



U.S. Department  
of Transportation

**Urban Mass  
Transportation  
Administration**

# Report on Funding Levels and Allocations of Funds

Report of the Secretary of Transportation  
to the United States Congress

Pursuant to Section 3(j) of the Urban Mass  
Transportation Act of 1964, as amended

---

---

May 1991



THE SECRETARY OF TRANSPORTATION

WASHINGTON, D.C. 20590

May 8, 1991

The Honorable Donald W. Reigle, Jr.  
Chairman, Committee on Banking,  
Housing and Urban Affairs  
United States Senate  
Washington, D.C. 20510-6075

Dear Mr. Chairman:

I am pleased to submit the enclosed "Report on Funding Levels and Allocations of Funds" in response to the requirements of Section 3(j) of the Urban Mass Transportation Act of 1964, as amended.

As required by Section 3(j), the report makes recommendations on the allocation of New Fixed Guideway Systems and Extensions funds for FY 1992. In addition, the report describes our recommendations for restructuring the overall Section 3 Discretionary Capital Grants Program and the funding for it, as proposed by the President's Budget and the Department's proposal for reauthorizing the surface transportation assistance programs.

We look forward to working with the Congress as the appropriations process moves forward.

Sincerely,

A handwritten signature in black ink that reads "Samuel K. Skinner". The signature is written in a cursive style.

Samuel K. Skinner

Enclosure



THE SECRETARY OF TRANSPORTATION  
WASHINGTON, D.C. 20590

May 8, 1991

The Honorable Jake Garn  
Ranking Minority Member  
Committee on Banking, Housing and  
Urban Affairs  
United States Senate  
Washington, D.C. 20510-6075

Dear Senator Garn:

I am pleased to submit the enclosed "Report on Funding Levels and Allocations of Funds" in response to the requirements of Section 3(j) of the Urban Mass Transportation Act of 1964, as amended.

As required by Section 3(j), the report makes recommendations on the allocation of New Fixed Guideway Systems and Extensions funds for FY 1992. In addition, the report describes our recommendations for restructuring the overall Section 3 Discretionary Capital Grants Program and the funding for it, as proposed by the President's Budget and the Department's proposal for reauthorizing the surface transportation assistance programs.

We look forward to working with the Congress as the appropriations process moves forward.

Sincerely,

A handwritten signature in black ink that reads "Samuel K. Skinner". The signature is written in a cursive style with a large initial 'S'.

Samuel K. Skinner

Enclosure



THE SECRETARY OF TRANSPORTATION

WASHINGTON, D.C. 20590

May 8, 1991

The Honorable Robert A. Roe  
Chairman, Committee on Public  
Works and Transportation  
House of Representatives  
Washington, D.C. 20515

Dear Mr. Chairman:

I am pleased to submit the enclosed "Report on Funding Levels and Allocations of Funds" in response to the requirements of Section 3(j) of the Urban Mass Transportation Act of 1964, as amended.

As required by Section 3(j), the report makes recommendations on the allocation of New Fixed Guideway Systems and Extensions funds for FY 1992. In addition, the report describes our recommendations for restructuring the overall Section 3 Discretionary Capital Grants Program and the funding for it, as proposed by the President's Budget and the Department's proposal for reauthorizing the surface transportation assistance programs.

We look forward to working with the Congress as the appropriations process moves forward.

Sincerely,

A handwritten signature in black ink that reads "Samuel K. Skinner". The signature is written in a cursive style with a large initial 'S'.

Samuel K. Skinner

Enclosure



THE SECRETARY OF TRANSPORTATION

WASHINGTON, D.C. 20590

May 8, 1991

The Honorable John Paul Hammerschmidt  
Ranking Minority Member  
Committee on Public Works and  
Transportation  
House of Representatives  
Washington, D.C. 20515

Dear Mr. Hammerschmidt:

I am pleased to submit the enclosed "Report on Funding Levels and Allocations of Funds" in response to the requirements of Section 3(j) of the Urban Mass Transportation Act of 1964, as amended.

As required by Section 3(j), the report makes recommendations on the allocation of New Fixed Guideway Systems and Extensions funds for FY 1992. In addition, the report describes our recommendations for restructuring the overall Section 3 Discretionary Capital Grants Program and the funding for it, as proposed by the President's Budget and the Department's proposal for reauthorizing the surface transportation assistance programs.

We look forward to working with the Congress as the appropriations process moves forward.

Sincerely,

A handwritten signature in black ink that reads "Samuel K. Skinner". The signature is written in a cursive style.

Samuel K. Skinner

Enclosure

# Report on Funding Levels and Allocations of Funds

Report of the Secretary of  
Transportation to the  
United States Congress

---

May 1991

Pursuant to Section 3(j) of the  
Urban Mass Transportation Act  
of 1964, as amended

United States Department of Transportation  
Urban Mass Transportation Administration

REPORT ON FUNDING LEVELS AND ALLOCATIONS OF FUNDS

TABLE OF CONTENTS

I. INTRODUCTION	3
II. PROPOSED REAUTHORIZATION OF THE UMT ACT	4
III. NEW STARTS ALLOCATIONS AND RECOMMENDATIONS	6
A. Existing Full Funding Grant Agreements	7
B. Ratings of Candidate New Start Projects	8
C. Project in Final Design without FFGA's	9
1. Jacksonville	9
2. Los Angeles MOS-3	9
D. Projects in Preliminary Engineering	10
1. Recommended for Funding in FY 1992	10
2. Summary of FFGA's and Candidates for LOI's to Projects in Preliminary Engineering	15
3. Other Projects	16
IV. CONCLUSION	16
APPENDIX A. REQUIREMENTS OF SECTION 3(i) OF THE UMT ACT	A-1
APPENDIX B. NEW START PROJECT PROFILES	B-1

## I. INTRODUCTION

This is the annual report called for by Section 3(j) of the Urban Mass Transportation Act (UMT Act) which requires a "Report on Funding Levels and Allocations of Funds." This provision was added to Section 3 of the UMT Act by Section 304 of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (STURAA). Section 3 is the discretionary capital grant program of the Urban Mass Transportation Administration (UMTA). The current Section 3(j) requires that the report contain:

"(1) a proposal of the total amount of funds which should be made available in accordance with subsection (k)(1)(D) of this section to finance for the fiscal year beginning on October 1 of such year grants and loans for each of the following:

- (A) the replacement, rehabilitation, and purchase of buses and related equipment and the construction of bus-related facilities,
- (B) rail modernization, and
- (C) construction of new fixed guideway systems and extensions to fixed guideway systems; and

(2) a proposal of the allocation of the funds to be made available to finance grants and loans for the construction of new fixed guideway systems and extensions to fixed guideway systems among applicants for such assistance." (Urban Mass Transportation Act of 1964, as amended: Section 3(j).)

With respect to allocation of Section 3 funds, the STURAA also added a new Section 3(k) which specifies that of the amounts available for fiscal years 1987, 1988, 1989, 1990 and 1991 --

"(A) 40 percent shall be available for rail modernization;  
(B) 40 percent shall be available for construction of new fixed guideway systems and extensions to fixed guideway systems;  
(C) 10 percent shall be available for the replacement, rehabilitation, and purchase of buses and related equipment and the construction of bus-related facilities; and  
(D) 10 percent shall be available for the purposes described in subparagraphs (A) through (C), as determined by the Secretary."

This report is a collateral document to the proposed Fiscal Year 1992 Federal Budget as submitted by the President. Under current law, the purposes of this report are 1) to describe the Department's proposal for allocating the 10 percent of Section 3 funds not otherwise allocated, and 2) to describe the Department's recommendations for allocating the funds for New Starts. It is meant to be a constructive element in the administration of the urban mass transportation program, enriching the information



exchange between the executive and legislative branches at the beginning of the appropriations cycle for the next fiscal year.

## II. PROPOSED REAUTHORIZATION OF THE UMT ACT

Since the funding authorizations for the Federal mass transportation assistance program expire at the end of FY 1991, no further Section 3 projects can be undertaken unless the program is reauthorized. The Administration has made a proposal for reauthorization of the program, which is also embodied in its FY 1992 budget proposal, which would continue Section 3, with several significant changes.

The proposal would authorize Section 3 at a level of \$350 million for FY 1992 and 1993, \$430 million for FY 1994 and 1995 and \$450 million for FY 1996. The FY 1992 budget proposal requests the full \$350 million proposed to be authorized. Section 3 would no longer be divided into the three categories set forth in subsection 3(k). Rather, the proposal would amend Section 3(k) to establish a requirement that no more than \$300 million in FY 1992 and 1993, \$380 million in FY 1994 and 1995 and \$400 million in FY 1996 of the total amount of Section 3 funding may be used for New Starts.

Funds remaining after these amounts are dedicated could be used for other discretionary grants for purposes such as the implementation costs of the Americans with Disabilities Act and the Clean Air Act amendments and other extraordinary needs. In addition, these funds could be used for grants under a Metropolitan and Rural Incentive Bonus Project Program (MRIBP). The MRIBP would be a joint program with the Federal Highway Administration (FHWA) which would focus on innovative, quickly implementable noncapital-intensive system management projects to alleviate congestion, improve air quality and address rural issues. These Section 3 funds would also be available for highway projects.

Section 3(i), which requires New Start projects funded under Section 3 to be cost-effective, to have acceptable local financial commitment and to be developed through the alternatives analysis and preliminary engineering process, would be retained. Consistent with these requirements, the proposal would include in the statute the specific criteria which New Start projects must meet to qualify for funding. According to these criteria, projects would be required to attain a significant gain in ridership and meet a cost-effectiveness threshold, localities would have to be able to meet the local matching share and would have to have sufficient funding sources to build and operate these projects. The proposal would also require that project proposals be based on a thorough assessment of innovative financing mechanisms to lower the overall cost of the construction and operation of the projects.

The provisions of Section 3(a)(4), which authorize the Secretary to issue Letters of Intent, which announce the intention of the Department to obligate future year funds for a project, would be retained. Letters of Intent are not obligations or administrative commitments. Rather, they are pledges of funding to worthy projects from future available budget authority.

The proposal also would expand the provisions of Section 3(a)(4) to include Full Funding Grant Agreements (FFGA's), as well as Letters of Intent. UMTA has used FFGA's to implement New Starts and related projects in some forty cases and the proposal would reflect the current practice (a FFGA essentially spells out the terms and conditions applicable to each project and establishes the maximum amount of Federal funding for the project).

The effect of this change would be to require 1) New Start projects be implemented by means of Letters of Intent and FFGA's and that 2) a project covered by a Letter of Intent or FFGA complete an operable segment and be covered, in terms of Federal funding, within the existing Federal authorization levels (under current law, these requirements only apply to Letters of Intent). Should the reauthorization proposal be adopted as proposed, a total of \$1.76 billion would be available for New Starts during the five year life of the authorization, and outstanding Letters of Intent and FFGA's for New Starts would be limited to this amount.

The required local match for discretionary funding would be increased from 25 percent to 40 percent, and to 50 percent for New Starts. Under the Secretary's Overmatch Initiative, grantees will still be encouraged to provide a greater local share than is required.

Another major change in Section 3 concerns rail modernization. As noted, by replacing the current Section 3(k), the reauthorization proposal would no longer have a specific percentage of funding for rail modernization from Section 3. Instead, the proposal would allocate \$600 million, a larger amount than what has been allocated in the past for Section 3 discretionary rail modernization grants, to the Section 9 formula program. These special funds would be allocated by the rail factors in the current Section 9 formula. This would have the effect of providing sufficient funds for rail modernization needs of the traditional eight rail modernization cities and other cities with newer rail systems from an expanded formula program. It should also be noted that rail modernization cities would continue to be eligible to compete for New Starts funds for extensions to their existing systems.

The final significant change to Section 3 concerns this report itself. The proposal would drop the mandatory proportional allocation of 90 percent of Section 3 funds among New Starts, Rail Modernization and Bus with the remaining unspecified 10 percent to be allocated to these categories. Thus, it would no longer be

necessary for this report to recommend how the remaining 10 percent should be used. Allocating funds to New Starts would therefore be the primary focus of this report.

Because the Department's FY 1992 budget proposal provides funding in accordance with the reauthorization proposal, it is necessary that this report be prepared in accordance with the requirements proposed for it in the reauthorization proposal, rather than current law. Thus, this report does not make a proposal on the allocation of funds among the current funding categories, but instead reiterates the FY 1992 budget proposal on allocation of funds among categories which will exist should the reauthorization proposal be accepted. In addition, it makes recommendations about the allocation of New Start funds. This is consistent both with current law requirements for this report and the requirements which would be in place under the reauthorization proposal.

### III. NEW STARTS ALLOCATIONS AND RECOMMENDATIONS

New fixed guideway systems and extensions (e.g., a light rail line, a subway line or a busway/high occupancy vehicle (HOV) facility) are referred to in this document as "New Starts" and are considered to be major capital investments.

The funding level proposed for FY 1992 for New Starts is \$300 million. Once the 3/4 percent for Project Management Oversight is taken down from this amount, \$297.7 million is available for projects. This report recommends the allocation of these funds among the various New Start projects that have been proposed. The recommendations are based on the following principles:

- o Existing UMTA Full Funding Grant Agreement (FFGA) commitments should be honored before any additional commitments are made.
- o Any project recommended for new funding commitments should meet the cost-effectiveness, finance and process criteria established by Section 3(i).
- o Funds should be allocated in a manner to ensure that operable facilities are completed; the "operable segment" concept.
- o Funds should be allocated to projects that are expected to complete preliminary engineering in FY 1991 or 1992 and will then be ready to begin final design and construction.
- o Firm funding commitments, embodied in Full Funding Grant Agreements, should not be made until preliminary engineering is completed, since costs, benefits and impacts are not accurately known until this level of engineering has been completed.

- o Letters of Intent (ultimately anticipating Full Funding Grant Agreements) authorized by Section 3(a)(4) of the UMT Act should be issued only to worthy projects which have proceeded far enough along that their cost-effectiveness and level of local financial commitment can be established with some certainty.
- o Letters of Intent should be awarded to the best projects, in terms of cost-effectiveness and financial commitment, in an order which is based on the degree to which each project meets these criteria.
- o Funding should be provided to the most worthy projects to allow them to proceed through the process on a reasonable schedule.

A. Existing Full Funding Grant Agreements

A year ago, the Department had agreed to Full Funding Grant Agreements (FFGA's) with local agencies for projects in St. Louis, Miami, Los Angeles and Denver. Accordingly, in the Section 3(j) report for FY 1991 (Report on Funding Levels and Allocations of Funds: Report of the Secretary of Transportation to the United States Congress Pursuant to Section 3(j) of the Urban Mass Transportation Act of 1964, as amended, June 1990), the Department recommended that all of the Section 3 New Start funds for FY 1991 be allocated to these projects. These funds would have been sufficient to allow the projects in St. Louis, Miami and Denver to be completed and would have provided all but \$53.3 million of the funding required for the Los Angeles project (MOS-2).

However, the Conference Report accompanying the FY 1991 Appropriations Act (House Report 101-892) earmarked less for these projects than the amounts needed to complete the Federal commitments under the existing FFGA's, while earmarking funds for other projects which were not recommended for funding because they could not be fully funded within the authorization existing at the time the report was prepared or because they did not meet the Section 3(i) criteria. Thus, three of these projects still require additional funds in order that the FFGA commitments can be met (the Denver project was fully funded). The Miami project still needs \$10.7 million, St. Louis \$16.0 million and Los Angeles (MOS-2) \$188.0 million. It is recommended that these amounts be provided in FY 1992. In the case of St. Louis, the FY 1991 earmark included \$4.0 million for preliminary engineering of an extension of the light rail line to St. Clair, which is not covered by a FFGA. This project is now only beginning alternatives analysis and no funding for preliminary engineering will be required until after FY 1992. Furthermore, this project does not appear to be cost-effective, nor to be supported by an adequate degree of local financial commitment. The allocations to the three remaining projects with FFGA's would consume \$214.7 million of the \$297.75 million available.

B. Ratings of Candidate New Start Projects

As noted above, before a New Start project can receive funding it must meet the criteria contained in Section 3(i) of the UMT Act which provides that:

"No grant or loan for construction of a new fixed guideway system or extension of any fixed guideway system may be made under this section unless the Secretary determines that the proposed project--

- (1) is based on the results of an alternatives analysis and preliminary engineering;
- (2) is cost effective; and
- (3) is supported by an acceptable degree of local financial commitment, including evidence of stable and dependable funding sources to construct, maintain and operate the system or extension.

In making such grants and loans under this section, the Secretary may also consider such other factors as the Secretary deems appropriate."

In order to carry out this provision, the Department has required that project sponsors conduct alternatives analyses and preliminary engineering which develop information on the cost-effectiveness and ridership gains achieved by the projects and include the preparation of financial plans which demonstrate the sponsors ability to meet the local matching share and to build and operate the projects. More detail is provided on the New Starts project development process in Appendix A.

Once sufficient information is available, the Department is able to rate the degree to which each project meets the criteria called for in Section 3(i). The ratings for the New Start projects being considered for funding in FY 1992 are contained in Table 1. The projects listed include all those in Final Design, Preliminary Engineering and Alternatives Analysis as well as those projects in System Planning which have received earmarks of Section 3 funds by Congress in past Fiscal Years. The ratings for local financial commitment are based on the financial plans developed by the local project sponsors. In some cases, these plans call for funding at Federal share levels in excess of those proposed in the reauthorization proposal. These financial plans and ratings may require revision once reauthorization legislation is enacted. In addition, these plans may also have to be revised to reflect the proposed requirement that a thorough assessment of innovative financing mechanisms has been undertaken to lower the overall cost of construction and operation of the project. Additional detail on the rating process is provided in Appendix B along with descriptions and maps of each project.

C. Projects in Final Design without FFGA's

After taking into account projects already under FFGA's, the next category of projects to be considered for funding consists of those which have completed preliminary engineering and which are now in the final design process, but which do not have FFGA's. This category includes Jacksonville and Los Angeles MOS-3.

1. Jacksonville

In the previous Section 3(j) report, the Department did not recommend funding for the Jacksonville project because it is not cost-effective and lacks local financial support. Although the Department's position has not changed, Congress has earmarked a total of \$28.4 million in Section 3 funds for this project and directed UMTA to sign a FFGA after Jacksonville's completion of a financing plan for the project. This is sufficient funding to permit Jacksonville to proceed with a northern extension of the existing system. In compliance with Congressional direction, the Department, upon receipt of a satisfactory financial plan, will negotiate a Full Funding Grant Agreement for this extension. However, because of continuing concerns about the cost-effectiveness and local financial commitment of the remainder of this project, additional funding for Jacksonville is not recommended. The next segment of this project would require \$44 million in Federal funds, at the proposed 50 percent maximum Federal share. The benefits which would accrue from this next segment simply do not warrant such an expenditure.

2. Los Angeles MOS-3

Section 338 of the Surface Transportation and Uniform Relocation Assistance Act of 1987 requires the Department to enter into a FFGA for the completion of the Los Angeles Metrorail system from downtown Los Angeles to the San Fernando Valley. MOS-3 represents those portions of the system which could not be completed with existing funds.

The MOS-3 project, estimated to cost \$1.1 billion, represents the final segment of a three phase project. The overall project is cost-effective and is being constructed with a local share in excess of the statutory minimum. The proposal for MOS-3 provides for a local share of 50 percent. These local funds are available from Proposition 111 funds. In addition, the area is undertaking a number of other transit capital improvements which are being funded only with local funds.

Given the fact that the Department is proposing to allocate \$188.0 million in FY 1992 for the completion of MOS-2, it is premature to make FY 1992 construction funding available for MOS-3. However, MOS-3 is a good candidate for a Letter of Intent given the cost-effectiveness and local financial commitment of this project and the fact that funding will be needed in the near

future to permit construction of the entire line without interruption.

D. Projects in Preliminary Engineering

The next category of projects to be considered consists of those now in the preliminary engineering phase but which are likely to be through this phase by the end of FY 1992. As mentioned earlier, this is the stage in project development where funding commitments should first be considered, since better information on cost and benefits is available. Projects now in preliminary engineering include Atlanta - North Extension, San Francisco - Colma, Portland - Westside, Honolulu, New York - Queens Local/Express, Orange County and Dallas.

1. Recommended for Funding in FY 1992

Seven projects are recommended for funding in FY 1992 as follows:

Portland - Westside	\$15.0 million
Atlanta - North	7.3 million
San Francisco - Colma	25.9 million
New York - Queens	9.8 million
Honolulu	10.0 million
Orange County	10.0 million
Dallas	5.0 million
TOTAL	\$83.0 million

Together with the \$214.7 million recommended to be committed to projects with existing FFGA's, this would fully commit the \$297.7 million proposed to be available for New Starts projects in FY 1992.

The Atlanta - North Extension and San Francisco - Colma projects are expected to advance to final design by 1992, at which point the Department intends to negotiate FFGA's for these projects. A FFGA would also be negotiated for the Portland - Westside project once it advances into the final design stage. The remaining four projects (New York - Queens Connection, Honolulu, Orange County and Dallas) will have completed preliminary engineering by FY 1992 and are expected to demonstrate cost-effectiveness and acceptable local financial commitment. However, because of the timing of these projects, no FY 1992 construction funding is needed. Rather, these projects are candidates for pledges of funding in subsequent years of the authorization through Letters of Intent, which can be issued following reauthorization of the program. In the interim, sufficient funding should be provided in FY 1992 to permit these projects to continue to progress without delay.

Portland - Westside

Portland is proposing a 12-mile light rail line from downtown Portland through the West Hills to Beaverton and suburban

Washington County with an estimated cost of about \$703 million as far as 185th Avenue. An extension to Hillsboro costing an additional \$180 million is in the Alternatives Analysis phase.

Because this project was in preliminary engineering before passage of the STURAA in 1987, it is not subject to the requirements of Section 3(i) that projects be cost-effective and supported by an adequate local financial commitment to be eligible for Section 3 New Starts funding. In addition, in the FY 1991 Appropriations Act (Section 328), the Department of Transportation was instructed to execute a Full Funding Grant Agreement for this project. Congress has also directed that a FFGA for the Portland - Westside project be amended in the future to include the Hillsboro extension.

As noted, it is estimated that this project will cost up to \$703 million. Although the reauthorization proposal would set the maximum Federal share for New Starts projects at 50 percent, the Congress, in the Conference Report accompanying the FY 1991 Department of Transportation Appropriations Act, has instructed the Department to fund this project at the current 75 percent Federal share. If this higher Federal share is allowed in the reauthorized program, the total amount of Section 3 funds required to complete this project would be \$527 million.

Based on the requirements of the FY 1991 Appropriations Act, the Department will issue an appropriate Full Funding Grant Agreement for a project in Portland at an appropriate time. The exact amount of this commitment will depend on the results of Preliminary Engineering and the development of local financial plans. The Department recommends that \$15.0 million be provided in FY 1992 funding to permit this project to move ahead on a reasonable schedule. No funding is now recommended for the extension from 185th Avenue to Hillsboro.

#### San Francisco - Colma

This project, which will extend BART into San Mateo County about 0.3 miles to a new station with extensive parking, is cost-effective and has a highly rated local capital funding plan. It is recommended that this project be funded. The Department intends to negotiate a Full Funding Grant Agreement for it.

The total cost of this project is \$140.0 million. To date, Congress has earmarked \$68.1 million for projects in the San Francisco Bay area, including about \$2 million for the Tasman Corridor in San Jose. The San Jose project is currently only in alternatives analysis and does not appear to be cost-effective at this time. It is recommended that sufficient FY 1992 funding be provided (\$25.9 million) to complete the Federal commitment to the Colma extension. This total Federal commitment of \$94.0 million assumes that the FY 1991 and prior year earmarked funds will be granted prior to reauthorization at a 75 percent Federal share.



FY 1992 funds would be granted at a 50 percent Federal share, consistent with the Department's reauthorization proposal.

#### Atlanta - North Extension

Preliminary engineering of the Atlanta - North Extension project is scheduled to be completed in the Spring of 1991. This project would extend the North Line from Medical Center to North Springs, a distance of 3.1 miles. The 5.7-mile North Line extension from south of the Lenox station to Medical Center is now in Final Design and is to be constructed completely with local funds.

The cost-effectiveness of this project and the stability and reliability of its operating assistance plan is questionable. Yet, the Atlanta area continues to have a strong commitment to the completion of the MARTA rail system and has adequate funds to complete the project. In addition, through FY 1991, \$82.0 million has been earmarked for this project.

The overall 3.1-mile project has an estimated cost of \$439.0 million. Assuming that the FY 1991 and prior year funds were used at the current 75 percent Federal share, and FY 1992 and subsequent funds are used at the proposed Federal share of 50 percent, a total of \$246.8 million of Section 3 funds would be required for this project.

Based on the strong local commitment to this project and the fact that a substantial amount of funds have already been earmarked, the Department intends, subject to resolution of certain funding issues, to negotiate a FFGA with Atlanta to cover the costs of an operable segment of the North Extension. Such a segment, running 1.3 miles from Medical Center to Dunwoody, would cost \$124.0 million. By allocating funds to this segment, it will be possible to continue efforts on the North line using funds available. Thus, it is recommended that \$7.3 million in FY 1992 funds be set aside for this project, pending successful completion of preliminary engineering. This amount will permit Atlanta to proceed with implementation to Dunwoody in accordance with their schedule. This total Federal commitment of \$89.3 million assumes that FY 1991 and prior year earmarked funds would be granted prior to passage of the Department's reauthorization proposal at a 75 percent Federal share. FY 1992 funds would be granted at a 50 percent Federal share. No funding is now recommended for the remainder of the system.

#### New York - Queens Local/Express Connection

New York is proposing a connection from the recently opened 63rd Street tunnel line to the Queens Boulevard subway lines. The project would involve construction of about one-quarter mile of new line and a considerable amount of track and signal work at a total cost of about \$645 million. This project appears to be one of the most cost-effective in the country, relieving severe

overcrowding on the Queens Boulevard Lines and improving access to Manhattan.

The New York Metropolitan Transit Authority (MTA) has a long history of overmatching Federal transit funds, primarily for rail modernization. It is expected that the MTA would provide at least 50 percent of the funding. For these reasons, this project is an excellent candidate for a Letter of Intent, following reauthorization. In FY 1992, it is recommended that \$9.8 million be provided to New York to cover a portion of the costs of Final Design and right of way acquisition, to allow this project to proceed through these steps without delay. Actual construction funding can be made available in subsequent years once the project is developed further.

#### Honolulu

Honolulu is planning a 17.3-mile fixed guideway system from Ewa through downtown to Waikiki and the University of Hawaii with a total estimated cost of \$1.6 billion. The locally preferred alternative also includes a minimum operable segment of 6.3 miles, extending from Middle Street to Waikiki, with a total cost of \$915 million.

Preliminary engineering could be completed for the Honolulu project by the Spring of 1992. While final decisions on funding this project must await completion of preliminary engineering and the local funding plan, this project appears to have significant potential.

If preliminary engineering confirms the costs and benefits of the project noted in the Draft Environmental Impact Statement, and adequate stable and reliable local funding can be secured, this project is worthy of consideration for funding. A major concern at this time is the need for a local funding source for \$30 million in operating and maintenance costs of the proposed system. While potential sources to cover this amount are available, the allocation of these sources to this purpose must be firmed up. On the other hand, Honolulu is considering a range of innovative financing techniques for this project, including the possibility of a significant amount of private sector funding either in the form of joint development or equity participation. As noted, the portion of the project for which Federal funds are being sought has an estimated cost of about \$915 million versus a total undertaking of as much as \$1.6 billion. To date, \$15.5 million has been made available to Honolulu, which with local share leaves a total cost of \$894.3 million remaining (or \$447.2 million in Federal funds at the proposed 50 percent Federal share for FY 1992 and subsequent funding). Due to the high total cost of the project, it will ultimately be necessary to limit total Federal participation through a FFGA with a cap of Federal funding of this amount.

Subject to the results of preliminary engineering and contingent on the availability of local operating resources, the project in Honolulu is an good candidate for a Letter of Intent in FY 1992, following reauthorization. For FY 1992, it is recommended that, because of the magnitude of the undertaking, \$10.0 million be allocated to Honolulu to permit the project to complete preliminary engineering without delay.

#### Orange County

Orange County is proposing a transitway project which has a total estimated cost of about \$436 million, although the components of the program are still being developed. The area is now proposing a Federally assisted project costing \$262 million, and is planning for a 75 percent Federal share or \$197 million. Because the reauthorization proposal calls for a 50 percent Federal share, the Federal share of this project would be \$131 million. The project is likely to be highly cost effective, with the best cost-per-new-rider of any project now in preliminary engineering. Local capital funding commitments appear to be falling into place.

Based on the cost-effectiveness of this project, once the process has proceeded to an appropriate point, the Department believes that this project is a good candidate for a Letter of Intent following reauthorization. In FY 1992, it is recommended that \$10.0 million be provided to Orange County to permit this project to complete final design of the transitway ramps without delay. Actual construction funding can be made available in subsequent years once the project is developed further.

#### Dallas

Dallas is studying a 20-mile, \$600 million light rail line from the Central Business District through South Oak Cliff and West Oak Cliff. Preliminary engineering of the 11-mile South Oak Cliff part of this line, for which a Federal Alternatives Analysis was conducted, is expected to be complete in December 1991. The request for Section 3 funding is expected to be limited to the most cost-effective portion of the South Oak Cliff line, a 6.4-mile segment from downtown to Illinois Avenue. The total cost of this line is \$300 million and Dallas is requesting \$125 million in Federal funds.

To date, \$19.9 million is already earmarked for this project. Therefore, the remaining Federal share would be \$105.1 million (\$125.0 million less \$19.9 million). Although the cost-effectiveness of this project is questionable, local funding is strong for both the capital and operating costs of this line as well as the entire system. Because of the strength of the local funding commitment, the 6.4-mile segment of the project is a candidate for a Letter of Intent. In addition, FY 1992 funding in the amount of \$5.0 million is recommended to fund final design and

right of way acquisition, to permit this project to proceed through these steps without delay.

2. Summary of FFGA's and Candidates for LOI's to Projects in Preliminary Engineering

The following chart indicates the FY 1992 and potential outyear implications of the FFGA's and candidates for commitments and pledges recommended above (in millions of dollars):

	<u>FY 1992 Funds</u>	<u>Maximum Outyear Funds</u>	<u>Total Funding FY 1992 &amp; beyond</u>
<u>Existing Full Funding Grant Agreements</u>			
Los Angeles MOS-2	\$188.0	-0-	\$188.0
Miami DPM Ext'n	10.7	-0-	10.7
St. Louis - Airport	16.0	-0-	16.0
<u>Proposed Full Funding Grant Agreements</u>			
San Fran. - Colma	\$25.9	-0-	\$25.9
Atlanta - Dunwoody	7.3	-0-	7.3
Portland *	15.0	to be determined	
<u>Candidates for Letters of Intent</u>			
New York - Queens	\$ 9.8	\$312.7	\$322.5
Los Angeles - MOS-3	0.0	550.0	550.0
Honolulu	10.0	437.2	447.2
Orange County	10.0	121.0	131.0
Dallas	5.0	100.1	105.1

\* Portland is not subject to the requirements of Section 3(i).

The potential maximum amount of New Start funding which would be available as now proposed by the Department in its reauthorization proposal is \$1.76 billion for Fiscal Years 1992 through 1996. As noted earlier, Section 3(a)(4) limits the total amount of Letters of Intent which can be issued at any time to the remaining balance of the authorization. Also, the reauthorization proposal would add FFGA's to this section. The ordering of the projects listed as candidates for Letters of Intent in the above table reflects the degree to which they meet the cost-effectiveness and local financial commitment criteria in Section 3(i), as well as their readiness for funding. It is expected that as projects are developed further through negotiations, the total amount committed through Letters of Intent and FFGA's will be brought in line with the total available by selecting among these projects, reducing the Federal share or by limiting the project to a federally funded segment shorter than now contemplated in local analyses for Federal funding.

In addition, it should be noted that Congress has earmarked funds for projects which are not ready for construction funding in the near future or are not recommended for funding because they are not cost-effective or supported by an adequate degree of local financial support. A total of \$225.2 million in unobligated FY 1991 and prior year funds thus could be available, through reprogramming, to meet the needs of the worthy projects which are ready for construction funding as noted above. The projects with unobligated earmarks are as follows:

Baltimore	\$14.3 million
Chicago	15.9 million
Cleveland	7.0 million
Houston	146.2 million
New Jersey - Waterfront	19.9 million
Salt Lake City	15.5 million
San Diego - Midcoast	0.4 million
San Jose - Tasman	2.0 million
St. Louis - St. Clair	4.0 million
TOTAL	\$225.2 million

### 3. Other Projects

Three other projects likely to be in preliminary engineering in FY 1992: Baltimore, Salt Lake City and Houston. However, because these projects are less cost-effective than the projects discussed heretofore, lack an adequate degree of local financial commitment, or have not proceeded to the point where a commitment can be made, these projects are not proposed for funding at this time.

## IV. CONCLUSION

The \$300 million available for FY 1992 will allow funding several attractive projects that could have beneficial impacts on local congestion problems as well as completing a number of projects which have had prior year funding earmarked by Congress. We intend to:

- o Provide \$188.0 million for Los Angeles MOS-2, \$10.7 million for Miami and \$16.0 million for St. Louis to complete funding for these projects.
- o Assuming satisfactory progress is made on funding plans and completion of preliminary engineering, negotiate Full Funding Grant Agreements with and provide funding to Atlanta (\$7.3 million in FY 1992 funding to allow completion of an operable segment), San Francisco (\$25.9 million in FY 1992 funding to allow completion of the funding of the project) and Portland (\$15.0 million in FY 1992 funding and a possible future commitment of an amount to be determined).
- o Assuming satisfactory progress is made on preliminary engineering and funding plans, consider as candidates for

Letters of Intent New York, Los Angeles (MOS-3), Honolulu, Orange County, and Dallas, in that order. These projects will be ready for construction funding within the authorization period but not during FY 1992. During FY 1992, sufficient funding is recommended to permit these projects (except Los Angeles MOS-3 which requires no funds) to proceed through the next steps in the process without delay. The amounts recommended are \$10.0 million for Honolulu, \$9.8 million for New York, \$10.0 million for Orange County and \$5.0 million for Dallas.

TABLE 1: SUMMARY OF FY1992 NEW START RATINGS

City (Project)	Status	Cost (a) (million \$)	<u>COST-</u>	<u>LOCAL FINANCIAL COMMITMENT(i)</u>			
			<u>EFFECTIVENESS</u>	Non-Federal	Overmatch	Capital	Stability &
			Total Cost per New Trip Index (\$/new trip)	Share of Project Cost	City(c) (Yes/No)	Financing Commitment	Reliability of Operating Assistance
<u>Cost-Effective: (j)</u>							
Los Angeles (MOS-3)	FD	\$1100	(g)	50%	No	Acceptable	Acceptable
Orange Co, CA (I-405/SR55)	AA/PE	\$262	\$4 (89\$) (e)	25%	No	Medium	Medium
Honolulu (Central)	PE	\$915	\$5 (88\$)	47%	Yes	Medium	Low
San Francisco (Colma)	PE	\$140	\$6 (90\$)	25%	Yes	High	High
New York (Queens)	PE	\$645	(f)	50%	Yes	High	Medium
<u>Questionable Cost-Effectiveness: (j)</u>							
Salt Lake City (I-15)	AA	\$200	\$7-\$8 (87\$)	50%	No	Low	Low
Atlanta (North)	PE	\$439	\$9 (90\$)	25%	No	Medium	Medium
Dallas (South Oak Cliff)	PE	\$300	\$9 (89\$)	58%	Yes	High	High
Houston (Priority Corridor)	AA	\$1250-\$1560	\$7-\$12 (88\$) (h)	40%	No	Medium	Medium
<u>Not Cost-Effective:</u>							
Jacksonville (ASE Extensions)	FD	\$133	(b)	25%	No	Unacceptable	Unacceptable
Portland (Westside to 185th)	PE	\$630-\$703	\$15-\$18 (90\$) (b)	25%	No	Medium	Low to Med.
San Jose (Tasman)	AA	\$200-\$350 (89\$)	\$15-\$22 (87\$)	50%	No	Medium	Low to Med.
Baltimore (Hunt Valley)	AA	\$45	\$26	25%	Yes	Medium	Medium
Buffalo (Amherst)	AA	\$367 (85\$)	\$46-\$67 (85\$)	25%	No	Low	Low
Portland (Hillsboro)	AA	\$180	(d)	25%	No	Medium	Low to Med.

City (Project)	Status	Cost (a) (million \$)	COST-EFFECTIVENESS		LOCAL FINANCIAL COMMITMENT(i)		
			Total Cost per New Trip Index (\$/new trip)	Non-Federal Share of Project Cost	Overmatch City (c) (Yes/No)	Capital Financing Commitment	Stability & Reliability of Operating Assistance
<u>Currently Unratable:</u>							
Baltimore (BWI Airport)	AA	\$26	NA	25%	Yes	Medium	Medium
Baltimore (Penn Station)	AA	\$12	NA	25%	Yes	Medium	Medium
Boston (Fan Piers)	AA	\$400	NA	50%	No	Medium	Medium
Chicago (Connector)	AA	\$740	NA	67%	Yes	Medium	Medium
Cleveland (Dual Hub)	AA	\$570	NA	50%	No	Low	Medium
New Jersey (Waterfront)	AA	\$950	NA	25%	No	Low	Medium
Pittsburgh (Spine Line)	AA	\$600	NA	25%	No	Low	Medium
St. Louis (St. Clair)	AA	\$300	NA	25%	No	Low	Low
San Diego (Mid-Coast)	AA	\$500	NA	25%	Yes	High	Medium
San Francisco (Airport)	AA	\$560	NA	25%	Yes	Medium	Medium
Chattanooga	SP	\$25	NA	50%	No	Low	Medium
Newark (Airport)	SP	\$400	NA	NA	No	Low	NA

(a) Unless otherwise noted, costs are shown in escalated (year of construction) dollars and are based on most recent cost estimate. For projects in alternatives analysis and the early stages of preliminary engineering, the estimate is likely to change as more detailed engineering is performed.

(b) By statute, this project is grandfathered from the requirements of Section 3(i) of STURAA and need not be cost-effective to be eligible for Section 3 funding. Also, UMTA is directed by statute to enter into a full funding contract.

(c) The non-Federal share of the transit agency's overall capital program is 70 percent or greater.

(d) Based on preliminary estimates developed by the Metropolitan Service District, the cost-effectiveness index is likely to fall in the \$15 to \$20 per new trip range.

(e) This represents a preliminary cost-effectiveness index. The estimate of costs and ridership is subject to change as a result of UMTA review and further local analyses.

(f) The project is considered to be cost-effective on the basis of a user benefit index of \$5.06 per hour of benefit.



(g) UMTA is directed to fund this project under Section 338 of the Surface Transportation and Uniform Relocation Assistance Act of 1987. In 1984, the cost-effectiveness index for the entire 18-mile Metrorail line was computed as \$1.46 per new rider. While the cost of the project has escalated somewhat since 1984, and ridership forecasts have been reduced, UMTA still considers the project to be a cost-effective investment.

(h) Houston's alternatives analysis is also considering a "better bus" alternative which includes a \$176 million transitway. The transitway has a cost-effectiveness index of \$2.41 and, if selected as the locally preferred alternative, would be rated in the "cost-effective" category.

(i) The local share and financial ratings shown in this table are based on the financial plans developed by the local project sponsors. The criteria used to rate the local financial plans are described in Appendix B. In some cases these plans call for funding at Federal share levels in excess of those proposed in the reauthorization proposal. Should the reauthorization proposal become law, these financial plans and ratings may require revision.

(j) Projects are considered to be cost-effective if they meet UMTA's \$6 per new trip threshold. Projects with indices in the \$6 to \$10 range are considered to be of questionable cost-effectiveness. The calculation of the cost-effectiveness index and the \$6 threshold is explained in Appendix B.

APPENDIX A. REQUIREMENTS OF SECTION 3(i) OF THE UMT ACT

Section 3(i) of the Urban Mass Transportation Act of 1964, as amended provides that:

"No grant or loan for construction of a new fixed guideway system or extension of any fixed guideway system may be made under this section unless the Secretary determines that the proposed project--

- (1) is based on the results of an alternatives analysis and preliminary engineering;
- (2) is cost effective; and
- (3) is supported by an acceptable degree of local financial commitment, including evidence of stable and dependable funding sources to construct, maintain and operate the system or extension.

In making such grants and loans under this section, the Secretary may also consider such other factors as the Secretary deems appropriate."

In addition, Section 303(b) of Public Law 100-17 provides that subsection (i) "shall not apply to any project--(1) for which a letter of intent or full funding contract has been issued under section 3(a)(4) of the Urban Mass Transportation Act of 1964 before the date of enactment of this Act; or (2) which was in the preliminary engineering, final design or construction stage as of January 1, 1987."

The Administration's reauthorization proposal would continue and strengthen these requirements. Section 3(i) would be retained and expanded to include in the statute the specific criteria which New Start projects must meet to qualify for funding. According to these criteria, projects would be required to attain a significant gain in ridership and pass a cost-effectiveness threshold, localities would have to be able to meet the local matching share and would have to have sufficient funding sources to build and operate these projects. The proposal would also require that project proposals be based on a thorough assessment of innovative financing mechanisms to lower the overall cost of the construction and operation of the projects.

Thus, before a New Start project not meeting the conditions of Section 303(b) of Public Law 100-17 can be considered for funding under Section 3, the criteria now in Section 3(i) (and, if the reauthorization proposal is accepted, the expanded criteria) must be met and the Secretary must make an affirmative finding that this is the case. The project development process which implements these requirements is contained in the UMTA policy on Major Capital Investments issued on May 18, 1984. This process provides for an objective determination of the merits of projects under consideration. The requirements of Section 3(i) and the Major Capital Investments Policy allow for the prudent management

of limited Federal resources. To assure that Federal funds are used to their best advantage, it is vital that projects for which Federal funds are contemplated be developed carefully, complying with all the environmental requirements and other tenets of good planning.

Such projects should be shown to generate substantial benefits compared to the costs and other impacts of the projects. In addition, local funding should be sufficient to assure that the projects will be completed in a timely manner and will be operated as planned and the local financial commitment should be more than sufficient to assure that other transportation programs will not have to be reduced to allow adequate funding for the new project's operation. Appendix B provides more detail on the basis by which the Department evaluates cost effectiveness and local financial commitment.

A key component of the Section 3(i) criteria is the requirement that Federal funding decisions be based on the results of alternatives analysis and preliminary engineering. These two stages are part of the overall project development process. This process is critical to assuring the effective use of Federal funds.

- o The process begins with system planning, where the most pressing transportation problems are identified. Based on the results of system planning, a priority corridor and a small set of promising alternatives are selected for further study in alternatives analysis.
- o Alternatives analysis explores options for serving the transportation demand in the region's highest priority corridor by estimating the costs, ridership and other impacts of a range of possible alternatives. At the end of alternatives analysis, the environmental impacts, potential benefits and estimated costs are available, supporting local decisions on a preferred mode and alignment and on a plan for financing the project's capital and operating costs.
- o Promising projects are then advanced to preliminary engineering. At the end of this stage, the Final Environmental Impact Statement is completed, firm cost estimates are available, financial commitments should be in place and a final decision on building the project can be made.
- o If a project appears to be worthy of a Federal investment at the completion of preliminary engineering, UMTA may, after notifying Congress of its plans, issue a Letter of Intent to pledge Section 3 funding for the project.
- o Once a decision is made to proceed with construction of a project, final design begins. It is at the completion of this stage that a Full Funding Grant Agreement (FFGA) is

normally entered into. Such an agreement obligates initial construction funding and a firm Federal commitment of future funding.

Table A-1 provides a summary of the projects now in the New Starts "pipeline." This table lists projects which are under construction, in final design, in preliminary engineering and in alternatives analysis. The table shows the total cost of the project, the amount of Federal funds involved and the State and local share.

Table A-1

NEW START PROJECTS  
(in millions of dollars)

CITY & PROJECT	TOTAL COST (FED, STA & LOC)	TOTAL FEDERAL OBLIGATIONS		STATE/ LOCAL COST
		UMTA SEC 3 (Through 3-31-91)	OTHER FEDERAL	
<u>UNDER CONSTRUCTION</u>				
1 Atlanta - East RRT	\$170	\$128.0	\$0	\$42
2 Atlanta - Northeast RRT	\$118	\$81.0	\$8	\$29
3 Baltimore - Hopkins RRT*	\$322	\$0.0	\$274	\$48
4 Chicago - Southwest RRT*	\$410	\$0.0	\$349	\$61
5 Denver - North I-25 HOV*	\$230	\$36.6	\$64	\$96
6 Houston - North I-45 HOV*	\$78	\$47.0	\$0	\$31
7 Houston - Southwest HOV*	\$102	\$62.0	\$0	\$40
8 Los Angeles - MOS-1 RRT*	\$1,350	\$605.0	\$91	\$654
9 Los Angeles - MOS-2 RRT*	\$1,446	\$329.7	\$0	\$779
10 Miami - DPM Extensions*	\$248	\$135.6	\$0	\$62
11 Memphis - Trolley LRT	\$33	\$0.0	\$25	\$8
12 St. Louis - Airport LRT*	\$384	\$216.0	\$2	\$94
13 Santa Clara - Guadalupe LRT*	\$510	\$206.0	\$52	\$252
SUBTOTAL	\$5,401	\$1,846.9	\$865	\$2,196
<u>FINAL DESIGN</u>				
1 Houston - Eastex HOV	\$128	\$0.0	\$62	\$66
2 Jacksonville - DPM Extension	\$135	\$4.0	\$0	\$35
3 Los Angeles - MOS-3 RRT	\$1,100	\$0.0	\$0	\$550
4 San Francisco - Colma	\$140	\$0.0	\$0	\$35
SUBTOTAL	\$1,503	\$4.0	\$62	\$686
<u>PRELIMINARY ENGINEERING</u>				
1 Atlanta - North Ext.	\$439	\$0.0	\$0	
2 Dallas - S. Oak Cliff LRT**	\$300	\$0.0	\$0	
3 Honolulu - Central	\$915	\$15.5	\$0	
4 New York - Queens	\$645	\$0.0	\$0	
5 Portland - Westside LRT	\$703	\$0.0	\$0	
6 Salt Lake City - S. I-15 LRT	\$200	\$0.0	\$0	
SUBTOTAL	\$3,202	\$15.5	\$0	

(Continued)

Table A-1 (Continued)

NEW START PROJECTS  
(in millions of dollars)

CITY & PROJECT	TOTAL COST (FED, STA & LOC)	TOTAL FEDERAL OBLIGATIONS		STATE/ LOCAL COST
		UMTA SEC 3 (Through 3-31-91)	OTHER FEDERAL	
<u>ALTERNATIVES ANALYSIS</u>				
1 Baltimore - Hunt Valley **	\$45	\$2.0	\$0	
2 Baltimore - Airport **	\$26	\$0.0	\$0	
3 Baltimore - Penn Station **	\$12	\$0.0	\$0	
4 Boston - Fan Piers	\$400	\$0.0	\$0	
5 Buffalo - Amherst	\$400	\$0.0	\$0	
6 Chicago - Central **	\$740	\$1.0	\$0	
7 Cleveland - Dual Hub	\$570	\$0.0	\$0	
8 Houston - Connector	\$1,560	\$0.0	\$0	
9 New Jersey - Waterfront	\$950	\$20.0	\$0	
10 Orange Co. (CA) - Central	\$262	\$0.0	\$0	
11 Pittsburgh - Spine Line	\$600	\$0.0	\$0	
12 Portland - Hillsboro	\$180	\$0.0	\$0	
13 St. Louis - St. Clair	\$300	\$0.5	\$0	
14 San Diego - Mid Coast	\$500	\$0.0	\$0	
15 San Francisco - Airport **	\$560	\$0.0	\$0	
16 San Jose - Tasman	\$350	\$0.0	\$0	
SUBTOTAL	\$7,455	\$23.5	\$0	
TOTAL: FOUR PHASES	\$17,561	\$1,889.9	\$927	

NOTES:

\* Full Funding Grant Agreement in place

\*\* Overmatch Initiative projects

Total Cost is the total cost to construct the project

Other Federal refers to the non-Section 3 Federal funds made available through January 31, 1991 including Interstate Transfer and Section 9

State/Local Share is the total state and local funding proposed to complete projects which are at least at the final design stage. Up to this stage, the State/local share may be subject to change.

APPENDIX B

NEW START PROJECT PROFILES  
(January 1991)

TABLE OF CONTENTS

PREFACE		B-3
PROJECT PROFILES		
Atlanta	North Line Extension	B-12
Baltimore	Central LRT Extensions Metrorail Extension to Johns Hopkins Hospital	B-15 B-18
Boston	South Boston Piers	B-21
Buffalo	Amherst Corridor	B-24
Chattanooga	Downtown Trolley	B-27
Chicago	Central Area Connector	B-29
Cleveland	Dual Hub Corridor	B-32
Dallas	South Oak Cliff Corridor	B-36
Honolulu	Rapid Transit Project	B-39
Houston	Priority Corridor	B-42
Jacksonville	Automated Skyway Express (ASE) Extension	B-45
Los Angeles	Red Line (MOS-2) Red Line (MOS-3) Orange Line (East) Orange Line (West)	B-49 B-51 B-53 B-55
Memphis	Main St. Trolley	B-58
Miami	Metromover Legs	B-61
New Jersey	Hudson River Waterfront Newark Air Link	B-64 B-67
New York City	Queens Local/Express Connection	B-70
Orange Co. (CA)	I-405/SR55 Transitway and Direct Access HOV Ramps	B-73

Pittsburgh	Spine Line	B-76
Portland	Westside Light Rail Hillsboro Corridor	B-79 B-83
St. Louis	"Metro Link" LRT to Airport St. Clair Corridor	B-86 B-89
Salt Lake City	I-15/State Street LRT	B-92
San Diego	Mid-Coast Corridor	B-95
San Francisco	BART Colma Station Colma to the Airport	B-98 B-101
San Jose	Tasman Corridor	B-104
Seattle	COG Box	B-107
Washington	Metrorail Extensions	B-109



## PREFACE

These new start project profiles provide background information supporting the Department of Transportation's new start funding recommendations for FY 1992. The Department's funding recommendations are being provided to the Congress pursuant to Section 3(j) of the Urban Mass Transportation Act of 1964, as amended. The funding recommendations are based in part on the decision criteria defined in Section 3(i) of the UMT Act.

Under Section 3(i), discretionary capital grants and loans for the construction of a new fixed guideway system or the extension of an existing system may be made only if the Secretary determines that the project is:

- (1) Based on the results of alternatives analysis and preliminary engineering;
- (2) Cost-effective; and
- (3) Supported by an acceptable degree of local financial commitment, including evidence of stable and dependable funding sources to construct, maintain, and operate the system or extension. <sup>1/</sup>

These statutory requirements are first used to identify new start projects that are eligible for Federal discretionary funding. The Section 3(i) criteria also provide a rational basis for selecting, from among the eligible projects, those which are the most worthy of scarce Federal funds. To this end, the new start project profiles describe the fixed guideway projects that are most advanced, and evaluate them in terms of the Section 3(i) requirements.

Profiles have been prepared for each project or study undergoing final design, preliminary engineering, and alternatives analysis. In addition, profiles have been prepared for projects that are under construction if additional funds are needed in FY 1992 to fulfill full funding contract commitments. A few system planning studies, particularly those where congressional interest has been demonstrated, are also covered.

Each profile contains a map and five sections:

- (1) Description. The description section briefly describes a project's physical characteristics and provides the latest estimates of cost and ridership.
- (2) Status. This section identifies where the project is in the major investment planning and project development process. It indicates, for example, whether alternatives analysis and

<sup>1/</sup> Section 3(i) does not apply to projects which were in preliminary engineering or final design on January 1, 1987. While such projects need not satisfy 3(i) to be eligible for funding, they must compete for funds with other eligible projects.

preliminary engineering have been completed. If not, it indicates when current studies are expected to be completed.

- (3) Cost-effectiveness. This section indicates how well the project addresses the corridor's transportation problems and presents the latest cost-effectiveness index. The calculation and use of the cost-effectiveness index is further described below.
- (4) Local financial commitment. This section notes the size of the local match and/or overmatch, and provides UMTA's rating on the soundness of the capital finance plan and the stability and reliability of local operating revenues. The financial ratings process is further described below.
- (5) Other rating factors. Other factors which may be important in identifying the most meritorious projects are described in this section. These factors include the project's contribution to improving air quality, support for economical and desirable urban development, and indicators of community support (as demonstrated through local commitments to supportive land use and transportation policies).

#### How the Ratings were Developed.

As part of the normal project development process, local agencies develop the information that UMTA needs to rate projects in terms of cost-effectiveness and local financial commitment. The specific information used for these evaluations is outlined below.

#### Cost-Effectiveness

Within UMTA's rating system, cost-effectiveness is defined as the extent to which a project returns benefits relative to its costs. The cost-effectiveness of a proposed major investment is measured in terms of its added benefits and added costs when compared to a transportation system management (TSM) alternative. The TSM alternative includes such low cost actions as traffic engineering, transit operational changes, and modest capital improvements. It is designed to address specific transportation problems in the corridor and to demonstrate the extent to which these problems can be solved without a major investment in new facilities. The TSM alternative is designed within real world limits -- street capacity to accommodate bus movements, financial resources to fund operating deficits, and so forth -- and is therefore a realistic option that represents a true alternative to major new transit facilities. The TSM alternative provides a baseline beyond which it is possible to isolate the added costs and added benefits of a proposed major investment and to compare potential investments in different cities.

For the purpose of the FY 1992 ratings, cost-effectiveness was measured using the cost per new trip index which was introduced in UMTA's 1984 Major Capital Investment Policy. To compute the new trip index, benefits are measured in terms of new riders, travel time savings for existing riders,

and operating cost savings. Additional ridership is a measure of how well a transit facility improves transit service, and is also a useful proxy for many of transit's potential secondary benefits, such as the structuring of urban development patterns and reductions in congestion, pollutant emissions, and energy consumption. The travel time savings measure reflects improved travel conditions for existing transit users, and is a good indicator of improved mobility for the transit dependent. In the new trip index, these travel time savings are converted to their monetary equivalent using an average value of time, and are included in the calculations as an offset to costs. Changes in operating and maintenance costs are included to reflect the potential for improvements in efficiency introduced by new transit facilities. The index takes the form of cost per added rider; the lower the index, the more cost-effective the project.

The 1984 policy statement established threshold tests to guide decisions on which guideway proposals should progress from one phase to the next in the new start project development process. Projects should satisfy two thresholds in order to pass from alternatives analysis into preliminary engineering and to qualify for consideration for discretionary funding at the end of preliminary engineering:

- (1) The alternative must produce a gain in transit ridership, compared to the TSM alternative. This threshold is designed to ensure that potential major Federal capital investments provide transportation benefits above and beyond those that can be achieved through lower cost (TSM) improvements.
- (2) The alternative must not have an excessive cost-effectiveness index. The threshold value for the total cost-effectiveness index is currently \$6 per new daily transit trip. <sup>2/</sup>

Data used to compute the indices were provided by the transit agencies and/or metropolitan planning organizations currently serving as lead local agency for project planning. Cost, ridership, and travel time savings estimates are produced as a routine part of the alternatives analysis and preliminary engineering phases. As guidance, UMTA supplied each city with a manual: Procedures and Technical Methods for Transit Project Planning. As each city develops the input data needed to compute the cost-

---

<sup>2/</sup> The threshold value is based on a 1984 study which found that a new transit trip would produce, on average, about \$2.80 in direct user benefits. The calculation of direct user benefits in this study was based on a generous estimate of potential savings in parking costs, travel time, and auto operating cost for the average commuter who shifts from auto to transit. UMTA factored the estimate from this study upward to \$6 recognizing that fixed guideways may also produce indirect benefits such as reduced emissions of air pollutants and support for desirable urban development. The \$6 threshold is presently under review to make sure it reflects the current cost of owning and operating an automobile and current wage rates.

effectiveness indices, UMIA reviews and concurs in the TSM alternative, the methods and assumptions used to estimate costs and benefits, and the reasonableness of the results.

#### Local Financial Commitment

The local financial commitment to a proposed project, including the stability and reliability of local sources of operating funds, is a factor used to order projects that rate similarly in terms of cost-effectiveness. The assessment of local fiscal effort focuses on three principal elements: the proposed local share of project costs, the strength of the proposed capital financing plan, and the stability and reliability of sources of operating deficit funding. The assessment of operating deficit funding takes into account the cost of the supporting bus service assumed in determining cost-effectiveness.

Local share refers to the percentage of capital costs to be met with non-Federal funding, and includes both the local match required by Federal law and any capital "overmatch." Overmatch is accounted for in the rating process because it reduces the required Federal commitment, thus leveraging limited Federal funds, and because it is evidence of a strong local commitment to the project. However, the local overmatch does not become final until preliminary engineering is completed.

The evaluation of each property's proposed capital financing plan takes two principal forms. First, the plan (where available) is reviewed in detail to determine the stability and reliability of each proposed source of local match. This includes a review of inter-governmental grants, tax sources and debt obligations. Each revenue source is reviewed for availability within the project timetable. Second, the financing plan is evaluated to determine if adequate provisions had been made to cover unanticipated cost overruns. For projects in final design, two rating categories are used to rate the strength of a local area's capital financing plan: acceptable and unacceptable. For projects in preliminary engineering, alternatives analysis, and system planning, the strength of the capital finance plan is rated high, medium, or low. The criteria used to assign these ratings are further explained in Table 1.

The third component of the financial rating is an assessment of the ability of the local transit agency to run the system as planned once the guideway project is built. The existence of stable and reliable revenues to cover operating costs reduces the risk that, after a large Federal capital investment, local resources will not be available to maintain and operate the transit system (including essential feeder bus and other ancillary services necessary to achieve projected ridership levels). This rating focuses on the operating revenue base and its ability to expend to meet the incremental operating costs associated with a new fixed guideway investment and any other new services and facilities. Again, final design projects are rated either acceptable or unacceptable, while less advanced projects are rated high, medium, or low (see Table 2).

TABLE 1: FINANCIAL RATINGS: CAPITAL FINANCING COMMITMENTS

Final Design	Acceptable	<ul style="list-style-type: none"> <li>* UMTA considers the applicant to be in reasonably sound financial condition based upon the reviews outlined in UMTA's Financial Capacity Circular.</li> <li>* The applicant has committed or dedicated sufficient funds to cover the entire non-Federal share of the overall undertaking, including provision for contingent cost overruns.</li> </ul>
	Unacceptable	<ul style="list-style-type: none"> <li>* UMTA does not consider the applicant to be in reasonably sound financial condition.</li> <li>* The applicant has not yet committed or dedicated sufficient funds to cover the entire non-Federal share of the overall undertaking, including provision for contingent cost overruns. For example, an "unacceptable" rating would be given where significant events -- such as the renewal of expiring authorizing legislation, satisfactory resolution of conditions imposed by funding entities, the passage of new legislation, or a referendum -- still must occur to put adequate local funding in place.</li> </ul>
Preliminary Engineering	High	<ul style="list-style-type: none"> <li>* UMTA considers the applicant to be in sound financial condition based upon the reviews outlined in UMTA's Financial Capacity Circular.</li> <li>* The applicant has committed or dedicated sufficient funds to cover all or nearly all of the non-Federal share of the overall undertaking, including provision for contingent cost overruns.</li> </ul>
	Medium	<ul style="list-style-type: none"> <li>* UMTA considers the applicant to be in reasonably sound financial condition based upon the reviews outlined in UMTA's Financial Capacity Circular.</li> <li>* The applicant has adopted a realistic capital finance plan that adequately covers projected non-Federal capital costs. The plan may be vulnerable to economic downturns and other funding uncertainties, but these vulnerabilities can probably be managed without significant disruptions to capital programs and/or operations.</li> </ul>

Low

- \* UMTA does not consider the applicant to be in reasonably sound financial condition based upon the reviews outlined in UMTA's Financial Capacity Circular.
- \* The applicant has not adopted a capital finance plan, or UMTA considers the adopted finance plan to be inadequate or infeasible. The plan may be so vulnerable to economic downturns and other funding uncertainties that implementation of the project would put capital programs and operations at significant risk.

---

Alternatives  
Analysis and  
System Planning

High

- \* UMTA considers the implementing agency to be in reasonably sound financial condition based upon the reviews outlined in UMTA's Financial Capacity Circular.
- \* The applicant has adopted a realistic capital finance plan that adequately covers projected non-Federal capital costs. The plan is based on reasonably conservative assumptions and provides for contingent cost overruns.

Medium

- \* UMTA considers the implementing agency to be in reasonably sound financial condition based upon the reviews outlined in UMTA's Financial Capacity Circular.
- \* The applicant's capital finance plan or preliminary funding strategy is considered by UMTA to be adequate to successfully undertake one or more of the proposed major transit investment alternatives. Uncertainties may exist the agency's ability to implement new funding sources as well as cash flow implications and the plan's sensitivity to risk and uncertainty.

Low

- \* UMTA does not consider the proposed implementing agency to be in reasonably sound financial condition based upon the reviews outlined in UMTA's Financial Capacity Circular.
  - \* The applicant lacks a preliminary funding strategy that would be adequate to successfully undertake a major investment alternative. If a plan or strategy exists, a "low" rating may also be given where the region has previously demonstrated an unwillingness to adopt new transit funding sources with the capacity that would be required to implement a new start.
-

TABLE 2: FINANCIAL RATINGS: STABLE AND RELIABLE OPERATING REVENUE

Final Design	Acceptable	<ul style="list-style-type: none"> <li>* Dedicated transit funding sources are in place, or there has been a clear pattern of general appropriations from State or local governments, which regularly provide a balanced budget for the existing system.</li> <li>* Existing transit facilities have been adequately maintained and replaced through continuing reinvestment in the system.</li> <li>* Financial projections show that the applicant currently has adequate financial capacity to operate and maintain the locally preferred alternative, supporting feeder systems, other programmed projects, and other elements of its transit system under reasonably conservative assumptions.</li> </ul>
	Unacceptable	<ul style="list-style-type: none"> <li>* Sources of local transit funding have not kept pace with costs. Financial conditions have led to a pattern of service level cuts to reduce operating costs.</li> <li>* The applicant has a history of deferring capital replacement and/or routine maintenance.</li> <li>* Financial projections show that the applicant does not currently have the financial capacity to operate the proposed project, supporting feeder systems, other programmed projects, and other elements of its transit system under reasonably conservative assumptions.</li> </ul>
Preliminary Engineering	High	<ul style="list-style-type: none"> <li>* Ample dedicated funding sources are in place, or there has been a clear pattern of general appropriations from State or local governments, which regularly provide a balanced budget for the existing system.</li> <li>* Existing transit facilities have been well maintained and improved through continuing reinvestment in the system.</li> <li>* Financial projections show that the applicant currently has ample financial capacity to operate and maintain the locally preferred alternative, supporting feeder systems, other programmed projects, and other elements of its transit system under reasonably conservative assumptions.</li> </ul>

## Medium

- \* Dedicated transit funding sources are in place, or there has been a clear pattern of general appropriations from State or local governments, which regularly provide a balanced budget for the existing system.
- \* Existing transit facilities have been adequately maintained and replaced through continuing reinvestment in the system. The applicant's funding plan demonstrates an ability to continue with an adequate maintenance and replacement program.
- \* The applicant has adopted a realistic financial plan which, once implemented, would provide adequate financial capacity to operate and maintain the locally preferred alternative, supporting feeder systems, other programmed projects, and other elements of its transit system under reasonably conservative assumptions.

## Low

- \* Sources of local transit funding have not kept pace with costs. Financial conditions have led to a pattern of service level cuts to reduce operating costs.
- \* The applicant has a history of deferring capital replacement and/or routine maintenance. Or, implementation of the project would create deficiencies in the applicant's ability to provide timely maintenance and capital replacement.
- \* The applicant has not yet adopted a finance plan, or has adopted a plan that is unrealistic or inadequate. For example, a "low" rating would be given where the region has demonstrated an unwillingness to adopt new funding sources with the required level of financial capacity, or where the operating plan is dependent upon unreasonable passenger revenue projections. . A "low" rating would also be appropriate where financial projections show that, even if the adopted plan is fully implemented, the applicant would still not have the financial capacity to operate the proposed project, other programmed projects, and other elements of its transit system under reasonably conservative assumptions.

Alternatives  
Analysis and  
System Planning

## High

- \* Dedicated transit funding sources are in place, or there has been a clear pattern of general appropriations from State or local governments, which regularly provide a balanced budget for the existing system.



- \* Existing transit facilities have been adequately maintained and improved through continuing reinvestment in the system. Available evidence indicates that the applicant will be able to continue its maintenance and replacement program upon implementation of a major investment.
- \* Financial projections show that the applicant currently has ample financial capacity to operate a major new transit investment, including supporting feeder systems, as well as other programmed projects, and other elements of its transit system under reasonably conservative ridership and other assumptions.
- \* Dedicated transit funding sources are in place, or there has been a clear pattern of general appropriations from State or local governments, which regularly provide a balanced budget for the existing system.
- \* Existing transit facilities have been adequately maintained and replaced through continuing reinvestment in the system. Available evidence indicates that the applicant will be able to continue its maintenance and replacement program upon implementation of a major investment.
- \* The applicant is considered by UMTA to have a realistic chance of adopting and implementing a financing plan which would provide adequate financial capacity to operate and maintain a fixed guideway alternative, including supporting feeder systems, other programmed projects, and other elements of its transit system under reasonably conservative ridership and other assumptions.
- \* Sources of local transit funding have not kept pace with costs. Financial conditions have led to a pattern of service level cuts to reduce operating costs.
- \* The applicant has a history of deferring capital replacement and/or routine maintenance, or available evidence suggests that a major investment could lead to financial strains that could adversely impact maintenance and replacement programs.
- \* The region has demonstrated an unwillingness to adopt new transit funding sources with the capacity that would be required to operate and maintain a fixed guideway alternative, including supporting feeder systems, other programmed transit projects, and other elements of its transit system under reasonably conservative ridership and other assumptions.

Medium

Low

## PROJECT PROFILE

### North Line Extension

Atlanta, Georgia

(January 1991)

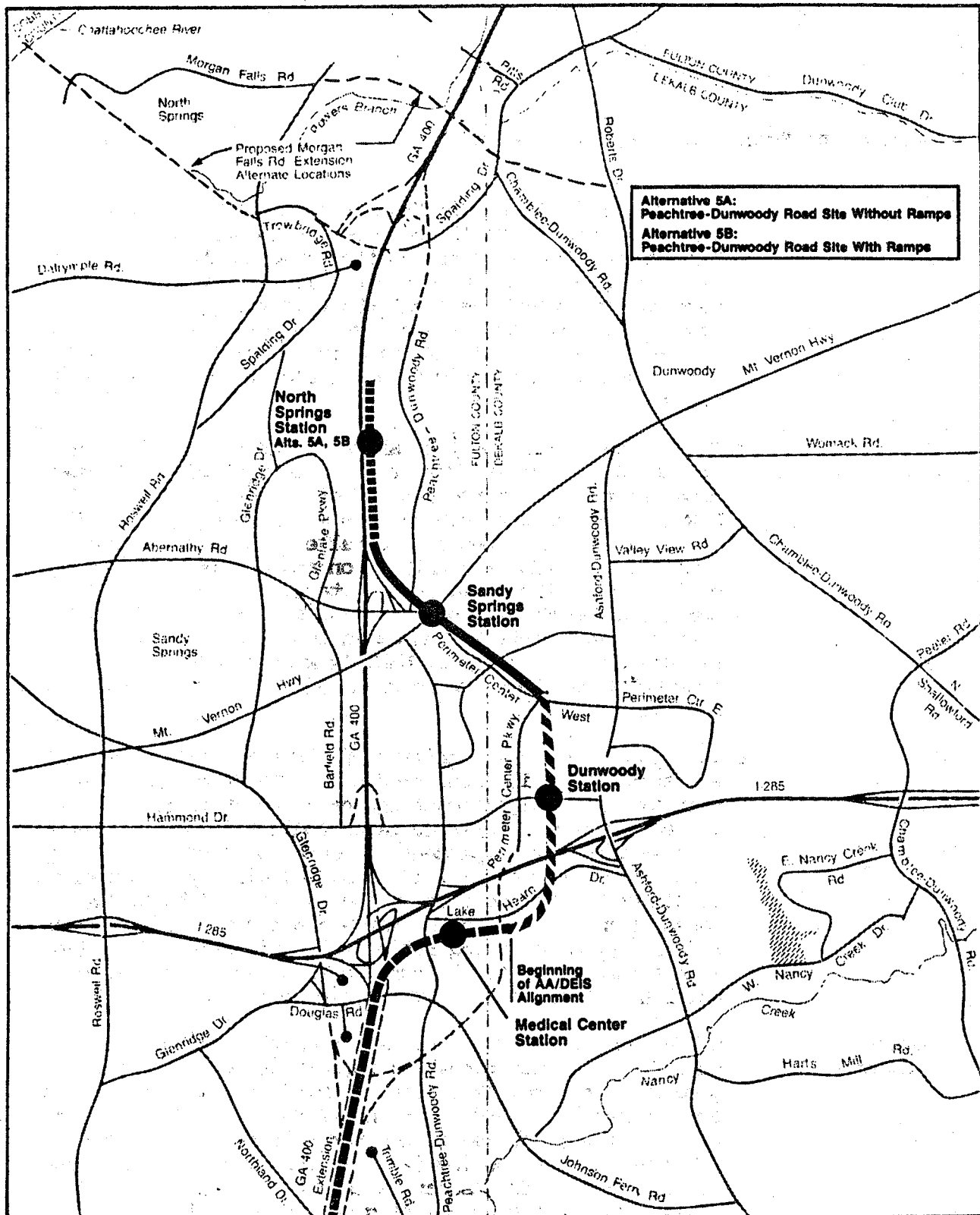
- Description
- o The Metropolitan Atlanta Rapid Transit Authority (MARTA) is proposing a 3.1 mile, 3 station extension of the North Line of its heavy rail rapid transit system from Medical Center to North Springs. The initial segment of the North Line from just south of the Lenox Station to Medical Center (5.7 miles) is currently in final design. It will be built by MARTA (without UMTA Funds) in the median of GA 400 which is under construction by Georgia DOT.
  - o The 3.1 mile extension is estimated to cost \$439 million (escalated \$) with a 75% Federal share of \$329 million. MARTA is also considering advancing a shorter 1.3 mile operable segment from the Medical Center Station through Dunwoody with a total cost of \$124 million.
  - o Ridership for the rail extension for the year 2005 is estimated at 19,000 riders per day including 11,000 new riders. The ridership projection assumes substantial new development in the service area.
- Status
- o The alternatives analysis and draft EIS was published in May 1990. The request to begin preliminary engineering (PE) and preparation of the final EIS was approved in September 1990. The project is nearing completion of the PE phase and the final EIS should be circulated for review and comment in the spring of 1991.
  - o Congress earmarked \$52.1 million in FY 1990 and \$29.9 million in FY 1991 for the project.
- Cost-Effectiveness
- o The North Atlanta Corridor is the fastest growing portion of the Atlanta area. The North Line and its extension will connect this area with the rest of the region and provide high quality transit service for inner city residents to expanding job opportunities in the suburbs as well as service from the North to downtown.
  - o The project has a cost-effectiveness index of \$8.67 (1990\$) per new transit rider. This is considerably above UMTA's threshold for cost-effectiveness of \$6 per new transit trip.
- Local Financial Commitment
- o MARTA's Locally Preferred Alternative Report calls for a 75% Federal share for the capital cost of the project. Although this is less than the UMTA policy objective of 50% or more non-Federal funding for new start projects, the

## North Line Extension — Atlanta, Georgia

UMTA share of the entire MARTA rail construction program thus far is 53%. MARTA had hoped to establish Community Improvement Districts around the three North Line extension stations to provide up to \$47 million in benefit assessments toward the local share of the project cost. However, due to the weak real estate market, MARTA is not actively pursuing this at this time. MARTA is considering other funding alternatives that would increase the local share.

- o The capital financing plan shown in MARTA's Locally Preferred Alternative Report is rated as "medium" due to uncertainties about the rate of growth of revenues from MARTA's one percent sale tax. However, a maximum of 50% of sales tax is dedicated to capital expenditures. Four rail extensions are under construction and one is in final design. When these segments, totally 14.9 miles, are completed, MARTA will be operating a 44-mile rail system with a commensurate increases in operating subsidies. Because of these factors, MARTA's working capital is decreasing and they are approaching their legal debt capacity.
- o The stability and reliability of MARTA's proposed operating assistance plan is rated "medium." The proposed financial plan assumes a significant increase (\$0.89 to \$1.47 over a 15 year period) in average fares and a resultant increase in operating ratio (percent of operating costs covered by fares). The current (FY 1990) system-wide operating ratio is 34% and MARTA projects an increase to 51% by 2005. Based on historic results, MARTA's projected increases in ridership and operating ratios are optimistic. The plan also assumes a 5% to 7% increase in sales tax receipts, which have been relatively flat in recent years.
- o MARTA has a one percent sales tax which it uses to subsidize its operations and support its construction program. To date, 47 percent of MARTA's rail construction program has been funded from non-Federal sources. MARTA is building the first leg of the North line, a two station, 5.7 mile segment costing \$229 million, with entirely local funds. UMTA needs assurances that the first leg is fully funded before committing to the extension.
- o EPA has classified Atlanta as a "serious" nonattainment area for ozone. The region has until November 1999, to meet EPA's air quality standard. However, the project will have minimal effect on air quality. The project will cause less than a 0.2% reduction in region-wide emissions of carbon monoxide, hydrocarbon and oxides of nitrogen.

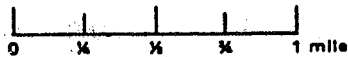
Other  
Factors



**Alternative 5A:**  
Peachtree-Dunwoody Road Site Without Ramps  
**Alternative 5B:**  
Peachtree-Dunwoody Road Site With Ramps

**Legend**

- Planned GA 400 Extension
- .... Planned Roadway Improvements
- ==== MARTA Rail Service
- //// Aerial Rail Extension
- At-Grade Rail Extension
- Subway Rail Extension
- Rail Station



**North Atlanta Corridor Project  
Alternatives Analysis/  
Draft Environmental Impact Statement**

## PROJECT PROFILE

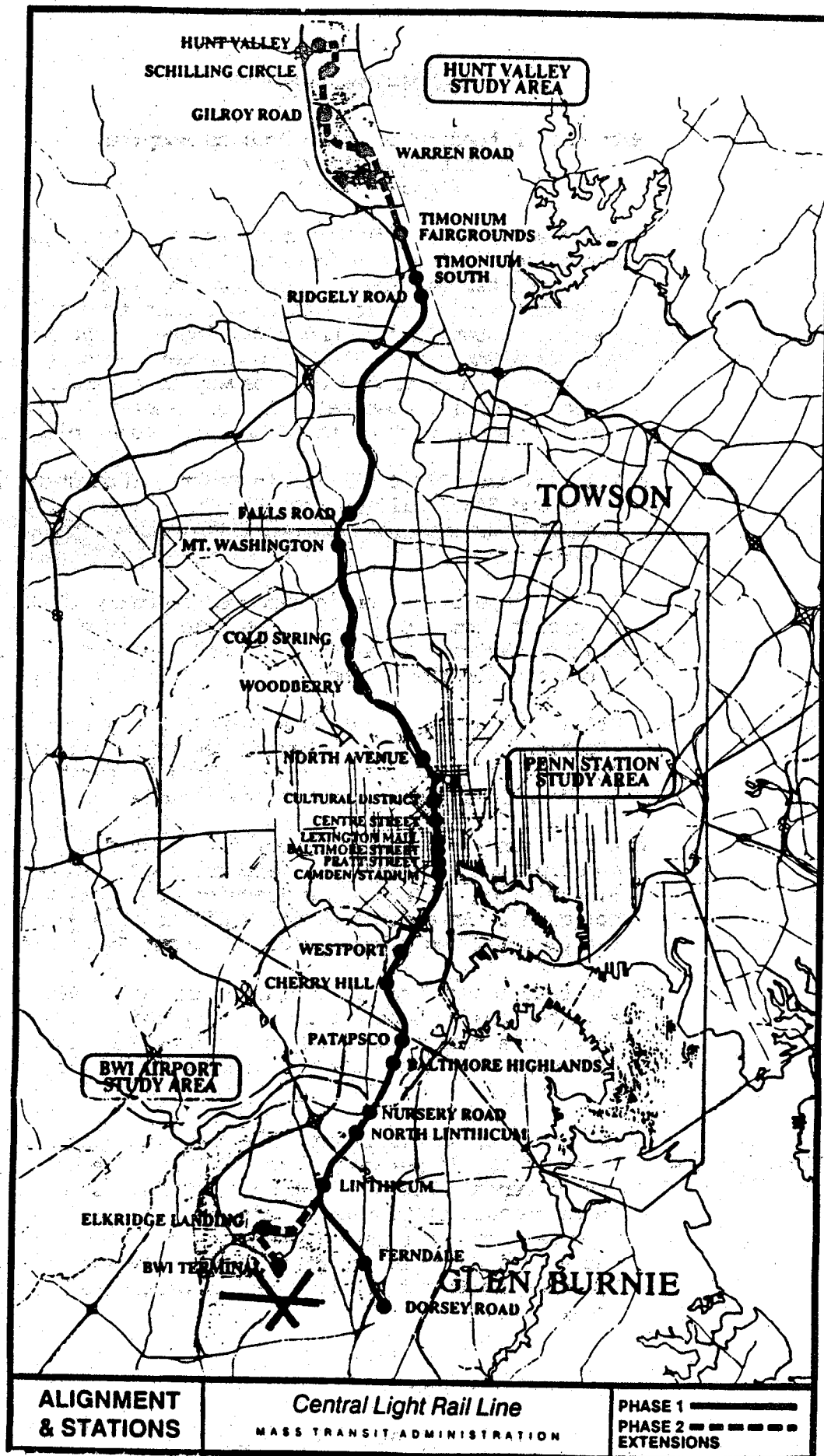
### Central LRT Extensions Baltimore, Maryland (January 1991)

- Description
- o The Mass Transit Administration (MTA) of Maryland, using money from the State Transportation fund and local funds, is constructing a 22.5-mile light rail transit (LRT) line from Timonium in the north through the Baltimore CBD to Dorsey Road.
  - o The proposed Federally assisted projects consist of three extensions of the State financed 22.5-mile line. They are a 4-mile extension from Timonium to Hunt Valley in the north, a 2-mile branch off the LRT main line to BWI Airport in the south, and a 0.5-mile spur to Penn Station in downtown Baltimore.
  - o The entire undertaking (both State and Federal portions) was originally estimated to cost \$315 million but revised estimates by the State in November 1990 put the cost at \$446 million. Preliminary estimates put the total cost of the three extensions at about \$80 million with a 75% Federal share of \$60 million (1990\$).
  - o The main line is estimated to carry 27,000 daily trips by the year 2000. The Hunt Valley extension is estimated to carry 2,000 daily trips including less than 700 new riders. Patronage data has not been developed for the two other spurs.
- Status
- o The alternatives analysis and draft EIS for the extension to Hunt Valley was published in September 1990 and a public hearing was held. UMTA is waiting for MTA to submit their locally preferred alternative report along with a request to begin preliminary engineering and preparation of the final EIS. The two spurs are still in the alternatives analysis phase of UMTA's project development process.
  - o Although the total costs and benefits of the extensions will not be known until completion of the other two AA's, Congress has earmarked \$17.3 million for the project, of which \$2.0 million has been obligated for alternatives analysis and preliminary engineering work.

## Central LRT Extensions - Baltimore, Maryland

- Cost-Effectiveness
- o The Hunt Valley extension project with a cost-effectiveness index of over \$26.00 per new rider does not rate well when compared to other projects or UMTA's cost-effectiveness threshold of \$6. Despite its relatively low cost, the project attracts only 640 more riders than the transportation system management (TSM) alternative. Similar cost-effectiveness data is not yet available for the spurs to the airport and Penn Station.
- Local Financial Commitment
- o The State has pledged \$303 million from its Transportation Trust Fund and three local counties have committed \$15 million each to build the 22.5-mile main line. The proposed Federal cost of \$60 million, which would constitute 75% of the Federal projects, is only 15% of the entire \$446 million undertaking.
  - o A financial analysis of capital cost requirements was performed as a part of the AA for the Hunt Valley Extension. The local share (\$20 million) for the three projects will be provided from the State Transportation Fund. The projects are programmed in MDOT's six year consolidated Transportation Program which totals \$4.7 billion. The State, because of short falls in projected trust fund revenue, is expecting a \$200 million short fall in the next 18 months. In December 1990 the Governor directed MDOT to study the matter and the issue is still under review. However, the capital financial plan is rated as "medium" for this stage of the project development process.
  - o MTA has a history of adequate funding of transit operations which includes contributions from the State Transportation Trust Fund which is under financial pressure and can not support all of the transportation projects in the program. However, the addition of 27 route miles of light rail service will place additional burdens on the Fund. The State is considering additional revenue sources to bolster the Fund. Farebox revenues are expected to cover 50% of the project's operating costs which has been a long standing MTA policy. The stability and reliability of MTA's operating assistance is rated "medium."
- Other Factors
- o EPA has classified Baltimore as a "serious" nonattainment area for ozone. The region has until 2007 to meet EPA's air quality standard. However, the extension to Hunt Valley will have very minimal impact on air quality. The project's effect on ozone levels is unmeasurable because so few auto driver trips would be eliminated by it.

Baltimore: Central Light Rail Line



## PROJECT PROFILE

### **Metrorail Extension to Johns Hopkins Hospital Baltimore, Maryland (January 1991)**

- Description**
- o The Mass Transit Administration (MTA) of Maryland is constructing a 1.5-mile extension of their heavy rail transit line with two stations in downtown Baltimore. The subway alignment would run in deep tunnel east from the existing Charles Center Station under Baltimore Street in the downtown to a Shot Tower Station underneath Jones Falls Way, and then turn northward on Broadway to a terminal station at Johns Hopkins Hospital. A bus transfer facility will be constructed as part of the Johns Hopkins Hospital Station.
  - o MTA will use \$273.4 million in Federal Interstate Transfer funds and \$48.2 million from the State Transportation Trust Fund to construct the \$321.6 million (escalated \$) project.
  - o By 2005, the extension is expected to carry 42,000 daily riders of whom 4,600 will be new riders on the region's transit system. No additional rail vehicles will be purchased for the extension.
- Status**
- o MTA is currently operating a 14-mile heavy rail line (Sections A and B) from Charles Center to Owings Mills. The project (Section C) extends the line northeast of downtown to Johns Hopkins Medical Complex.
  - o A full funding grant agreement for final design and construction was signed in December 1988. Through FY90, \$164 million in Interstate Transfer funds have been obligated. An additional \$58.7 million was appropriated for FY91 leaving a balance due of about \$51 million.
  - o Construction of Section C started in early 1989 and is slightly behind schedule but still within budget. Revenue service is still scheduled to begin by July 1994. UMTA has assigned a PMO contractor to monitor construction of the project.
- Cost-Effectiveness**
- o The project, at \$13.71 per trip and with a user benefit index of \$23.84 per hour, exceeds UMTA's tests of cost-effectiveness. It does not meet UMTA's cost-effectiveness tests because of high construction costs, little travel time savings for existing riders, and few new riders. MTA has agreed to build the project entirely with Interstate Transfer funds and not to seek any Section 3 discretionary funds.



**Metrorail Extension - Baltimore, Md.**

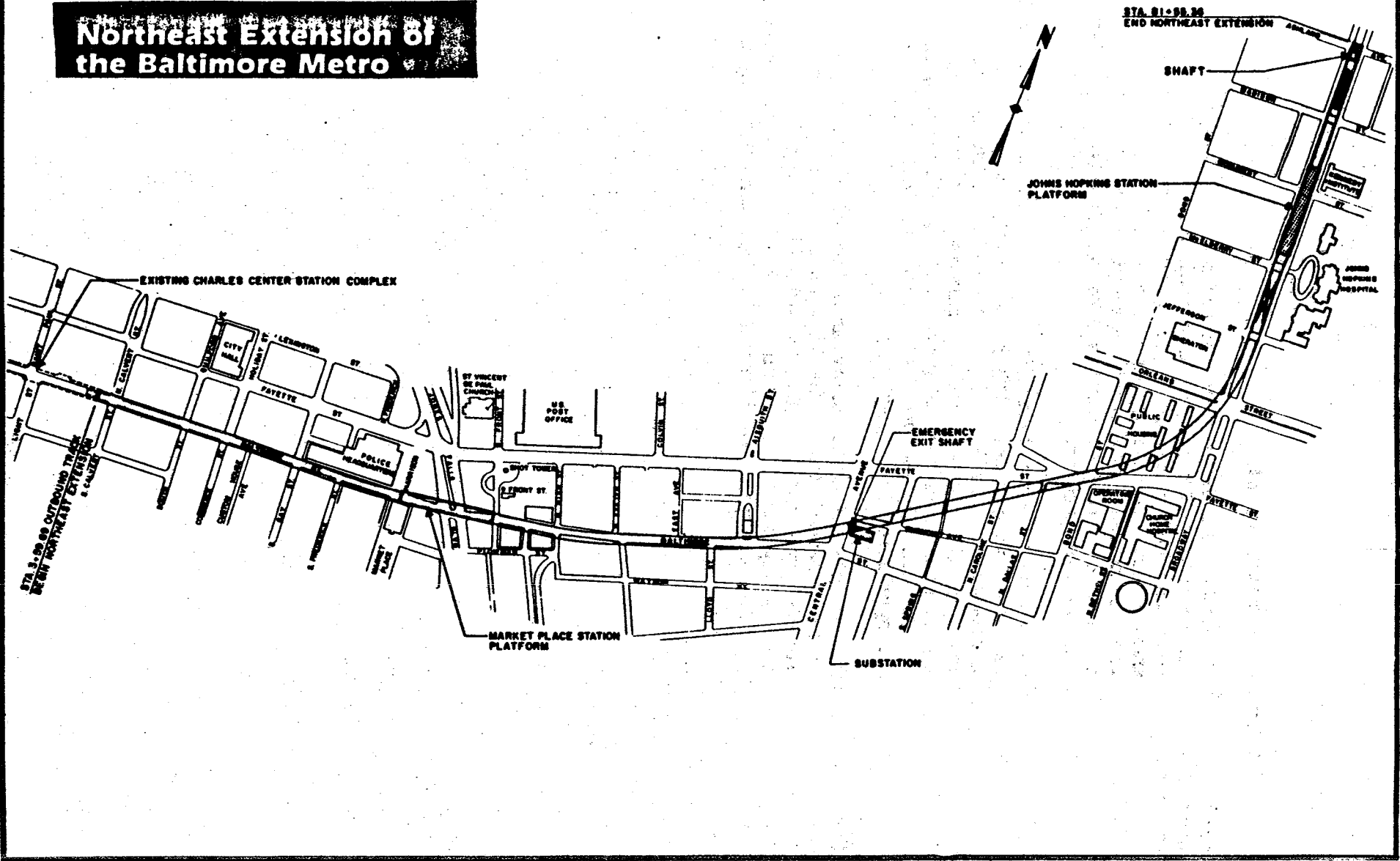
**Local  
Financial  
Commitment**

- o The capital financing plan for the project is rated "acceptable." The project is contained in the States six year Consolidated Transportation program, with the local share coming from its Transportation Trust Fund. Declining trust fund revenues are not expected to impact this project, but the Governor has directed the MDOT to review the six year program.
- o The stability and reliability of MTA's operating assistance is rated "acceptable." MTA projects an operating cost increase of \$3.1 million by 1994 when the Hopkins extension is expected to be in service. Farebox revenues are expected to cover over 50 percent of these expenses, and the deficit will be funded with proceeds from the State Transportation Trust Fund.

**Other  
Factors**

- o EPA has classified Baltimore as a "serious" nonattainment area for ozone. The region has until 2007 to meet EPA's air quality standard. The project has a minimal impact on air quality and is estimated to reduce hydrocarbons, carbon monoxide and oxides of nitrogen by less than 0.2.% by the year 2005.

# Northeast Extension of the Baltimore Metro



B-20

## PROJECT PROFILE

### South Boston Piers Boston, Massachusetts (January 1991)

- Description**      ○ The Metropolitan Boston Transportation Authority (MBTA) is proposing to build an underground transitway between the MBTA's existing transit system and the South Boston Piers area, located on the fringe of downtown. The transitway would use either electric trolley buses or dual mode buses. The cost of the project could exceed \$400 million (1988\$) depending upon the termini, alignment, and vehicle technology chosen.
- Status**              ○ UMTA approved the initiation of alternatives analysis in August, 1990, and the scoping phase of the study is underway. The MBTA hopes to complete the study quickly so that any project could be built jointly with the reconstruction of Boston's Central Artery. The draft EIS could be completed during the latter half of 1991.
- Cost-  
Effectiveness**      ○ The downtown Boston office market was quite strong during the 1980's, leading to interest in developing neglected areas peripheral to the CBD. One area receiving development attention was the South Boston Piers/Fort Point Channel area. Boston expects an additional 12 to 13 million square feet of development in the piers area by 2010, with land use shifting from industrial to office uses. This development would aggravate Boston's already severe traffic congestion unless adequate public transportation is provided.
- Preliminary cost-effectiveness indices are in the range of \$4 to \$8 per new transit trip. The cost-effectiveness of the project is highly dependent upon the level of development in the South Boston Piers area, which in turn is dependent on the currently depressed Boston real estate market.
- Local  
Financial  
Commitment**      ○ The MBTA is committed to raising at least 50 percent of the project costs from non-Federal sources. In the past, the MBTA has suggested a funding scenario with the State and City providing 50 percent of the cost, the private sector 25 percent, and the Federal government the remaining 25 percent.
- a "medium" rating is appropriate at this stage of planning, although a capital finance plan has not yet been developed. The State has made very sizable contributions to transit in recent years. While the State's financial condition has deteriorated, and downtown development has slowed significantly, the MBTA is thought to have a reasonable chance of obtaining the financial support needed to undertake the project.

South Boston Piers -- Boston, Mass.

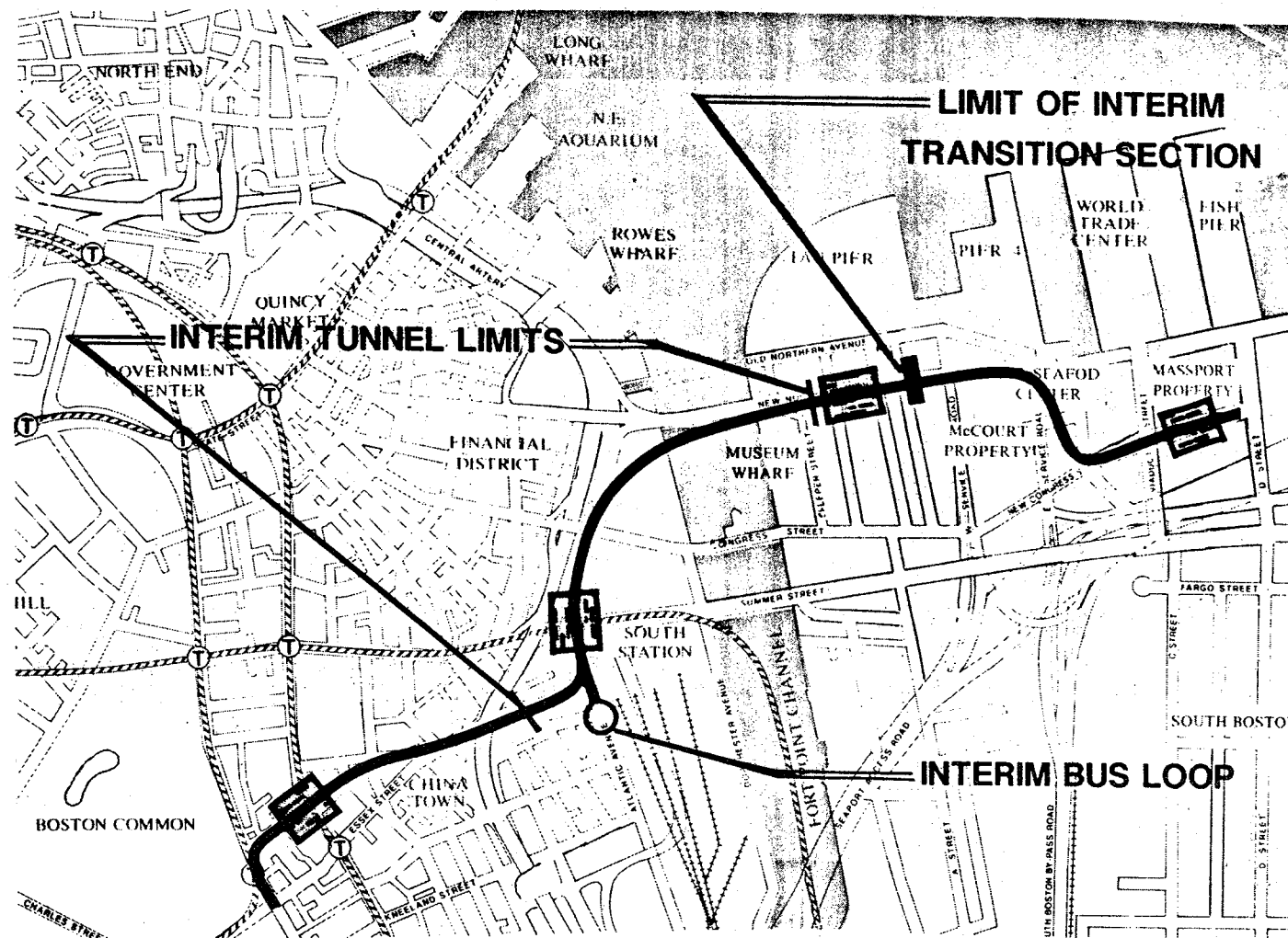
- o A "medium" rating is also given for the stability and reliability of local operating funds. In recent years the State has strongly supported the operation and enhancement of the MBTA system. The MBTA system is being adequately maintained and replaced through continuing reinvestment. (In 1989, the average age of the MBTA's bus fleet was 9.4 years, its rail fleet 8.8 years.) In view of the area's current economic conditions, however, service cutbacks and fare increases are being discussed as a way to reduce spending.

Other Rating  
Factors

- o Air Quality. Metropolitan Boston is an EPA non-attainment area for carbon monoxide and ozone. It is unlikely that any of the alternatives would have a noticeable effect on pollution levels at the regional scale. They could have a small but positive effect on carbon monoxide in the central business district.
- o Parking Policy. To help reduce air pollution, Boston has established a cap on the number of parking spaces to be provided in downtown. The effect of the cap is to increase the cost of commuting by private auto, thus promoting transit ridership.

# South Boston Piers Alternatives Analysis

## Underground Transitway Alignment



## PROJECT PROFILE

### Amherst Corridor Buffalo, New York January 1991

- Description**
- o The Amherst Corridor extends some 6 miles from the north end of the Niagara Frontier Transportation Authority's (NFTA) light rail rapid transit line. An extension of the existing line, connecting the north and south campuses of the University of New York at Buffalo (SUNYAB), has been a part of local plans since the early 1970's. Several alignment and termini options have been proposed. A continuation or expansion of existing bus service is another alternative.
  - o The NFTA's capital cost estimate for a 6.1-mile LRT extension to Amherst and Audubon is \$367 million (1985\$). A shorter (2.6-mile) extension to Boulevard Mall is estimated to cost \$144 million.
- Status**
- o UMTA approved the initiation of alternatives analysis in 1982, subject to the selection of a priority corridor. The NFTA's Northern Corridors Refinement Study led to the selection of the Amherst Corridor in 1986.
  - o Since 1986, the NFTA has been performing an Economic Development/Value Capture Study to estimate the economic benefits of an LRT extension. The study found that an Amherst LRT extension would have virtually no impact on the amount of economic activity in the region, and only marginal redistributive effects on economic activity in the corridor and station areas.
- Cost-Effectiveness**
- o According to the Northern Corridors Refinement Study, an LRT extension would have little impact on regional transit ridership and traffic congestion. Compared with a low cost all-bus alternative, LRT would attract only 3300 more daily transit riders. The NFTA's operating costs would increase by several million dollars per year with the LRT extension.
  - o The Northern Corridors Refinement Study yielded cost-effectiveness indices of \$46 to \$67 per new regional transit trip (1985\$). If University of New York at Buffalo students (who currently use buses between two campuses) are counted as new riders, the extension would cost \$8 to \$37 per new NFTA rider. It is highly unlikely that further study will show a LRT extension to be cost-effective.

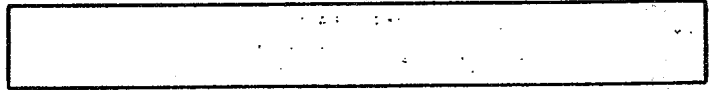
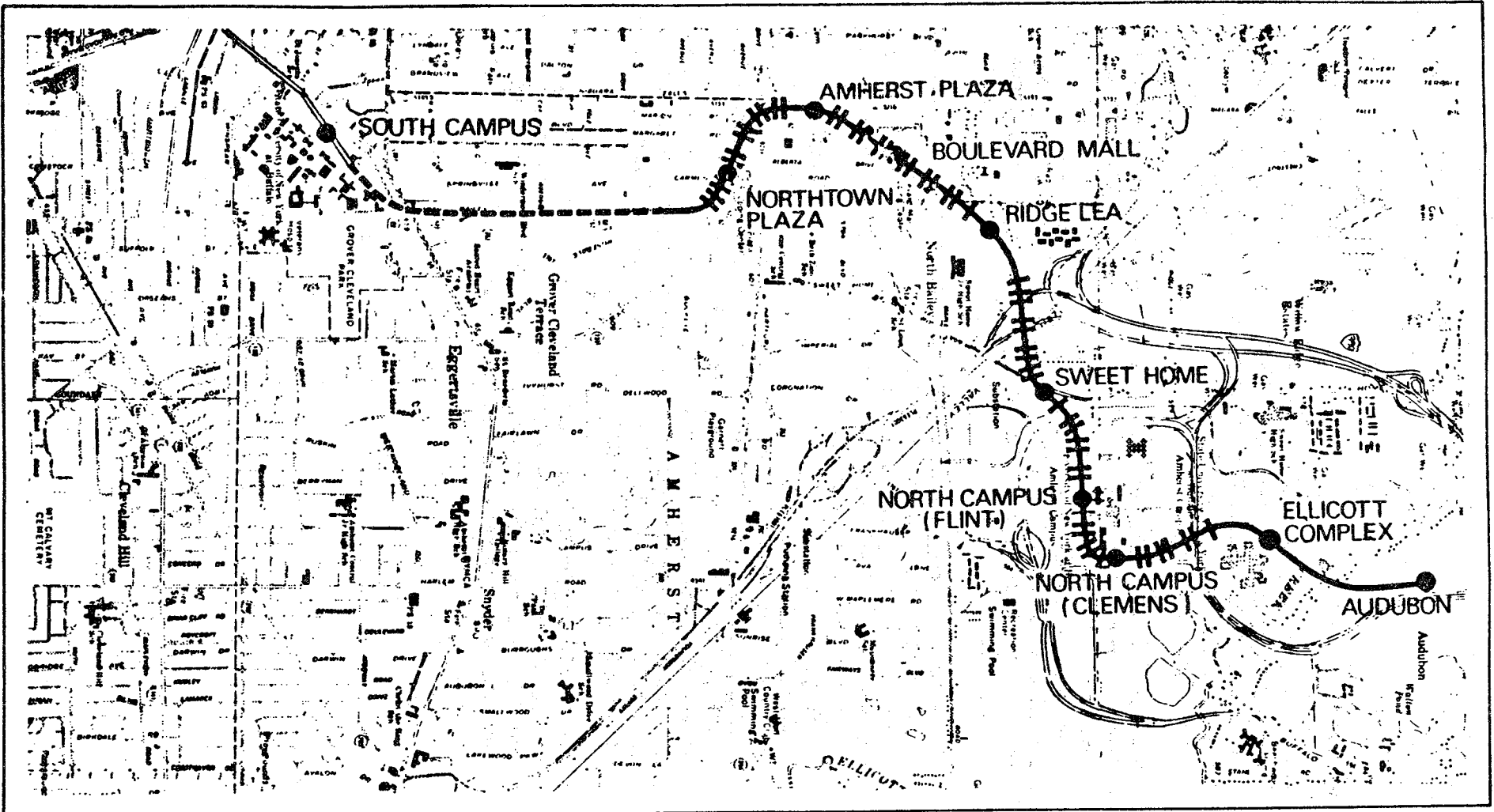
**Amherst Corridor-Buffalo, N.Y.**

**Local  
Financial  
Commitment**



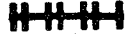

- o Because of local and State financial difficulties, UMTA assumes that the NFTA would seek 75 percent funding from Section 3. The assumed funding plan would be inconsistent with the Federal policy objective of 50 percent or more non-Federal funding.
- o The NFTA's only regular source of capital funding has been State appropriations. The State is now insisting upon a greater financial effort by local governments, but Buffalo area jurisdictions have consistently demonstrated a reluctance to fund the NFTA. The NFTA system briefly shut down in March 1990 due to a lack of operating funds. The project has been assigned a "low" capital finance rating.
- o The stability and reliability of NFTA operating revenues is also rated "low." To the NFTA's credit, the agency has undertaken a bus replacement program which has reduced the average age of the bus fleet from 11.0 years in 1984 to 9.4 years in 1989. In addition, following the 1990 shut down, local governments agreed to a low level of dedicated funding for NFTA operations. The "low" rating reflects the fact that the NFTA has been forced to rely on emergency appropriations by the State and other stop-gap measures to avoid major service cuts and, new dedicated funds notwithstanding, the NFTA remains highly dependent on local and State appropriations for its operating revenues. The stability and reliability of these sources is in doubt, as demonstrated by the 1990 shut down.

**Other Rating  
Factors**

- o Air Quality. The Buffalo region is a non-attainment area for ozone. It is unlikely that any of the alternatives would have a noticable effect on pollution levels at the regional scale because of the small number of auto driver trips they would eliminate.



**LEGEND**

-  underground ( tunnel or cut-and-cover subway )
-  at grade ( including cuts, fills, and transitions )
-  aerial structure and viaducts
-  station locations

Buffalo

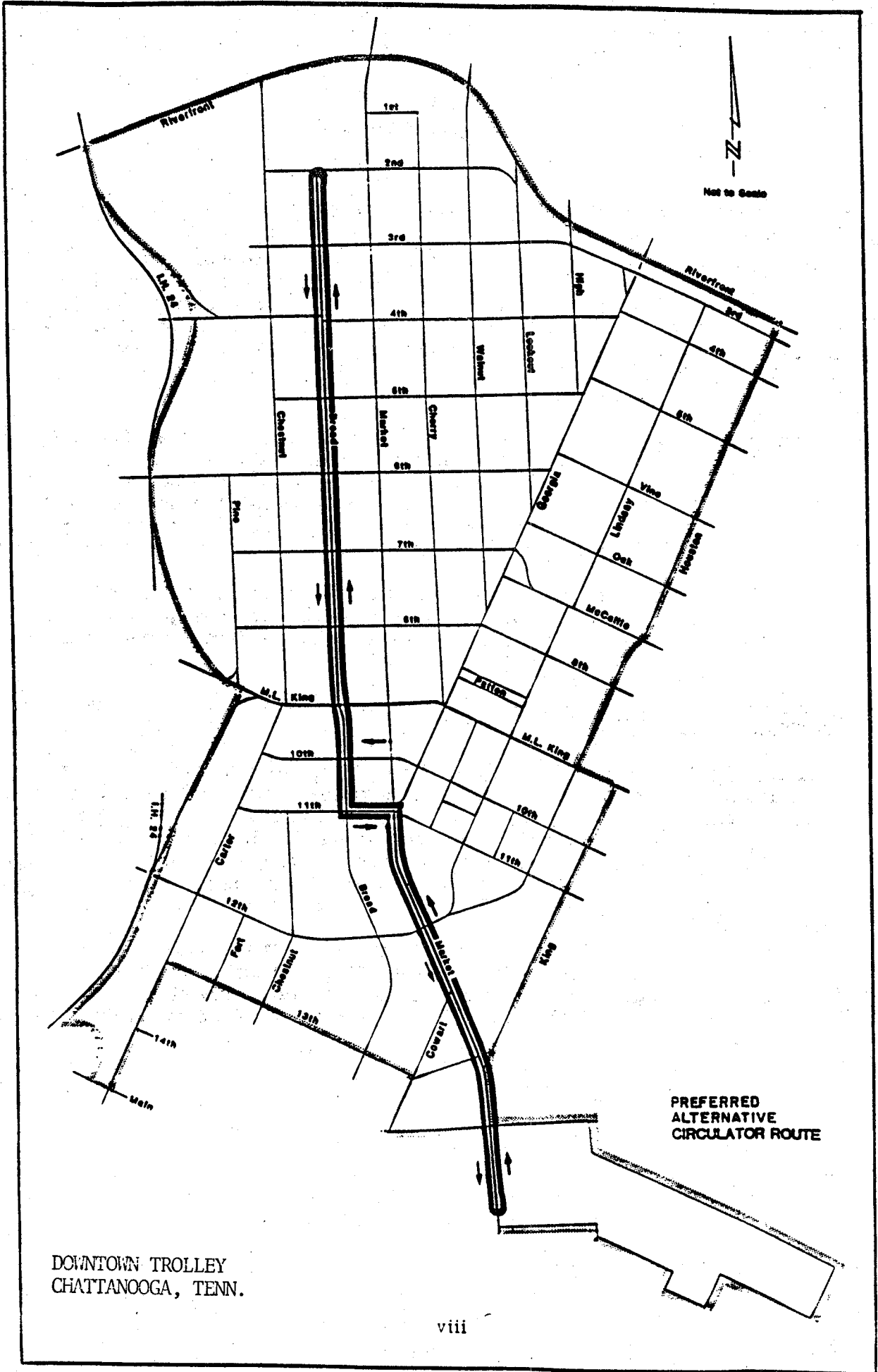
**Amherst Full Extension**



## PROJECT PROFILE

### **Downtown Trolley** Chattanooga, Tennessee (January 1991)

- Description
- o This project consist of a 3 mile, downtown trolley circulator, three-500 space parking garages and related utility work from the Chattanooga Choo-Choo to the Tennessee riverfront. The vehicles for the circulator would be either light rail cars or trolley buses. Ridership for the year 2001 is estimated at about 5000. The very preliminary cost estimates is around \$25 million.
- Status
- o The project is in systems planning. A six month, \$100,000 plan study was completed in December 1991. No cost-effectiveness or environmental work was done as a part of the study. The Chattanooga Area Regional Transportation Authority has yet to request UMTA permission to enter alternatives analysis.
  - o The Congress earmarked \$1 million of FY 1991 Section 3 funds for site preparation, engineering and design work upon completion of the necessary alternatives analysis and draft environmental impact statement.
- Cost-Effectiveness
- o No cost-effectiveness data has been developed to date for the project.
- Local Financial Commitment
- o Initial discussions have suggested a 50 percent Federal share of the entire undertaking with the City contributing 28%, the State 10% and the private sector 12%. The City contribution would include some right-of-way. However, at this time there is neither a firm cost estimate nor a viable financing plan. The capital financing plan for the project is rated "low."
  - o The stability and reliability of Chattanooga's operating assistance plan is rated "low." Local officials are proposing to subsidize the trolley circulator's operating cost with presumed surplus revenues from the parking garages.



DOWNTOWN TROLLEY  
CHATTANOOGA, TENN.

## PROJECT PROFILE

### Central Area Circulator Chicago, Illinois (January 1991)

- Description**
- o The Chicago Central Area Circulator (CAC) project would be a multi-legged transit system within Chicago's central area, which is the second largest central business district (CBD) in the Nation with 650,000+ jobs.
  - o The current rapid transit system, including both the "loop" and two subways, does not directly connect the newly developing areas on the CBD's east side (e.g., in the northeast along North Michigan Avenue) with the rest of the CBD, particularly the commuter rail terminals which have an aggregate ridership of about 250,000 trips per day.
  - o The cost of constructing all legs of the light rail alternative is estimated to be about \$750 million (inflated dollars). Ridership is projected to be about 120,000 trips per day. The majority of riders would either be existing transit users or people who formerly walked.
- Status**
- o Much of the technical work for the alternatives analysis has been completed. The local schedule calls for completion of the DEIS by early 1991.
  - o The Congress has earmarked \$16 million in FY1991 Section 3 funds for preliminary engineering and design.
- Cost-Effectiveness**
- o The major transportation benefit of the circulator is the provision of better access to and egress from the commuter rail stations in the Chicago CBD, connecting them to the high growth areas on the opposite side of the core.
  - o This project was admitted to alternatives analysis based upon estimates of a cost per new trip of \$9.90. Preliminary indications from the alternatives analysis results are that this figure will go higher. The project results in a very marginal increase in transit trips originating outside the downtown core. About one half of the new transit trips are short trips made within the core of the city during off peak periods. The project has little impact on reducing transit travel times and thus would yield a relatively high cost per hour of travel time saved.
- Local Financial Commitment**
- o One third of the total cost of the first phase of the system is proposed to come from the Federal government, one third from the State and one third from the private sector (and the City) by means of a tax on commercial property within a special benefits assessment district.

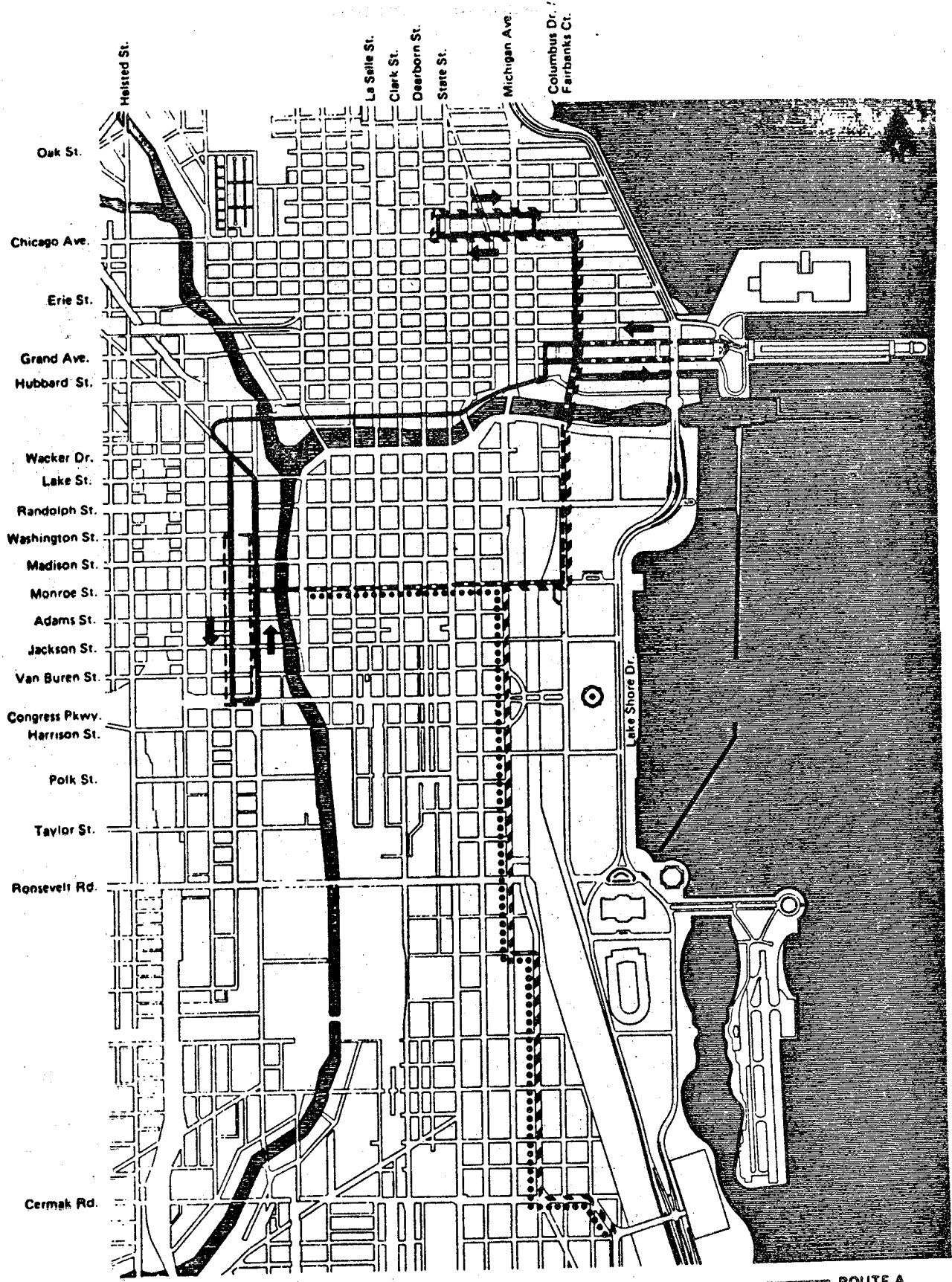
## Central Area Circulator -- Chicago, Illinois (Continued)

- o A final financing plan for the CAC project is unavailable. However, the State legislature has passed a new funding package for transit which will make \$820 million available statewide for transit capital improvements over the next five years in addition to an existing \$1.5 billion funding base. This package, a combination of direct funding and an increase in bonding authority, includes \$20 million specifically earmarked for engineering and other "up front" costs for the CAC project. In addition, State legislation authorizing the City to establish a special benefits assessment district to fund the local/private one third share of the project is already in place, and the local business community strongly supports the district.
- o The stability and reliability of local operating and maintenance funding is acceptable; However, operating deficits are rising faster than dedicated sources of revenue are growing. The deficit associated with the CAC project would be relatively small both in dollar terms and as a percentage of the region's total transit deficit.

### Other Rating Factors

- o Because few of the new riders attracted to the rail project are from automobiles, there will be less than negligible improvements in regional air quality resulting from the project. There would, however, be some reductions in bus-related diesel emissions in the CBD.

Chicago: Central Area Circulator



LRT ROUTES— SYSTEM ALTERNATIVE I

- ROUTE A
- - - ROUTE B
- ..... ROUTE C
- / - / - / - / - ROUTE D

## PROJECT PROFILE

### Dual Hub Corridor Cleveland, Ohio (January 1991)

- Description**
- o The Dual Hub corridor contains two major employment centers, downtown Cleveland and University Circle, which are 5.6 miles apart. In 1988, there were 134,000 daily bus riders in the corridor. Cleveland's Red Line serves both centers but follows a circuitous route that just touches the edge of downtown and bypasses the busiest transit corridor on the eastside. The rail system has only one station in downtown, Tower City, which the City recently rehabilitated, in part with an UMTA grant. This study is considering alternatives for moving the eastside line so that it passes through downtown and the heart of the busy eastside corridor to University Circle.
  - o The alternative considered most likely to be selected as the locally preferred alternative follows Euclid Avenue in subway downtown and on surface streets outside of downtown. It has an estimated capital cost of \$568 million (escalated dollars).
  - o Systemwide ridership peaked in the early 1980s at over 120 million annual passengers, but has declined steadily since. In 1988 ridership was under 70 million riders. The drop in ridership had been most dramatic on the Red rail line. In the last year, rail ridership has gone up significantly as GCRTA decreased train headways and improved service frequency and reliability.
- Status**
- o An alternatives analysis has been underway since 1983. The study has progressed slowly partly because, until recently, the Greater Cleveland Regional Transit Authority (GCRTA) showed little interest. GCRTA and the Northeast Ohio Areawide Coordinating Agency (NOACA, the MPO) both had managerial and other problems which detracted from their work on the study. It is now progressing. The alternatives being examined are the No-Build, a TSM alternative, and several rail re-alignments that range in cost from \$292 to \$774 million.
  - o The City of Cleveland and NOACA have already endorsed the Euclid rail alternative. GCRTA will not take any formal action until after the public hearing on the AA/DEIS.
  - o The Congress earmarked \$2 million of FY 1990 and \$5 million of FY 1991 Section 3 funds for preliminary engineering for the project.

## Dual Hub Corridor — Cleveland, Ohio

- Cost-Effectiveness
- o It is not yet known whether the relocation of the rail line will attract sufficient new riders to justify the major expense. A TSM alternative may accomplish the same objective at a much lower cost.
  - o The impetus for the project comes from several sources: (1) the rail system does not serve the entire downtown, (2) the current eastside alignment (an old industrial railroad) misses the best transit corridor on that side of town, (3) dwindling ridership has left the rail system underutilized and (4) the city would like to focus new development in the area between Tower City and University Circle. However, because the realigned trains would operate on surface streets, existing riders to the important and growing Tower City area of downtown would be subject to longer travel times than at present. The eastside corridor is now well served by buses and not so congested that a train operating on the same streets as current buses would improve travel times appreciably.
  - o A cost-effectiveness index for the proposed action has not been determined since UMTA and the City have not agreed on the TSM baseline.
- Local Financial Commitment
- o GCRTA's preliminary financial plan calls for funding from UMTA (50 percent), the State of Ohio (10 to 12 percent), the City of Cleveland (5 percent), GCRTA (25 to 35 percent), and the private sector (10 to 20 percent). No commitments have been made by any funding source, and state legislation is not in place to impose a special benefit assessment to facilitate private contribution to the project.
  - o The Capital Financing Plan for the project has not been adopted and is rated "low" for this stage in UMTA's project development process. The draft plan lacks specific commitments.
  - o GCRTA's capital and operating expenses are supported by a 1 percent sales tax in Cuyahoga County. Farebox revenues cover 26 percent of operating expenses. The remainder is provided by UMTA (7 percent), the State of Ohio (5 percent), and GCRTA's dedicated sales tax (62 percent). While there is a modest capital program which is 100 percent locally funded, it is clear that the sales tax revenue is committed to operating and maintaining the existing system for the most part, with little left over for new initiatives. The stability and reliability of GCRTA's operating assistance are rated as "medium."

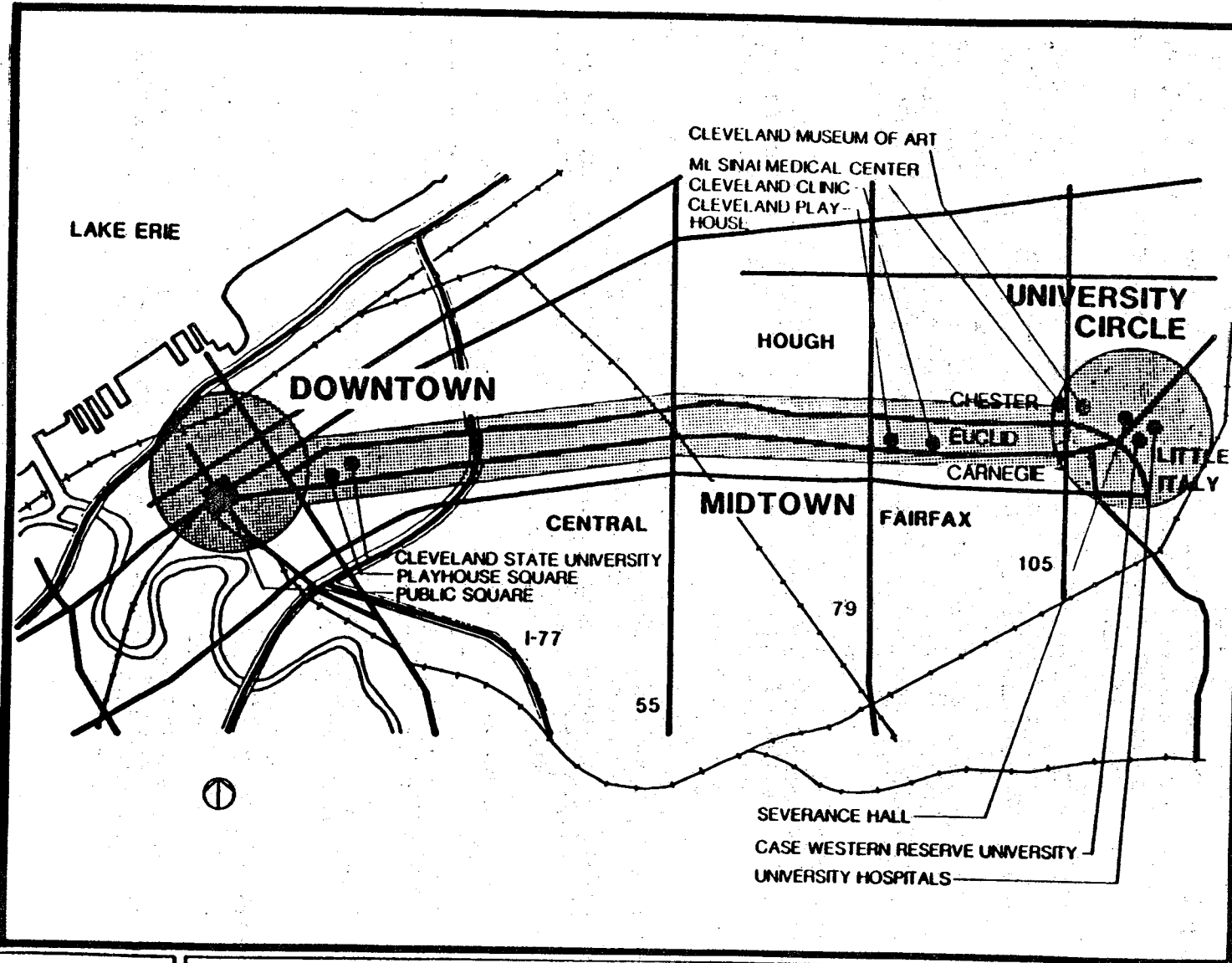
## Dual Hub Corridor — Cleveland, Ohio

### Other Factors

- o There has been strong support from certain sectors of the business community for the project.
- o Air Quality: Cleveland is a "moderate" nonattainment area for ozone. The Region has until November 1996 to meet EPA's air quality standard. The project would have minimal impact on regional air quality because of its relatively small attraction of new transit riders.



Cleveland: Dual Hub



B-35

DUAL HUB  
CORRIDOR  
ALTERNATIVES  
ANALYSIS

DUAL HUB CORRIDOR

CITY  
PLANNING  
COMMISSION



## PROJECT PROFILE

### South Oak Cliff Corridor Dallas, Texas (February 1991)

- Description**
- o The Dallas Area Rapid Transit (DART) proposes to build a \$287 million (1989 dollars), 10-mile light rail line with 13 stations from downtown Dallas to Ledbetter Drive in the South Oak Cliff area of Dallas.
  - o The South Oak Cliff line would be part of a 20-mile, \$625 million light rail starter system planned by DART. Other elements of the system include a branch to West Oak Cliff and a North Central line. The request for Section 3 funding is expected to be limited to \$125 million for the most cost-effective portion of the South Oak Cliff line (6.4 miles and 10 stations from downtown to Illinois). DART plans to build all of the other two lines without federal funding assistance.
  - o The South Oak Cliff Line to Ledbetter is expected to carry about 20,000 riders daily in 2005. This figure represents an increase of 4,400 transit trips over the number of trips carried by the best bus alternative.
- Status**
- o In August 1990, DART and UMTA circulated an AA/DEIS for the South Oak Cliff line. DART adopted its preferred alternative in early November, and UMTA approved the initiation of preliminary engineering on that alternative in late November. This work, including preparation of the FEIS, is already underway.
  - o The most significant environmental issue is the visual impact of the line on the Kennedy assassination site, which the Department of Interior is nominating for National Historic Landmark status.
  - o The FY 1991 DOT Appropriations Act earmarked \$19.9 million for the project.
- Cost-Effectiveness**
- o The proposed project serves the most transit-dependent area of Dallas, but an area of very low density.
  - o The cost-effectiveness index for the UMTA portion of the project is \$9 per new trip, reflecting the relatively low capital cost of the proposed at-grade rail line and modest benefits.

South Oak Cliff Corridor — Dallas, Texas (continued)

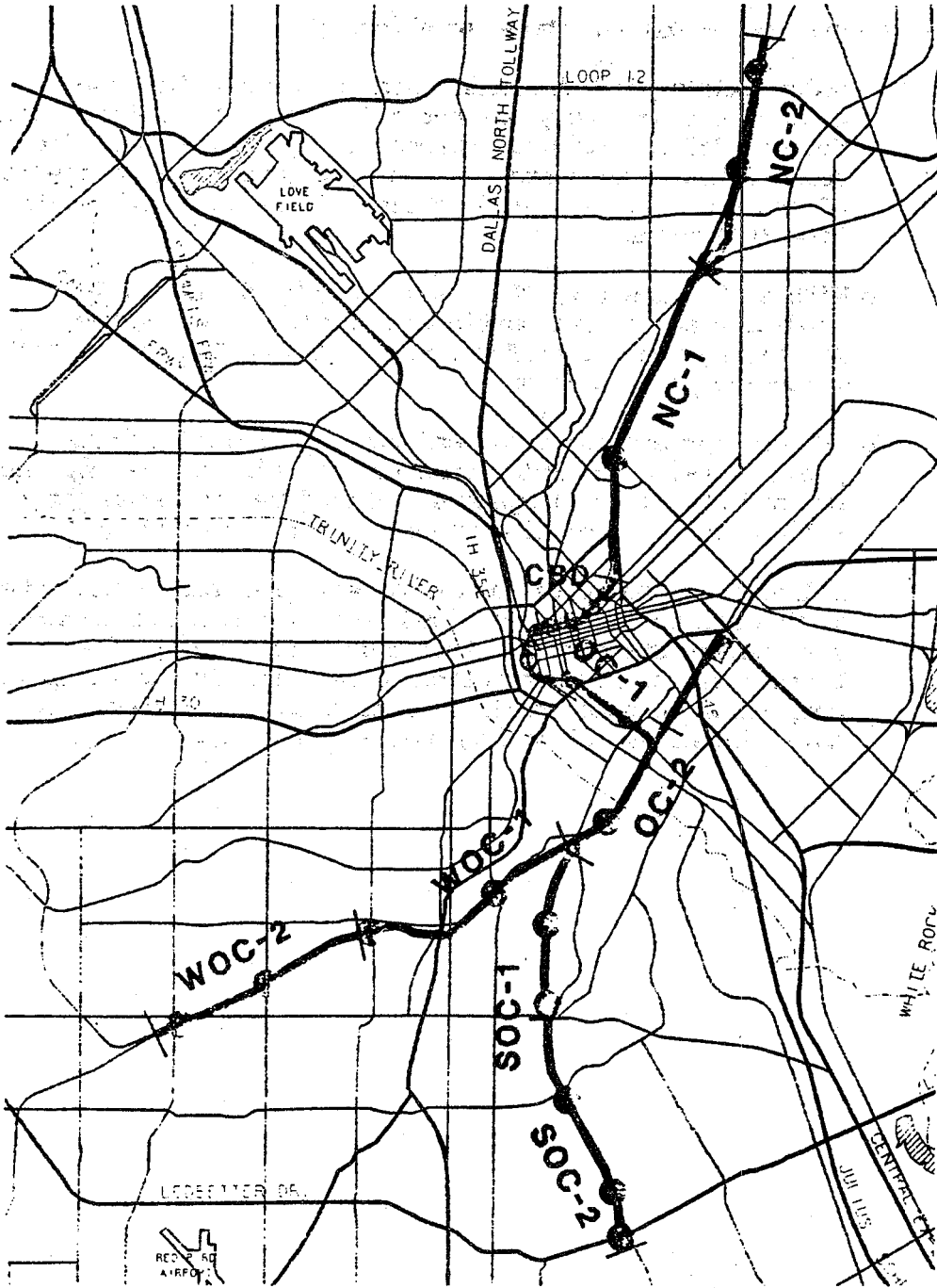
Local  
Financial  
Commitment

- o Under DART's present plans, which have qualified the project for Secretary Skinner's Overmatch Initiative, call for non-federal funding sources to pay about 80% of the cost of the 20-mile starter system or about 45% of the cost of the federally-assisted portion of the South Oak Cliff line (6.4 miles).
- o With a 1% sales tax, DART is in very good financial condition and enjoys sufficient surplus to build the 20-mile system. Therefore, the rating of DART's capital financing plan is "high."
- o The one percent sales tax and other dedicated sources provide DART with ample funds to maintain and operate the bus and 20-mile rail systems. Therefore, the stability and reliability of operating revenue are rated as "high."

Other  
Factors

- o Dallas is a "moderate" nonattainment area for ozone. The region has until November 1996 to meet the National Ambient Air Quality Standard for that pollutant. The project, because of its low attraction of new transit ridership in comparison to total regional auto trips, is expected to have minimal impact on regional air quality.

# LIGHT RAIL STARTER SYSTEM



## LEGEND

- STATION
- SEGMENT BOUNDARY
- MAINTENANCE FACILITY



## PROJECT PROFILE

### Rapid Transit Project Honolulu, Hawaii

(January 1991)

- Description**
- o The City and County of Honolulu is planning a 17.3-mile fixed guideway system stretching from Ewa on the west, through downtown, to Waikiki and the University of Hawaii on the east. The system would be fully grade separated -- mostly elevated but with a 1.3-mile tunnel downtown -- and would utilize driverless trains. The project is estimated to cost \$1.6 billion (year of construction dollars) and to carry 165,000 riders per day in 2005. The preferred alternative includes a 6.3-mile, \$915 million "minimum operable segment" ("MOS") from Middle Street to Waikiki.
- Status**
- o The alternatives analysis phase was completed in 1990 with circulation of a draft environmental impact statement, selection of a preferred alternative, and adoption of a financing plan. The city also issued a Request for Proposals for a possible turnkey contract covering system design, financing, construction, and operation.
  - o UMTA approved the initiation of preliminary engineering in October 1990. One critical issue to be addressed early in PE will be the city's preparation of a satisfactory project management plan (PMP) and structure. The city lacks experience in managing a transit project of this magnitude and complexity. The PMP is needed to demonstrate the city's technical capacity to carry out the project. The PE phase is not expected to be completed before Spring 1992.
  - o Congress earmarked \$11 million for the project in the FY-1991 Conference Report.
- Cost-Effectiveness**
- o Given Honolulu's topography, its development patterns, and the large transit patronage already present in the corridor, a fixed guideway system in the corridor would carry a relatively large number of riders. A transit guideway would have substantial transportation benefits in terms of generating new transit riders and saving travel time for existing riders. However, the project is one of the most costly in the new start pipeline.
  - o According to the alternatives analysis results, the 17.3-mile locally preferred alternative has a cost-effectiveness index of \$9.19, about 50 percent above UMTA's \$6 threshold. The 6.3-mile "MOS" would achieve more than half the benefits of the 17.3-mile project at less than half the cost, yielding a cost-effectiveness index of \$5.19. The 6.3-mile MOS is cost-effective and thus eligible for Section 3 funding.

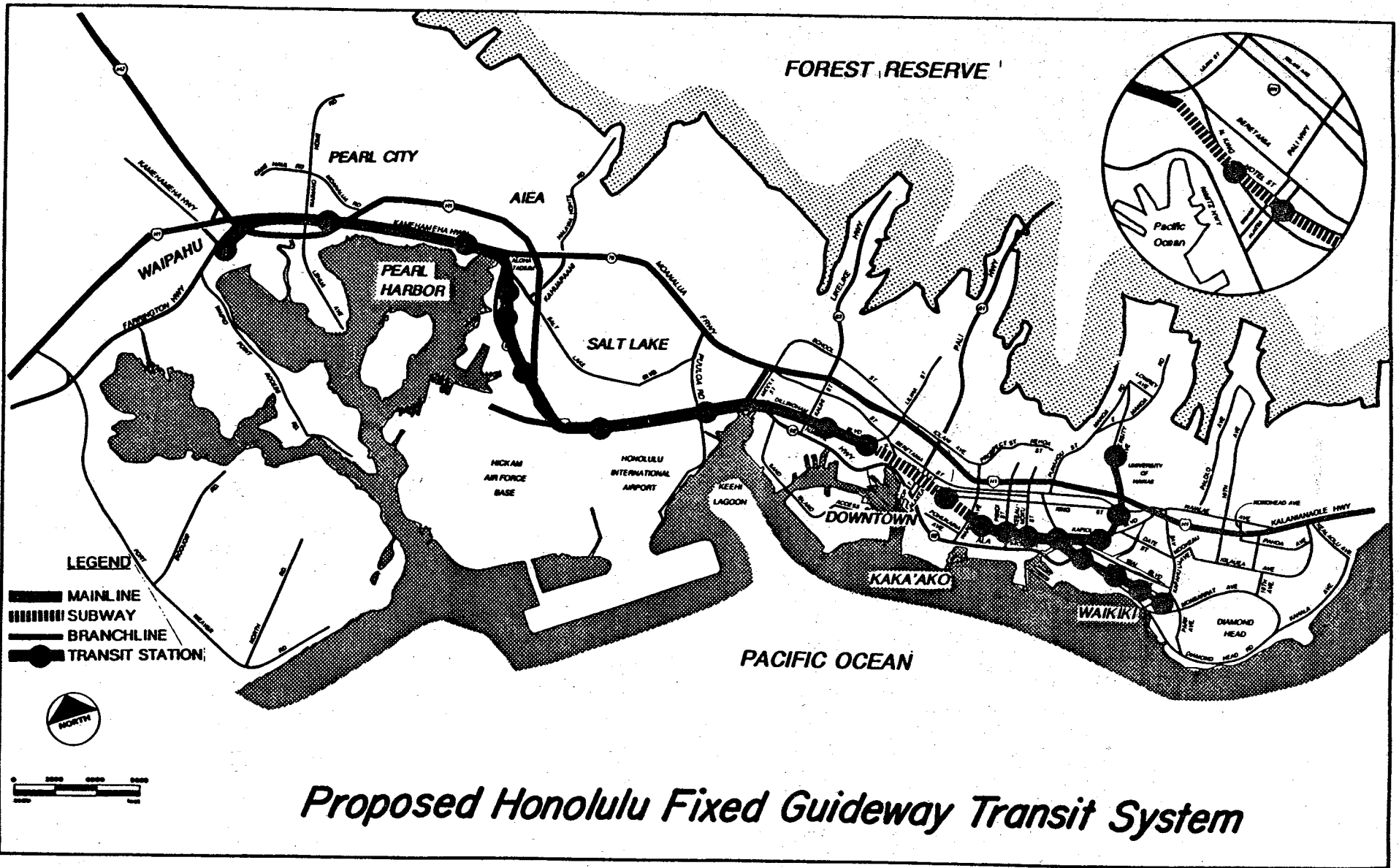
## Rapid Transit Project — Honolulu, Hawaii

### Local Financial Commitment

- o Local and State officials expect to provide 70 percent of the 17.3-mile project's \$1.6 billion capital cost from non-Federal sources. State legislation enacted in 1990 provides two options for financing the non-Federal share. Under one option, the State would provide \$50 million per year for 17 years, or 35 percent of the cost, provided the other 35 percent is raised from city and private sources. As a fallback option, the State legislation authorizes the city to impose a 1/2 percent excise tax for 10 years beginning in 1992.
- o The 30 percent Federal share, or \$485 million, could be directed to the \$915 million "MOS" which meets UMTA's cost-effectiveness threshold.
- o Honolulu's capital finance plan has been given a "medium" rating. The city's transit system is currently in reasonably sound financial condition. The capital finance plan is considered to be realistic, and is based on reasonably conservative assumptions, but offers little margin of safety. Uncertainties in the plan include the amount of private funding to be generated through the RFP process and a final State funding decision.
- o In terms of the stability and reliability of operating assistance, Honolulu's bus system is supported through the city's general appropriations which have provided a dependable source of operating assistance. The bus system is being adequately maintained and replaced through continuing reinvestment. (In 1989, the average age of Honolulu's bus fleet was 8.2 years.)
- o Implementation of rapid transit would lead to a \$27 million (60 percent) increase in the transit system's annual operating deficit. This added burden may be difficult to absorb without a new source of revenue. While the city has the authority, as a general purpose local government, to raise these additional revenues by a variety of means, it has not yet identified a specific revenue source for operations. UMTA is concerned about the size of the added burden that the combined rail and bus system would put on existing revenue sources, as well as the lack of a local decision on a funding source. Pending local decisions on a how to fund the operating deficit, a "low" rating has been assigned.

### Other Rating Factors

- o Air Quality. Honolulu has met the National Ambient Air Quality Standards during the last 3 years. According to the air quality analysis in the draft EIS, implementation of a fixed guideway transit project would reduce regional pollutant emissions by only 1 to 2 percent.



*Proposed Honolulu Fixed Guideway Transit System*

17-3

## PROJECT PROFILE

### Priority Corridor Houston, Texas (January 1991)

- Description
- o Houston METRO recently completed an Alternatives Analysis/ Draft Environmental Impact Statement (AA/DEIS) for its Priority Corridor which traverses downtown Houston, Greenway Plaza, Uptown Galleria and the western suburbs. In addition to the no-build alternative, METRO has analyzed a TSM, "better bus" and a fixed guideway alternative with an estimated capital cost of of \$705 to \$870 million (1988\$). If the fixed-guideway alternative is selected, in addition to the 14-mile segment in the priority corridor, METRO is committed to construct an additional 10-mile portion serving the Texas Medical Center/Astrodome area and the University of Houston/Texas Southern University area in southeast Houston. The total estimated capital cost for this 24-mile system is \$1.1 billion.
- Status
- o The AA/DEIS began circulation in early February 1991. Under the fixed-guideway alternative, METRO is simultaneously evaluating five system proposals received in November 1990, including monorails, guided bus and automated light rail systems. METRO anticipates selecting a locally preferred alternative at the end of March 1991. Should the fixed-guideway alternative be selected, METRO anticipates seeking approval to enter into PE and preparation of the FEIS on one of the five systems proposed.
  - o There is pressure to submit the project to another referendum and the State Legislature may intervene on this issue. Furthermore, residents may force the Board to shift the alignment from a more cost-effective route along Richmond to the Southwest Freeway.
  - o FY 1989, 1990 and 1991 unobligated earmarks for this project are \$49.8, \$64.5 and \$31.8 million respectively for a total of \$146.1 million.
- Cost Effectiveness
- o Cost-effectiveness numbers for year 2005 indicate that the cost per new rider of the fixed guideway alternatives vary between \$6.84 and about \$12 per new rider, placing the proposed project into the questionable cost-effectiveness category. However, the "better bus alternative" would cost about \$3.84 per new rider, which would put it into the cost-effective category.



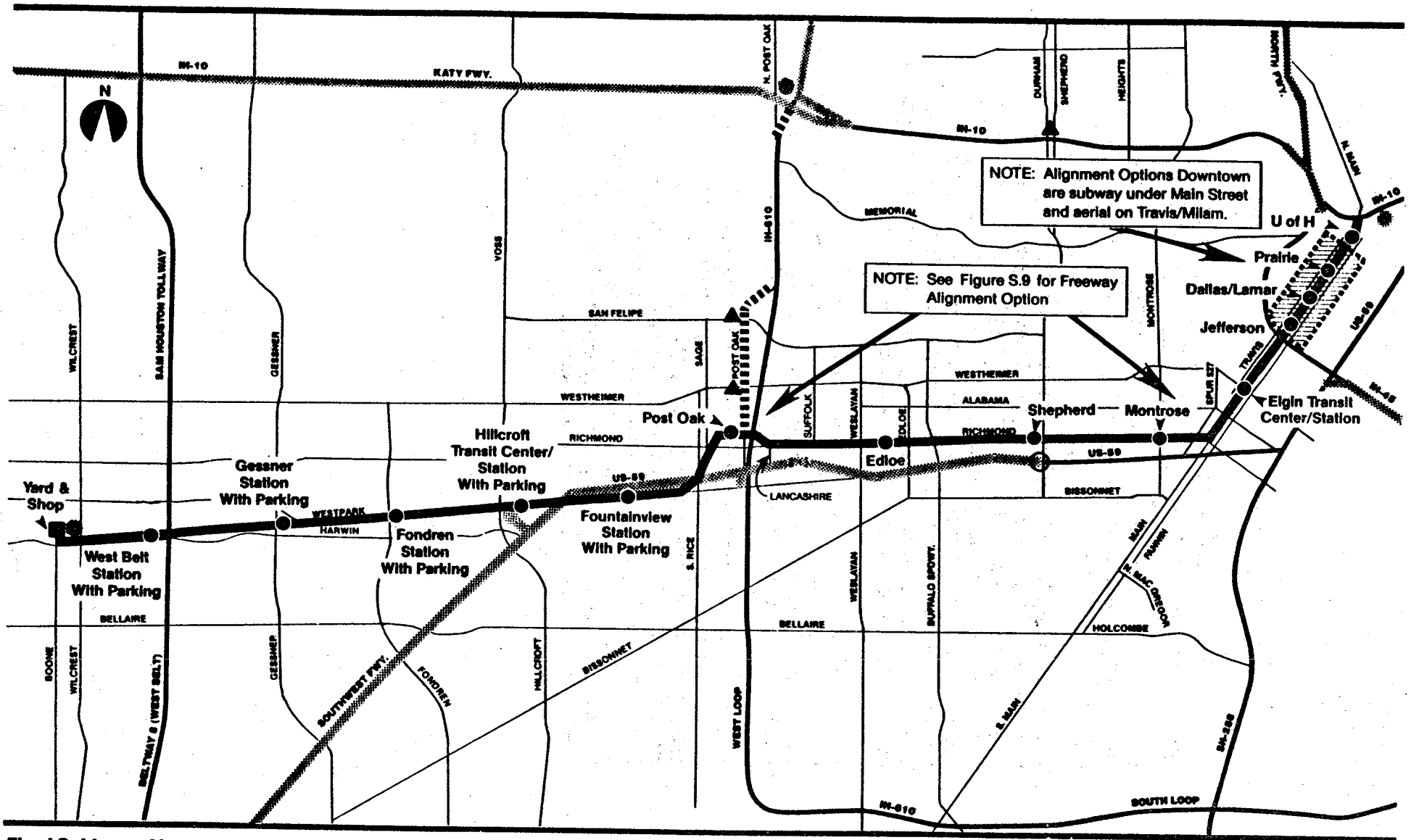
## System Connector - Houston, Texas

### Local Financial Commitment

- o Houston Metro, which is supported by a 1 percent sales tax which generates substantial revenue above that required to operate the existing transit system and meet other capital obligations. METRO has proposed that UMTA fund approximately 50 percent of the cost of the Priority Corridor Project.
- o The Houston capital financing commitment is rated "medium" because Metro's financing plan, includes several assumptions which may be difficult to implement, including a very large increase in the operating ratio (percent of operating costs covered by fares) of the bus system and an assumed the private sector contribution of \$130 million. Nevertheless, even without implementing some of these assumptions, METRO should be able to finance the project.
- o The stability and reliability of financing for future operations is rated "medium". The proposed system can be supported with existing dedicated sources of revenue, but the higher cost alternatives would have smaller margins.

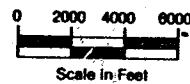
### Other Factors

- o Houston is a "severe" nonattainment area for ozone. The region has until November 2007, to meet the National Ambient Air Quality Standard for that pollutant. The project, because of its low new ridership attraction in comparison to regional auto trips, is expected to reduce air pollutants in the region by less than 0.2% of the region's emissions from mobile sources when compared to the TSM alternative and by less than one percent when compared to the no-build alternative.



**Fixed Guideway Alternative Includes:**

- Fixed Guideway
- Fixed Guideway Station
- Projects Also in TSM Alternative
- No Action Alternative Projects



**Fixed Guideway Alternative  
Corridor Facilities  
Draft Environmental Impact Statement**

## PROJECT PROFILE

### Automated Skyway Express (ASE) Extension Jacksonville, Florida (January 1991)

#### Description

- o This project (phase 1-B) is an 1.8 mile extension by the Jacksonville Transportation Authority (JTA) of the 0.7 mile phase 1-A starter line of the Automated Skyway Express. The extension would consist of an elevated, double track guideway with 6 stations, 12 vehicles and a maintenance yard. The extension consists of two segments. The northern segment extends 0.6 miles from the Central CBD Station to Florida Community College and has two stations. The southern segment extends 1.2 miles across the St. Johns River through the South Bank Business District to St. Johns Place and would include a permanent central maintenance and storage facility and four new stations.
- o The estimated cost to complete the extension is \$135 million (1990\$) which includes \$47 million for the northern leg and \$88 million for the southern leg.
- o The most current projection for ridership for the Phase I (2.5 mile) system was done in 1988. JTA estimates that depending on development and parking assumptions, ridership would range from 38,000 to 51,000 in 2005. The JTA is using 38,000 as their planning estimate. UMTA believes that this estimate is unrealistically high based on actual ridership levels for similar systems in Miami and Detroit. Ridership on the 0.7 mile leg is substantially less than originally anticipated.

#### Status

- o The Phase 1-A segment or "Starter line" opened for revenue service in June 1989 with a 25 cent fare. The line is averaging about 1,600 riders per day who are primarily park and ride patrons that pay a single fee to park in a JTA facility and ride the system. The current ridership is considerably less than the 1990 forecast of 10,000 originally used to justify the system.
- o The final EIS for the 1.8 mile extension was completed in February 1983. An environmental reassessment is being prepared by JTA. JTA has selected a consultant to do the final design work for phase 1-B and UMTA has assigned a project management oversight contract to monitor the work.
- o The Conference Report 100-957 accompanying the FY 1989 DOT Appropriation Act directed the Secretary to revise the existing full funding grant agreement to include the 1.8 mile project. UMTA and JTA negotiations on a contract amendment for construction funding of the north leg of the extension are pending completion of a financial plan called for in the report accompanying the FY 1991 DOT Appropriation Act. Congress earmarked \$14.8 million in FY 1990 and \$14.0 million in FY 1991 for the project.

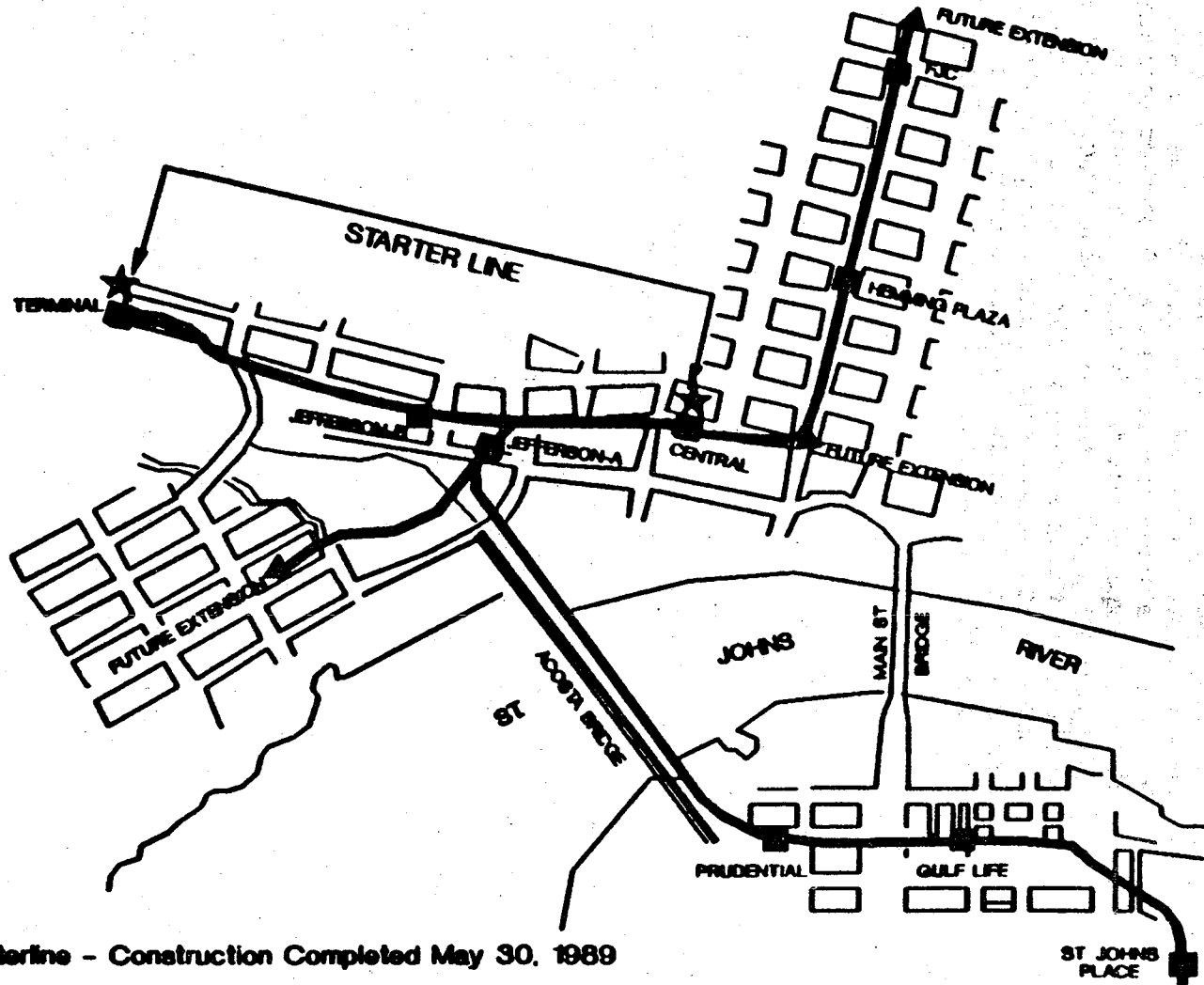
## Automated Skyway Express (ASE) Extension — Jacksonville, Florida

- o UMTA, pursuant to Congressional direction, has transferred \$7 million to FHWA for the widening of the Acosta bridge to accommodate the future construction of the Skyway Express across the St. Johns River.
- Cost-Effectiveness
- o The project predates UMTA's issuance of its Major Capital Investment Policy. UMTA's cost-effectiveness index has not been computed for the project.
  - o In 1983 JTA estimated that 1995 ridership for the 2.5 mile system would be 42,000 per day. The estimate was based on the assumption that significant new development will occur along the alignment. In recent years growth and development in downtown Jacksonville has slowed considerably. In view of this fact, the low ridership on the starter line and the low ridership on the similar Miami Metro Mover (11,000 actual vs. 40,000 projected daily trips) and Detroit (13,000 actual daily trips versus 70,000 projected DPM systems, this estimate is considered very optimistic.
- Local Financial Commitment
- o JTA is proposing the maximum Federal share (75%) resulting in a Section 3 cost of about \$100 million. While the JTA grant request does not specifically contain an overmatch, Jacksonville is providing parking (eligible for federal funding) without requesting federal assistance. For the 0.7 mile segment, this parking element represents approximately 9 percent of total cost. JTA is, however, unable at this time to reach the UMTA administrative objective of 50 percent local funding.
  - o JTA's Capital Financing Plan, per congressional report language, has been recently resubmitted to UMTA and is under review. It is rated "unacceptable" at this time. JTA is in the final design stage and should have firm funding commitments in place. While all funding is not in their account, JTA has commitments for the local funding necessary for the next construction segment. State funding has been provided for the complete project and the City Council has agreed to support the remaining local funds by a resolution. Jacksonville does not have an ongoing dedicated funding source to support its capital program or extensive contingency fund. JTA is dependent upon the city of Jacksonville and the State of Florida for the 25 percent local match. JTA's 1/2 percent sales tax, which went into effect in January 1989, is primarily dedicated to retiring existing highway toll bonds. JTA has no revenue base or taxing power dedicated to transit capital, but intends to seek legislative authority to use the tax for general transportation purposes rather than just highways.

### **Automated Skyway Express (ASE) Extension — Jacksonville, Florida**

- o Once the full 2.5 mile system is in place and operations stabilize for 2 to 3 years, JTA expects to cover operating expense from the system's operating revenue stream. The existing 0.7 mile segment, with only half the planned parking currently available, achieved a first (startup) year operating revenue recovery ratio of 55.3 percent. The JTA's Financial Plan conservatively assumes only a 35 percent recovery ratio in 1991. JTA expects this to increase to a break even basis (100 percent) approximately by the year 2000. While the magnitude of the operating subsidy is relatively small, UMTA considers a 100 percent cost recovery very unrealistic and consequently the operating assistance plan is rated "unacceptable" for a project that is in final design.

# JACKSONVILLE AUTOMATED SKYWAY EXPRESS 2.5 MILE ASE SYSTEM



## PROJECT PROFILE

### Red Line - (MOS-2) Los Angeles, California (January 1991)

- Description
- o The 17-mile, \$3.8-billion Los Angeles Metro Rail Project, known as the Red Line, has been broken into three "minimum operable segments" (MOSs) for funding purposes. The second minimum operable segment, or MOS-2, consists of 6.8 miles of heavy rail with eight stations, all in subway. (The 4.4-mile MOS-1 in downtown Los Angeles has been fully funded.) MOS-2 extends west from the western terminus of MOS-1 at MacArthur Park along Wilshire Boulevard to Vermont Avenue where it branches. One branch continues along Wilshire to Western Avenue, the other branch turns northwest on Vermont to Hollywood Boulevard and terminates near the intersection of Hollywood and Vine.
  - o The estimated cost of MOS-2 is \$1.5 billion (escalated \$).
  - o The 17-mile Metro Rail System is expected to attract 300,000 daily riders by the year 2000. The Los Angeles County Transportation Commission (LACTC) is working on revised Metro Rail System patronage estimates in connection with the Orange Line study.
- Status
- o On April 1990, UMFA signed a Full Funding Grant Agreement (FFGA) for final design and construction of MOS-2 with the Los Angeles County Transportation Commission (LACTC), the major local funding partner. The FFGA for MOS-2 committed \$667 million in Section 3 funds, subject to congressional appropriation, and provided an initial funding increment of \$329.7 million. Congress appropriated an additional \$149.2 million in FY 1991 leaving a balance due of \$188 million.
  - o The project is in final design with construct to start in early 1991.
- Cost-Effectiveness
- o Los Angeles has the highest bus ridership of any bus-only system in the country and has the third highest transit ridership overall. Its freeways are notoriously congested. The Wilshire Avenue corridor carries SCRIP's busiest bus lines, and there are no inexpensive ways to improve bus level's of service.
  - o The STURA Act of 1987 exempted MOS-2 from its cost-effectiveness requirement. Earlier studies had suggested that the Wilshire branch would be cost-effective.
- Local Financial Commitment
- o The Federal share for MOS-1 and MOS-2 together is 50 percent. In addition, IACTC is financing several major transit investments without any Federal assistance. These projects include: the recently completed Blue Line between

## Red Line (MOS-2) - Los Angeles, California

Los Angeles and Long Beach (\$877 million); a planned Blue Line Extension to Pasadena (\$688 million); The Green Line now under construction from Norwalk to El Segundo (\$886 million); a planned Green Line Extension from El Segundo past the Los Angeles International Airport to Westchester (\$215 million); and several planned commuter rail projects.

- o Los Angeles' transit programs benefit from several State and local dedicated revenue resources. The primary local resource is a one half-percent county-wide sales tax, known as Proposition A, which was adopted in 1980. Thirty-five percent of this tax, about \$130 million annually, is dedicated to the construction of a county-wide rail system. An additional one half percent sales tax dedicated to transit related highway improvements was passed in November 1990.
- o In June 1990, funding for public transit in California was greatly enhanced by the passage of three ballot measures, Propositions 111, 116 and 108. Proposition 111 increases the State's motor fuels tax by a total of 9 cents over a 5-year period, providing \$18.5 billion for transportation projects over the next 10 years. Proposition 116, known as the Rail Transportation Bond Act, authorizes \$2 billion in general obligation bonds for rail transportation facilities. Proposition 108, known as the Passenger Rail and Clean Air Act, authorizes an additional \$1 billion in general obligation bonds for the acquisition of right-of-way, rolling stock, and other capital expenditures for urban, commuter, and intercity rail.
- o The revenue from State and local resources are adequate to finance all segments of the Red Line and the operating deficits of the bus and rail systems. UMTA has rated LACTC's capital and operating financing plan for the Red Line "high". However, new elements of the county-wide system currently being planned may require additional resources to construct and maintain.
- o Metropolitan Los Angeles is a non-attainment area for carbon monoxide and ozone. It is unlikely that MOS-2 will have a noticeable effect on pollution levels at the regional scale, although it may have a small positive effect on carbon monoxide levels in the Wilshire corridor. However, it is part of a larger commitment to meeting the goals of the Air Quality Management Plan through the Regional Mobility Plan which includes an extensive network of rail lines, electric bus lines and High Occupancy Vehicle facilities.

Other  
Factors



## PROJECT PROFILE

### Red Line - (MOS-3) Los Angeles, California (January 1991)

- Description
- o The 17-mile, \$3.8-billion Los Angeles Metro Rail Project, known as the Red Line, has been broken into three "minimum operable segments" for funding purposes. The third minimum operable segment, or MOS-3, is approximately six miles in length with three stations, all in subway. MOS-3 extends from the MOS-2 terminus near the intersection of Hollywood Boulevard and Vine Street, through the Santa Monica mountains into North Hollywood. It includes one station in Hollywood and two in North Hollywood.
  - o The estimated cost of MOS-3 is \$1.1 billion (escalated \$).
  - o The 17-mile Metro Rail System is expected to attract 300,000 daily riders by the year 2000. The Los Angeles County Transportation Commission (LACTC) is working on revised Metro Rail System patronage estimates in connection with the Orange Line study.
- Status
- o LACTC has completed all environmental work, most preliminary engineering, and some final design on MOS-3. Construction of MOS-3 is not scheduled to begin before 1994.
  - o Federal funds have not been authorized for MOS-3, and it is not the subject of any negotiations at this time. Any Section 3 funds earmarked for Metro Rail in the next year are expected to fund MOS-2 under a Full Funding Grant Agreement (FFGA) between UMTA and the Los Angeles County Transportation Commission (LACTC).
- Cost-Effectiveness
- o The STURA Act of 1987 exempted MOS-3 from its cost-effectiveness requirement. Earlier studies had suggested that the 17-mile system would be cost-effective.
  - o Los Angeles has the highest bus ridership of any bus-only system in the country and has the third highest transit ridership overall. Its freeways are notoriously congested.
- Local Financial Commitment
- o Non-Federal funding sources account for about 50 percent of the \$2.7 billion being spent on MOS-1 and MOS-2. The local share for MOS-3 has not been established but is expected to be in the range of 50-60 percent.
  - o The Federal share for MOS-1 and MOS-2 together is 50 percent. In addition, LACTC is financing several major transit investments without any Federal assistance. These projects include: the recently completed Blue Line between

## Red Line (MOS-3) - Los Angeles, California

Los Angeles and Long Beach (\$877 million); a planned Blue Line Extension to Pasadena (\$688 million); The Green Line now under construction from Norwalk to El Segundo (\$886 million); a planned Green Line Extension from El Segundo past the Los Angeles International Airport to Westchester (\$215 million); and several planned commuter rail projects.

- o Los Angeles' transit programs benefit from several State and local dedicated revenue resources. The primary local resource is a one half-percent county-wide sales tax, known as Proposition A, which was adopted in 1980. Thirty-five percent of this tax, about \$130 million annually, is dedicated to the construction of a county-wide rail system. An additional one half percent sales tax dedicated to transit related highway improvements was in November 1990.
- o In June 1990, funding for public transit in California was greatly enhanced by the passage of three ballot measures, Propositions 111, 116 and 108. Proposition 111 increases the State's motor fuels tax by a total of 9 cents over a 5-year period, providing \$18.5 billion for transportation projects over the next 10 years. Proposition 116, known as the Rail Transportation Bond Act, authorizes \$2 billion in general obligation bonds for rail transportation facilities. Proposition 108, known as the Passenger Rail and Clean Air Act, authorizes an additional \$1 billion in general obligation bonds for the acquisition of right-of-way, rolling stock, and other capital expenditures for urban, commuter, and intercity rail.
- o The revenue from State and local resources are adequate to finance all segments of the Red Line and the operating deficits of the bus and rail systems. UMTA has rated IACTC's capital and operating financing plan for the Red Line "high". However, new elements of the county-wide system currently being planned may require additional resources to construct and maintain.
- o Metropolitan Los Angeles is a non-attainment area for carbon monoxide and ozone. It is unlikely that MOS-2 will have a noticeable effect on pollution levels at the regional scale, although it may have a small positive effect on carbon monoxide levels in the Wilshire corridor. However, it is part of a larger commitment to meeting the goals of the Air Quality Management Plan through the Regional Mobility Plan which includes an extensive network of rail lines, electric bus lines and High Occupancy Vehicle facilities.

Other  
Factors

## PROJECT PROFILE

### Orange Line (East) Los Angeles, California (January 1991)

- Description
- o The East/West Central Corridor project consists of two separate extensions to the Los Angeles Metro Rail System. The eastern extension, known as the Orange Line (East), would consist of between 7.3 to 8.8 miles of heavy rail and have 3 or 5 stations. Portions of the line may be aerial. The line would run from the eastern terminus of the Red Line at Union Station to a location near the Santa Ana Freeway and Atlantic Avenue in East Los Angeles. Three to five separate alignments will be evaluated during Alternatives Analysis (AA).
  - o The estimated cost for the East/West Central Corridor project is \$2.6 billion. The cost for the eastern extension is about \$970 million (1990\$).
  - o Ridership on the eastern extension have initially been estimated at about 36,000 daily boardings. The corridor meets UMTA's criterion of 15,000 existing daily riders.
- Status
- o The Los Angeles County Transportation Commission (LACTC) and the Southern California Association of Governments (SCAG) have completed a transitional analysis to support their application to begin AA. UMTA expects to receive a formal request to enter AA in early 1991.
- Cost-Effectiveness
- o LACTC has calculated cost-effectiveness for the combined East and West Extensions of the Orange Line. The cost-effectiveness ratings vary between \$9 and \$10 per new rider and depend on the alignment selected. UMTA believes that the cost-effectiveness ratings for the eastern extension alone would be within the AA threshold of \$10.
- Local Financial Commitment
- o The Federal share for MOS-1 and MOS-2 together is 50 percent. In addition, LACTC is financing several major transit investments without any Federal assistance. These projects include: the recently completed Blue Line between Los Angeles and Long Beach (\$877 million); a planned Blue Line Extension to Pasadena (\$688 million); The Green Line now under construction from Norwalk to El Segundo (\$886 million); a planned Green Line Extension from El Segundo past the Los Angeles International Airport to Westchester (\$215 million); and several planned commuter rail projects.

## Orange Line (East) - Los Angeles, California

- o Los Angeles' transit programs benefit from several State and local dedicated revenue resources. The primary local resource is a one half-percent county-wide sales tax, known as Proposition A, which was adopted in 1980. Thirty-five percent of this tax, about \$130 million annually, is dedicated to the construction of a county-wide rail system. An additional one half percent sales tax dedicated transit related highway improvements in November 1990.
- o In June 1990, funding for public transit in California was greatly enhanced by the passage of three ballot measures, Propositions 111, 116 and 108. Proposition 111 increases the State's motor fuels tax by a total of 9 cents over a 5-year period, providing \$18.5 billion for transportation projects over the next 10 years. Proposition 116, known as the Rail Transportation Bond Act, authorizes \$2 billion in general obligation bonds for rail transportation facilities. Proposition 108, known as the Passenger Rail and Clean Air Act, authorizes an additional \$1 billion in general obligation bonds for the acquisition of right-of-way, rolling stock, and other capital expenditures for urban, commuter, and intercity rail.
- o The revenue from State and local resources are adequate to finance all segments of the Red Line and the operating deficits of the bus and rail systems. UMTA has rated LACTC's capital and operating financing plan for the Red Line as acceptable. However, new elements of the county-wide system currently being planned may require additional resources to construct and maintain. This project has not been rated.
- o Metropolitan Los Angeles is a non-attainment area for carbon monoxide and ozone. It is unlikely that any of the alternatives will have a noticeable effect on pollution levels at the regional scale, because such a small percentage of auto trips would be directed to transit. This could, however, help keep the situation from getting worse and may have a small positive effect on carbon monoxide levels in the central corridor. However, it is part of a larger commitment to meeting the goals of the Air Quality Management Plan through the Regional Mobility Plan which includes an extensive network of rail lines, electric bus lines and High Occupancy Vehicle facilities.

Other  
Factors

## PROJECT PROFILE

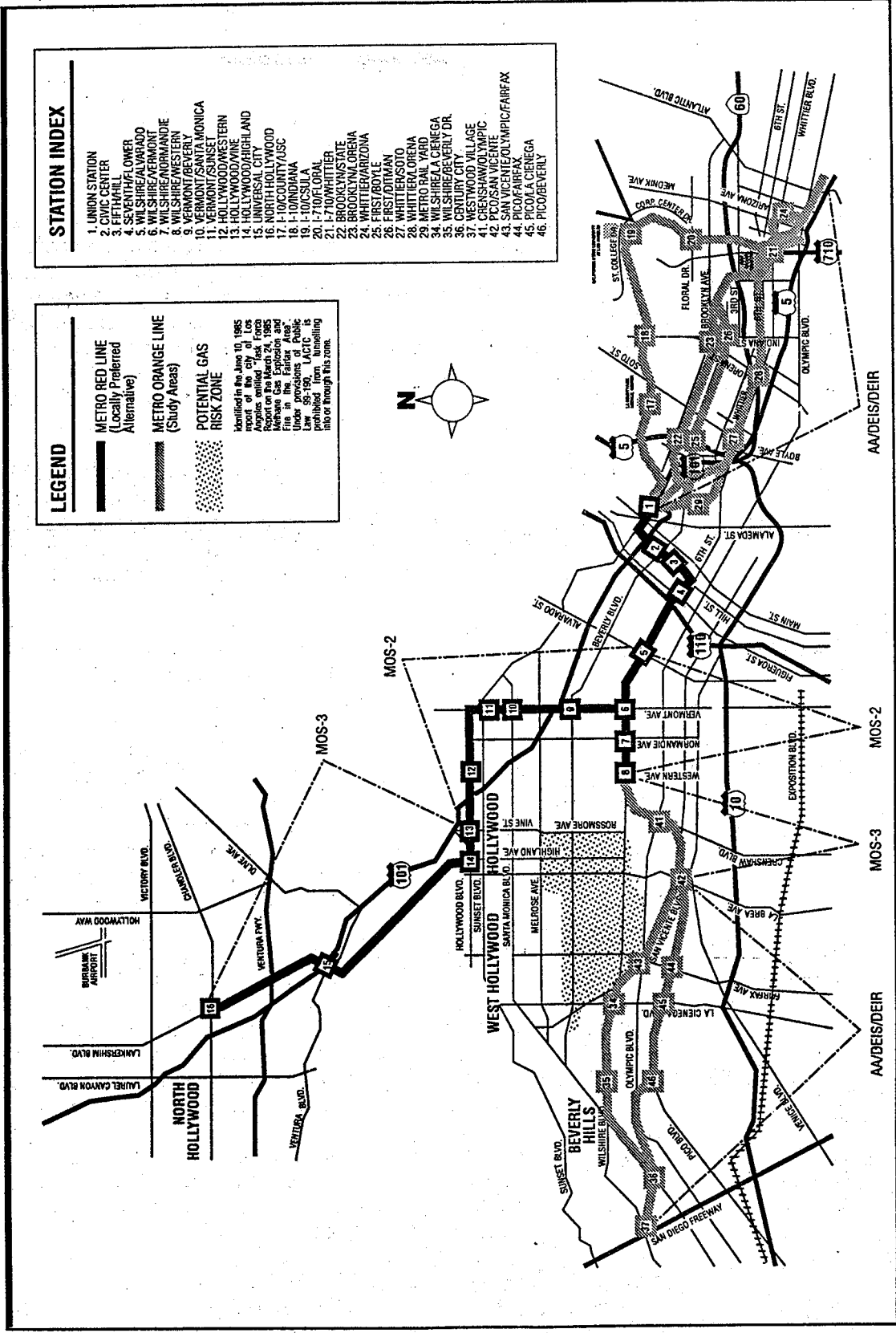
### Orange Line (West) Los Angeles, California (January 1991)

- Description**
- o The East/West Central Corridor project consists of two separate extensions to the Los Angeles Metro Rail System. The western extension, known as the Orange Line (West), would consist of between 7.5 to 9.4 miles of heavy rail and have 5 or 7 stations. Portions of the line may be aerial. The line would run from one of two western stations of the Red Line, Wilshire/Western or Hollywood/Highland, to Westwood near the University of California campus.
  - o The estimated cost for the combined east and west extensions of the Orange Line is \$2.6 billion. The cost for the western extension range from \$1.3 to \$1.6 billion (1990\$).
  - o Ridership for the western extension have been initially estimated at 92,000 daily boardings. The corridor meets UMTA's criterion of 15,000 existing daily riders.
- Status**
- o The Los Angeles County Transportation Commission (LACTC) and the Southern California Association of Governments (SCAG) have completed a transitional analysis to support their application to enter AA. UMTA expects to receive a formal request to initiate the AA in early 1991.
- Cost-Effectiveness**
- o LACTC calculated the cost-effectiveness of the combined East and West extensions of the Orange Line. This analysis showed cost-effectiveness ratings varying between \$9 and \$10 per new rider depending on the alignment selected. UMTA believes that the cost-effectiveness of the western extension alone would be within the \$10 threshold to enter AA.
- Local Financial Commitment**
- o The Federal share for MOS-1 and MOS-2 together is 50 percent. In addition, LACTC is financing several major transit investments without any Federal assistance. These projects include: the recently completed Blue Line between Los Angeles and Long Beach (\$877 million); a planned Blue Line Extension to Pasadena (\$688 million); The Green Line now under construction from Norwalk to El Segundo (\$886 million); a planned Green Line Extension from El Segundo past the Los Angeles International Airport to Westchester (\$215 million); and several planned commuter rail projects.

## Orange Line (West) - Los Angeles, California

- o Los Angeles' transit programs benefit from several State and local dedicated revenue resources. The primary local resource is a one half-percent county-wide sales tax, known as Proposition A, which was adopted in 1980. Thirty-five percent of this tax, about \$130 million annually, is dedicated to the construction of a county-wide rail system. An additional one half percent sales tax dedicated to both highway and transit construction and operation was passed in the spring of 1990.
- o In June 1990, funding for public transit in California was greatly enhanced by the passage of three ballot measures, Propositions 111, 116 and 108. Proposition 111 increases the State's motor fuels tax by a total of 9 cents over a 5-year period, providing \$18.5 billion for transportation projects over the next 10 years. Proposition 116, known as the Rail Transportation Bond Act, authorizes \$2 billion in general obligation bonds for rail transportation facilities. Proposition 108, known as the Passenger Rail and Clean Air Act, authorizes an additional \$1 billion in general obligation bonds for the acquisition of right-of-way, rolling stock, and other capital expenditures for urban, commuter, and intercity rail.
- o The revenue from State and local resources are adequate to finance all segments of the Red Line and the operating deficits of the bus and rail systems. UMTA has rated LACTC's capital and operating financing plan for the Red Line as acceptable. However, new elements of the county-wide system currently being planned may require additional resources to construct and maintain. This project has not been rated.
- o Metropolitan Los Angeles is a non-attainment area for carbon monoxide and ozone. It is unlikely that any of the alternatives will have a noticeable effect on pollution levels at the regional scale, because such a small percentage of auto trips would be directed to transit. This could, however, help keep the situation from getting worse and may have a small positive effect on carbon monoxide levels in the central corridor. However, it is part of a larger commitment to meeting the goals of the Air Quality Management Plan through the Regional Mobility Plan which includes an extensive network of rail lines, electric bus lines and High Occupancy Vehicle facilities.

### Other Factors



**STATION INDEX**

1. UNION STATION
2. CIVIC CENTER
3. SOUTH MAIN
4. SEVENTH/LOWER
5. WILSHIRE/ALVARADO
6. WILSHIRE/ARMONDT
7. WILSHIRE/NORMANDIE
8. WILSHIRE/WESTERN
9. VERMONT/BEVERLY
10. VERMONT/SANTA MONICA
11. VERMONT/SUNSET
12. HOLLYWOOD/WESTERN
13. HOLLYWOOD/VINE
14. HOLLYWOOD/HIGHLAND
15. HOLLYWOOD/ROSELAND
16. NORTH HOLLYWOOD
17. I-10/COUNTY/USC
18. I-10/INDIANA
19. I-10/CSULA
20. I-710/FLORAL
21. I-710/WHITTIER
22. BROOKLYN/STATE
23. BROOKLYN/LORENA
24. WHITTIER/ARIZONA
25. FIRST/BOYLE
26. FIRST/DITMAN
27. WHITTIER/SOHO
28. METRO/CALIFORNIA
29. METRO/SALVADOR
30. WILSHIRE/LA CENEGA
31. WILSHIRE/BEVERLY DR.
32. CENTURY CITY
33. WESTWOOD VILLAGE
34. CRENSHAW/OLYMPIC
35. SAN VICENTE
36. PICOP/FAIRFAX
37. PICOP/LA CENEGA
38. PICOP/BEVERLY

**LEGEND**

- METRO RED LINE (Locally Preferred Alternative)
- METRO ORANGE LINE (Study Areas)
- POTENTIAL GAS RISK ZONE

Identified in the June 10, 1985 report of the city of Los Angeles on the March 24, 1985 Methane Gas Explosion and Fire in the Fairfax Area. Under existing conditions, public use of the LACTC is prohibited from tunnelling into or through this zone.



LOS ANGELES COUNTY  
TRANSPORTATION COMMISSION

**METRO RED &  
ORANGE LINES**

ALTERNATIVES ANALYSIS  
SOURCE: LACTC CENTRAL AREA TEAM

SCALE: 1 INCH = 1 MILE

DATE: DECEMBER 1990

## PROJECT PROFILE

### Main St. Trolley Memphis, Tennessee (January 1991)

- Description
- o The initial project consists of a 2.5 mile light rail trolley system along Main St. in downtown Memphis in an effort to revitalize the downtown and put new life in the ten block Mid American Mall. Ultimately, Memphis Area Transportation Authority (MATA) hopes to ultimately extend the project in a loop down to the riverfront, run along existing railroad tracks and then run back to Main St., a distance of 5.2 miles. The 10 vehicles needed for the project are to be donated by the private sector.
  - o The initial segment is estimated to cost \$37 million and carry about 3200 daily riders. MATA intends to use \$25 million in Interstate transfer funds, \$2.8 million in Section 9 funds and \$9.3 million in local funds including \$3 million from the private sector to finance the 2.5 mile project.
- Status
- o The project is in final design with construction scheduled to begin in 1991. Work is being monitored by a project management oversight contractor.
  - o Through the end of FY 1990 UMTA has granted \$11.7 million in Interstate Transfer funds for the project. An additional \$12.3 million was earmarked by the Congress in FY 1991 leaving a balance of \$1.4 million in interstate transfer funds available. As a condition of the grant approval MATA has agreed to build the project with their formula funds and not to seek any Section 3 discretionary funding.
- Cost-Effectiveness
- o MATA did not follow a traditional approach in calculating UMTA's cost-effectiveness index for the project. However, UMTA accepted MATA's method as reasonable based on the nature and magnitude of the project and the funding sources. The estimated cost-effectiveness index was a marginal total cost per marginal transit trip of \$7.69, far in excess of UMTA's threshold for a project of this type.
- Local Financial Commitment
- o The capital financial plan for the project was rated "acceptable" with the City and State splitting the local matching requirements and the private sector "committed" to provide funding for the rail vehicles.
  - o The stability and reliability of MATA's operating assistance plan is rated "acceptable." The project with an estimated operating and maintenance cost of \$1 million will have a slight impact on MATA's \$21 million operating budget. A special taxing or benefit assessment district is proposed to be established with proceeds used to cover the operating cost of the trolley system.

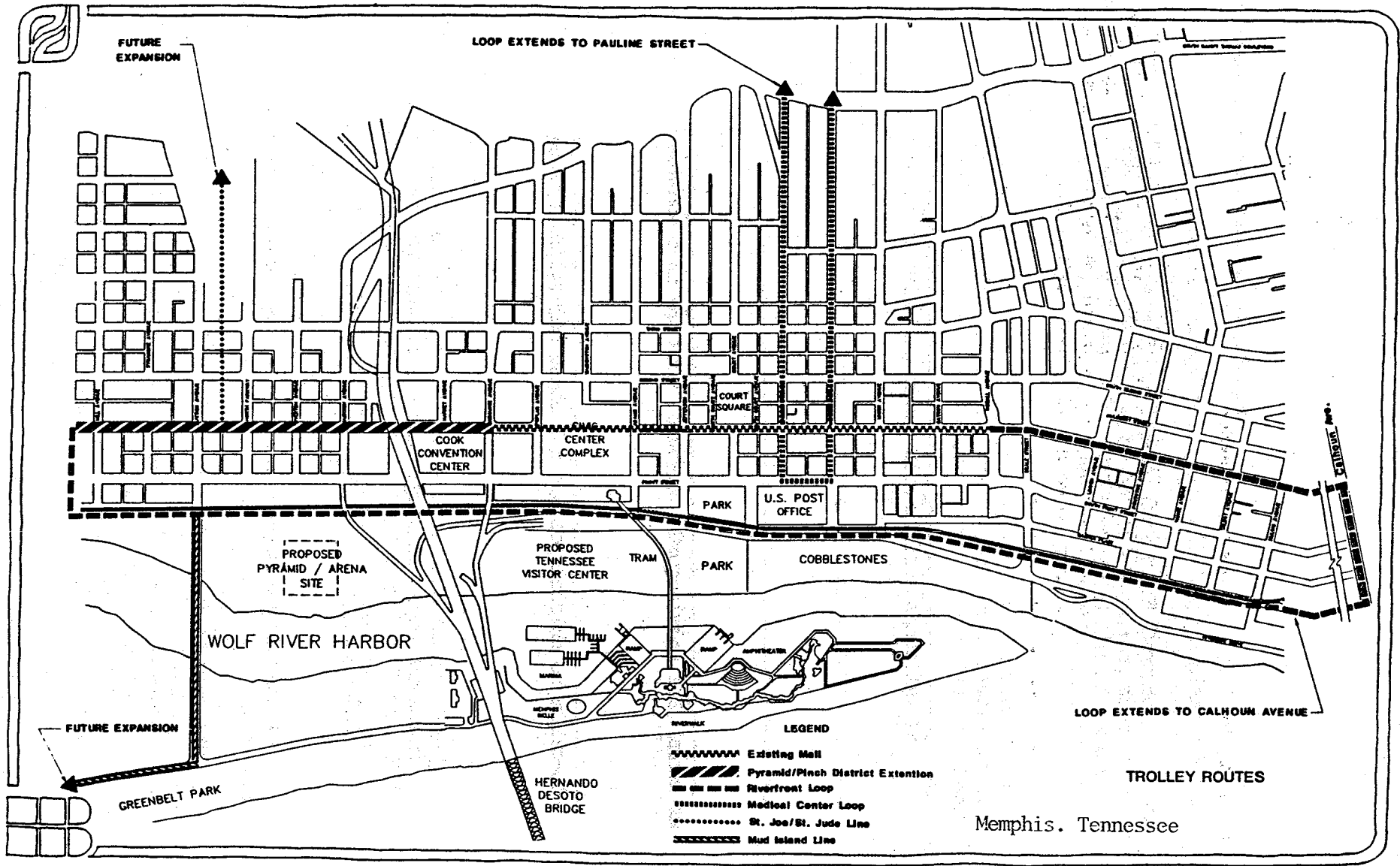


**Main St. Trolley — Memphis, Tennessee**

Other  
Factors

- o Memphis is a "moderate" nonattainment area for ozone. The Region has until November 1996, to meet EPA's air quality standard. This project will have no impact on regional air quality as virtually none of its riders are forecast to be diverted from automobiles.

B-60



## PROJECT PROFILE

### Metromover Legs

Miami, Florida

(January 1991)

- Description
- o The Metro-Dade Transit Agency will be adding two extensions to its automated guideway system, the Metromover, which circles downtown Miami. The north extension, 1.4 miles in length, would connect downtown to hotels and a shopping mall in the Omni area. The 1.1 mile south extension will connect office developments in the Brickell area with downtown.
  - o The two legs are estimated to cost \$248 million, of which \$186 million (75 percent) is to come from Section 3.
- Status
- o At the direction of Congress, UMTA signed a full funding contract with the MDTA in May, 1989.
  - o Final design is nearly complete and MDTA is planning a groundbreaking in April, 1991.
  - o Congressional earmarks (thru 1991) total \$175 million, of which \$115 million has been obligated. The balance remaining to be appropriated under the FFGA is \$11.3 million.
- Cost-Effectiveness
- o The MDTA projects that the Metromover legs will increase transit ridership by 5200 trips per day. Some 72 percent of the new riders will be taking short trips within the downtown. Existing Metrorail riders will save, on average, 2.8 minutes per trip, while existing bus riders would experience a 0.6 minute increase in travel time.
  - o The cost-effectiveness index for the legs is \$15.20 per new transit rider which is much higher than other UMTA-funded new starts, especially when viewed on a passenger-mile basis. Most of the new riders will be taking very short trips entirely within the downtown.
- Local Financial Commitment
- o State and local funding provides 25 percent of the project's capital costs. The local share is being provided by the State (\$30 million), a benefit assessment district (\$23 million), and the City of Miami (\$7 million).
  - o The capital finance plan is rated "acceptable" as all capital funding is in place.

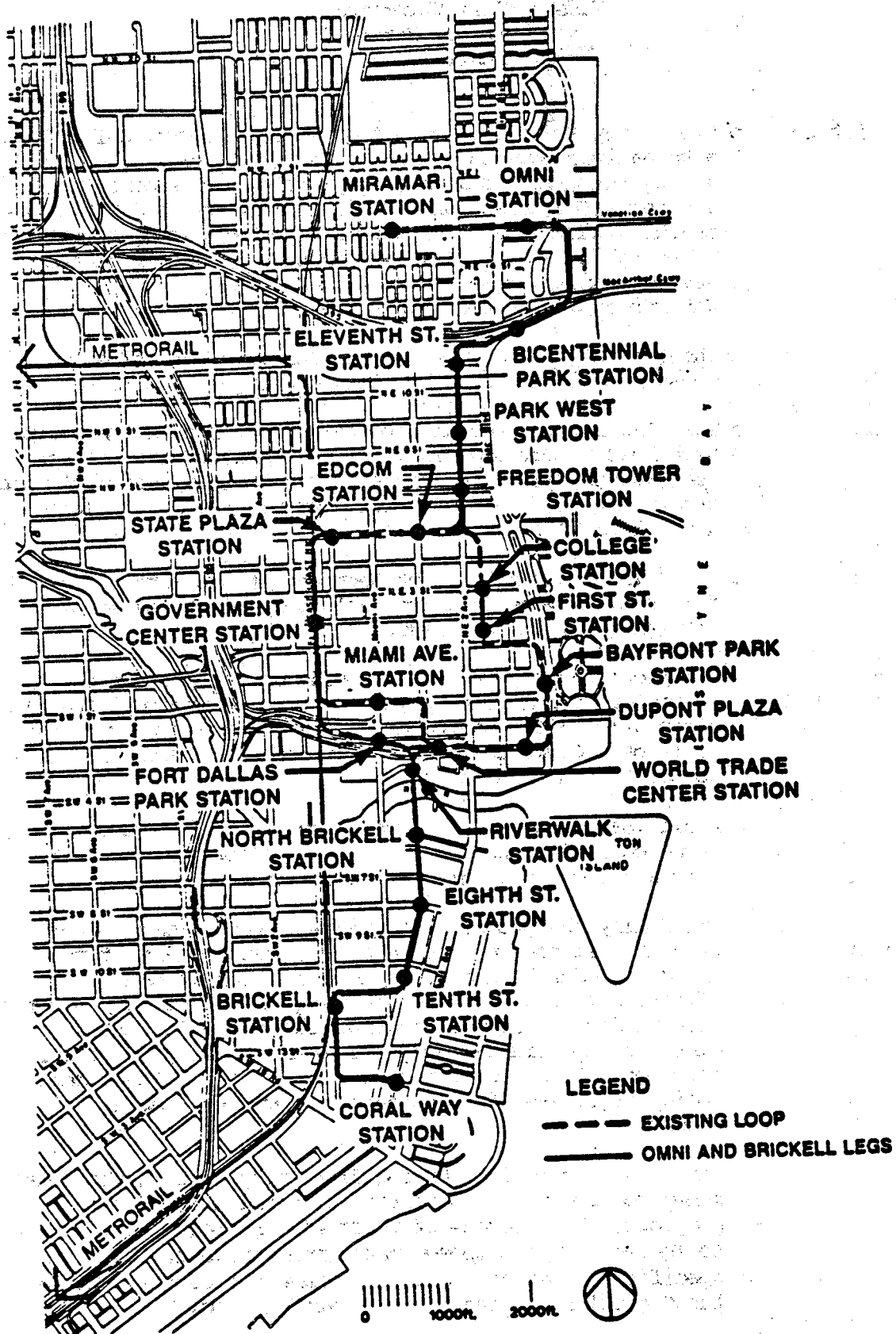
## **Metromover Legs - Miami, Florida**

- o Miami has not established a stable and reliable funding source for transit. In recent years, the area has scaled back its bus system to reduce subsidy requirements. This is one reason why ridership on the Metrorail system is about 25 percent of projections. The Metromover legs will increase transit subsidy requirements by \$1.8 Metromover Legs -- Miami, Florida million per year. A November 1990 referendum to establish a 1 percent sales tax for transit was soundly defeated. Miami's bus system is being adequately maintained and replaced through continuing reinvestment. (In 1989, the average age of the MDTA's bus fleet was 6.2 years.)

## **Other Rating Factors**

- o Air Quality. The Miami-Ft. Lauderdale region is an EPA non-attainment area for ozone. Construction of the Metromover Legs would have no effect on ozone levels, but could very slightly reduce carbon monoxide concentrations in downtown Miami.

Miami: Metromover Legs



## PROJECT PROFILE

### Hudson River Waterfront Northern New Jersey (January 1991)

- Description**
- o New Jersey Transit is studying several busway, AGT and LRT alternatives between a massive park-and-ride lot on the New Jersey Turnpike and Jersey City. The most expensive alternative consists of 9.5 miles of busway and 9.0 miles of LRT with 6.5 miles of overlapping LRT/busway operation. These options would serve the massive amount of planned development and redevelopment along the Hudson River Waterfront across from Manhattan.
  - o The capital cost of the most expensive alternative being considered is about \$1 billion (escalated \$).
- Status**
- o The AA was initiated in November 1988. Scoping meetings were held in November 1989. Since then, NJ Transit has been working with developers on right-of-way easements and other issues. The study will probably not be complete until late 1991.
  - o In FY 1991, \$20 million of Section 3 funds were earmarked for TSM improvements which would complement any major investment ultimately made.
- Cost-Effectiveness**
- o The proposed project would provide guideway transit service to the waterfront, would provide internal transit circulation along the waterfront and would connect with NJ Transit Commuter service at Hoboken and with PATH trains to Newark and Manhattan.
  - o Preliminary and conservative calculations indicate that the proposed project would be less than \$6 per new transit trip and thus meet UMTA's cost-effectiveness threshold.
- Local Financial Commitment**
- o Originally the project was proposed for private sector funding. It now appears that NJ Transit will want to maximize Federal financial participation, though significant private sector participation in this project is possible in the form of transportation development districts and right-of-way easements. A proposed local match of only 25 percent would be well below the Federal policy objective of 50 percent or more non-Federal funding.
  - o New Jersey Transit is having difficulty finding the local money to fund the construction of committed modernization projects. New sources of funds will be required in order to implement the proposed Waterfront project. Since no specific sources of local funds have yet been identified, the Capital Financing Plan is rated as "low."

**Hudson River Waterfront — Northern New Jersey (continued)**

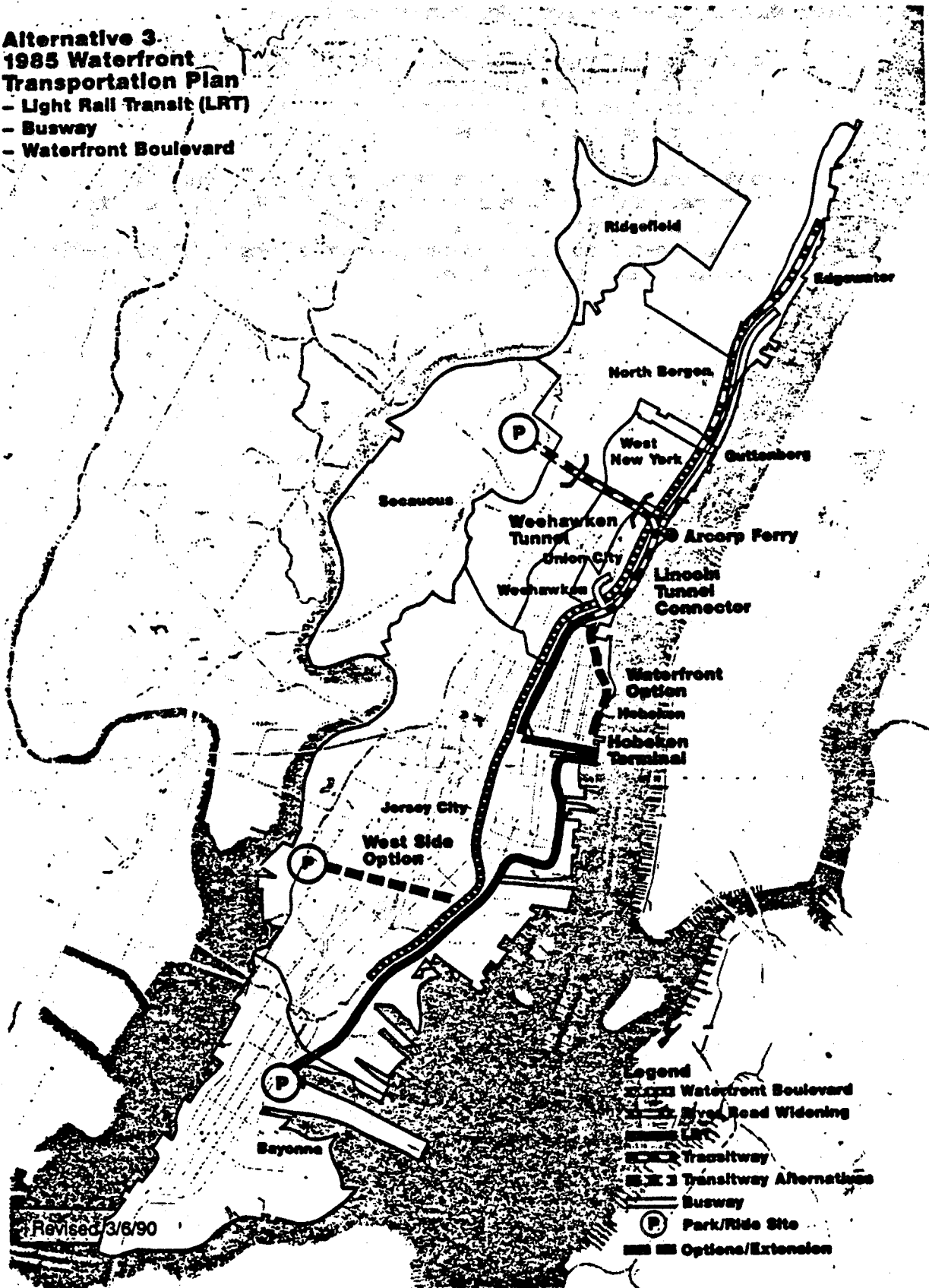
o The stability and reliability of operating assistance for an expanded system is rated "medium" because, despite its current financial difficulties, NJ Transit has a good history of funding transit service.

**Other  
Factors**

o Northern New Jersey is a "severe" nonattainment area for ozone. The region has until November 2007, to meet the National Ambient Air Quality Standard for that pollutant. The impact, of the proposed project on regional air quality is not known at this time.

Northern New Jersey Hudson River Waterfront

**Alternative 3  
1985 Waterfront  
Transportation Plan**  
 - Light Rail Transit (LRT)  
 - Busway  
 - Waterfront Boulevard



Revised 3/6/90



PROJECT PROFILE

**Newark Air Link**  
Newark/Elizabeth, New Jersey  
(January 1991)

- Description**
- o The Cities of Newark and Elizabeth have proposed an eight mile long Automated Guideway Transit (AGT) system connecting the downtowns of those two cities by way of Newark International Airport. Preliminary capital costs are over \$400 million (1987 \$) including an airport circulator.
  - o The original proposal assumed significant private sector financing of the project and no Federal construction funding.
  - o A locally developed ridership estimate indicated that in 1995 the proposed project could carry almost 40,000 riders a day.
- Status**
- o In December 1989, UMTA made a two million dollar grant to support further planning work on the proposed project. The work will be divided into two phases. The first phase will consist of a detailed exploration of private sector financing possibilities and related planning and engineering. If it is found that the available private, State and local funding is not sufficient to construct and operate the proposed system, and if UMTA concurs, the second phase will be an Alternatives Analysis to support a request for Federal funding.
  - o In FY89 and FY90, \$2 million and \$5 million have been earmarked, respectively by Congress for the project.
- Cost-Effectiveness**
- o The primary goal of the proposed project stated by local officials is to attract new development and jobs to the Newark, Newark Airport and Elizabeth areas.
  - o Cost-effectiveness data have not yet been developed, though earlier planning work by the NY-NJ Port Authority suggested that the project would provide little transportation benefit.
- Local Financial Commitment**
- o The project was originally proposed to be non-Federally funded. It is not clear at this time how much Federal money will be requested. There is private sector interest in this proposed project, and some private sector funding can be expected.

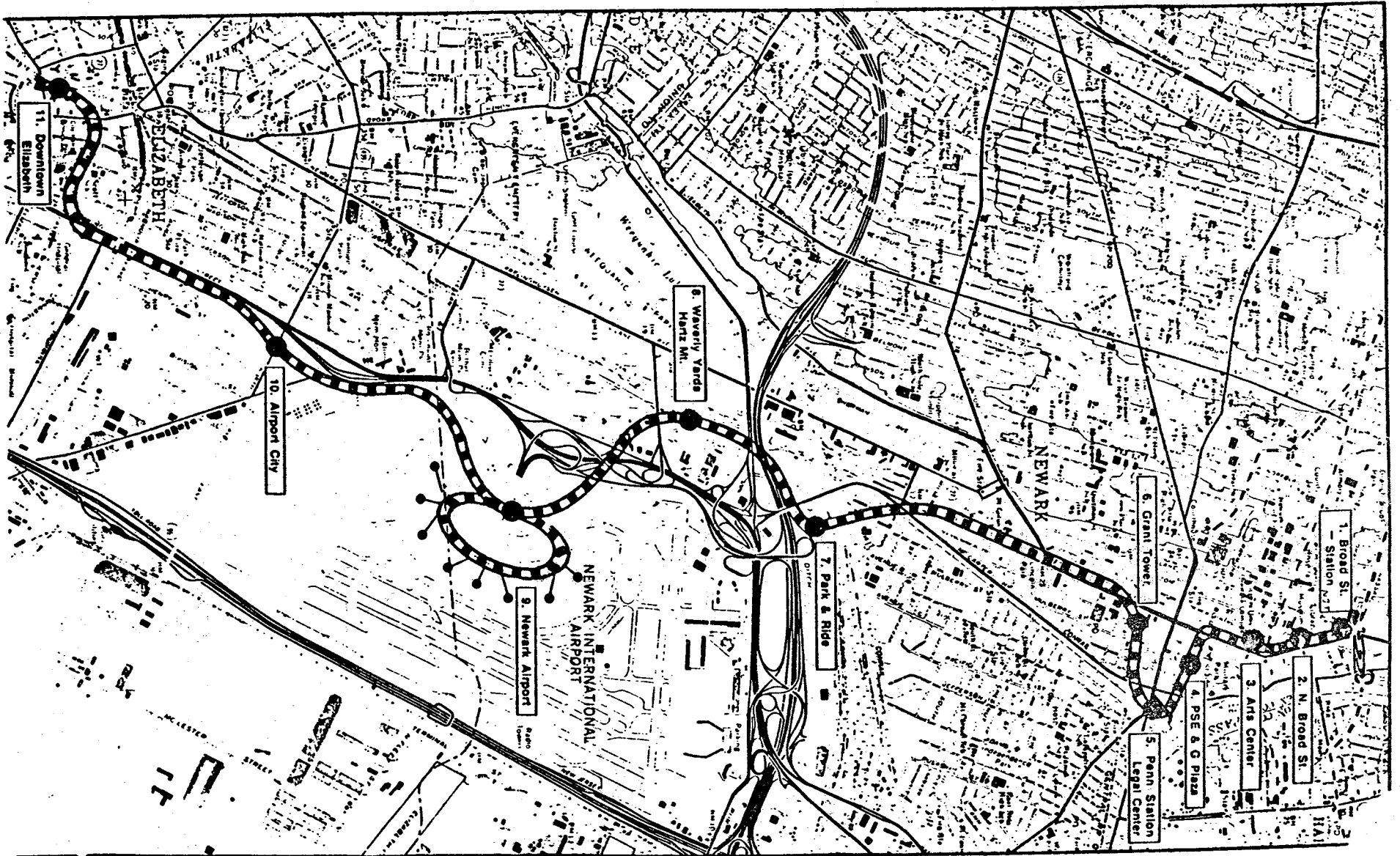
### **Air Link - Newark, New Jersey**

- o It is not clear how this project would be funded, since New Jersey Transit is having difficulty funding other major projects. Therefore the Capital Financing Commitment is rated "low."
- o New Jersey Transit is having difficulty finding sufficient state and local funds to operate their existing systems without service cuts and fare increases, but may not be the operator of the proposed system. Information on the stability and reliability of operating assistance is unavailable and no rating is shown.

### **Other Factors**

- o Newark is a "severe" nonattainment area for ozone. The region has until November 2007, to meet the National Ambient Air Quality Standard for that pollutant. At this point, it is not possible to ascertain if the proposed project would have any impact on air quality in the region.

Northern New Jersey Newark Air Link



PROJECT PROFILE

**Queens Local/Express Connection**

New York, New York

(January 1991)

- Description
- o The Queens Local/Express Connection would relieve overcrowding on the Queens Boulevard subway lines by diverting service to the recently opened 63rd Street Tunnel.
  - o Construction costs would include about one-quarter mile of new tunnel, a significant amount of track, signal work and real estate at a cost of \$645 million (escalated dollars).
- Status
- o The NYCTA completed a supplemental DEIS and AA in May 1990, and UMTA approved initiation of PE and the FEIS in December 1990.
- Cost-Effectiveness
- o The project would relieve severe overcrowding on the Queens Boulevard Lines by improving utilization of the East River tunnel capacity to and from Manhattan.
  - o Updated cost-effectiveness data indicates that the project passes UMTA's "cost per hour of user benefit" cost-effectiveness threshold. The "cost per hour" index is an alternative to the "cost per new trip" index.
- Local Financial Commitment
- o The MTA is expected to ask UMTA for less than 50 percent of the project's cost. It also has a very large locally funded capital program. The MTA plans to fund final design for the Queens project (\$33 million) without any Federal assistance. New York's financial commitment is consistent with the Federal policy objective of 50 percent or more non-Federal funding.
  - o The draft capital plan for 1992-96, which includes local money for 50 percent of the \$612 million (escalated) cost of construction and property acquisition, is currently before the MTA Board. Although the cost of vehicles was included in the cost-effectiveness calculation, the funding for additional rail vehicles has not been programmed during the next five years. The large increase in the capital cost estimate over previous years will require more local funds for this project, and could result in delays for other locally funded improvements to the system. However, significant progress has been made to bring assets to a good state of repair. It is likely that many of the funding sources used in the last 5-year plan will again be in place in the new plan, and the capital financing plan has accordingly been rated as "high."

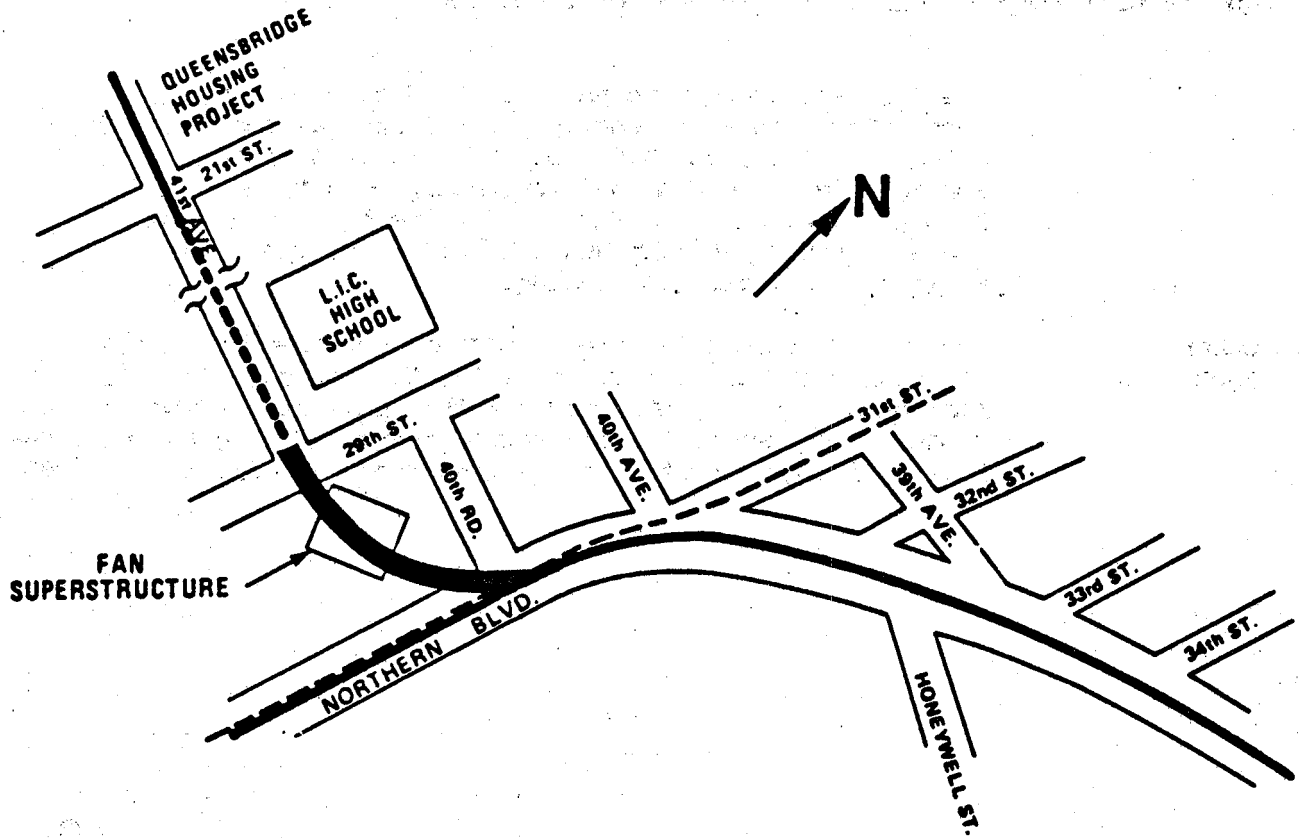
**Queens Local/Express Connection — New York, New York**



- o The City and State have an array of dedicated taxes supporting both an extensive capital program and operating deficits. Although this project will not have an appreciable impact on their operating budget, money has become tight, and cut backs in service have been proposed. Therefore the stability and reliability of operating assistance is rated as "medium."

**Other  
Factors**


- o New York City is a "severe" nonattainment area for ozone. The region has until November 2007, to meet the National Ambient Air Quality Standard for that pollutant. The project, because it has few "new" riders, is expected to have an insignificant impact on regional air quality.

New York Queens Local Connection



EXISTING  SUBWAY  
 ELEVATED

EXISTING TUNNEL NOT UTILIZED  SUBWAY

PROPOSED CONNECTION  SUBWAY

(SKETCH NOT DRAWN TO SCALE.)

NEW YORK CITY TRANSIT AUTHORITY  
QUEENS BOULEVARD SUBWAY LINE CONNECTION  
SUPPLEMENTAL DRAFT EIS

PROJECT AREA

MAY 1990

## PROJECT PROFILE

### I-405/SR55 Transitway and Direct Access HOV Ramps Orange County, California (January 1991)

- Description
- o The Orange County Transit District (OCTD) and the California Department of Transportation (Caltrans) are constructing HOV lanes on a number of Orange County freeways including I-5, I-405, SR-55, and SR-57. OCTD is performing an alternatives analysis to evaluate the construction of short sections of barrier-separated transitway in the medians of I-405 and SR-55, exclusive HOV connections between the transitways on both freeways, and HOV ramps between the transitways and adjacent activity centers. TSM and No Build alternatives are also being considered.
  - o The capital cost of the transitway segments and direct access ramps is estimated to be \$213 million (escalated dollars). The proposed project also includes park-and-ride lots (\$34 million) and bus acquisition (\$15 million). The total cost of the project is \$262 million.
- Status
- o The OCTD is performing alternatives analysis and preliminary engineering. There are only two build alternatives under consideration, and since these are limited in scope, the analysis is straightforward. The OCTD's schedule anticipates the completion of alternatives analysis and preliminary engineering by the Summer of 1991, following which OCTD plans to submit a capital grant application.
- Cost-Effectiveness
- o The direct access ramps and exclusive HOV connections are designed to save travel time and increase safety for buses and other high-occupancy vehicles. Without the ramps, buses and other high occupancy vehicles must weave across the congested general traffic lanes to enter and leave the HOV lanes.
  - o The OCTD has calculated a preliminary cost-effectiveness index of \$4.35 per new trip, which would make the project one of the most cost-effective projects in the new starts pipeline. The underlying estimates of costs and ridership are subject to change as a result of UMTA review and further local analyses. Nevertheless, UMTA expects that the project will prove to be cost-effective.

## Central Corridor -- Orange County, California

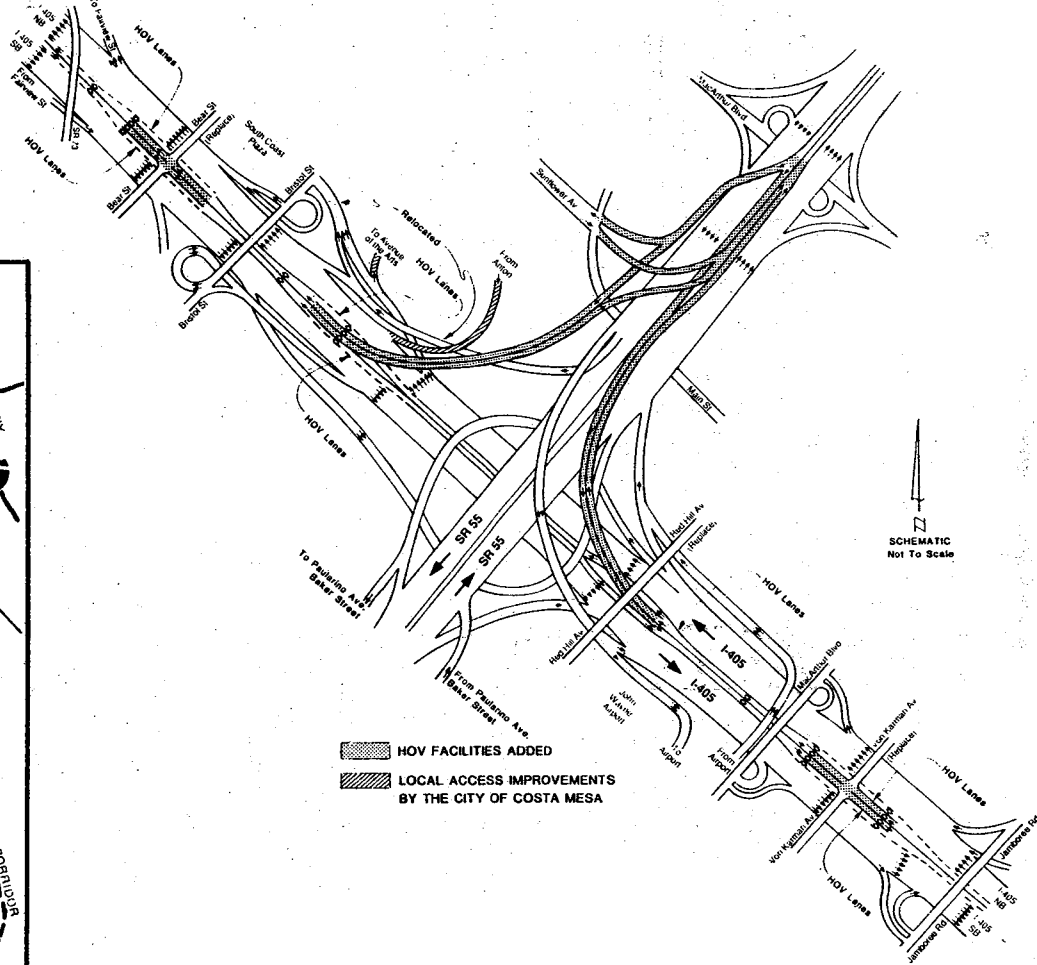
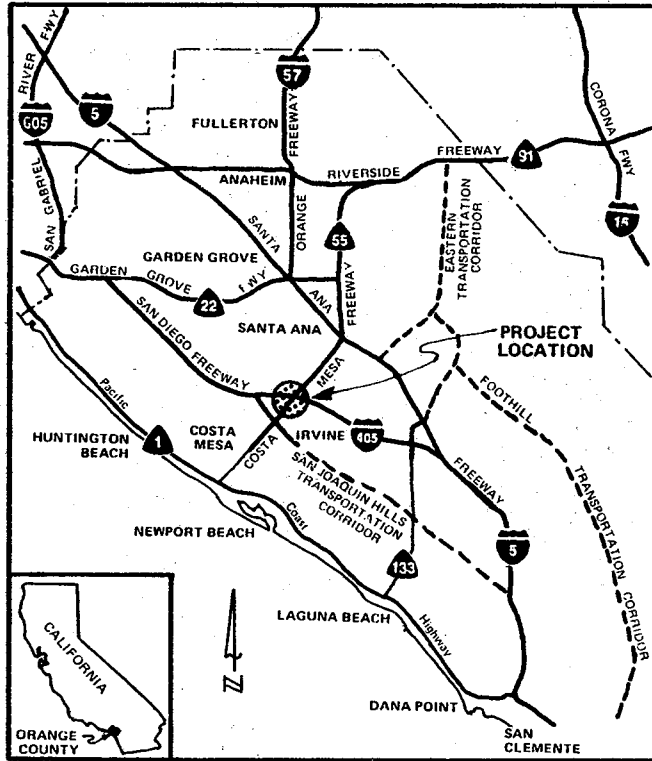
### Local Financial Commitment

- o Orange County is proposing a 75 percent Federal share for this particular project. If the project is viewed as part of a 20-year local/State effort to build HOV lanes and transitways on Orange County freeways, the Federal share is only 38 percent. Local funding levels and/or the scope of the project would need to be reconsidered if the reauthorization bill changes the Section 3 matching ratio.
- o The capital financing plan is rated "medium". In November 1990, county voters passed "Measure M" which establishes a 1/2 cent local sales tax dedicated to highway and transit construction. The measure included \$125 million for the transitway program, specifically including this project. Orange County's financing plan, submitted in December 1990, is under review by UMTA and a number of questions will need to be resolved.
- o In terms of the stability and reliability of operating revenues, a "medium" rating has been given. The OCTID's operations are supported by general revenues, which are extremely stable and growing rapidly. The OCTID system is being adequately maintained and replaced through continuing reinvestment. (In 1989, the average age of OCTID's bus fleet was 7.8 years.) The OCTID's preliminary assessment of financial feasibility found that revenues are sufficient to fund O&M costs, including the costs attendant to system expansion, through 2010.

### Other Factors


- o Air Quality. Southern California is a nonattainment area for transportation pollutants. Implementation of this project is not likely to have a noticeable effect on pollution levels at the regional or local level because of the extremely small percentage of auto trips which would be diverted.





**BASMACIYAN-DARNELL, INC.**  
 Barton-Achman Associates, Inc.  
 DKS Associates  
 Myra L. Frank & Associates  
 Parsons Brinckerhoff Quade & Douglas, Inc.  
 Sharon Greene and Associates

**CENTRAL COUNTY  
 TRANSPORTATION CORRIDOR  
 ORANGE COUNTY TRANSIT DISTRICT  
 TRANSITWAY ALTERNATIVES ANALYSIS/  
 ENVIRONMENTAL ASSESSMENT**



**ORANGE COUNTY  
 TRANSIT DISTRICT**

**PROPOSED HOV FACILITY IMPROVEMENTS  
 SR-55/I-405 INTERCHANGE AREA  
 ORANGE COUNTY, CALIFORNIA**

**FIGURE**

## PROJECT PROFILE

### Spine Line Pittsburgh, Pennsylvania (January 1991)

- Description**
- o This corridor is approximately five miles connecting the Northside, Downtown Pittsburgh, Oakland and Squirrel Hill. The eastern segment of the Spine Line LRT project would be constructed primarily in subway with possibly 8 stations, connecting to the existing LRT line near the Steel Plaza Station. The western segment runs from the existing Gateway LRT Station across the Allegheny River to the three Rivers Stadium.
  - o Preliminary estimates put the cost of the project at over \$500 million.
  - o By the year 2000 the Spine Line is estimated to carry three to four million annual transit trips.
- Status**
- o An Alternatives Analysis for the corridor began in March 1987. The scoping meeting was held in April 1988. The study has been progressing slowly and recent indications are that the Port Authority will begin to wind down the work in recognition of a higher priority corridor to the airport.
- Cost-Effectiveness**
- o The Spine Line corridor is the most populated and highly urbanized area of Pittsburgh. Over 100,000 of the transit system's 300,000 daily riders have an origin or destination in the corridor. There are a number of contraflow transit lanes in the corridor, but street capacity is inadequate to handle existing travel demand at a good level of service. Transportation System Management (TSM) improvements are limited by narrow streets and typography. CBD employment is projected to increase from 140,000 to 180,000 in the next 20 years.
  - o The preliminary cost effectiveness for the range of alternatives to be studied vary from \$7.80 to \$9.00/per new trip.
- Local Financial Commitment**
- o In recent years, the Port Authority of Allegheny County (PAT) has suffered from financial difficulties and has had to reduce service. Because PAT wants to modernize its existing light rail system, extend its East Busway, build a busway to the airport and build a rail project in the Spine Line corridor, UMPA required a financial capability analysis as the first part of the AA. The "Preliminary

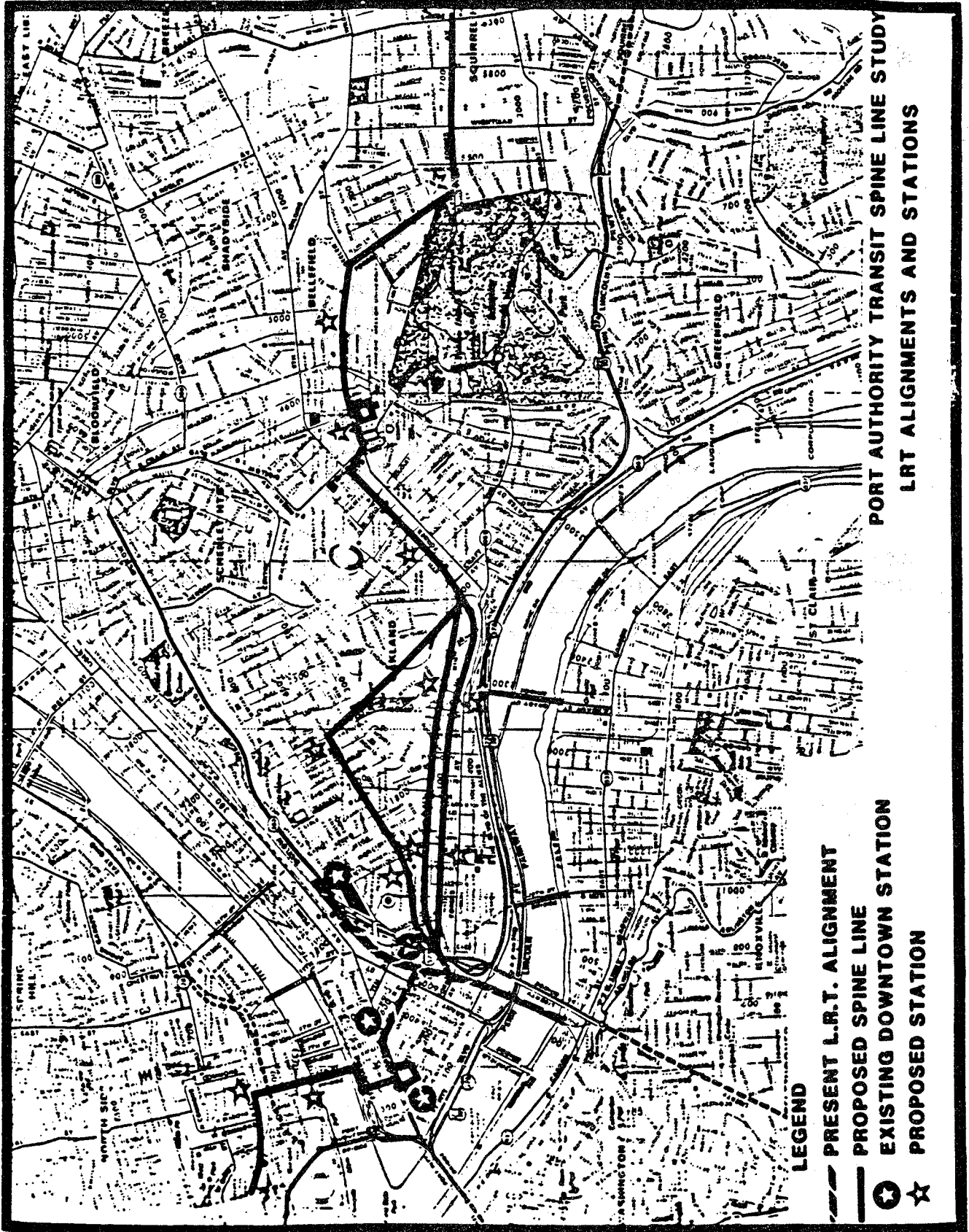
## Spine Line — Pittsburgh, Pennsylvania

Local Financial Analysis" was issued in March 1988 and will be completed during the AA. The study noted that PAT does not have a dedicated source of revenue for transit and relies on general revenues and annual appropriations from the State.

- o No committed sources of funds have been identified to provide for the local share of the capital cost of the project. PAT's capital financing plan is currently rated "low." The proposed Federal share of 75 percent is not supportive of the Department's policy to encourage the grantee to provide at least 50 percent of the estimated capital cost of the project.
- o PAT's operating assistance plan is considered "medium" because of PAT's history of obtaining needed funds to operate new services and to operate and maintain it's existing system without the need for major service cuts and fare increases.
- o Pittsburgh is a "moderate" nonattainment area for ozone. The Region has until November 1996 to meet EPA's air quality standard. The project's impact on air quality has yet to be determined.

Other  
Factors

Pittsburgh: Spine Line



## PROJECT PROFILE

### Westside Light Rail Portland, Oregon (January 1991)

#### Description

- o The Tri-County Metropolitan Transportation District (Tri-Met) is proposing a 12-mile light rail line from downtown Portland, through the West Hills, to Beaverton and suburban Washington County. In downtown, the line would connect with the Banfield LRT line ("MAX") that operates between Portland and Gresham. Several alignment alternatives, including short and long tunnels through the West Hills, are being considered as part of preliminary engineering. Two "minimum operable segment" alternatives (5.7 and 9.3 miles long) and an all-bus alternative are also being considered.
- o Construction of the 12-mile LRT facility is estimated to cost \$630 to \$700 million (escalated dollars), depending upon the final alignment chosen.
- o Portland's Metropolitan Service District estimates that a Westside LRT line would attract 24,300 to 27,100 trips per day in 2005. In 1983, when LRT was selected as the locally preferred alternative, the forecast was 51,400 trips per day for 1995.

#### Status

- o The project is in the preliminary engineering phase of project development. UMTA and Tri-Met have prepared a supplemental draft EIS (SDEIS) which was approved for circulation in January 1991. Following the SDEIS circulation period, a locally preferred alignment alternative will be chosen and a final EIS will be prepared. Preliminary engineering is not expected to be completed until September 1991 at the earliest.
- o Section 328 of the Department's FY-1991 appropriations act directs the Secretary to issue a letter of intent and enter into a full funding contract for the Westside project by September 30, 1991. In addition, Congress has indicated an intent to fund the project at the 75 percent level (House Reports 101-183, 101-315, 101-584 and Senate Report 101-398). However, since Congress has not backed this direction with earmarked funds for the Federal share, UMTA funding depends upon reauthorization of the UMTA program. In 1991, Congress earmarked \$1 million for the Westside LRT.

## Westside LRT — Portland, Oregon

### Cost- Effectiveness

- o Tri-Met's ridership analyses indicate that, compared with a fiscally constrained No Build alternative, both an improved bus system and a LRT line would reduce transit travel time between downtown and the Westside. For much of the corridor, LRT would reduce transit travel time more than bus improvements, resulting in 4600 additional transit trips per weekday. There would be no real difference in traffic congestion between LRT and a "best bus" alternative.
- o Cost-effectiveness indices for the LRT alignment alternatives range from \$15 to \$18 per new rider. The high index is a reflection of the project's high cost and modest transportation benefits. The project is grandfathered from the requirements of section 3(i) and need not be cost-effective to be eligible for funding.

### Local Financial Commitment

- o Portland hopes to receive 75 percent of the capital cost from Section 3. Congressional report language expresses an intent to fund the project at this level even though a 75 percent Federal share would be inconsistent with the Federal policy objective of 50 percent or more non-Federal funding.
- o Three sources have been identified for the 25 percent local share: Tri-Met bonds backed by local property taxes, contributions by affected local jurisdictions, and State bonds backed by the cigarette tax. In November 1990, Portland voters authorized Tri-Met to issue \$85 million in bonds for the project. Local governments have entered into a Regional Compact which establishes the framework for local government contributions, although their ability to contribute may be affected by a tax limitation initiative passed by the voters in November 1990. State legislative action is needed to put the State funding in place. UMTA has given the capital finance plan a "medium" rating.
- o The stability and reliability of Tri-Met's operating revenues are rated "low" to "medium." Tri-Met's analysis shows that a Westside LRT could be operated without a new funding source, assuming that operating and maintenance costs can be contained at about 5.5 percent per year while payroll tax revenues grow at 6.6 to 7.4 percent per year. This conclusion is sensitive to an economic downturn and other uncertainties. To Tri-Met's credit, the agency's bus replacement program has reduced the average age of the bus fleet from 11.5 years in 1989 to 8.3 years today.

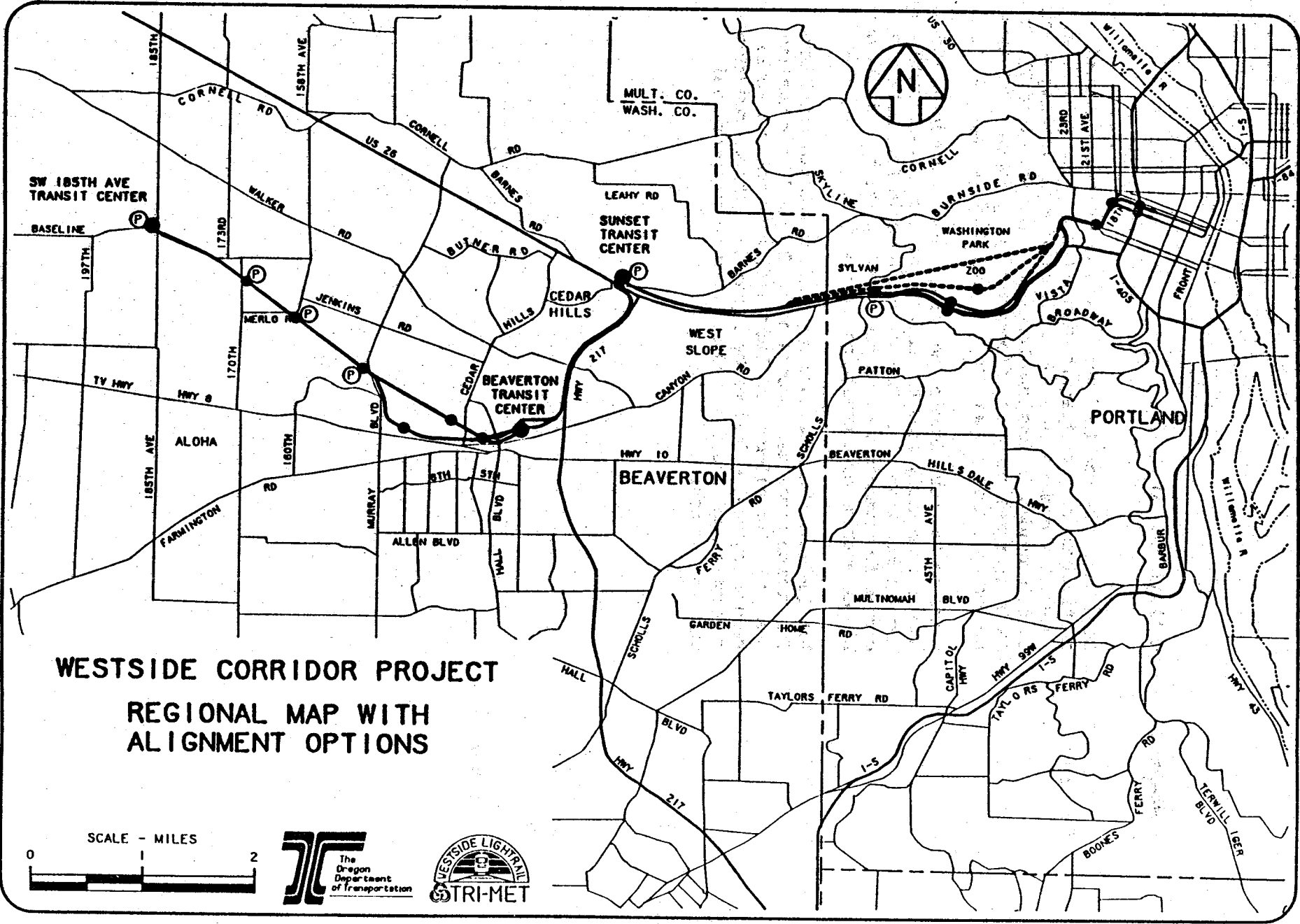
## Westside LRT — Portland, Oregon

### Other Factors

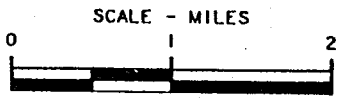
- o Land Use. The Portland area has undertaken a number of initiatives to link transit with urban development. One noteworthy example is a cap on the number of parking spaces to be provided in downtown Portland. The effect of the cap is to increase the cost of commuting by private auto, thus promoting transit ridership. A goal of local land use

plans is to focus development near transit stations. This should eventually lead to somewhat higher transit ridership and farebox revenues. Tri-Met's ridership forecasts and cost-effectiveness indices take these parking policies and higher station area densities into account.

- o Air Quality. The Portland region is a nonattainment area for carbon monoxide. According to Tri-Met's air quality analysis, the all-bus and light rail alternatives would reduce regional emissions by 1 percent. Carbon monoxide concentrations would be reduced at some receptors and increase at others.



**WESTSIDE CORRIDOR PROJECT  
REGIONAL MAP WITH  
ALIGNMENT OPTIONS**



B-82



## PROJECT PROFILE

### Hillsboro Corridor Portland, Oregon (January 1991)

#### Description

- o The Metropolitan Service District (Metro) is conducting a study of bus and light rail alternatives in the Hillsboro Corridor. The corridor extends from 185th Street on the east to the town of Hillsboro on the west, a distance of about 6 miles. The eastern terminus at 185th Street corresponds to the western terminus of the Westside LRT project, now in preliminary engineering.
- o Tri-Met's latest capital cost estimate for a LRT extension to Hillsboro is \$180 million (escalated dollars, assuming project completed in 1998-1999 time frame).

#### Status

- o UMTA approved Metro's request to undertake alternatives analysis in April, 1990. The study is now in the early stages. UMTA and Metro are discussing the alternatives and analysis methodologies.
- o Under Section 328 of the Department's FY-1991 appropriations act, the full funding agreement for the Westside light rail project shall provide for a future amendment, under the same terms and conditions, covering the Hillsboro project. The bill directs the Secretary to initiate preliminary engineering once local officials select a preferred alternative.

#### Cost- Effectiveness

- o UMTA has been provided very little information on the potential benefits of a Hillsboro extension. Metro estimates that a Hillsboro extension would attract about 1,920 new transit trips per day in 2005. In total, Metro projects that the extension would carry 5000 to 6000 riders. UMTA has not reviewed the technical support for these forecasts.
- o The Hillsboro corridor fails to meet UMTA's cost-effectiveness thresholds. In 1987, there were 3200 daily transit trips west of 185th on four bus routes. UMTA's threshold is 15,000 existing riders. Based on Metro's projections, the cost per new transit trip would be close to \$20, compared with UMTA's threshold of \$10 to enter alternatives analysis and \$6 to enter preliminary engineering. There is very little likelihood that, for the foreseeable future, an LRT extension to Hillsboro would meet the cost-effectiveness requirements of Section 3(i) of the UMT Act.

## Hillsboro Corridor — Portland, Oregon

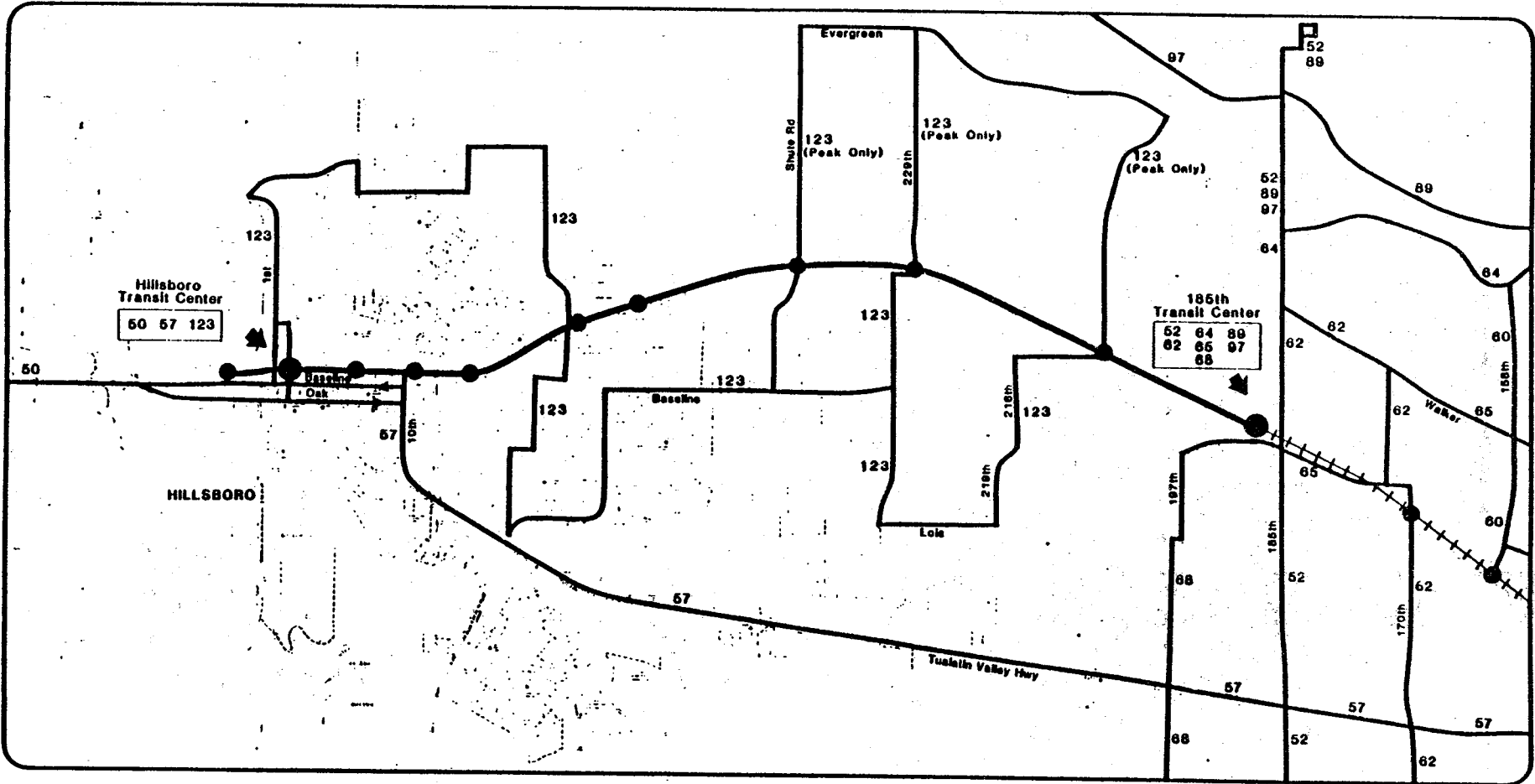
### Local Financial Commitment

- o Portland hopes to receive 75 percent of the capital cost from Section 3. Congressional report language expresses an intent to fund the project at this level even though a 75 percent Federal share would be inconsistent with the Federal policy objective of 50 percent or more non-Federal funding.
- o Three source have been identified for the 25 percent local share: Tri-Met bonds backed by local property taxes, contributions by affected local jurisdictions, and State bonds backed by the cigarette tax. In November 1990, Portland voters authorized Tri-Met to issue \$25 million in bonds for the project. Local governments have entered into a Regional Compact which establishes the framework for local government contributions. State legislative action is needed to put the State funding in place. Its ability to contribute may be affected by a tax limitation initiative passed by the voters in November 1990. UMTA has given the capital finance plan a "medium" rating.
- o The stability and reliability of Tri-Met's operating revenues are rated "low" to "medium." UMTA has not yet seen a financial analysis for the Hillsboro project. Tri-Met's analysis shows that a Westside LRT (downtown to 185th) could be operated without a new funding source, assuming that operating and maintenance costs can be contained at about 5.5 percent per year while payroll tax revenues grow at 6.6 to 7.4 percent per year. This conclusion is vulnerable to an economic downturn and other uncertainties. To Tri-Met's credit, the agency's bus replacement program has reduced the average age of the bus fleet from 11.5 years in 1989 to 8.3 years today.

### Other Factors

- o Land Use. The Portland area has undertaken a number of initiatives to link transit with urban development. One noteworthy example is a cap on the number of parking spaces to be provided in downtown Portland. The effect of the cap is to increase the cost of commuting by private auto, thus promoting transit ridership. A goal of local land use plans is to focus development near transit stations. This should eventually lead to somewhat higher transit ridership and farebox revenues. Tri-Met's ridership forecasts and cost-effectiveness indices take these parking policies and higher station area densities into account.
- o Air Quality. The Portland region is a nonattainment area for carbon monoxide. It is unlikely that any of the transit alternatives would have a noticeable effect on air quality because of the very small number of auto drivers they would attract.

Portland: 185th to Hillsboro



B-85

**Legend**

- +++++ LRT
- LRT Extension To Hillsboro
- Bus Line
- LRT Station
- Transit Center

**Westside Corridor Project  
Hillsboro Extension  
YEAR 2005 TRANSIT NETWORK  
LRT ALTERNATIVE  
CENTRAL HILLSBORO TERMINUS**



## PROJECT PROFILE

### "Metro Link" IRT to Airport

St. Louis, Mo.

(January 1991)

#### Description

- o The project called Metro Link is an 18 mile doubletrack IRT line with 20 stations and 31 vehicles. The line runs from East St. Louis across the Eads Bridge, through an existing railroad tunnel, under the St. Louis CBD along 11 miles of existing railroad track and the I-70 right of way to the Airport.
- o The original estimated total cost of this project is \$384 million of which \$288 million is Section 3 funds. The local share was provided through in-kind donations of the Eads Bridge, tunnel and railroad land.
- o Opening year (1993) ridership was estimated in the FEIS to be 17,000 per day which had been projected to increase to 37,000 by the year 2000 including 8000 new riders. The latest ridership forecast for the line is 31,000 by the year 2010.

#### Status

- o A full funding grant agreement (FFGA) was executed in October 1988 between UMTA and the Bi-State Development Agency, the transit operator for the St. Louis Region in accordance with Congressional direction. At that time Bi-State took over responsibility for the project for East West Gateway Coordinating Council (EWGCC), the regional Metropolitan Planning Organization (MPO), which had advanced the project through alternatives analysis and preliminary engineering phases of UMTA's project development process. The agreement provides for final design and construction of the project and identifies a federal funding schedule. As of September 30, 1990, UMTA has provided \$216 million to Bi-State. Congress has appropriated \$59.7 for FY 1991 leaving a Federal balance due under the FFGA of \$12 million.
- o The project is currently in final design/construction. Alignment changes are being considered in East St. Louis and near the airport along with modifications to the yard site. As a result of revision to the Airport Master Plan Bi-State is proposing to relocate the line near the airport and extend it to near the main terminal entrance. These changes are estimated to cost \$35 million. Bi-State has requested an addition \$25 million in Section 3 funds to cover the Federal share of these changes. Actual construction on some portions of the line started in the Spring of 1990.

"Metro Link" LRT to Airport-St. Louis, Mo.

Cost-  
Effectiveness

- o With a cost-effectiveness index of \$8.95 (1986\$), the project did not meet UMTA's \$6.00 threshold. Since calculation of this index, the ridership forecast for the line has fallen 40 percent and costs have increased 13 percent. The project was grandfathered from the requirements of Section 3(i).

Local  
Financial  
Commitment

- o The project's capital financing plan is rated marginally acceptable. The local matching share (25 percent) consisted of donated assets (railroad rights-of-way and land). There was no cash match. Bi-State does not have sufficient financial reserves to meet unexpected cost overruns.
- o The project operating assistance plan is marginally acceptable. Operation and routine capital purchases are supported by a 1/2 percent State Transportation Sales Tax. There is a concern that when the system opens in 1993, cut backs in bus service will be needed to offset the operating deficit of the rail line. Currently, fare box revenues fund about 26 percent of Bi-State's operating budget.

Other  
Factors

- o EWGCC expects total system wide ridership (bus and rail) to increase from 112,000 in 1985 to 160,000 in the year 2000, but UMTA considers this increase to be highly optimistic.
- o St. Louis is a "moderate" nonattainment area for ozone. The Region has until November 1996 to meet EPA's air quality standard. The project will have a small (0.3%) reduction in total regional vehicle miles traveled and hence result in only a insignificant improvement in regional air quality.

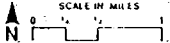
# Metro Link



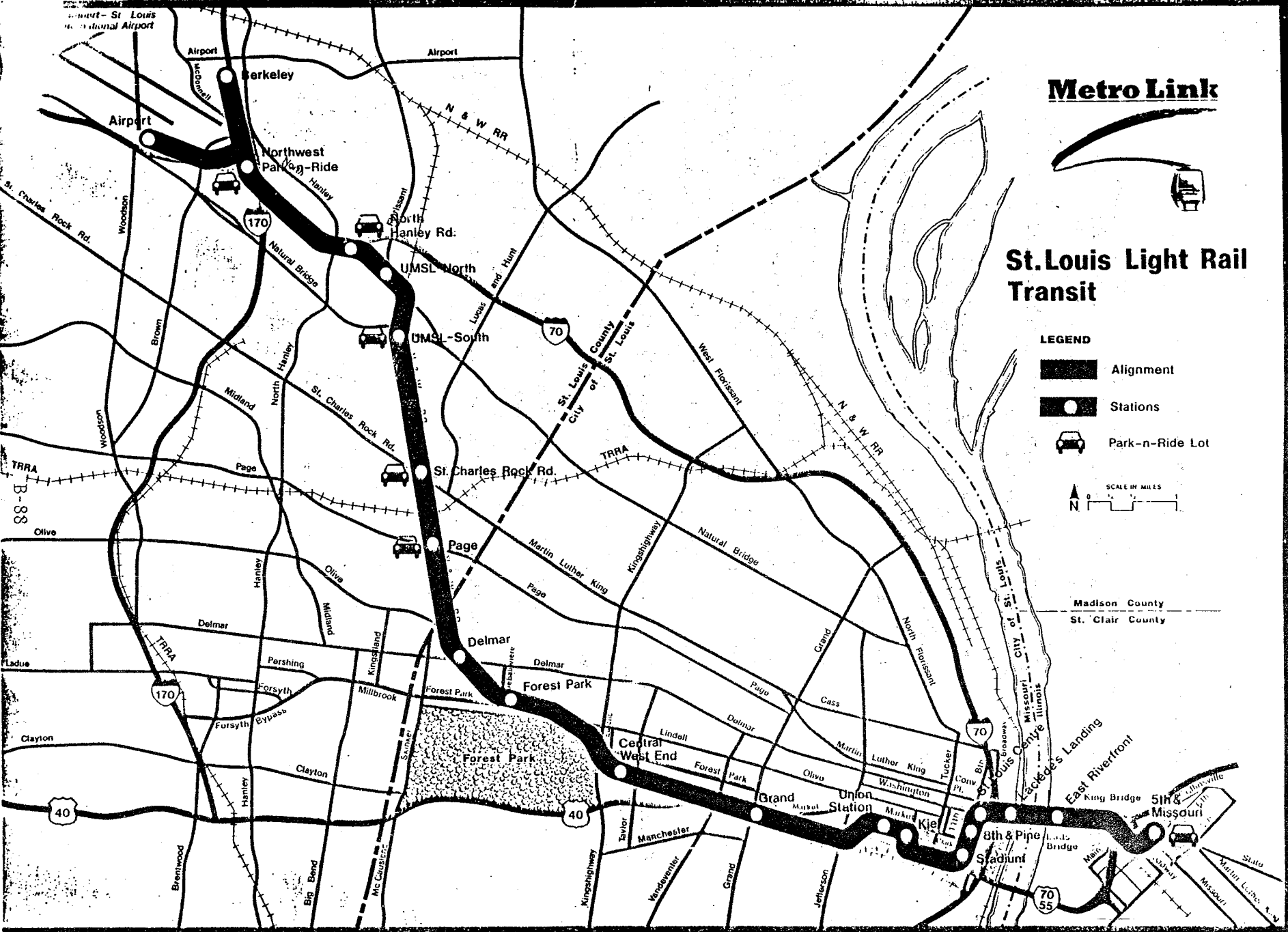
## St. Louis Light Rail Transit

### LEGEND

- Alignment
- Stations
- Park-n-Ride Lot



Madison County  
St. Clair County



## PROJECT PROFILE

St. Clair Corridor  
St. Louis, Missouri  
(January 1991)

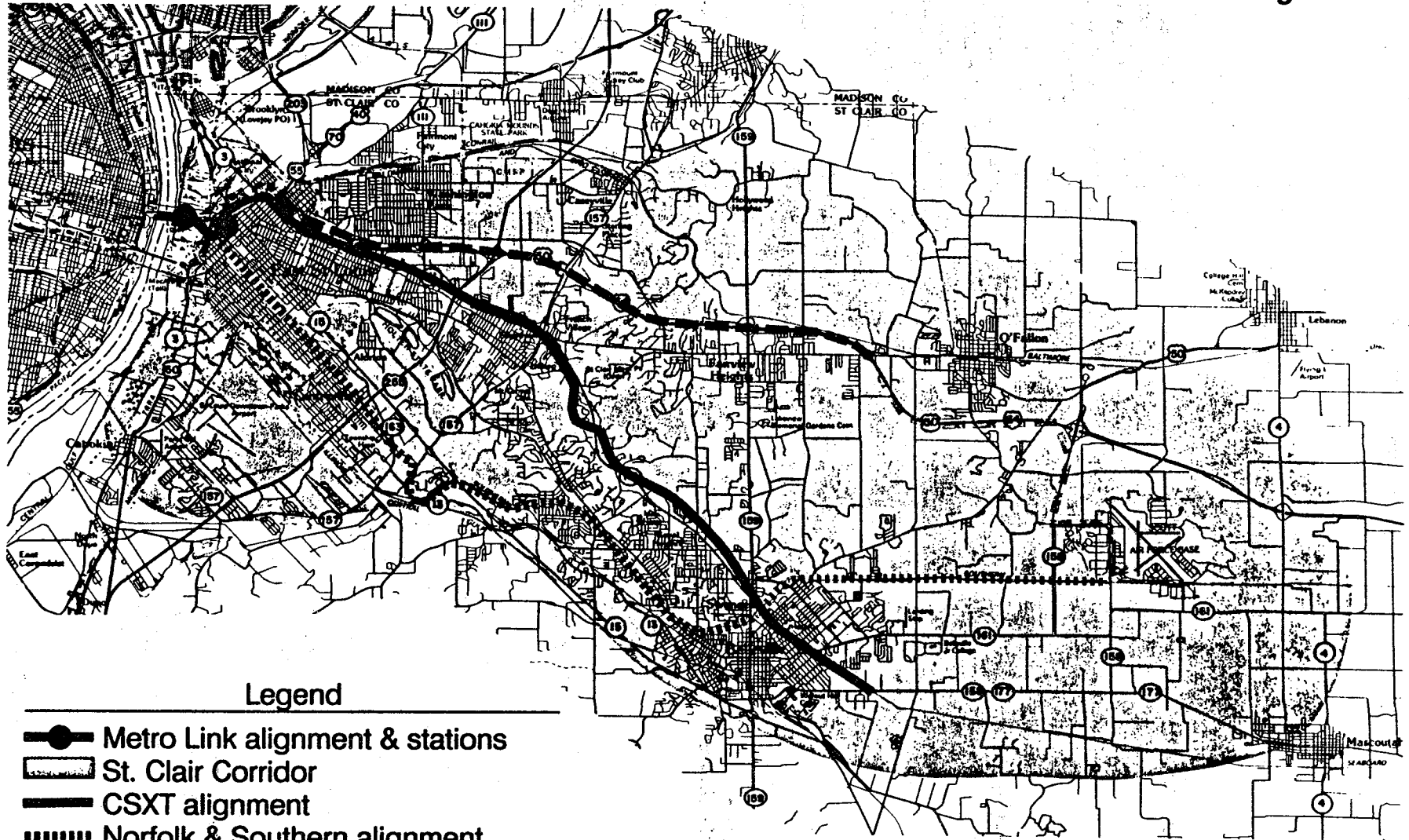
- Description
- o The East West Gateway Coordinating Council (EWGCC) is performing alternatives analysis for the corridor between downtown St. Louis and Belleville, Illinois. One alternative being considered is an 18 to 20 mile extension of the Metro Link light rail project now under construction in St. Louis. The light rail alternative would include 10 to 12 stations and 23 additional light rail vehicles.
  - o The light rail alternative is estimated to cost \$213 million in 1989 dollars. Ridership on the line is estimated at 13,100 trips for the year 2010.
- Status
- o The application to enter alternatives analysis was approved by UMTA in January 1991 per Congressional direction.
  - o The FY 1990 Conference Report (HR 101-135) accompanying DOT's Appropriation Act provided \$450,000 for conducting an alternative analysis. The FY 1991 reports directed that \$4,000,000 be set aside for preliminary engineering studies for an extension of the Metro Link system into St. Clair County.
- Cost-  
Effectiveness
- o UMTA found significant technical problems with the system planning work used to justify entry into alternatives analysis.
  - o The corridor fails UMTA's ridership threshold test. There are only 12,300 daily transit trips in the corridor, which is below UMTA's threshold test of 15,000 existing transit trips for entering alternatives analysis.
- Local  
Financial  
Commitment
- o The sources of local capital funds have not been identified and the project's capital financing plan is rated "low."
  - o The stability and reliability of the area's operating assistance is rated "low." The sources of operating assistance to support the projected \$8 million increase in the local operating deficit are questionable.
- Other  
Factors
- o EWGCC expects total system wide ridership (bus and rail) to increase from 112,000 in 1985 to 160,000 in the year 2000, but UMTA considers this increase to be highly optimistic.

**St. Clair Corridor — St. Louis, Missouri**

- o St. Louis is a "moderate" nonattainment area for ozone. The Region has until November 1996 to meet EPA's air quality standard. The project would probably have very minimal impact on air quality, although specific data has not yet been developed.



# St. Clair Alignments



## Legend

- Metro Link alignment & stations
- St. Clair Corridor
- CSXT alignment
- Norfolk & Southern alignment
- I-64 alignment

(Note: Scott AFB extensions marked by screened lines.)

## PROJECT PROFILE

### I-15/State Street LRT Salt Lake City, Utah (January 1991)

- Description**      o The Utah Transit Authority (UTA) is proposing to build a 15- to 17-mile at-grade light rail line from downtown Salt Lake City to suburban areas to the south. The line would follow the lightly used Union Pacific Railroad, and is currently estimated to cost \$200 million (escalated dollars).
- Status**              o In 1990, the alternatives analysis phase was completed with the approval of a draft EIS, selection of a locally preferred alternative, and local adoption of a financing plan. A request to initiate the next phase of project development, preliminary engineering, is being reviewed by UMTA. If approved, the PE phase would likely take 2 years to complete.
- o Congress has earmarked \$15.5 million for the project in FY1991 and prior years.
- Cost-  
Effectiveness**      o LRT would provide much the same level of transit service as an expanded bus system. Some parts of the corridor would benefit from a slight reduction in transit travel time, while other areas would experience increased transit travel time due to the need to transfer from bus to rail. Compared with the all-bus alternative, LRT is projected to increase transit ridership by about 4200 trips per day or 4 1/2 percent. LRT would not have a noticeable effect on traffic congestion.
- o The locally preferred alternative has a cost-effectiveness index of \$7 to \$8 (1987\$) per new transit trip, some 15 to 30 percent above UMTA's \$6 threshold. The \$7 to \$8 index is reflective of a very low cost project, not one that is particularly effective. The LRT alternative assumes a bare bones design with a cost-per-mile lower than any other LRT system in North America. The cost estimate (and the cost-effectiveness index) may increase if and when preliminary engineering is performed.
- Local  
Financial  
Commitment**      o The locally adopted finance plan anticipates a 50 percent non-Federal share. The plan depends upon passage of a referendum to raise UTA's current 1/4 cent sales tax by 3/16 cent. The referendum is tentatively scheduled for November 1991. UTA's finance plan anticipates that Salt

## I-15/State Street Corridor-Salt Lake City, Utah

Lake City will receive 50 percent Section 3 funding (\$100 million) for the rail project plus 50 percent Section 3 funding for bus replacement and bus fleet expansion. It should be noted the the Administration's reauthorization proposal would eliminate the Section 3 bus program. Even if Congress extends the Section 3 bus program, Salt Lake's assumption for Section 3 bus funding -- \$126 million over the next 18 years -- is highly optimistic. Historically, Salt Lake City has captured \$3.5 million in Section 3 bus funds over the last 5 years.

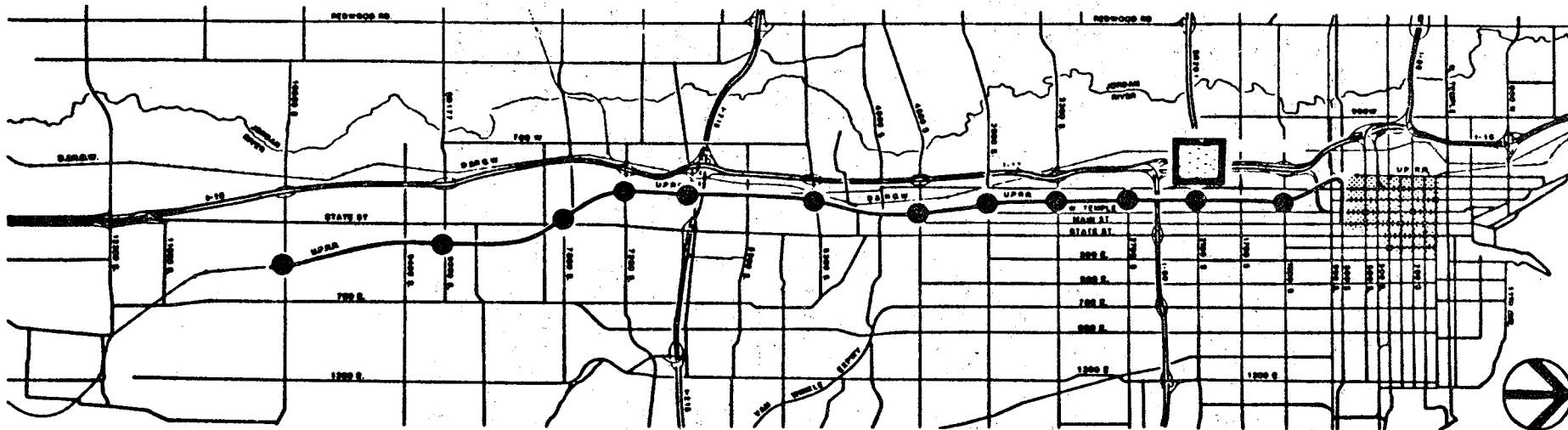
- o UMTA has additional reservations about the UTA capital finance plan. Sales tax revenues are assumed to grow more rapidly than historic trends. The finance plan is vulnerable to increases in project cost and/or declines in projected rates of revenue growth. The plan does not have a contingency or capital reserve fund. Pending resolution of these concerns, the capital financing plan is rated "low".

- o Salt Lake City receives a "low" rating for the stability and reliability of local operating funds. To the UTA's credit, the agency has a strong bus maintenance and replacement program. (In 1989, the average age UTA's bus fleet was 7.3 years.) A sales tax provides a stable and reliable revenue source. However, the adopted finance plan's heavy dependence on Section 3 bus funding, as well as the other concerns noted above, raises questions about the UTA's financial capacity to operate and maintain the proposed expanded bus and rail system, even assuming passage of the sales tax referendum.

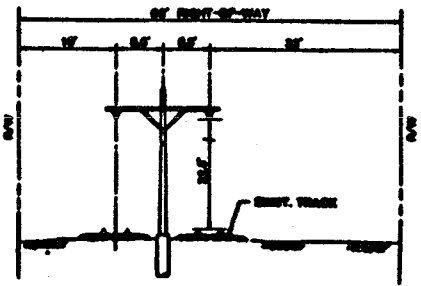
### Other Rating Factors

- o Air Quality. The Salt Lake City region is non-attainment for ozone. The air quality analysis for the draft EIS found that the build alternatives would reduce regional emissions by no more than 1 percent, and would have negligible impact at local receptors.








# Salt Lake City



B-94



**Typical Section for Alternative 7**  
Applies between 1000 So. and 500 So.

- Light Rail Transit (LRT)**
-  Addition of LRT on existing UPRR<sup>\*\*</sup> tracks between 1000 So. and 500 So.
  -  Construction of 12 transit stations along LRT alignment.
  -  Continuation of LRT system around/into Salt Lake City Central Business District utilizing 4-8 curbside stations. See Fig. B.16 for details.
- System Improvements:**
-  Relocation and/or expansion of existing bus routes.
  -  Optimization of existing transit facilities and services.
  -  Area of moderate changes in geometrics between 1700 So. and 1200 So. See Fig. B.25 for details.
  -  Rehabilitation of all I-15 pavement and bridges between 1200 So. and 600 No.

<sup>\*\*</sup>UPRR - Union Pacific Railroad

## I-15 / State Street Corridor Alternatives Analysis & Environmental Study

### ALTERNATIVE 7 LRT - UPRR & TSM IMPROVEMENTS

## PROJECT PROFILE

### Mid-Coast Corridor San Diego, California (January 1991)

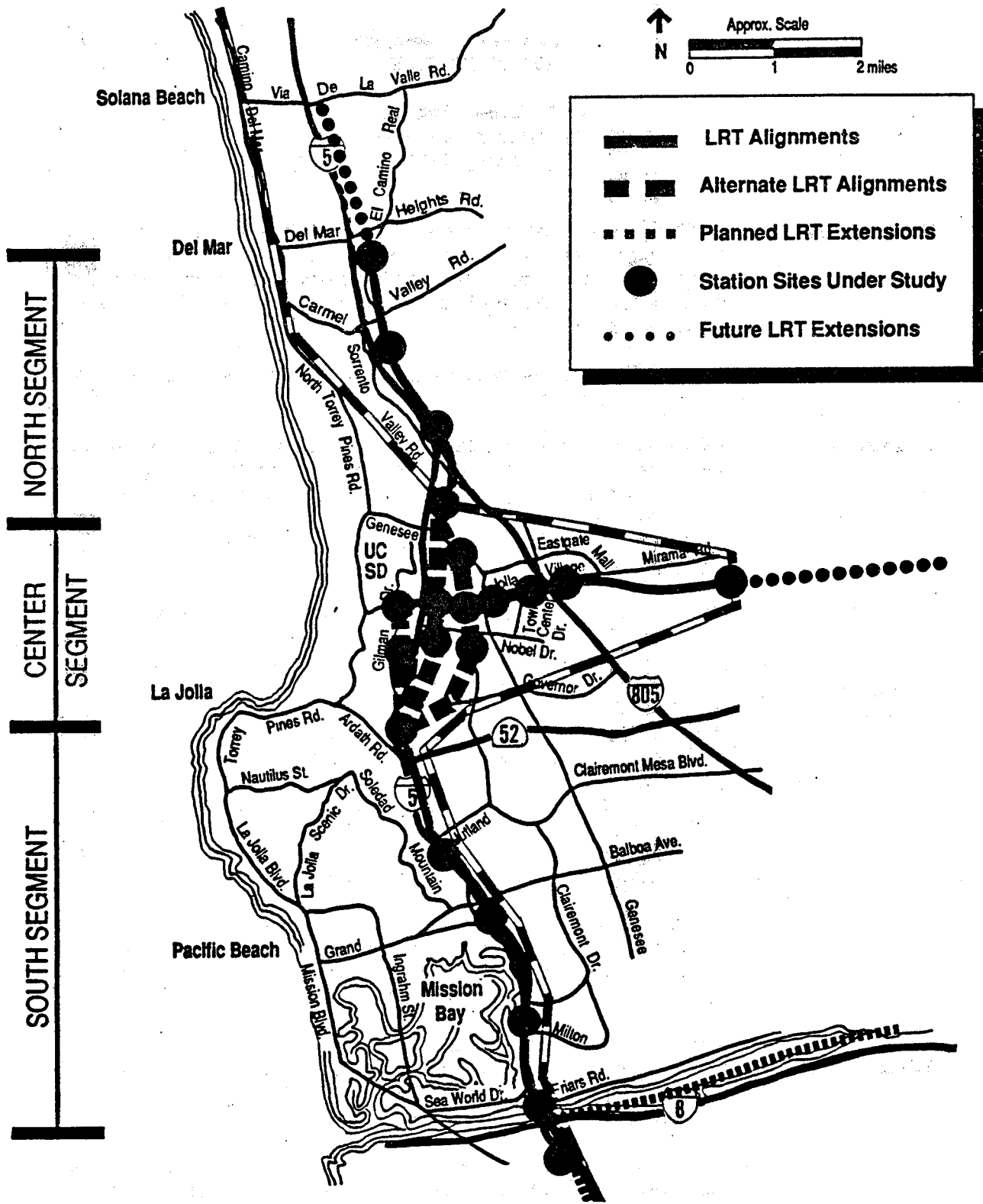
- Description**
- o The Mid-Coast corridor extends about 16 miles along the Pacific Ocean from I-8 near Old Town north to the vicinity of Del Mar. The Metropolitan Transit Development Board (MTDB) plans to study several alignments and termini within this corridor for a possible LRT extension. Two other possible build alternatives are a transportation system management (TSM) alternative consisting of express bus improvements, and high occupancy vehicle (HOV) lanes alternative on I-5.
  - o According to system planning estimates, the capital cost of the alternatives ranges from \$12 million for the TSM alternative to \$337 million for a 19.9-mile LRT alternative (costs in 1988\$).
- Status**
- o UMTA approved the initiation of alternatives analysis in October, 1989. The study is in the initial stages and a draft EIS is not expected to be completed before late 1991.
  - o Congress earmarked \$400,000 for the project in the FY-1991 Conference Report.
- Cost-Effectiveness**
- o Freeways and arterial streets in the corridor are highly congested, due to rapid growth and the lack of alternative routes. Existing bus service must contend with the same highway congestion as the private auto. The MTDB estimates that, for an average transit trip, the 19.9-mile LRT alternative would reduce travel time by 3 minutes (compared with an expanded bus alternative). Transit ridership is projected to increase by 12,000 trips per day.
  - o Preliminary cost-effectiveness indices for the LRT alternatives, developed in system planning, fall between \$7.50 and \$24 per new trip. These indices can be expected to change significantly as the alternatives analysis is performed.
- Local Financial Commitment**
- o The MTDB is expected to seek 75 percent Section 3 funding for a Mid-Coast Corridor project. If the project is viewed as part of the MTDB's overall fixed guideway construction program, the Federal share would be only 30 percent.

## Mid-Coast Corridor — San Diego, California

- o The MIDB's capital financing plan is rated "high." In 1987, San Diego voters approved a one-half cent local sales tax dedicated to transportation. One-third of the revenues, or \$750 million over 20 years, is earmarked for capital improvements to public transit, and a major share of this is for LRT extensions. The transit agency is in reasonably sound financial condition and its finance plan adequately covers projected non-Federal capital costs.
- o In terms of the stability and reliability of operating revenues, the MIDB receives a "medium" rating. Dedicated funding sources are in place which regularly provide a balanced budget for the existing system. Existing transit facilities are adequately maintained and replaced through continuing reinvestment. (As of 1989, San Diego's existing bus fleet was a relatively old 12.5 years, but the MIDB plans to buy 130 buses in 1991 which will substantially reduce the fleet age.) The agency is likely to have sufficient resources to operate a fixed guideway facility in the Mid-Coast Corridor, although additional operating revenues will be needed if the entire guideway system is built as planned.

### Other Rating Factors

- o Air Quality. The San Diego region is a nonattainment area for ozone and carbon monoxide. It is unlikely that any of the transit alternatives would have a significant effect on air quality.



**MID-COAST CORRIDOR**

**ALTERNATIVES ANALYSIS / DRAFT ENVIRONMENTAL  
IMPACT STATEMENT / ENVIRONMENTAL IMPACT REPORT STUDY**

**Alternative  
LRT Alignments to be  
Considered  
in EIS/EIR**

**Metropolitan Transit Development Board  
San Diego, California**

Source: BRW, Inc., June 1990

## PROJECT PROFILE

### BART Colma Station San Francisco, California (January 1991)

**Description**     o SamTrans proposes to build a new BART station and parking structure with 1400 spaces about 1.5 miles from the Daly City station. The Colma station would be the first BART station in San Mateo County and would relieve the parking congestion at the Daly City Station.

o The project is estimated to cost about \$140 million in escalated dollars.

#### **Status**

o In 1988 the Colma AA/DEIS was completed and in November 1989, UMTA, BART and SamTrans agreed to the scope of work for Preliminary Engineering and preparation of the final EIS. The FEIS was completed in December 1990. UMTA intends to negotiate a full funding grant agreement for the project.

o The local funding for the Colma project has been assured by a regional rail capital program agreement and voter approval of all local tax increases needed to implement the financing plan. The plan calls for San Mateo County to pay \$200 million to East Bay Counties to buy into BART and partially fund BART extensions in those counties in exchange for San Mateo County's fixed guideway projects getting local priority in the competition for Federal New Starts funding. One half of the \$200 million payment to BART will be made when the Colma Station is under construction and the other half in installments tied to the Airport Extension construction.

o Congress has earmarked \$28.3 and \$40 million in FY 1990 and 1991 respectively toward construction of the project. However, per Congressional direction MTC may allocate a portion of the funds toward the Tasman corridor project.

#### **Cost-**

#### **Effectiveness**

o The Colma project is designed to capture additional auto trips coming north to the San Francisco CBD and to relieve the parking congestion at the Daly City Station which is currently the end of the BART line.

o In the FEIS, the cost-effectiveness of the Colma project has been determined to be \$6.26, which is very close to UMTA's cost-effectiveness threshold of \$6.00 per new trip.



## Colma Station-San Francisco, California

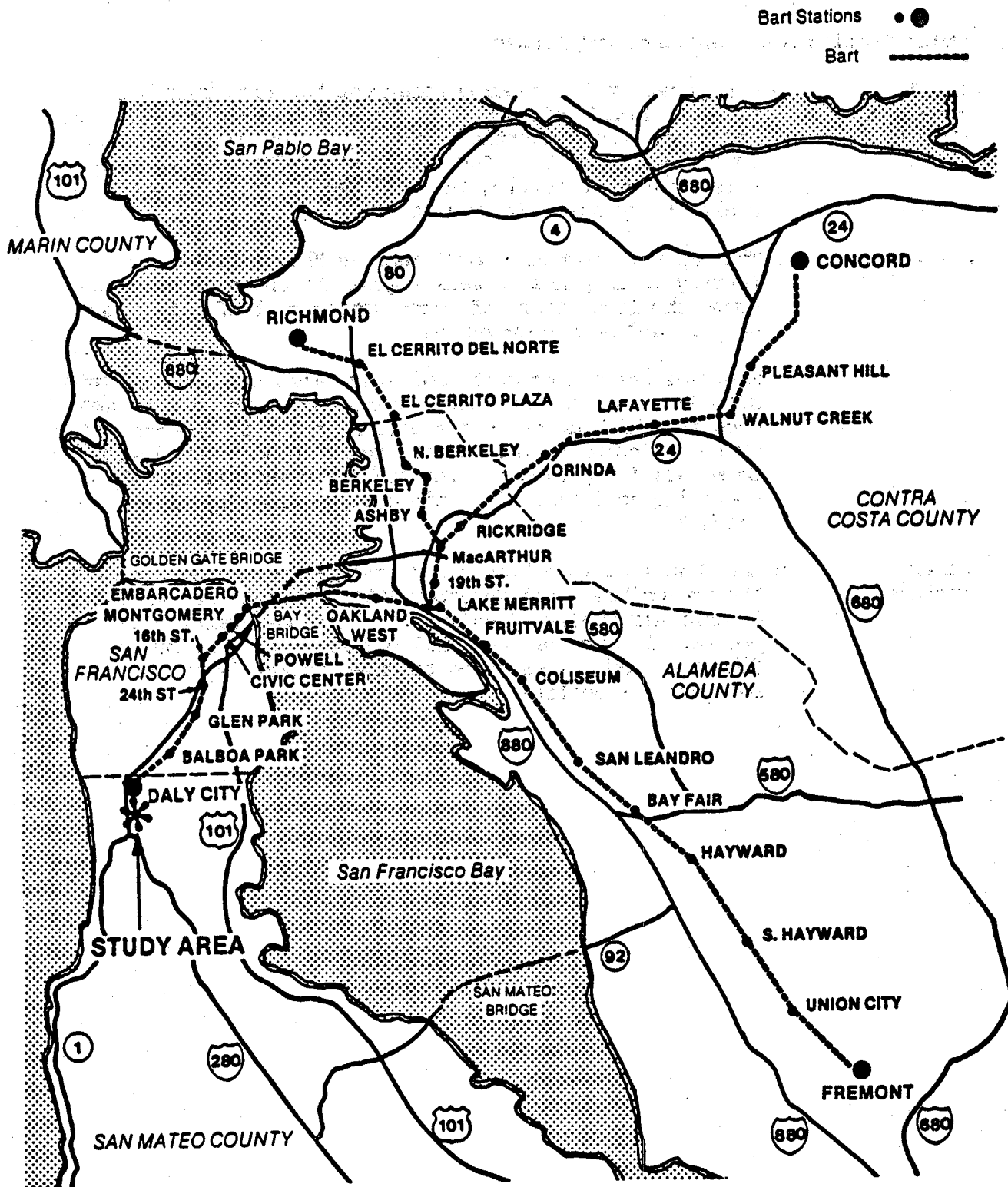
### Local Financial Commitment

- o A regional rail financing agreement has tied this project to other fixed guideway projects in San Francisco, Alameda and Contra Costa Counties. The agreement calls for 100% local funding of East Bay projects and 75% UMTA funding of this project, resulting in a 27% Federal funding share of BART's fixed guideway projects.
- o The capital financing commitment is "high" since local funding is in place to easily generate enough capital to cover the local share of construction cost of this modest project and handle over-runs.
- o SamTrans has a 1 percent dedicated sales tax and BART has 3/4 of 1/2 percent dedicated sales tax in the three BART counties which generate adequate revenues to operate their systems (including the modest expansion associated with the Colma Station project). The stability and reliability of operating assistance for this project alone is therefore "high."

### Other Factors

- o San Francisco is a "moderate" nonattainment area for ozone. The region has until November 1996, to meet the National Ambient Air Quality Standard for that pollutant. The project, because of the small number of cars it removes from the road, is expected to have minimal impact on regional air quality.

# REGIONAL SETTING



## PROJECT PROFILE

### Colma to the Airport San Francisco, California (January 1991)

- Description
- o This study is investigating a 6-mile, 3-station extension of BART from Colma to the airport at an estimated capital cost of \$560 million in escalated dollars.
- Status
- o In 1988, the Bay Area entered into a regional agreement on financing rail extensions in San Francisco, San Mateo, Alameda and Contra Costa Counties. All of the extensions, except those in San Mateo County are to be funded without Federal assistance. All of the financing elements were in place except about \$550 million which is being sought from UMTA. The BART extension to San Francisco Airport in San Mateo County is proposed for 75 percent Federal Funding. However, because 73 percent of the whole rail extension package in the Bay Area is to come from local sources, the Airport extension has been considered under the Secretary's Overmatch Initiative.
  - o Cost estimates for the proposed extensions have escalated substantially, forcing the Bay Area to initiate a re-examination of their regional financing plan.
  - o In May 1990, following a screening of alternatives, UMTA authorized the initiation of Alternatives Analysis in the Colma to the Airport Corridor. BART and UMTA are currently incorporating the scoping comments in to the study design.
- Cost-Effectiveness
- o The extension of BART is expected to help ease the traffic congestion along the freeways in Northern San Mateo County into San Francisco as well as providing direct BART service to San Francisco Airport.
  - o The cost-effectiveness analysis of conducted during the screening of alternatives indicates that the BART extension to the Airport would cost about twice as much as UMTA's \$6.00 cost per new trip threshold.
- Local Financial Commitment
- o A regional financing agreement has tied this project to other fixed guideway projects in San Francisco, Alameda and Contra Costa Counties. The regional plan calls for 100 percent local funding of East Bay projects and 75 percent UMTA funding of this project, resulting in a 27 percent Federal funding share of the entire region's fixed guideway projects.

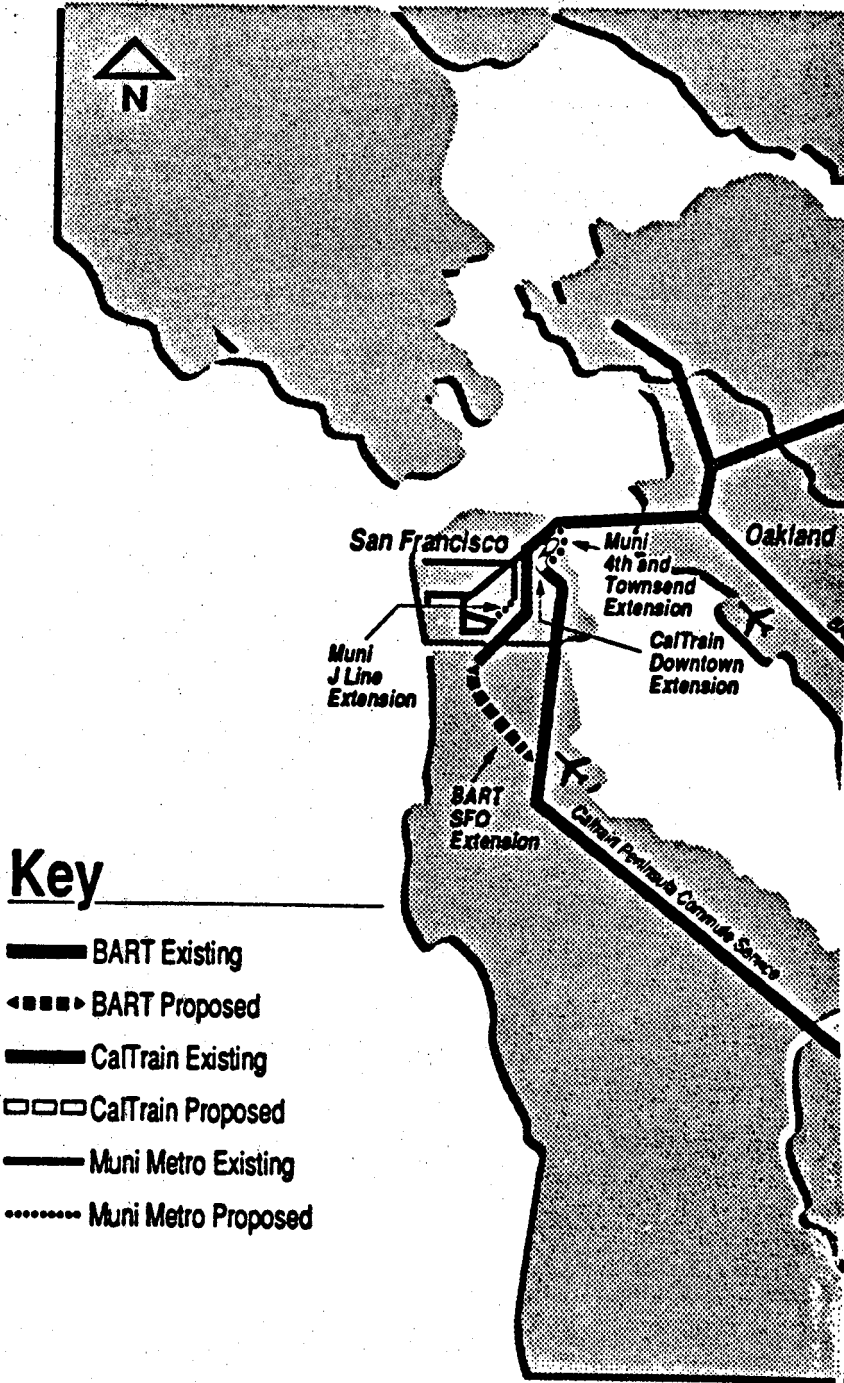
## San Francisco - Colma to the Airport (continued)

- o All of the local funding mechanisms are in place for the regional capital financing plan, so this proposed project has been rated "medium." However, UMTA is concerned because it is so closely tied by local agreements to the construction of East Bay BART extensions whose costs have escalated dramatically without commensurate increases in local funding.
- o Existing dedicated sales taxes should support a modest SamTrans and BART expansion, therefore the stability and reliability of for operating assistance has been judged "medium." However, there is some concern because the capital shortfall may negatively impact operating assistance in the out years of the financial plan, and because of the existing precarious financial condition of several of the Bay Area operators.

### Other Factors

- o San Francisco is a "moderate" nonattainment area for ozone. The region has until November 1996 to meet the National Ambient Air Quality Standard for that pollutant. The impact, of the project on air quality is not known at this time.

San Francisco: Colma to Airport



PROJECT PROFILE

Tasman Corridor  
San Jose, California  
(February 1991)

- Description
- o The Metropolitan Transportation Commission (MTC) is studying a surface light rail transit (LRT) line from Milpitas to Sunnyvale or Mountain View with a connection to the existing Guadalupe LRT in northern Santa Clara County. The LRT alternatives range in length from 5.4 to 12.7 miles.
  - o Capital costs range from \$165 to \$310 million (1989 \$).
  - o Transit ridership in Santa Clara County is forecast to increase by 5,000 to 7,000 new daily riders if the LRT project is built.
- Status
- o In 1988, the BART-extension alternatives originally included in the AA study were dropped because of their poor cost-effectiveness. However, the MTC is continuing to study BART extensions to San Jose and may seek federal funding of these extensions in the future.
  - o Congress earmarked FY 1990 and 1991 funds for metropolitan San Francisco with the provision that MTC allocate the funds among the various Bay Area projects including this one.
- Cost-Effectiveness
- o The proposed project serves the work trip market between southern Alameda County and Silicon Valley where high levels of freeway congestion currently exist.
  - o Preliminary estimates indicate that the LRT alternatives have a cost-effectiveness index of \$15 to \$20 per new trip. This poor cost-effectiveness is mainly due to the nature of office and light-industrial development in Santa Clara County. Numerous low-rise buildings on large parcels of land with large setbacks from arterial streets to allow space for ample parking are not conducive to high transit ridership.
- Local Financial Commitment
- o UMTA is expected to pay about 50 percent of the capital cost of the project. By comparison, the sponsors of other projects in the Bay Area are expected to request about 30 percent Federal funding of their projects which are primarily BART extensions.

## Tasman Corridor — San Jose, California

- o The County has a 1/2 cent sales tax for transit and another 1/2 cent sales tax to build three highway projects. However, Bay Area transit construction cost estimates are increasing more rapidly than local revenues. The rating of the Capital Financing Plan is thus "medium."
- o Santa Clara Transit currently covers less than 15 percent of operating costs out of the farebox. Adding more light rail will reduce the operating ratio further. Although, local agencies have historically provided adequate financing for expanded operations with dedicated sources, the service expansions envisioned for this project do not appear to be financially affordable, therefore the Stability and Reliability of Operating Assistance has been rated as "medium/low"

### Other Factors

- o San Jose is a "moderate" nonattainment area for ozone. The region has until November 1996, to meet the National Ambient Air Quality Standard for that pollutant. The project, because of its very low ridership in comparison to total auto travel, is expected to have minimal impact on regional air quality.

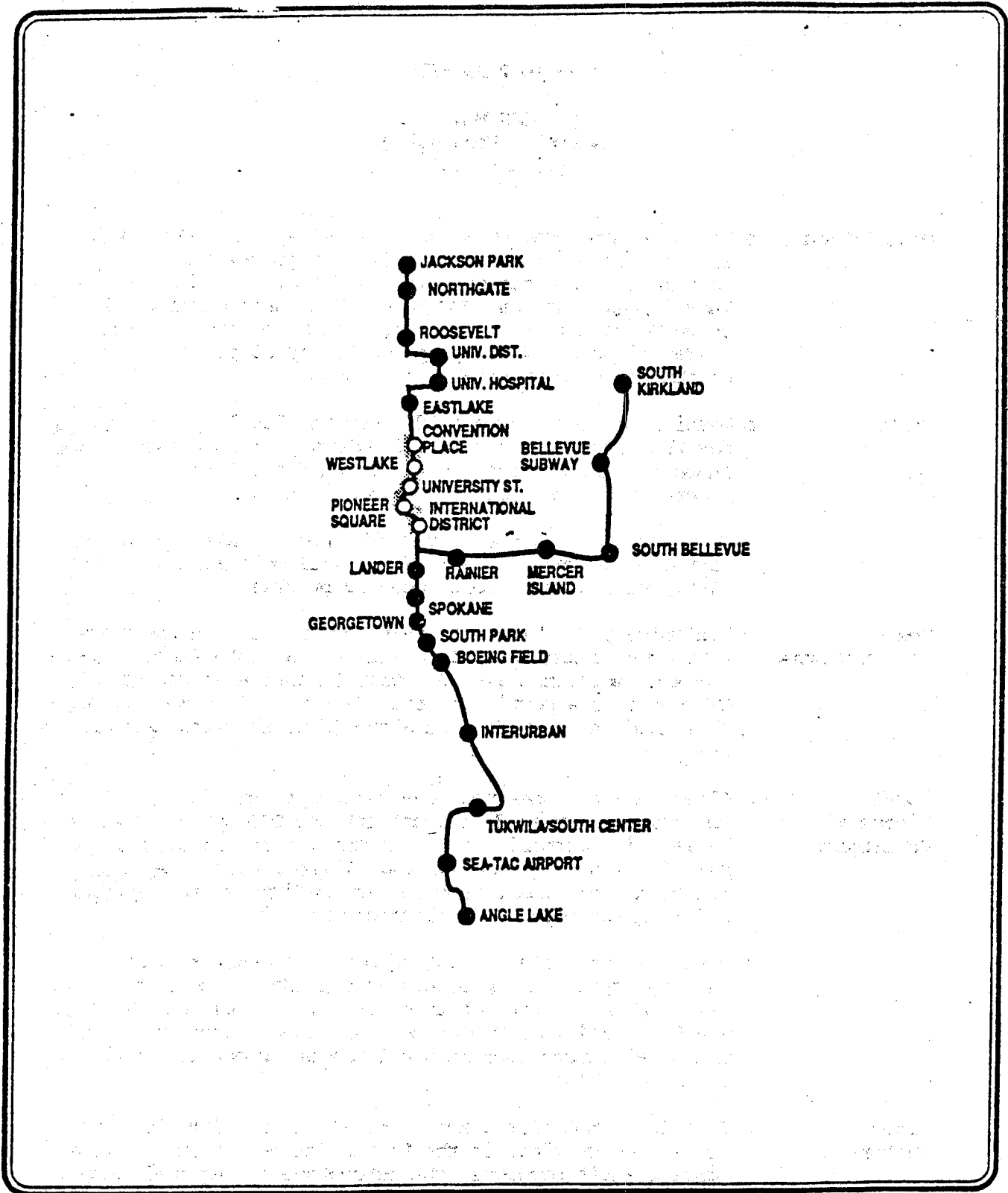




## PROJECT PROFILE

### COG Box Seattle, Washington (January 1991)

- Description**      ○ Metro has proposed examining a 40-mile, three-corridor, \$2.5 or more billion (1990\$) fixed guideway system in the Seattle area focused on downtown Seattle. The project is known locally as the "COG Box". The three corridors would converge on the CBD Bus Tunnel from Northgate, Bellvue and SeaTac Airport. Metro proposes to pay 80 percent of the capital costs with non-Federal funds.
- Status**              ○ Washington State Law provides several local option taxes for the construction of fixed guideway transit facilities. These funding sources can be voted on only after Alternatives Analyses have been performed.
- UMTA and Metro have agreed that a Federal AA/DEIS can be performed in one corridor, which will be selected in May 1991, after a three month scoping process.
- Cost-  
Effectiveness**      ○ Preliminary data indicate that the projects in the three corridors, taken together would have a cost-effectiveness index of more than \$10.00. Only further analysis will determine if a portion of the COG Box will achieve a \$10.00 threshold and therefore be a candidate for alternatives analysis.
- Local  
Financial  
Commitment**      ○ Although Metro does not have voter approval for any of the new taxes needed to construct the COG Box, it does have legislative authority to go to the voters and also has a plan for financing the system. Therefore, the Capital Financing Commitment is rated as "medium" at this early stage in the project development process.
- Metro has adequate funding resources to support its existing system and probably an expanded system, which has resulted in a rating at this time of "medium" for Stability and Reliability of Operating Assistance. Once additional financial information is available we expect the rating may change to "high".
- Other  
Factors**              ○ Seattle is not listed among the 96 cities with the worst ozone smog problems in the United States. However, like other transit projects, the percentage of regional auto drivers attracted by the proposed project is likely to be small.



**Metro Rail Planning Study**

COG Box  
 Preliminary Estimate  
 GANNETT - DELEUW

Seattle, Washington

COG Box  
 Diagram

April 1990

PROJECT PROFILE

**Metrorail Extensions**

Washington, D.C.

(January 1991)

- Description
- o The Adopted Regional System for Washington's Metrorail includes 14 miles of heavy rail transit beyond the 89.5 miles which are now in operation or under construction. The 1990 amendments of the National Capital Transportation Act provide a special authorization for 11 of the 14 miles in four segments: an inner connection of the Green Line between U Street-Cardozo and Fort Totten in the District; a southern extension of the Green Line from Anacostia in the District to Naylor Road in Prince George's County, Maryland; an extension of the Red Line from Wheaton to Glenmont in Montgomery County, Maryland; and an extension of the Blue Line from Van Dorn Street to Franconia-Springfield in Fairfax County, Virginia.
  - o The total capital cost of the four segments is estimated to be \$2.1 billion (in escalated \$). The capital cost and projected 1995 ridership for the four segments are roughly broken down as follows:

Line: segment	Length (miles)	No. of Stations	Daily Boardings	Cost in millions
Red: Wheaton/Glenmont	1.3	1	6,000	\$ 350
Green: Anacostia/Naylor Rd.	3.5	3	19,000	780
Green: U St.-Cardozo/Ft. Totten	2.9	2	24,000	750
Blue: Van Dorn/Franco.-Springfield	3.3	1	5,000	200
Totals:	11.0	7	54,000	\$2,080

- o The federal share is 62.5 percent, which results in a federal cost of \$1.3 billion.

- Status
- o WMATA is considering alternative alignments for the two Green Line segments, so supplemental environmental work is needed. An environmental assessment of the vehicle storage yard in Glenmont is also needed. These projects are considered to be in the preliminary engineering phase of project development. Environmental work is finished for the Red Line (except the yard) and the Blue Line, so these segments are considered to be in final design.

- Cost-Effectiveness
- o The inner Green Line segment would provide service in a highly transit-dependent, central city neighborhood and connect the northern Green Line directly to downtown. The southern Green Line also would serve transit-dependent neighborhoods, but of much lower density. Ridership on the Red Line extension to Wheaton which opened in September of

## Metrorail Extensions — Washington, D.C.

1990 has been significantly below forecasts. Though it serves an area with poor auto access to downtown because of a lack of freeways, the area is relatively affluent. The additional extension to Glenmont to serve a more affluent area would probably attract even fewer new riders to public transportation. The new Blue Line station will have a large parking facility and may draw traffic away from the highly congested I-395, I-95, and I-495 interchange. However, the Blue Line extension will compete with the highly successful rapid transit service on the Shirley HOVway, and offer a lower level of service (i.e., longer travel times) for downtown trips.

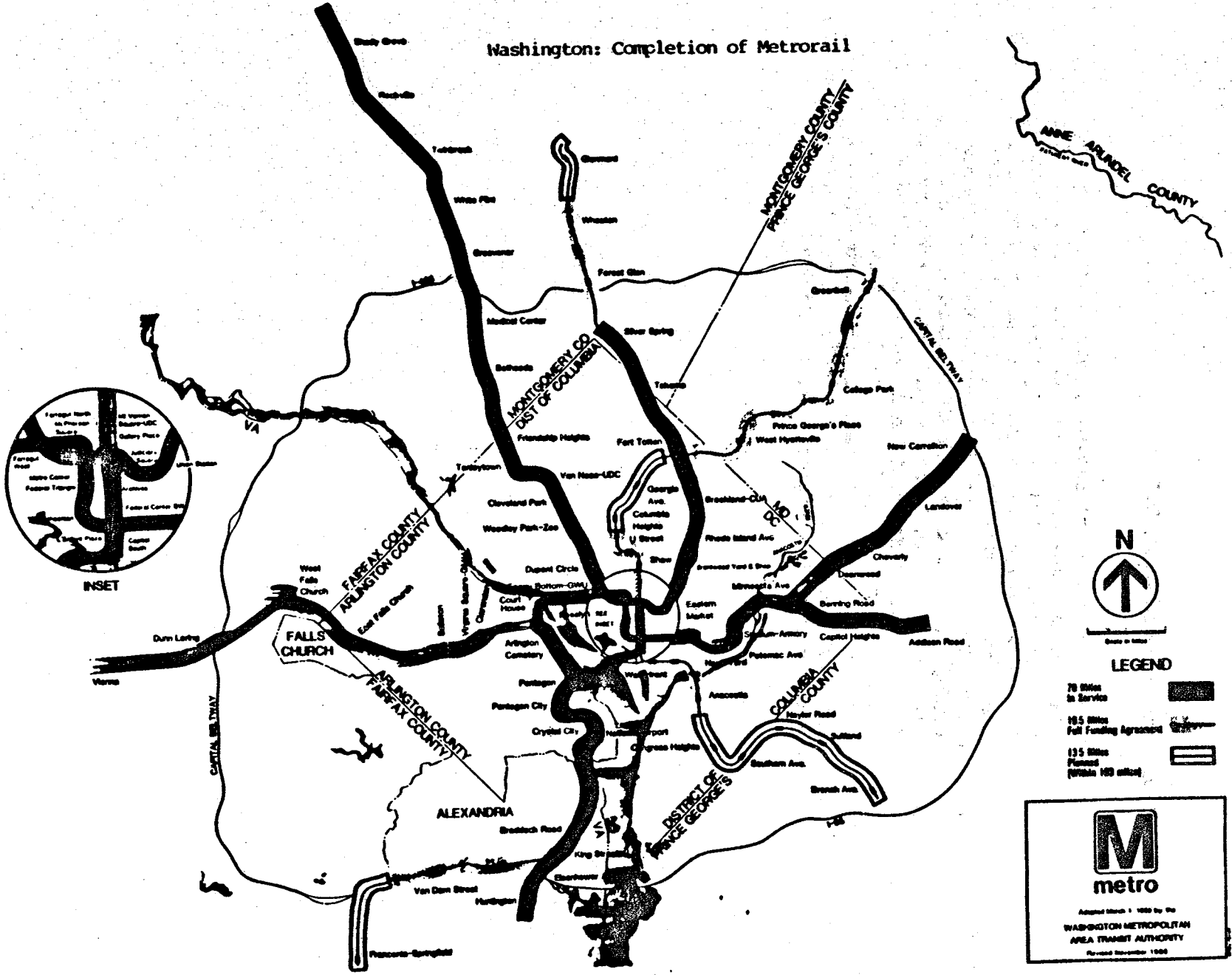
### Local Financial Commitment

- o Estimates of ridership and costs made in 1986 using 1977 data showed the Green Line as a whole to be cost-effective. Shorter segments of the Green Line and the single-station extensions of the Red and Blue Lines and were not evaluated.
- o The local matching share for the 1990 reauthorization is 37.5 percent. The average local share for the 89.5-mile system has been about 25 percent. Funding sources for the 50-percent increase in local share have not been identified.
- o The first Metrorail segment, opened in 1976, is now 14 years old. Before the year 2000, WMATA will require up to \$150 million annually for the rehabilitation, restoration, and reconstruction of existing transit infrastructure to forestall the same fate as the Philadelphia and New York systems. The local governments are currently contributing about \$265 million annually to WMATA, so an additional \$150 million represents a substantial increase in their contributions. WMATA points out, however, that its costs as a percentage of total regional governmental expenditures would only increase from 2.4% in 1986 to 2.7% in 2000, and would actually decline as a percentage of total property value in the WMATA service area.
- o Stable and reliable sources of funds for the increased local share of new construction, for the rehabilitation program, and for increasing operating deficits have not been identified. In 1990, missed payments by one local funding partner (the District of Columbia) forced WMATA into short-term borrowing to continue operating. Immediate fare increases of up to 18 percent, followed by annual increases of undetermined amount, are now under consideration.

## Metrorail Extensions — Washington, D.C.

- o Several of the local funding partners are proceeding with planning or implementation other major transit projects in the metropolitan area with non-federal money despite the lack of a regional financial plan for the continued construction, rehabilitation, and operation of Metrorail. These projects include the Virginia Railway Express commuter rail line from Fredericksburg and Manassas in Virginia to the District, a rail or bus rapid transit line from the Vienna Metrorail station to Dulles Airport in Fairfax County, Virginia, a rail line from Addison Road Metrorail station to Bowie in Prince Georges County, Maryland, and a light rail connection between Bethesda and Silver Spring in Montgomery County, Maryland.

# Washington: Completion of Metrorail



B-112