OCA PAD INITIATION - PROJECT HEADER INFORMATION

Project #: E-20-W20
Cost share #: 
Rev #: 0
OCA file #: 
Work type : RES
Document : AGR
Contract entity: GTRC

Center #: 10/24-6-R8237-0A0
Center shr #: 
Contract#: AGR DTD 8/16/94
Mod #: 
Prime #: 

Subprojects ? : N
Main project #: 

Project unit: CIVIL ENGR
Project director(s): MEYER M D
Unit code: 02.010.116

Sponsor/division names: COBB COUNTY
Sponsor/division codes: 300

Award period: 940801 to 941031 (performance) 941031 (reports)

Sponsor amount
Contract value New this change Total to date
20,000.00 20,000.00
Funded 20,000.00 20,000.00

Cost sharing amount

0.00

Does subcontracting plan apply ?: N

Title: DEVELOPMENT OF MIA WORKPLAN

PROJECT ADMINISTRATION DATA

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COBB COUNTY
DEPARTMENT OF TRANSPORTATION
10 EAST PARK SQUARE
MARIETTA, GA 30090-9612

ONR resident rep. in ACO (Y/N): N
N/A supplemental sheet

Security class (U,C,S,TS): U
Defense priority rating : N/A
Equipment title vests with: Sponsor
NONE PROPOSED OR ANTICIPATED.

Administrative comments -
INITIATION OF PROJECT E-20-W20.
GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION

NOTICE OF PROJECT CLOSEOUT

Closeout Notice Date 02/10/95

Project No. E-20-W20__________
Project Director MEYER M D__________
Sponsor COBB COUNTY/MARIETTA, GA______________________
Contract/Grant No. AGR DTD 8/16/94______________
Prime Contract No. _____________________________

Title DEVELOPMENT OF MIA WORKPLAN

Effective Completion Date 941031 (Performance) 941031 (Reports)

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Comments__________________________________________________________________________

Subproject Under Main Project No. _______________

Continues Project No. _______________

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NOTE: Final Patent Questionnaire sent to PDPI.
MAJOR INVESTMENT STUDY FOR THE I-75/U.S. 41 CORRIDOR

Final Report
Prepared for Cobb County Transit

School of Civil & Environmental Engineering
Georgia Institute of Technology

November 5, 1994
MAJOR INVESTMENT STUDY FOR THE I-75/U.S.41 CORRIDOR

1.0 INTRODUCTION

The Cobb County Department of Transportation recently completed a Multimodal Strategic Plan for Public Transportation in the County. This Plan recommended that a Major Investment Study (MIS) be undertaken in the I-75/U.S.41 corridor and corresponding connections to the regional transportation system. In June, 1994, the Cobb County Board of Commissioners voted to initiate the process of undertaking such a study, and requested the Atlanta Regional Commission (ARC) to develop a Request For Proposals (RFP) for the activities that would have to be accomplished in an MIS. This document is the Scope of Services for the RFP.

The MIS will fulfill the requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA) and Section 450.318, "Major Metropolitan Transportation Investments" of the Metropolitan Planning Regulations. It is expected that the MIS will build upon the results of the Cobb County Multimodal Strategic Plan and upon the Atlanta Metropolitan Transportation Plan. Both documents have been recently produced based on the latest data collection and analysis. The MIS should utilize this database and information resource as much as possible to satisfy the requirements of Section 450.318.

The MIS is a major step in implementing the ISTEAA in the Atlanta metropolitan area. The need for an MIS is clearly stated in ISTEAA and relates to mobility problems that are facing the region. For example, the Atlanta Regional Commission (ARC) has forecast an increase in population growth for the region of 113% from 1980 to 2010, and an increase in employment of 170% over this same period. The percent of Cobb County person work trips bound for the Atlanta CBD is expected to increase to 27,357 from 18,701 in 1980. And although the I-75 corridor is already congested, the forecasted level of congestion in this corridor is described as "extreme". The nonattainment status of the Atlanta region also requires decision makers to examine a variety of solutions to the mobility problems facing the region, solutions that do not exacerbate the serious air quality problem found in the region. The MIS is a tool for helping decision makers provide the level of investment in the transportation system that will provide higher levels of mobility to the region’s citizens in the next century.

It is important to note at the outset that the MIS is to be developed through a collaborative process with all affected agencies and the general public. A Task Force has been formed with representation from the various governments and agencies affected by the project, including the Atlanta Regional Commission, Metropolitan Atlanta Rapid Transportation Authority (MARTA), Georgia Department of Transportation, Cobb County, Fulton County, and the Cobb Community Improvement District. The Task Force will oversee the project’s progress, and be responsible for making decisions at key phases of the project, including approval of the evaluation criteria, the study alternatives, and selection of the preferred alternative. The Task Force will also act as a liaison with various political bodies.
A Study Advisory Committee will provide input into the study and make recommendations to the Task Force at key phases of the study. The Committee will include representatives from the major groups and organizations affected by the MIS, including municipalities, environmental groups, the business community, and community groups.

A Technical Management Team, a subcommittee of the Study Advisory Committee, will provide background information and specific direction to the consultant on a regular basis throughout the project. Members will include representatives from Cobb County Department of Transportation, MARTA, Fulton County, CCT, FTA, and FHWA.

A Project Administrator will handle numerous administrative tasks of the project and act as a liaison between the Task Force, the Technical Management Group, the Study Advisory Committee and the Consultant. The Project Administrator will be a staff member of the Cobb County Department of Transportation.

The MIS will not result in a draft or final environmental impact statement (EIS), however, the information collected and used in the MIS shall be provided and formatted in a manner that will be useful in the subsequent production of an EIS. The MIS is intended to provide the region with the opportunity to address long-term transportation issues and needs in the I-75/U.S. 41 corridor (shown in Exhibit 1). The focus of the MIS shall be the identification and thorough and fair evaluation of a full range of high capacity transportation alternatives. In addition to the No-Build and the Transportation Systems Management (TSM) alternatives, the Consultant, under the direction of the Technical Management Team, shall define and evaluate a full range of bus and rail alternatives to serve the identified corridor, as well as highway improvements that will satisfy the mobility needs of the corridor. It is anticipated that the MIS recommendations will be used as the basis for a Cobb County referendum seeking funding approval for proposed transit improvements in the I-75/U.S 41 corridor in Cobb County.

The Task Force on the I-75/U.S. 41 MIS is requesting statements of qualifications and proposals from firms qualified and interested in providing services necessary and consistent with federal, state, and local guidelines for the performance of the Major Investment Study. The consultant shall prepare all necessary documentation that will satisfy federal, state, and local requirements for an MIS. The engineering and environmental work performed in the MIS will occur at a level to allow for informed decision-making and is not intended to be an engineering document that provides great levels of detail on alignments and station locations. However, the level of detail will be sufficient to allow a comprehensive evaluation of the various options and their implications. Subsequent environmental documentation for the Preferred Major Investment Strategy will summarize the consideration of the alternative investment strategies analyzed in the MIS.

While the focus of the MIS is on the identification and evaluation of transportation strategies in the corridor, the Consultant will consider the community context and the implications of the resulting transportation strategy recommendation on both improving mobility as well as the quality of life for the communities served by the proposed transportation project. Accordingly,
the consultant shall provide opportunities for public outreach and input sufficient to assure that all possible views on the transit investment options under consideration are obtained.

The selected Consultant will have a demonstrated understanding of the I-75/U.S. 41 corridor, the full range of challenges facing it over the next several decades, and the likely impact that different transit options will have on meeting these challenges.

2.0 **SCOPE OF SERVICES**

The following sections describe the primary Consultant responsibilities for the successful completion of this project. To be considered responsive to this RFP, the Consultant must address each responsibility in some detail showing how the requirements will be satisfied.

2.1 **ADMINISTRATION AND PROJECT MANAGEMENT**

The purpose of these activities is to provide project coordination and tracking of progress. The Consultant is responsible for managing all activities that must be completed to satisfy federal, state, and local requirements.

2.1.1 **Project Staffing**

The majority of the work in developing the MIS will be performed in the Atlanta Metropolitan Area. The Project Manager for the MIS shall be located in the Atlanta Metropolitan Area. A minimal amount of contract funds will be expended on travel expenses.

The Project Manager shall be responsible for the successful completion and the day-to-day operation of the project and is expected to devote a majority of his/her time to the management of the project. The Project Manager will also make presentations to affected agencies and public groups and therefore should have demonstrated skills in oral and written communications. The Project Manager may be removed and replaced only with the written consent of the Project Administrator, in consultation with the Technical Management Team.

Those responding to this RFP are required to show the level of staffing and the time allotted to each task for all members of the proposed Consultant team. The Technical Management Team reserves the right to require the Consultant to remove and replace any member of the Consultant/subconsultant team from the project for cause.

2.1.2 **Project Management and Control**

All work shall be completed within 18 months of the Notice to Proceed. Upon receipt of the
Notice to Proceed, the Consultant shall prepare a Project Management Plan that outlines the tasks to be accomplished and the time schedule for their completion. A detailed project budget broken down by task and staff member will also be prepared and submitted to the Project Administrator. The major review and decision points for the study shall be clearly defined. Project items that are on the critical path should be clearly identified, and contingency actions discussed if critical path activities are not accomplished as per the schedule.

Once reviewed and approved by the Technical Management Team, the Project Management Plan shall be regarded as the baseline against which project status and progress will be measured. The Consultant Project Manager will be responsible for submitting in a timely manner all work and progress reports for the project and other documentation that might be necessary for the successful completion of the project. The Consultant Project Manager shall coordinate and administer the project, at a minimum, through the following means:

- **Monthly Progress Reports** shall be included with each monthly invoice. Progress reports shall include status of work, budget expended by task, significant accomplishments, problems encountered and anticipated, solutions to these problems, schedule adherence, and work planned for the next month.

- **Monthly Invoices** shall be prepared to provide a summary of the project budget activity and show expenditures by task.

- **Project Schedule** will be updated as appropriate to reflect the changing circumstances of project activities. Any significant changes in project schedule will be transmitted to the Project Administrator as soon as possible, and be reflected in that month’s progress report.

- **Monthly Project Meetings** will be held between the Consultant Project Manager and the Technical Management Team. These meetings are intended to report on progress and to resolve issues that cannot be resolved through independent action.

- **Public Meeting Notes** will be prepared for each meeting held as part of the public involvement program. These notes will pinpoint the key issues discussed at the meeting and identify specific comments relating to the transit alternatives under consideration. The notes will include a list of those attending the meeting.

The Consultant Project Manager shall also develop a project document management system that will provide for logical and consistent reference of all project-specific documentation and correspondence. For all deliverables, ten (10) copies shall be delivered to the Project Administrator. For final copies of technical documents (not correspondence), the Consultant Project Manager shall deliver to the Project Administrator the ten copies along with a 3.5" IBM compatible DOS-based diskette with the document clearly labeled in a file. All spreadsheet files shall be written in Lotus 1-2-3. In addition, all graphics in a final draft shall be camera-ready.
2.1.3 Coordination With Other Agencies

The Study Advisory Committee will have primary responsibility for interagency coordination and outreach. It is expected that interagency coordination will occur throughout the project and the Consultant is expected to attend all Study Advisory Committee and Task Force meetings, and at the direction of the Project Administrator prepare materials for these meetings. Those work activities that rely on data and technical resources from affected agencies (e.g., patronage forecasting from ARC or transit data from Cobb County Transit) will be coordinated through the Project Administrator.

2.1.4 Public Involvement

Public involvement is an important element of the MIS. The public participation program will be an on-going effort throughout the study and could include various means of providing opportunities for public involvement. Importantly, the MIS public involvement program should be coordinated with other public involvement initiatives that are part of the on-going transportation planning process of the ARC and other affected agencies. The Consultant should outline in the proposal the specific characteristics of a proposed public involvement program. In this description, the Consultant should discuss the types of experience the firm and Project Manager have in each type of mechanism proposed. At a minimum, the Consultant shall facilitate a process to keep the public informed of the progress of the project. The Consultant shall prepare and maintain a project mailing list, a media list, and provide correspondence necessary to inform the public. The Consultant provide staff support for the proposed program and, at the request of the Project Administrator, shall provide the following support material: agendas, visual aids, technical documentation, marketing and publicity materials, analysis of information obtained from outreach efforts, and a report for each meeting held. When appropriate, technical experts from the Consultant’s team shall be available to discuss key issues with those in attendance.

The recommended public involvement program shall be part of the Project Management Plan discussed in Section 2.1.2 above. When approved by the Task Force, after consideration of the Study Advisory Committee’s recommendations, the public involvement program will be implemented according to the schedule outlined in the Plan. Progress in implementing the program will be reported as part of the monthly progress reports.

2.2 SCOPING

The purpose of these activities is to refine the study parameters, better delineate the travel markets affected, and identify a preliminary set of investment strategies. This set of activities also establishes an evaluation framework that will be used in the subsequent evaluation of transit investment options.
2.2.1 Definition of the Mobility Problem

The Consultant will describe the extent of the MIS corridor from the perspective of geographical boundaries, travel markets, physical characteristics, existing and expected transportation services, and congestion/mobility problems. System planning issues, such as intermodal connections or reverse commutes, will be identified in this effort. It is expected that his review will include not only what exists today, but with population and demographic shifts, what might realistically be expected in future years. Much of this information will be found in existing transportation planning documents. Trends in congestion on major highway links, use of transit services, air quality targets, etc. need to be discussed specifically in the context of regional needs and in relationship to ISTEA.

The Consultant will identify proposed transportation improvements in the corridor and discuss their likely impact on alternative transit service improvements (e.g., the addition of HOV lanes on I-75). This task will rely heavily on existing documentation that has been produced as part of the ARC Transportation Plan Update and the Cobb County Multimodal Strategic Plan. The Consultant will produce a clear statement on the types of problems transit service and facility improvements will likely address in this corridor.

2.2.2 Purpose and Need Statement

A Statement of Purpose and Need is necessary to clearly define to affected agencies and the general public what problems currently exist or will exist in the future that different transit options can help solve. In some sense, this Statement becomes the benchmark against which the benefits of proposed transit alternatives are measured. The Consultant will prepare Purpose and Need Statement based on the results of the work activities discussed in Section 2.2.1. The Statement will be submitted to the Project Administrator in two forms: as a technical memorandum that clearly outlines the issues in technical detail, and as a brief, clearly understandable, statement that can be used in public outreach efforts to describe the project.

2.2.3 Evaluation Criteria

The Consultant will work with the Technical Management Team and other groups to identify an initial set of evaluation criteria that will be used to evaluate and screen alternative investment strategies. The identification of these criteria will occur early in the process so that they can be used to define data collection requirements and provide input into the analysis capabilities that will be necessary to analyze different transit options. The Consultant should discuss in the proposal his/her thoughts on the types of criteria that might be appropriate for this project. At a minimum, these criteria should be related to requirements of the "Metropolitan Planning" regulations, the ARC Transportation Plan, the Cobb County Multimodal Strategic Plan for Transit Investments, the Atlanta portion of the State Implementation Plan (SIP), and ARC Vision 2020 Statement, the Georgia DOT's Vision 2000, and specific transit service criteria of affected
transit service providers. It is expected that these criteria will be reviewed by the Study Advisory Committee and the general public, and then subsequently approved by the Task Force.

2.2.4 Technology Review

The Consultant will provide an overview and assessment of a full range of transportation technologies and strategies appropriate to addressing the corridor problem identified in Section 2.2.1. This information will be used to educate decision-makers on the advantages and disadvantages of the wide variety of options that can be considered in the corridor. At a minimum, the Consultant shall provide the following comparative information for the transportation technologies that could be considered in this corridor.

- Description
- Prototypical Applications
- Facility Requirements
- Capital/Operating Cost Characteristics
- Ridership Potential

This assessment shall consider other issues that might be deemed important by the Consultant or the Technical Management Team (e.g., interface potential with existing transit services).

2.2.5 Conceptual Alternatives

This activity will produce a set of conceptual alternatives that represent a wide range of improvements and investment costs. The alternatives will be considered as viable, distinct alternatives that can be described in terms of general alignment, mode, and operating strategies. It is not expected at this point in the MIS that detailed ridership information would be necessary although some sense of patronage impact will be needed to assess potential operating strategies and overall ridership potential. The description of the conceptual alternatives will be provided to the Technical Management Team in two forms: a technical description which provides as much technical detail as necessary to satisfy the technical representatives of the affected agencies, and an easy-to-understand narrative that can be used for public outreach efforts. After being considered by the Study Advisory Committee, the final set of conceptual alternatives that form the basis of the next set of work activities will be sent to the Task Force for review and approval.

2.3 DEFINITION OF MAJOR INVESTMENT STRATEGIES

The purpose of these activities is to identify a set of major investment strategies that can be carried into more detailed analysis and evaluation. A conceptual alternative identified from Section 2.2.5 will not be carried forward in the process if it does not have a reasonable chance
of becoming a Preferred Alternative. Such a determination could be based on lack of public support, fatal environmental impact, incompatibility with existing system characteristics, or unproven technology.

2.3.1 Screening of Conceptual Alternatives

The conceptual alternatives developed in Section 2.2.5 will be assessed using the evaluation criteria identified in Section 2.2.3. This assessment will match the likely impacts of each alternative with the Purpose and Need Statement developed earlier. Based on this comparison, each conceptual alternative will be evaluated both as a stand-alone alternative and as part of a much broader investment package. The Consultant’s proposal shall present ideas on the type of methodology that could be used to accomplish this assessment.

2.3.2 Identifying Major Investment Strategies

The Consultant will recommend to the Technical Management Team a selected set of major investment strategies that relate to the problem statement. For purposes of this analysis, the target year for planning should be the year 2020. Major investment strategies are defined as a combination of investments that as a package provide solutions to the problems being faced. They could include transit and highway capital and operational improvements. Some specific actions could, in fact, be part of all investment strategies due to their important contribution to achieving corridor goals. It is expected that between six to eight investment strategies will be in this initial set. The process of identifying these strategies will include outreach to affected agencies and the general public. The Consultant will work closely with the Technical Management Team and others to screen the initial set of Major Investment Strategies. This screening effort is intended to define a reasonable range of strategies that are relevant to the Problem Statement and which have a reasonable chance of being selected as a Preferred Investment Strategy.

The Consultant will evaluate this initial set of Strategies based on, but not limited to, the following technical factors:

- Degree of Addressing Corridor Problem Statement
- Evaluation Criteria Established in Section 2.2.3
- Integration With Existing Transportation Services and Systems
- Appropriate Technology
- Environmental Considerations
- Likely Benefits Justifying Expected Costs

The level of analysis for this initial screening should be appropriate for the types of information desired. The results of this initial screening will be presented to the Study Advisory Committee and other groups.
The Task Force will approve the final set of investment strategies that will be carried forward into more detailed analysis.

2.4 **TECHNICAL ANALYSIS**

This set of activities relate to the technical analysis that provides relevant information on each Investment Strategy that survives the initial screening evaluation from Section 2.3. Engineering and environmental work will be performed at a level to allow for informed decision-making. Engineering work should therefore be undertaken at a conceptual level. The primary purpose of these technical studies is to identify, predict, and assess the various benefits and costs associated with the implementation of each Investment Strategy. As noted before, the results of this work should be in a format useful for subsequent environmental analysis as part of an EIS.

The key work tasks that will be included in this Section include: conceptual engineering, environmental assessment, travel demand forecasting, capital cost estimation, O&M cost estimation and financial analysis. The Consultant shall also recommend to the Technical Management Team other analyses that might have to be undertaken to provide information to decision-makers appropriate to the type of decisions for this project.

2.4.1 **Refinements of Alternative Investment Strategies**

This task will refine the definition of the alternative Investment Strategies to a level of sufficient detail that will allow technical analyses to occur. This includes the following specific tasks:

**Design Standards:** The Consultant shall define basic design standards that will guide engineering design decisions for each alternative. These design criteria should be sufficient to complete conceptual engineering, travel demand forecasting and environmental analyses. It is expected that the design criteria will address geometries, clearances, cross section characteristics, and vehicle characteristics.

**Engineering and Constraints Analysis:** The Consultant will identify physical and policy constraints that could affect design and alignment decisions. These constraints could include such things as utility and railroad operational policies, property ownership, community characteristics, federal, state, and local policies, and environmentally sensitive areas.

In addition, the Consultant will conduct engineering analyses that include consideration of the Constraints Analyses. These analyses will incorporate at a minimum for rail alternatives horizontal and vertical alignments, conceptual station locations and characteristics, and typical cross sections. For TSM/Bus alternatives, the engineering shall include at a minimum, the identification of bus lane locations and preferential HOV treatments, and the identification of park-and-ride and other bus-related facilities.
Conceptual Operating Plans: The Consultant will define the operating characteristics of each mode in each Major Investment Strategy to a level sufficient to support transit demand forecasting, environmental analysis, and the development of capital and operating cost methodologies. These conceptual operating plans will provide the needed network and model inputs for travel demand forecasting and ridership estimates. For each Major Investment Strategy, the Consultant in coordination with the Technical Management Team, will prepare background networks for bus and rail transit analysis; route information such as headways, dwell times and travel speeds, rail station access; fare structure; and transfer policies.

It is expected that the Consultant will utilize existing models to the extent possible to develop the database necessary to undertake this technical analysis. The ARC models and the models used for the Cobb County Multimodal Strategic Plan development, and the GDOT Commuter Rail Study, will provide a good foundation for conducting this technical analysis.

2.4.2 Conceptual Engineering and Operational Requirements

This work further refines the physical and operational features of each Major Investment Strategy to a level where plan and profile drawings and station site plans can be developed. The specific tasks in this work include the following:

Conceptual Station Plans: The Consultant shall prepare conceptual station site plans at a scale needed for technical analysis. Station plans shall include right-of-way requirements, proposed station configurations for terminal operations and volumes, park-and-ride lots, and street relocations and adjustments.

Plans and Profiles: The Consultant will prepare conceptual level plan and profile drawings at a scale needed for technical analysis. These plan and profile drawings shall be based on existing information as much as possible, and shall show horizontal and vertical curves, conceptual locations of park-and-ride lots, stations, TSM elements, support facilities, and other relevant physical elements for each of the alternatives.

2.4.3 Travel Demand Forecasting/Ridership Estimates

The Consultant will estimate ridership levels for the different Major Investment Strategies. Given the importance of providing consistent ridership estimates, the Consultant is expected to use existing models and databases to the extent possible.

The forecasting efforts performed by the Consultant will specifically address transit ridership analysis and travel demand for each alternative Investment Strategy. It is expected that the Consultant will interact on a continuing basis with the modeling staff of the affected agencies to assure consistency and validity of the results as they relate to existing modeling efforts. The Consultant shall undertake, at a minimum, the following activities.
Methodology Report: The Consultant shall develop a work program outlining the methodology that will be followed in undertaking demand forecasting. In particular, the Consultant shall identify existing models and data sources that can be used to successfully complete this task. The work program should also reflect the requirements of the ISTEA, Clean Air Act, and any Major Investment Study guidelines that will be disseminated by the federal modal administrations during the period of this activity. The Consultant should focus efforts on those activities which are anticipated to have the greatest impact on ridership estimates. In particular, the Consultant shall address the following issues in the work program and submit specific recommendations to the Technical Management Team on how they should be addressed in the MIS analysis.

- Zone system definition
- Demographic and land use data
- Zonal assumptions such as walk/auto access factors and parking costs
- Network coding conventions
- Model assumptions such as fares, travel time values, and transfer penalties
- Model validity across all trip purposes
- Special generator projection procedures
- Specific model enhancements

Validation: The Consultant shall conduct base year estimations to validate the modeling approach. Data for this validation will come from existing sources relating to travel patterns, characteristics, and volumes. Sources for such data could include MARTA on-board surveys, ARC and GDOT traffic data, and the 1990 Census. The Consultant shall present summaries of these validation efforts to the Technical Management Team.

Service and Demand Analysis Results: The Consultant shall undertake the demand analysis as described (and approved) in the work program. In this task, the Consultant shall perform the following procedures: reasonableness checks, modification of output to include travel forecasts generated external to the model (e.g., special generator forecasts), and data summary and presentation. Mode split and traffic assignment for auto, HOV, and other transit modes found in the Major Investment Strategies will be checked for reasonableness, and where deficiencies are found, the Consultant will outline to the Technical Management Team how they will be resolved.

The Consultant shall prepare a summary report that documents the results of this analysis. This report shall provide the results of the analysis in an understandable way, and in a format that is easy to use in benefit/cost assessment and in environmental reviews.
2.4.4 Environmental Studies

This work activity is designed to provide information on social, environmental, and economic impacts associated with each Major Investment Strategy alternative. Potential impacts during construction, as well as longer-term impacts should be identified. The basic assumption in this analysis is that the level of work will allow for informed decision-making. The results of this activity should be provided in a format that will feed into subsequent environmental documents.

The primary types of environmental analyses that should be conducted relate to the evaluation criteria formulated earlier. It is likely that the environmental issues of importance, and thus should be included in the analysis, include land use and development, air quality, energy conservation, water quality and runoff, and other factors considered important by the Technical Management Team with input from the Study Advisory Committee. In particular, the environmental factors identified in the ISTEA should be considered as part of this analysis.

The Consultant will develop environmental impact methodologies based on the initial information received from the Technical Management Team and other affected agencies. Applicable federal, state, and local regulations concerning environmental analyses should also guide the development of appropriate levels of methodology. The level of effort should be sufficient to clearly distinguish the significant and potentially significant environmental impacts among the proposed Major Investment Strategies. The recommended criteria and methodologies that will be used in evaluating the environmental impacts will be submitted to the Project Administrator and approved by the Technical Management Team before the environmental work is begun. Conceptual level mitigation measures that might be required to mitigate the environmental impacts for the alternative strategies will be developed and used in cost estimation.

2.4.5 Identification of Supporting Strategies

To the extent that transit options are part of the Major Investment Strategy alternatives, the Consultant will undertake an assessment of the types of incentives and disincentives that might be considered to support the level of transit investment being considered. In addition, the Consultant shall recommend land use and development strategies that will augment the effect associated with the incentives and disincentives. The Consultant shall prepare a report that will be approved by the Technical Management Team that outlines the specific actions that should be taken to support the preferred Major Investment Strategy.

2.5 COST ESTIMATION

The Consultant shall estimate the capital and O&M costs associated with the Investment Strategies. In each case, the Consultant shall use methodologies and assumptions that are accepted by FTA, FHWA, and the affected agencies. Level of effort and amount of detail should be sufficient to produce conceptual level cost estimates that show differences among
alternatives with acceptable levels of confidence.

### 2.5.1 Capital Cost Methodology

The Consultant shall use a methodology for capital cost estimation that includes all the capital costs for all alternatives, including bus and TSM-related costs. Capital costs such as right-of-way and vehicle purchases, should reflect recent construction trends and unit costs observed in the Atlanta metropolitan area.

The Consultant shall prepare conceptual comparative facility, equipment, construction, and right-of-way cost estimates for each alternative estimated from the plans and profiles developed in earlier tasks. It is expected that the following activities would be part of the capital cost methodology.

- Determination of appropriate construction or unit costs
- Quantity estimates and construction requirements
- Total costs by category, segment, or facility
- Add-on or indirect costs
- Reasonableness and sensitivity checks on estimates

The Consultant shall also prepare annualized cost estimates, implementation schedules, capital expenditure flows, comparison matrices, and other information deemed appropriate for the level of decision being contemplated.

### 2.5.2 Operating and Maintenance Costs

The Consultant shall estimate the operating and maintenance (O&M) costs for each of the Major Investment Strategies. The Consultant shall undertake, at a minimum, the following tasks to accomplish this work activity.

- Review O&M cost models already used in the Atlanta area
- Use appropriate FTA guidelines to develop an acceptable approach to O&M cost estimation for this project
- Test and evaluate the O&M cost model by comparing base year and current year cost information to the O&M model results
- Where appropriate, and with the concurrence of the technical steering committee, revise operating scenarios to obtain more cost-effective alternatives

- Develop annual cost estimates for each of the alternatives, and present the results in the form of an annual flow of costs between the base year and the horizon year

- Conduct reasonableness checks of the O&M estimates

The Consultant shall present the O&M cost estimates to the Technical Management Team in a form that is consistent with the timeframe and format used for estimating capital costs. The O&M cost estimates shall be presented in a cash flow format and shall be summarized according to major categories such as vehicle miles, rail miles, vehicle hours and number of vehicles. In addition, the Consultant shall pinpoint those factors which account for any significant differences in O&M costs between the alternatives.

2.6 **FINANCIAL ANALYSIS**

The Consultant shall work with the Technical Management Team to assess the financial feasibility of each alternative. This financial feasibility shall include, but not be limited to, the following tasks.

- Identify existing and potential funding sources, and the likelihood that future financial resources will meet expected needs

- Estimate transit farebox revenues for each alternative, reflecting the likely mix of fare payment, and express estimates in terms of current year dollars and escalated dollars

- Develop alternative funding packages for each Major Investment Strategy

- Assess institutional feasibility of funding packages from the perspective of legal and administrative constraints, public acceptability, growth potential, and equity issues

- Compare alternative strategies according to revenue availability and feasibility

- Develop financial plans for each strategy

It is expected that the cash flow analysis will be conducted through the horizon year with results shown in both base year dollars and year of expenditure dollars. The Consultant will prepare a technical report on the results of this financial analysis and submit it for review and approval to the Study Advisory Committee and Task Force.
3.0 **FINAL EVALUATION**

The Consultant shall prepare a Final Evaluation Report that summarizes the results of the technical analyses that have been undertaken in this study, and the results of public involvement program. The Final Evaluation Report shall be considered a document whose intent is to provide relevant information on the selection of the Preferred Investment Strategy. As such, the Report should present comparative information on the alternative strategies under consideration, and provide a calculation of the cost effectiveness of each Strategy based on the latest FTA/FHWA guidance. The Consultant shall propose in the response to this solicitation the methodology that will be used to undertake this final evaluation. This explanation shall include the specific methodology proposed, the level of information that will be provided to decision-makers, and the extent to which additional work might be necessary over that found in the previous tasks to accomplish this objective.

The Consultant shall participate in meetings with the Technical Management Team, the Study Advisory Committee, and the Task Force that will lead to the selection of a preferred investment strategy. At the direction of the Project Administrator, the Consultant will prepare graphic materials that highlight the differences among the alternatives under consideration, and facilitate meetings that lead to resolution of key issues. In addition, the Consultant shall participate, if requested by the Project Administrator, in discussions with federal and state agencies to explain the technical basis for the identification of the Preferred Investment Strategy.