN

Blin reviewed the June 3, 1993 staff memo. Beard moved and Hunt seconded:

That the Regional Transit Board approve the comments on the Metropolitan Council's Transportation Development Guide/Policy Plan and forward them to the Metropolitan Council.

Riley said the significance of the Metropolitan Council's statement, in their plan, that the first priority of transit should be the transit dependent of the central city, is important because it will give the RTB direction when it comes time to cut services, should it become necessary. Franklin questioned why this issue was before the Administration and Finance Committee and not the Policy Committee.

The motion was unanimously approved.

METROPOLITAN TRANSIT EDUCATION PLAN

Hanson reviewed the June 1, 1993 staff memo. Higgins moved and Grant seconded:

That the Regional Transit Board authorize the executive director to enter into a contract for the period of July 1, 1993 through September 15, 1994 with the Metropolitan Transit Commission, the Metropolitan Council, the Minnesota Department of Transportation, the Hennepin County Regional Railroad Authority, the Ramsey County Regional Railroad Authority, and the LRT Joint Powers Board for the amount of $40,000.00 as the Regional Transit Board's contribution to the implementation of the Metropolitan Transit Education Plan.

Beard complimented staff on taking the lead in transit education. He then questioned what would happen if the other players didn't come through with their portion of the funding. Hanson said that it would be the board's decision what direction is taken. Hanson said that she would know by July 1 if there is full funding, at this point the Metropolitan Council is the only potential hold out. Riley suggested that Suzanne keep the board updated on this issue.

The motion was unanimously approved.

OTHER BUSINESS

Franklin mentioned the numerous letters she has received from downtown Minneapolis

residents regarding a tunnel for LRT in the downtown area. She was concerned if someone on the RTB staff was answering these letters. Riley said that he plans to answer them himself.

There being no other business, Beard moved and Riley seconded that the meeting be adjourned. The motion carried unanimously and the meeting was adjourned at 6:10 p.m.

I hereby certify that the foregoing constitutes a true and accurate record of the Administration and Finance Committee of the Whole meeting of June 14, 1993.

Respectfully submitted,

Kathy Grochowski
Acting Secretary

Approved by the Regional Transit Board on this sixth day of July, 1993.

7/6 hand

REGIONAL TRANSIT BOARD

Mears Park Centre
230 East Fifth Street, St. Paul, Minnesota 55101
292-8789

DATE: July 6, 1993

TO: Chair and Members of the Committee of the Whole

FROM: Howard Blin, Planning Manager HB

SUBJECT: ISTEA Funding Applications

SUMMARY

Board authorization is requested to submit two applications to the Transportation Advisory Board for 1993 ISTEA funding.

BACKGROUND

Within the metropolitan area, funding from the federal Intermodal Surface Transportation and Efficiency Act (ISTEA) is allocated to regional and local units of government by the Transportation Advisory Board (TAB) and Metropolitan Council. Specifically, funding from two ISTEA programs is available to the RTB:

- Surface Transportation Program. This program provides flexible funding for either highway or transit projects. In 1993, $16 million from this program is available to the metropolitan area.

- Congestion Mitigation and Air Quality Program. Cities which do not meet federal air quality standards (non-attainment areas) are eligible for funding for projects that reduce emissions. Within Minnesota, the Twin Cities and Duluth are both in the non-attainment category for carbon monoxide emissions. Minnesota will receive $4 million from this program in 1993.

In May 1993, the RTB submitted an application for Congestion Mitigation and Air Quality funding for I-394 service. $2.4 million was requested to fund operating costs of the first year of new service within the I-394 corridor. This request was approved by the TAB and Metropolitan Council and is now being reviewed by the Federal Highway Administration for consistency with federal regulations.

DISCUSSION

Two new applications are proposed for the 1993 funding cycle. Both would request Congestion Mitigation and Air Quality funding:

1. I-394 Service Operating Costs (2nd year) - $2.4 million
   This application would request federal fiscal year 1994 funding (beginning October 1993) for the second year of new I-394 service. The application is proposed at this time in order to obtain a funding decision before 1994 operating budgets are finalized.

2. Travel Demand Management Programs - $850,000
   $650,000 would be sought for Minnesota Rideshare operations and guaranteed ride home programs. $200,000 would be used for other, currently unspecified, travel demand management projects the RTB may fund. If successful in obtaining funding, the RTB would then determine how to allocate the $200,000 for travel demand management activities.

RECOMMENDATION

That the Regional Transit Board authorize the executive director to submit the following applications to the Transportation Advisory Board:

1. I-394 Service Operation Costs (2nd year) - $2.4 million

2. Travel Demand Management Programs - $850,000

HB:jmo

REGIONAL TRANSIT BOARD

Mears Park Centre
230 East Fifth Street, St. Paul, Minnesota 55101
292-8789

DATE: June 25, 1992

TO: Chair and Members of the Regional Transit Board

FROM: Stephanie Eiler, AICP
Senior Planner, LRT Development

SUBJECT: Light Rail Transit Update

1993 Legislative Action

Governance: The 1993 legislature passed and the governor signed an LRT governance bill, which stipulates roles and responsibilities for the entities involved in LRT planning in the metro area. All of the various parties involved have been following the agreement informally since it was reached one year ago.

Funding: The legislature also authorized $200,000 for LRT development, to be matched by $200,000 from Ramsey County and $400,000 from Hennepin County. Together, the $800,000 would provide the local match for a new federal grant of $3.2 million for further work including preliminary engineering for the Central Corridor. This grant has been requested by the region and is being supported in Washington by Representative Martin Sabo.

Central Corridor Transit Project

Alternatives Analysis/Draft Environmental Impact Statement: The AA/DEIS is anticipated to be complete in September. Four alternative transit improvements are being evaluated:

- o No Build (required by the Federal Transit Administration)
- o TSM (also required)
- o LRT
- o Busway/HOV

The need for the project is laid out in the Purpose and Need Chapter of the AA/DEIS. This chapter was developed by Metropolitan Council and RTB staff, and was recently approved by the Federal Transit Administration. This section of the document sets the stage for the evaluation of the four alternatives, and is attached for your information.

Patronage Forecasts: The patronage, or ridership, forecasts are being prepared by the Metropolitan Council and the consulting team. They are expected to be available early in July. Early indications are the ridership forecasts are generally consistent with previous forecasts for the corridor.

Cost Estimates: Capital costs for construction have also been estimated for the four alternatives. Current estimates range from a low of $3.6 million for the no-build alternative to a high of $474 million for the LRT alternative. The LRT estimate is very close to the RTB's 1991 estimate of $469 million, the figure used in the Metropolitan Council's Regional Transit Facilities Plan.

Operating and maintenance costs are awaiting the final ridership estimates, as they are affected by the number of vehicles needed.

Surface Alignment: One segment in the Central Corridor, plus a segment adjacent to the corridor to connect with I-35W, needed additional work to identify an alignment for evaluation in the AA/DEIS. The Hennepin County Regional Railroad Authority convened advisory committees over the last several months to recommend alignments to HCRRA and Mn/DOT.

The Downtown Minneapolis Advisory Committee, charged with recommending a surface alignment to replace the previously-planned downtown tunnel, recommended a one-way loop on Second and Marquette Avenues. The downtown committee's conclusion also stated a clear preference for a tunnel, and advised the joint lead agencies to follow the development of low-floor light rail vehicles closely. A system with low-floor vehicles would remove the need for high station platforms. Many downtown business interests find high platforms objectionable because of their size and mass (approximately 4 feet high by 300 feet long).

The Southside Minneapolis Advisory Committee was charged with recommending a surface alignment between the end of the Central Corridor at the Convention Center and I-35W near Lake Street. The southside committee identified one surface alignment, 4th Avenue South, as least damaging to the community, but firmly stated its belief that LRT should be constructed in a tunnel, not on the surface.

I-35W

Interim High Occupancy Vehicle Lane: The City of Minneapolis voted not to sue Mn/DOT to stop implementation of the proposed interim HOV lane between Burnsville and Richfield in I-35W. However, a south Minneapolis neighborhood group, Neighborhood Transportation Network (NTN) has filed suit to stop the project. Mn/DOT recently announced its intention to extend the interim HOV lane north to 46th Street in Minneapolis.

I-35W Reconstruction Project: To date, no funding has been identified for the $1.2 billion proposed reconstruction project for I-35W. A study committee to evaluate possible funding sources for I-35W and I-494 was discussed during the legislative session, but not established.

RECOMMENDATION: For information only. No Board action is required.

attachment: DEIS Purpose and Need Chapter

RTB
11/19/91

LRT CORRIDOR REEVALUATION RECOMMENDATIONS

Discussed and passed at the November 18, 1991 RTB Board Meeting

CORRIDOR STAGING:

- The RTB proposes a two-phase system: a Central Corridor and an I-35W/South Corridor.

  The initial system has both regional core and home-based trip service features, and the highest performance characteristics in the region.

  1. Central Corridor linking downtown Minneapolis, University of Minnesota, State Capitol, and downtown St. Paul
  2. I-35W/South Corridor eventually linking Dakota County with Minneapolis and St. Paul

  Corridor segments will be constructed as funding becomes available.

- Additional corridors have attractive performance characteristics. Additional corridors should be considered for implementation either after Central and I-35W, or if neither Central nor I-35W can be started in the near future, particularly Minneapolis Northeast.

- Right-of-way for corridors with identified potential for LRT should be preserved.

ALIGNMENT

- The RTB recommends the construction of a two-corridor LRT system on a surface alignment. While the RTB recognizes that a regional system would require the construction of a tunnel, the proposed project offers the least expensive, functional, transit legislative initiative possible.

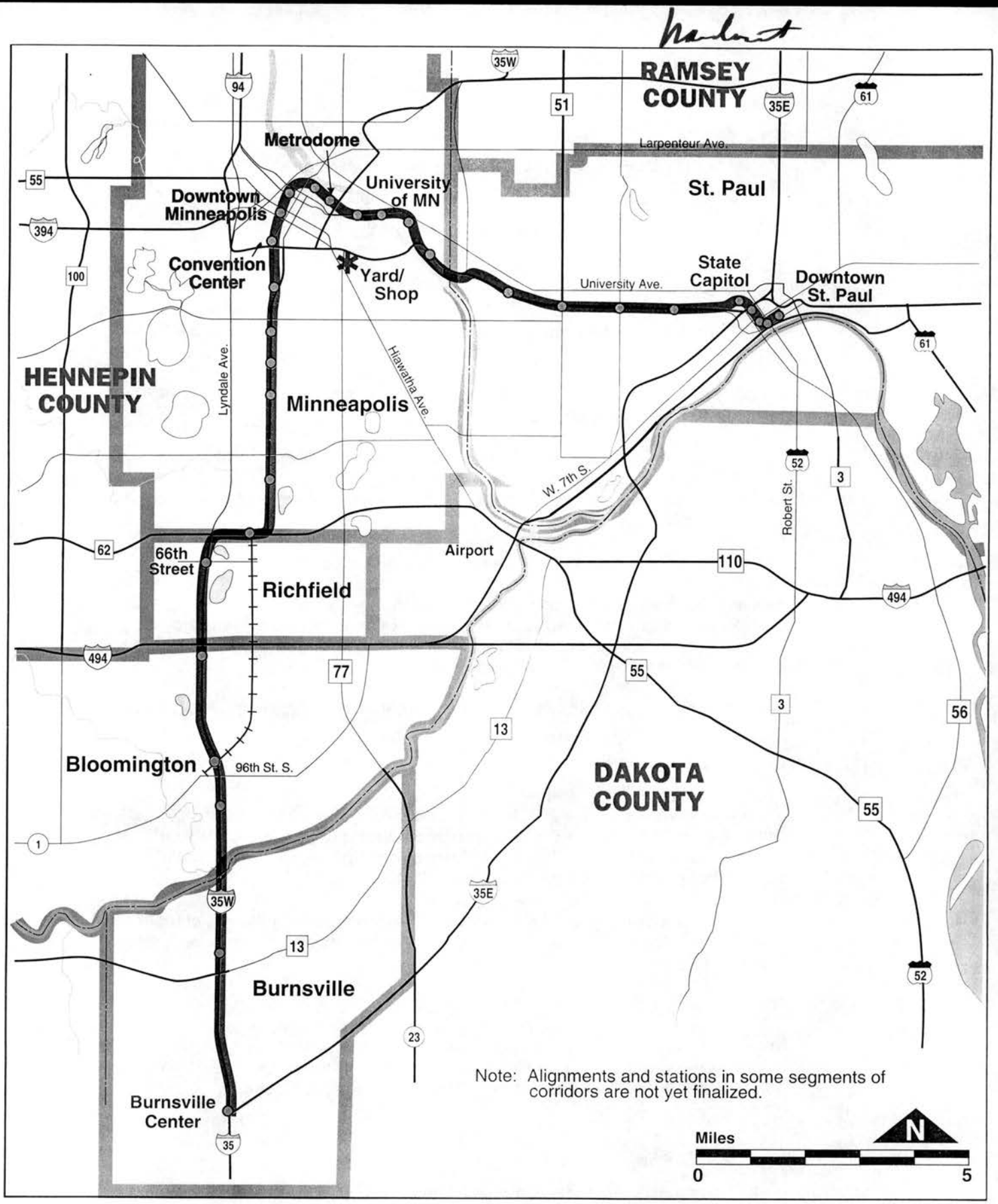
  This recommendation would not preclude the construction of a tunnel for the first two corridors financed by individual jurisdictions independent of federal, state or regional funding.

FINANCING:

- The RTB recommends a financing goal of 30% federal funding, with the remaining 70% to be paid by state and local (i.e., RTB bonding). Federal EIS/Alternative Analysis procedures should begin immediately.

GOVERNANCE:

- Final design and construction should be directed by a Joint Powers Board as described in the LRT Regional Coordination Plan.



LRT TWO CORRIDOR SYSTEM
Central and I-35W

Cost Estimates: Capital costs for construction have also been estimated for the four alternatives. Current estimates range from a low of $3.6 million for the no-build alternative to a high of $474 million for the LRT alternative. The LRT estimate is very close to the RTB's 1991 estimate of $469 million, the figure used in the Metropolitan Council's Regional Transit Facilities Plan.

Operating and maintenance costs are awaiting the final ridership estimates, as they are affected by the number of vehicles needed.

Surface Alignment: One segment in the Central Corridor, plus a segment adjacent to the corridor to connect with I-35W, needed additional work to identify an alignment for evaluation in the AA/DEIS. The Hennepin County Regional Railroad Authority convened advisory committees over the last several months to recommend alignments to HCRRA and Mn/DOT.

The Downtown Minneapolis Advisory Committee, charged with recommending a surface alignment to replace the previously-planned downtown tunnel, recommended a one-way loop on Second and Marquette Avenues. The downtown committee's conclusion also stated a clear preference for a tunnel, and advised the joint lead agencies to follow the development of low-floor light rail vehicles closely. A system with low-floor vehicles would remove the need for high station platforms. Many downtown business interests find high platforms objectionable because of their size and mass (approximately 4 feet high by 300 feet long).

The Southside Minneapolis Advisory Committee was charged with recommending a surface alignment between the end of the Central Corridor at the Convention Center and I-35W near Lake Street. The southside committee identified one surface alignment, 4th Avenue South, as least damaging to the community, but firmly stated its belief that LRT should be constructed in a tunnel, not on the surface.

I-35W

Interim High Occupancy Vehicle Lane: The City of Minneapolis voted not to sue Mn/DOT to stop implementation of the proposed interim HOV lane between Burnsville and Richfield in I-35W. However, a south Minneapolis neighborhood group, Neighborhood Transportation Network (NTN) has filed suit to stop the project. Mn/DOT recently announced its intention to extend the interim HOV lane north to 46th Street in Minneapolis.

I-35W Reconstruction Project: To date, no funding has been identified for the $1.2 billion proposed reconstruction project for I-35W. A study committee to evaluate possible funding sources for I-35W and I-494 was discussed during the legislative session, but not established.

RECOMMENDATION: For information only. No Board action is required.

attachment: DEIS Purpose and Need Chapter

REGIONAL TRANSIT BOARD

Mears Park Centre
230 East Fifth Street, St. Paul, Minnesota 55101
292-8789

DATE: June 25, 1992

TO: Chair and Members of the Regional Transit Board

FROM: Stephanie Eiler, AICP
Senior Planner, LRT Development

SUBJECT: Light Rail Transit Update

1993 Legislative Action

Governance: The 1993 legislature passed and the governor signed an LRT governance bill, which stipulates roles and responsibilities for the entities involved in LRT planning in the metro area. All of the various parties involved have been following the agreement informally since it was reached one year ago.

Funding: The legislature also authorized $200,000 for LRT development, to be matched by $200,000 from Ramsey County and $400,000 from Hennepin County. Together, the $800,000 would provide the local match for a new federal grant of $3.2 million for further work including preliminary engineering for the Central Corridor. This grant has been requested by the region and is being supported in Washington by Representative Martin Sabo.

Central Corridor Transit Project

Alternatives Analysis/Draft Environmental Impact Statement: The AA/DEIS is anticipated to be complete in September. Four alternative transit improvements are being evaluated:

- o No Build (required by the Federal Transit Administration)
- o TSM (also required)
- o LRT
- o Busway/HOV

The need for the project is laid out in the Purpose and Need Chapter of the AA/DEIS. This chapter was developed by Metropolitan Council and RTB staff, and was recently approved by the Federal Transit Administration. This section of the document sets the stage for the evaluation of the four alternatives, and is attached for your information.

Patronage Forecasts: The patronage, or ridership, forecasts are being prepared by the Metropolitan Council and the consulting team. They are expected to be available early in July. Early indications are the ridership forecasts are generally consistent with previous forecasts for the corridor.

Central Corridor Alternatives Analysis/
Draft Environmental Impact Statement
Chapter 1

1.0 PURPOSE AND NEED

The purpose and need for transportation improvements are presented in this chapter. The region has identified four key problems affecting transportation in the Central Corridor, and goals to improve conditions through this project:

1. ***Problem: Mobility, and therefore access, to the primary activity centers in the core of the region is decreasing because congestion is increasing.***

   Goal: Improve mobility and access in the Central Corridor.

2. ***Problem: Congestion is increasing because auto use has increased while transit use has decreased. Environmental consequences are increasing along with auto trips.***

   Goal: Foster positive environmental impacts with transit improvements.

3. ***Problem: The vitality of the central cities is diminishing. The residential and employment base of the regional core needs bolstering.***

   Goal: Support revitalization of the central cities with transit improvements.

4. ***Problem: All the costs of providing transportation services are increasing.***

   Goal: Optimize public investment in transportation in the Central Corridor.

1.01 INTRODUCTION

This chapter discusses the need for transportation improvements in the Central Corridor of the Twin Cities metropolitan area and the planning context through which alternative transportation improvements were identified and developed for analysis. The chapter presents an overview of corridor-level development, demographics, existing and planned transportation facilities and describes current and anticipated problems and issues.

The discussion of the planning context includes a description of the transportation planning and implementation functions of agencies that have cooperated to conduct this study. The discussion also outlines transportation policies for the region and local goals that were cooperatively developed and adopted for the study.

1.02 EXISTING CONDITIONS IN THE CENTRAL CORRIDOR

1.021 Development Pattern

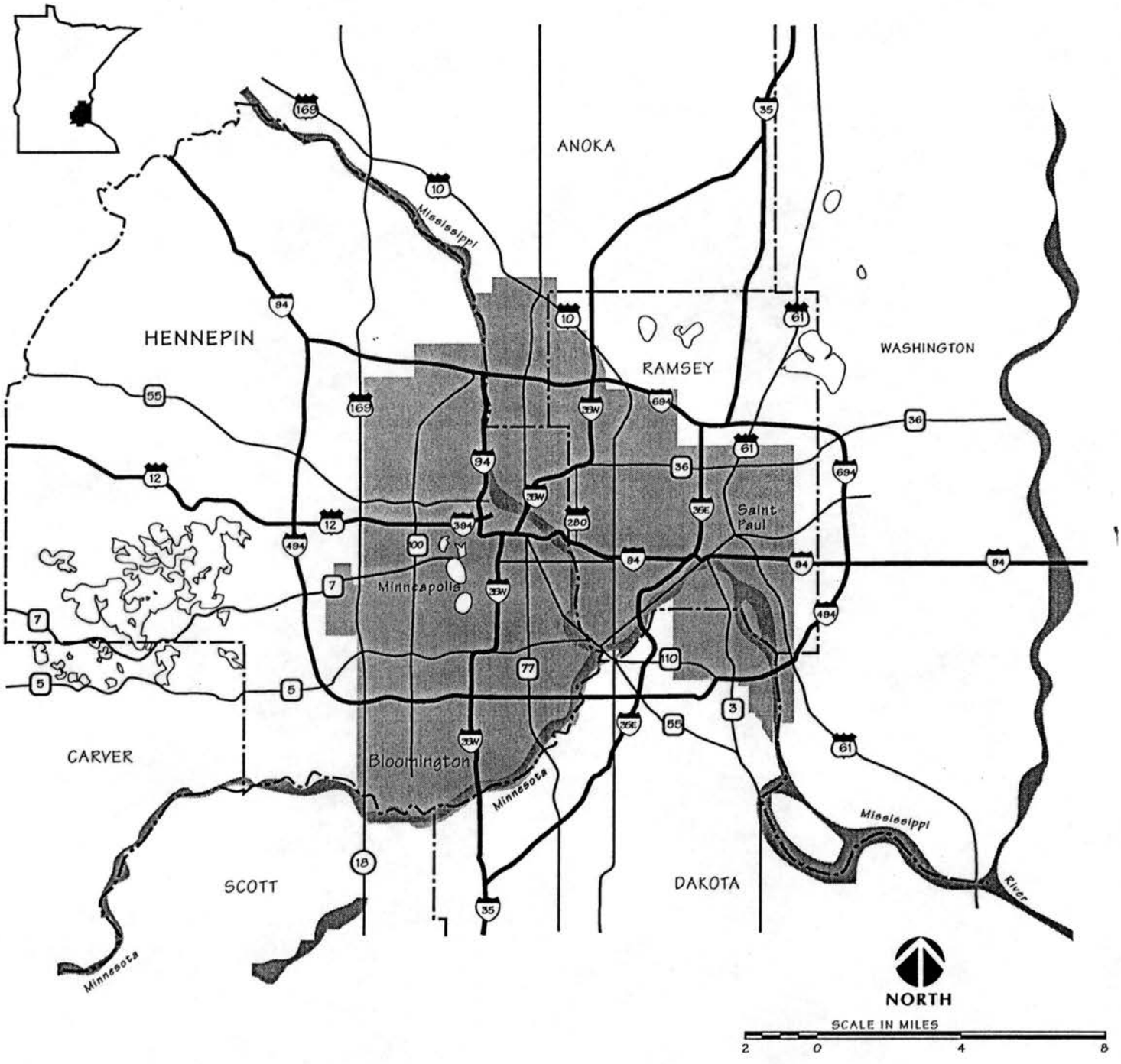
The urban form of the Twin Cities began to take shape over 100 years ago with independent settlements near what are now the downtowns of Minneapolis and St. Paul. By 1930, the area between downtown Minneapolis and downtown St. Paul had filled in with residential and other land uses, which were oriented to the respective downtown of the City in which it was located. It was not until the late 1960's, when the opening of Interstate 94 placed the two downtowns within a 15-minute travel time of each other, that the nucleus of the region became more united in a single urban core.

The Central Corridor is entirely urban in nature, and home to multiple land uses: two central business districts; mature, medium-density neighborhoods with a large transit-dependent population; the main campus of the University of Minnesota and its hospital complex; a 65,000-seat stadium; a convention center; the State Capitol; St. Paul's cultural corridor; and several commercial and historic districts. In addition to these independent activity centers, significant amounts of both cluster and strip development exist along the corridor.

The Central Corridor is in the heart of the region's "fully developed area," as defined by the Metropolitan Council (Figure 1.01). A Metropolitan Council staff report ("Trouble at the Core," November 18, 1992) described the erosion in the economic and social vitality of the fully developed area, particularly in the core. The Central Corridor study area (Figures 1.02 and 1.03) encompasses a portion of the area identified as the regional core. This area also represents an enormous investment in public and private facilities, an investment the Metropolitan Council believes must be maintained if the region is to remain economically strong.

1.022 Demographics

The Central Corridor and its immediate surroundings are comprised of nearly 143,000 residents, almost one-quarter of the combined populations of Minneapolis and St. Paul. Because of the existing transit service orientation, the Corridor indirectly affects another 60,000 people. Over 150,000 jobs are located in downtown Minneapolis; and over 65,000 are located in downtown St. Paul. An additional 83,000 jobs are spread out along the Corridor.



Source: Metropolitan Council, Feb. 1989

Central Corridor

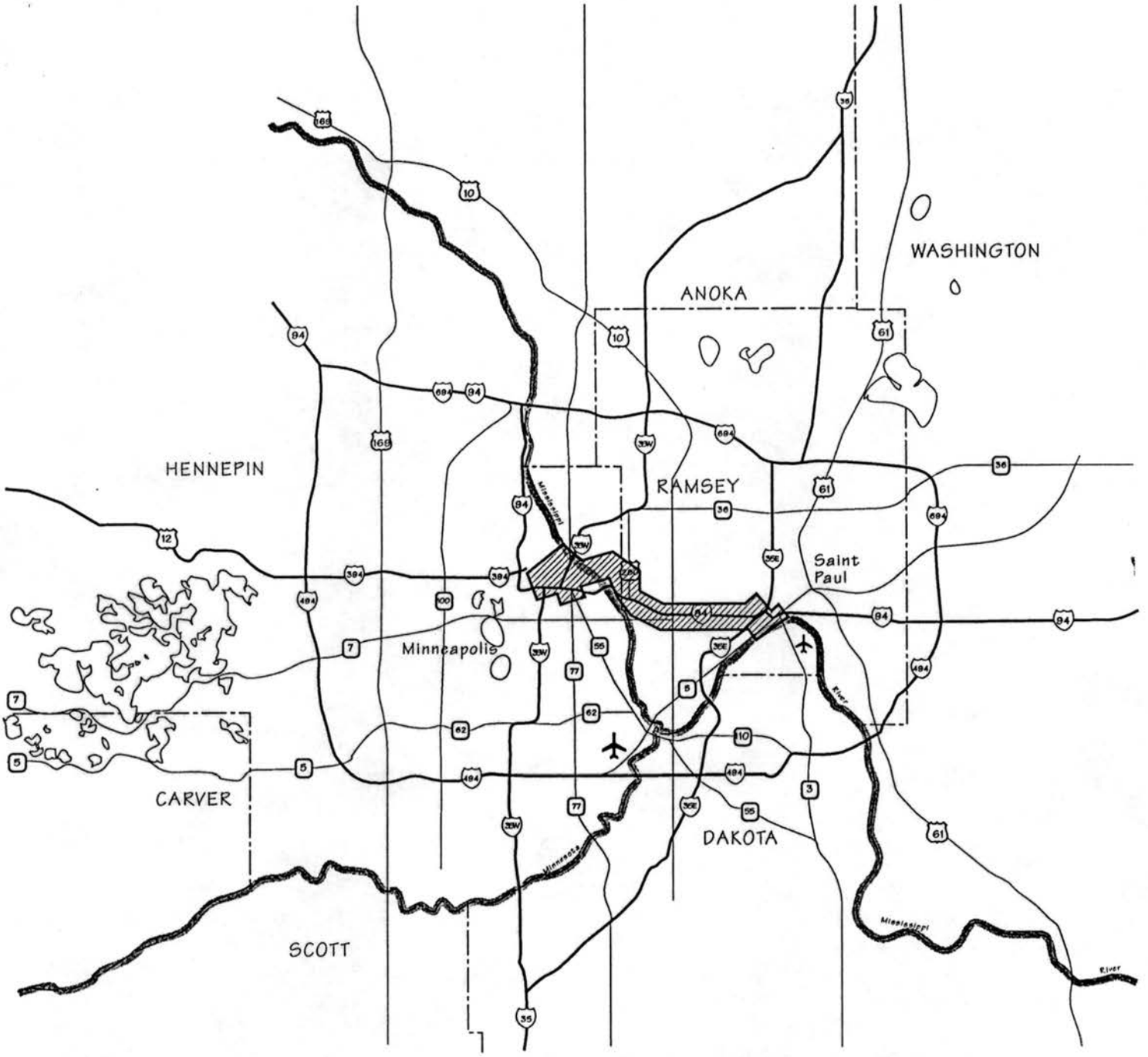
Mn/DOT • RCRRA • HCRRA

Alternatives Analysis
Environmental Impact Statement

BRW

FULLY DEVELOPED METROPOLITAN TRANSIT AREA

Figure 1.01



STUDY AREA

NORTH

SCALE IN MILES

3 0 6 12

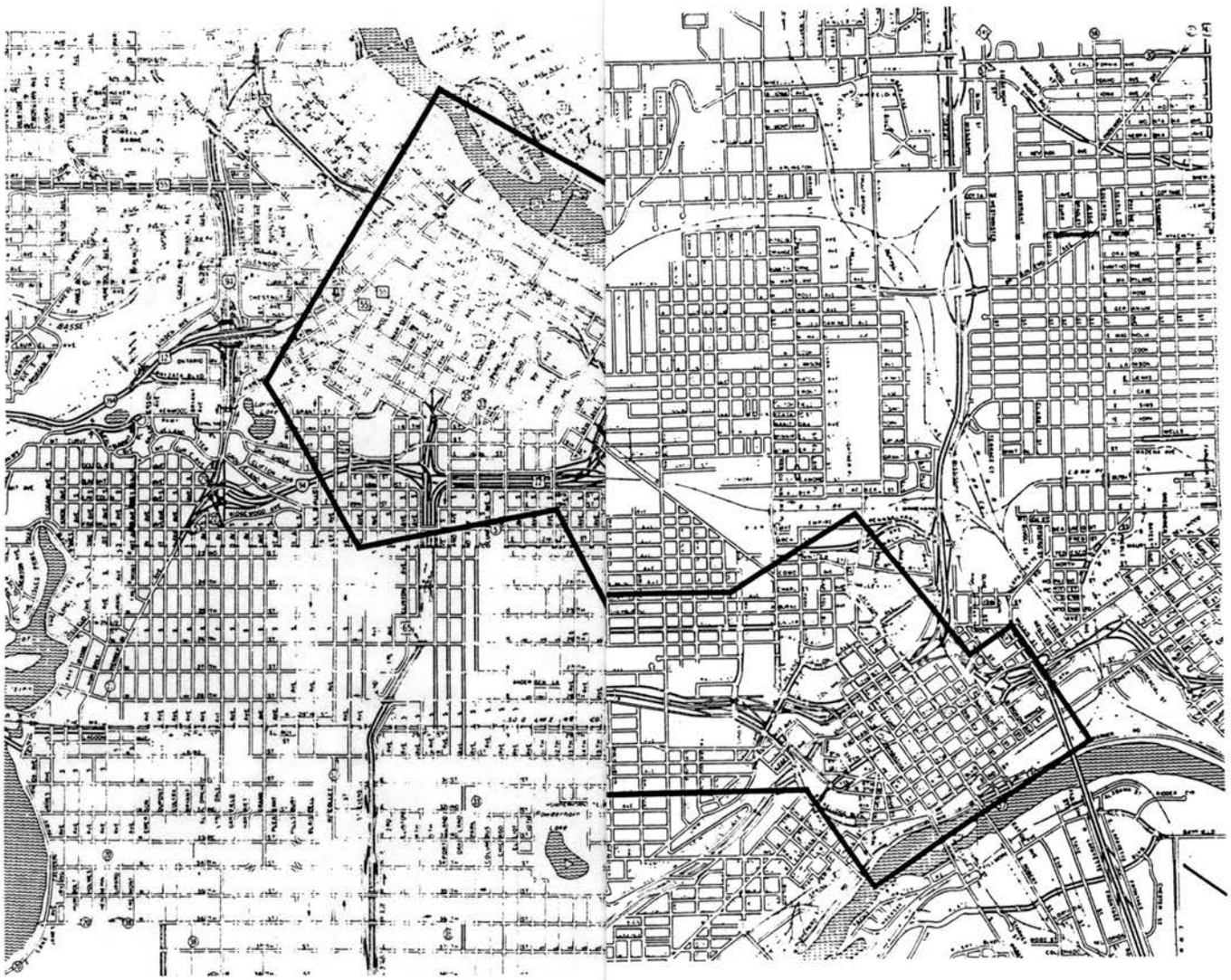
Central Corridor

Mn/DOT • RCRRA • HCRRA

BRW

TWIN CITIES METROPOLITAN AREA

Figure 1.02



STUDY AREA

Central Corridor

Mn/DOT • RCRRA • HCRRA

Alternatives Analysis
Environmental Impact Statement

Figure 1.03

Census data for 1990 indicates that many regional trends are amplified in the core area, where poverty is intensifying and concentrating. Most of the growth in the number of racial and ethnic minorities occurred in the core. The core area has also experienced a shift in the makeup of households--fewer married couple families and more families headed by single parents. This pattern was found in the Corridor to a greater degree than in the rest of the region.

The Corridor is home to a substantial number of people who depend on transit. Table 1.01 outlines the number and percentage of populations traditionally considered transit dependent.

The University of Minnesota and its major medical complex has a student enrollment of 41,000, plus 18,000 faculty and staff, making the "U" the region's third most concentrated trip generator.

TABLE 1.01
CENTRAL CORRIDOR TRANSIT DEPENDENT GROUPS

Category	Corridor Total	Percent of Corridor Population or Households
Total Population	142,600	100%
Total Households	61,900	100%
Mobile Youth (12-18 Years Old)	9,700	7.0%
Elderly (65+ Years Old)	15,900	11.2%
Mobility Limitation	15,100	10.6%
Zero-Car Households	18,500	29.9%
Low Income Households (<$12,500)	13,300	21.5%
Persons Living Below Poverty Level	32,200	22.6%

Source: 1990 Census, Metropolitan Council. Census tracts 38-40, 44-50, 52-54, 56-64, 319-329, 332-340, 342, 348-359.

Notes: 1990 population, cities of Minneapolis and St. Paul: 640,618.
Seven-county metropolitan area: 2,288,721.

1.023 Travel Patterns

Travel in the Corridor is multi-directional. The two downtown "anchors" and the multiple internal activity areas create both east-west and north-south traffic. Travel is constant throughout the day, rather than focused solely on peak periods. The Corridor has historically had a transit orientation, with substantial commuter and midday use of transit.

The Central Corridor, along with the I-35W South Corridor, stands well above other transportation corridors in the metropolitan area in terms of its highway congestion, transit needs, and economic impacts, as shown in Table 1.02.

TABLE 1.02
RANKING OF CORRIDOR NEEDS/PROBLEMS

Corridors	Highway Congestion	Transit Needs	Economic Impacts	Overall Rating
Mpls./I-35W S.	Very High	Very High	Very High	Very High
Central	High	Very High	Very High	Very High
Mpls. NW./I-94 N.	High	High	High	High
I-494 (Minn. R./I-394)	Very High	Medium	High	High
TH 36	High	Medium	High	High
Mpls. NE.	Medium	Medium	High	Medium
Mpls. I-35W N.	Medium	Medium	High	Medium
Mpls. SW.	Medium	Medium	High	Medium
St. Paul NE./I-35E N.	High	Medium	Medium	Medium
Mpls. Hiawatha	Low	High	High	Medium
St. Paul/I-35E S.	Medium	Medium	Medium	Medium
St. Paul/I-94 E.	Low	Medium	Medium	Medium
St. Paul S.	Low	Medium	Medium	Medium
TH 77/Cedar Avenue	Medium	Low	Medium	Low
I-694 (I-35E/I-94 N.)	High	Low	Low	Medium
I-494 (Minn. R./I-94 E.)	Low	Low	Medium	Low
I-494 (I-94 N./I-394)	Medium	Low	Low	Low
I-694 (I-94 E./I-35E)	Low	Low	Low	Low

Source: Regional Transit Facilities Plan, etc.

1.03 PLANNING CONTEXT

1.031 Planning Responsibility

The Twin Cities area conducts transportation planning activities in a multi-jurisdictional environment. The Twin Cities process is generally consistent with provisions of the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) and the Minnesota Department of Transportation and Metropolitan Council coordinating approvals for state and federal metro-area facilities.

The following agencies develop, advise, and/or implement transportation policy:

The Minnesota Department of Transportation has broad responsibility for highways and transit state-wide, and is responsible for the design, construction and operation of state highways in the metropolitan area. Mn/DOT also has responsibility for several aspects of light rail transit design and implementation.

The Metropolitan Council, the designated Metropolitan Planning Organization (MPO), is responsible for long-range comprehensive planning and approval of highway and transit facilities in the seven-county metropolitan area.

The Regional Transit Board is responsible for short- and mid-range transit planning to carry out the Metropolitan Council's long-range goals. The RTB implements the region's plans through a five-year plan.

The Metropolitan Transit Commission is the operating agency for most of the region's fixed-route transit service.

The seven county regional railroad authorities have planning and implementation responsibilities for several aspects of light rail transit.

The cities of Minneapolis and St. Paul include transportation facilities in their comprehensive plans, which are developed using principles consistent with regional plans. Municipal streets and arterials are the responsibility of the cities.

In addition, the Metropolitan Council develops regional land use goals, and the two central cities plan, implement and control land use within their communities.

1.032 Policy Overview

Minnesota Statutes 1992, Section 174.01, subdivision 2, lists the goals of the state transportation system. Several goals have special relevance to transportation improvements in the Central Corridor:

- To provide multimodal and intermodal transportation that enhances mobility and economic development and provides access to all persons and

businesses in Minnesota while ensuring that there is no undue burden placed on any community.

- To provide transit services throughout the state to meet the needs of transit users.

- To provide funding for transportation that, at a minimum, preserves the transportation infrastructure.

- To increase transit use in the urban areas by giving highest priority to the transportation modes with the greatest people moving capacity.

- To encourage tourism by providing appropriate transportation to Minnesota facilities designed to attract tourists.

In the metropolitan area, the Metropolitan Council's Metropolitan Development and Investment Framework (MDIF) sets the general direction for future development patterns. The Council then specifies transportation policies, priorities, and implementation strategies consistent with the MDIF in its Transportation Development Guide/Policy Plan. Metropolitan policies are summarized below.

- The Council's highest investment priority will be maintaining the two metro centers.

- The transportation system should support the region's economic vitality and quality of life by providing for safe, efficient movement of people and goods.

- Travel demand should be satisfied by managing, protecting, adapting, reconstructing, and reconfiguring existing services and facilities while making the most effective use of resources.

- Transit should be strengthened to:

  - maximize people-carrying capacity
  - serve transit-dependent people
  - supplement the metropolitan highway system
  - satisfy downtown-oriented travel
  - allow intensified development
  - be more competitive with single-occupant vehicles, particularly for commuters
  - function as an integral part of the regional transportation system

- Multiple transit strategies should be used to reduce the projected increase in vehicular traffic and reduce the need for added peak period highway capacity.

- Transit resources should be allocated to maintain and upgrade service in high demand corridors and in areas with high concentrations of transit-dependent people.

- Land use and transportation planning should be integrated to maximize the use of existing and reduce the need for expanded transportation facilities.

- Funding should be adequate and stable. Transit financing should be the shared responsibility of users, federal, state, regional, and local governments, and the private sector.

These policies are reflected in the 1992 Regional Transit Facilities Plan. The Plan concludes that:

- The region needs a transportation solution that goes beyond providing a major infusion of capital investments for additional highway capacity.

- The region cannot build its way out of congestion.

- Declining transit- and car-occupancy levels need to be reversed.

- Transportation and land use strategies need to be better integrated.

- The Central Corridor should be the first priority. An alternatives analysis should be initiated to establish federal funding eligibility.

1.033 Planning and Project Development Process

The federal project development process identifies five phases of study for major transportation projects: system planning, alternatives analysis, preliminary engineering, final design, and construction. The Twin Cities has completed system planning for the Central Corridor and is currently engaged in the alternatives analysis phase.

The Twin Cities regional transportation system has been examined over the past twelve years to make decisions regarding regional transit needs, priorities, and feasibility. Three system planning studies were conducted: the Light Rail Transit Feasibility Study (1981); the Long-Range Transit Analysis (1986); and the Regional Transit Facilities Plan (1992). In each of these studies the Central Corridor was determined to have the highest potential viability for fixed guideway transit. More recently, the 1990 Light Rail Transit Regional Development and Financial Plan and 1990 Coordination Plan reaffirmed the Central Corridor as the region's priority corridor. The 1992 Regional Transit Facilities Plan selected the Central Corridor as the region's priority corridor for federal transit funding through the Federal Transit Administration.

Portions of the Central Corridor have also been evaluated in three specific studies. In 1985, the Metropolitan Council developed a draft federal alternatives analysis for transit improvements in the University Avenue Corridor between downtown Minneapolis and St. Paul. A state legislative moratorium on rail transit planning precluded completing and processing that document through the Urban Mass Transportation Administration. When the moratorium was lifted, decisions were made that altered the fixed guideway transit planning process in the metropolitan area.

In 1990, the Hennepin County Regional Railroad Authority (HCRRA) prepared a state-level Draft Environmental Impact Statement (DEIS) for a "University Connector" light rail line serving the portion of the Central Corridor between downtown Minneapolis and the University of Minnesota. The HCRRA LRT DEIS evaluated a tunnel in downtown Minneapolis as well as at-grade alignments. In 1991, the Ramsey County Regional Railroad Authority (RCRRA) completed a state-level DEIS for a "Midway Corridor" light rail line in the portion of the corridor between the University of Minnesota and downtown St. Paul. The alignment in the RCRRA Midway Corridor DEIS followed I-94.

This project, the Central Corridor Alternatives Analysis/Draft Environmental Impact Statement (AA/DEIS), is being conducted following Federal Transit Administration guidelines by the Minnesota Department of Transportation and the regional railroad authorities of Hennepin and Ramsey Counties, acting as joint lead agencies. This AA/DEIS draws heavily on the previous work for the Midway Corridor and University Connector, as well as new information for alternatives and segments of the alignment not previously evaluated. When completed, it will be used by local decision-makers to select a preferred alternative.

1.034 Role of the Draft Environmental Impact Statement in the Decision Process

The DEIS is the product of the alternatives analysis. The DEIS acts as a decision document, summarizing all relevant technical analysis for decision-makers.

The DEIS describes the likely consequences of each of the alternatives, outlines mitigating measures and describes probable impacts that cannot be mitigated. The DEIS is required by the National Environmental Policy Act (NEPA) to provide the basis for an informed decision by the community. The DEIS details the benefits of the project, and the consequences and costs associated with achieving those benefits. Options to mitigate negative impacts are presented. The DEIS compares the investment required by each alternative with the likely return on that investment. By considering a broad range of transit improvements, from maintaining the present system to building a capital-intensive guideway, the DEIS helps to ensure that available transportation dollars are directed to the most useful projects.

The Central Corridor AA/DEIS considers issues raised during previous environmental studies of the corridor, and those raised as a part of a scoping process for this project, conducted during the summer and fall of 1992.

The Draft and Final EIS documents will also be used by the Federal Transit Administration (FTA) to evaluate the merits of the selected alternative for federal funding, should an alternative requiring a major federal funding commitment be chosen. The FTA evaluates projects using four major criteria:

1. **Effectiveness** -- Do the alternatives achieve benefits expressed by goals and objectives?

2. **Cost-Efficiency** -- To what extent are each alternative's costs, both capital and operating, commensurate with its benefits? FTA requires several explicit cost-effectiveness measures.

3. **Financial Feasibility** -- Are the funds for construction and operation readily available, and to what extent do they place burdens on the sources of those funds?

4. **Equity** -- Are the costs and benefits distributed fairly across different population groups?

The region must decide on the transit services and facilities to be used in addressing the transportation problems in the Central Corridor. The region must also decide on a funding approach. The AA/DEIS will be circulated to federal, state, regional and local agencies, interested persons and organizations. The public will have the opportunity to comment on the alternatives and their impacts at public hearings and during a 45-day comment period. Public comment provides input to the joint lead agencies prior to their decision on a locally preferred alternative and a financing plan.

Subsequent steps in the development process depend on which alternative is selected, and which funding strategies are pursued. The local financial commitment will be a critical factor in taking the process forward. If the selected funding scenario involves FTA funding, the joint lead agencies will seek FTA approval to begin preliminary engineering. At this stage, a Final EIS will be prepared. Any federal funding decision for construction would occur after the completion of preliminary engineering, the third phase of the FTA process.

1.04 TRANSPORTATION FACILITIES AND SERVICES

1.041 Highways

Inventory

The east-west and north-south major arterial highways in the Corridor are Interstate 94; Washington, University, Snelling, and Lexington Avenues; and Dale Street. Interstate 94, a three- to four-lane facility, carries about 124,000 vehicles per day through most of the Corridor. The freeway is the major east-west connection through the region. Excluding I-35W northeast of downtown Minneapolis, I-94 is the only freeway connection to downtown Minneapolis from the east and to downtown St. Paul from the west. Table 1.03 shows 1990 actual and 2010 forecast traffic volumes on the Corridor's major arterials and describes the forecast 2010 level of congestion. As shown, in the table, traffic volume on I-94 is expected to increase to over 160,000 vehicles per day by 2010, decreasing the level of service to "E" on a scale of "A" to "F."

TABLE 1.03
PRIMARY STUDY AREA ROADWAYS

Route	Location	Average Daily Traffic 1990	Average Daily Traffic 2010	2010 Congestion Level
Interstate 94	TH 55 - TH 280	120,000	157,500	Severe
	TH 280 - TH 51	127,000	166,500	Major
	TH 51 - Rice St.	127,000	167,000	Major
Washington Avenue	TH 55 - E. River Road	25,000	39,500	Moderate
	E. River Road - Oak St.	19,000	30,000	Moderate
University Avenue	Oak St. to TH 280	21,000	28,000	Moderate
	TH 280 - TH 51	26,000	34,000	Major
	TH 51 - Dale St.	27,000	40,000	Severe
	Dale St. - Rice St.	23,500	36,000	Severe
Snelling Avenue	North of University Ave.	30,625	35,000	Severe
	Between University and I-94	38,675	45,650	Moderate
	Between I-94 and Marshall	45,150	44,700	Severe
Lexington Avenue	North of University Ave.	27,950	31,000	Moderate
	Between University and I-94	30,650	34,950	Major
	South of I-94	32,600	38,150	Severe
Dale Street	North of University Ave.	17,150	24,350	Minor
	Between University and I-94	23,225	27,400	Minor
	South of I-94	20,350	24,225	Minor

Source: Mn/DOT, St. Paul Public Works. Congestion level is based on volume/capacity ratio for type of facility.

The I-94 frontage roads (St. Anthony and Concordia Avenues) also experience traffic congestion, particularly near the interchanges with major north-south arterials in St. Paul. Traffic congestion on north-south streets is focused on the three arterials in the central part of the corridor: Snelling and Lexington Avenues and Dale Street.

University Avenue is an urban arterial with two lanes of traffic, left-turn bays, and on-street parking. Traffic signals are spaced approximately one-half mile apart. Once the major connector between the two downtowns, University Avenue now primarily provides access to local traffic generators, including the Midway Center, the Westgate area, and the University of Minnesota. University Avenue also is a reliever-arterial for I-94 during periods of congestion.

Washington Avenue is the main arterial through the University of Minnesota Minneapolis campus, connecting the campus areas on either side of the Mississippi River with downtown Minneapolis. Right-of-way is significantly restricted through the campus area, with two lanes of traffic in each direction when parking is eliminated during peak periods. The street carries about 19,000 vehicles per day through the campus and is projected to operate at level of service "E" by 2010. While options exist to redirect through traffic around the campus, no other east-west streets reach the core of the campus.

Planned Highway Improvements

The Minnesota Department of Transportation (Mn/DOT) plans to meter all I-94 on-ramps in the Corridor within the next few years. Bypasses for high occupancy vehicles will be added at the following ramps:

- Marion to westbound I-94
- Snelling to westbound I-94
- Cretin to westbound I-94
- University of Minnesota to both east and westbound I-94 in Minneapolis
- Sixth Street (Minneapolis) to eastbound I-94

The City of St. Paul plans to improve Dale Street north of the study area, widening the current four, ten-foot traffic lanes to twelve feet. No other improvements are planned for Snelling or Lexington Avenues or Dale Street.

1.042 Transit

System Structure

The Central Corridor serves as the "spine" of the regional transit system, connecting the east and west halves of the regional service area as well as serving the heavily-developed area between the two downtowns. Bus service in the Corridor follows the grid pattern street system, with major routes on east-west and

north-south arterials and express service on the freeway. In the central cities, transit service is designed to provide a high level of service to people who depend on transit.

Although much of the transit service in the core area will continue to be comprehensive and grid-based, regional service is planned to evolve into a system of hubs and spokes. Routes are being changed from the traditional single-downtown destination model to meet changing travel needs. New service will be oriented to transit hubs, where transfers can be made between short local routes and express routes that provide links between hubs. While much of the focus of system-wide reorganization is on suburban areas, the Central Corridor, with the three largest hubs and other trip generators, is the most important of the spokes.

Transit Service Inventory

Routes 16 and 94B, C, and D are the major east-west transit routes in the Corridor. Local Route 16 and express routes 94 B/D together carry over 10 percent of the total regional transit ridership. Route 16 is a local route service between the two downtowns, generally along University Avenue. Service is provided every 6-8 minutes throughout the day. Route 16 buses stop at nearly every block, and total travel time between the two downtowns - approximately ten miles apart - is just under one hour. Route 16 currently carries about 20,000 daily riders, many of whom depend on transit as their sole or primary source of transportation.

Routes 94B, 94C, and 94D are express routes between the two downtowns along I-94. They carry a total combined ridership of about 5,000 riders per day. Route 94B stops in the two downtowns, the State Capitol complex, and at Snelling Avenue. 94C stops in the two downtowns and at Snelling Avenue. Snelling Route 94D only stops in the two downtowns. The composite frequency for the combined service is about 10 buses per hour in the peak and 4 buses per hour in the off-peak.

Three additional 94 express routes have been added over time. Route 94L serves south Minneapolis to downtown St. Paul, and the 94H and 94J serve St. Paul neighborhoods south of I-94 to downtown Minneapolis. These limited frequency routes carry a combined total of approximately 2,000 daily riders.

The only express service from downtown St. Paul to the University of Minnesota is the Route 52E, a limited service oriented to student schedules. It is a part of the University's extensive Route 52 service. The University also operates an intercampus shuttle bus service (Route 13) between the main campus on Washington Avenue and the St. Paul campus, located northeast of the Central Corridor. This service runs on the University Transitway, an exclusive two-lane busway newly constructed to link the two campuses. Route 13 also serves University of Minnesota park-and-ride lots located along the Transitway and on the state fairgrounds property near the eastern terminus of the Transitway.

North-south service is provided by local route service on Rice Street (Route 12), Dale Street (Route 17), Snelling Avenue (Route 4), and Cleveland Avenue (Route 7). Headways range from 7.5 minutes to 15 minutes in peak periods, and from 15 to 30 minutes during midday. Average weekday ridership on the route portions in the Central Corridor are given below:

12/Rice Street	2,000
17/Dale Street	340
4/Snelling Avenue	3,200
7/Cleveland Avenue	1,200

Service Delivery Problems

Growing traffic congestion in the Corridor makes bus transit service less reliable and more costly at a time when regional transit planning efforts recognize the need for a high level of transit service in the Central Corridor. Congestion forces the purchase and operation of additional buses to maintain service levels. A need exists for a high level of service to meet existing demand from transit-dependent population groups living in the Corridor to preserve their access to regional employment through connections to the two downtowns. In addition to being the region's most frequent transit destinations, the two central cities serve as transfer points to employment and activity centers throughout the region.

Planned Improvements

As noted previously, the Regional Transit Facilities Plan and Vision for Transit both recognize the need for a high level of transit service in the Central Corridor. The RTB's Five-Year Plan proposes to maintain and strengthen the core system, where more than 85 percent of all transit trips in the region are taken. Improvements in routing, frequency, and security are planned, as well as better and faster links between central city and suburban transit hubs.

1.043 Parking

Downtown Minneapolis currently has adequate parking, but severe shortages are projected by Year 2010. The shortage is expected to reach 8,300 spaces based on projected land use changes, which will substantially increase the demand for parking. At the same time parking demand is increasing, the amount of downtown land available for parking will be reduced.

The change from industrial to commercial land use currently underway significantly increases the need for parking within the Corridor.

1.05 PURPOSE AND NEED FOR PROJECT

Over the next twenty years and beyond, a number of existing problems will be exacerbated and new problems will arise if no transportation improvements are made in the Central Corridor. The region has identified **four key problems** which need to be addressed:

1. **Mobility, and therefore access to the primary activity centers in the corridor, is decreasing because congestion is increasing.**

2. **Congestion is increasing because auto use has risen dramatically in the Twin Cities area. Transit ridership is declining at the same time single-occupant auto use is increasing. As the number of trips increases, adverse environmental consequences also increase.**

3. **The demographics of the center cities of Minneapolis and St. Paul are changing, indicating that their residential and employment bases need bolstering. The vitality of the center cities is diminishing.**

4. **All of the costs of providing transportation services are increasing.**

These problems are discussed below.

1. **Mobility, and therefore access to the primary activity centers in the Corridor, is decreasing because congestion is increasing.**

   Interstate 94, the main artery of the Corridor, will need significant additional transportation capacity by 2010. Average daily traffic on I-94 between downtown Minneapolis and Trunk Highway 280 is expected to increase by 31 percent by 2010, resulting in more than four hours of severe congestion each day. Such an increase will result in longer traffic delays during peak periods and increased traffic volumes on local streets.

   Adding general purpose lanes to I-94 is not consistent with regional goals, would be unacceptable to affected communities, and would be very costly. In addition to the Corridor's neighborhoods, the environmentally-sensitive Mississippi River also inhibits the ability to create new roadway capacity.

   Streets in downtown Minneapolis and downtown St. Paul are congested during peak hours. Washington Avenue through the University of Minnesota campus is congested throughout the day.

Buses operating in the downtowns contribute to overall congestion levels, further decreasing mobility and accessibility. Bus lanes in downtown Minneapolis in particular are full during peak hours, with speeds averaging five miles per hour. Although Minneapolis buses are routed over exclusive contra flow lanes, it still takes a bus twenty minutes to get through downtown. St. Paul has recently restructured downtown bus service to operate more efficiently. With projections for year 2010, however, St. Paul will face many of the same problems currently affecting Minneapolis. At the University of Minnesota, the existing congestion problem is worsened by heavy pedestrian activity, presenting safety as well as operational problems. Congestion forces the purchase and operation of additional buses to maintain service levels, adding yet more vehicles to roadways and downtown streets.

Improvements to the transportation system will be required to carry out the economic, land use, environmental, and transportation objectives of the region. Existing transportation facilities in portions of this fully-urbanized corridor are landlocked. The region has therefore determined that:

- Transit improvements should be the focus for increasing transportation capacity and personal mobility within the Corridor.

- Transit improvements can best preserve access to and circulation within the high activity nodes, particularly the two downtowns and the University.

- Transit improvements can best reduce the adverse land use and environmental impacts of increased transportation capacity.

2. Congestion is increasing because auto use has risen dramatically in the Twin Cities area. Transit ridership is declining at the same time single occupancy auto use is increasing. As the number of trips increases, adverse environmental consequences also increase.

The freedom of movement and flexibility Twin Cities residents have experienced resulted from a massive highway buildup accomplished over the past 40 years. This freedom of movement has integrated the region, tying places together. It has come at a high price, however: greater reliance on the single-occupant automobile, an increasingly congested highway system, declining use of transit and ridesharing, environmental pollution, depletion of petroleum resources, and greater urban sprawl.

Vehicle trips in the Twin Cities are increasing by approximately four percent each year. Vehicle occupancy rates are falling, to a current (1990) average of 1.12 persons per vehicle in the peak hour. Growing congestion in the corridor makes transit service less reliable and more costly at a time when the Regional Transit Facilities Plan and Vision for Transit both recognize the need for a high level of transit service in the Central Corridor.

With the projected growth in vehicle miles travelled (VMT), auto congestion in the two downtowns and at the University, already a problem, will continue to grow. Existing parking shortages have been identified in several of the major travel generators in the Central Corridor, and are emerging in other parts as well. Additional parking requires land that could otherwise be put to more productive use. Depending on the location, parking construction can be very expensive. Even with available space, the street system would have difficulty handling the traffic load. The parking shortage and associated price increase will create demand for alternative means of travel into these areas. The lack of convenient alternative modes of transportation hampers efforts to control the growth in parking demand.

The dramatic growth in vehicle miles travelled has offset environmental improvements in automobile technology. Even with engine improvements, road vehicles today account for 56 percent of carbon monoxide emissions and 25 percent of petroleum consumption. Primarily as a result of automobile emissions, the Twin Cities metropolitan area does not meet the air quality requirements of the Clean Air Act for carbon monoxide (CO). The region is in the "Moderate" category in violation of CO standards. Two of the three locations which have violated air quality standards in the past are in the Central Corridor: the University Avenue/Lexington Avenue and University Avenue/Snelling Avenue areas. While the region has taken steps to improve these air quality "hot spots," they are of continuing concern.

3. The demographics of the center cities of Minneapolis and St. Paul are changing, indicating that residential and employment bases need bolstering. The vitality of the center cities is diminishing.

The dramatic suburanization of jobs and people which occurred in the 1980's reduced the "gravitational force" of the central cities, as described in the Metropolitan Council's "Trouble at the Core" report. The region has used its investments to increase mobility in the developing suburbs, burgeoning with new residents and jobs. While the two central cities drew a smaller percentage of commuters in the region in 1990 than in 1970, they do draw about a third of all work trips in the region. For the central business districts by themselves, the percentage dropped from sixteen percent in 1970 to six percent in 1990. Over forty percent of the people travelling to downtown Minneapolis during the peak hours get there by bus. The central cities also send nearly as many reverse commuters out as they draw in from the suburbs.[1]

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[1] "Trouble at the Core: The Twin Cities Under Stress'," Metropolitan Council Staff Report, November 18, 1992, p. 42.

The Council report notes that as the developing suburbs mature, with their own shopping malls, medical clinics, banks and movie theaters, there is less reason to go downtown. "A widening psychological distance between the developing suburbs and the central cities would mark an ominous trend, making solutions more elusive."[2]

This corridor needs a high level of service to meet existing and the forecast demand from transit-dependent population groups living in the corridor, and to preserve their access to regional employment through connections to the two downtowns. In addition to being the region's most frequent transit destinations, the two central cities serve as transfer points to employment and activity centers throughout the region.

Regional goals support using transportation improvements to reinforce and direct desirable development patterns. The Metropolitan Council's highest investment priority is maintaining the two metro centers and their viability as major employment concentrations. Transportation access is a potent tool in shaping and supporting development. With travel demand expected to continue to increase, and the region's focus on transit improvements to increase transportation capacity and mobility, improved access will be required to maintain the health of the core cities.

4. All the costs of providing transportation services are increasing.

Highway construction and transit service costs are paid with state and local as well as federal dollars. There are significant private costs as well as public costs. None of these resources is increasing as quickly as the cost to provide service. The severe social and environmental costs which often accompany major public works projects must also be acknowledged.

Financial constraints were well documented in the Transportation Study Board's 1991 report, *Study of Minnesota's Surface Transportation Needs*. The Study Board estimated that a federal and state funding increase of approximately $400 million per year would be needed to finance reconstruction, preservation, bridge repair, and replacement of existing roadways within the state, plus a very limited number of new roadways.

The Twin Cities cannot afford to build its way out of congestion. Adding roadway capacity to accommodate additional single-occupant vehicle trips results in an escalating spiral of vehicular demand, feeding into the very problem it tries to solve. Increased traffic results in additional pollution, including vehicle emissions, adding to mitigation and clean-up costs. Increased travel time results in lowered productivity in the delivery of goods

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[2] Ibid., p. 32.

and services. Land use issues are magnified, as the demand for public systems including transportation spreads to areas farther out, draining resources from more densely-developed areas where they are more cost-effective to provide.

Congestion forces the purchase and operation of additional buses to maintain service levels. This corridor needs a high level of transit service. A recent survey by the Regional Transit Board found that most people support an enhanced transit system and are willing to pay for it. Without the development of facilities to maintain and improve transit operating speeds and conditions, further declines in transit productivity can be expected by 2010. Declines in transit speed will result in a decline in transit's share of the travel market, increased cost to the community to provide poorer service, and fewer mobility options for all persons, in direct conflict with federal, state, and regional goals to offer attractive and convenient multi-modal transportation options.

1.06 GOALS AND OBJECTIVES

To solve these problems it is necessary to proceed on several fronts, including reversing declining transit ridership and car occupancy levels, and reinforcing and guiding growth toward land use patterns that support transit.

The goals which follow have been developed to address each of the problem areas detailed in the previous section.

Achieving these goals and objectives would make this multi-land use corridor so well served by transit all day long that travellers to any one of the Central Corridor activity nodes would have little need for auto use, and thus be free to travel via transit.

Problem 1: Mobility, and therefore access to the primary activity centers in the corridor, is decreasing because congestion is increasing.

Goal: Improve mobility and access in the Central Corridor.

Related Objectives:

Reduce travel delays and congestion
Improve service, reliability, safety, travel time, comfort
Provide an attractive transit alternative to the single occupant automobile for commuters and other riders
Fully integrate the transit facility with existing and proposed rail, bus, highway and, local street facilities
Improve circulation at major transportation generators, including "event" related land uses

Improve access to employment and activities in five major activity centers
Provide a transit system which can efficiently respond to population/ employment growth
Provide for reverse commute trips on transit
Improve transit service for socially, economically, and physically disadvantaged

Problem 2: Congestion is increasing because auto use has risen dramatically in the Twin Cities area. Transit ridership is declining at the same time single-occupant auto use is increasing. As the number of trips increases, adverse environmental consequences also increase.

Goal: Foster positive environmental impacts with transit improvements.

Related Objectives:

Improve air quality by reducing mobile source emissions, mitigate any adverse local air quality impacts and minimize noise impacts
Reduce traffic congestion
Protect sensitive areas such as historic and cultural resources, wetlands, scenic areas and river crossings in the Corridor
Support non-vehicular access within the Corridor (biking and pedestrian paths where feasible)
Minimize right-of-way takings, displacement of homes and businesses, and impacts during construction

Problem 3: The demographics of the center cities of Minneapolis and St. Paul are changing, indicating that their residential and employment bases need bolstering. The vitality of the center cities is diminishing.

Goal: Support revitalization of the central cities with transit improvements.

Related Objectives:

Design transit improvements, stations, and facilities compatible with local communities
Support redevelopment and stabilization of the central cities and attract jobs and businesses
Implement land use policies that support transit use and limit urban sprawl
Reduce the need for additional parking at five major activity centers

Problem 4: All the costs of providing transportation service are increasing.

Goal: Optimize the public investment in transportation in the Central Corridor.

Related Objectives:

Encourage private investment in the local economy and transportation infrastructure
Reduce transit operating and maintenance costs and minimize capital investment
Ensure that the transit improvement is a wise use of available public/private funds
Identify and equitably distribute the benefits, costs, and impacts of the investment
Minimize total transportation costs - public and private, capital, and operating

1.07 CONCLUSION

The Central Corridor must preserve and enhance the region's access to downtown Minneapolis, downtown St. Paul, the State Capitol, and the University of Minnesota. It must continue to link the two central cities, in the face of increasing congestion, with minimal environmental damage. It must facilitate the mobility of residents of the region, especially those who depend on transit for access to employment, education and public services.

The Central Corridor transit project is proposed in a fully developed corridor with long-established communities bordering the right-of-way. The challenge of the project is to identify a transit improvement which can achieve the project's transportation, environmental and public investment goals. Ultimately, the proposed investment in the Central Corridor must prove to be a judicious use of public transportation dollars: for the people who use it, for the two central cities, and for the region as a whole. This document will describe and evaluate alternative transit improvements to alleviate the problems in the corridor and achieve the project goals.

REGIONAL TRANSIT BOARD

Mears Park Centre
230 East Fifth Street, St. Paul, Minnesota 55101
292-8789

DATE: June 28, 1993

TO: Chair and Members of the Regional Transit Board

FROM: Randy Rosvold, Senior Planner RR

SUBJECT: Presentation of the Comprehensive Operations Analysis

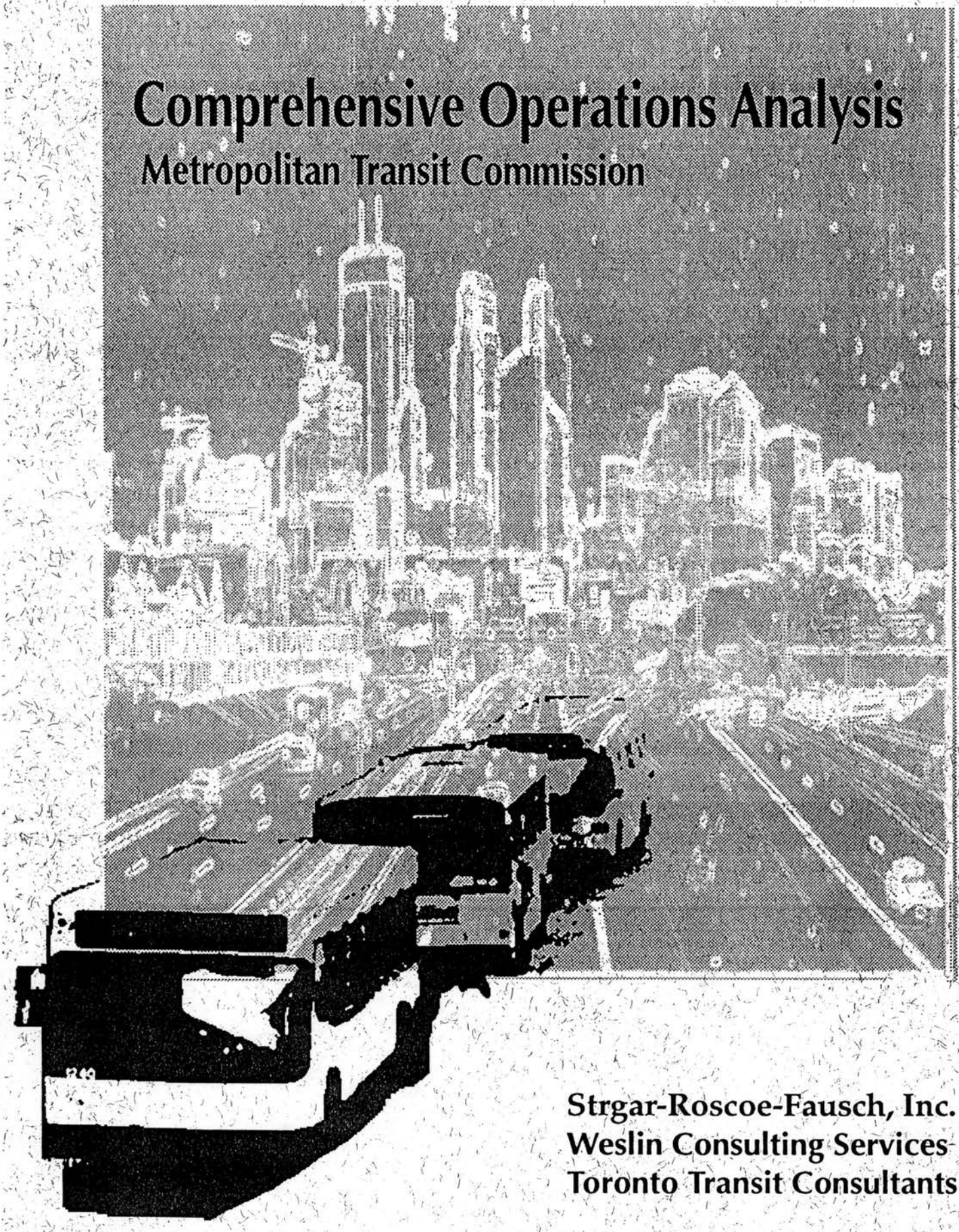
Enclosed is the Executive Summary of the Comprehensive Operations Analysis (COA) prepared for the Metropolitan Transit Commission (MTC) by Strgar-Roscoe-Fausch, Inc. (SRF). Staff from the MTC and SRF will be presenting the findings of the COA to the Regional Transit Board at the July 6, 1993, meeting of the RTB.

RR:jmo
Enclosure

EXECUTIVE SUMMARY

Comprehensive Operations Analysis

Metropolitan Transit Commission



Strgar-Roscoe-Fausch, Inc.
Weslin Consulting Services
Toronto Transit Consultants

MTC

COMPREHENSIVE OPERATIONS ANALYSIS

STRGAR-ROSCOE-FAUSCH, INC.
WESLIN CONSULTING SERVICES
TORONTO TRANSIT CONSULTANTS, LIMITED

MAY 1993

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1.0. EXECUTIVE SUMMARY

1.1 Purpose and Scope

The Comprehensive Operations Analysis (COA) for the Twin Cities Metropolitan Transit Commission (MTC) was conducted in order to produce a detailed assessment of the ridership and performance characteristics of existing regular route transit services. Since this was the first systemwide COA conducted in the region, the sample goal was to cover all bus trips operated by MTC, excluding contract services, for weekday, Saturday and Sunday service. The primary data components were passenger boarding and alighting counts and type of fare payment at each bus stop in the system and schedule adherence checks at route timepoints. In addition, a passenger transfer analysis was completed as was a computer-based analysis of bus pull-out and pull-in travel times from garages to terminals. The on-board data collection activities were completed during May and June, 1992 and the transfer data was collected in November, 1992.

The MTC is a large transit operator with a peak fleet of 830 buses in service on weekdays. About 95,000 vehicle miles of service are provided over 125 routes each weekday. There are almost 10,000 unique bus stops in the system and almost 220,000 passenger trips per day. The amount of weekend service operated is also quite significant as the Saturday bus fleet requirement is slightly less than that operated midday on weekdays. The level of Sunday service is about half that on Saturdays. The COA project was a very significant data collection effort as over 12,700 bus trips were sampled and over 13,500 surveyor hours were expended to complete the sampling.

The ridership data is deemed to be very representative of average conditions as almost all of the weekday data was collected in May. May has historically been an average month in terms of ridership as it was 100.7 percent of average in 1990 and 100.6 percent of average in 1991. Because of daily variations in ridership patterns and limitations of field data collection accuracy levels, it was anticipated that the field counts would not precisely match MTC driver counts. Overall, the field data was 92 percent of the average MTC driver counts for May weekdays.

1.2 Overview of Analysis

The goal of the operations analysis was to identify route and service changes that would enhance system productivity and effectiveness. The key components of the analysis include the following:

- Review of boarding and alighting counts for each bus stop of each bus route in an effort to identify productivity by segment.

- Review of boardings per bus trip per route for different time periods to identify strong and weak performance periods as well as gauge the appropriateness of the current service frequency.

- Development of route profiles to gauge the productivity of a route against a group of similar routes (peer groups).

- Grouping of routes into corridors to identify and compare the strengths and weaknesses among geographic areas.

- Review of the collected schedule adherence data to determine levels of on-time performance for individual routes.

- Review transfer activity (to/from routes) to identify locations where timed-connections may be important.

- Evaluation of route configuration to identify problems related to route directness, interlining, route deviations, excessive number of terminals (tails) and duplication of service.

A glossary of terms commonly used is included in Appendix A.

1.3 Peer Group Analysis

Four peer groupings were used for the analysis:

1. Local radial routes

2. Peak period express routes

3. Crosstown routes

4. All-day express routes

By using the peer group technique, only routes of similar service characteristics are evaluated against one another.

Five performance measures were calculated for all routes and major route segments (separated pieces of interlined routes). The measures were:

Primary measures:

1. Subsidy per passenger

2. Cost per revenue hour

Exploratory measures:

1. Farebox recovery ratio

2. Passengers per revenue mile

3. Average fare

This analysis was completed for weekday, Saturday and Sunday service. The two primary measures, subsidy per passenger and cost per revenue hour, are used to rate overall route performance. The remaining three measures are used to help explain or verify the findings. Key performance data is as follows for weekday service:

Peer Group	Average Subsidy Per Passenger (1)	Average Cost per Revenue Hour	Revenue to Cost Ratio	Average Passenger Per Revenue Mile
1. Local Radial	$1.05	$ 73.43	32.7%	3.3
2. Peak Express	$2.65	$145.05	24.5%	2.2
3. Crosstown (2)	$1.04	$ 64.71	29.3%	3.5
4. All-Day Express	$2.67	$106.85	24.5%	1.5

(1) Current RTB subsidy per passenger standards for the peer groups are:

Local Radial	$3.25
Peak Express	$3.85
Crosstown	$4.00
All-Day Express	$3.50

(2) The performance data in this peer group is significantly influenced by Route M21. If this route were moved to the Local Radial peer group, the revised Crosstown peer group would have the following performance:

Average Subsidy Per Passenger:	$1.71
Average Cost Per Revenue Hour:	$70.00
Revenue to Cost Ratio:	26.9%
Average Passenger Per Revenue Mile:	2.1

The peer group analysis concluded that there were significant differences between local and express service. However, the difference between peak express and all-day express is not significant enough to warrant continued use of these two separate groups. Therefore, it is recommended that only three peer groups, local, crosstown and express service, be used in future performance evaluation.

The analysis of route performance also identified an underlying difference between local and express routes. The analysis indicates that the subsidy per passenger for express routes is generally $1.10 to $1.40 higher than that for local routes regardless of the route productivity (passengers per mile). Thus, even if both types of routes generate the same number of passengers, the express route will require much higher subsidy requirements.

The analysis of individual route performance within peer groups identifies poor and marginal performers by comparing the individual's route performance against the peer group average. Routes that are classified as poor perfomers are those that are in need of immediate attention for possible reconfiguration or elimination. Poor performance is defined as having one or more of the primary performance measures more than two standard deviations above the average value for the peer group. Routes labelled marginal performers are generally not in need of immediate attention but should be thoroughly evaluated as time permits. Marginal performance is defined as having one or more of the primary performance indicators more than one standard deviation but less than two standard deviations above the peer group average.

Classification of performance was done using the subsidy per passenger and cost per revenue hour measures. The findings are as follows:

Number of Routes Classified As

	Poor (2 or more standard deviations above average)		**Marginal** (1 to 2 standard deviations above average)	
	Routes	Percent	Routes	Percent
Weekday				
Local Radial	5	8%	14	23%
Peak Express	4	11%	9	25%
Crosstown	3	30%	2	20%
All-Day Express	0	0%	2	20%
Saturday				
Local Radial	5	10%	11	22%
Crosstown	2	29%	3	43%
All-Day Express	0	0%	1	50%
Note: No peak express service on Saturdays.				
Sunday				
Local Radial	3	6%	18	37%
Crosstown	3	43%	2	29%
Note: No peak express or all-day express service on Sundays.				

1.4 Schedule Adherence

As part of the on-board data collection effort, the actual bus departure time from each of the MTC route timepoints was recorded. This was compared to the scheduled time of departure to determine the overall level of schedule adherence. Strict tolerances were chosen by MTC to define on-time bus trips. Any trip that departed early or more than three minutes late was not deemed on-time. The results of the analysis for all bus trips and timepoints are as follows:

	Percent of Timepoints Departed		
Service	On-Time	Early	Late
Local Routes	72%	13%	15%
Peak Express	68%	16%	16%
Crosstown	76%	14%	10%
Daily Express	72%	11%	17%

The proportion of timepoints with early departures was about the same as late departures for local and express routes. Local routes tended to have less variability in the degree of on-time depatures than did express routes.

1.5 Sector Performance

Analysis was undertaken to evaluate how different route types performed within geographic corridors or sectors and to determine if all sectors performed equally. Nine radial sectors were identified by MTC for this analysis (shown in Figure 24 on page 150). The Minneapolis based sectors consistently outperformed the St. Paul based sectors as summarized below:

Performance Measure	Minneapolis Based Sectors (1, 6, 7, 8, 9)	St. Paul Based Sectors (3, 4, 5)	Mpls.-St. Paul Based Sector (2)
Cost per Passenger	$ 1.69	$ 2.72	1.18
Subsidy per Passenger	$ 1.16	$ 2.12	0.71
Cost per Revenue Hour	$80.75	$79.60	$70.10
Passengers per Revenue Mile	3.2	1.8	4.4
Farebox Recovery	31.7%	21.9%	40.3%

1.6 Review of Major Corridors

Certain major corridors have a need for significant changes in transit service:

1. St. Paul-White Bear Lake-Maplewood Mall--The existing MTC services in this area have poor productivity. Routings are circuitous and duplicative. Services here should be reconfigured in the form of feeder services to a major transit hub at Maplewood Mall. Feeder service could consist of fixed route circulators and dial-a-ride with connections to express buses destined for downtown Minneapolis and St. Paul.

2. St. Paul-Woodbury-Cottage Grove--Ridership is high in these areas, reflecting population growth. The current services need to restructured and improved to reduce trip circuitry. Local circulators should be used in place of the circulation portion of express bus routes.

3. Downtowns to Airport--Route productivity is generally weak for the limited stop and express services. Alternatives such as minivans, demand responsive service or premium fare express service should be explored.

4. Edina-West Bloomington to Minneapolis--Express routes providing local neighborhood circulation are excessively long in this area. Local circulators should feed the Southdale transit hub. Express buses to downtown should originate at Southdale.

5. Anoka-Coon Rapids-Northtown--Route productivity is generally poor in this area. Alternative service configurations should be considered including a hub-and-feeder concept. Local circulator service could offer better neighborhood coverage.

1.7 System Analysis

The MTC route network covers a very large service area with primary service focused on the two major downtowns. The way the service is currently configured is very complex. The following system elements should be considered for revision:

<u>Route and Service Performance</u>

- There are many long routes which operate through the downtown but serve completely separate service areas on either side of the downtown. Interlining or through routing of service can be advantageous for fleet and operator scheduling. Long routes should be shortened at natural transfer points (e.g., downtown) unless there are specific and significant ridership patterns which require a through service.

- Route structures are often complicated, with multiple branches and diversions off the main trunk to serve isolated developments. The route structures should be simplified to provide a maximum of five branches on a single route and limit the number of routes with multiple branches. Eliminate route diversions to private developments which inconvenience more through riders than are served by the diversion.

- Many headways are uneven and exhibit significant gaps in service throughout the day. Reschedule service to provide even headways. On multiple-branch routes, "blend" the service where possible to provide even headways along the common trunk portion of the route.

- Many areas are served with infrequent service (i.e., one or two trips per day). Eliminate headways greater than 30 minutes whenever possible. Where it is necessary to operate wider headways, provide even, clock service that is easier to grasp and to remember. Eliminate service consisting of one or two trips per day where vehicle loads are below applicable standards.

- A large number of express routes have low ridership and low productivity. Reduce the number of express routes and restrict them to corridors that exhibit the highest demand (use) between major origins and destinations. Redesign express routes so that they provide 50 percent or more of total route travel time as "express". Limit circuity on the local portions of the route: in some cases this might reduce overall access to transit service. Integrate and "blend" local and express schedules over common route areas to save resources. Establish a vehicle load standard for express routes which would require that buses be full or nearly full when they start the express portion of the trip.

- Many routes are circuitous and service is duplicated over some route segments. Reduce the number of routes operating on the same street and redesign the routing configuration to maximize the amount of direct service.

- Route service to and from regional hubs is very confusing. Restructure the service network to fit a transit hub pattern with a hierarchical route structure consisting of community circulators, local feeder routes and regional trunk services including radial expresses.

<u>System Performance</u>

- The route numbering system is confusing. The use of a Minneapolis-based route numbering system and St. Paul-based numbering system is a source of confusion for infrequent transit riders or potential new riders. There are twenty-two examples

of a metro area route number having two different destinations. That involves 44 of the 115 non-contract routes operated by MTC (38 percent). The present system should be replaced, as soon as possible, by a numbering system that is less ambiguous and simpler to understand.

- Interlined routes are difficult to evaluate in the current MTC Route profile because the segments generally perform quite differently. Interlining can be advantageous for operations, but the extent of through ridership was generally quite low. Split interlined routes into distinct segments for performance analysis in the future route profiles.

- A combination of local and express services is essential to the continued success of MTC. Currently, local routes account for 88 percent of weekday revenue miles. The MTC should pay proportionate attention to these services in terms of level of service, performance evaluation and promotion.

1.8 Service Planning and Evaluation Process

The MTC accepted Standards and Guidelines for Service Planning in 1989 to have a basis for implementing new services and modifying existing services. Although this was a useful initial effort, the standards do not adequately provide a process that can be consistently and uniformly applied. There is a tremendous need not only for more complete service standards, but also for a consistant application process to be inplace so that the MTC can balance the trade-offs of providing mobility at an affordable cost.

There are many examples in the current route network where the existing service standards are not adequately applied. For example, the standards indicate a goal of four route terminals as a maximum per route. In practice, some routes have ten or more terminals. Another example of inconsistent application of the standards is found in the use of clock headways. Generally, clock headways have been implemented not based on passenger demand, but rather simply where they can be easily scheduled.

Major revisions should be considered in the individual route guidelines and standards as well as the overall service evaluation process as follows:

- Establish guidelines for the design of the overall transit network to better address route diversions, stop location and spacing, route spacing, effect of service changes on existing riders, periods of operation and evaluation of results of service changes.

- Establish hours and frequency of service guidelines to better address service start and end times, policy headways and vehicle load standards.

- Establish economic performance measures to better evaluate route performance.

- Expand the on-going monitoring process to better determine whether or not system objectives and performance targets are being met, and whether or not service revisions can be recommended.

- Expand the new service evaluation process to ensure the best new projects are implemented.

The expansion of the service planning and evaluation process will require additional staff resources to ensure timely completion. It is also recommended that the data collection efforts be expended beyond load counts and infrequent rider checks to ensure continued use of the most current data for service planning efforts. New electronic fareboxes will provide some but not all of this additional data that is needed.

2.0. ROUTE ANALYSIS

The data collection activities associated with the MTC Comprehensive Operations Analysis (COA) were designed to produce a detailed assessment of the ridership and performance characteristics of existing MTC services. The MTC had not previously conducted a thorough evaluation of all routes and services and so this project was intended to collect baseline data representative of the entire system.

The overall purpose of the COA is to identify route and service improvements that would enhance system productivity and effectiveness. The analysis considers routes as individual performers as well as contributors to the overall system. The key elements of the route analysis are as follows:

- Review of boarding and alighting counts for each bus stop of each bus route in an effort to identify low ridership segments. Figure 1 presents a sample of the data collection form used for the boarding and alighting count. An overview of the data collection activities and related forms and materials is contained in Appendix B.

- Review of boardings per bus trip per route for different time periods to identify strong and weak performance periods as well as gauge the appropriateness of the current service frequency.

- Review of the collected schedule adherence data to determine levels of on-time performance for individual routes.

- Evaluation of route configuration to identify problems related to route directness, interlining, route deviations, excessive number of terminals (tails) and duplication of service.

This section of the report will summarize each of the above elements of the overall analysis.

Recorder: _____

Date: _____

ROUTE M 35B		TIME			PASSENGERS			
OUTBOUND								
STOP LOCATION		SCHED.	ACTUAL	Spd	ON	OFF	LOAD	CASH
CARRY OVER LOAD		XXX	XXX	XX	XXX	XXX		XXX
2nd Street No	**2nd Avenue No**							
2nd Avenue No	2nd Street No	XXX	XXX	XX				
1st Street	1st Avenue	XXX	XXX	XX				
1st Street	Hennepin	XXX	XXX	XX				
1st Street	Marquette	XXX	XXX	XX				
Marquette	2nd Street	XXX	XXX	XX				
Marquette	**Washington**							
Marquette	3rd St/4th St	XXX	XXX	XX				
Marquette	5th Street	XXX	XXX	XX				
Marquette	6th Street	XXX	XXX	XX				
Marquette	7th Street	XXX	XXX	XX				
Marquette	8th Street	XXX	XXX	XX				
Marquette	10th Street	XXX	XXX	XX				
Marquette	11th Street	XXX	XXX	XX				
Marquette	12th Street	XXX	XXX	XX				
12th Street	2nd Ave/3rd Ave	XXX	XXX	XX				
12th Street	**3rd Avenue**							
I-35W	**Lake Street**							
Stevens Avenue	46th Street	XXX	XXX	XX				
46th Street	**Nicollet**							
46th Street	Blaisdell	XXX	XXX	XX				
46th Street	Wentworth	XXX	XXX	XX				
46th Street	Pillsbury	XXX	XXX	XX				

COMMENTS: _____

SRF STRGAR-ROSCOE-FAUSCH, INC. CONSULTING ENGINEERS & PLANNERS

SRF NO. 0921661

MTC COMPREHENSIVE OPERATIONS ANALYSIS

SAMPLE SURVEY FORM

FIGURE **1**

2.1 Bus Stop Productivity

Each route was analyzed to identify which bus stops generate high, medium and low levels of daily passenger boardings and alightings. Thresholds for high, medium and low levels outside of the downtown areas were defined by MTC staff for each of the four primary service peer groups as follows:

Peer Group	Passenger Boardings per Stop		
	High	Medium	Low
Peak Express	4 or more	1-3	0
Daily Express	6 or more	3-5	0-2
Crosstown	6 or more	3-5	0-2
Local Radial	10 or more	6-9	0-5

Figure 2 presents a sample of these tables. The summary tables show the total boardings (B), alightings (A), people paying cash fares ($) and on-board load (O) at each bus stop for each direction of each route. Two additional columns are shown, Boardings and Alightings, which contain symbols marking the level of passenger activity. A symbol of "00" represents low passenger activity of that stop and a symbol of "##" represents medium passenger activity. This format allows the anlayst to quickly scan the bus stop list to locate areas of concern regarding levels of passenger activity. The detailed results of this analysis are contained in Appendix C.

2.2 Boardings by Trip

The route datasets were also used to generate weekday tables of total passenger boardings for each bus trip in the system. The tables sum passenger boardings and bus trips that occur within the following time periods:

1. 2:01 a.m. - 6:00 a.m.
2. 6:01 a.m. - 9:00 a.m.
3. 9:01 a.m. - 3:00 p.m.
4. 3:01 p.m. - 6:00 p.m.
5. 6:01 p.m. - 2:00 a.m.

From this information, the average boardings per bus trip per time period is calculated. A sample of the tables is shown in Figure 3. The complete set of tables is included in Appendix D.

MPLS WEEKDAY

PEER GROUP 2

KEY: ## - Medium Activity
00 - Low Activity

ROUTE 94H OUTBOUND
WEEKDAY

STOP LOCATION		B	A	$	O	TOTAL BOARDINGS	ALIGHTINGS
5th Street Garage	--	4	0	0	4		00
6th Street	Hennepin	39	0	0	43		00
6th Street	Nicollet	128	0	2	171		00
6th Street	Marquette	147	0	1	318		00
6th Street	4th/5th Avenue So	63	0	5	381		00
6th Street	Portland Avenue	2	1	1	382	##	##
6th Street	Park/Chicago	11	1	0	392		##
6th Street	Carew Drive	5	0	2	397		00
6th Street	10th Avenue So	1	4	0	394	##	
6th Street	11th Avenue So	0	6	1	388	00	
Cretin	I-94/Temple	0	13	0	375	00	
Cretin	Roblyn	0	13	1	362	00	
Cretin	Iglehart	0	10	2	352	00	
Cretin	Marshall	2	30	4	324	##	
Cretin	Selby	0	9	2	315	00	
Cretin	Mississippi River Blvd	0	5	1	310	00	
Cretin	Summit	1	10	0	301	##	
Cretin	Grand	0	37	7	264	00	
Cretin	Goodrich	0	5	0	259	00	
Cretin	Princeton	0	12	0	247	00	
Cretin	St Clair	0	27	2	220	00	
Cretin	Stanford	0	13	2	207	00	
Cretin	Jefferson	0	10	0	197	00	
Cretin	Palace	0	6	1	191	00	
Cretin	Randolph	0	22	2	169	00	
Cretin	Niles/Watson	0	10	0	159	00	
Cretin	Hartford	0	5	0	154	00	
Cretin	Scheffer	0	4	0	150	00	
Cretin	Highland Parkway	0	23	2	127	00	
Cretin	Pinehurst	0	0	0	127	00	00
Ford Parkway	Finn	0	26	6	101	00	
Ford Parkway	Cleveland	2	26	3	77	##	
Ford Parkway	Kenneth	1	9	1	69	##	
Ford Parkway	Howell	0	9	1	60	00	
Ford Parkway	Fairview	0	11	1	49	00	
Ford Parkway	Davern	0	7	0	42	00	
Ford Parkway	Macalester	0	4	0	38	00	
Ford Parkway	Snelling Avenue	0	4	0	34	00	
Snelling	Pinehurst	0	0	0	34	00	00
Snelling	Highland Parkway	0	2	0	32	00	##
Snelling	Eleanor	0	3	0	29	00	##
Snelling	Scheffer	0	4	0	25	00	
Snelling	Hartford	0	3	0	22	00	##
Snelling	Wiles	0	1	0	21	00	##
Snelling	Randolph	0	14	0	7	00	
TOTAL		406	399	50			

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BOARDINGS BY STOP – SAMPLE

FIGURE **2**

MINNEAPOLIS ROUTE 01
WEEKDAY

PEER GROUP 1

TIME PERIOD		ROUTE BOARDS	ROUTE TRIPS	ROUTE BOARDS/ TRIP	PEER GROUP BOARDS	PEER GROUP TRIPS	PEER GROUP BOARDS/ TRIP	RATIO (ROUTE BOARDS/TRIP)/ (P.G. BOARDS/TRIP)
02:01 AM	06:00 AM	20	1	20	7014	229	31	65.30%
06:01 AM	09:00 AM	544	20	27	34050	929	37	74.21%
09:01 AM	03:00 PM	389	18	22	52562	1241	42	51.02%
03:01 PM	06:00 PM	442	20	22	38258	940	41	54.30%
06:01 PM	02:00 AM	20	2	10	21004	661	32	31.47%
	TOTALS:	1415	61	23	152888	4000	38	60.69%

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BOARDING PER BUS TRIP – SAMPLE

FIGURE 3

Also included in the tables is the total passenger boardings and bus trips during each time period from all routes in the same peer group as well as the peer group averages. Finally, the individual route average boardings per trip is expressed as a percent of the peer group average. This gives an indication of the relative strengths and weaknesses of the individual route throughout different time periods of the day. For the sample shown, the route generally performs worse than the average performance of all routes within its peer group with average boardings per bus trip at 60 percent of the peer group average. Also, its night ridership appears to be very low.

2.3 Schedule Adherence

Schedule adherence data was collected for all timepoints for all bus trips in the system for weekdays, Saturdays and Sundays. This was completed in conjunction with the on-board data collection effort for the boarding and alighting counts. MTC timepoints are generally defined as those found in the pocket schedules, but also include other locations used in the initial development of the schedule from the headway sheets. Generally, local routes have between 15 and 20 timepoints per direction and express routes about 10 to 15 timepoints.

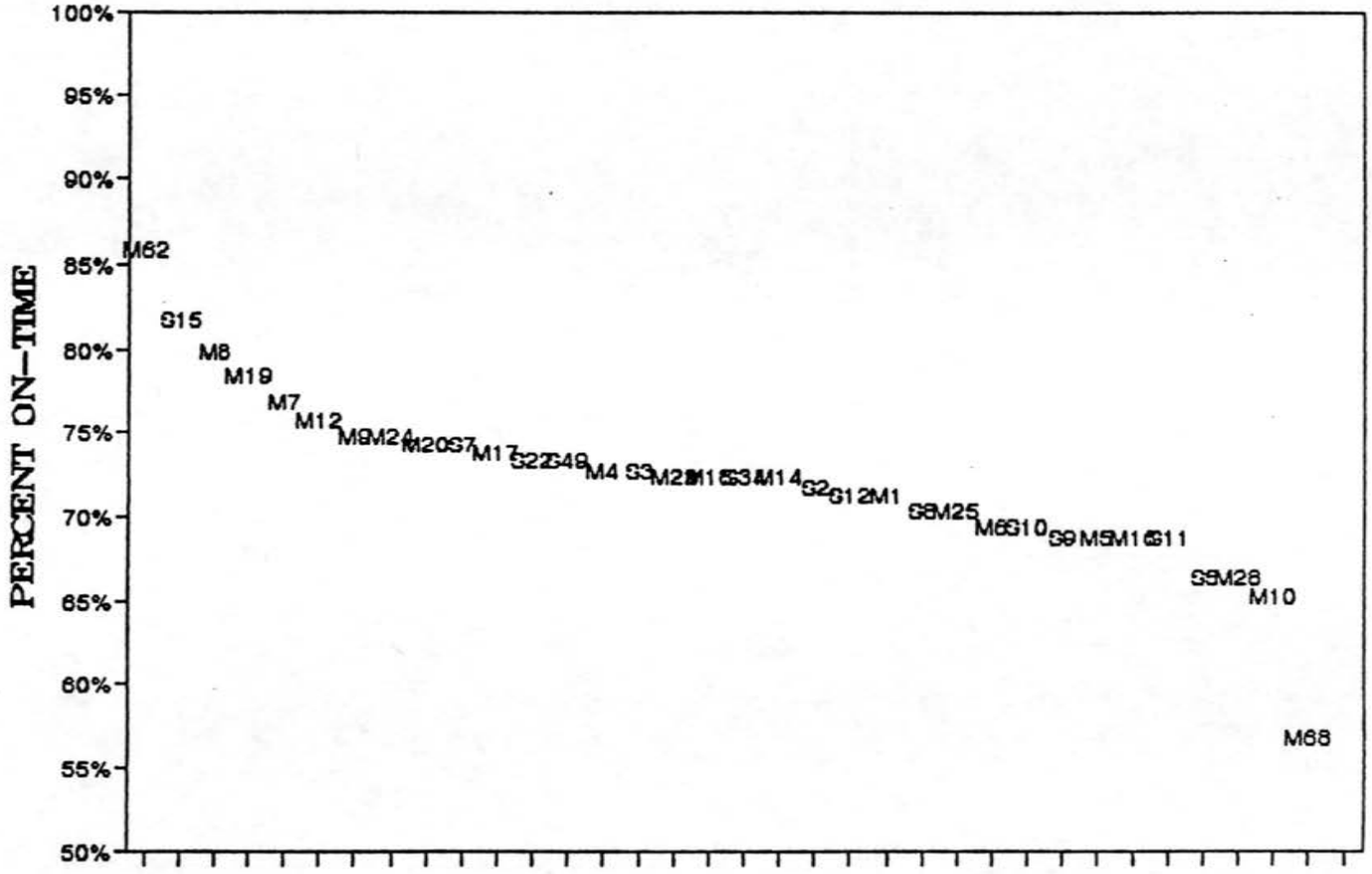
The schedule adherence analysis consists of comparing the scheduled time a bus should pass a timepoint against the actual time it departed that location on the day of the survey. The MTC defined on-time performance as a bus trip departing from a timepoint zero minutes early up through 3 minutes late. Therefore, any trip that departed any amount of time early or more than 3 minutes behind its scheduled time was classified as not on-time. Generally, local routes were on-time slightly more often than express routes as shown below:

	Percent of Timepoints Departed		
	On-Time	Early	Late
Peer Group 1--Local Routes	72%	13%	15%
Peer Group 2--Peak Express	68%	16%	16%
Peer Group 3--Crosstown	76%	14%	10%
Peer Group 4--Daily Express	72%	11%	17%

The proportion of timepoints with early depatures was about the same as late departures for local and express routes. Local routes tended to have less variability in the degree of on-time departures than did express routes as shown in Figures 4 and 5. This is probably because express routes are longer and they operate primarily during peak periods when traffic congestion and delays are more likely to occur. (The figures use the name of the route to depict the actual route value.) The route level data is presented for each route timepoint in Appendix E.

MTC COA SCHEDULE ADHERANCE

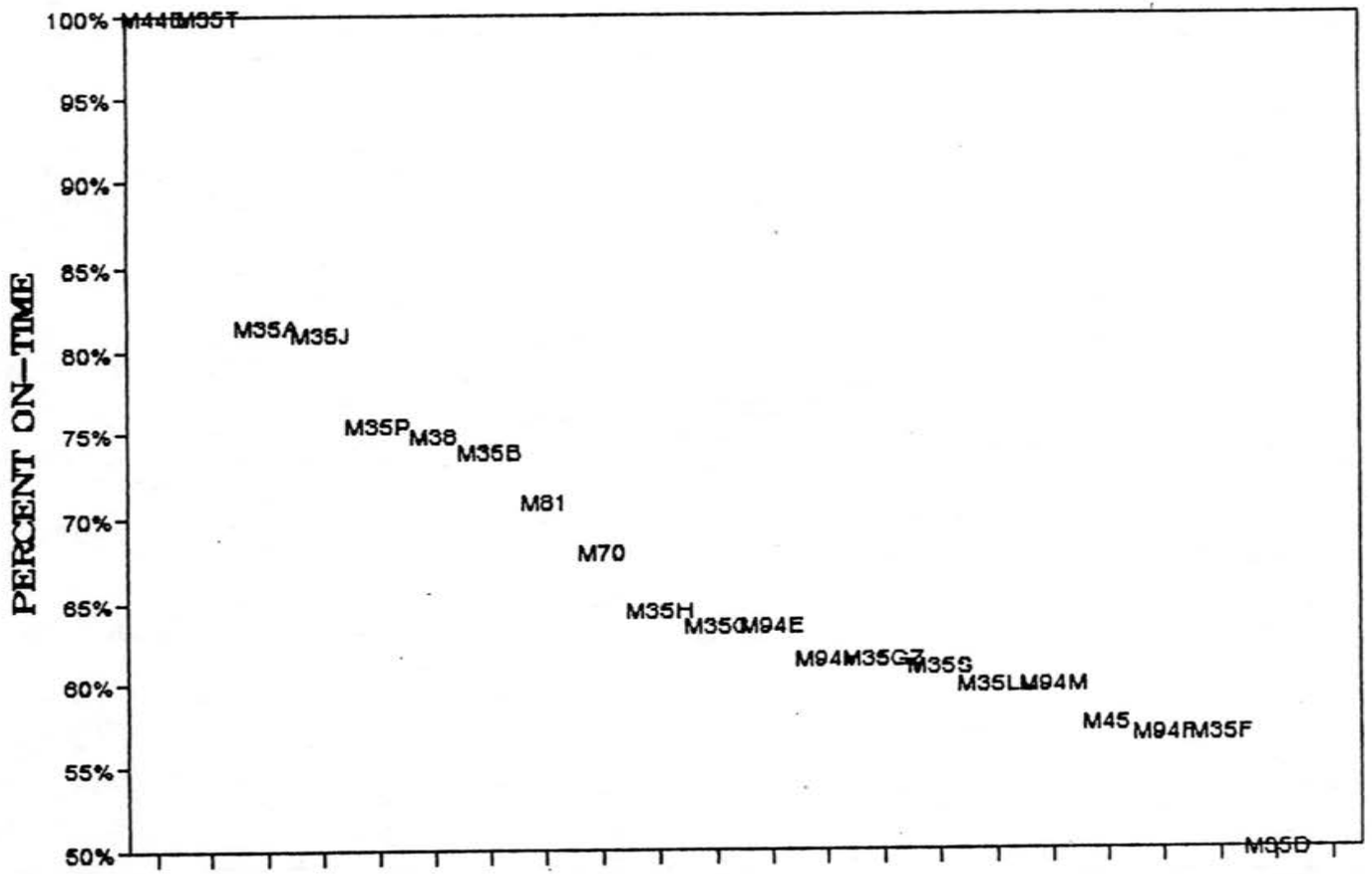
% OF LOCAL ROUTE TIMEPOINTS ON-TIME



SRF STRGAR-ROSCOE-FAUSCH, INC. CONSULTING ENGINEERS & PLANNERS SRF NO. 0921661	MTC COMPREHENSIVE OPERATIONS ANALYSIS **SCHEDULE ADHERENCE – LOCAL ROUTES**	FIGURE **4**

MTC COA SCHEDULE ADHERANCE

% OF EXPRESS ROUTE TIMEPOINTS ON-TIME



SRF STRGAR-ROSCOE-FAUSCH, INC. CONSULTING ENGINEERS & PLANNERS SRF NO. 0921661	MTC COMPREHENSIVE OPERATIONS ANALYSIS **SCHEDULE ADHERENCE – EXPRESS ROUTES**	FIGURE **5**

2.4 Review of Major Corridors

Certain major corridors have a need for significant changes in transit service:

1. St. Paul-White Bear Lake-Maplewood Mall--The existing MTC services in this area have poor productivity. Routings are circuitous and duplicative. Services here should be reconfigured in the form of feeder services to a major transit hub at Maplewood Mall. Feeder service could consist of fixed route circulators and dial-a-ride with connections to express buses destined for downtown Minneapolis and St. Paul.

2. St. Paul-Woodbury-Cottage Grove--Ridership and demand for service is relatively high in these areas, reflecting population growth. The current services need to restructured and improved to reduce trip circuitry. Local circulators should be used in place of the circulation portion of express bus routes.

3. Downtowns to Airport--Route productivity is generally weak for the limited stop and express services. Alternatives such as minivans, demand responsive or premium fare express service should be explored.

4. Edina-West Bloomington to Minneapolis--Express routes providing local neighborhood circulation are excessively long in this area. Local circulators should feed the Southdale transit hub. Express buses to downtown should originate at Southdale.

5. Anoka-Coon Rapids-Northtown--Route productivity is generally poor in this area. Alternative service configurations should be considered including a hub-and-feeder concept. Local circulator service could offer better neighborhood coverage.

2.5 Route Analysis and Recommendations

A complete analysis of each route is presented in the following Route Analysis Worksheets. These worksheets describe and quantify the strengths, weaknesses and operating characteristics of each route including weekday, Saturday, and Sunday service as appropriate. Recommendations for improving performance consist of routing and scheduling changes. The worksheets are organized by St. Paul and Minneapolis routes, and Peer Groups 1 through 4 for each city.

The recommendations rely upon three basic analyses. An analysis of boarding activity (Appendix C) identifies route segments with good ridership and poor ridership. A service utilization analysis (Appendix D) identifies ridership by time period on a route in relation to the number of bus trips operated. The analysis of schedule adherence (Appendix E) indicates on-time performance. Additional analyses, including performance standards, are described more fully in Chapter 3.0.

The recommendations for route service changes are listed in the following pages. Typical recommended revisions include:

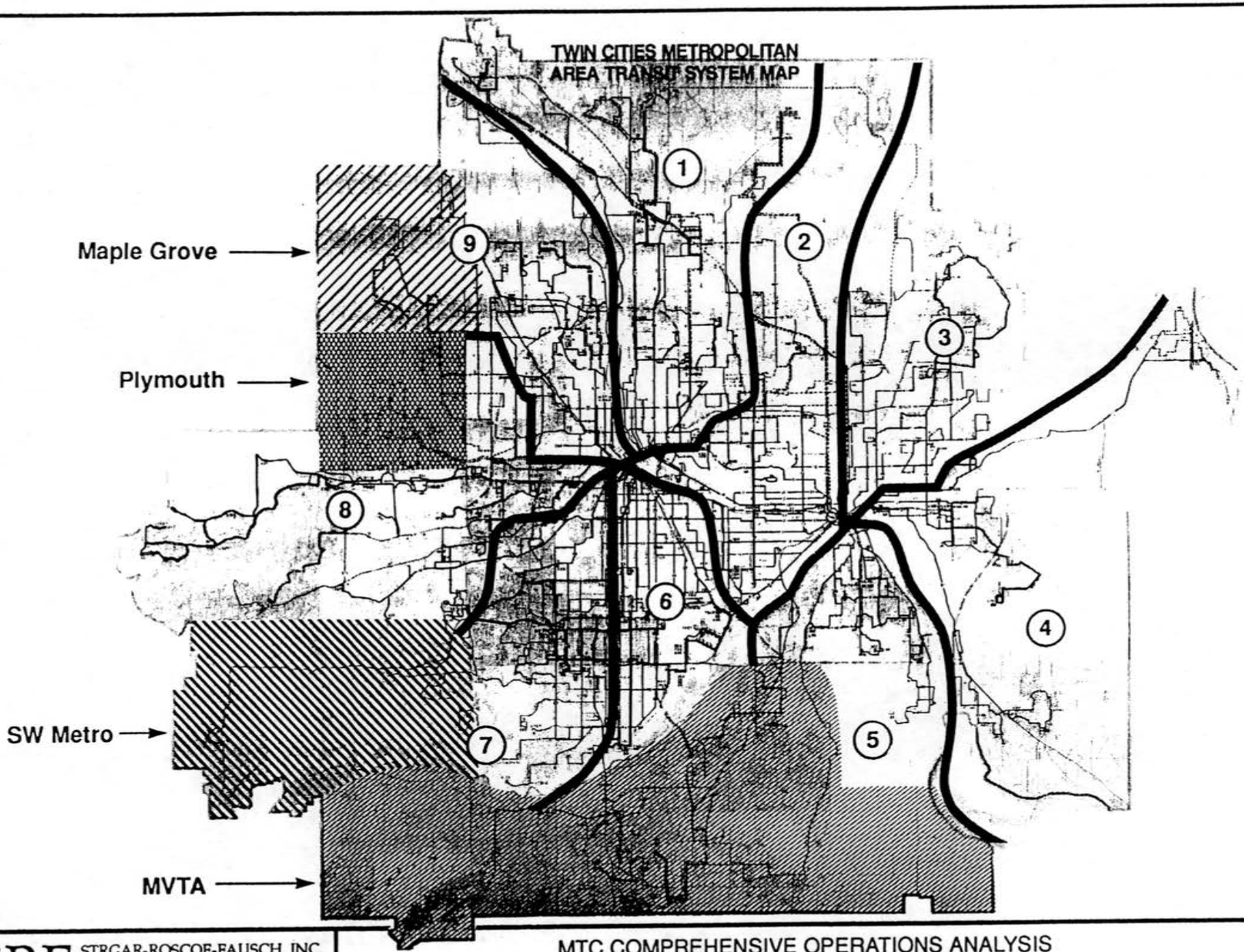
- Elimination of weak route segments. Service that is severely underutilized is typically recommended for termination or significant restructuring. For example, there is a substantial number of route tails (branches or terminals) with extremely low ridership which are being recommended for elimination.

- Simplification of route structure. A number of routes are highly complex, some with up to 10 different routing combinations. This complexity is confusing to riders, especially new riders. Suggestions are made for reducing routing options, improving directness of travel, and reducing overlap in service.

- Changes in schedule. Unproductive service, especially at the start and end of the day, are recommended for elimination. Recommendations are made for changes in the frequency of service and the hours of service. In some cases, the frequency of service is poor (up to two hours between trips) with typically very low ridership at a high cost. It is recommended that token service such as this be either eliminated or upgraded if warranted by demand.

The intent of the route analysis is to identify problem areas and suggest improvements. Additional service planning is required to more fully determine the causes of each problem and to implement corrections in accordance with regional policies and priorities. All routes that operated in May of 1992 have been evaluated with the exception of routes that have undergone significant change since that time. Those routes are:

- Minneapolis 34
- Minneapolis 51
- Minneapolis 63
- Minneapolis 71
- Minneapolis 73
- Minneapolis 75
- Minneapolis 94BCD



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MTC COMPREHENSIVE OPERATIONS ANALYSIS

GEOGRAPHIC SECTORS

FIGURE

24

TABLE 10
ROUTES CONTAINED IN GEOGRAPHIC SECTORS

Sector 1	Sector 2	Sector 3	Sector 4	Sector 5
M10N	M16	S10E	S12E	S11S
M18N	M62	S11N	S3E	S29E
M1N	M6N	S14E	S49	S29W
M24	M73	S15	S61	S5S
M25	M94H	S2	S94M	S7S
M27	S10W	S35ABE	S94S	S8S
M29	S12W	S35C	S94W	
M38	S14W	S35H		
M4N	S22	S36		
S33	S31	S8N		
	S34	S93		
	S35FN			
	S3W			
	S5N			
	S7N			
	S94J			
	S9W			

Sector 6	Sector 7	Sector 8	Sector 9	Sector 10
M14S	M10S	M12	M14N	M11
M19S	M17	M67	M19N	M15
M20S	M18S	M70	M20N	M2
M22N	M1S		M26	M21
M22S	M28		M45	M23
M35D	M35A		M5N	M3
M35EGZ	M35B		M7N	S17
M35P	M35C		M81	S20
M5S	M35F		M94E	S4
M7S	M35H		M94F	
M8	M35J		M94M	
M9N	M35LU			
M9S	M35S			
M50	M35T			
S94L	M44A			
	M44B			
	M44C			
	M47			
	M48			
	M68			
	M6S			

The summary of sector data is contained in Table 11. Plots of sector performance are shown for key variables in Figures 25 through 30. What becomes immediately apparent is the significant difference in the amount of service deployed in the Minneapolis sectors (1, 6, 7, 8, 9) versus the St. Paul sectors (3, 4, 5). Except for Sector 8, Minneapolis-based sectors exceed the average service miles for all sectors (6,500 miles), while the St. Paul sectors all have below-average service miles. Sector 8, which has the lowest service miles among all sectors (2,255 miles), is an anomaly because so much of the service miles in that sector is contract service and this kind of service was not surveyed as part of the COA. Also, the service in Sector 8 was significantly revised as part of the I-394 service improvement. The correlation between sector service miles and sector performance appears to be quite high. As shown in the following table, the Minneapolis sectors consistently outperformed the St. Paul sectors.

Performance Measure	Minneapolis Based Sectors (1, 6, 7, 9)	St. Paul Based Sectors (3, 4, 5)	Mpls.-St. Paul Based Sector (2)
Cost Per Passenger	$ 1.55	$ 2.72	$ 1.18
Subsidy per Passenger	$ 1.03	$ 2.12	0.71
Cost per Revenue Hour	$78.46	$79.60	$70.10
Passengers per Revenue Mile	3.5	1.8	4.4
Farebox Recovery	33.6%	21.9%	40.3%

While, as a group, sectors with high service miles outperform sectors with low service miles, having high service miles does not guarantee high performance. Sector 1 (NE Minneapolis), has the third highest service miles among all sectors, but it has below-average performance. Sector 9 also has above-average service miles but its performance is only average. The following table summarizes the sector differences:

	Performance of Sectors w/Below Average Service Miles			Performance of Sectors w/Above Average Service Miles		
Performance Measure	Below	Ave.	Above	Below	Average	Above
Subsidy per Passenger	3, 4, 5, 8	--	--	1	9	2, 6, 7, 10
Cost per Revenue Mile	3, 4, 8	5	--	1,9	7	2, 6, 10
Passengers per Mile	3, 4, 5, 8	--	--	1	9	2, 6, 7, 10
Revenue to Cost Ratio	3, 4, 5, 8	--	--	1	9, 10	2, 6, 7