

**REGIONAL MULTIMODAL
TRANSPORTATION ANALYSIS:
ALTERNATIVE APPROACHES FOR
PREPARING MULTIMODAL
TRANSPORTATION ANALYSIS IN
ENVIRONMENTAL IMPACT REPORTS**

SEPTEMBER 2011

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GOVERNMENTS**

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Technical Advisory & Stakeholders Working Groups

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City of San Diego
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Move San Diego
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Executive Summary

The Regional Multimodal Analysis is tool that may be used to enhance traffic impact analysis (TIA) of development projects where use by transit, bicycle and /or pedestrians is anticipated. Development projects that may benefit from a regional multimodal analysis include smart growth developments located in urban area and other large trip generators. The Regional Multimodal Analysis is consistent with adopted SANDAG policy documents. The “Implementation” chapter of the *Regional Comprehensive Plan* (RCP) includes actions to support a more effective transportation planning and development review process:

- ◆ Strengthen the connection between local and regional plans, particularly between land use and transportation, through subregional planning programs and private sector participation.¹
- ◆ Develop and implement an improved IGR process where SANDAG and other public agencies assess proposed local development projects that have significant regional impacts, within the context of RCP goals and policy objectives.²
- ◆ Develop improved analytical tools, including a consistent measure of transportation level of service or other applicable performance measure, and enhanced transportation planning models

The current intergovernmental review (IGR) practice at SANDAG assesses regional transportation impacts of proposed developments on a project-by-project basis under the California Environmental Quality Act (CEQA). Through the IGR process SANDAG comments on the environmental impact report prepared by the lead agency responsible for preparing CEQA documents associated with a development project. This includes review and comment on detailed traffic impact analysis and the transportation impacts and mitigation measures recommended therein.

SANDAG Traffic Impact Analysis Guidelines, CEQA guidelines, and the Congestion Management Process, provide analysis guidelines and methodologies for the identification of traffic impacts and proposed mitigation measures. Development projects that may generate a high percentage of multimodal use such as transit, may benefit from a more detailed multimodal transportation analysis. The benefits of a multimodal analysis may include the following:

- Verification of the benefits of smart growth projects located in an urban area
- Identification of projects or areas that may benefit from comprehensive Transportation Demand Management Techniques
- Identification of additional feasible multimodal mitigation measures

¹ San Diego Association of Governments, *Regional Comprehensive Plan for the San Diego Region* (July 2004), pp. 356-360, 368. 391-392.

² *Ibid.*, p. 362.

- Determination of need for additional transit service and phasing of needed service based upon additional project demand
- Ability to collect fairshare contributions toward existing established multimodal projects on a project by project basis

The purpose of this study is to develop an multimodal transportation analysis methodology that may be used in the preparation of transportation impact analysis during the environmental review process under CEQA that:

- ◆ Broaden mitigation measure options for areas well served by transit operations and/or with development patterns well suited for multimodal transportation features. The multimodal options could augment roadway segment and intersection improvements as part of a development project's package of mitigation measures.
- ◆ Lead agencies can utilize this methodology to consider additional transportation mitigation options; and
- ◆ Regional transportation agencies can use to develop and comment on additional or alternative transportation mitigation options that may be feasible.

This study supplements current guidelines prepared by SANDAG and Caltrans for traffic impact analysis of development projects. It is the intent of SANDAG that this document will provide lead agencies an alternative approach and more flexibility in conducting environmental review of development projects to assess multimodal transportation impacts on the regional transportation system.

SANDAG established Technical Advisory and Stakeholders Working Groups for this study. The groups met six times during the course of the study, providing comments on approach, preliminary findings, and recommendations.

In discussions with the groups and SANDAG staff, three primary objectives were identified for this study:

- ◆ **Equity:** Promote consistent analysis among development projects countywide with regards to mitigation of regional transportation system impacts.
- ◆ **Efficiency:** Streamline the intergovernmental review process of reviewing development project impacts on the regional transportation system.
- ◆ **Effectiveness:** Maintain conditions for economic investment.

Three alternative approaches to multimodal transportation analysis were initially developed for consideration based on current San Diego regional transportation plans, IGR comment letters, and practices in other regions in California. The alternatives included a Lead Agency Program, a Subregional Program, and a Regionwide Program.

The alternatives were evaluated using evaluation criteria developed with input from the Technical Advisory and Stakeholders Working Groups. Each alternative was evaluated using a ranking scale to represent the relative effectiveness of each alternative to meet each criterion.

The Subregional Program ranked highest primarily because the geographic scope is the most appropriate level for environmental analysis of impacts across all regional transportation

facilities. A sub-area or corridor scope balances the need for a comprehensive analysis of regional impacts with the need for detailed analysis of individual development projects.

The major disadvantage of the Subregional Program is that it would require significant effort on the part of SANDAG, Caltrans, and cooperating jurisdictions to conduct subregional studies and maintain those studies as land use and transportation conditions change over time.

The Lead Agency Program ranked second among the three alternatives. This alternative was most effective at maintaining project economic feasibility because project-by-project analysis can best adapt to changing market conditions, balancing the potential cost of mitigation with the economic feasibility of the development project. The disadvantage of this approach is that the cumulative effort across multiple project-level studies is probably greater than a single sub-area analysis.

Based on this evaluation, the best characteristics of the Subregional and Lead Agency Program alternatives were combined into a fourth alternative, the Local Agency Program. The Technical Advisory and Stakeholders Working Groups emphasized the need for sensitivity to economic feasibility particularly in the current economic environment, a key advantage of the Lead Agency Program alternative. So the recommendation revised the Lead Agency Program alternative to include benefits of the Subregional Program. As SANDAG completes sub-area and corridor studies (an ongoing effort under the *Regional Transportation Plan*), these studies may be able to supplant the Lead Agency Program.

The key characteristics new Local Agency Program are:

- ◆ Builds on the traffic impact study guidelines already adopted by SANDAG;
- ◆ Promotes the use of sub-area or corridor approach to assess multimodal impacts and the identification of feasible multimodal mitigation measures;
- ◆ Recommends a multimodal assessment for development projects that will generate a high percentage/amount of multimodal trips, such as transit. Completion of a regional multimodal assessment will not alter a local jurisdiction's adopted transportation impact fee program, but if additional multimodal projects are found to be needed, a local jurisdiction could consider adding these projects to their transportation impact fee program during their next scheduled update;
- ◆ Provides a formula for calculating net unfunded mitigation measure costs; and
- ◆ Provides a formula for allocating mitigation measure costs to individual development projects.

1. Introduction

Background

SANDAG, Caltrans, and regional transit agencies are responsible for the regional transportation system in the San Diego region. Development projects generate new travel demand causing impacts on this system of highways, arterials, and transit facilities. The California Environmental Quality Act (CEQA) process provides the primary venue for regional transportation agencies to comment on these impacts. Comments are provided to the lead agency responsible for preparing the CEQA documents associated with a development project. The lead agency is typically the agency responsible for giving the development project land use approval, typically the city in which the project is located or, for unincorporated areas, the County.

The San Diego region has a long history of cooperation among local and regional agencies to foster a consistent approach for the identification of development projects impacts on the regional transportation system through the CEQA process. This history began in September 1998 when San Diego Regional Traffic Standards Task Force met for the first time. From those initial discussions came the *Traffic Impact Study Guidelines* most recently published by the San Diego Association of Governments (SANDAG) as part of the 2008 update for the *Congestion Management Program*.

Purpose

The purpose of this study is to develop a multimodal transportation analysis methodology that may be used in the preparation of transportation impact analysis included in environmental documents under CEQA. This study supplements current guidelines prepared by SANDAG and Caltrans for traffic impact analysis of development projects, such as the *Traffic Impact Study Guidelines* mentioned above. It is SANDAG's intent that this document will provide local agencies a multimodal analysis approach and more flexibility when conducting environmental review of development projects to assess multimodal transportation impacts on the regional transportation system. The multimodal transportation analysis may be used to:

- ◆ Broaden mitigation measure options for areas well served by transit operations and/or with development patterns well suited for multimodal transportation features. The multimodal options could augment roadway segment and intersection improvements as part of a development project's package of mitigation measures;
- ◆ Lead agencies can utilize this methodology to consider additional transportation mitigation options; and
- ◆ Regional transportation agencies can use to develop and comment on additional or alternative transportation mitigation options that may be feasible.

The Regional Multimodal Analysis:

- ◆ Supplements existing regional traffic impact study guidelines that lead agencies may refer to when conducting environmental review;
- ◆ Does not establish a legal standard for environmental review;
- ◆ Does not necessitate or require modification of local jurisdictions' existing transportation impact fee programs;
- ◆ Does not otherwise affect local, regional, state, or federal funding for transportation projects in San Diego County; and
- ◆ Does not call for any type of comprehensive funding program such as a regional transportation impact fee.

The California Environmental Quality Act

The basic goal of CEQA³ is to develop and maintain a high-quality environment now and in the future by requiring public agencies to:

- ◆ Identify the significant environmental effects of their actions; and, either
- ◆ Avoid those significant environmental effects, where feasible; or
- ◆ Mitigate those significant environmental effects, where feasible.

CEQA applies to projects proposed to be undertaken or requiring approval by State or local government agencies as well as projects proposed by private applicants. Projects are activities that have the potential to have a physical impact on the environment.

A lead agency is responsible for complying with CEQA. The lead agency is generally the agency primarily responsible for approving or carrying out the project, such as a city approving a new subdivision or a community college district building a new campus. If the lead agency finds that there is substantial evidence in light of the whole record that a project may have a significant impact on the environment after mitigation, then it must prepare an environmental impact report (EIR).

The purpose of an EIR is to provide State and local agencies and the general public with detailed information on:

- ◆ The significant environmental effects that a proposed project is likely to have;
- ◆ Ways that the significant environmental effects may be minimized; and
- ◆ Alternatives to the project.

CEQA enables substantial opportunity for public comment on the environmental impacts of a project. The purpose is to better inform the lead agency as it considers approval of the project. CEQA requires that lead agencies consult with regional agencies responsible for transportation facilities that could be affected by the project.⁴

³ Pub. Res. Code §21000 et seq.

⁴ 14 California Code of Regulations, §15086(a)(5).

Regional transportation agencies such as SANDAG and Caltrans have developed an intergovernmental review (IGR) process to respond systematically to notifications from lead agencies about pending EIRs. These agencies have also developed guidelines for traffic impact analysis that they encourage lead agencies to use to evaluate impacts of the proposed project on the regional transportation system.

A development project often does not generate a significant regional transportation system impact by itself (a project-specific impact), but only in contributing to the cumulative impact of multiple projects. During the IGR process regional transportation agencies are most often concerned that each individual project provides its fair share of the measures needed to mitigate cumulative impacts. CEQA anticipates this situation, allowing a project to reduce its impact to a less than significant level if it provides its fair share of the mitigation measure needed to alleviate the cumulative impact.⁵

Problem Statement

The current IGR practice at SANDAG assesses regional transportation impacts of proposed developments on a project-by-project basis following the requirements of the California Environmental Quality Act (CEQA). This can be sometimes problematic and can lead to:

- ◆ Time-consuming negotiations;
- ◆ Inconsistent mitigation requirements;
- ◆ Inconsistent and time constrained coordination with other agencies; and
- ◆ Lack of adequate assessment of regional impacts.

The current process can result in development projects with similar impacts being treated differently based on specific circumstances such as project location, project type, project funding sources, and local policies regarding traffic mitigation.

A standardized and coordinated methodology would streamline the environmental review process and ensure greater consistency in impact analyses and mitigation measures for development projects by providing guidance for both:

- ◆ Lead agencies to follow in conducting environmental reviews; and
- ◆ Regional agencies to use when commenting on environmental documents.

SANDAG Traffic Impact Analysis Guidelines, CEQA guidelines and the Congestion Management Process provide analysis guidelines and methodologies for the identification of traffic impacts and proposed mitigation measures.

Development projects that may generate a high percentage of multimodal use such as transit, may benefit from a more detailed multimodal transportation analysis. The benefits of a multimodal analysis may include the following:

- Verification of the benefits of smart growth projects located in an urban area

⁵ Ibid., §15130(a)(3).

- Identification of projects or areas that may benefit from comprehensive Transportation Demand Management Techniques
- Identification of additional feasible multimodal mitigation measures
- Determination of need for additional transit service and phasing of needed service based upon additional project demand.
- Ability to collect fairshare contributions toward existing established multimodal projects on a project by project basis.

Finally, this approach could benefit development projects by reducing the time and cost associated with the transportation analysis required under CEQA. Advance knowledge of accepted analytic processes and mitigation practices will reduce costs for the developer by not requiring significant negotiations and rework of studies.

Policy Basis

The Regional Multimodal Analysis Study is consistent with adopted SANDAG policy documents. The “Implementation” chapter of the *Regional Comprehensive Plan (RCP)* includes actions to support a more effective transportation planning and development review process:

- ◆ Strengthen the connection between local and regional plans, particularly between land use and transportation, through subregional planning programs and private sector participation.⁶
- ◆ Develop and implement an improved IGR process where SANDAG and other public agencies assess proposed local development projects that have significant regional impacts, within the context of RCP goals and policy objectives.⁷
- ◆ Develop improved analytical tools, including a consistent measure of transportation level of service or other applicable performance measure, and enhanced transportation planning models.⁸

Public Participation

SANDAG established Technical Advisory and Stakeholders Working Groups for this study. The groups met during the course of the study, providing comments on approach, preliminary findings, and recommendations.

Study objectives

In discussions with the Technical Advisory and Stakeholders Working Groups and SANDAG staff, three primary objectives were identified for this study:

⁶ San Diego Association of Governments, *Regional Comprehensive Plan for the San Diego Region* (July 2004), pp. 356-360, 368. 391-392.

⁷ Ibid., p. 362.

⁸ Ibid., pp. 363-364.

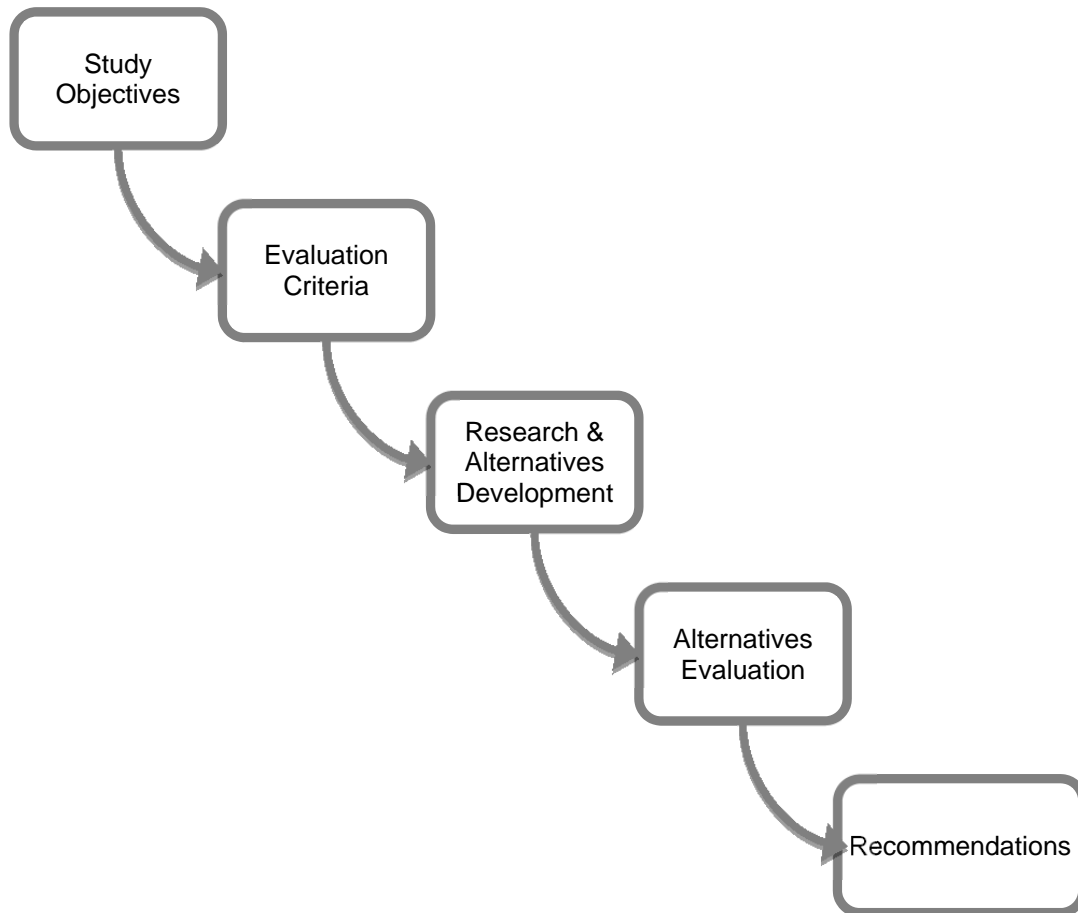
- ◆ **Equity:** Promote consistent analysis among development projects countywide with regards to mitigation of regional transportation system impacts.
- ◆ **Efficiency:** Streamline the intergovernmental review process of reviewing development project impacts on the regional transportation system.
- ◆ **Effectiveness:** Maintain conditions for economic investment.

These objectives guided the evaluation of program alternatives described in the next chapter.

2. Alternatives Analysis

To develop a recommended Regional Multimodal Analysis, alternative approaches were developed and evaluated using a standard analytical framework, shown in **Figure 2.1**. This chapter describes the core of the work effort, including determining evaluation criteria, conducting research, and developing and evaluating alternatives.

Figure 2.1: Alternatives Analysis



The Technical Advisory and Stakeholders Working Groups provided input at every step of the process shown in Figure 2.1 through the course of six meetings, resulting in substantive changes in the approach and recommendations.

Evaluation Criteria

The evaluation criteria are presented in **Table 2.1**. Weighting factors reflect alignment with the study's major objectives discussed in Chapter 1: equity, efficiency, and effectiveness.

Table 2.1: Evaluation Criteria

<u>1. Equity</u>	<u>Weighting factor = 2</u>
Objective: Analyze development projects with similar impacts in a similar manner.	
<ul style="list-style-type: none"> a. Estimate a similar fair share for development projects with similar regional transportation impacts in similar locations. b. Estimate fair share in proportion to project impacts regardless of project size and accounting for existing deficiencies.⁹ c. Adjust for other transportation mitigation measures imposed on projects to avoid double charging. 	
<u>2. Applicability</u>	<u>Weighting factor = 1</u>
Objective: Expand traffic impact analysis to incorporate multiple modes.	
<ul style="list-style-type: none"> a. Estimate fair share of impacts on multiple modes, specifically vehicles and transit. 	
<u>3. Predictability</u>	<u>Weighting factor = 1</u>
Objective: Estimate fair share impacts in advance of project-level analysis.	
<ul style="list-style-type: none"> a. Enable project applicant to make a rough estimate of fair share impacts prior to doing fair share analysis. b. Enable regional agencies to forecast overall contributions from development projects. 	
<u>4. Efficiency</u>	<u>Weighting factor = 2</u>
Objective: Improve the efficiency of the CEQA process.	
<ul style="list-style-type: none"> a. Minimize additional transportation impact analysis requirements for development projects during project-level CEQA review. b. Minimize additional transportation impact analysis requirements for regional agencies when preparing corridor and sub-area transportation plans. c. Maximize coordination and consistency of comments among regional agencies (SANDAG, Caltrans, MTS, and NCTD) and CEQA lead agency. 	
<u>5. Transparency</u>	<u>Weighting factor = 1</u>
Objective: Avoid methodologies that are not clearly documented.	
<ul style="list-style-type: none"> a. Ensure that assumptions and methods are clearly documented and accessible. 	
<u>6. Effectiveness</u>	<u>Weighting factor = 2</u>
Objective: Support economic development.	
<ul style="list-style-type: none"> a. Minimize disproportionate economic impacts among real estate industry sectors to support project feasibility. b. Promote effective use of funds to mitigate impacts in a timely manner 	

⁹ The intent is to base fair share impacts on the project's contribution to the cumulative impacts caused by all development, whether subject to environmental review or not

The initial draft of the criteria was revised based on comments received from the Technical Advisory and Stakeholders Working Groups. Revisions included:

- ◆ Criteria 1(b) was expanded to include a reference to existing deficiencies.
- ◆ Criteria 2(a) was narrowed to exclude bicycle and pedestrian modes because these modes are more appropriately examined in the context of local rather than regional transportation impacts.
- ◆ Criteria 4(b) was added to capture the tradeoff among alternatives for additional analysis at the local versus regional level.
- ◆ Criteria 6(a) and 6(b) were added to reflect a key objective of the study.
- ◆ All criteria were weighted to emphasize those most closely aligned to the study's objectives.

Background Research

Research was conducted to assist in the development of alternatives in concert with input from the Technical Advisory Working Group. Key areas of investigation included:

- ◆ Research on the California Environmental Quality Act (CEQA) with a focus on:
 - Use of program environmental impact reports (EIRs) to streamline the CEQA process for development projects;
 - Definitions of thresholds of significance with specific emphasis on multimodal transportation impacts; and
 - Cumulative impacts and fair share mitigation.
- ◆ Analysis of comments on environmental documents for major development projects within San Diego County submitted by SANDAG and Caltrans to the lead agency as part of the intergovernmental review (IGR) process.
- ◆ Review of local and regional transportation plans and environmental documents within the San Diego region.
- ◆ Research on practices from other regions in California to mitigate the impacts of development on the regional transportation system.

Key findings and conclusions from this research include:

- ◆ CEQA:
 - Program EIRs that support fair share mitigation through implementation of a fee or similar requirement provide a reasonable approach to streamlining the CEQA process for development projects, potentially saving time and costs for developers.¹⁰

¹⁰ William W. Abbott and Janell M. Bogue, "Impact Fee Programs as Effective Tools for CEQA Mitigation: An Update" in *Abbott & Kindermann Land Use Law Blog* (May 10, 2006), <http://blog.aklandlaw.com/>.

- Fair share mitigation of cumulative impacts is expressly allowed by CEQA and subject to the same constitutional protections associated with any development exaction.¹¹
- ◆ Comment letters on CEQA documents from SANDAG, Caltrans, and the North County Transit District (NCTD):
 - Impacts on the regional transportation system included:
 - Inter-city transportation systems, not local roads and related intra-city systems;
 - Capital and operating impacts;
 - Transit systems; and
 - Both cumulative and direct impacts.
 - Mitigation was requested for regional transportation impacts when impacts were estimated or documented, though often a mitigation methodology was not specified.
 - When transportation impact analysis was insufficient and mitigations could not be specified, recommended fair share participation in subregional transportation impact study and participation in recommended mitigations.
 - SANDAG and Caltrans tended to focus more on cumulative regional transportation system impacts; NCTD focused more on direct local impacts on the regional transit system.
- ◆ Transportation Impact Studies and Plans
 - The Regional Transportation Plan (RTP) provides a foundation for all subregional and corridor-level transportation studies and plans.
 - The transportation thresholds of significance for general plan EIRs focus primarily on vehicle, not multimodal, impacts.
 - Caltrans studies (Transportation Concept Reports, Project Reports) can inform project-level CEQA analysis if current, e.g. consistent with adopted RTP.
 - Subregional transportation studies (corridor studies and specific plans) provide the most useful level of analysis for determining project-level impacts on the regional transportation system.
- ◆ Practices from Other Regions
 - Regional transportation models are adapted for corridor and sub-area analyses, and made available to lead agencies for project-level environmental impact analysis.

¹¹ 14 California Code of Regulations, §15130(a)(2) and §15126.4(a)(4).

- Regional (countywide or sub-area) fair share mitigation programs are used primarily for vehicle impacts on the highway, interchange, and major arterial components of the regional transportation system.
- There was limited use of program EIRs to streamline the CEQA process for development projects.

Alternatives Development

Based on this research three alternatives were developed for evaluation. The alternatives included a Lead Agency Program, a Subregional Program, and a Regionwide Program. The alternatives were developed to reflect different levels of geographic analysis for traffic impact studies conducted pursuant to the Regional Multimodal Analysis:

- ◆ The Regionwide Program anticipates a single regionwide analysis resulting in a fair share allocation of significant regional transportation system impacts to all applicable development projects within the region.
- ◆ The Subregional Program anticipates multiple analyses, one for each subarea in the region. Development projects within each subarea would use the regional multimodal analysis articulated in the applicable subregional analysis.
- ◆ The Lead Agency Program largely represents a continuation of current practice in which the fair share analysis would be conducted individually on each applicable development project, though now with the use of a common methodology.

See **Table 2.2** for a description of each alternative.

Evaluation of Alternatives

The alternatives were analyzed using the evaluation criteria. Each alternative was evaluated using a ranking scale from one to three to represent the relative effectiveness of each alternative to meet each criterion. The results are shown in **Table 2.3**.

The evaluation was a qualitative process. Input from the Technical Advisory and Stakeholders Working Groups and SANDAG staff over the course of two meetings was used to refine the rankings. The scoring was ambiguous for several criteria that could be evaluated differently depending on the details of each alternative. As a result, the evaluation process provided useful guidance but not a definitive recommendation.

The Subregional Program ranked highest (see Table 2.3) primarily because the geographic scope is the most appropriate level for environmental analysis of impacts across all regional transportation facilities. A sub-area or corridor scope balances the need for a comprehensive analysis of regional impacts with the need for detailed analysis of individual development projects.

Table 2.2: Alternatives

	Alternative 1 Lead Agency Program	Alternative 2 Subregional Program	Alternative 3 Regionwide Program
General Description	Lead agency develops program on a project-by-project basis.	Regional agencies develop program based on corridor and other sub-area studies and related program EIRs.	Regional agencies develop countywide program based on RTP and related program EIR.
Project Screen	SANDAG TIS Guidelines ¹ .	All projects subject to CEQA.	All projects subject to CEQA.
Study Area	SANDAG TIS Guidelines ¹ .	Corridor or other sub-area, as appropriate.	Countywide.
Affected Transportation Network	SANDAG TIS Guidelines ¹ .	RTP Adopted Scenario network including regional arterial system and local interchanges.	RTP Adopted Scenario network excluding regional arterial system and local interchanges.
Program EIR	To be determined by Lead Agency.	Sub-area program EIRs consistent with RTP Adopted Scenario.	RTP EIR.
Transportation Modeling Tool	To be determined by Lead Agency.	Refined RTP model based on SANDAG TransCAD model and/or sub-area simulation model.	Existing or refined SANDAG TransCAD model.
Mitigation Threshold	SANDAG TIS Guidelines ¹ , Caltrans TIS Guidelines ¹ , or Highway Capacity Manual.	To be determined by SANDAG and affected agencies and jurisdictions as part of sub-area program EIR.	Based on RTP performance measures.
Mitigation Measures	To be determined by Lead Agency.	To be determined by SANDAG and affected agencies and jurisdictions as part of sub-area program EIR.	Based on share of unfunded portion of RTP Adopted Scenario.
Fair Share Allocation ²	Project vehicle trip ends share of total vehicle trip ends, or Project vehicle and transit person trip ends share of total vehicle & transit person trip ends.	Project vehicle trip ends share of total vehicle trip ends, or Project vehicle and transit person trip ends share of total vehicle & transit person trip ends.	Project vehicle trip ends share of total vehicle trip ends, or Project vehicle and transit person trip ends share of total vehicle & transit person trip ends.

¹ TIS Guidelines refer to traffic impact study guidelines prepared by SANDAG and Caltrans to guide the preparation of traffic impact analyses for development projects.

² "Total trip ends" may refer to either (1) total growth in trips or (2) total trips including existing trips, depending on how existing deficiencies and improvements to level of service, if any, are accounted for in mitigation measures.

Table 2.3: Evaluation of Regional Multimodal Analysis Alternatives

	Alternative 1 Lead Agency Program (LAP)	Alternative 2 Subregional Program (SP)	Alternative 3 Regionwide Program (RP)	
(1 = Least Effective / 3 = Most Effective)				Remarks
<u>Equity</u>				
Similar Projects = Similar Impacts	2.0	3.0	1.0	RP least likely to incorporate differences in impacts across region.
Impacts Proportional To Project Size	2.0	2.0	2.0	All programs subject to same legal nexus requirements.
Adjust For Other Mitigations	2.0	2.0	2.0	All programs subject to same legal nexus requirements.
Average (weight = 2)	4.0	4.7	3.3	
<u>Applicability</u>				
Evaluate Impacts On All Modes	2.0	3.0	1.0	SP most effective because of geographic scope.
<u>Predictability</u>				
Rough Estimate By Project	1.0	3.0	2.0	SP most effective because of geographic scope. High variability with LAP
Forecast Total Mitigation	1.0	3.0	2.0	SP most effective because of geographic scope. High variability with LAP
Average	1.0	3.0	2.0	
<u>Efficiency</u>				
Minimize Project-level Analysis	1.0	3.0	2.0	SP most effective for CEQA streamlining because of geographic scope.
Minimize Regional Agency Analysis	3.0	1.0	2.0	SP requires multiple studies with periodic updates by regional agencies.
Consistency Among Regional Agencies	2.0	2.0	2.0	Regional agencies can pursue consistent methodology regardless of alternative.
Average (weight = 2)	4.0	4.0	4.0	
<u>Transparency</u>				
Clear Assumptions & Methods	2.0	2.0	2.0	All programs have same potential to clearly document approach.
<u>Effectiveness</u>				
Project Economic Feasibility	3.0	2.0	1.0	LAP best incorporates economic feasibility because of timing and scope.
Timely Mitigation	2.0	2.0	2.0	All alternatives have equal potential to ensure timely mitigation.
Average (weight = 2)	5.0	4.0	3.0	
Total Score	18.0	20.7	15.3	

Source: Willdan Financial Services.

The benefits of a sub-area or corridor approach are recognized in the RTP:

This corridor approach considers multiple facilities, modes, jurisdictions, and land uses. The objective is to select the most effective mix of strategies to improve mobility within a specific corridor.¹²

The Subregional Program would more likely result in greater equity by determining the impact of all development within the sub-area in a comprehensive study. Other reasons that the Subregional Program ranked highest included:

- ◆ Impacts on multiple modes, particularly regional transit (bus and rail) needs, and the local feeder systems needed to serve regional routes.
- ◆ More predictable because a single transportation impact analysis would determine the mitigation requirements of development projects throughout the sub-area. A Regionwide Program is less likely to be as comprehensive an analysis of all components of the regional transportation system because of the broader geographic scale.¹³

The major disadvantage of the Subregional Program is that it would require significant effort on the part of SANDAG and cooperating jurisdictions to conduct subregional studies and maintain those studies as land use and transportation conditions change over time.

The Lead Agency Program ranked second among the three alternatives. This alternative was most effective at maintaining project economic feasibility because project-by-project analysis can best adapt to changing market conditions, balancing the potential cost of mitigation with the economic feasibility of the development project. The disadvantage of this approach is that the cumulative effort across multiple project-level studies is probably greater than a single sub-area analysis.

The Regionwide Program ranked last among the three alternatives primarily because the wide geographic scope of the analysis would result in a loss of detail regarding regional transportation system impacts. The Regionwide Program would miss some mitigation measures because the measures would be too small to be captured by regionwide analysis. As a result, the Program ranked behind the other two alternatives on the following evaluation criteria:

- ◆ Equity: Lead agencies would determine certain regional transportation system impacts on a project-by-project basis, causing inequities when different mitigation measures are identified for projects with similar impacts.
- ◆ Applicability: Not all mitigation measures by mode (vehicles, transit) would be addressed.
- ◆ Effectiveness: Impacts on economic feasibility on a project-by-project basis would be difficult to evaluate.

¹² San Diego Association of Governments (SANDAG), *2030 Regional Transportation Plan (2030 RTP)* (adopted November 30, 2007), p. 6-35.

¹³ For example, countywide transportation modeling typically cannot adequately evaluate interchange and intersection impacts.

Recommendation

Based on this evaluation the best characteristics of the Subregional and Lead Agency Program alternatives were combined into a fourth alternative. The Technical Advisory and Stakeholders Working Groups emphasized the need for sensitivity to economic feasibility particularly in the current economic environment, a key advantage of the Lead Agency Program alternative. So the recommendation revised the Lead Agency Program alternative to include benefits of the Subregional Program. This new alternative is called the Local Agency Program. This alternative encourages the use of sub-area and corridor studies as they are completed by SANDAG (an ongoing effort under the RTP) to supplant the Lead Agency Program (see discussion under *Step 3: Study Area* in the next chapter).

3. Regional Multimodal Analysis

Introduction

SANDAG has invested significant resources developing tools for local agencies to use to improve mobility within the region. The Regional Multimodal Analysis builds on these existing tools to provide guidelines for:

- ◆ Identifying measures needed to mitigate the impacts on the regional transportation system caused by multiple development projects (as opposed to mitigation measures associated with only a single project); and
- ◆ Determining an approach to allocate responsibility for those mitigation measures across multiple development projects.

The Regional Multimodal Analysis is an enhancement of existing guidelines for traffic impact analysis (TIS) of development projects on the regional transportation system. These guidelines and related resources include:

- ◆ San Diego Association of Governments, *Final 2008 Congestion Management Program Update, Traffic Impact Study Guidelines* (Appendix D), November 2008 (SANDAG TIS Guidelines);
- ◆ California Department of Transportation, *Guide for the Preparation of Traffic Impact Studies*, December 2002 (Caltrans TIS Guidelines).
- ◆ San Diego Association of Governments, *Congestion Mitigation Strategies Research*, December 2003, specifically the following work products:
 - *Congestion Mitigation Strategies Toolbox* (CMS Toolbox);
 - *Trip Reduction Guidelines* (Trip Reduction Guidelines); and
 - *Trip Reduction Ordinance Framework* (TRO Framework).
- ◆ San Diego Association of Governments, *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, 2006 (Not So Brief VTGR Guide).
- ◆ San Diego Association of Governments, *Trip Generation for Smart Growth: Planning Tools for the San Diego Region and Parking Strategies for Smart Growth: Planning Tools for the San Diego Region*, June 2010 (Smart Growth Trip Generation and Parking Study)

The Lead Agency is responsible for determining compliance with CEQA. The Lead Agency should consult the most recent edition of each of these documents for more guidance on specific steps of the Regional Multimodal Analysis. The Regional Multimodal Analysis relies primarily on SANDAG documents for specific methods and criteria. Differences with the current edition of the Caltrans TIS Guidelines (December 2002) are not significant.

Step 1: Project Screening

Traffic impact study guidelines typically screen out projects that are unlikely to generate a significant impact. Both the SANDAG and Caltrans TIS Guidelines contain project screening criteria. The Lead Agency should proceed with Step 2 if the auto vehicle trip generation of the Project meets one or more of the criteria listed below. Average percentage for transit, bicycle and pedestrian traffic can then be made based upon the overall trip generation anticipated by the project. The purpose of this initial step is to determine projects that might benefit or be subject to a Regional Multimodal Analysis, not to trigger additional CEQA analysis if not warranted. The criteria are based on the SANDAG TIS Guidelines.

- ◆ Greater than 1,000 average daily or 100 peak-hour trip ends if:
 - Project conforms to land use and transportation elements of the applicable general plan, specific, or community plan; and
 - The applicable general plan, specific, or community plan conforms to these guidelines for the analysis of regional transportation system impacts.
- ◆ Greater than 500 average daily or 50 peak-hour trip ends if Project does not conform to land use and transportation elements of the general plan or a specific plan.
- ◆ Equal to or greater than 20 peak-hour trips per day on an existing highway on- or off-ramp.

Project screening based on vehicle trip estimates requires assumptions of trip generation rates per unit of development. The SANDAG TIS Guidelines provide a detailed explanation of methods for estimating trip generation rates for development projects:

- ◆ First, the lead agency should consult the SANDAG TIS Guidelines to develop a preliminary estimate of trip generation based on rates from recognized local sources such as SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, or national sources such as *Trip Generation*, by the Institute of Transportation Engineers.
- ◆ Second, the Lead Agency should use anticipated rates for the percentage of multimodal trips (transit, pedestrian, bicycle) that would be anticipated based upon the overall trip generation for the proposed project. The Congestion Management Strategies (CMS) Toolbox and Trip Reduction Guidelines to reduce the preliminary estimate based on the characteristics of the Project that reduce auto trips such as transit-oriented design, transit-oriented locations, transportation demand management programs, and mixed use development may provide a guide for assessing the percentage of anticipated multimodal trips.

Step 2: Tiered Environmental Analysis

The Project may be able to rely on an existing program-level EIR for analysis of regional transportation system impacts. Before proceeding with a TIS for the Project the Lead Agency should determine if the Project is consistent with an existing program-level EIR such as the EIR for a general plan, specific plan, corridor plan, or other sub-area EIR. To

comply with CEQA and be consistent with the Regional Multimodal Analysis the program-level EIR must at a minimum have:

- ◆ Analyzed a land use plan that encompassed the size and location of the Project;
- ◆ Examined a reasonable range of alternatives to the adopted land use plan;
- ◆ Provided information about the potential environmental impacts of development on the regional transportation system facilities with the Project study area (Step 3);
- ◆ Analyzed transit system impacts on the regional transportation system if appropriate (Step 4); and
- ◆ Identified measures to mitigate significant environmental impacts on the regional transportation system (Step 5).

If the program EIR does not identify the cost of mitigation measures (Step 6) and provide a methodology for allocating mitigation costs to the Project (Step 7) then the Lead Agency will need to conduct those steps as part of a project-level environmental analysis.

If the analysis of regional transportation system impacts is not going to tier off of an existing program-level EIR then the Lead Agency should proceed with a TIS for the Project as described in the following steps.

Step 3: Study Area

This step addresses (1) the regional transportation system facilities included in the Regional Multimodal Analysis, and (2) the boundaries of the TIS study area.

Regional Transportation System

The Regional Transportation Plan (RTP) defines regional transportation investment priorities for the region. However, the RTP analysis focuses on overall corridor mobility and so lacks detailed investment programs for the more fine-grained components of the network such as local interchanges, intersections, arterials, and local transit service. To adequately identify environmental impacts on the regional transportation system the TIS should include evaluation of the following facilities:

1. Those segments of state highways to be improved in the currently adopted RTP;
2. Interchanges along segments included in (1);
3. Transit systems to be improved in the currently adopted RTP;
4. Transit systems providing feeder service to (3); and
5. SANDAG regional arterial system.

Boundaries of Study Area

The TIS study area should be based on the area of influence of the Project on the regional transportation system. Based on the SANDAG TIS Guidelines that area is defined as:

- ◆ All regional transportation system segments and intersections where the proposed project will add 50 or more peak-hour trips in either direction to the existing roadway traffic.

- ◆ All freeway entrance and exit ramps where the proposed project will add a significant number of peak-hour trips to cause any traffic queues to exceed ramp storage capacities.

The Lead Agency could use the current SANDAG transportation forecasting model (currently TransCAD) to identify segments affected by the Project. The study area could be based on the extent of affected segments. More refined analysis of intersections and freeway ramps could follow as part of the transportation modeling developed specifically for the TIS (see Step 4).

Strict application of the SANDAG TIS Guidelines may result in a study area that is too limited for effective regional transportation system planning. Geographic analysis of regional transportation system impacts at the sub-area or corridor level is preferred. The sub-area or corridor level of analysis typically provides the most reasonable balance between the identification of specific project impacts and the development of a comprehensive plan for mitigating the impacts of growth on the regional transportation system.

The RTP identifies areas for sub-area and corridor analysis.¹⁴ For the purposes of the current study the status of these analyses was compiled and is shown in **Figure 3.1** and **Table 3.1** on the following pages. The table also lists Caltrans reports that are useful inputs to corridor studies. Both the corridor and Caltrans studies focus on major highways within each corridor, major transit routes, and parallel roadway routes. However, the completed corridor studies listed in Table 3.1 may not evaluate all regional transportation system facilities within the corridor.

Step 4: Project Impacts

Identifying impacts of the Project requires:

- ◆ Defining the transportation analysis scenarios;
- ◆ Determining how to address transit impacts;
- ◆ Conducting transportation impact analysis; and
- ◆ Determining thresholds of significance.

Transportation Analysis Scenarios

Both the SANDAG and Caltrans TIS guidelines contain fairly consistent definitions of the transportation analysis scenarios to be evaluated. With regard to the Regional Multimodal Analysis, the focus is on cumulative scenarios because a longer horizon is more likely to capture all the regional transportation system mitigation measures needed within a corridor or sub-area. As stated in the SANDAG TIS Guidelines the horizon year for the cumulative scenario should have a horizon of at least 20 years.

In addition, for those regional transportation facilities to be improved with mitigation measures (see Step 5) data regarding level of service or other applicable performance measures (see Step 7) will be needed for the following four scenarios:

¹⁴ San Diego Association of Governments (SANDAG), *2030 Regional Transportation Plan (2030 RTP)* (adopted November 30, 2007), p. 6-35.

1. Existing conditions (near the time of approval of the Project);
2. Existing conditions plus the Project;
3. Future conditions at the planning horizon with cumulative development but without the mitigation measure; and
4. Future conditions at the planning horizon with cumulative development and with the mitigation measure.

Figure 3.1: San Diego Region Corridor Study Areas

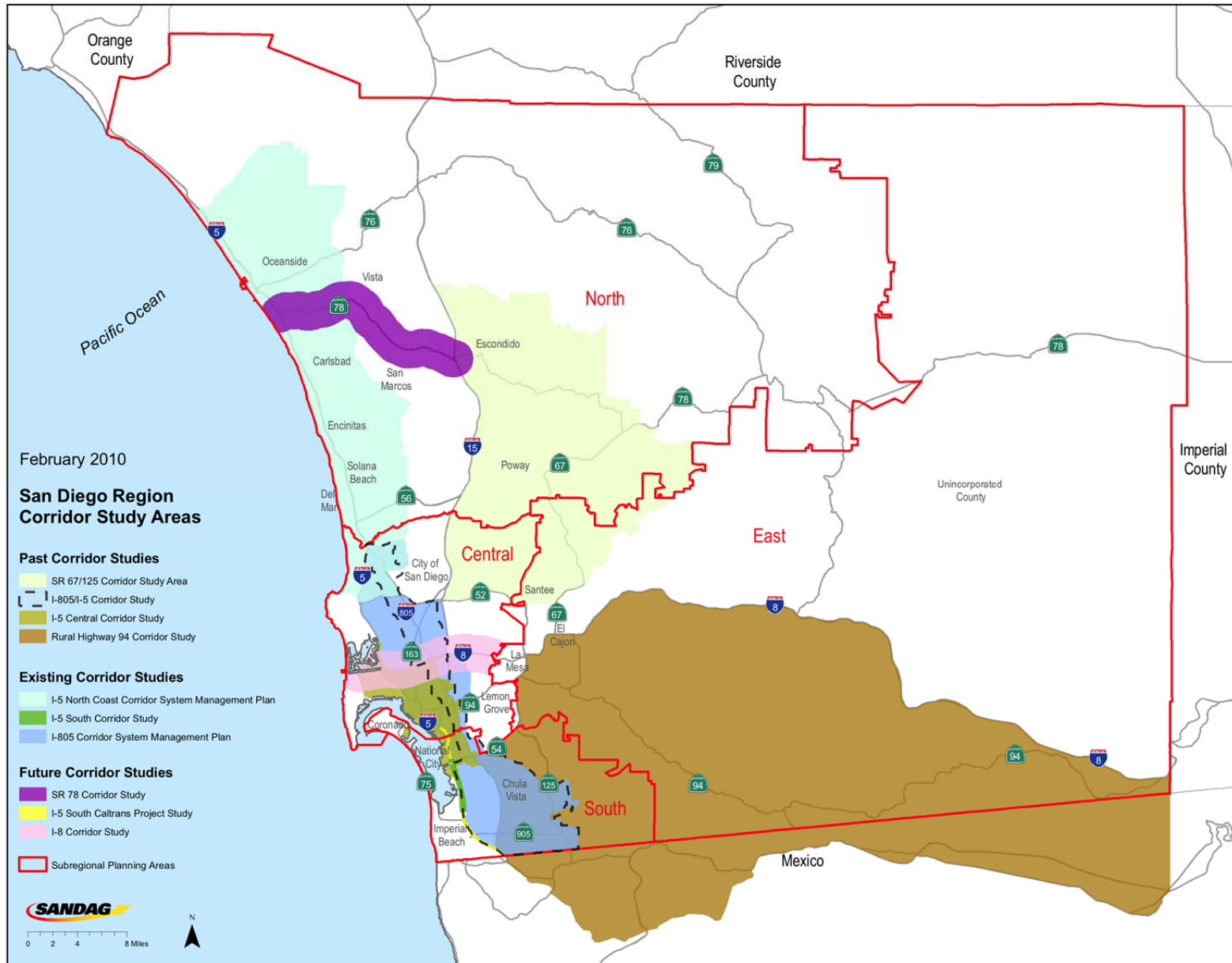


Table 3.1: SANDAG Corridor Studies and Caltrans Reports

Status / Title	Completion Date
<u>Completed Corridor Studies</u>	
Rural Highway 94 Corridor Study	Jan. 2001
SR 67/125 Corridor Study	Jun. 2002
I-5 Central Corridor Study	Jun. 2003
I-805/I-5 Corridor Study	Jun. 2005
I-5 South Corridor Study	December 2010
I-805 Corridor System Management Plan	May 2010
I-5 North Coast Corridor System Management Plan	Jun. 2010
<u>Corridor Studies In Process</u>	
SR 78 Corridor Study	Jun. 2012
<u>Future Corridor Studies</u>	
I-8 Corridor Study	TBD
<u>Caltrans Reports</u>	
SR 52 Project Report / Transportation Concept Report	1970 / Mar. 2002
SR 56 Final Project Report / Transportation Concept Report	Apr. 1999 / Oct. 1999
SR 125 Transportation Concept Report / Final Project Report	Dec. 1994 / May 1999
SR 905 Transportation Concept Report / Project Report	Sep. 1994 / Jul. 2004
SR 76 Transportation Concept Report / Draft Project Report	Mar. 2002/ Oct. 2007
SR 11 Transportation Concept Report / Project Report	Nov. 2003 / Aug. 2008
I-5 South Project Study Report	May 2011

Source: SANDAG.

Transportation Impact Analysis (TIS)

The SANDAG and Caltrans TIS Guidelines provide substantial direction with regards to transportation impact analysis including:

- ◆ Trip generation;
- ◆ Traffic counts;
- ◆ Peak hour analysis;
- ◆ Transportation modeling; and
- ◆ Transportation impact methodologies.

The Lead Agency should consult the latest edition of these guidelines for direction.

For the Regional Multimodal Analysis the Lead Agency should explicitly consider the role that transit services, both current and planned, will play in serving the Project, particularly in the more urban areas. If transit will have the capacity to accommodate a seven percent or more share of work trips then the Lead Agency should explicitly evaluate the impact of the

Project on the need for transit services.¹⁵ Simply identifying transit services as a mitigation measure without analyzing direct impacts on the need for expanded services is not adequate for a multimodal analysis. The Lead Agency should provide a rationale if transit impacts are not explicitly analyzed.

Thresholds of Significance

Selecting the appropriate thresholds to determine significant impacts on the regional transportation system is a critical step in any environmental analysis. Under CEQA the Lead Agency selects thresholds appropriate for its community.

Historically lead agencies have focused on auto vehicle congestion metrics because of the high level of auto mode share in most areas. This focus typically exemplified by the use of “level of service” measures is now expanding to other transportation system metrics, particularly in urban areas, as:

- ◆ Auto congestion has surpassed significance thresholds; and
- ◆ Economic and environmental constraints limit the expansion of highway and roadway systems.

Work is underway in the State to develop a broader palette of impact metrics to incorporate multimodal mobility. Multimodal mobility is the capacity of the transportation system to accommodate person trips across all modes: auto, transit, bicycle, and pedestrian. Recent revisions to the State’s CEQA Guidelines reduce the current emphasis on measures of vehicle congestion.¹⁶ The upcoming 2010 Highway Capacity Manual is anticipated to include substantially more guidance on the analysis of impacts on transit and other modes.

The Lead Agency may follow adopted thresholds in applicable environmental documents (EIRs) for general or specific plans if those thresholds address regional transportation system impacts. Otherwise, the SANDAG TIS Guidelines provide direction with regard to thresholds for vehicle impacts on highways, roadways, intersections, and freeway ramps. However, the Guidelines provide little direction with regards to transit impacts. If the Lead Agency needs to analyze transit impacts (see *Transportation Impact Analysis*, above) and local EIRs provide insufficient direction, then the Agency should seek other sources such as the Caltrans TIS Guidelines and the Highway Capacity Manual.

Step 5: Mitigation Measures

The Lead Agency must adopt all feasible mitigation for significant impacts on the regional transportation system. The SANDAG TIS Guidelines include a brief discussion of alternative approaches to mitigation. Sources for mitigation measures include:

¹⁵ The seven percent mode share criterion is based on the current (2006) work trip transit mode share of 6.4 percent rising to 7.3 percent under the RTP’s Reasonably Expected scenario in 2030. See SANDAG, *2030 RTP*, Table 2-3, p. 2-7.

¹⁶ California Resources Agency, *Adopted Text of SB97 CEQA Guidelines Amendments*, revisions to California Code of Regulations, Title 14, Division 6, Chapter 3, Article 20, Appendix G (see new Section XVI(a) regarding transportation).

- ◆ SANDAG Regional Transportation Plan, Regional Transportation Improvement Program, and Short Range Transit Plan (including improvements associated with projects referenced in those plans even if not specifically described);
- ◆ SANDAG Corridor Studies and Corridor System Management Plans (see Table 3.1);
- ◆ Caltrans Transportation Concept Reports and Project Study Reports (see Table 3.1).
- ◆ SANDAG CMS Toolbox and TRO Framework;
- ◆ General plan circulation elements, specific plans, and project-level CEQA documents;
- ◆ Additional mitigation measures developed specifically for the Project, including interim measures required to mitigate near-term impacts prior to completion of final measures anticipated by the end of the planning horizon; and
- ◆ Alternative designs of the Project to avoid or reduce impacts.

Mitigation measures for regional transportation system impacts should be drawn from adopted local and regional transportation plans. Measures may also be reasonable extensions or phases of measures summarized in adopted plans, for example freeway improvements related to interchanges, auxiliary lane, and ramps. Measures should not represent new regional transportation system investments that have not been properly vetted through a prior regional transportation planning process.

Mitigation Measure Timing

A common challenge for the identification of feasible mitigation measures on the regional transportation system is the needs to implement measures within a reasonable period of time. Through the RTP, regional transportation system improvements are planned decades in advance of their construction. Improvements are not specifically programmed with identified funding and an implementation schedule until they fall within the five-year window of the current Regional Transportation Improvement Program (RTIP).¹⁷

If a mitigation measure falls outside of the current adopted five-year RTIP, the Lead Agency should work cooperatively with SANDAG and Caltrans to attempt to identify a reasonable implementation schedule and funding plan for the measure. The ability of the Project to provide a fair share contribution to the mitigation measure may prompt the reprioritization of existing funds and enable implementation of the mitigation measure within a reasonable period of time.

Planning Studies

Another common challenge for the identification of feasible mitigation measures is the lack of current planning studies of specific regional transportation system components. These planning studies include Corridor Studies, Project Study Reports, and the other studies listed

¹⁷ The RTIP is prepared by SANDAG and is the region's short-term five-year programming document for regional transportation projects. The RTIP must be consistent with the RTP.

in Table 3.1. Unlike a Project-level TIS, these planning studies can focus on a specific component of the regional transportation system, evaluate a range of alternatives, and recommend a preferred approach to mitigating cumulative impacts. These planning studies are often needed as input to a Project-level TIS to provide a feasible approach to mitigating Project impacts.

If a needed transportation improvement lacks the necessary planning to be evaluated as a mitigation measure, the Lead Agency should identify the scope, budget, and funding plan needed to complete the planning study in consultation with SANDAG and Caltrans. The Lead Agency could impose as a condition of approval that the Project fund its fair share of study costs. Though such a condition may not constitute a mitigation measure under CEQA, funding planning studies in this manner may be the most effective method to identify mitigation measures needed by future development projects.

Step 6: Local Share

The Project's fair share contribution toward regional transportation system mitigation measures should be based on the Local Share for the planned improvement. Most regional transportation system improvements are funded with a combination of federal, state, and local funds. Many of the state and federal funding sources specify a minimum share of the total of an improvement that must be funded with local sources. The Local Share typically ranges from 10 to 20 percent, but may be as high as 100 percent for improvements that are not eligible for state or federal funds. In most cases fair share contributions to regional transportation improvements by development projects can leverage substantial state and federal funding through these funding formulas.

The Local Share is that portion of the total cost of a mitigation measure that is reasonably foreseeable to require funding from local sources. Local Share is defined by the equation in **Figure 3.2**. Terms used in the equation are defined in the following sections.

Figure 3.2: Local Share

$$\text{Local Share} = \text{Total} - \text{Reasonably Foreseeable State and Federal Funding}$$

Estimates of funding for all mitigation measures should represent current dollars as of the date of the Project TIS. Clearly identifying the date of the estimate will facilitate updates for inflation if necessary following publication of the TIS.

Local Share

Local Share is that portion of the total mitigation measure that is reasonably foreseeable to require funding from local revenue sources. Local revenue sources include:

- ◆ Local sales taxes dedicated to transportation such as *TransNet*;

- ◆ Local agency funding including local gas tax subventions, developer fees and contributions administered by local agencies, local general funds, and Prop. 42 funds;
- ◆ Local privatization/toll revenues such as the State Route 125 private toll road project; and
- ◆ Transportation Development Act (TDA) funds that are administered locally (one-quarter cent of the sales tax primarily dedicated to transit operating and capital purposes).¹⁸

Total Cost

To estimate the Total Cost of the mitigation measure the Lead Agency should develop a description of the measure with sufficient detail to develop a conceptual-level cost estimate. A planning-level cost estimate is developed during the early phase of a project to compare costs of various technically feasible alternatives.¹⁹ Planning-level cost estimates should be based on preliminary understanding of the scope of the mitigation measure and typically include:

- ◆ Unit cost line items: Costs based on quantities representing the size of the mitigation measure. Quantities are multiplied by the estimated cost per unit to calculate the total line item cost. For example: (number of lane-miles x cost per lane mile = lane-mile costs). The cost per unit may be a lump sum cost representing a single cost estimate for a specific line item.
- ◆ Percent cost line items: Costs that are typically correlated with unit costs. Percent costs typically include “soft” costs such as design, engineering, environmental clearance, and project management. For example: (total unit costs x X% = design & engineering costs). Percent costs also include a contingency based on the degree of uncertainty in the overall cost estimate.

The Lead Agency should consult documents that may already have a cost estimate for the mitigation measure, including:

- ◆ SANDAG RTP and RTIP;
- ◆ Corridor plans, general plans, and other sub-area transportation plans; and
- ◆ Local agency capital improvement plans.

Reasonably Foreseeable State and Federal Funding

Reasonably Foreseeable State and Federal Funding is funding that can reasonably be expected within the planning horizon of the cumulative scenario from state and federal funding sources. Regional and state transportation planning agencies such as SANDAG and Caltrans routinely estimate reasonably expected funding levels by revenue source to provide a rational basis for policy planning and project programming.

¹⁸San Diego Association of Governments, *Final 2008 Regional Transportation Improvement Program*, July 2008, p. 166.

¹⁹ Choi, Ying-Kit, *Principles of Applied Civil Engineering Design*, ASCE Publications, 2004, p. 172.

The Lead Agency should review adopted regional transportation plans such as the RTP and the RTIP, and work with SANDAG and Caltrans for guidance in developing estimates of Reasonably Foreseeable State and Federal Funding for the mitigation measure. Methods for determining Reasonably Foreseeable State and Federal Funding include:

- ◆ Applying the minimum local cost share required by the state and federal funding source(s) for which the mitigation measure would be eligible (see the Caltrans publication, *Local Agency Program Guidelines*, for a summary of all state and federal funding requirements)²⁰;
- ◆ Applying the average local cost share currently programmed for similar transportation improvement projects based on the current adopted RTIP; or
- ◆ If the mitigation measure is a programmed improvement project in the RTIP, applying the local cost share applicable to the project.

Step 7: Fair Share Allocation

The fair share allocation of the Local Share for a mitigation measure should be roughly proportional to the impact of the Project (“rough proportionality”). Mitigation measures associated with a regional transportation system typically are on routes that currently accommodate travel demand from existing development. Consequently, to assure rough proportionality the Lead Agency should determine whether or not existing development would benefit from the mitigation measure.

Whether or not existing development would benefit from the mitigation measure depends on a comparison of transportation system performance between:

- ◆ Existing conditions without the Project (“existing condition”); and
- ◆ Future conditions at the planning horizon with cumulative development and with the mitigation measure (“cumulative scenario”).

Existing development would not benefit from the mitigation measure as long as the measure would not improve transportation system performance under the cumulative scenario compared to existing conditions. Even if existing conditions were deficient (an “existing deficiency”), if the mitigation measure under the cumulative scenario would not improve performance above existing conditions then existing development would not benefit.

If existing development would not benefit from the mitigation measure then the Local Share should be allocated across all growth to determine the Project’s fair share. If existing development would benefit from the mitigation measure then the Local Share should be allocated across existing development and growth to determine the Project’s fair share. Thus, there are two alternative formulas for calculating the fair share allocation:

- ◆ **Alternative 1:** The Project’s fair share allocation is based on the Project’s share of the total **growth** in travel demand if the mitigation measure **would not** improve existing performance of the transportation facility at the planning horizon (based on level of service or other applicable performance measure).

²⁰ Available at <http://www.dot.ca.gov/hq/LocalPrograms/lam/lapg.htm>.

- ♦ **Alternative 2:** The Project’s fair share allocation is based on the Project’s share of total travel demand (**existing plus growth**) if the mitigation measure **would** improve existing performance of the transportation facility at the planning horizon (based on level of service or other applicable performance measure).

The calculation of the Fair Share Allocation for the Project is shown below by the equations in **Figures 3.3 and 3.4**. The only difference between the two formulas is whether the fair share allocation is based on the Project’s share of the growth in trips (Alternative 1) or the Project’s share of total trips (Alternative 2). Terms used in the equations are defined in the following sections. A numerical example follows each equation.

Figure 3.3: Fair Share Allocation Alternative 1

$$\begin{array}{l}
 \text{No Improvement} \\
 \text{in Level of} \\
 \text{Service}
 \end{array}
 \quad
 \begin{array}{l}
 \text{Project} \\
 \text{Fair} \\
 \text{Share} \\
 \text{Allocation}
 \end{array}
 = \frac{\text{Project Trips}}{\text{Growth In Trips}} \times \left[\begin{array}{l} \text{Local} \\ \text{Share} \end{array} - \begin{array}{l} \text{Other Local} \\ \text{Funding} \end{array} \right]$$

$$\begin{array}{l}
 \text{Existing LOS} = D \\
 \text{Future LOS} = D
 \end{array}
 \quad
 \$100,000 = \frac{1,000}{100,000} \times \left[\begin{array}{l} \$10 \text{ mil.} \\ - \\ \$0 \end{array} \right]$$

Figure 3.4: Fair Share Allocation Alternative 2

$$\begin{array}{l}
 \text{Improvement in} \\
 \text{Level of Service}
 \end{array}
 \quad
 \begin{array}{l}
 \text{Project} \\
 \text{Fair} \\
 \text{Share} \\
 \text{Allocation}
 \end{array}
 = \frac{\text{Project Trips}}{\text{Total Trips}} \times \left[\begin{array}{l} \text{Local} \\ \text{Cost} \\ \text{Share} \end{array} - \begin{array}{l} \text{Other Local} \\ \text{Funding} \end{array} \right]$$

$$\begin{array}{l}
 \text{Existing LOS} = D \\
 \text{Future LOS} = C
 \end{array}
 \quad
 \$18,000 = \frac{1,000}{500,000} \times \left[\begin{array}{l} \$10 \text{ mil.} \\ - \\ \$1 \text{ mil.} \end{array} \right]$$

Level of Service

Level of Service (LOS) is a measure of the performance of the transportation facility impacted by the Project. LOS may be based on traditional measures of vehicle congestion or other applicable performance measure. LOS should be measured using the same methodology used to determine if the Project’s impact exceeds the threshold of significance (See Step 4). Whether or not a mitigation measure increases LOS, i.e. whether to use Alternative 1 or 2, is indicated by comparing LOS under existing conditions with LOS at the TIS planning horizon following implementation of the mitigation measure and all other planned improvements.

Changes in travel patterns for existing development through the planning horizon may affect calculation of existing LOS. For example, if vehicles miles traveled per capita is projected to increase over time then existing LOS would degrade without the impact of new development. This type of re-evaluation of existing LOS may affect whether the formula for Alternative 1 or Alternative 2 is applicable to the mitigation measure. SANDAG will provide an adjustment factor for existing LOS should the Lead Agency choose to consider this issue.

Project Fair Share Allocation

The Project Fair Share Allocation is that share of the Local Share of the mitigation measure represented by the impact of the Project.

Project Trips

Project trips are the auto vehicle trips generated by the Project and estimated for Step 1, unless transit impacts are included in the transportation impact analysis (see Step 4). Use vehicle and transit person trips if transit impact analysis is included. The Lead Agency should consider using select link data from a travel demand model to isolate the estimated number of trips generated by the Project on the specific transportation facility to be improved with the mitigation measure. In calculating Project Trips, Growth In Trips, and Total Trips of trips the Lead Agency should be consistent in either using **trips** or **trip ends** throughout the analysis.

Growth In Trips

Growth in Trips is the total growth in trips generated by the Project plus all other development that would impact the need for the mitigation measure, excluding development that has already been approved but not constructed. Use the same trip generation methodology and rates used to calculate Project Trips.

Total Trips

Total Trips is the sum of the following three trip end estimates:

1. Growth in Trips.
2. Trips from existing development, including development that has been approved but not constructed at the time of Project approval for the same geographic area used to calculate Growth in Trips.
3. Trips at the planning horizon that may benefit from the mitigation measure but that start and end outside the geographic area used to calculate Growth in Trips. These trips are commonly referred to as “external” trips.

For each estimate above use the same trip generation methodology and rates used to calculate Project Trips.

Local Share

See Step 6 above for calculation of Local Share.

Other Local Funding

Other Local Funding dedicated to the mitigation measure may reduce the Local Cost Share. The Local Share should be reduced for local funding that is non-discretionary such as existing development impact fee programs that would fund the mitigation measure. These programs include, for example, the many existing city and county transportation impact fee programs, as well as the Regional Transportation Congestion Improvement Plan (RTCIP) developer impact fee required by the *TransNet* sales tax extension approved by voters in 2004. The Local Share may be reduced for local funding that is discretionary such as gas taxes, general funds, and certain *TransNet* funds.

Step 8: Economic Feasibility

The Lead Agency should adopt a Project Fair Share Allocation only if it is economically feasible. As defined by statute, economic feasibility means that the mitigation measure funded by the Project Fair Share Allocation is “capable of being accomplished in a successful manner within a reasonable period of time taking into account economic...factors.”²¹

Conclusion

The Lead Agency must impose all feasible mitigation measures as conditions of project approval. The Lead Agency could rely on one of the following three approaches, or a combination of approaches, if it requires mitigation by Project:²²

- ◆ **Upfront Mitigation.** The Project could provide its fair share allocation prior to issuance of a building permit for the Lead Agency to hold in reserve until implementation of the mitigation measure.
- ◆ **Incremental Mitigation.** The Project could provide its fair share allocation incrementally over time for the Lead Agency to hold in reserve based on the estimated implementation date of the mitigation measure.
- ◆ **Trigger Point Mitigation.** The Project could provide the fair share allocation in a lump sum at the time the mitigation measure is implemented.

For the two approaches that defer the allocation (Incremental and Trigger Point) several additional considerations apply. First, the allocation should be adjusted annually based on a formula to reflect cost inflation. Second, the Lead Agency should use a credit instrument to secure the allocation. Private development projects could use a special assessment or special tax lien placed on the Project. Development projects by public agencies would require legislative authorization and therefore may have to rely on a memorandum of understanding or similar instrument.

²¹ *California Public Resources Code*, Section 210061.1.

²² California Legislative Analyst Office, “Intersegmental: Addressing the Local Impacts of Campus Growth”, in *Analysis of the 2008-09 Budget Bill* (February 20, 2008), p, E-186.

4. Additional Recommendations

This study represents the initial effort by SANDAG to develop a consistent methodology for determining the fair share of development project impacts on the regional transportation system. Consequently, this methodology may need to be adjusted as SANDAG, Caltrans, and local agencies gain experience with its implementation. The following recommendations should assist SANDAG in this effort.

- ◆ **Transit performance:** Development impacts are likely to increase on transit systems as transit plays an increasing role in providing mobility in the region. The current SANDAG TIS Guidelines do not address transit performance by defining level of service or other applicable performance measure. The next update to the SANDAG TIS Guidelines should address transit performance measures to assist Lead Agencies in evaluating transit impacts.
- ◆ **Subregional studies and CEQA streamlining:** The analysis that led to the Regional Multimodal Analysis Study determined that the subregional area of analysis is the most effective for determining development impacts on the regional transportation system. In addition, subregional studies have the potential to streamline the CEQA process and lower costs to development. Consequently, SANDAG should continue to conduct subregional transportation studies in cooperation with affected state and local agencies. SANDAG should, to the greatest extent feasible, conduct those studies in a manner so that they provide CEQA streamlining benefits to development projects, such as by completing a program EIR on proposed mitigation projects to streamline the analysis of regional transportation system impacts at the project level (see Step 2 of the Regional Multimodal Analysis).²³
- ◆ **Monitor implementation:** SANDAG should monitor implementation of the Regional Multimodal Analysis through its existing IGR process. SANDAG should track the use of the methodology across multiple development projects to identify changes that would better meet the study objectives explained in the *Introduction* of equity, efficiency, and effectiveness.
- ◆ **TIS Guidelines:** SANDAG should seek funding to formally update the TIS guidelines to incorporate recent studies.

The County of San Diego provided additional recommendations for future study.

Additional work is needed to fully develop a Local Agency approach in the region. This document also identifies the steps needed to develop and implement a local agency approach throughout the region. These steps include the following:

- Identification of a multimodal analysis study area

²³ Taking the additional step in a corridor study to develop a programmatic CEQA document to streamline environmental analysis of individual development projects could significantly increase the scope and budget for these studies.

- Identification of development projects that may benefit from a regional multi-modal transportation analysis
- Preparation of corridor studies
- Identification of multimodal corridor improvements
- Identification of potential multimodal improvements and measures
- Identification of feasible mitigation measures
- Development of cost sharing programs

Until a complete Local Agency Program for Regional Multimodal Analysis is developed or established for a specific corridor or corridors, multimodal transportation analysis may be prepared and reviewed on a project by project basis. This document, however, may serve as a tool that local jurisdictions, traffic engineers and transportation planners may use to prepare multimodal transportation analysis to identify and evaluate the potential for additional multimodal mitigation measures for consideration.

Appendix A: Caltrans TIS Guidelines

The following report provides Caltrans guidelines for the preparation of traffic impact studies that was current at the time of this report's production. Consult Caltrans for the most recent edition of these guidelines.

Appendix B: SANDAG TIS Guidelines

The following report provides SANDAG guidelines for the preparation of traffic impact studies that was current at the time of this report's production. The guidelines were last published as Appendix D of the *2008 Final Congestion Management Program Update*. Consult www.sandag.org/cmp for the most recent edition of these guidelines.