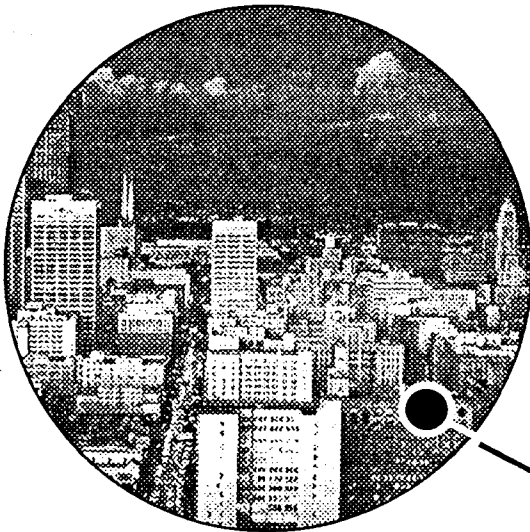


LA5-1992050001-B1



DOWNTOWN LOS ANGELES

**EXPOSITION
RIGHT-OF-WAY**

**Alternatives Refinement/
Environmental Impact
Report Study**

Revised Draft

**Evaluation
Process**

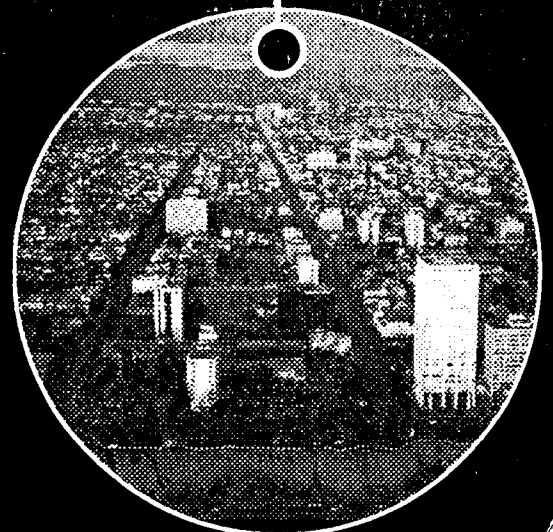
23 July 1993

MTA

**LOS ANGELES COUNTY METROPOLITAN
TRANSPORTATION AUTHORITY**



BRW, Inc.
Myra Frank and Associates
Katz, Okitsu and Associates
ICF/Kaiser Engineers



DOWNTOWN SANTA MONICA



**REVISED DRAFT
EVALUATION PROCESS**

**EXPOSITION CORRIDOR
ALTERNATIVES REFINEMENT/
ENVIRONMENTAL IMPACT REPORT STUDY**

Prepared for:

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23 July 1993



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1.0 Introduction

This report presents the methodologies which will be used to evaluate the alternatives as part of the Exposition Corridor Alternatives Refinement/EIR Study. This Evaluation Process Report includes a list of evaluation measures, the relationships to the project goals and objectives, the sources for the data to be used, and the framework to be used in the evaluation. The evaluation process will focus on the information needed to satisfy the objective to select the best transportation improvement for the Corridor. This will provide decision-makers with information based on the following four categories:

- Mobility Improvements - To measure service enhancements for transit riders and corridor congestion relief.
- Community Benefits - The degree to which the alternative assists in meeting environmental and community objectives such as minimization of adverse impacts, air quality improvements, and economic development.
- Cost Effectiveness - To compare the efficiency of each alternative with respect to achieving transportation benefits.
- Operating Efficiencies - To assess the changes in transit network operations and the relative costs of the alternatives with respect to system resources.

A two-step evaluation process will be followed during the Study. The Alternatives Refinement Phase will provide MTA with an evaluation of the options prior to conducting the environmental studies. This is helpful to:

- Focus environmental studies on the truly promising alternatives; and,
- Reduces complexity and potential confusion by the public and agencies involved.

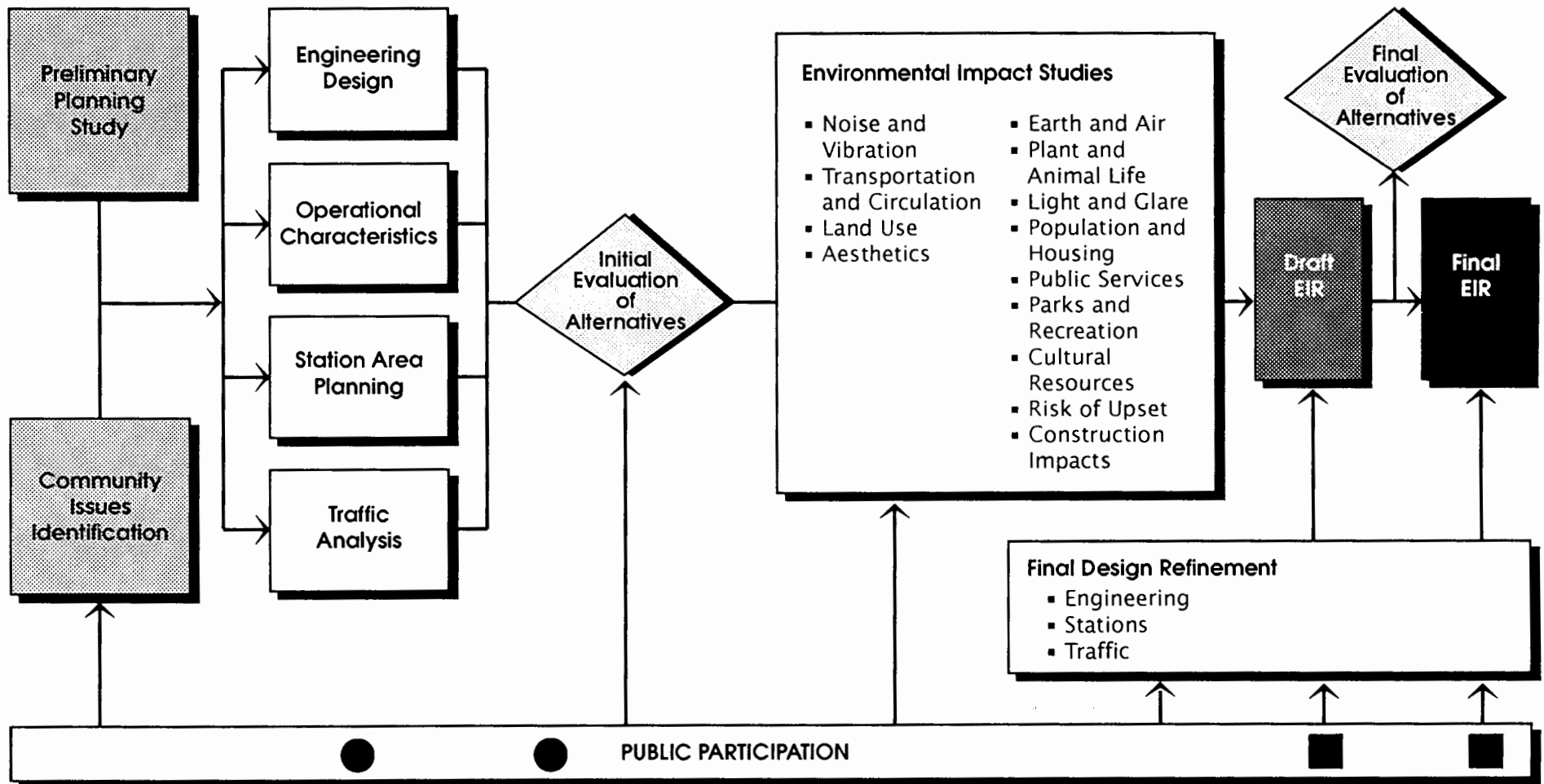
The first step will consider seven alternatives remaining from the Preliminary Planning Study completed in May, 1992. The first screening step will attempt to reduce the number of alternatives prior to conducting detailed environmental studies for the EIR.

A second or final evaluation screening will be conducted at the conclusion of the EIR to select the Preferred Alternative. Figure 1-1 schematically depicts this process.

The final evaluation process will also focus on the identification of trade-offs. In general, trade-offs are descriptions of the relationships among impacts, among affected interests and among the alternatives. Trade-off analysis shows the effect of making selected changes in the alternatives by displaying how an action designed to achieve an effect in one impact area has implications for other areas as well. The use of trade-offs is particularly valuable where alternatives exhibit strengths and weaknesses in different areas and in differing degrees. A series of sensitivity analyses will be performed with the results assisting in the definition of the Preferred Alternative.



Study Process



- Neighborhood Workshops
- Public Hearing

Source: B R W, Inc., 20 July 1993



2.0 Evaluation Framework

2.1 OVERVIEW

The design of the evaluation framework should enable a clear identification of the differences among the candidate alternatives. The purpose of the evaluation process is to concentrate on key areas of difference and to identify implications and trade-offs in a manner to facilitate decision making and the selection of the Preferred Alternative.

Using the results from the Preliminary Planning Study, the evaluation process will be based on the following alternatives recommended for further consideration:

- A. No-Build Alternative
- B. Light Rail Transit (LRT) - along Exposition Right-of-Way (ROW) to Santa Monica.
- C. LRT - along Exposition ROW, then along south side of I-10 at Motor Avenue to I-405 back to ROW to Santa Monica.
- D. Electric Trolley Bus (ETB) - Exposition ROW to Santa Monica.
- E. ETB - Exposition ROW to Venice/Robertson; down Venice to Sepulveda back to ROW to Santa Monica.
- F. ETB - Exposition ROW to Venice/Robertson; down Venice in median to Lincoln, then in mixed traffic to Coast then Main/Pacific to Santa Monica.
- G. ETB - Exposition ROW to La Cienega, north to Venice in mixed flow, south to Exposition ROW to Santa Monica.
- H. Bike Path - Interim or Adjunct use along Exposition ROW from Vermont Avenue to Santa Monica.

Each alternative will be measured and compared based on following four general categories of criteria:

- **Mobility** - The degree to which each alternative improves transit times and congestion problems in the Corridor.
- **Environmental/Community** - The degree to which each alternative meets local, regional and community objectives such as minimization of adverse impacts, enhanced regional air quality and economic development opportunities.



- **Cost Effectiveness** - The degree to which performance and transportation benefits of each alternative compare with the total project costs.
- **Operating-Efficiency** - The degree to which changes in transit network operations associated with each of the alternatives compare with relative operating costs.

A number of evaluation measures related to each of these general criteria have been identified and will be used in the two screening steps. The evaluation measures will be applied to each of the alternatives, and a summary of the evaluation results will be prepared. Because not as much detail will be known at the point of the initial screening, selected evaluation criteria and measures will need to be deferred until the final evaluation.

An assessment of significant trade-offs between the alternatives during the final evaluation after the DEIR has been prepared will identify major decision choices with regard to fiscal effectiveness, cost/affordability, cost effectiveness, and equity assessments. The selection of the Preferred Alternative will include a discussion of the rationale for the decision, based upon the evaluation measures and assessment of trade-offs between alternatives.

2.2 GUIDING PRINCIPLES TO DEFINE AND EVALUATE ALTERNATIVES

The LACMTA's mission statement contains specific goals to help improve transportation throughout the County. These goals were reviewed to formulate a set of principles to guide the definition and evaluation of alternatives for the Exposition Right-of-Way Corridor Project.

The set of five objectives are listed below:

- Transportation improvements should result in a net increase in corridor capacity.
- Transportation improvements should be consistent with local objectives and plans.
- Transportation improvements should link successfully with the regional system and help relieve regional congestion.
- Transportation improvements should provide additional service options for existing transit riders.
- Transportation should be compatible with and, if possible, enhance adjacent land uses.



2.3 PUBLIC AND AGENCY INPUT TO THE REFINEMENT OF ALTERNATIVES

An ongoing dialogue with the public was established in the Preliminary Planning Study and will be continued in the Alternatives Refinement/EIR Study. The dialogue is important to obtain input and comments on design concepts and to review evaluation results specifically community input is needed to:

- Identify and provide detail on issues and concerns that can be addressed with design of alternatives and can consist the MTA in the comparison of alternatives;
- Suggest ideas about how to incorporate the transportation improvement into the area (i.e., pedestrian and auto linkages, separation treatments, etc.); and,
- Identify issues and concerns to be addressed in the environmental studies.

The first series of public meetings for the Alternatives Refinement Phase was held from mid-April to mid-May, 1993. During this time, eight workshops were held and over 1,000 comments obtained. Table 2.1 was prepared to organize community comments to be used effectively in the refinement and evaluation process.

Each of the comments received at the workshops was recorded and then assigned to one of the 20 categories listed in Table 2.1. These comments were further reviewed to determine an appropriate response for each. Seven different status response levels were identified:

- Comment Noted
- Incorporated in Design of Alternative
- Incorporated into EIR Analysis
- Considered in Evaluation
- Considered in Station Location Analysis
- Part of System-wide Assessment
- Considered in the Planning Process

Table 2.2 presents an example page of how each comment was recorded and the response level assigned.



TABLE 2.1
SEGMENT DESIGN CRITERIA FROM COMMUNITY INPUT COMMENTS

SEGMENT DESIGN CRITERIA	
A-1	Station Location - Different sizes and sites - Access routes
A-2	Station Characteristics - Number of bus routes/berths - Number of parking spaces - Number of kiss-and-ride spaces - Design integration
A-3	Alignment Horizontal Location
A-4	Alignment Vertical/Profile
A-5	Cross-Section Elements - Guideway - Bikeway - Mitigations
A-6	Traffic Operations - Station and parking access - Alignment crossings - Pedestrian crossing
ADJACENT COMMUNITY CONCERNS	
A-7	- Other
A-8	- Noise
A-9	- Visual
A-10	- Safety
A-11	- Vibration
A-12	- EMF
A-13	- Security/crime in neighborhood
A-14	- Growth Inducement
A-15	- Cumulative Traffic
ALTERNATIVES EVALUATION	
B-1	- Operations
B-2	- Ridership
B-3	- Potential for Environmental Sensitivity
B-4	- Project Costs
SYSTEM CONSIDERATIONS	
C-1	- Alternatives to Project
C-2	- Systemwide issues

SOURCE: BRW, Inc.; May 1993.



TABLE 2.2
 EXAMPLE OF COMMUNITY INPUT
 ECHO HORIZON SCHOOL - CULVER CITY
 APRIL 14, 1993

Category	Segment Design Criteria	Comment Status					
		Comment Noted	Incorporated in Alternative Design	Incorporated Into EIR Analysis	Considered in Evaluation	Considered in Station Location Analysis	Part of System-Wide Assessment
Station Location							
A	Is a station possible at Ballona?					X	
A-1	Put a station near Hayden Street and have the train stop there every other run (skip stop service).					X	
A-1	Is it possible to move the recycling center?						X
A-1	Lot of underutilized land east of La Cienega.					X	
A-1	Could there be a station at Von's market?					X	
A-1	A station will not be within walking distance of residents unless you have one between La Cienega and Robertson.					X	
A-1	It would be hard to fit a station in at Motor because of space constraints.					X	
A-1	Assess station sites impact on traffic because parking attracts cars.					X	
A-1	When locating a station, consider that National Boulevard/Motor Avenue is a confusing area - lots of freeway on/off ramps.		X			X	
A-1	If there are only two stations, why assume that we have to leave out the "Hayden" station?					X	
A-1, A-6	Consider heavy traffic at Jefferson and National Boulevards.				X		
A-1, B-1	Station between La Cienega and Robertson would put 3 stations close together and would slow things down.				X	X	
A-1, B-1	If there is no station at Hayden Street, what about a shuttle between Venice station and Hayden Tract area?					X	

SOURCE: Rose and Kindle, MTA, BRW, Inc.; May 1993.



comparison of the effectiveness of the project alternatives relative to each other will be conducted. Text discussion will be used to illuminate key findings.

3.3 ENVIRONMENTAL

The alternatives refinement phase and the scoping process for the DEIR will identify project issues which will be investigated and addressed in detail in the environmental evaluation of the project alternatives. In the alternative refinement phase, the number and proximity of sensitive land uses (e.g. residential, schools, sound studios) to each alternative will be determined. The magnitude of displaced land uses will be desired to mitigate impacts will be described including impacts on project costs and operations. Anticipated benefits to community land use and economic goals will be discussed. In the EIR Phase, potential impacts will be identified and evaluated. Recommended mitigation measures will be identified and compared amongst the alternatives. Table 3.1 presents specific environmental evaluation criteria expected to be major factors in the evaluation of alternatives.

3.4 COST-EFFECTIVENESS

The costs of the alternatives relative to performance and impact will be of significant interest in the comparison of alternatives. Capital costs of the alternatives will be compared to the No-Build alternative as well as among alternatives. Data and results to make these comparisons will be available from Task 2.1: *Capital Cost Estimates*. Similar to Capital Costs, O&M costs for each of the alternatives from Task 2.2 will be compared to the No-Build alternative as well as among the options to identify clear differences.

Annualized capital and O&M costs will be developed. Capital costs will be annualized using a 7 percent discount rate and the following useful lifetimes:

• right-of-way	100 years
• right-of-way preparation (major grading, etc.)	100 years
• structures	30 years
• trackwork	30 years
• signals, electrification	20 years
• pavement, parking lots, grade crossings	20 years
• rail vehicles	30 years
• buses	12 years



3.0 Alternatives Evaluation Criteria

This section presents the specific project objectives and the evaluation measures to be used to compare the project alternatives. These objectives and measures are based upon an understanding of overall goals and project issues and are designed to address areas where clear differences are anticipated to exist among the alternatives.

3.1 ALTERNATIVES EVALUATION CATEGORIES

The following evaluation criteria categories and project objectives will be used:

Mobility/Transportation Effectiveness

- Reduce Corridor Congestion
- Improve Corridor Mobility
- Increase Transit Ridership in Corridor
- Increase Mobility of Transportation Disadvantaged (lower income households)
- Increase Corridor Transportation Capacity

Environmental/Community

- Minimize Impacts to Sensitive Land Uses
- Minimize Impacts to Historic and Cultural Facilities
- Minimize Impacts to Community Facilities
- Maximize Integration with Land Use Plans, Activity Centers, Economic Development Objectives
- Reduce Energy Consumption
- Reduce Emissions and Air Quality Impacts

Cost/Cost-Effectiveness

- Project Costs
- Cost per Mile
- Cost per Rider

Operating Efficiency

- Operating and Maintenance Costs
- Integration with Regional Transportation Network

3.2 MOBILITY/TRANSPORTATION EFFECTIVENESS

The evaluation of Mobility will assess the degree to which each alternative resolves Corridor mobility. The analysis will assess the amount of improvement in performance with implementation of each alternative compared to the No-Build. In addition, a



TABLE 3.1
ENVIRONMENTAL EVALUATION
Category Elements, Project Objectives and Measures

Category	Objective	Measure(s)	Screening Level ¹
ENVIRONMENTAL			
	<ul style="list-style-type: none"> • Minimize Adverse Impacts <ul style="list-style-type: none"> - Sensitive Land Uses - Parks - Community Facilities - Displacements 	<ul style="list-style-type: none"> • Number of Sensitive Land Uses Near Project Alignment • Number of Noise Impacted Receptors <ul style="list-style-type: none"> - Residential Units - Commercial Businesses - Open Space Acres • Number of Displacements <ul style="list-style-type: none"> - Residential Units - Commercial Businesses - Open Spaces Acres 	1 - 2 1 2
	<ul style="list-style-type: none"> • Minimize Impacts to Parks and Community Facilities 	<ul style="list-style-type: none"> • Number of Community Facilities Impacted • Number of Impacted Parks 	2 2
	<ul style="list-style-type: none"> • Reduce Energy Consumption 	<ul style="list-style-type: none"> • Change in Energy Consumption 	2
	<ul style="list-style-type: none"> • Reduce Emissions and Air Quality Impacts 	<ul style="list-style-type: none"> • Change in Pollutant Emissions 	2
	<ul style="list-style-type: none"> • Minimize Impacts to Historic/Cultural Resources 	<ul style="list-style-type: none"> • Number of Impacted Historic/Cultural Sites 	- 2

¹ 1 = Refinement Phase; 2 = EIR Phase

SOURCE: BRW, Inc.; July 1993.



Annual O&M costs will be calculated using the annualization factors listed below:

Service Type	Equivalent Average Weekdays per Year
LRT	331
Local Bus	308
Express Bus	269
Weekday Only Express Bus	254

SOURCE: Service and Patronage Methodology Report; March 1993.

The comparison of benefits versus costs provides a primary indicator of project efficiency. Because this evaluation is concerned with total costs to society, the cost-effectiveness indices, as outlined in FTA guidelines, will be employed in this evaluation. The FTA guidelines will be followed because of familiarity with these computations in Los Angeles and comparability with other MTA projects.

3.5 OPERATING EFFICIENCY

Operating Efficiency indices will be developed to compare operating costs relative to performance among the alternatives. Performance of the various alternatives will be quantified by riders and place-miles as a measure of capacity. Operating costs will be developed and annualized for each of the alternatives.

The efficiency of operations will then be measured on a per-rider basis or on a per-unit-of-capacity basis. Operating cost per rider will be calculated for all Corridor services on a daily basis. Similarly, daily operating cost per place-mile will be calculated as a measure of capacity.

Table 3.2 presents the Operating Efficiency category elements, objections and measures.



TABLE 3.2
COST-EFFECTIVENESS EVALUATION
 Category Elements, Project Objectives and Measures

Category	Objective	Measure(s)	Screening Level
COST EFFECTIVENESS			
	<ul style="list-style-type: none"> • Capital Costs • O&M Costs • Annual Costs • Cost Effectiveness 	<ul style="list-style-type: none"> • Total Capital Costs of Each Alternative • Total O&M Costs of Each Alternative • Annualized Capital Costs for Each Alternative • Total Costs per Rider • Total Boardings per Mile of Guideway 	<p>1 2</p> <p>1 2</p> <p>1 2</p> <p>1 2</p> <p>1 2</p>

SOURCE: BRW, Inc.; July 1993.



TABLE 3.3
OPERATING EFFICIENCY EVALUATION
 Category Elements, Project Objectives and Measures

Category	Objective	Measure(s)	Screening Level
OPERATING EFFICIENCY			
	<ul style="list-style-type: none"> • Provide Fiscally Efficient Operations 	<ul style="list-style-type: none"> • Total O&M Costs of Each Alternative • Operating Cost per Rider • Operating Cost per Place Mile 	<p align="center">1 2</p> <p align="center">1 2</p> <p align="center">1 2</p>

SOURCE: BRW, Inc.; July 1993.



4.0 Assessment of Significant Trade-Offs

The final component of the evaluation involves the identification of trade-offs. In general, trade-offs are descriptions of the relationships among impacts, among affected interests, and among alternatives. Trade-offs also show the effect of making selected changes in the alternatives by displaying how an action which is designed to achieve an effect in one impact area may have implications for other areas as well. The use of trade-offs is particularly valuable when the various alternatives exhibits strengths and weaknesses in different areas and in differing degrees.

Trade-offs will be illustrated via a series of comparisons using the results of the evaluation analyses. The first set of comparisons will focus on specific impacts or measures, with the predicted impacts or measures divided into three categories:

- Those with similar but negligible values for all alternatives considered.
- Those with similar but significant values.
- Those with diverse values.

Presenting material in this way will be useful in informing decision-makers of the major impacts and issues associated with the project.

The next set of comparisons will focus on the differences between alternatives. Under this procedure, quantitatively expressed impacts will be presented and compared on the basis of the incremental differences between them. For those which are qualitative in nature, key differences between the alternatives will be highlighted. The presentation of this material will take the form of tables and figures designed to illustrate not only the major differences among the alternatives, but also the degree to which each of the alternatives achieves the goals set for this project.

It will also be important to address the sensitivity of the performance of the alternatives to other changes in the transportation system. This will include variations in the combinations of the alternatives and extensions of selected alternatives. The primary sensitivity comparison will be the change in cost-effectiveness indices, given changes in transportation service and costs.

The sensitivity tests will be performed with conceptual estimates of capital and operating cost differences. Changes in ridership will be estimated using a pivot-point sketch planning technique. Ridership estimates will use the most similar basic model results and then pivot from that point based upon changes in transportation service (travel time) from the alternative investment.

