

Community Impact Assessment

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Chapter 1 Introduction

1.1 Purpose of Volume 4

Volume 4 of the California Department of Transportation (Caltrans) Environmental Handbook series provides guidance and procedures for assessing the impacts of proposed transportation projects on communities and neighborhoods and for achieving context sensitive solutions in the design of transportation projects. This guidance is intended to assist Caltrans environmental personnel, consultants, and other transportation partners in completing the community impact assessment report or documentation; engaging the public and other stakeholders in the transportation planning process; avoiding, minimizing, or mitigating for adverse effects, and increasing project benefits.

To assist in this objective, Volume 4 provides a discussion of the most vital laws, regulations, guidelines, practices, and procedures that must be addressed as part of the project planning and development processes. Additionally, this volume provides links to many valuable Internet resources that will assist in conducting the analysis. This volume is intended to be used as a guide and is not a substitute for legal requirements nor does it impose requirements different from or in addition to those imposed by law.

1.2 Volume 4 Update

This update to Volume 4 incorporates information from recent studies published by the Transportation Research Board (TRB), guidance on social impact assessment and context sensitive solutions published by the Federal Highway Administration (FHWA), and recent changes to guidance provided in the Caltrans Standard Environmental Reference (SER), particularly in regard to the preparation of environmental documents (ED). Volume 4 has been reorganized in an effort to improve its usefulness for the community impacts analyst. Updates to this volume are based largely on the Florida Department of Transportation (DOT) Community Impact Assessment Handbook.

1.3 Contents of Volume 4

Volume 4 of the Caltrans Environmental Handbook series focuses on the community impact assessment as a part of the overall project development process. It describes the methodological approaches and the variety of sources available for obtaining the information needed for the assessment process. A quick look at the Table of Contents will familiarize the reader with the arrangement of this volume. Volume 4 is organized into eight main chapters and five appendices.

Volume 4 begins with an introduction to community impact analysis for transportation projects, how it relates to organizational objectives, and an overview of related laws and requirements. Chapter 2 provides a conceptual overview of the community impact assessment process and how that process relates to the various phases of transportation planning and project development. Chapter 3 provides guidance on how to develop a community profile so that the analyst can describe the affected environment as it relates to communities and neighborhoods. Chapter 3 also provides common data sources and techniques to describe the affected environment. Chapters 4

through 8 describe techniques for assessing land use, social, and economic impacts including: community cohesion, community facilities and services, farmland impacts, access, relocation, and environmental justice. The appendices at the end of Volume 4 provide supplementary material on related topics including property value considerations and relocation policies.

Most of the data collection and analysis required in the preparation of a community impact assessment can be carried out by persons without specialized training, although prior experience and an educational background in geography, social ecology, economics, sociology, or regional planning may be very helpful, particularly in complex situations.

1.4 What Is a Community Impact Assessment?

A community impact assessment is —“process to evaluate the effects of a transportation action on a community and its quality of life” (FHWA 1996). Community impact assessments serve a number of uses. Most commonly they are used as background technical reports for EDs; however, their true value is in their role in facilitating the public involvement process and the development of context sensitive solutions—a concept that is explained in more detail later in this chapter. Some of the topics addressed in community impact analysis are:

Land Use and Growth Effects

- Consistency of projects with local plans and policies
- Compatibility with existing and planned land uses
- Direct or indirect influences on growth
- Impacts on farmlands and timberlands

Social Effects

- Community character and cohesion
- Community facilities
- Relocation of housing
- Environmental justice

Effects on Public Services

- Police, fire, and emergency services
- Utilities

Economic Effects

- Relocation of businesses
- Change in access to and parking for businesses
- Change in employment
- Tax base changes

Although economic effects are not currently listed as a topic for discussion in the ED [annotated outlines](#) found in the Caltrans Standard Environmental Reference (SER), these effects are addressed in the community impact assessment because transportation projects can have profound effects on the local and regional economy that need to be considered during project planning and design.

As one can see from the above lists, a community impact assessment considers how the proposed project will affect the people, institutions, neighborhoods, communities, organizations, and larger social and economic systems. Of course, many of the effects mentioned in the above lists are not mutually exclusive. A transportation-related “social” effect on the local population caused by displacement may also have an effect on the local economy and vice versa. For example, a project that would result in displacing a large number of residents would have more than just social effects. There may be fiscal impacts due to properties being removed from the local tax roll. There also may be economic effects if consumers and/or employees in the local labor market are displaced.

The human environment section of an ED prepared for Caltrans should focus on important topics identified through the preliminary and formal scoping processes, including a thorough public involvement effort. A good community impact assessment should clearly describe the relevant existing conditions, the potential impacts of the project on the community and its neighborhoods, the extent of the identified impacts, and potential solutions to best avoid, minimize, or mitigate for any adverse impacts. It is important to keep in mind that for many projects it will not be necessary to analyze each and every issue described in this volume. For example, a project to upgrade—but not expand—an existing highway facility in a heavily urbanized region may not be expected to result in growth-related impacts. In such a case, the project’s growth-related impact on the capacity of public services and/or facilities in the community probably does not need to be considered in depth, unless other circumstances suggest it. Likewise, consideration of neighborhood effects may not be appropriate for many projects situated in unpopulated rural areas, although farmland and timberland issues may indeed be relevant.

In addition, even when there appears to be an outstanding community issue in need of further exploration, many of the analytical techniques found in this volume will provide a very high degree of detail. Usually it will not be necessary to analyze every impact as rigorously as outlined in this volume.

While no two community impact assessment reports will be exactly the same, because of differences in project characteristics and local setting, a standard methodology or use of a checklist is nevertheless useful to ensure that a complete analysis is undertaken for each project. The information presented here is designed to help the analyst focus on the appropriate issues, methodology, and data sources available in preparing the community impact assessment or specific ED section. Additionally, the ED annotated outlines found in the SER can provide insight into the types of effects to analyze and how best to organize the community impact assessment to aid in the preparation of the ED.

A community impacts assessment, in most cases, will be produced as a separate document (one that is summarized within, but not included in the ED), that can be made available to the public upon request. If community impacts are substantial, however, the technical report should be a bound appendix accompanying the ED. For further discussion see [“NEPA’s Forty Most Asked Questions,” March 16, 1981 The Council on Environmental Quality, questions 25a, and 25b](#), and [FHWA, *Community Impact Assessment: A Quick Reference for Transportation*](#), pp 36-38. For direction on CEQA documents, see the [CEQA Guidelines](#), Section 15147. It is important to note that the significance of impacts is not determined in technical reports. The community impacts assessment should simply identify the potential effects of a project, both positive and adverse, and present measures to avoid, minimize, or mitigate any identified adverse effects. The significance of impacts is addressed within the ED, which should adequately summarize all technical reports.

There is one major difference between the technical reports prepared for such environmental areas as cultural resources or natural resources and those prepared for addressing community issues. Resource agencies such as the State Office of Historic Preservation (within the Department of Parks and Recreation) and the California Department of Fish and Game have regulatory responsibilities to review and approve certain technical reports prepared by Caltrans. There is no comparable state agency responsible for the review and approval of community impact assessment reports. On the other hand, FHWA and FTA, as well as interested citizen groups and decision makers, may wish to see a technical report that explores community impacts in some degree of detail.

1.5 Laws, Regulations, and Executive Orders

1.5.1 National Environmental Policy Act (NEPA)

The [Council on Environmental Quality \(CEQ\) regulations](#) specify that “effects” include social and economic effects. [Section 1508.14](#) of the CEQ regulations states that economic or social effects are not intended by themselves to require preparation of an [Environmental Impact Statement](#) (EIS). However, it further states that when an EIS is prepared and economic or social and natural or physical environmental effects are interrelated, then the document will discuss all of these effects on the human environment. Oversight of the NEPA environmental process for transportation projects has historically been the responsibility of the FHWA. In August 2005, President George W. Bush signed into law a federal transportation reauthorization bill called the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users ([SAFETEA-LU](#)). Two sections of the law allow Caltrans to assume the FHWA’s responsibilities under the National Environmental Policy Act and other federal environmental laws such as the Endangered Species Act and Section 106 of the National Historic Preservation Act. These programs offer the opportunity to test a streamlined environmental process. Caltrans is, in essence, the federal agency for those projects where it assumes FHWA’s environmental responsibilities. Caltrans assumed responsibility for NEPA implementation on July 1, 2007.

Additional information on the [NEPA Delegation Pilot Program](#) in California is available on the Caltrans website.

1.5.2 California Environmental Quality Act (CEQA)

Many people in California, including some decision makers, mistakenly believe that [CEQA](#) addresses only purely “environmental” issues, not social, demographic, or economic issues resulting from proposed projects. This mistake, however, is understandable due to the complex linkage that must be demonstrated between the physical, social, and economic environment and the determination of “significance.” This nexus is discussed below.

The CEQA *Guidelines* define a “significant effect” as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance” ([CEQA Guidelines](#), 15382). Further, “An ironclad definition of significant effect is not possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area” ([CEQA Guidelines](#) 15064 (b)).

There must be a direct or indirect physical change resulting from the project before CEQA will apply. The following passages from the CEQA *Guidelines* address the linkage between socioeconomic and physical impacts:

(a) Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.

(b) Economic or social effects of a project may be used to determine the significance of physical changes caused by the project. For example, if the construction of a new freeway or rail line divides an existing community, the construction would be the physical change, but the social effect on the community would be the basis for determining that the effect would be significant. As an additional example, if the construction of a road and the resulting increase in noise in an area disturbed existing religious practices in the area, the disturbance of the religious practices could be used to determine that the construction and use of the road and the resulting noise would be significant effects on the environment. The religious practices would need to be analyzed only to the extent to show that the increase in traffic and noise would conflict with the religious practices. Where an EIR uses economic or social effects to determine that a physical change is significant, the EIR shall explain the reason for determining that the effect is significant. ([CEQA Guidelines](#) 15131 (a) (b)).

Clearly then, CEQA does not focus solely on physical changes in the environment. Thus, if an economic impact will cause physical change, or a physical change will cause an economic impact, then the impact should be considered.

1.5.3 Title VI of the Civil Rights Act and Executive Order 12898

[Title VI of the Civil Rights Act of 1964](#), and related statutes, requires there be no discrimination in federally-assisted programs on the basis of race, color, national origin, age, sex, or disability (religion is a protected category under the [Fair Housing Act of 1968](#)). Because much of the information needed to assess possible discrimination during project development is obtained during the study of potential community impacts, Title VI issues can logically be evaluated and covered in the section of EDs dealing with the social or human environment. Caltrans must act in full compliance with Title VI.

[Executive Order \(EO\) 12898](#), signed by President Clinton in 1994, addresses environmental justice in low-income and minority communities. EO 12898 is not technically a law, and is discussed in Chapter 8 of this volume. Essentially, the environmental justice movement is part of a larger trend toward achieving social equity in environmental planning and land use. Social equity calls for a more forward-looking and “proactive” planning approach that fully identifies community effects, considers alternatives (including avoidance), and meaningfully involves the public early and throughout the life of the project. Planners at the state and local levels are increasingly expected to eliminate unnecessary barriers, look for ways to enhance access to project information, facilitate full participation in the project planning process, and help people to create sustainable communities. Appropriate implementation of Title VI and EO 12898 can be accomplished through proper implementation of the FHWA/FTA NEPA process.

1.5.4 Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970

The [Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended in 1987](#), is often referred to simply as the Uniform Act. The Uniform Act provides for uniform and equitable treatment of persons displaced from their homes, businesses, non-profit associations, or farms by federal and federally-assisted programs, and establishes uniform and equitable land acquisition policies. Please see Appendix C for more information on these policies.

1.5.5 Other Relevant Laws

There are other laws that involve community impact analysis. The [Intermodal Surface Transportation Efficiency Act of 1991](#) (ISTEA) incorporates Sections 109(h) and 128 of Title 23 (Highways) of the United States Code of Federal Regulations (CFR), which require that social and economic impacts of proposed federal-aid projects be determined, evaluated, and eliminated or minimized as part of the EDA for project development. These include “destruction or disruption of man-made and natural resources, aesthetic values, community cohesion and the availability of public facilities and services; adverse employment effects, and tax and property values losses; injurious displacement of people, businesses and farms; and disruption of desirable community and regional growth.” Implementing regulations for the legislation are contained in [23 CFR 771](#). Many of the provisions originated in ISTEA have been continued or expanded in subsequent surface transportation legislation—the Transportation Efficiency Act for the 21st Century ([TEA-21](#)) and [SAFETEA-LU](#).

[The Americans with Disabilities Act \(ADA\) of 1990](#) extends the protection of the 1964 Civil Rights Act to the disabled, prohibiting discrimination in public accommodations and transportation and other services. Caltrans’ ADA policy states:

Caltrans makes every effort to ensure equal employment opportunities for employers and applicants, including those with a disability, by providing access opportunities to departmental programs, services, and activities. The Department considers the accessibility needs of customers with disabilities to enable participation in all departmental programs, services, and activities available to the public. The Department with its partners, identifies accessibility deficiencies and addresses those over which the Department has control.

The ADA stipulates involving the disabled community in the development and improvement of services. For example, participation by the disabled community is essential for the development of a station plan for a rail transit project. Likewise, in planning for roadway improvements in a town, it is important to listen to and engage the disabled community in the development of access at sidewalks and ramps, street crossings, and in parking or transit access facilities. See further discussion on public involvement in Chapters 2 and 3, as well as the Caltrans [Public Participation Guide](#).

1.6 Community Impact Assessment in the Transportation Planning Process

1.6.1 Transportation Planning Process

[Volume 1](#) of the Caltrans Environmental Handbook series describes the regulatory steps and consideration involved in the transportation planning and environmental processes. As described in [Chapter 4 of Volume 1](#), transportation planning begins at the statewide level with regional and system planning. Regional and system planning identifies the need for individual and specific projects. If a major transportation need is identified, studies are performed to compare potential transportation investments before deciding what to build. Project initiation follows planning. It represents the first phase of project development, obtaining approval to fund projects. All proposed transportation project candidates require a [Project Initiation Document \(PID\)](#) that provides the information necessary to program funds for project development activities, acquisition of rights of way, and construction. [Preliminary scoping](#), such as the Preliminary Environmental Analysis Report (PEAR) or Preliminary Environmental Study (PES) occurs during the project initiation phase and is conducted to develop the list of potential impacts and concerns related to the proposed project.

During the Project Approval and Environmental Document Phase (PA&ED) [formal scoping](#) as warranted by the level of ED takes place. During formal scoping, the various stakeholders, interest groups, and involved local governments and state and federal regulatory agencies play a major role. Efforts to involve neighborhoods, businesses, non-profit organizations, and specific groups of people must be considered at every stage of the planning process. Scoping requirements vary depending upon the type of ED that is being prepared. If the early Caltrans Project Development Team (PDT) meetings or scoping meetings indicate that there is high community interest in the project, *and* a higher level ED is expected to be prepared, it may be appropriate to prepare a stand-alone community impact assessment. The preparation of a separate community impact assessment, however, is not always necessary even when the decision to prepare a higher level ED has been made.

If during scoping or with meetings involving the public and/or local agencies, it appears that a separate technical report is not necessary, the analyst may instead prepare brief text sections on the pertinent social, economic, and land use topics that can be inserted directly into the ED. The content of these sections should be appropriate to both the setting and the expected consequences of the transportation project as revealed through the scoping effort, as well as the use of common sense judgment. When environmental justice issues might be a concern, i.e., there is the presence of a minority or low-income community that will be adversely affected, it may be necessary to prepare a stand-alone community impact assessment, even though the need for one was not identified through the formal scoping process, as prior outreach to minority or low-income populations may have been absent or ineffectual.

1.6.2 Context Sensitive Solutions

[Context sensitive solutions](#) (CSS) refers to the practice of achieving environmental sensitivity by means of incorporating consideration of social, economic, and environmental effects throughout the project development process. The [Director's Policy on CSS](#) states that Caltrans uses "Context Sensitive Solutions" as an approach to plan, design, construct, maintain, and operate its transportation system. These solutions use innovative and inclusive approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. Context sensitive solutions are reached through a collaborative, interdisciplinary approach involving all stakeholders. The context of all projects and activities is a key factor in reaching decisions. Inherent in Caltrans' mission to increase mobility across California is the need for context sensitive solutions that consider collaborative, community-sensitive approaches to transportation decision-making. To support these approaches Caltrans has adopted a number of policies and an [implementation plan for CSS](#) that encourage the appropriate functional disciplines to respond to community values.

In the framework of CSS, community impact analysis is an iterative process that informs planning, project development, and decision-making. In the CSS model, the community impact assessment guides the design of project alternatives leading to a refined impact analysis. Public participation and engagement is a key aspect of CSS. Caltrans supports a balanced representation of all stakeholders in the planning, especially those that are traditionally underserved.

1.6.3 Caltrans Policies

The content of community impact assessments must comply with all applicable state and federal laws, regulations and executive orders. The practices described in this volume are to be considered standard Caltrans approaches to preparing a community impact assessment, but are not mandatory or exclusionary.

Caltrans has formulated purpose, mission, vision, and goals statements for the purpose of guiding Caltrans' efforts in delivering quality transportation services. In part, Caltrans' Vision states: "We will work in partnership with other agencies and the public to assure that our work is done in a way that is sensitive to the needs of the environment and communities."

1.7 Additional Resources

The FHWA sponsors a [community impact assessment website](#) that is administered by the University of South Florida. The site contains a comprehensive [list of resources](#) that covers a

wide spectrum of topics that may be of interest to analysts preparing community impact assessments. The following resources are also recommended for gaining a better understanding of the relationship between community impact assessment, context sensitive solutions, and highway design:

- Context Sensitive Solutions Website. Accessed January 2011. Available at: <http://contextsensitivesolutions.org/>
- FHWA. *Community Impact Assessment: A Quick Reference for Transportation*. 1996. Accessed January 2011. Available at: http://www.ciatrans.net/CIA_Quick_Reference/Purpose.html
- FHWA. *Flexibility in Highway Design*. ND. Accessed January 2011. Available at: <http://www.fhwa.dot.gov/environment/flex/>
- Florida Department of Transportation. *Sociocultural Effects Evaluation Handbook*. 2005. Accessed January 2011. Available at: <http://www.dot.state.fl.us/EMO/pubs/sce/sce1.shtm>
- Transportation Research Board. NCHRP Report 480: “A Guide to Best Practices for Achieving Context Sensitive Solutions.” Washington D.C. 2002. Accessed January 2011. Available at: <http://www.trb.org/Main/Public/Blurbs/152625.aspx>

Chapter 2

Assessing Community Impacts

2.1 Introduction

Community impact analysis is an iterative process that informs planning, project development, and decision making throughout the life of a transportation project. Public involvement is integral to the community impact assessment process. For the community impact assessment to play a meaningful role in the public involvement process and the development of context sensitive solutions (CSS) and vice versa, public involvement should be initiated at the earliest opportunity in the planning process.

The community impact assessment process is similar to the process for analyzing impacts under NEPA and CEQA and should follow these basic steps.

1. Develop an understanding of the nature of the transportation plan or project, and identify communities that could potentially be affected by the project.
2. Create a profile of the community or communities that may be affected by the project to establish the baseline conditions in the community.
3. Analyze the potential impacts that each project alternative would have on the community.
4. Identify opportunities to avoid, minimize, and /or mitigate any adverse effects of the action.
5. Prepare a report documenting the results of the assessment, including public involvement activities and any commitments made.

It is possible to integrate context sensitive solutions at each of these steps. Early public involvement can shape the overall direction of the project and project objectives by helping to identify community values and resolve community concerns before project design reaches a point where it becomes difficult to make adjustments. Even with early public involvement, as project development proceeds new impacts may be identified and it may be necessary to reassess earlier findings. For the community impact analysis to be an effective tool in developing context sensitive solutions, adequate time must be allowed well in advance of ED preparation for public involvement activities and preparation of the community impact assessment report.

2.2 The Assessment Process

The process of assessing community impacts involves seven general steps—all of which are described in detail in this section.

1. Determine your approach and the methods you will use.
2. Involve the public throughout the process.
3. Describe the project, define your study area, and map the project alternatives onto the study area.

4. Create a profile of the social and economic characteristics of the communities that may be affected by the project.
5. Analyze the impacts of the project on the communities that may be affected.
6. Identify solutions to the project impacts, including avoidance, minimization, and/or mitigation.
7. Document the findings of the assessment in a technical report or specific ED sections.

2.2.1 Methods

The methods presented in this volume of the Caltrans Environmental Handbook series represent basic approaches to evaluating community impacts. Any number of methods may be available for evaluating a specific impact ranging from simple methods that produce a rough estimate to more complex methods which yield detailed and precise data. The analyst preparing the community impact assessment; however, must choose methods that are appropriate for the level of detail and accuracy that are needed for the analysis. The selection of study methods should take into account the following criteria:

- Relevancy
- Accuracy and completeness
- Acceptability and credibility
- Flexibility
- Data Requirements
- Cost

While the methods presented herein are all considered acceptable, few are identified as being —recommended” over the others. Transportation projects and the communities they affect are unique, and it is important to select analysis methods that are appropriate for each set of circumstances.

Community impact analysis, by its nature, relies more on informed but subjective judgment and experience than on rigid quantitative analytical methods. Indeed, quantitative methods or standards for determining significance in the area of community impact assessment are largely absent. Moreover, some models may be extremely complicated for non-specialists to understand and, as a result, are not always as well received by the public as planners might hope. This is not to say, however, that quantitative methods have no place in community impact analysis (for example, they are used heavily in forecasting growth).

In cases in which the issues are complex, the methodology and assumptions used to prepare the analysis should be discussed with the District Environmental Office Chief and the general ED writer (unless the document writer is also preparing the community impact assessment).

FHWA’s Office of Planning, Environment, and Realty has requested that the statistics (as well as other assumptions about the community) used in the community impact assessment document be

subjected to what is termed “validation.” In other words, people at the local level should determine whether the information is reasonable if there is any possibility that it will not be readily accepted. This involves more than just “circulating” the draft document—the analyst needs to go directly to informed community sources and discuss the data and conclusions with them, and, if necessary, field verify the data. This feedback loop is especially important with the increased emphasis on social equity concerns within the transportation planning processes.

2.2.2 Role of Public Involvement

Public involvement is required under SAFETEA-LU, NEPA, CEQA, and ADA, and is not intended to be a separate task relating primarily to the community impact assessment process. Rather, public involvement should be fully integrated within all stages of planning and project development.

However, public involvement is also an essential part of the community impact assessment process. Public involvement should occur at the beginning of the assessment process (i.e., during the collection of data on the community), throughout the assessment itself (i.e., ongoing public involvement opportunities), and upon completion of the assessment (i.e., follow-up analysis). The public should be actively involved in developing the public involvement procedures themselves so that public input extends beyond commenting on drafts of EDs. The public can provide the following kinds of important information for the project.

- Input on
 - developing a purpose and need statement,
 - developing and identifying project alternatives, and
 - preparing the community profile for the community impact assessment.
- Identification of
 - possible conflicts and controversy associated with the project,
 - social and economic impacts and their evaluation, and
 - ways to avoid, minimize, and/or mitigate adverse impacts or enhance the community.

Depending on the magnitude and extent of controversy associated with a major project, Caltrans or the local transportation planning organization may have already initiated a public involvement program. Environmental planners should coordinate closely with those responsible for public involvement on the project so that community input is timely, coordinated, and integrated into the community impact analysis as well as other environmental studies.

Planners should be sensitive in planning public involvement activities, which can feed into the community profile and other steps of the community impact analysis. Public hearings and open meetings are a prime source of information on issues of concern to many in the community, but others, including those who are traditionally under-served by transportation such as minority and low-income populations, may not be interested in attending such meetings and may be skeptical about whether they can truly influence the outcome of a transportation decision. While obtaining meaningful dialogue and input from the community may require a considerable effort, FHWA/FTA, Caltrans, and California’s Metropolitan Planning Organizations (MPOs) and

Regional Transportation Planning Agencies (RTPAs) are committed to treating communities as important partners in the transportation planning process. It is crucial that transportation agencies at all levels employ a variety of techniques that maximize effectiveness and which emphasize early and continuous involvement. An organized and well-planned outreach program is essential for successful community input.

The public can have a real effect on transportation decisions. Examples of project changes resulting from feedback from the public range from alignment choices and changes in the width of a transportation facility, to modifications of planned landscaping and structure design, as well as providing access for student school routes and scheduling construction work around peak shopping seasons, among many others. The U.S. DOT's publication, [Public Involvement Techniques for Transportation Decision-Making](#), provides a comprehensive set of guidelines for planning and implementing an effective public participation program. [Chapter 22](#) of the [Caltrans Project Development Procedures Manual](#) and the [Caltrans Environmental Handbook Series Volume 1, Chapter 3](#) provide additional information on the community involvement process.

Ideally, the collection of data for the community impact assessment, the ongoing public involvement process, and the follow-up analysis by the planner should anticipate most, if not all, of the pertinent community issues before the draft ED is completed and circulated for public review and comment.

2.2.3 Describe the Project and Study Area

A basic first step in the community impact analysis is to obtain a detailed description of the proposed project and alternatives and create a base map showing the location of each alternative. The preliminary description of the project should include the project purpose and need; project location; project characteristics, including the conceptual design of the project; anticipated right-of-way requirements; and the schedule, including major decision making milestones and project construction phasing. This information can be obtained from preliminary project reports, the project team and/or the project engineer. It will be used to identify items such as the primary and secondary study areas, the typical impacts relating to that project, and the potential duration of impacts.

The next step is to delineate the affected socioeconomic environment. Note that in preparing an ED, the area boundaries are likely to be drawn differently for different resources such as community impact assessment, historic and archaeological resources, hazardous materials, and noise. Additionally, the boundaries of study areas of different impact topics within a community impact assessment may differ. For example, the study area for growth inducement effects or cumulative effects may be much larger (such as a regional study area) than the study area for other types of impacts that are more direct or neighborhood-based in nature.

Delineating the study area can be done by drawing a boundary line on an aerial photograph or detailed map that depicts the land, buildings, and other features that may be subject to project effects. A rigorous neighborhood boundary determination is not really necessary at this stage. The aerial photo or map should be considered a working document with the boundary lines subject to revision as more is learned about the project and area. The use of geographic information systems (GIS) technology is an ideal means of delineation because changes to project maps are easily made and can also be documented.

The affected environment/setting sections for the social and economic environment should include information for the project area, study area, and the larger region in which the project is proposed. Within the document, the term *project area* should be used to denote the area that would be directly and physically affected during the construction period of the project. The *study area* should describe the surrounding community that is generally associated with the project area within which community impacts could occur. Depending on the size of the study area that is considered appropriate for the project, the *larger regional component* of the study area may include city, county, and/or state demographics. Comparing study area data to regional data often helps the reader gain perspective by identifying similarities, differences, and relationships between the areas.

Choosing the appropriate project, study, and regional areas will depend on the type of project being analyzed and where it is located. As a general rule, the region is defined as the jurisdiction that is larger than and includes the study area. To illustrate, if the project is exclusively located within the confines of an incorporated city, the city would be the study area and the county would represent the regional area (although local circumstances may dictate some deviations from this standard practice). The two areas also can be segregated by designating an area of primary impact and an area of secondary or indirect impact. After an area has been delineated for study, an initial windshield survey of the area can be made to gain a preliminary impression of its character and needs, likely impacts, and potentially affected interests. Sometimes exceptional regional qualities and focal points outside the strict study area may be relevant for discussions of growth and other quality-of-life issues.

2.2.4 Develop a Community Profile

The community profile provides a summary of the social and economic characteristics of the communities that may be affected by the project. The community profile should describe the character of the community with respect to geography, demographics, institutions, neighborhood groups and organizations, businesses, access and circulation, and public services and facilities. The profile will help the analyst understand the community where the project will be located and the issues that will need to be taken into account in order to address community concerns. When developing the community profile, the analyst should be sure to gather the data necessary to support the environmental justice analysis, which is covered in Chapter 8 of this volume.

To the extent feasible, the topics described in the community profile should be presented in the same order as they appear in the impact analysis section of the environmental document (ED). The information from this section of the community impact assessment should be used, as appropriate, in the “Affected Environment” portion of the ED. Section 2.2.7 below provides a sample outline of the community impact assessment and shows a possible order for presenting topics, so that they can be easily incorporated into the ED.

A detailed description of how to prepare a community profile, including primary and secondary data sources, is provided in Chapter 3 of this volume.

2.2.5 Analyze Impacts

The analysis of project impacts requires the careful consideration of how the proposed project will affect the community. Engaging the community in the development of the purpose and need

statement and development of alternatives will often provide insight into the issues associated with the project and the relative importance of those issues to the community.

The impact analysis needs to include all project alternatives, including the No-Build alternative. The impact analysis should address both direct and indirect impacts as well as the project's contribution to cumulative impacts. The CEQ NEPA regulations provide the following definitions of effects as they relate to NEPA analysis (40 CFR §§ 1508.7 and 1508.8, also see [Caltrans Guidance for Preparers of Cumulative Impact Analyses](#)).

- Direct effects are caused by the action and occur at the same time and place.
- Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-related effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.
- Cumulative impacts are the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Prioritize the Level of Analysis of Impacts

There are few clear standards, formulas, or criteria for identifying potential impacts or for measuring their significance. The significance of a potential impact must be determined through careful judgment on a case-by-case basis. Much of the information on communities and neighborhoods is considered “soft data,” information that describes or characterizes people's perceptions, feelings, and attitudes. Soft data typically makes the wide acceptance of an analysis more difficult. The credibility of social and economic analysis can be improved, however, through clear, objective, and concise explanations of methodology, data sources, and objectives.

Not all community impacts associated with a proposed project have the same priority for depth of analysis. The more important impact should receive a higher priority for analysis than one that the community is less concerned about. The [FHWA Technical Advisory T 6640.8A](#), which provides guidance for preparing EDs, states that “Data analyses should be commensurate with the importance of the impact.” For instance, a project-related impact that seriously affects large segments of the population for a long time period is by its nature always more important than one that is not serious, affects few people, and lasts for only a short duration. With respect to social and economic or community impact assessment, more effort, budget, and staff time should be dedicated to analyzing the major impacts of the project rather than the minor short-term project effects.

Determine the Magnitude of Impacts

CEQA vs. NEPA

CEQA requires that each “significant [adverse] impact” be identified in an ED; NEPA does not. References to “significant impact” may be made in the ED to fulfill this CEQA requirement, pursuant to California law. Under NEPA, no such determination needs to be made for each

environmental effect. The requirement to prepare an EIS is determined by the lead agency's assessment that overall the project would have a "significant effect" on the environment. Generally, for CEQA and joint NEPA/CEQA documents the findings of significance are reserved for the ED and are not included as part of the community impact assessment.

Under NEPA, significance is a function of both the context and intensity of the impact. *Context* refers to the setting in which the impact occurs (society as a whole, the affected region, or the local area). *Intensity* refers to the severity of the impact and is a function of type, quality, and sensitivity of the resource involved; the location of the proposed project; and the duration of the effect.

Magnitude vs. Significance

The magnitude of an impact differs from significance in that the magnitude expresses the extent of effects and the importance of a particular impact to a community. As noted above, significance is not addressed in technical studies and does not need to be determined in community impact assessments, but magnitude does.

The magnitude of a potential impact must be determined through careful judgment on a case-by-case basis. As stated above, much of the information on communities and neighborhoods is considered "soft data," involving people's perceptions, feelings, and attitudes, and therefore more difficult for the public to accept. Clear and concise explanations of methodology, data sources, and objectives improve credibility of the analysis. Some predictive tools do exist, but most, created in the 1970s, are now seldom used because of their high cost, questionable validity, and the frequent controversy that surrounds the conclusions that are drawn from such methodologies. Determining the magnitude of impacts is therefore ultimately a matter of judgment. For the purposes of CEQA, an environmental issue is likely to be relevant if it concerns the effects identified below, excerpted from [Appendix G to the CEQA Guidelines](#). Other criteria for evaluating an impact include uniqueness, controversy, legal standards, benefits and detriments, uncertainty and risk, setting precedent, indirect and cumulative effects, and public health and safety.

Socioeconomic Effects Under CEQA

Culled from Appendix G to the CEQA Guidelines as being considered socioeconomic in nature are any effects that would:

- Disrupt or divide the physical arrangement of an established community
- Conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect
- Conflict with any applicable habitat conservation plan or natural community conservation plan
- Convert prime agricultural land to nonagricultural use or impair the agricultural productivity of prime agricultural land
- Conflict with existing zoning for agricultural use, or a Williamson Act contract
- Require new facilities to provide acceptable levels of public services, the construction of which would cause significant environmental impacts
- Interfere with emergency response plans or emergency evacuation plans.
- Result in inadequate emergency services
- Result in inadequate parking capacity
- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system

2.2.6 Identify Solutions

The process of scoping and selecting alternatives is intended to engage the public in the development of approaches to minimize the adverse effects of a project. For NEPA when adverse effects must be addressed, the following sequential approach to finding a solution is recommended (40 CFR 1508.20).

- Avoid the impact altogether by not taking a certain action or parts of an action.
- Minimize impacts by limiting the degree or magnitude of the action and its implementation.
- Rectify the impact by repairing, rehabilitating, or restoring the affected environment.
- Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action.
- Compensate for the impact by replacing or providing substitute resources or environments.

The development of mitigation strategies for addressing project impacts should begin early in the project development process and should be a key focus of the public participation plan. In cases where the adverse effects of a project cannot be avoided, it may be possible to compensate the affected community by providing enhancements that improve the livability of the community. Several case studies of successful community impact mitigation strategies are available for review on the FHWA-sponsored [CIA website](#) (University of South Florida and FHWA 2000).

2.2.7 Outline and Write the Technical Report

Preparing an outline of the community impact assessment or specific ED sections will help to ensure thoroughness, make the writing process more efficient, and identify data needs prior to the actual or formal analysis. As discussed in Chapter 1, one of the results of the public involvement and scoping process should be the determination (if not previously determined) of whether to prepare a separate community impact assessment (versus preparing sections directly for inclusion in the ED).

Topics analyzed in the community impact assessment or appropriate ED sections are determined based on expected impacts and issues. Extraneous topics should not be discussed in the section (or at least minimized) if irrelevant to the project. For example, topics such as ethnic composition or the age of the population need not be discussed at length if the project is not likely to have an impact on these groups, and if Caltrans, the public, or local decision makers have not identified such topics as project issues.

The organization of the ED, including the land use, social, and economic sections, is governed by whether the document is solely a CEQA or a combined NEPA/CEQA document. Traditionally, Caltrans EDs followed the NEPA format because federal funding or federal permits are involved. However, as the local county tax measures and other alternative transportation funding programs have expanded in recent years, CEQA-only documents have become more common. The topic sequence in the ED should follow the appropriate [Caltrans annotated outline](#).

As a general principle, the organization of the “Affected Environment” or “Setting” section of the community impact assessment should parallel that of its “Environmental Consequences” or “Impacts” section. That is, the sequence of topics should be same in both sections of the community impact assessment.

Sample Outline

There is no single correct way to prepare a community impact assessment, but some ways are better than others. An example of a table of contents for a Caltrans community impact assessment for a major project is outlined below for the purpose of illustrating a good approach for an. The generic study outline chosen for the example shows a full range of issues; the report prepared by the analyst should reflect the nature of the specific project and may not cover all the same issues.

- I. INTRODUCTION
 - A. Executive Summary
 - B. Background
 - C. Project Summary Description
 - 1. Purpose and Need
 - 2. Alternatives
 - D. Summary of Public Involvement Activities
- II. AFFECTED ENVIRONMENT
 - A. Land Use
 - 1. Existing Land Use Patterns
 - 2. Development Trends
 - 3. Adopted Plans and Programs
 - 4. Parks and Recreational Facilities
 - 5. Farmlands/Timberlands

- B. Community Characteristics
 - 1. Demographic Profile
 - 2. Community Cohesion
 - 3. Community Facilities (schools, health care, libraries, alternative transportation, etc.)
 - 4. Community Issues and Attitudes
- C. Utilities and Emergency Services
 - 1. Police and Fire Protection and Emergency Medical Services
 - 2. Utilities and Communications Providers
- D. Economic Conditions
 - 1. Regional Economy
 - 2. Employment and Income
 - 3. Study Area Business Activity

III. IMPACTS

- A. Land Use
 - 1. Consistency and Compatibility with Existing and Planned Land Uses
 - 2. Consistency with State, Regional, and Local Plans and Programs
 - 3. Parks and Recreational Facilities
 - 4. Farmland/Timberland
 - 5. Growth Inducement
- B. Community Impacts
 - 1. Community Character and Cohesion
 - 2. Community Facilities
 - 3. Relocations
 - 4. Environmental Justice
- C. Utilities and Emergency Services
 - 1. Police, Fire Protection, and Emergency Medical Services
 - 2. Utilities and Communication Providers
- D. Economic Impacts
 - 1. Business Impacts
 - 2. Employment Impacts
 - 3. Tax Revenue Effects

IV. MITIGATION

V. APPENDICIES

- A. AD 1006 Form (*If completed*)
- B. Relocation Impact Report (*If relocations are anticipated*)
- C. Caltrans Relocation Assistance (*If relocations are anticipated*)
- D. References Used and Contacts
- E. List of Preparers

Considerations for Content

As is true of all technical reports, the composition of a community impact assessment report should be concise and carefully organized. Tables and charts should be prepared when needed to enhance the presentation and highlight information. Many readers of EDs are visually oriented while others will rely more heavily upon the narrative text. Written text should accompany each table or chart to assist the reader in understanding the table or graphic. The original source of data for the compilation of charts and tables should be clearly identified.

The analyst preparing the community impact assessment should keep in mind that the audience is the general public. Thus, the document should be written so that it can be understood by persons with various levels of education. When difficult terms or concepts cannot be easily explained in the body of the text or replaced by another word, use footnotes or include a glossary to explain the meaning of these terms or phrases in common language.

In addition to documenting the findings of the community impact assessment, the report should include a summary of all public involvement activities for the project, a summary of public concerns and comments, and a record of any commitments made to the public. It is Caltrans policy to maintain an [Environmental Commitments Record](#) (ECR) for each project. The purpose of the ECR is to ensure that Caltrans meets its environmental commitments by recording the commitments made, specifying how each commitment will be met, and documenting the completion of each commitment.

2.3 Mitigation Monitoring

While monitoring is ultimately a component of the final ED prepared for the project, the community impact assessment can help to define what the mitigation and monitoring measures will be. For example, the community impact assessment could recommend the level of success for a specific mitigation measure or suggest a specific measure such as the creation of a nuisance hotline during construction.

According to [CEQA Guidelines Sections 15091\(d\) and 15097](#), a program for reporting or monitoring should be established for mitigation measures that are adopted or made conditions of project approval. The monitoring program is implemented to ensure that the mitigation measures and project revisions identified in the ED are implemented. In addition to ensuring timely implementation of mitigation measures, monitoring serves to identify the need for enforcement action before irreversible environmental damage occurs, and to provide feedback to agency staff and decision makers about the effectiveness of their actions and present learning opportunities for improving mitigation measures on future projects.

Having a monitoring or reporting program in place is useful in addressing public concerns regarding the enforcement of mitigation. Accountability and a quick response mechanism to lessen impacts help to build community confidence in the agency and in the quality of transportation projects.

2.4 Additional Resources

- Caltrans. *CEQA Guidelines for Cumulative and Indirect Impacts*. 2005. Accessed January 2011. Available at:
http://www.caltrans.ca.gov/ser/cumulative_guidance/downloads/CEQA_Guidelines_for_Cumulative_and_Indirect_Impacts.pdf.
- Caltrans. –“Environmental Commitments Record Memorandum.” Dated June 10, 2005. Accessed January 2011. Available at:
http://www.dot.ca.gov/ser/downloads/memos/DDD_const_design_env_proj_mgmt.pdf.
- Council on Environmental Quality. *Considering Cumulative Effects Under the National Environmental Policy Act*. 1997. Accessed January 2011. Available at:
<http://ceq.hss.doe.gov/nepa/ccenepa/ccenepa.htm>.
- FHWA. *Secondary and Cumulative Impact Assessment in the Highway Project Development Process*. 1992. Accessed January 2011. Available at:
http://www.environment.fhwa.dot.gov/projdev/tdm2_c_imp.asp.
- FHWA. *Community Impact Assessment: A Quick Reference for Transportation*. 1996. Accessed January 2011. Available at:
http://www.ciatrans.net/CIA_Quick_Reference/Purpose.html.
- FHWA. *Environmental Guidebook*. Accessed January 2011. Available at:
<http://www.environment.fhwa.dot.gov/guidebook/index.asp>.
- FHWA. –“Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process.” Accessed January 2011. Available at:
<http://www.environment.fhwa.dot.gov/projdev/qaimpact.asp>.
- University of South Florida and FHWA. –“Community Impact Mitigation: Case Studies.” 2000. Accessed January 2011. Available:
http://www.ciatrans.net/Community_Impact_Mitigation/CIM_Introduction.html.
- USDOT. *Public Involvement Techniques for Transportation Decision-Making*. 1996. Accessed January 2011. Available at:
<http://www.fhwa.dot.gov/REPORTS/PITTD/cover.htm>.

Chapter 3

Involving the Public and Developing a Community Profile

3.1 Introduction

Now that you understand the general process for preparing a community impact assessment (the focus of Chapter 2), the next major step is to involve the public in the process and develop the community profile. The community profile establishes the baseline conditions for assessing impacts and is used to prepare the “Affected Environment” or “Setting” section of the community impact assessment report and the ED. The community profile describes the physical features of the study area and the pertinent social and economic conditions in the community and region. In keeping with the principles of Context Sensitive Solutions (CSS), the affected community should be engaged in the preparation of the profile, and the profile should be considered a living document that is updated as additional information becomes available during the project development process.

3.2 Involving the Public

The public involvement process is discussed in detail in [Chapter 3 of the Caltrans Environmental Handbook Series, Volume 1](#). This chapter includes discussion of the legal requirements for public involvement as well as links to a number of guidance documents related to public involvement in transportation projects. For a detailed discussion of techniques for involving the public, the analyst is directed to the FHWA/FTA document, [Public Involvement Techniques For Transportation Decision-making](#). This booklet discusses a wide variety of subjects, including civic advisory committees, public meetings/hearings, negotiation, mediation, and improving meeting attendance.

To facilitate the public involvement process, it may be helpful to prepare a map or series of maps that show the locations of the project alternatives, study area neighborhoods and communities, relevant demographic and economic characteristics, land uses, and the various resources identified in the research discussed below. The use of GIS in preparing these maps is highly encouraged because it is so well suited to this sort of task. Each of the geographic and socioeconomic features of the study area that make up the community profile can become a data layer in GIS along with a layer that represents the project alternatives and proposed right-of-way. These layers can be added or removed to create easily understood visual representations of the project alternatives, which will aid greatly in the comparison of alternatives and the development of measures to avoid and minimize impacts.

The analyst should consult with the GIS technician before beginning the data collection task. GIS technology requires geographically referenced data, which in many cases may not be readily available. If feasible and appropriate, global positioning system (GPS) technology can be used to assist in the data collection effort.

3.3 Developing the Community Profile

3.3.1 Review and Inventory Existing Conditions

Prior to beginning the assessment, a base map should be created to familiarize the analyst with the project area and to assist with field surveys. Aerial base maps may be available from Caltrans staff, such as the project engineer, or consultants working on the project. The aerial map should be as current as possible, so as to depict existing buildings (residential and commercial), transportation facilities, land uses, and neighborhood and community features. The base map should include the following components:

- Project alignment for each alternative
- Existing and proposed right-of-way boundaries
- Assessor's parcels (boundaries and numbers) located adjacent to or within project boundaries

As discussed in Chapter 2, this map should be used to establish a project boundary that includes the land, buildings, and other features that may be subject to project effects. Delineation of the affected social and economic environment should be drawn to include the following components:

- **Buildings:** Residences, businesses, schools, government offices, and public service buildings that would be made more or less accessible or otherwise affected by the proposed project. Include structures that may be subject to removal or relocation. Coordinate with Caltrans right-of-way staff concerning information available for the draft relocation impact statement or report (DRIS or DRIR) prepared for the proposed project. Please see Chapter 7 and Appendix C of this volume for more information on relocations. More about this in Appendix C.
- **Transportation Facilities:** Streets, railroad lines, bikeways, pedestrian overcrossings, and parking facilities that may be closed or otherwise affected by the proposed project.
- **Neighborhood and Community Features:** Communities, neighborhoods, parks and recreation facilities, and business centers that may be affected by the proposed project. Local planning agencies may have maps or plans delineating neighborhoods or communities. When conducting a community impact assessment, it is always a good idea to contact the local planning agency to determine whether there is a planner with a special knowledge of the area.

This working project area map can then be verified during subsequent site visits and will help to identify existing conditions for the setting section. Depending on the input received from the community during the course of public involvement, it may be necessary to reassess the boundary lines or to update the map to address changes in facilities or features that are identified later in the process.

The map should clearly depict the area directly affected by the project, which is the *project area*, and the area used for determining the demographic and socioeconomic character of the surrounding community, which is the *study area*.

3.3.2 Land Use

Inventories of existing and planned land uses in the study area provide a basis for understanding growth trends of the broader community and the study area. Such data are useful in assessing the potential for the transportation project to conflict with land uses, result in growth-related effects, or displace active farmland or timberland.

Data Needs

The following data should be collected to establish the baseline description of existing land uses in the study area:

- Major land uses (e.g., commercial, residential, agricultural)
- Acreages of rural and urban land and farmland
- Amount and location of undeveloped land
- Zoning and land use plans
- Parks and recreational facilities
- Land use development trends

Data Sources

In addition to general plans and land use maps, sources of land use information include local special area plans, EDS prepared for other types of projects in the area, master EDS local real estate boards, large-scale residential and commercial developers, district right-of-way staff, the area chamber of commerce, and articles from the local newspaper. Additional sources available to Caltrans staff are the Digital Highway Inventory Photography Program (DHIPP) and the Caltrans Photolog. DHIPP allows every Caltrans employee with intranet access the ability to instantly view color, high-resolution, and geo-referenced digital imagery of the entire State Highway System (SHS). The Caltrans Photolog provides all employees with intranet access to take a video driving tour of any segment of the SHS.

Below are other sources that can be used to gain information specific to each property within the study area.

- **Field Surveys:** Information such as existing land uses are best obtained through direct observation and visits to the project area. Aerial photos and the creation of the base map can give analysts a general idea of the existing conditions, but actual conditions should be verified through field surveys.
- **Local Planning or Community Development Agency:** Local agencies can provide copies of general plan elements and other information such as the prospects of approval of pending development projects and potential construction activities that could take place at the same time as the project's construction. This may include recent records of the number and types of building permits issued to aid in identifying growth trends. In many cases, planning agencies will have data available in a format compatible with GIS.
- **[State of California's Department of Conservation](#) website:** This website contains links to available maps and information about the [Farmland Mapping and Monitoring Program](#) (FMMP). Additional sources of data regarding farmland include:

U.S. Department of Agriculture, [Census of Agriculture](#). The Census of Agriculture is taken every five years, and provides a complete count of U.S. farms and ranches including data on land use and ownership, operator characteristics, production practices, income, and expenditures and other areas.

[California Department of Food and Agriculture](#).

[The California Office of the U.S. Department of Agriculture National Agricultural Statistics Service](#) (NASS). The NASS prepares reports on agricultural production including an interactive statistical map and detailed data by county.

County Agricultural Commissioners.

County Farm Bureaus.

[American Farmland Trust](#) is a nonprofit group that maintains statistics on state agriculture.

The [California Institute for Rural Studies](#) is also a non-profit research organization that conducts research on topics including farm labor conditions, sustainable food systems, immigration reform, immigrant civic participation, rural health, pesticide use, and water policy.

- Local Council of Governments: This agency is likely to have published reports containing discussions of development trends in the region.

Summarizing Results

The land use section of the community profile provides the basis for analyzing the project's compatibility with existing and planned land uses, consistency with local zoning, plans and programs, potential for growth-related impacts, and impacts to farmlands and timberlands. Comparing local data with similar county and state data can provide further insight regarding identified land use trends in relation to the broader region or state. The summary should address the following topics:

- Land use characteristics in the study area (acreages of rural and urban land, existing use, and zoning). The purpose is to convey a general understanding of the amount of developed, undeveloped, and underdeveloped land in the area.
- General discussion of the agricultural resources and character of agriculture in the project area (if applicable). Such a discussion might include the amount of land under cultivation by crop type, the number of acres under Williamson Act contracts, the Important Farmland Mapping categories applicable to relevant farmlands, the value of agricultural production, a description of trends in farmland conversion in the particular county, and a description of applicable general plan elements, ordinances, and other policies related to agriculture in that locale. More detail regarding farmland can be found in Chapter 4 of this volume.
- Important land use changes that have or are occurring in the community, such as major development, redevelopment, or urbanization.
- Local growth and development policies for the region. All developable land areas that would be made more accessible by the action should be identified and described. This information is used to analyze any growth-related impacts of the proposed action. Development trends should also be described to assess the growth potential of the affected area.

- Location and characteristics of parks and recreational facilities in the study area (indoor vs. outdoor, public vs. private, community center, and amenities available), availability (time of year, hours of operation, membership eligibility, etc.), programs offered, and the condition of structures/facilities. If the project would result in the use of a Section 4(f) resource and a Section 4(f) evaluation is being prepared for the project, include reference to that report here.

Exhibits for both existing and planned land uses should be used if the area is not fully built out. These exhibits should encompass the study area at a minimum and may include a larger area such as a community plan or group of planning areas. Whenever possible, the land uses should be simplified to cover the standard planning and zoning classifications.

3.3.3 Community Character and Cohesion

This section addresses the demographics of the study area population, housing characteristics, and economic conditions and trends. Because they influence the character of a community, this section should also describe the types of transit facilities, highways, streets, and bicycle and pedestrian facilities in the study area as well as the availability of parking facilities and any existing lots or parking spaces if the proposed project would likely have an effect on such facilities.

Data Needs

The community demographics provide insight into the ethnicity, income, and age characteristics of the affected population. This information is also used to support the environmental justice analysis, which is discussed in more detail in Chapter 8 of this volume. For this reason, data should be collected at a level of detail appropriate for the anticipated impacts. If minority and low-income groups are not present in the study area, then less detail is needed in the demographic analysis. However, if there are concentrations of minority or low-income persons that may be adversely affected by the project, then these groups need to be identified. A site visit or interviews with planning agencies and community leaders may be the best way to identify these groups. [U.S. \(Census\)](#) data can provide detailed information on ethnicity, income, and poverty levels.

The data collection effort for community character and cohesion should compile the following information:

- Demographic characteristics of the community and region
 - Population and growth trends
 - Ethnic composition
 - Average household income and percentage of the population under the poverty level
 - Age distribution
 - Average household size
 - Concentrations of special groups, such as minority or low-income populations, elderly persons, religious or ethnic groups, and persons with disabilities
- Housing characteristics

General characteristics of housing in the study area compared to the larger region (Median home value, single-family vs. multifamily, age of structures)

Type of occupancy (renters vs. owners)

Type, value, age, and condition of housing that may be displaced

Vacancy rates and length of residency (tenure)

Availability and location of low-income housing

- Economic data and trends

Unemployment rates and trends

Major employers in the local area and region

Workforce composition

Commuting patterns

Sales tax and property tax revenues

- Circulation and access

Major freeways and highways serving the study area and region

Type, availability, and location of transit services

Local roadways, bicycle, and pedestrian facilities in the study area

Data Sources

The Census generally provides the most geographically detailed data on demographics, housing characteristics, and income. However, Census data is only updated every ten years and may be out of date when you need it. The U.S. Census Bureau also produces population estimates and conducts the [American Community Survey \(ACS\)](#) annually. All data from the ACS are estimates, however, as the information is based on a sample of the population of the United States and Puerto Rico, rather than from the whole population. Other possible sources of data include state and local government agencies or previous planning studies. City and county planning departments and economic development departments as well as metropolitan planning organizations usually maintain up-to-date projections of demographic and economic information. Demographic information is also regularly compiled and maintained by other agencies such as the [California Department of Finance, Demographic Research Unit](#), social service agencies, water management districts, and health departments.

Economic data, such as labor force characteristics, major employers and industries, and tax revenue may be obtained from the Census, local plans and planning studies, the county assessor's office, county or city budgets, the chamber of commerce, and local economic development organizations. In addition, the [California Employment Development Department](#) compiles detailed records of labor data on California businesses in the [Labor Market Info Database](#). Economic data is also compiled by the [California Department of Finance, Demographic Research Unit](#) and the [Bureau of Economic Analysis](#). Depending on the nature of the project, a thorough inventory of businesses in the study area may be necessary in order to evaluate potential economic impacts related to relocations or changes in access.

Property tax is imposed on real property and is based on the value of the property. Sales tax is imposed on retailers for the privilege of selling tangible personal property in California. The sales tax rate is a composite of various tax rates: a state rate, a variable city-county rate, a local transportation rate, a statewide rate for local public safety services, and a statewide rate for local health and social services. Therefore, if a large number of firms or major firms may be displaced, the effect would be important to assess. The analyst would need to determine the amount of local taxes paid annually by the businesses. The community impact analyst should also determine the amount of property tax paid annually by both the residents and the business owners who are likely to be subject to displacement. This amount is then calculated as a percentage of the city or county's total annual property tax. The local tax assessor's office can provide the information on the total amount collected.

Housing data can be obtained from the Census, California Department of Finance, Caltrans right-of-way studies, local planning agencies, the county assessor, real estate agencies, and real estate websites. Site visits and interviews with people familiar with the area are helpful for collecting information on housing conditions and development trends.

Information on local and regional circulation and access can be obtained from maps, information from the circulation element of the general plan, traffic studies, and field surveys. Information on transit services can be obtained from city and county transit agencies and their websites and through interviews with officials of the local public transit authority and/or planning agency.

Note on Census Data

The U. S. Census Bureau within the Department of Commerce is the basic source for demographic data. Census data provides statistics on population, housing, race, age, family composition, marital status, nativity, parentage, country of origin, school enrollment, years of school completed, birth rates, place of work, means of transportation, employment status, occupation, industry, class of worker, and income.

The Census generally collects and analyzes data in various geographic divisions. These geographic divisions include obvious areas such as states, cities, and counties. The Census also provides information at the Census Tract (1,000–8,000 persons), Block Group (300–3,000 persons) and Block (1–500 persons, usually equivalent to city blocks) levels. The Census provides data on ethnicity and income characteristics at varying levels.

Note that not all information is available at the same geographic level and be aware of any potential discrepancies when presenting differing levels of data in the same table. For example, because detailed economic and social information (occupation, income, poverty, housing values), otherwise known as "long-form" data, are gathered from a sample of the population, they are available only down to the block group level. However, "short-form" data (race, sex, age, total population) includes 100% of the population and is available down to the block level.

In addition, over time the value of the data may become diminished. While short-form Census data are available on a relatively short interval (annually for areas with 65,000 or greater population, three-year average for areas with 20,000 or greater population, and five-year average for areas with populations below 20,000), long-form Census data are available only on a ten-year basis. If the locale has been experiencing relatively rapid or constant change, the data can

become unreliable. The analyst, therefore, must continually validate the data so that it represents the current economic and business conditions of the affected area.

The usefulness of Census data for social and economic analyses does have some limitations because: 1) it is collected only every ten years, 2) it is not usually available until at least two years after the census is taken, and 3) it is not updated until the new census is taken. Since California is a dynamic state, Census data can, in some instances, become outdated within a few years of being collected, depending on local circumstances and the amount of change occurring in a specific geographic area. Local planning agencies may have more current demographic data based upon community surveys or projections of Census information, but this is not always standard practice. The Census information can be valuable nonetheless for indicating community characteristics because existing low income and minority areas tend to persist over the years even if specific resident individuals, families, and households shift or relocate. [2010 US Census](#) data is now available via the Internet.

Summarizing Results

Describing the community character is best accomplished by comparing the local community to an appropriate larger area such as a city, county, or state, depending on the size and nature of the project and affected community. This comparison will provide insight into social and economic trends in the study area. Depending on the nature of the project's anticipated effects, the discussion of community character and cohesion could include the following components.

- Changes in population that are occurring in the community and how they compare to changes in the larger region. The discussion should address growth trends and changes in demographics such as ethnicity, income, and age—if these demographic indicators are relevant to the study.
- Location of high growth areas and proposed new development in the region (e.g., residential neighborhoods, commercial centers, or industrial parks).
- Characteristics of the populations affected by the project as compared to the larger region (age, ethnicity, employment, median income, and families living below the poverty level).
- Locations of populations of concern, such as minority or low-income neighborhoods, concentrations of low-income elderly persons, and persons with disabilities.
- Housing characteristics in the study area (size and location of neighborhoods, types of units, condition of houses, and relative value), household size, length of residency, vacancy rates, and tenure (owner vs. renter) compared to the larger region.
- Economic conditions and trends in the community, including unemployment, labor force characteristics, major employers, dominant business sectors, and the location and nature of businesses in the study area.
- Tax revenues from property taxes and sales tax.
- Traffic patterns, traffic problems, and transit use.

3.3.4 Utilities, Public Services, and Emergency Services

The basic utilities that serve a community are often taken for granted, but interruptions to those services seldom go unnoticed. The community impact assessment should include an inventory of the community facilities and services, utility providers, and emergency services that could be directly or indirectly affected by the construction or operation of the project.

Data Needs

The inventory should include the service provider, location, service area, and a general description of the following topics as relevant to the project effects.

- Public utilities and services such as gas and electrical power, telecommunications, water supply, sewer, post offices, libraries, and public assistance services
- Law enforcement and emergency services (such as fire protection and ambulance service), including the location of emergency routes
- Schools, including student enrollment and capacity
- Medical and health care facilities
- Community centers
- Religious institutions

Data Sources

Data sources for utilities, public services, and emergency service providers are similar to those for land use. Local planning agencies, public works departments, utility companies, and public service providers will be able to provide the bulk of the data. Telephone directories, on-line mapping services such as Google Earth, and road maps of the local area are potential sources of information. Data gathered from these sources should be verified through field surveys to assure accuracy. Stakeholder meetings and interviews with knowledgeable persons are also valuable for identifying local resources.

Summarizing Results

The community impact assessment report should provide sufficient information, such as that listed below, about utilities, public services, and emergency service providers to assist in comparison of alternatives.

- Location of major water supplies, sewer lines, and underground power and telephone lines that cross or are in close proximity to the project alignment.
- Location of police stations and substations, fire stations, and ambulance dispatch centers. If frequently used emergency routes cross the project alignment, this should be noted in the report.
- Location of schools relative to the project area to determine if construction or operation of the project would affect normal school operations or access to the schools. If the project is expected to result in growth-related impacts, the existing capacity and enrollment of schools should be identified.

- Other community facilities such as hospitals, religious facilities, and community centers should be described. These facilities act as focal points for community residents.

3.3.5 Community Values, Issues, and Attitudes

Data Needs

Understanding the values, issues, and attitudes of the affected communities is an essential part of community impact assessment. Generally this information will become available through the development and execution of the public involvement plan. For additional information on the public involvement process, please see [Volume 1, Chapter 3 of the Caltrans Environmental Handbook Series](#). Within the framework of CSS, outreach should focus on learning about specific community values and understanding community attitudes toward the proposed transportation project. If there are divergent value and opinions within a community, this should be noted.

Data Sources

An initial feel for community values, issues and attitudes can be obtained through conversations with knowledgeable persons and reviewing media reports, community plans, and local community organization bulletin boards. Other secondary sources of information include general plans, policy studies, minutes of public hearings, and histories of the local area. These same sources can be used to review similar projects in other locations to see how the public reacted to those projects. Interviews and surveys of community residents can provide valuable, first-hand information about community values and concerns regarding the project. Appendix B contains a list of sample interview questions as well as a sample survey questionnaire that can be used to gather information about the community. Lastly, field surveys are critical to gaining first-hand knowledge of the area and its residents.

Summarizing Results

The community impact assessment report should provide sufficient information, such as that listed below, about community values, issues, and attitudes to assist in comparison of alternatives.

- Does the community generally feel that the proposed project is needed? Do they think it will resolve problems that the community is currently experiencing? Do they feel the project will resolve a problem somewhere else and place the burdens of the project on their community?
- How does the community feel about the proposed project? Are they generally in favor? Opposed? Worried about its affect on the community?
- What are the community's major concerns regarding the project? Are they worried about relocations? Impacts on businesses? Safety? Aesthetics?

3.4 Summary

Involving the community and developing the community profile is the key step in understanding the context within which the transportation project needs to fit. For the community impact analysis to be meaningful, the data gathered must be complete, accurate, and current. The public involvement process can assist the analyst in verifying the accuracy and completeness of data by identifying information that may have been missed, providing information on the importance of

facilities and services to the community, and providing information about community concerns, issues, and attitudes. The following table summarizes the data needs and potential sources of data that were discussed in this chapter. Additional information regarding data sources can be found in Appendix B.

Table 3.1. Summary of Data Needs and Sources

Data needs	Sources
Land Use	
Major land uses (e.g., commercial, residential, agricultural) Acreages of rural and urban land and farmland	General plans, area plans, aerial photos, field surveys State of California Department of Conservation Farmland Mapping and Monitoring Program , County Agricultural Commission, Census of Agriculture, California Department of Food and Agriculture, National Agricultural Statistics Service, County Agricultural Commissioners, County Farm Bureaus, American Farmland Trust, California Institute for Rural Studies
Amount and location of undeveloped land	City or county planning departments, aerial photos, field surveys
Zoning and land use plans	City or county planning departments, general plans, area plans, Land Use Planning Information Network (LUPIN)
Parks and recreational facilities	City or county recreation departments, general plans, area road maps, recreation maps
Land use development trends	City or county planning departments, general plans, area plans, local councils of governments, local real estate boards, large-scale residential and commercial developers, District right-of-way staff, the area chamber of commerce, articles from the local newspaper
Community Character	
Demographic characteristics of the community and region	U.S. Census Bureau , California Department of Finance , local councils of government, city or county planning departments
Housing characteristics	U.S. Census Bureau , local plans and planning studies, the county assessor's office, county or city budgets, the chamber of commerce, Department of Finance, local economic development organizations
Economic data and trends	U.S. Census Bureau , local plans and planning studies, the county assessor's office, county or city budgets, the chamber of commerce, and local economic development organizations, California Employment Development Department , Labor Market Info Database , California Department of Finance, the Bureau of Economic Analysis
Circulation and access	Local or regional transportation planning agencies, city or county planning departments, road maps, field surveys, aerial photos, the local bicycle coalition or similar advocacy group, transit agencies
Utilities, Public Services, and Emergency Services	
Public utilities and services	Local planning agencies, public works departments, utility companies, public service providers, telephone directories
Law enforcement and emergency services	Local planning agencies, police and fire departments, ambulance, telephone directories
Schools	School district staff, school staff, state department of education, telephone directories
Medical and health care facilities	Local planning agencies, , field surveys, telephone directories

Data needs	Sources
Community Values, Issues, and Attitudes	Interviews and surveys of community members, conversations with knowledgeable persons, media reports, community plans, community organization bulletin boards, general plans, policy studies, minutes of public hearings, histories of the local area.
Understanding of the values, issues, and attitudes of the affected communities	

Chapter 4 Land Use, Farmland, and Growth

4.1 Introduction

This chapter walks the practitioner through the process of assessing land use impacts in the context of the community impact analysis. This chapter focuses on direct impacts and indirect growth-related impacts. Cumulative impacts are not addressed herein.

Transportation and land use are intricately tied together. Transportation plans and projects can influence development by providing or improving access to undeveloped areas. Land use decisions can influence transportation systems by creating a demand that exceeds the existing capacity of the system. Predicting the effect of transportation plans or projects on land uses and land use planning is an important part of the community impact assessment and is critical to developing context sensitive solutions for transportation projects.

The analysis of the impacts of transportation plans and projects on land use is both an iterative and a collaborative process in which agencies involved in preparing land use plans and making land use decisions should be consulted. Consultation should occur during both the land use inventory and the analysis of project impacts, which includes determining if the transportation project is consistent with local plans and programs. If inconsistencies are found or adverse impacts are anticipated, these agencies and the communities they serve should be actively engaged in the development of measures to address these issues.

The analysis of land use impacts for transportation projects is guided by FHWA Technical Advisory T 6640.8 and the CEQA Guidelines. The relevant portions of those guidance documents that describe the topics that an assessment of land use impacts should cover are similar and are introduced below.

The results of the land use, farmland, and growth analysis should be shared with the public during the public involvement process, e.g., at community advisory committee meetings, scoping meetings, etc. Public input should be considered by the analyst and if necessary, the findings of the analysis should be revised to reflect information gained through the public involvement process.

4.1.1 Federal Guidance

The [FHWA Technical Advisory T 6640.8, *Guidance for Preparing and Processing Environmental and Section 4\(f\) Documents*](#), states:

This discussion [of land use] should identify the current development trends and the State and/or local government plans and policies on land use and growth in the area which will be impacted by the proposed project.

The land use discussion should assess the consistency of the alternatives with the comprehensive development plans adopted for the area and (if applicable) other plans used in the development of the transportation plan required by Section 134. The secondary social, economic, and environmental impacts of any substantial,

foreseeable, induced development should be presented for each alternative, including adverse effects on existing communities. Where possible, the distinction between planned and unplanned growth should be identified.

4.1.2 State Guidance

The [CEQA Guidelines \(15126\(a\)\)](#) specify that an EIR for a proposed project include a discussion of

...changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

4.2 Analyzing Land Use Impacts

The following are the basic steps in analyzing land use impacts as part of the community impact assessment process:

1. Inventory the existing land use patterns (including undeveloped land), development trends, and transportation systems.
2. Determine whether the project is consistent with local and regional policies that govern land use and development.
3. Assess the changes that would occur in land uses and growth with and without the project.
4. Develop measures to avoid, minimize, and/or mitigate potential adverse effects.

4.2.1 Inventory Existing Conditions

This first of these steps was discussed in Chapter 3, *Involving the Public and Developing a Community Profile*. The inventory of existing land uses should include the following land use types: residential, commercial, industrial, recreational, institutional, public services, community services, emergency services, transportation, utilities, agriculture, and undeveloped land in the study area. The study area should include the surrounding community that is generally associated with the project area within which community impacts could occur. The inventory should also address development trends and identify recent developments in the study area to include the development's name, size, status (planned, built, under construction), and the jurisdiction in which it is located. A map showing the location of existing and planned land uses in the area should also be prepared.

4.2.2 Consistency with State, Regional, and Local Plans and Programs

For the consistency analysis in step 2 above, the land use policies and programs that were identified in the development of the community profile are analyzed in light of the objectives and anticipated outcomes of the proposed project. The policies and programs considered in the analysis should include:

- transportation plans and programs (MTPs/RTPs and MTIPs/RTIPs),

- regional growth plans,
- habitat conservation plans and similar regional conservation plans,
- general plans and community plans that establish land use and growth management policies for the study area, and
- any specific development proposals such as specific plans and tentative maps.

If applicable, this analysis should also include a discussion of consistency with the Coastal Zone Management Act of 1972, California Coastal Act of 1976, the National Wild and Scenic Rivers Act (16 USC 1271) and the California Wild and Scenic Rivers Act (Pub. Res. Code Sec. 5093.50 et seq.).

The consistency analysis is a subjective process that requires a working knowledge of transportation and land use planning as well as an awareness of the political and socioeconomic context in which the project is being proposed. The consistency analysis should focus on those policies and programs that are relevant to the proposed action. Identifying the range of plans and programs that are applicable to the proposed action and narrowing down the list of policies and objectives that should be considered is a task best accomplished in cooperation with the staff of those agencies whose plans and programs would be potentially affected, such as local and regional planning departments, community and economic development agencies, water management districts, and regional transportation planning agencies.

After preparing a preliminary list of relevant plans, policies, and objectives to be considered in the analysis, the planner should meet with staff of the various agencies to review the list to determine if it is complete and revise the list as necessary. This meeting would be an excellent opportunity to learn of any specific land use or transportation issues that should be considered in the consistency analysis.

The next step is to consider the nature of the proposed project and its likely outcomes and identify any potential inconsistencies with the applicable policies. Each project alternative should be considered separately since the results may be different. An effective way to present this information is to use a table that presents a matrix of the project alternatives and the relevant land use and transportation policies. The cells of the table should contain a conclusion regarding consistency and a brief explanation to justify the findings. The following table illustrates this approach.

Table 4.1. Consistency with State, Regional, and Local Plans and Programs

Policy	Alternative A	Alternative B	No Project Alternative
County General Plan			
<i>Policy 2.5: To sustain the viability of County agriculture by restraining division and use of land which is harmful to continued agricultural use of non-replaceable land resources.</i>	Consistent. Alternative A would acquire narrow strips of farmland along the sides of the existing roadway, but these acquisitions would not result in the subdivision of agricultural parcels; appreciably diminish the size of agricultural parcels; or change the existing use, designation, or zoning of agricultural parcels.	Not Consistent. Alternative B would require the acquisition of two agricultural parcels resulting in a permanent conversion of farmland to non-agricultural uses. Alternative B would also require fragmentation of two agricultural parcels leaving small remnants that would not be viable for agriculture.	Consistent. The No-Project Alternative would not result in conversion of farmland to non-agricultural uses.
City Redevelopment Plan for Project Area			
<i>Policy 6.1: Designate expeditious routes for freight trucks between industrial and commercial areas and the regional and state freeway system to minimize conflicts with automobile traffic and incompatibility with other land uses.</i>	Consistent. Implementation of Alternative A would create an efficient route for freight trucks between the state highway and industrial areas to the south that would reduce conflicts with automobile traffic and reduce truck traffic on residential streets.	Consistent. Implementation of Alternative B would create an efficient route for freight trucks between the state highway and industrial areas to the south that would reduce conflicts with automobile traffic and reduce truck traffic on residential streets.	Not consistent. Under the No-Project Alternative, no changes to the existing roadways would occur in the project area. This alternative would not provide an efficient route for freight trucks between the state highway and industrial areas that would minimize conflicts with automobile traffic and incompatibility with other land uses.

If the policy consistency analysis for a specific policy is inconclusive or highly controversial, the agencies responsible for implementing the policies and local stakeholders should be consulted and their input should be used to revise the analysis as needed. This will assure that the analysis reflects the local context and that potential issues are addressed early in the process.

When an alternative is found to be consistent, then the findings should be documented in the report and no further analysis or action is necessary. When an alternative is found to be inconsistent with a policy or program, then consideration must be given to modifying the alternative to make it consistent, or measures to address the inconsistency must be developed.

4.2.3 Assessing Land Use Impacts

As was noted in Chapter 2, environmental effects have three components: direct, indirect, and cumulative effects.

- Direct land use impacts include physical changes in the community such as displacement of structures, changes in access to homes or businesses, loss of parking or setbacks, conversion of farmland to non-agricultural use, and conversion of timberland to other uses.

- Indirect land use impacts generally occur outside of the study area and may occur over a longer time period than direct impacts. Examples of indirect land use impacts include changes in regional development patterns and growth-related changes.
- Cumulative impacts result from the combined effects of past, present, and future actions. Examples of cumulative land use impacts include permanent conversion of farmland to non-agricultural uses, and growth-related impacts that result from the combined influence of several transportation projects that increase accessibility to undeveloped areas.

The key to understanding the relationship between indirect and cumulative land use impacts and transportation is accessibility; however, improving accessibility to an area does not necessarily lead to changes in land use (National Cooperative Highway Research Program [NCHRP] Report 423A). Development decisions are based on a number of factors that include the circumstances of the local and regional economy, the existing road network and transit systems, zoning, existing infrastructure, and market trends. In general, larger transportation projects have a greater potential to induce land use changes than smaller projects.

4.2.4 Assessing Direct Impacts

Direct land use impacts generally result from acquisition of right-of-way or the need for temporary construction easements. Using an aerial photo showing existing and proposed right-of-way and parcel boundaries can assist greatly in determining how individual parcels will be affected by a particular action. An effective way to track a project's impacts is to prepare a table that lists each affected property, the amount of right-of-way that will be acquired for each alternative, whether the effects are permanent or temporary, the existing land use and owner, and a description of the direct impacts on the parcel (e.g., structural displacement, relocation of tenants, or loss of frontage, landscaping, or signage). Field surveys are highly recommended as a means to ground truth the anticipated effects of the project. A summary of the direct land use impacts should be prepared to complement the data contained in the table.

This section discusses effects on three primary categories of land use: parks and recreational facilities, farmland, and timberland.

Effects on Parks and Recreational Facilities

Any impacts on parks and recreational facilities, including equestrian trails, recreational bikeways, and other recreational trails should be identified in this summary. For projects with federal USDOT involvement (funding, right-of-way, action), a Section 4(f) evaluation may need to be completed if the project would result in a "use" of publicly owned parks, recreation areas, or wildlife and waterfowl refuges. A use occurs when:

- the property is acquired for a transportation project,
- there is an occupancy of land that is adverse to the preservationist purpose of Section 4(f), or
- there are proximity impacts that substantially impair the purpose of the land (constructive use).

Temporary construction easements do not normally result in a use for purposes of Section 4(f). If a Section 4(f) evaluation report is prepared, it will normally be included as an appendix to the ED and reference to that appendix should be made in the community impact assessment.

Effects on Farmland

Local farmland preservation policy is typically implemented through the planning policies and development regulations of local jurisdictions, and is therefore addressed in the general plan, locally adopted CEQA guidelines, and zoning ordinances. Most counties treat agricultural land protection in the open space, land use, or conservation elements of their general plans. Some counties have a separate agricultural element. Even in those jurisdictions where an agricultural element has not been formally adopted, local governments have often achieved some protection of farmland through traditional zoning techniques, such as placing restrictions on use, imposition of minimum parcel sizes, designating spheres of influence through Local Area Formation Commissions (LAFCOs), establishing urban growth boundaries, and placing limitations on residential density.

In California, farmland is classified under the [Farmland Mapping and Monitoring Program](#) (FMMP) based on its physical and chemical characteristics. Land with the best combination of physical and chemical features to sustain long-term production of agricultural crops is classified as “prime farmland.” [Chapter 23 of the Caltrans Environmental Handbook Series, Volume 1](#) provides definitions of the various farmland classifications. In general, more scrutiny is paid to the protection of prime farmland; however, as noted below, farmland need not be considered “prime” in order to be placed under provisions of the Williamson Act. All lands defined by the state as “prime farmland,” “other than prime farmland,” and “open space land” are eligible for coverage by a Williamson Act contract. Land other than prime farmland and open space land can be placed under contract if the lands are located in an area designated by the county or city as an agricultural preserve. The [California Department of Conservation](#) (DOC) estimates that more than half of the state’s irrigated (mostly prime) farmland is protected by the Act. The Williamson Act provides a separate definition for “prime agricultural farmland” which is also available in [Chapter 23 of the Caltrans Environmental Handbook Series, Volume 1](#).

Williamson Act

The California Land Conservation Act of 1965 (Cal. Govt. Code S.51200-51295), commonly known as the [Williamson Act](#), provides contractual incentives through reduced property taxes for farmland owners to deter the premature conversion of agricultural and open space lands.

The Williamson Act, administered by the Division of Land Resource Projection within the DOC, offers use-value property tax benefits to farm and open-space landowners who voluntarily enter into contracts. These contracts specify that the owners will not convert their land to nonagricultural uses for at least ten years. At the end of each year within the ten-year contract period, the contract is automatically renewed for an additional year, unless the landowner or the local government moves to terminate the contract. Termination can occur in one of four ways: non-renewal, cancellation, eminent domain, or city annexation under certain circumstances.

The primary advantage to a landowner for placing their property under a Williamson Act contract is that the contracted land is assessed for county property tax purposes at its agricultural value rather than its full market value (e.g., what the value of the property would be if it were otherwise available for its highest and best use). Individual landowners enter into these restrictive use agreements with cities and counties. In California, 48 counties and 20 cities participate in Williamson Act programs. The State of California makes partial payments annually (“subvention entitlements”) to local governments for lost local property tax revenues that

landowners would otherwise pay if the property was taxed at its market value. Fees are charged to landowners who prematurely cancel Williamson Act contracts.

CEQA

State CEQA Guidelines address farmland conversion impacts directly in two ways. First, cancellation of Williamson Act contracts for parcels exceeding 100 acres is an action considered to be “of statewide, regional, or area-wide significance,” and thus subject to CEQA review (CEQA Guidelines Section 15206 (b)(3)). Second, Appendix G of the CEQA Guidelines states that a project that would “convert prime agricultural land to non-agricultural use or impair the agricultural productivity, would normally have a significant effect on the environment.” Note that in either case, no set acreage of prime farmland conversion has been determined by case law or regulatory framework which would constitute a significant impact.

Projects with Federal Involvement

NEPA and the provisions of the [Farmland Protection Policy Act](#) (FPPA, USC 4201-4209; and its regulations, 7 CFR Ch. VI Part 658) require that before taking or approving any federal action that would result in conversion of farmland, the federal agency must examine the effects of the action using the criteria set forth in the Act, and, if adverse effects are found, must consider alternatives to lessen them. Neither NEPA nor FPPA requires a project to be modified solely to avoid or minimize the effects of conversion of farmland to nonagricultural uses.

A Land Evaluation and Site Assessment (LESA) is a tool for quantifying the merits of retaining in agricultural use parcels proposed for conversion. Originally developed by the [USDA Natural Resource Conservation Service \(NRCS\)](#), the farmlands assessment process results from requirements in the FPPA of 1981, and as amended in 1984 (guidance for implementation was issued by FHWA on August 7 and October 26, 1984, and January 23, 1985), with the Final Rule issued June 17, 1994. This process requires a system of numerical weights assigned to different characteristics of affected parcels, a description and classification of affected farmlands, as well as early consultation with the NRCS. Depending upon the project, processing of either [Form AD 1006](#) (Farmland Conversion Impact Rating) or [Form NRCS-CPA-106](#) (Farmland Conversion Impact Rating for Corridor Type Projects) is also necessary and can be accomplished on line.

Analysis of Farmland Impacts

Below is a general process for determining the impacts of a transportation project on farmlands.

Determine if farmlands exist in the project area. What constitutes an urban area vs. farmland may be determined in a number of ways. First, a review of general plan maps and an assessment of existing conditions will establish if the study area potentially contains farmlands. If the area is undergoing development, or it is unclear what uses exist on a parcel, visiting the site and reviewing NRCS soil survey maps, USGS topographical maps, and FMMP maps and databases can help the planner distinguish farmland and urban uses. The State of California’s [Department of Conservation](#) website contains links to available maps and information about the FMMP. Urban uses are shown as an urban tint outline or urban area map on USGS topographical maps, or shown as “urban/built-up lands” (D) on FMMP maps. In addition, FMMP databases can help planners distinguish between the differing agricultural land classifications (see these definitions listed in [Chapter 23 of the Caltrans Environmental Handbook Series, Volume 1](#)).

Any farmland (regardless of quality) which is already in or committed to urban development is farmland not subject to the FPPA. Where the proposed right-of-way for a transportation project is wholly within a delineated urban area, the completion and submittal of Form AD 1006 or [Form NRCS-CPA-106](#) to NRCS is not necessary.

If viable farmlands are included in the project area, complete Form AD-1006 or [Form NRCS-CPA-106](#) as appropriate.

Complete the Form AD-1006 or [Form NRCS-CPA-106](#): The federal process to assess farmland impacts is guided by the provisions of the FPPA which calls for completing Form AD-1006 or [Form NRCS-CPA-106](#) as appropriate. The process is an iterative one, with both the NRCS and Caltrans, acting for FHWA, or in some instances FTA, completing various portions of the form. The following is an overview of the process. Detailed instructions for completing the form are provided online by the NRCS (included with the [Form AD 1006](#) documentation), along with definitions of agricultural land classifications (see also [Chapter 23 of the Caltrans Environmental Handbook Series, Volume 1](#)).

Except in cases where it is obvious there is no farmland, the Caltrans District Environmental Program submits the form to the NRCS office which handles that particular county and requests a determination as to whether the project location has farmland that is subject to the FPPA.

If the NRCS determines that the project does not involve farmland, the form is sent back to Caltrans to be placed in the environmental project file. No further evaluation is required. If the project location is subject to the Act, the NRCS will measure its relative value on a numerical scale. The NRCS will also include on the form numerical responses for the total amount of land that can be farmed, the percent of the jurisdiction that is covered by the Act, the percent that the project would convert, and other quantifiable data.

After Caltrans receives the form from NRCS with a score of each site's or corridor's (this is equivalent to project alternatives) relative value, Caltrans will assign point values by applying the site assessment criteria included with the instructions for completing the form. If a threshold score is reached, Caltrans will consider alternatives to avoid converting the farmland. This form should be included as an appendix within the ED.

Summarize the Findings. If farmlands exist in the project area, a brief description of applicable policies and regulations specific to the project area that address farmlands should be included in the community impact assessment report. As with the consistency analysis described previously in this chapter, be specific in describing the nature of the existing farmlands and document the extent to which the project would convert these uses. A brief text and/or table summary (see example below) that compares the effects of the alternatives should be included. Compare farmland conversion from the project alternatives to farmland conversion locally, in the county, or in the region, and the state,

including the percentage of the county's total agricultural land and prime farmland that would be lost or affected by the project.

Table 4.2. Farmland Conversion by Alternative

Alternatives	Land Converted (acres)	Prime and Unique Farmland (acres)	Percent of Farmland in County	Percent of Farmland in State	Farmland Conversion Impact Rating
A	242	131.4	0.47	0.25	153.2
B	713	139.1	0.15	0.05	188.0
C	226	59.0	0.20	0.05	136.4

Source: Form NRCS-CPA-106 (Farmland Conversion Impact Rating for Corridor-Type Projects).

If the project would take place entirely within an urbanized area with no farmland involvement, the following standard statement may be used in the ED:

Through coordination with the Natural Resource Conservation Service, it has been determined by Caltrans that the project area, which is *located* in the urbanized area (*Name of urbanized area*) does not meet the definition of farmland as defined in 7 CFR 658. Therefore, the provisions of the Farmland Protection Policy Act of 1984 do not apply to this project.

Alternatively, if the project would take place entirely within a non-urbanized area but it still has no farmland involvement, the following standard statement may be used in the ED.

It has been determined by the Natural Resource Conservation Service that no farmlands as defined by 7 CFR 658 are located in the project vicinity.

Review the draft farmland determination with agency staff and study area stakeholders and revise the draft accordingly.

Conversion of Williamson Act Contract Land

Implementation of transportation projects will sometimes require Caltrans to acquire farmland currently under Williamson Act contracts for right-of-way purposes. The Act prohibits a public agency from acquiring prime farmland covered under the Act for the location of a public improvement if there is other land within or outside the preserve on which it is reasonably feasible to locate the public improvement. However, the law generally exempts existing state highways from this provision.

Also, the CEQA Guidelines consider cancellation of contracts for parcels exceeding 100 acres to be of statewide significance. Solely on the question of valuation, Government Code section 51295 states that when a project would condemn or acquire only a portion of a parcel of land subject to a Williamson Act contract, the contract is deemed null and void only as to that portion of the contracted farmland taken. The remaining land continues to be subject to the contract unless it is adversely affected by the condemnation. In such cases, the contract for the remaining portion may be canceled. Government Code Section 51291(b) requires an agency to notify the Director of the California Department of Conservation and the local governing body responsible for the administration of the preserve (usually the planning department) of Williamson Act

contracted land proposed for acquisition for a [public improvement project](#) (regardless of whether it is a state or federally funded project, or the amount of total acreage involved). Such notification must occur when land enrolled in a Williamson Act contract is being considered for acquisition by a public agency. Within 30 days thereafter, the Director of Conservation and the local governing body shall forward their comments which shall be considered by the public agency. This coordination should be mentioned in the ED. Separate notification must occur again within 10 working days upon completion of acquisition. Planners should also be aware that this process should be followed regardless of whether the project is covered under CEQA or NEPA; the FPPA and Williamson Act farmland policies are not mutually exclusive.

A Note on Agricultural Easements

Agricultural easements involve permanent restrictions on the use of land from more intensive purposes; the property ownership does not change. Usually administered by land trusts or other non-profit entities, easements are acquired either by purchase or as a mitigation for development approved on parcels elsewhere. Such conservation easements are increasingly being used by local governments to mitigate farmland loss, notably in Alameda, Solano, and Marin Counties. The Agricultural Land Stewardship Program, signed into law by Governor Wilson in 1995, established a [Farmland Conservancy Program](#) in the [California Department of Conservation](#), which provides grant funding for projects which use and support agricultural conservation easements for protection of agricultural lands (Public Resources Code 10200, Division 10.2).

The conversion of agricultural land to other uses may be a significant impact that cannot always be mitigated. In those situations, to satisfy the findings requirement under CEQA, the decision makers would have to conclude that social or economic factors do not make it feasible to mitigate the conversion.

Effects on Timberlands

The Timberland Productivity Act of 1982 (covered in Government Code Sections 51100 et seq.) established “Timberland Production Zones” (TPZ) for the purpose of discouraging the premature conversion of timberland to other uses. TPZs are rolling ten-year contracts providing preferential tax assessments to qualified timberlands. Under this program, assessments on timber are based on the value of the timber at the time of harvest, rather than an annual assessment on the market value of standing timber. Land use elements of general plans are required to reflect the distribution of existing TPZ zoning (if applicable), and any timberland removed from a production zone is subject to approval by the local legislative body. Although existing state highways are exempt from provisions of the Timberland Productivity Act, the California Secretary of Resources and the local governing body should be notified in writing in the event new or additional right-of-way from a TPZ will be required for a transportation project.

Although there are no significance thresholds established in CEQA for conversion of timberland to other uses, by definition (14 CCR 1100 (g)(1)(C)), timberland conversion includes a division of timberland into ownerships of less than three acres. Therefore, creation of these smaller parcels constitutes a conversion to non-timberland use. For more information, contact the [Forest Practice Regulation Unit](#) of the [California Department of Forestry and Fire Protection](#).

4.2.5 Assessing Indirect Growth-Related Impacts

In most cases, a community impact assessment prepared for a transportation project should discuss the potential for the project to result in growth-related impacts. For many transportation projects where growth is not an outstanding issue or there is no apparent controversy the topic is best treated briefly.

Growth inducement is defined as the relationship between the proposed transportation project and growth within the project area. This relationship is often difficult to establish with a high degree of precision. The relationship is sometimes looked at as either one of facilitating planned growth or inducing unplanned growth. Both types of growth, however, must be evaluated because they will each have varying degrees of beneficial and adverse effects.

Section 15126.2(d) of the CEQA Guidelines states that a growth-inducing impact could occur if:

...the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects that would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in the service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristics of some projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Caltrans has prepared a guidance document, [*Guidance for Preparers of Growth-related, Indirect Impact Analysis*](#), which focuses on growth-related, indirect impact analyses for transportation projects in California that are subject to NEPA and CEQA. The guidance specifically deals with indirect effects associated with highway projects that encourage or facilitate land use or development that changes the location, rate, type, or amount of growth. Not every project will need a growth-related impact analysis; such an analysis typically will be needed in the ED for those highway projects that are built along a new alignment and/or provide new or substantially expanded access.

Growth-related impacts and the need for analysis should be considered early in project development. Where such impacts are identified, appropriate and reasonable steps to avoid or minimize such impacts also should be considered early and incorporated into the project and the ED. A growth-related impact analysis assists with complying with the requirements of NEPA and CEQA in two ways: by considering environmental consequences of project actions in the planning process as early as possible, and by providing a well-documented and sound basis for government decision making.

Analysis

The analysis of growth should consider what local officials and planning documents say, but the conclusions should express the analyst's own judgment based on an analysis of all the information available. Information should be quantified where possible, conclusions should be as

clear and specific as possible, and uncertainty should be described where it needs to be. Judgments should be based on and supported by facts, not personal opinions. The conclusions should help readers of the ED and decision makers determine what the project's effect on growth would be and whether the effects of that growth would be significant in the context of the region's plans, natural setting, and growth patterns.

Please Note: With respect to Caltrans-sponsored projects, any draft conclusions that a proposed project may be judged to be growth inducing must be discussed with the Environmental Office Chief and the Project Manager.

A Note on Growth and Agricultural Land

Some people believe that any project that would increase access to agricultural land should be considered growth inducing, regardless of whether local land use plans and current zoning show that the agricultural land is not proposed to be urbanized. Certainly the analysis should discuss the basic land market dynamics in the area where the project is located. If there is little pressure for urbanization, the project is unlikely to be growth inducing.

4.2.6 Assessing Cumulative Land Use Impacts

CEQ regulations require all federal agencies to consider the cumulative effects of all proposed agency actions. A cumulative impact analysis is required whenever an ED is prepared (i.e., an Environmental Assessment or Environmental Impact Statement). Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

Caltrans has developed guidance for analyzing the cumulative impacts of transportation projects that should be consulted prior to undertaking the cumulative impact analysis. This guidance describes an eight-step approach for analyzing impacts that should be followed whenever preparing environmental assessments for Caltrans projects. The analysis of cumulative impacts should not be postponed until the analysis of direct and indirect project effects is well underway. Early consideration of cumulative impacts may facilitate development of project alternatives that will avoid or minimize the cumulative impacts of the project. The Caltrans [Guidance for Preparers of Cumulative Impact Analysis](#) is available on the Caltrans Standard Environmental Reference website.

4.3 Addressing Project Impacts

When it is determined that a project will have an adverse effect on the environment, measures need to be developed to address those impacts. The community impact assessment should document these measures and the process used to develop them. Developing measures to address impacts provides an opportunity to involve the community and other stakeholders in the problem-solving process to develop solutions that are acceptable to the affected parties and consistent with the local context. This approach will increase the probability that approaches can be found to address project impacts in ways that also address community problems or issues.

The FHWA's [Community Impact Assessment: A Quick Reference for Transportation](#) (1996), identifies four methods for addressing potential impacts:

- Avoidance – Altering the project to avoid a potential impact
- Minimization – Modifying the project to reduce the severity of an impact
- Mitigation – Undertaking an action to alleviate or offset an impact or to replace an appropriated resource
- Enhancement – Adding a desirable or attractive feature to the project to make it fit more harmoniously into the community (not designed to replace lost resources or alleviate impacts caused by the project)

The following examples discuss how these methods can be implemented with respect to land use effects.

- Avoid
 - Change an alignment to avoid displacing residents or businesses
 - Redesign a roadway or interchange to avoid taking land from a public park or wildlife refuge
- Minimize
 - Alter an alignment to increase the distance between the roadway and residences to minimize noise impacts
 - Phase project construction to minimize interference with business access during peak periods
 - Modify the project to minimize the use of farmland
- Mitigate
 - Contribute to a land bank for preservation of prime farmland or establishment of a conservation easement for timberland
 - Contribute a fair share of the cost of an intersection improvement to offset project-related delays at the intersection
 - Set aside land for a park or add to public recreation areas to replace lost facilities
- Enhance
 - Add landscaping and widen sidewalks to enhance pedestrian access to businesses
 - Provide interpretive signs to recognize natural, cultural, or historic resources
 - Develop shared-use paths adjacent to roadways
 - Add public artwork to a transportation facility that is consistent with the aesthetic design goals of the community

As discussed in Caltrans' [*Guidance for Preparers of Growth-Related, Indirect Impact Analysis*](#), there are a number of tools to avoid or minimize growth-related impacts. If avoidance or minimization of adverse effects to resources is not possible, then other mitigation strategies will need to be considered in the ED. It is suggested that a dialogue be initiated with the appropriate local agencies and resource agencies regarding other mitigation strategies.

Making a determination that mitigation is required for a growth-related, indirect impact can be complicated because there are many factors that contribute to growth. Because these effects usually occur in combination with other actions by local agencies and private entities, Caltrans is not required to mitigate indirect effects that are outside of its control. Project-induced land development is almost always under the control of local governments and the private sector. The most effective way to mitigate or reduce the potential adverse resource effects from changes in land use is through the application of controls by local governments. Local governments have the authority to reject land use proposals that are inconsistent with local goals, surrounding uses, future plans, or zoning.

Despite these limitations, Caltrans is uniquely qualified to exercise a leadership role in environmental planning and stewardship. The following approach for transportation projects could minimize the need for mitigation (other than avoidance or minimization) of growth-related indirect impacts.

- Early collaborative planning between federal, state, and local agencies (see FHWA's web site on scenario planning, an approach that integrates land use and transportation)
- Incorporating reasonable avoidance and minimization opportunities for identified resource impacts
- Thoroughly documenting analysis results
- Ensuring consistency with regional habitat/restoration planning efforts
- Identifying opportunities for project stakeholders to become involved in regional planning efforts

4.4 Additional Resources

- Caltrans. *Guidance for Preparers of Growth-Related Indirect Impact Analysis*. ND. Accessed January 2011. Available: http://www.dot.ca.gov/ser/Growth-related_IndirectImpactAnalysis/GRI_guidance06May_files/gri_guidance.pdf
- FHWA. "Section 4(f) Policy Paper." 2005. Accessed January 2011. Available: <http://www.environment.fhwa.dot.gov/projdev/4fpolicy.asp#1>
- Transportation Research Board. NCHRP Report 466: "Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects." 2002. Prepared for the National Cooperative Highway Research Program by The Louis Berger Group. Accessed January 2011. Available: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_466.pdf

- Transportation Research Board. *A Review and Synthesis of the Requirements for Indirect and Cumulative Impact Analysis and Mitigation under Major Environmental Laws and Regulations*. 2006. Prepared for the American Association of State Highway and Transportation Officials (AASHTO). Accessed January 2011. Available [http://onlinepubs.trb.org/onlinepubs/archive/NotesDocs/25-25\(11\)_FR.pdf](http://onlinepubs.trb.org/onlinepubs/archive/NotesDocs/25-25(11)_FR.pdf)
- Transportation Research Board. *Land Use Impacts of Transportation: A Guidebook*. 1998. National Cooperative Highway Research Program (NCHRP) Report 423A. Prepared by Parsons Brinckerhoff Quade and Douglas. Accessed January 2011. Available: [http://nepa.fhwa.dot.gov/ReNEPA/ReNepa.nsf/All%2BDocuments/CCECF4D789DB510E85256CE6006142A0/\\$FILE/land_use_guidebook.pdf](http://nepa.fhwa.dot.gov/ReNEPA/ReNepa.nsf/All%2BDocuments/CCECF4D789DB510E85256CE6006142A0/$FILE/land_use_guidebook.pdf)

Chapter 5

Social Impacts

5.1 Introduction

This chapter discusses how to analyze social impacts as part of the community impact assessment process. Social impacts are the effects of the project that disrupt the normal daily functions of a community or neighborhood. Effects generally analyzed under the heading of social impacts include effects on community cohesion, including community facilities and services, access and circulation, and parking.

Frequently, the social effects of transportation projects are borne by the communities, neighborhood, and areas that lie near the highway corridor, while the benefits are shared by a larger population at the city or regional level. For this reason, analysis of social impacts is generally directed at the neighborhood level, where the majority of negative impacts would be felt.

Although the terms “community” and “neighborhood” are widely used, they mean different things to different people. A classic textbook definition of *community* is: a population whose members are interdependent and who perform many activities that satisfy the population’s economic and social needs. In simpler terms, a community is a population rooted in one place, where the daily life of each member involves contact with and dependence on other members. It has generally been a characteristic of our society that people form relationships and establish social organizations on the basis of two things: certain distinctions they perceive about themselves, such as ethnicity, religion, or other demographic characteristics; and spatial proximity. Neighborhoods are a subset of the geographic community and are based on personal interactions among residents.

The boundaries of communities or neighborhoods can often be delineated by physical barriers (highways, waterways, open spaces, etc.), activity centers, home values, selected demographic characteristics (ethnic groups), and (through surveys of) residents’ perceptions. Reports and maps developed by local planning agencies can also help define spatial boundaries.

5.2 Analyzing Social Impacts

The effects of a transportation project on a community are experienced in different ways by different members of the community. A project that widens a roadway and adds sidewalks and landscaping may make a neighborhood or commercial center more inviting to most people; it may make crossing the road more difficult for the elderly and disabled, and may displace parking essential to the economic success of a business. Therefore, when analyzing social impacts, the analyst should take a holistic approach and attempt to describe the way impacts are interrelated and how the benefits and burdens of the project are distributed through the community and larger regional context. The following are the basic steps in analyzing social impacts as part of the community impact assessment process.

1. Measure the cohesiveness of the community and determine how community cohesion would be affected.

2. Assess the changes that would occur on access and circulation, as well as on parking, with and without the project.
3. Develop measures to avoid, minimize, and/or mitigate potential adverse effects.

5.2.1 Effects on Community Cohesion

The assessment of a transportation project’s effects on community cohesion involves determining whether community cohesion exists in the neighborhoods that would be affected by the project, and if so, to what extent would the project damage that cohesiveness. In many cases, trained social scientists and other consultants are best able to conduct this type of work for Caltrans or its local agency transportation partners.

Is the Community Cohesive?

Community cohesion is the degree to which residents have a –sense of belonging” to their neighborhood, a level of commitment of the residents to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. Cohesion refers to the degree of interaction among the individuals, groups, and institutions that make up a community. Local public officials and community leaders, such as clergy members, can provide valuable information and insight into the community’s makeup and cohesiveness.

The impacts of transportation projects tend to be more disruptive to cohesive communities. Generally, the effect of a transportation facility located through an older, established neighborhood is more severe than one located through an area where the housing changes ownership every three to five years. There also may be multi-family or renter-occupied areas that exhibit these same qualities (for instance, where recent immigrants or low-income people may have clustered), although these may be somewhat more difficult to detect through traditional research means.

As with other community impacts discussed in this handbook, the level of effort expended on the analysis should be commensurate with the severity of the impact, particularly as perceived by the potentially affected community. If a project is expected to be extremely disruptive of community routines, such as a project that would displace a large number of homes and/or businesses, then a more rigorous approach to assess community cohesion may be appropriate. If on the other hand, the project is unlikely to result in disruption of community or neighborhood routines, then there is little reason to expend a great deal of time or effort in developing a quantitative measure of community cohesiveness.

Measuring Community Cohesion

Several analytical tools are available for assessing community cohesion. One of the traditional tools for measuring community cohesion by transportation departments across the country is by means of a –stability index” or mathematical formula with numerical variables. The stability index is represented by the following formula.

$$\text{Percent households in same housing unit} + \text{Percent Owner-Occupied Units} + \text{Percent Single Family Units} = \text{Stability Index}$$

In more recent years, the stability index has received criticism from some community planners for being too narrow—that “cohesiveness” is not something that can be made a part of a formula. Essentially, the stability index is based on the assumption that the longer people live in a community, the more committed they become to it and the more cohesive the community. The stability index may be most useful when it is viewed as just a rough indicator of neighborhood stability. More information on the stability index can be obtained by contacting the community impact assessment specialist within the Caltrans Headquarters Division of Environmental Analysis.

If a project is expected to be extremely disruptive to a community, a more rigorous analytical approach may be warranted. Commercial products based on the Identity Structure Analysis (ISA) methodology are available that provide information on the following topics (Weinreich and Saunderson 2002):

- The extent to which communities share common values and beliefs
- Factors on which one section of the community feels other groups are different or they themselves are seen as different
- Different groups’ perceptions of community facilities, such as community centers, schools, libraries, religious institutions, and local government
- Trends in perceptions, such as the extent to which different groups feel that their situation is getting better or worse

Other methods to help determine community cohesion include conducting interviews with community leaders and members of community-oriented ad hoc committees, interviewing managers of neighborhood service organizations, having discussions with planning officials, and perusing newspaper articles regarding citizens’ views of their community and neighborhoods.

Another promising methodological approach to measure the psychological sense of neighborhood at the community level is the [Likert scale survey](#). Likert scale surveys can be affordably and reliably administered to assess the cohesiveness or “sense of community” at the more immediate neighborhood level. The Likert scale is used commonly in social research. The survey evaluates using an odd number scale to quantify the community’s agreement to a variety of topics. Below is a sample of what a Likert scale survey might contain.

Please rate your agreement with the following statements using the 1–5 scale.

	1 = Strongly disagree	2 = Disagree	3 = Undecided	4 = Agree	5 = Strongly agree
My friends in this neighborhood are part of my everyday activities.					
If there were a serious problem in this neighborhood, the people here could get together and solve it.					

Being a member of this neighborhood is like being a member of a group of friends.					
I don't care whether this neighborhood does well. (Reverse scoring is used for this item.)					
I have no friends in this neighborhood on whom I can depend. (Reverse scoring is used for this item).					

Evaluating Community Cohesion

In all cases, it is essential that neighborhood and community studies be backed up with direct observation and possibly other research measures. A field trip should be conducted through the neighborhood to observe variables that may be associated with community cohesion. Look for evidence of informal social interaction and interdependence (e.g., is there a Neighborhood Watch program?), pedestrian activity (e.g., are sidewalks readily used?), children at play, predominance of single family dwellings or apartments with courtyards, shared parking lots and yards of a housing complex, condition of houses, parks, and other community facilities. However, interpretations of such observations should be made with caution as these variables do not always correlate strongly with community cohesion. Wherever possible, these observations should be documented over a period of time and validated through the public involvement process. See Appendix B for a set of sample survey questions that would be useful in measuring community cohesiveness.

If residents, either individually or through their representatives, express particular concern for their neighborhood at public meetings or through other forums, this may be an indicator of a cohesive community, especially if such attitudes are voiced by a cross section of residents that may be affected by a proposal.

Community facilities contribute in many ways to community cohesion. Community facilities are those services and institutions that the local population relies on for their health and welfare and as a means to interact with other members of the community. Community facilities include schools, libraries, recreation facilities, health providers, emergency services, community centers, boys and girls clubs, and other similar institutions. The severity of the impact of the transportation project on community cohesiveness will depend on how much the community uses and relies on the facility, and the degree to which the project will impede or enhance the ability of residents to access the facility. Facilities that are frequently accessed by the elderly, disabled, low-income, and minority populations, are especially important because these groups often have limited mobility and may depend on transit to access the facilities.

Relocating a community facility far from the community it serves may result in that facility no longer being able to meet its mission or an inability to raise funds for continued operation because it has lost a large portion of its client base. The reverse could be true if the facility were relocated to a more desirable or more convenient location. Relocation impacts are discussed further in Chapter 7.

When it may be an issue, the impact assessment should describe the type, size (capacity, acreage, floor space), and location of public services and facilities within the affected socioeconomic environment. As part of their regular studies, Caltrans right-of-way staff compiles information on public and community service facilities affected by proposed projects so it may be beneficial to contact them.

Analysis Techniques

The next step after evaluating community cohesion is to answer the question: —Will the project affect community cohesiveness?” Using the baseline data gathered during the development of the community profile (see Chapter 3), overlay mapping of alternative alignments, and information gathered in the analysis of relocation impacts (see Chapter 7), complete the following checklist, adopted from the Florida DOT [Community Impact Assessment, A Handbook for Transportation Professionals](#). This checklist is a useful tool for conducting the analysis of potential impacts.

Checklist for Assessing Social Impacts

		Yes	No
1.	Will the project create a barrier that divides the neighborhood or limits access to all or part of the neighborhood?	<input type="checkbox"/>	<input type="checkbox"/>
2.	Will the project impact any special groups (such as the elderly, persons with disabilities, racial/ethnic/religious groups) within the neighborhood?	<input type="checkbox"/>	<input type="checkbox"/>
3.	Will the project reduce the amount of social interaction that occurs within the neighborhood?	<input type="checkbox"/>	<input type="checkbox"/>
4.	Will the displacement of residents resulting from the proposed project negatively affect the perceived quality of life in the neighborhood?	<input type="checkbox"/>	<input type="checkbox"/>
5.	Will the project affect access to, parking for, or result in the removal of, neighborhood facilities or services that are needed and valued by neighborhood residents (stores, parks, public services, schools)?	<input type="checkbox"/>	<input type="checkbox"/>
6.	Will the facilities and services subject to removal or relocation be able to remain in, or within proximity of, the neighborhood?	<input type="checkbox"/>	<input type="checkbox"/>
7.	Will the project result in an increase in noise, vibration, odor, or pollution that reduces social interaction in the neighborhood?	<input type="checkbox"/>	<input type="checkbox"/>
8.	Will communal areas (e.g., parks and playgrounds) used by residents be negatively affected by construction of the project?	<input type="checkbox"/>	<input type="checkbox"/>
9.	Will the availability and convenience of transit services be reduced as a result of the project?	<input type="checkbox"/>	<input type="checkbox"/>
10.	Will the project negatively affect pedestrian and non-motorized mobility within the neighborhood?	<input type="checkbox"/>	<input type="checkbox"/>
11.	Will vehicular mobility within the neighborhood be negatively affected by this project?	<input type="checkbox"/>	<input type="checkbox"/>
12.	Will vehicular traffic increase on local streets as a result of the project?	<input type="checkbox"/>	<input type="checkbox"/>
13.	If vehicular traffic increases, will this create unsafe conditions for non-motorized transportation within the neighborhood?	<input type="checkbox"/>	<input type="checkbox"/>
14.	Will there be any changes to popular bicycle or pedestrian routes?	<input type="checkbox"/>	<input type="checkbox"/>
15.	Will “blind or isolated” areas be created that are difficult to monitor for criminal activity as a result of the project?	<input type="checkbox"/>	<input type="checkbox"/>
16.	Will emergency response routes be negatively impacted as a result of the project?	<input type="checkbox"/>	<input type="checkbox"/>

Source: Florida DOT, [Community Impact Assessment, A Handbook for Transportation Professionals](#), 2000.

After completing the checklist for each project alternative, document your rationale for each answer. Documentation of the checklist results should include a discussion of whether the impact will be temporary or permanent and how the impacts vary among project alternatives. Particular attention should be paid to the rationale for all yes answers. Although the checklist does not result in a quantitative “score” that determines whether the project would have adverse social impacts, the more yes answers there are, the more severe the social impacts are likely to be.

The results of the analysis should be shared with the public and other stakeholders during the public involvement process and measures to avoid, minimize, and/or mitigate impacts should be developed cooperatively with affected parties.

5.2.2 Effects on Access and Circulation

While state highway projects typically improve regional access, they may also affect local access and circulation. The analysis of access and circulation impacts should evaluate whether the project would impede or enhance the ability of residents to move freely about the neighborhood. Beneficial impacts can include an increase in accessibility and a reduction in congestion. Though transportation can play a critical role in maintaining people’s independence and provide access to community-based services, there is a whole range of side effects that also may need to be considered. For example, the construction of a freeway or expressway can result in the closing of cross streets and the creation of cul-de-sacs. As a result, access by some local residents to businesses and public services may become less convenient; however, the new facility may also have the effect of removing traffic from a neighborhood.

There are numerous examples that illustrate the importance of analyzing the effects of changes in access caused by new projects.

- For low-income, disabled, elderly residents, and possibly others, changes in access may become a serious problem.
- School attendance areas may have to be redrawn if the highway is a physical barrier for students.
- Local traffic may increase as residents travel longer distances on local streets to enter the freeway at the limited access points.
- Response times for emergency vehicles may lengthen with the closure of local cross streets and may shorten with improved highways.
- Pedestrian safety may also be affected, depending on changes in traffic. For example, a shoulder-widening project might eliminate sidewalks for several blocks in the vicinity of a school or along an arterial adjacent to which people walk or jog.
- Transit service may be affected by the new freeway project. If the number of transit stops is reduced or modified, consider what this will do for the quality of life of low-income, disabled, elderly residents, and possibly others who may rely on the service.
- Businesses near highway connections may experience economic losses when ramps are closed temporarily in conjunction with project construction or maintenance activities. If a project would result in a ramp closure, the potential for business losses should be assessed.

(See Appendix E for details on the need to consider the economic impacts from temporarily closing freeway ramp access.)

Highway improvements can also improve local circulation. For example, a highway bypass can relieve congestion on city streets by rerouting through-traffic away from the central business district. This may, in turn, encourage residents to patronize local businesses rather than traveling to more remote shopping centers. However, bypasses can have a negative economic effect on businesses that are dependent on pass-by traffic.

Road or lane closures during project construction and barrier effects of the project can affect the ability of emergency service providers to access neighborhoods and may delay response times. On the other hand, emergency access and response times may be improved through project design that reduces congestion and improves access to neighborhoods.

A proposed project may affect residents without access to automobiles. If many residents of a neighborhood must walk to stores, a highway project that becomes a physical barrier may separate them from access to needed goods and services. A high level of pedestrian travel may be an indication of a potentially serious effect. Including a new bus stop location or a bike path in the project design could improve neighborhood mobility. A transportation project that results in increased traffic, wider roadways, and higher travel speeds may have an adverse effect on pedestrian and bicycle safety.

Analysis Techniques

Analysis of access and circulation impacts can be accomplished by reviewing project plans and through windshield surveys. Plan review and windshield surveys are conducted to determine if the project would have the following effects.

- Eliminate or restrict automobile or pedestrian access to stores, public services, schools, and other facilities. Pedestrian service areas are generally considered to be 1/4 to 1/2 mile in radius (roughly 1/2 to 1 km). Also, keep in mind that access may be temporarily hindered during construction activities.
- Increased or decreased traffic on local streets. For instance, would a new freeway result in higher traffic on local streets that provide access to or egress from the freeway connections? Determine if other streets would have less traffic as a result of the diversion.
- Result in more circuitous routing for emergency vehicles.
- Result in any reduction of transit service.
- Result in changes to popular bicycle or pedestrian routes.

Particular attention should be paid to the presence of elderly people or children. If there are a large number of older persons, try to identify potential situations where their safety may be affected. For example, studies have shown elderly people feel vulnerable when crossing on sidewalks next to overcrossings and bridges.

Detailed assessment methods are extremely time-consuming and should be utilized primarily in cases where accessibility is perceived as a major issue.

Systematic analysis techniques involve doing a small scale origin/destination (O/D) analysis within the affected communities. This level of analysis involves defining three components:

- Community boundaries
- Intensity and overlap of travel patterns
- Importance of the facility to users

Determining the overall importance of the facility to users requires an analysis of the attitudes and perceptions of the affected residents on the importance of the facilities and services for their social interactions, as well as actual patterns of their use (service areas, frequency of use, membership, etc.). This approach requires direct interviews with community residents or representatives of local institutions and agencies.

Social interaction analysis utilizes the patterns of movement to and from community facilities or neighborhood activity centers as a gauge of social interaction. At the simplest level of analysis, data collection involves taking surveys at each community facility (grocery store, clinic, and so forth) that was found to be important.

Users of the facility can be informally questioned as they arrive and depart as to the origin and destination of their trip, frequency of use, and so forth. Shopkeepers or employees of the public facility should also be questioned to determine when various population groups use the facility. To take one example, a neighborhood grocery store may be used by a number of distinct groups that arrive at different times and have different activity patterns. School children may arrive on weekdays after school and throughout the day on weekends; elderly residents may visit infrequently, except at the time of the month when pension or Social Security checks arrive.

5.2.3 Effects on Parking

Transportation improvement projects can change the number and/or location of parking spaces. These changes may be temporary, such as the removal of spaces during construction, including those used by the increased numbers of construction workers in the area. Permanent losses of parking spaces may occur when a new roadway is constructed, additional lanes are built on an existing facility, or even if there is a re-striping project if it displaces on- or off-street parking.

Loss of parking for customers and delivery trucks can affect businesses and the operation of hospitals, schools, and other public services. Some businesses, such as convenience stores, are highly dependent on adjacent parking. The problem can be exacerbated when the demand for parking rises as pass-by traffic increases on the improved roadway.

The loss of business-related parking may result in vehicles being parked on residential side streets, thus limiting neighborhood parking and access, and also increasing traffic on nearby streets. The loss of parking may create the need for construction of spaces at a more remote and less convenient location, and this, in turn, could affect business sales. Thus, parking impacts clearly may be both social and economic in nature.

Analysis Techniques

The analysis of parking impacts should incorporate the following steps:

- Consider the number of spaces that would be lost and the number of spaces remaining, the existing demand for those spaces, and the availability of replacement parking.
- Review project plans to determine the total number of parking spaces that may be removed. (Check with Caltrans right-of-way staff first to see whether they will address the issue in their studies.)
- Survey the area to see whether any business would lose a substantial portion of its customer parking spaces.
- Contact local merchants or the chamber of commerce regarding the effect of the potential loss of parking. Also be aware that some local jurisdictions require a set amount of parking for specific business categories. Information may be available from a local parking agency or local planning department.
- Consider the effect on businesses that are highly dependent on parking spaces.
- Determine if a loss of parking could result in overflow parking that would cause secondary impacts.
- Consider the effect on neighborhoods if commuter or business-related parking occurs on residential streets.
- If eliminating parking is unavoidable, identify and include a plan of mitigation.

5.3 Addressing Project Impacts

As explained in detail in Chapter 4, the FHWA approach for addressing a project's adverse effects, as outlined in the FHWA's [*Community Impact Assessment: A Quick Reference for Transportation*](#) (1996), identifies four methods for addressing potential impacts. Based on those four methods, the following are suggested approaches to avoid, minimize, mitigate, and enhance the social impacts of a transportation project.

- Avoid
 - Modify an alignment to avoid displacements and relocations.
 - Elevate or depress, or provide a cut-and-cover structure to avoid creating a barrier through a cohesive neighborhood.
- Minimize
 - Reduce the number of traffic lanes or right-of-way width.
 - Phase the project to avoid disruption.
 - Create a transportation management plan that addresses concerns related to access for pedestrians, bicyclists, school children, emergency providers, and others during construction periods.
 - Create or enforce hourly parking restrictions, residential parking stickers, and parking meters to prevent customers and/or commuters from overloading parking facilities and residential side streets.

- Mitigate
 - Create new structures such as pedestrian overcrossings.
 - Improve or add pedestrian facilities such as crosswalks, sidewalks, overcrossings, and traffic-calming devices.
 - Relocate a displaced business or community facility to a new location with improved accessibility.
 - Construct new parking facilities, including multi-level garages or the use of highway right-of-way for parking areas.
- Enhance
 - Provide trees, landscaping, sidewalks, public artwork, and street furniture as part of the project design.
 - Expand transit services and locations.
 - Provide a recreational opportunity such as a small park or a bicycle trail.

5.4 Additional Resources

- Betlyon, Brian and Beverly Ward. *Community Impact Assessment: Developing a Preliminary Community Profile Using Hard Data*. 2001. Accessed January 2011. Available at: <http://contextsensitivesolutions.org/content/reading/preliminary-community-profile/resources/preliminary-community-profile/>
- FHWA. *Project Planning, Development, Right of Way; Public Involvement; Mitigation and Enhancement Activities: Cypress Freeway Replacement Project, California Department of Transportation*. ND. Accessed January 2011. Available: <http://www.fhwa.dot.gov/environment/ejustice/case/cypress.pdf>.
- Florida Department of Transportation. *Community Impact Assessment, A Handbook for Transportation Professionals*. 2000. Accessed January 2011. Available at: http://www.dot.state.fl.us/research-center/Completed_Proj/Summary_EMO/FDOT_BB296_rpt.pdf
- Illinois Department of Transportation. *Community Impact Assessment Manual*. 2007. Accessed January 2011. Available at: [Community Impact Assessment Manual](#)
- Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, *Guidelines and Principles for Social Impact Assessment*. U.S. Department of Commerce. National Oceanic and Atmospheric Administration. Washington, D.C. 1994. Accessed January 2011. Available at: http://www.nmfs.noaa.gov/sfa/social_impact_guide.htm
- University of South Florida and Federal Highway Administration, *Community Impact Assessment Website*. 2000. Accessed January 2011. Available at: <http://www.ciatrans.net/index.shtml>

- Weinreich, Peter and Wendy Saunderson. *Identity Structure Analysis*, Published in *Analysing Identity*, Volume 1, Part 2 December 2002, pages 7 – 76.

6.1 Introduction

Economic impacts of transportation projects include the effects of the project on factors such as personal and business income, employment, property values, and tax revenues. Transportation projects can have both positive and negative effects on local and regional economies. These effects are generally related to the following factors:

- Short-term construction activities
- Changes in accessibility to homes and businesses
- Changes in traffic volumes and transportation routes
- Business relocations
- Changes in the physical environment that lead to economic effects (noise, congestion, aesthetics, etc.)

This chapter examines the types of economic impacts caused by transportation projects and techniques for identifying and addressing these impacts. In most cases, economic impacts will be relatively minor and primarily temporary in nature. In these cases, a subjective, qualitative analysis is probably appropriate. However, when economic impacts are expected to be considerable and a major concern for local communities, a more rigorous quantitative approach may be needed (impacts related to business relocations are covered in more detail in Chapter 7 of this volume.

As noted in Chapter 1 of this volume of the Caltrans Environmental Handbook Series, —effects” under NEPA include social and economic effects. [Section 1508.14](#) of the CEQ regulations states that economic or social effects are not intended by themselves to require preparation of an EIS but that when an EIS is prepared and economic or social and natural or physical environmental effects are interrelated, then the document should discuss all of these effects on the human environment.

Under CEQA, economic or social effects of a project are not treated as significant effects on the environment. The focus of CEQA is on physical changes in the environment. However, physical changes may result in economic or social effects. For example, construction of a transportation project may adversely affect access to businesses and cause financial hardship for the business owners. Another example might include a business district that is made unviable by a project, resulting in the failure of multiple businesses leading to urban decay or blight. Although significance determinations are not normally included in the community impact assessment technical report, the relationship between economic impacts and physical changes in the environment should be explained.

6.2 Analyzing Economic Impacts

Similar to other types of impacts, the appropriate level of analysis of economic impacts depends on the severity of the potential impacts. For most transportation projects, a qualitative approach that does not involve complicated modeling is sufficient for analyzing economic impacts. If economic impacts are expected to be considerable and a major concern to the community, a more sophisticated analysis may be called for. There are many different tools available for conducting a quantitative analysis of economic impacts, including input-output models, cost-benefit analyses, and the use of employment and income multipliers. Chapter 4 of the [Illinois Department of Transportation CIA Manual](#) provides an excellent discussion of the use of economic multipliers should that approach be necessary.

The analysis of economic impacts should be undertaken with considerable input from the affected communities and stakeholders. The decision-making process should be open and inclusive, with serious consideration given to public input. Business owners are likely to be sensitive to any proposed changes to the business environment, and it is important to keep all stakeholders informed of anticipated project effects and any changes being made to project alternatives.

The primary economic impact of a transportation project on businesses is a change in the level of business activity. The following are some of the factors that can influence business activity. These factors are each discussed individually below:

- Changes in
 - access to the business
 - traffic patterns, both locally and regionally
 - employment circumstances
 - the environment near the business (e.g., noise level, air quality, or aesthetics)
 - property values
- Loss of
 - available parking
 - tax revenue

When evaluating the following potential impacts to businesses, keep in mind both temporary effects during construction and permanent effects resulting from the operation of the facility.

- Will access to the business be changed for customers or clientele, employees, delivery vehicles, or elderly or disabled persons? If so, how will it change and what is the likely outcome of the change?
- Will local or regional traffic patterns, volumes, or speeds be affected by the project? If so, how will the changes affect businesses both within and outside of the project area?
- Will the project displace or otherwise affect a major employer in the project area? What is the current unemployment rate in the affected communities? Will jobs be lost because of the

project or will employees be able to move with the affected company? Will the project create jobs for the local community?

- Will the project change the environment near any businesses? Will noise levels increase or decrease? Will air quality be improved or worsened? How will the project affect the visual setting of the business? Will amenities such as sidewalks, benches, crosswalks, or overcrossings be added or changed in some way? Will traffic congestion increase or decrease? If so, how will these changes affect businesses in the community?
- Will the project displace parking for any businesses? If so, how many spaces will be affected and how many will remain? Will replacement parking be provided either on the existing parcel or elsewhere? How will the loss of parking affect the business?
- Will the project displace a considerable number of businesses or residences such that the total amount of sales tax or property tax is reduced to the level that it will affect an agency's ability to provide services?
- How will the project affect property values and marketability of businesses? Would any of the issues discussed above have an impact on the ability of a business owner to sell or lease the property? Would the project adversely affect property values or result in an increase in property value?

6.2.1 Changes in Access

As mentioned above, access to a business can influence business activity, and therefore changes in access can affect business.

Analysis Techniques

The analysis of access impacts should include a discussion of the nature of the change in access, who the change will affect (the specific business and its clientele, suppliers, and employees), whether the change is permanent or temporary (if temporary, what is the duration of the change), whether alternative access will be provided, and how the change of access will affect the business.

Listed below are some examples of transportation projects might affect access to businesses.

- A median project may limit left turns into a commercial area, making it more difficult for customers to access businesses on one side of the street; whereas a project that adds a turn lane would improve access.
- Construction of a new highway or extending an existing facility may require closing off streets or creating cul-de-sacs, thereby affecting the ability of local traffic to access businesses on the opposite side of the highway. The effect on residents that do not drive may be considerably more severe if the highway blocks access to stores or services.
- Bypass projects take traffic off of main streets, improving conditions for pedestrians and local traffic but reducing the amount of pass-by traffic on which some businesses may depend. For businesses that do not depend on pass-by traffic, the improved traffic conditions may increase patronage at local shops, resulting in a net benefit.

- Freeway interchange projects may temporarily close on- and off-ramps, resulting in a loss of business for service stations and restaurants. If a project would result in a ramp closure, the potential for business losses should be assessed (see Appendix E for details on the need to consider the economic impacts from temporarily closing freeway ramp access).
- Construction activities may require temporarily blocking access to businesses along the project corridor. If alternative access could not be provided, the businesses would likely suffer a decline in patronage.

Data Sources

The best sources of data for this analysis are field surveys and interviews with business owners and clients. The severity of the impact will depend in large part on whether the business is a destination or dependent on pass-by traffic, characteristics that are discussed further in the next section.

6.2.2 Changes in Traffic

Transportation projects affect traffic in many ways. New roadways provide alternatives to established circulation patterns and may necessitate the development of new routes to access goods and services. Bypass projects route traffic away from downtowns resulting in an improved social environment, but remove pass-by traffic from downtown commercial centers. Projects that widen roads or improve roadway geometries or intersections may result in less congestion and increased traffic speeds, which can influence an individual's decision whether to stop and shop.

Analysis Techniques

The following factors are important in the initial assessment of potential economic effects on communities due to changes in traffic:

- Population of the community (e.g., size of the locally based market)
- Nature of local economic base (e.g., retail and services or manufacturing)
- Type/location of businesses
- Percent of traffic-dependent retail
- Type of existing highway
- Average daily traffic (ADT)
- Origin/destination of traffic
- Distance to other cities and towns

Variables to consider when analyzing changes in traffic on business activity may include interregional traffic volumes and patterns, future growth trends (existing and proposed land use and development), traveler spending potential, and distance from the existing to the proposed facility.

Understanding the nature of businesses along the project corridor is key to understanding the affects of the project on the businesses. Destination businesses such as banks or legal services are generally affected less by a reduction in pass-by traffic than businesses like gas stations and fast-

food restaurants. Table 6.1 provides examples of businesses that typically depend on pass-by traffic, and businesses that typically do not depend on pass-by traffic, and businesses that are not so clearly defined as to the degree they rely on traffic to sustain their business.

Table 6.1. Dependency of Business Types on Pass-by Traffic

Dependent on Pass-by Traffic	Do Not Depend on Pass-by Traffic	May or May Not Depend on Pass-by Traffic
Fast-food restaurants	Banking	Flea markets
Convenience stores	Manufacturing	Antique stores
Lounges	Real estate companies	Garden centers
Motels	Laundromats	Hardware stores
Gas stations	Higher-end restaurants	Miniature golf/amusement center
Ice cream stores	Insurance companies	Grocery stores
Roadside vegetable stands	Law firms	
	Mortuaries	
	Appliance repair shops	
	Hospitals and veterinary clinics	
	New auto sales	
	Computer sales	

The analysis of impacts related to changes in traffic should include a discussion of the nature of the project and how it will influence traffic, a description of the specific businesses that would be affected by the changes in traffic, and how the changes in traffic are likely to affect the businesses. With regard to bypass projects, studies conducted around the nation by various state transportation agencies generally indicate the following results.

- **The size of community influenced the intensity of the economic impacts.** Generally a larger town has a larger economic base, and will continue to draw more people to purchase goods and services there. Some studies have shown that towns with a population of less than 5,000 are harder hit; others have used 500 as a bottom-line population.
- **The effects of a bypass on towns with tourist-based or service-oriented economies may be less than other towns.** A decrease in truck traffic and auto congestion can actually enhance pedestrian safety in a central business district encouraging the local residents to frequent the downtown area for shopping and dining.
- **A new highway bypass built a mile away (or closer) from the existing roadway experiences less of a drop in sales volumes.** Studies have shown travelers do not generally

perceive a mile (or thereabouts) to be so great an inconvenience when in need of services such as gas and food.

- **Some highway-oriented businesses were able to overcome losses in revenue through creative means.** Changes in business practices to serve more local demand, such as expanding advertising to local customers, have been able to counteract the effects of decrease in pass-by traffic.

These summaries are provided as a rule of thumb only; specific bypass studies should be consulted to determine the extent to which the various methodologies and factors identified above are applicable to a specific project.

Finally, it should be noted that changes in traffic and access issues are non-compensable under federal law. While the previous analysis and discussion is appropriate for inclusion in the ED for a bypass project, it should be made clear that businesses affected by changes in traffic (such as bypassed business on old routes) are not eligible for loss of goodwill payments and other benefits. Only properties with actual physical takings are eligible for acquisition and relocation benefits (i.e., compensation).

Data Sources

Most of the required information to assess the effects of changes in traffic will be available from the data collected for the community profile and field surveys. Information on existing and future traffic conditions will be available from the traffic study prepared for the project. Early coordination with the traffic analyst will help to ensure that the necessary data are included in the study. The best sources of information regarding business types and the likelihood of the business to depend on pass-by traffic are field surveys, interviews with business owners and customers, and case studies. Case studies should be carefully selected to represent similar conditions to the project and community being analyzed.

A publication prepared for the U.S. Economic Development Administration, *Understanding Your Economy: Using Analysis to Guide Local Strategic Planning* (1991), outlines key location and economic function considerations of cities relative to larger regional economic forces. These may be useful for understanding the effects of highway bypasses.

6.2.3 Changes in Employment Circumstances

While transportation projects generally do not result in the creation of significant permanent new jobs within a community, they may affect employment in a variety of ways, both positive and negative.

- Construction activities may directly create new jobs in the local community and larger region.
- Spending in the local economy by construction teams may generate additional sales revenue in the community that could lead to new jobs.
- Bypasses, permanent changes in access, and changes in traffic volumes can lead to increases or decreases in sales, which may translate into corresponding changes in employment.

- The displacement of a major employer or the relocation of a significant number of employees would probably affect employment either through loss or relocation of jobs, depending in large part on the relocation site.

Consideration should be given to the distance and travel time between employees and employers both before and after the project.

Analysis Techniques

The discussion of impacts on employment should begin with a summary of the economic profile of the community, including labor force characteristics (major employers, unemployment trends, income levels), multiplier effects (how increases or decreases in employment and consumer spending will ripple through the economy), and market sector characteristics (agriculture, manufacturing, retail, etc.). The analysis should discuss how the project is expected to influence employment within the community, both directly through creation of new jobs or through business or residential displacements, and indirectly through the multiplier effect (the analysis of business relocation effects is discussed in Chapter 7 of this volume).

Data Sources

Data for the economic profile summary should be available from the community profile. Analysis of impacts on employment can be based on the following sources.

- Case studies
- Census Bureau publications and statistical abstracts for economic indicators and average business sizes
- Commercial providers such as Dunn & Bradstreet for business locations, types, employee information, and other economic data
- Local government planning and economic development department staff
- [U.S. Bureau of Economic Analysis](#) (BEA), which provides regional and industry multipliers for economic analysis
- [IMPLAN](#) input-output model, which can be used to assess the total employment and income changes in a region resulting from direct project-related impacts on businesses

6.2.4 Changes in the Business Environment

Changing the local business environment (noise, vibration, air quality, pedestrian amenities, etc.) can affect business activity by making the shopping experience more or less pleasant. For example, increased noise, vibration, and dust during construction can make the shopping experience less pleasant and discourage business patronage. Improved pedestrian amenities can help attract shoppers and improve the shopping experience by making it easier for pedestrians to cross the street or by providing benches and/or other pedestrian amenities.

Analysis Techniques

The analysis of impacts related to changes in the business environment is necessarily qualitative. While the impacts related to air quality, noise, aesthetics, etc., can be determined with some precision, the effect of these impacts on businesses is less certain and depends on a number of

factors, including the severity of the impacts, the availability of competing services, and the local and regional trends in business and development.

Data Sources

Data sources for this analysis are the technical studies prepared for the ED for the project, field surveys, and interviews with business owners and customers.

6.2.5 Loss of Parking

In today's auto-centric society, adequate and convenient parking is essential to the success of most businesses. When a transportation project changes the number and/or location of parking spaces, either temporarily or permanently, the effects on a business can be substantial. Temporary parking changes may result from the removal of spaces during construction or the use of spaces by construction workers engaged on the project. Permanent losses of parking spaces may occur when a new roadway is constructed, additional lanes are built on an existing facility, or even a re-striping project if it displaces on-street or off-street parking.

Loss of parking for customers and delivery trucks can affect businesses and the operation of hospitals, schools, and other public services. Some businesses such as convenience stores depend greatly on adjacent parking. The problem can be exacerbated if the demand for parking rises due to an increase of pass-by traffic on the improved roadway.

The loss of business-related parking may result in vehicles being parked on residential side streets, thus limiting neighborhood parking and access, and also increasing traffic on nearby streets. The loss of parking may create the need for construction of spaces at a more remote and less convenient location, and this, in turn, could affect business sales.

Analysis Techniques

The analysis of parking impacts should include a discussion of the total number of parking spaces that may be removed compared with the total spaces available for businesses in the project area (check with Caltrans right-of-way staff first to see whether they will address the issue in their studies). Identify the degree to which businesses depend on on-street parking for their customers and consider the effect on businesses that are highly dependent on parking spaces. Determine whether a loss of parking could result in overflow parking that would cause secondary impacts. Finally, consider the effect on neighborhoods if commuter or business-related parking occurs on residential streets.

Data Sources

Primary sources of information include project plans, which should be reviewed to determine the number of spaces that will be lost, and field surveys of the area to see whether any business would lose a substantial portion of its customer parking spaces. Local merchants or the chamber of commerce can be contacted to help determine the effect of the potential loss of parking.

Also be aware that some local jurisdictions require a set amount of parking for specific business categories. Information may be available from a local parking agency or local planning department.

6.2.6 Changes in Property Values

Many of the potential economic impacts of transportation projects are internalized in property values. Transportation projects can cause or contribute to changes in the value of adjacent lands and buildings and can influence the use and marketability of surrounding lands. Because people's homes and businesses often represent a large part of their personal wealth, impacts on property values are almost always a topic of concern for the public.

Analysis Techniques

Property value is a reflection of the demand for the property. The market value of the property is the value for which the property can be sold on the open market and establishes the equity that the owner has in the property. The assessed value is set by the tax assessor and is the value at which the property is taxed. A change in the assessed value would result in a proportional change in property tax on the property.

The direct effects of transportation projects can influence property values in a number of ways. Section 11 of the TRB [Guidebook for Assessing the Social and Economic Effects of Transportation Projects](#) (NCHRP Report 456) lists the following six examples of factors related to transportation projects that may affect property values.

- Accessibility
- Safety
- Noise
- Visual quality
- Community cohesion
- Business productivity

A change in any of these factors may result in a change in property values; however, often the effects are different for residences and businesses. For example, a highway improvement project that improves accessibility to businesses or to new markets may have a positive effect on commercial property values. If that same project increases noise or subjects a neighborhood to increased diesel emissions, the residential property values may decrease. The degree to which a transportation project will affect property values depends in part on the location of the land (either adjacent to the project or just in the vicinity) and the type of land use (e.g., changes in noise levels affect industrial parcels less than residential parcels).

In general, a quantitative analysis of potential property value changes is neither necessary nor practical. What is important to include in the community impact assessment technical report is a summary of the project's potential impacts related to the factors that influence property values and a discussion of the land use context in which the impacts will occur. Section 11 of the [TRB Guidebook](#) recommends the following four possible approaches to analyzing a project's effects on property values:

- **Market studies**, which involve developing a profile of the types of land use and commercial business activities in the affected area and estimating the extent to which the proposed transportation project would affect customer access to the area.
- **Property comparisons**, which involve comparing property values for similar types of properties in other parts of the community or region that have similar types of transportation facilities.
- **Case studies**, which are similar in approach to property comparisons, with the exception that the case study may be more removed in time and distance from the proposed project. Additionally, case studies provide a “before and after” look at how a similar project affected a community.
- **Regression models**, which use regression analysis to develop coefficients that represent the incremental effect on property value associated with the various factors that influence property values.

A more detailed discussion of these assessment methods is available in the [TRB Guidebook](#) (Section 11). Determining which method to use for the analysis is a function of the project, the affected communities, and the anticipated magnitude of the impact of the project on residential and commercial property values.

Data Sources

Sources of information for the analysis include county tax assessor’s office, regional real estate journals, property appraisers, real estate agents, and online real estate and property value search services.

6.2.7 Impacts on Taxing Authorities

Removal of residences and businesses for a project results in an initial loss of property and sales tax revenue for local jurisdictions. In most cases, the amount of tax revenue lost will be an insignificant percentage of total revenue unless the project causes the displacement of a major source of sales tax revenue (e.g., an auto dealership) or causes widespread negative property value effects in a community. Also, the loss is often only temporary, because displaced homeowners and businesses will resume generation of sales tax revenues and payment of property-related taxes upon relocation. However, the original tax revenue-generating property is permanently taken off the tax rolls and not necessarily replaced by new construction if the stock of available business properties and housing is sufficient. There may be a more important impact if most of the displacees relocate outside the original taxing jurisdiction, or if businesses cease operations altogether.

If a project facilitates a substantial amount of growth, property and other tax revenues may increase. In many cases, this could more than offset any revenue losses associated with relocation.

Analysis Techniques

An analysis of the impact on local tax revenue, both property and sales taxes, should be done if a sizable portion of a community’s residences and/or businesses may be removed or if widespread property value effects are anticipated to result from the project. The tax revenue lost should be calculated as a percentage of total local tax revenue and not just presented as a total amount. If

most of the residents and businesses will be relocated in the community, however, the tax loss should be described as minor and temporary only, and a calculation of the property and sales tax changes need not be done.

Be aware that transportation projects may also affect tourism, which may have a negative or beneficial effect on sales and sales tax revenues. Additionally, projects that affect the use of motels and hotels or that displace these businesses may have adverse effects on transient occupancy tax revenues that are collected by many local jurisdictions.

Data Sources

Property tax information can be obtained from the county tax assessor's office. Sales tax information can be obtained from the California State Board of Equalization or from the annual budgets of local jurisdictions.

6.3 Addressing Project Impacts

A comprehensive, integrated public involvement program should be undertaken to involve affected business owners in the process of developing innovative, effective approaches to addressing the economic impacts of transportation projects. Involving stakeholders in this process is a way to keep them informed of progress in project development and to gain their confidence in the proposed measures for addressing project impacts. The following strategies represent some of the commonly used approaches for addressing project impacts through avoidance, minimization, mitigation, and enhancement measures. Where appropriate, these measures should be incorporated into the Traffic Management Plan (TMP) prepared for the project.

- Avoid
 - Schedule construction for after business hours.
 - Locate construction staging areas so that they will not block or impede access to businesses.
 - Modify the project to avoid taking commercial buildings or parking spaces whenever possible.
- Minimize
 - Phase construction to minimize disruption of business activities.
 - Schedule construction during the off season if seasonal businesses might be affected.
 - Clearly sign business entrances from the roadway.
 - Establish a single point of contact to facilitate communication between the project proponent and the public. In special situations such as non-English speaking communities, minority communities, and situations where there is local opposition to the project, this individual could be someone from the community itself or a public relations specialist that the community knows and trusts.

- Coordinate road and lane closures and other construction activities with emergency service providers.
- Provide business owners with information about construction schedules, lane or road closures, and regular project updates through newspapers, a project website, and/or regular public meetings.
- Mitigate
 - Construct frontage roads and provide alternative access to businesses when the primary access point is blocked.
 - Provide alternative parking in project right-of-way when feasible.
 - Provide relocation assistance consistent with federal and state requirements.
 - Construct vehicular and/or pedestrian overcrossings or tunnels.
 - Signalize intersections.
 - Expand transit service.
- Enhance
 - Improve signage for bypassed business districts.
 - Incorporate project design elements that enhance local business districts (e.g., pedestrian and bicycle amenities, improved landscaping, street furniture, etc.).
 - Assist businesses and local communities in planning strategies to minimize economic impacts during project construction. See the Wisconsin Department of Transportation's website, [In This Together Workbook](#), for an example of how this can be applied.

6.4 Additional Resources

- Illinois Department of Transportation. *Community Impact Assessment Manual*. 2007. Accessed January 2011. Available at: <http://www.dot.il.gov/desenv/CIAManual.pdf>
- Transportation Research Board. Transportation Research Circular 477: "Assessing the Economic Impact of Transportation Projects." 1997. Prepared by Glen Weisbrod and Burton Weisbrod. Accessed January 2011. Available at: <http://onlinepubs.trb.org/Onlinepubs/circulars/circular477.pdf>
- Transportation Research Board. Transportation Research Report 456: "Guidebook for Assessing the Social and Economic Effects of Transportation Projects." 2001. Prepared by David Forkenbrock and Glen Weisbrod. Accessed January 2011. Available at: http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rpt_456-a.pdf
- University of South Florida, Center for Urban Transportation Research (CUTR). *Managing Corridor Development: A Municipal Handbook*. 1996. Accessed January 2011. Available

at: http://www.fdottransportationimpacthandbook.com/resources/documents/cat_view/60-fdot-handbooks

- Wisconsin Department of Transportation. *A Workbook to Help Wisconsin Businesses Thrive During Highway Construction*. 1998. Accessed January 2011. Available at: <http://www.dot.wisconsin.gov/business/engrserv/itt/workbook.htm>

Chapter 7

Relocation and Displacement

7.1 Introduction

This chapter discusses how to analyze impacts related to relocation and displacement as part of the community impact assessment process. Transportation projects that are intended to benefit the general public sometimes require new right-of-way, which may result in the acquisition of land, homes, or businesses resulting in the displacement and relocation of residents, businesses, farms, or nonprofit organizations.

Relocation impacts are among the most sensitive community-related effects associated with transportation improvements because they may involve modifying relationships between people and their homes and neighbors. The forced removal of families from neighborhoods or businesses from their existing locations affects not only those being relocated, but also those who remain in the affected neighborhood and those who live in the new areas where the relocated residents or business will be. It is the policy of Caltrans that displaced persons shall not suffer unnecessarily as a result of programs designed to benefit the public as a whole.

The analysis of relocation impacts in the community impact assessment provides information that the community needs to offer meaningful input during the public involvement process. Often neighborhood sensitivities about potential displacements are not apparent until the public becomes informed and involved in the transportation planning process. The earlier this involvement occurs, the more likely it is that the community's concerns can be addressed in a meaningful way without incurring delays or added costs for the project.

The community impact assessment technical report should provide a summary of the potential relocation impacts on residences, businesses, and community facilities for each project alternative. The summary should be easy to understand and as specific as possible so that affected stakeholders can clearly see how they may be affected by the project.

Relevant Regulation and Policies

Caltrans' Relocation Assistance Program (RAP), as established by federal and state law, provides help to individuals, families, businesses, and others that are required to relocate as a result of a public improvement project. Its primary objective is to assist all project displacees so that they do not suffer disproportionate injury as a result of projects constructed for the benefit of the public.

Federal and state laws ([the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended](#), also known as the Uniform Relocation Act or just Uniform Act, and [California Government Code, Chapter 16, Section 7260, et seq.](#)) require that relocation assistance be provided to any person, business, farm, or nonprofit operation displaced because of the acquisition of real property by a public entity for public use. Compliance with the federal act is required by any public agency where federal funds are to be used in the acquisition or construction of the proposed project. It is not considered mitigation, per se, but an entitlement because compensation is required by other than environmental laws, and is, of course, provided regardless of magnitude of impact.

The Caltrans Relocation Assistance Program (RAP) specifies that before any project that involves the displacement of people can be undertaken a Replacement Housing Study (final relocation impact document) must be completed to determine the needs of relocatees and the availability of replacement housing. These studies serve to assure that orderly relocation can be accomplished and that realistic and adequate plans are developed for the relocation of all displaced persons. The information contained in these studies can also assist the environmental planner in determining whether, under CEQA, the social impacts are significant.

The Federal Uniform Relocation Assistance Act of 1970 (as amended) and the California Relocation Assistance Act both require that, within a reasonable period of time prior to displacement, comparable replacement housing will be available or provided for each displaced person. Such assurance is part of the RAP study process and must be specifically given on every project requiring residential displacement.

If relocations are anticipated, a relocation impact document should be prepared according to the guidance for relocation assistance provided by the Caltrans [Right-of-Way Manual, Chapter 10](#). Depending on the number and complexity of relocations, either a relocation impact memorandum, relocation impact statement, or relocation impact report may be appropriate. The community impact assessment technical report should assess all potential relocation impacts that could result from each project alternative, both positive and negative, and incorporate the appropriate relocation impact document (RID) as an appendix. This chapter describes potential relocation impacts associated with residential, business, and community facilities and suggests assessment techniques and mitigation strategies for addressing those potential impacts.

7.2 Analyzing Relocation Impacts

There are three aspects to displacements:

- number and characteristics of families, businesses, and community facilities displaced;
- probability that comparable decent, safe, and sanitary relocation sites can be found for those affected; and
- psychological and economic impacts associated with the relocation process.

The analysis of relocation impacts in the community impact assessment technical report should include a discussion of the characteristics of the existing housing stock and business establishments in the affected area; housing policies and programs; development trends in the study area and larger regional context; and characteristics, attitudes, and special needs of those residents, and others who are being displaced.

Relocation impacts should be assessed in collaboration with Caltrans Right-of-Way Program staff, because these units typically collect most of the critical information needed for an analysis. [Chapter 10, Section 10.05.00.00](#) of the [Caltrans Right-of-Way Manual](#) is an important reference for the type of information collected by Right-of-Way staff, which can also be beneficial for preparing a community impact assessment. The analysis of relocation impacts should begin with the preparation of the appropriate RID. The data gathered in the preparation of the RID will

support the preparation of the relocation chapter of the community impact assessment technical report.

7.2.1 Relocation Impact Documents

The RID is prepared in support of the environmental document and will be completed at two intervals during the planning stage of the project: prior to the draft environmental document and prior to any route selection or acquisition activities. The RID format depends on the complexity of the project as determined by the number of displacements and the availability of replacement property.

Analysis Techniques

A relocation impact memorandum (RIM) is prepared if there are fewer than ten displacements and there is ample replacement property. A relocation impact statement (RIS) is prepared if there are ten or more displacements and ample replacement property is available. The relocation impact report (RIR) is prepared if there are complex relocations because of available replacement property, special considerations for displaced persons, or major impacts to minorities, the elderly, large families, and/or persons with disabilities.

The standard formats and directions for completing these documents can be found in [Chapter 10](#) Section 10.02 of the [Right-Of-Way Manual](#).

Generally, a draft RID that is prepared for the draft environmental document will require a final RID when the project alternative has been selected and the final environmental report is prepared. Listed below are the minimum requirements for each RID.

- Identification of the project (Co., Rte., KP [PM], and description), including a general location map
- Identification of the displacement area and the potential replacement area, by alignment
- Number and type of occupants that may be displaced by each alignment
- Availability of replacement property by type, and a statement of its affordability
- List of all sources of information, including interviews with potential displaces (usually conducted for final documents only)
- Statement of how relocation will occur in a manner that minimizes the hardships on the displaces
- Project map showing the alignment

The RID should also contain helpful data, including the information listed below.

- Relocation advisory services information
- Proposed actions to remedy insufficient relocation housing, including commitments to last resort housing

- Summary of discussion with businesses, groups, and social agencies related to impacts on remaining businesses, potential sources of funding and other incentives that will be furnished to assist businesses and relocation impacts on special populations

Data Sources

Much of the information required for completing the RID will have been gathered in the preparation of the community profile, which is discussed in Chapter 3 of this volume. Additional information needed to complete the RID includes specific data on the number and type (owner vs. renter) of persons being displaced, information on the availability of replacement property, and cost of replacement property. Possible sources of information include studies prepared by Caltrans Right-of-Way staff, internet real estate sites and multiple listing services, and field surveys.

7.2.2 Residential Relocation Impacts

The severity of displacement impacts varies greatly depending on the people involved, and impacts are often related to demographic characteristics. If a person is highly mobile and has had a history of changing residences frequently, the impact may be only a minor inconvenience. If on the other hand, the community is stable and cohesive, and residents have been in their homes for many years, many of those displaced may have a difficult time adjusting to new homes and neighborhoods because they have a strong attachment to their existing home and neighborhood.

Improved financial assistance has helped to offset the adverse economic impacts of residential relocation. The adverse psychological and social impacts of relocation have understandably been more difficult to mitigate. Certain population groups such as senior citizens, low-income residents and non-English speaking people often have strong community ties and depend on primary social relationships and important support networks that can be severed upon relocation. Households with school age children may consider relocation especially disruptive if school transfers would be involved. Disabled people and those without automobile transportation often have special relocation problems.

Residential relocations have physical, financial, and psychological effects. The physical effects include finding and moving into suitable replacement housing or possibly the construction of replacement housing. For persons with special needs, such as the elderly or disabled, these physical impacts can be daunting.

Adverse financial impacts may include moving expenses, increased living expenses, increased commute to work costs, or increased property taxes. Negative financial impacts related to residential relocation are identified in the relocation impact report (RIR) and are handled in accordance with [the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as Amended](#).

In certain circumstances the financial impacts of relocation may be positive, such as selling property that may have otherwise been difficult to sell, relocating closer to work or to a less expensive area, or relocating to a better home or to a more desirable neighborhood.

The psychological effects of relocation are primarily related to the change in a person's living conditions. People become attached to their homes and communities and are often unwilling to

move. Psychological impacts may be especially serious for elderly and disabled persons, families with children in school, long-term residents, and mobile home residents.

Analysis Techniques for Relocation Impacts on the Elderly and Disabled

Relocation typically affects senior citizen and physically disabled residents more seriously than other groups. Some older people move to be closer to family and some move to a better climate, but most want to stay put. According to a telephone survey conducted by the American Association of Retired Persons, 78% of those polled indicated they do not want to leave their own homes. Older Americans often rely on others for emotional support, and are frequently dependent on community services and local access to stores.

The analyst should look at the services older people may use in their current residential location and should consider the following kind of questions.

- Is basic convenience shopping (food, pharmacy, dry cleaning) available nearby?
- Is there an emergency health care facility or full-service hospital nearby?
- Is the neighborhood considered safe?
- How close does available public transportation come?
- How likely is it that these amenities will change with implementation of the project?

When members of these age groups are displaced, the relationships providing such assistance are often lost and not always re-established. Be aware, too, that older persons are not homogeneous. For instance, studies show that the “young” elderly, aged 65 to 74, are relatively healthy. Those aged 75 and over are more likely to be disabled. Hence relocation impacts may vary in degree.

Analysis Techniques for Relocation Impacts on Mobile Home Residents

Displacement of mobile home park residents may involve impacts not typically encountered by residents of more traditional houses or apartments. First, the term “mobile home” is now somewhat of a misnomer because most units only move from the factory to a permanent site. The term “manufactured housing” is becoming more common, especially when applied to models constructed in the past quarter-century or so. Mobile home parks often occupy an unfavorable position in community planning and zoning due to their low tax base and because conventional residential owner-occupants rarely want them to be located nearby because they feel they may affect their neighborhood’s overall property values. Manufactured housing still suffers from financing and zoning barriers arising out of old attitudes towards mobile homes. Consequently, new parks that could be built to accommodate displaced mobile home owners are difficult to establish in some parts of California.

When mobile home park occupants must relocate, the mobile home is often sold in place due to the relatively high cost of moving the home. Some parks charge a fee when a home remains, but this is usually less than the cost of transporting it. Also, an old mobile home may be considered obsolete or unattractive and so may not be allowed in other or newer parks. Therefore, changes in occupancy do not always result in vacant spaces, and this limits the supply of spaces available to accommodate displacees. In cases where a vacant space does become available, the space is often filled as a result of a continuing agreement between the park management and local mobile

home dealers who have what is tantamount to an option on the vacant site for their customers. Often the rental rate for the mobile home space is raised to “market levels” for a new owner.

Normally, new parks will accept only new or nearly new manufactured housing units. When used units are accepted, park management often requires painting, new skirting and awnings, landscaping, and such. New parks are generally designed to accept “double-wide” units (the average size of new mobile homes is 1,210 square feet). This eliminates them as a source for more affordable “single-wide” units.

Because of these special characteristics, it is often difficult to locate mobile home residents near their former area or with their neighborhood friends and relatives. This exacerbates the other relocation impacts such as loss of support groups, commute time increases, and so forth.

Residents in mobile home parks often live in a “community within a community.” Many parks have organized community activities for seniors set up around a recreation center. Planners should contact the park manager to determine whether or not there are organized activities.

Analysis Techniques for Affordable Housing

A loss of a substantial number of houses affordable to people with low and moderate incomes may have an effect on the community’s stock of affordable housing. This decrease in supply of housing could have the effect of creating an imbalance between supply and demand for housing in a given sector of the market, bidding up the cost of that housing if the market supply is constrained and thereby disproportionately affecting certain income groups. The U.S. Housing and Urban Development Department (HUD) has developed methods for calculating affordability and definitions of low- and moderate-income households. Caltrans Right-of-Way may have this information and can provide information on the numbers of affordable houses subject to removal and the number of affordable houses in the community. Also, be aware that, in some instances, units in older motels may be leased for several months or longer and constitute regular and permanent residential units for the low-income and migrant worker families, rather than just serve overnight customers.

Analysis Techniques for Disproportionate Impacts

In addition to affordable housing impacts, the demographic characteristics of the residents subject to relocation should be investigated to determine whether any groups (low income, minority, senior citizens, disabled, etc.) would be disproportionately affected by the proposed project. Occasionally, advocacy groups will argue that a project’s proposed alignment was determined primarily on the basis of the economic (low) cost of land and housing, so it is important to document that early planning took into account and took steps to ameliorate potential impacts on the housing stock of any particular social or economic group. In analyzing impacts of relocation, it is important to identify which groups, if any, would benefit and which would be disadvantaged by a highway project. (See Chapter 8 for a discussion on community participation, environmental justice, and Title VI considerations.)

Data Sources

Sources of information to determine how many elderly and disabled, mobile home residents, and residents in affordable housing would be affected by a project are various and include the following.

- Caltrans Right-of-Way staff may have such information and can provide information on the numbers of affordable houses subject to removal and the number of affordable houses in the community.
- Local planning departments
- County Assessor's parcel information
- Community organizations
- Field studies, including driving tours of the route alternatives

7.2.3 Business Relocation Impacts

When a business is displaced, the impacts are generally financial, but in certain circumstances the effects may be more complicated. Depending on the nature of the business, the ability to find a suitable site for relocation may be difficult. Some businesses, such as ethnic restaurants and minority-owned businesses that depend on local clientele, could suffer a significant loss in business if separated from their client base. Businesses that require specialized equipment or that use hazardous substances may be difficult to relocate due to their particular needs and the inability to find a location where they would be welcome. Other impacts related to business relocation could include a loss of employment base for the local community or the loss of a readily available source of employees for the business. Impacts on small businesses tend to be more severe than impacts on larger nationally based businesses because small businesses often have a localized customer base and are less able to afford the cost to promote a new location.

Analysis Techniques for Employment Impacts

Relocation of business firms and industries can result in unemployment and associated financial impacts. If the firms relocate within the community and remain viable, the unemployment effect may be temporary. A more serious impact will occur if the firms cannot relocate or if they relocate outside the region.

The size of the firm may determine the importance of the employment impact on the community. The physical removal of a city's major employer could result in multiplier effects to related businesses. The loss of a small business, however, is likely to have a lesser effect on employment in the community because of the fewer numbers of households affected. Employment impacts are less severe when the employer has sufficient lead time to become established at a new location prior to closing the existing facility.

Should the effects of business displacements be so severe as to result in degradation of the community leading to urban decay, or blight, the impact could be considered "significant" under CEQA. Recent court cases highlight the need to consider these potential effects in the environmental document (see *Bakersfield Citizens for Local Control v. City of Bakersfield*, No. F044943, 04 C.D.O.S. 10918, 2004 DJDAR 14768. Filed December 13, 2004, and *Anderson First Coalition v. City of Anderson*, 130 Cal. App. 4th 1173 [2005]).

Loss of key employees may occur when some businesses are displaced and workers are not willing to relocate or travel to the new area. This could affect the firm's ability to re-establish itself in the new location. The severity of this impact varies with the type of business, the

distance to and attractiveness of the new location, as well as the employees' interest in continued employment with the firm.

Analysis Techniques for Loss of Clientele

Firms are often profitable because they have built up a loyal clientele over time. Relocation to a new area may require time to re-establish customers. This time period may be short for well-known firms such as nation-wide fast food franchises or service stations. For those without national or regional name recognition, however, the time period required to re-establish clientele may be long enough to affect the economic survival of the firm.

Local residents may depend on certain firms for needed goods and services. People without automobile transportation may be affected if a nearby grocery store or senior citizens' center is moved out of the neighborhood. Analysis of relocated businesses should, therefore, include an assessment of any special characteristics of their clientele.

Analysis Techniques for Business Relocation Impacts

The discussion of business impacts in the technical report should encompass the following information.

- Describe the size (in square footage if possible) and types of businesses (i.e., retail, wholesale, manufacturing, service, government, or nonprofit) subject to relocation.
- Determine the percentage of the city, county, or region's businesses that are subject to relocation.
- Estimate the number of years such firms have been in operation. (Caltrans architectural historians should be able to help in this regard).
- Determine whether the businesses are established, declining, or new.

Use this information to analyze the ability of the firms to economically survive being relocated. If appropriate, an analysis of relocation impacts should include an assessment of the potential for businesses to relocate to economically viable areas. Availability of relocation sites will be affected by zoning restrictions, property values, accessibility or other special requirements of the business (e.g., a dog kennel, print shop, auto dismantling). Some may be non-conforming land uses.

Then the analyst should consider the following approach.

- Describe whether the businesses subject to relocation serve primarily through traffic or local customers.
- Determine whether the displaced firms would suffer a loss of clientele upon relocation. Firms catering primarily to through traffic, if relocated along a highway with adequate access, are typically less affected than those that serve a local clientele that has been built up over many years.
- Determine the number and type (professional, skilled or unskilled labor, etc.) of employees working for the firms subject to displacement.

- Make an assessment of the opportunity for the employees to continue to work for the relocated firms.
- Note whether the firms would likely have to relocate to a distant location that may require the employees to relocate or travel long distances to work.
- Mention if any businesses would close rather than relocate.
- Indicate whether any of the displaced firms are major employers in the community and discuss the potential for substantial layoffs.
- Indicate whether people are employed with firms that would close and their skill is one with limited job opportunities.

Data Sources

Sources of information to determine the number and type of businesses that would be affected by a project include:

- Caltrans Right-of-Way staff,
- County Assessor,
- Chambers of Commerce,
- Local planning and economic development agencies, and
- Field studies, which are essential for identifying specific businesses that may be affected and for understanding the severity of the relocation impact.

7.2.4 Community Facility Relocations

Impacts related to the relocation of community facilities such as schools, community centers, churches, and recreational facilities are likely to be mostly psychological, although financial impacts associated with loss of client base or memberships may occur for facilities that collect dues or user fees to support their operations. Much like a small business relocation, relocating a community facility away from the community that supports and uses it, such as a health care facility for the elderly or a substance abuse treatment center, may make the facility ineffective in achieving its mission.

The nature of school financing in California is discussed briefly here because it affects the way the environmental planner should look at anticipated impacts on public schools.

In 1972, the State enacted legislation which established a system of revenue controls that limited the maximum amount of general purpose state and local revenue that a school district could receive. The revenue limit formulas include both a base revenue limit—a basic education amount per unit of average daily attendance (often abbreviated ADA, but not to be confused with the American Disabilities Act)—that has been equalized over time and revenue limit adjustments that provide additional revenues for special needs, such as unemployment insurance.

Though the statutes remain on the books, since the passage of Proposition 13 in 1978, as well as through the results of court decisions, schools are no longer largely financed through local property taxes. As a result, losses in assessed property valuations due to removing property from

the tax rolls currently have no effect on revenues received by school districts. This is because any such reductions in local tax revenue distributed to a school district are automatically compensated by increased state aid in an equal amount. Instead, the current education financing system is driven by pupil enrollments, measured as average daily attendance. School districts have their total district revenue limit funds calculated based on ADA of the previous year.

In other words, with respect to impacts on school financing the analyst should consider not how many total properties are likely to be removed from the local tax rolls, but the following questions.

- How many displacements are likely to involve families with school age children?
- Are such families likely to be relocated within the same school district?

On the other side of the ledger, those enrollments that are drained from one school district must be assumed to shift to other school districts, with a corresponding increase in their respective revenue limits.

Data Sources

With projects that would include a sizable number of residential displacements, the planner should contact school district offices that serve the affected community to gather information to determine whether there would be any potential impacts associated with any reduced attendance related to the relocations.

7.3 Summarizing Relocation Impacts in the Community Impact Assessment Report

As noted earlier, the summary of relocation impacts for the community impact assessment should include a discussion of the characteristics of the existing housing stock, business establishments, and community services in the affected area; relevant housing policies and programs; development trends in the study area and larger regional context; and characteristics, attitudes, and special needs of those who are being displaced. The summary of residential displacements should describe the location (APN and address) and type (single-family, multi-family, apartment) of the affected properties and a description of the nature of the impact.

The complexity of business impacts necessitates the gathering of considerable detail about displaced businesses. Once it has been determined what the relocation impacts of the project will be, the analyst should determine whether there are appropriate relocation sites available for the displaced businesses. Caltrans Right-of-Way staff may have looked into this; check with them first. Often redevelopment agencies will develop plans for relocating displaced firms and these can be useful in determining the severity of relocation impacts. The summary of business impacts should include information similar to that for residential impacts and should also include the type of business being relocated.

Using a table similar to Table 7-1 below is a convenient way to summarize relocation impacts. More detailed information regarding the availability of replacement property and any unique circumstances related to specific relocations should be included in the discussion of impacts.

Table 7-1. Summary of Displacements

APN	Address	Tenant Owner/Renter	Number of Displaced Residents or Employees	Type of Unit	Description of Impact
111-22-333	123 Main Street	Owner	5	Multi-family duplex	Full parcel acquisition of a 3,000-sq ft residential duplex. Both units in the duplex are occupied.
444-55-666	456 Main Street	Renter	0	Single family	Partial acquisition, loss of frontage and landscaping, reduced setback
777-888-999	789 10 th Street	Owner	4	Commercial business	Full parcel acquisition of a gas station and convenience store.
123-456-789	10 Community Drive	Renter	2	Boys' and Girls' Club	Partial acquisition, loss of 3 parking spaces and landscaping.

It is desirable to distinguish between properties that are strictly “displacements” rather than “relocations.” There may be parcels that are vacant land that would be displaced by the project, or small portions of parcels that would be displaced, but that would not require any relocations. Additional detailed information should be provided for those properties where there would be a full acquisition resulting in the need for a relocation. This kind of information, characterizing the nature of the impact, should be inserted in the “Description of Impact” column.

7.4 Addressing Project Impacts

Using the FHWA approach to addressing a project’s adverse effects, the following are suggested approaches to avoid, minimize, mitigate, and enhance the relocation impacts of a transportation project.

- **Avoid**
 Modify an alignment to avoid displacements and relocations.
 Adjust the project profile to reduce the right-of-way requirements.
 Reduce the scope of the project to reduce right-of-way requirements.
- **Minimize**
 Modify the project to minimize the need for right-of-way acquisition.
 Construct replacement facilities before demolishing the displaced facility.
- **Mitigate**
 Provide financial compensation for property loss and relocation expenses, as outlined in the Uniform Relocation Act. Details regarding the principal benefits and services available to relocatees are discussed in Chapter 10 of the Caltrans Right-Of-Way Manual. See Appendix C for a discussion of the Caltrans relocation assistance program.

Not all social impacts associated with displacement can be offset by financial compensation or physical relocation. The impacts on a person's social attachment to a particular community or the loss of close proximity to customary services and recreation facilities may not be duplicated in another community.

Engage local governments in developing a regulatory strategy to encourage development to replace lost housing, employment, and community facilities through measures such as revising zoning, providing tax incentives, and other financial incentives for developers.

Provide "severance aid" to mitigate impacts on student enrollments (Education Code Article 16, section 41960 extract in Caltrans Statutes).

- Enhance

Provide improved replacement housing within the same neighborhood as the displaced housing when sufficient land is available.

Provide improved access to and/or replacement parking for businesses.

Provide trees, landscaping, sidewalks, public artwork, and street furniture as part of the project design.

Expand transit services and locations.

Provide a recreational opportunity such as a small park or a bicycle trail.

7.4.1 Additional Resources

- [42 U.S.C. 4601](#). Chapter 61--Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs. 1970.
- [49 CFR, Part 24](#). Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs.
- Caltrans. [Context Sensitive Solutions Website](#).
- Caltrans. [Right of Way Manual](#). 2000.
- Caltrans. [Business Relocation Brochure](#) (pdf).
- Caltrans. [Mobile Home Relocation Assistance Program](#) (pdf).
- Caltrans. [Relocation Assistance for Residential Relocation](#) (English) (pdf).

Chapter 8

Title VI and Environmental Justice

8.1 Introduction

This chapter discusses how to analyze impacts related to environmental justice issues as part of the community impact assessment process. Transportation planning and project development can have considerable economic, social, and environmental impacts on communities—both positive and negative. *Environmental justice* refers to the fair treatment of all races, cultures, and income levels with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Any federally funded transportation project or improvement conducted by Caltrans must comply with all appropriate federal and state civil rights and environmental justice guidance.

The concept of environmental justice stems from federal laws and policies developed to ensure that the civil rights of minority and low-income populations are protected and that the decision-making process for federally funded projects is free from discrimination. [Title VI of the Civil Rights Act of 1964](#) established the foundation for environmental justice. Title VI states:

No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

[Executive Order \(EO\) 12898](#), Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, was signed by President Clinton in 1994. EO 12898 states:

Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

In response to EO 12898, the U.S. Department of Transportation (USDOT) issued [USDOT Order 5610.2](#) on April 15, 1997, establishing USDOT's environmental justice strategy. The USDOT Order requires the following of responsible DOT officials:

Ensure that any of their respective programs, policies or activities that will have a disproportionately high and adverse effect on populations protected by Title VI (~~protected~~ populations") will only be carried out if:

1. A substantial need for the program, policy or activity exists, based on the overall public interest, and
2. Alternatives that would have less adverse effects on protected populations (and still satisfy the need identified in subparagraph (1) above), either (i) would have other adverse

social, economic, environmental or human health impacts that are more severe, or (ii) would involve increased costs of extraordinary magnitude.

The following are the key principles of the USDOT environmental justice strategy.

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The Federal Highway Administration (FHWA) issued [FHWA Order 6640.23](#) on December 2, 1998, establishing policies and procedures for FHWA to use in complying with the strategies established by [Executive Order 12898](#) and [USDOT Order 5610.2](#). In December 2001, the FHWA Western Resource Center issued interim guidance for [Addressing Environmental Justice in Environmental Assessments/Environmental Impact Statements](#). This document provides guidance for conducting and documenting the environmental justice assessment and provides a checklist for including the assessment in the environmental document.

In January 2003, Caltrans published the [Desk Guide, Environmental Justice in Transportation Planning and Investments](#) (Desk Guide). The purpose of the Desk Guide is to provide information and examples of ways to promote environmental justice to those involved in making decisions about California's transportation system—public agencies, concerned citizens, community-based organizations, and elected officials.

The Desk Guide provides a detailed discussion of the history and regulatory context of environmental justice as it pertains to transportation planning and project development. In addition, the Desk Guide is an excellent source of information for analysts preparing environmental justice evaluations for long-range planning and for project development.

8.2 Implementing Title VI and Analyzing Environmental Justice Impacts

Title VI and environmental justice requirements apply equally to all phases of transportation planning, from the development of long-range plans to the implementation of individual projects. The following steps provide an effective approach for implementing Title VI and assessing environmental justice impacts of transportation planning and project development.

- Determine whether the action would result in adverse effects.
- Identify protected populations that would be affected by the action.
- Determine whether there would be a disproportionate impact.
- Engage protected populations in a meaningful way throughout the process.

- Propose measures to avoid, minimize, or mitigate adverse effects.

Title VI and environmental justice equity analysis can and should begin once the nature of the transportation plan or project is known. The process begins with an analysis of potential impacts of the project.

8.2.1 Assessing Potential Impacts

As stated in the beginning of this section, transportation projects can have both adverse and beneficial effects on communities. Both the USDOT and FHWA define adverse effects as:

...the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness or death; air, noise, and water pollution and soil contamination; destruction or disruption of man-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion; isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of DOT programs, policies, or activities.

So, the community impact assessment process should consider the typical range of social, economic, and environmental issues in the analysis of adverse effects, as well as whether the project would deny, reduce, or significantly delay benefits to a population protected under Title VI. Additionally, both the USDOT and FHWA encourage the consideration of offsetting benefits to the adversely affected minority and low-income populations so that, in the final analysis, consideration is given to the net effect of the project on the community.

The community impact assessment provides an analysis of the project's social and economic impacts such as impacts on community cohesion, land use, public services, relocation, employment, etc. Other technical reports prepared in support of the environmental process can provide the analysis of impacts related to issues such as noise and vibration, air quality, water quality, and human health. Early coordination with the technical staff preparing these reports will ensure that the level of detail needed to support the environmental justice analysis is provided in the technical reports and supporting documentation.

Methods for assessing the social and economic impacts of a project are discussed in Chapters 5 through 7 of this document and are also covered in more detail in the [Desk Guide](#). Other sources of information related to the analysis of socioeconomic impacts of transportation projects can be found in Appendix A.

8.2.2 Identifying Protected Populations

To determine whether a project would have a disproportionate and adverse impact on minority or low-income populations, the analyst needs to know three primary things.

- Location of the impacts

- Severity of the impacts
- Demographic characteristics of the people that would be affected

Analysis Techniques

Much of the literature on environmental justice focuses on methods for establishing thresholds for identifying “environmental justice communities.” While these thresholds may be useful in calculating the relative effects of a project on protected populations, it is important to remember that a community’s perception of itself may be as important as what the statistics indicate. Involving protected populations in the development of the public participation plan and in the initial steps of delineating neighborhoods and communities for the community profile will improve participation by these groups, ultimately increase the acceptability of impact findings by the affected community. Section 8.2.4, *Public Involvement*, below addresses when and how to involve protected populations in this process.

The analyst should keep in mind that the size of the community is not a factor in determining whether there are disproportionately high and adverse effects. Environmental justice equity determinations are based on effects, not on the size of the affected populations. What is important is the comparison between impacts on minority and low-income groups relative to non-minority or higher income populations (see Section 8.2.3 “Disproportionate and Adverse Impacts” below).

The Council on Environmental Quality has established definitions for NEPA analysis (Council on Environmental Quality 1997).

Minority individuals are defined as members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black; or Hispanic.

Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census’ Current Population Reports, Series P-60 on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.

It should be noted that while these are the official definitions for NEPA analyses, they may not be appropriate for assessing environmental justice issues in transportation plans in California where minority individuals are the majority of residents and living expenses in some areas are unusually high.

Chapter 4 of the [Desk Guide](#) and case studies in Chapter 6.2 of the Desk Guide describe how some agencies have used alternative methods for identifying “communities of concern” when

considering transportation plan equity. Thresholds for low-income or minority communities may also need to be adapted to compensate for limitations in available data. When establishing thresholds for a specific plan area or project location the analyst should focus on identifying groups whose interests are traditionally under-represented and involve these groups in making decisions about the approach for conducting the environmental justice analysis.

In addition to low-income and minority populations, FHWA policy also encourages discussion of other groups protected under Title VI in the analysis of community impacts. FHWA policy states the following.

Within the framework provided by Executive Order 12898 on Environmental Justice, the USDOT Order (5610.2) addresses only minority populations and low-income populations, and does not provide for separate consideration of elderly, children, disabled, and other populations. However, concentrations of the elderly, children, disabled, and other populations protected by Title VI and related nondiscrimination statutes in a specific area or any low-income group ought to be discussed. If they are described as low-income or minority, the basis for this should be documented.

For community impact assessment, concentrations of the elderly, children, the disabled, or similar population groups (i.e., female head of household) could also experience adverse impacts as the result of an action. All impacts on sectors of the community, including minority and low-income populations as well as impacts on the community as a whole, should be routinely investigated, analyzed, mitigated, and considered during decision making, similar to investigations of impacts on minority populations and low-income populations. (FHWA 2006)

Data Sources

Data sources and methods for collecting demographic data are discussed in Chapter 3, *Developing a Community Profile*. For the environmental justice analysis, the most important demographic data pertain to race, ethnicity, and income. Geographic information systems (GIS) can aid greatly in identifying the location of minority and low-income populations within the study area and assist in determining the distribution of impacts among protected populations.

8.2.3 Identifying Disproportionate and Adverse Impacts

FHWA defines a disproportionately high and adverse effect on minority and low-income populations as an adverse effect that either:

- is predominately borne by a minority population and/or a low-income population; or
- will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

Evidence of substantially disproportionate adverse impacts on a protected population under Title VI can be considered a form of discrimination that is subject to civil rights action. When determining whether a particular program, policy, or activity would have disproportionately high and adverse effects on minority and low-income populations, the analyst should take into

account mitigation and enhancement measures and potential offsetting benefits to the affected minority or low-income populations.

Chapter 5 of the [Desk Guide](#) provides a “Model Environmental Justice Analysis for Transportation Projects” that describes a sound approach to determining whether a project would have disproportionately high and adverse impacts on low-income or minority populations. Another excellent source of information on assessment methods for environmental justice analysis can be found in Chapter 10 of the [Florida DOT Community Impact Assessment Handbook](#). The Florida DOT handbook recommends the following steps for determining whether a project would result in disproportionate impacts (Florida DOT 2000).

- Identify the potential population that might be affected by the transportation project.
- Compare the distribution of potential impacts on local populations. An evaluation should be completed for minority and low-income populations and the population as a whole. Consider the relative impact on each population as compared to the proportion of the population that each group comprises. This comparison could be made for each potential adverse impact resulting from a proposed alternative.
- An area of measurement needs to be selected for conducting this assessment, such as census tract, census block group, traffic analysis zones from the regional traffic model, neighborhood, and so on. The nature and size of the area of measurement should be based on the level of detail of available data, the size of the project, and the potential area affected. Consider applying more than one area of measurement to determine whether the potential impacts are disproportionate. Also, look at the potential impacts from the perspective of a variety of potentially affected populations.

For example, if an increase in noise adversely affects only five percent of the non-minority study area population, but affects eighty percent of the minority population, this would indicate a disproportionate impact on the minority population. Looked at another way, the same increase in noise may potentially affect the only low-income neighborhood in the community, raising concerns that the low-income neighborhood was being singled-out and disproportionately affected. Looked at still another way, impacts on the low-income or minority population may be roughly equivalent or lower than impacts on the non-low-income and non-minority populations in the broader jurisdiction. The point is to determine whether the project would cause disproportionate impacts in minority and low-income communities.

- Review the results with members of the potentially affected population. This step will give the community an opportunity to review all the related and supporting facts and give the transportation agency an opportunity to receive additional input concerning project effects and community needs. This effort should be viewed as an opportunity to “partner” with members of the community to develop the best transportation solution possible.
- Document if the potential exists for disproportionate and high adverse impacts on a minority or low-income population. If a disproportionate and high adverse impact is determined, then the community should be consulted regarding the mitigation of potential impacts. Ensure that the information generated from this assessment and any mitigation efforts are made part of the permanent project file.

A similar process can be used to evaluate an action's benefits to minority and low-income populations. The following are examples of benefits that should be considered.

- Improved accessibility to jobs and activities
- Safer transportation systems or driving routes
- Reduced travel times
- Availability and level of service of transit to protected populations
- Improvements in socioeconomic, human health, or environmental conditions

There are no definitive guidelines for deciding how to measure the proportionality of the distribution of benefits and burdens for a plan or project. Some of the issues that the analyst must consider include the period over which benefits and burdens should be evaluated, how to weigh the effectiveness of mitigation measures, and how to measure the net impact of a project's benefits and burdens.

If it is determined that a project may have an adverse effect on a minority or low-income population, measures to avoid, minimize, or mitigate adverse effects must be considered.

8.2.4 Public Involvement

One of the fundamental principles of environmental justice is to ensure the full and fair participation by all potentially affected communities in the transportation decision-making process (FHWA 2006). It is often difficult for minority and low-income members of a community to participate in the decision-making process for transportation planning and they are therefore often underserved by transportation systems. It is essential to make every reasonable effort to remove barriers that impede participation by underrepresented populations.

The USDOT publication, [*Public Involvement Techniques for Transportation Decision-Making*](#), specifically addresses the issue of engaging minority and low-income populations through the public involvement process. Inadequate access to project information combined with low understanding of the decision-making process for transportation projects is a major cause of perceived discrimination by minority and low-income populations. The standard public involvement and outreach program for transportation improvement projects does not intentionally exclude minority and low-income populations, but the techniques applied are often inadequate to reach these populations. Only by being involved in the decision-making process and having access to project information can a community expect that their needs or concerns will be addressed. Otherwise, the agency gives the perception that it is not open to community concerns. Further, the transportation agency can only hope to achieve community acceptance of the transportation project by addressing community concerns or objectives in project development.

Below are several specific things to consider in ensuring a successful public involvement process.

- Take care to ensure that the public involvement program reaches all target audiences. Public involvement and outreach techniques should reach people where they live and in ways that have meaning to them.
- Determine how local residents receive information and use that medium to reach out to the community. This is the key to providing access to information and the decision-making process for all potentially affected populations. For example, the local Spanish-language newspaper may reach more households in a predominately Hispanic neighborhood.
- Even if a public involvement program seems adequate, be aware that some groups simply need more assistance than others in navigating the public decision-making process. Low literacy levels, unfamiliarity with the process, and language barriers are among the factors that can reduce access to decision-making among various groups.

Sometimes, even when the target audience is reached, the message may be unclear, misunderstood, or mistrusted. This can be reduced through attention to the cultural bias of a specific population and sensitivity to the subtleties of cross-cultural communication. For example, if the minority community originates from a non-democratic country, then a government agency seeking input in an open decision-making process might be alien to them. A public workshop format may not be the appropriate means for involving this particular minority population. Instead, alternative methods may need to be explored to build their trust and to involve them in ways that are not perceived as threatening.

8.3 Addressing Project Impacts

FHWA policy states the following.

The programs, policies, and activities that will have disproportionately high and adverse effects on minority populations or low-income populations will only be carried out if further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effects are not practicable. In determining whether a mitigation measure or an alternative is practicable, the social, economic (including costs) and environmental effects of avoiding or mitigating the adverse effects will be taken into account. (FHWA 2006)

In addition to the mitigation measures proposed for reducing direct impacts, mitigation approaches increasingly include compensating the community in other ways. For example, community enhancements such as parks, landscaping, or pedestrian amenities may be offered as compensation for the negative impacts resulting from the project. One approach to developing these measures is through a comprehensive public involvement strategy focused on mitigating the action's impacts on the affected communities. Providing benefits that enhance a community can offset a project's adverse effects resulting in a win-win situation.

It is important to document the process followed in determining the appropriate measures to avoid, minimize, or mitigate the project's adverse effects. Good documentation will satisfy state and federal requirements as well as help to communicate the approach and findings to local stakeholders and affected populations.

See the Federal Highway Administration's [Environmental Justice Website](#) for a discussion of relevant case studies and mitigation strategies for addressing environmental justice. Also see

FHWA's [Community Impact Mitigation: Case Studies](#) for a discussion of relevant case studies and mitigation strategies for addressing impacts on communities.

8.4 Additional Resources

- California Department of Transportation. 2003. [Environmental Justice in Transportation Planning and Investments Desk Guide](#). Available: http://www.dot.ca.gov/hq/tpp/offices/opar/ejandtitlevi_files/EJDeskGuideJan03.pdf
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Appendix A - References

The following general list of books, reports, and articles, in conjunction with the various suggestions provided within this volume, should prove useful for preparers of community impact assessments. This list includes reference materials related to the following topics:

- Agriculture and rural lands
- Demography and census
- Economic forecasting and fiscal analysis
- Environmental justice
- Growth inducement and land use
- Planning and socioeconomic assessments
- Public and minority involvement
- Secondary and cumulative impacts

Please note that many of the articles listed below may be available to Caltrans staff using Caltrans computers through the California DOT Library account at Sage Journal Online (<http://jpl.sagepub.com/>).

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Appendix B - Resources Kit

B1 - DATA SOURCES

An Overview on Research Strategies

This Appendix is intended to help environmental planners and others concerned with community impact assessment issues collect the needed information. It concentrates on basic informational sources and publications covering a wide area, with a specific focus on the federal census and state agencies. It also provides several rules of thumb. For some experienced environmental planners, the discussion below will not contribute greatly to their knowledge on how to go about gathering and critically using information and data. On the other hand, some environmental planners have educational backgrounds in vastly different areas than those in which they work and may find this guidance to be useful. No attempt is made here to cover each potential issue area completely, but the Appendix introduces a number of the sources that we have found valuable to other planners working in the social and economic area.

The nature of research, data sources, and their strength and weaknesses are included in the discussion. As was pointed out in Chapter 1 of this volume, the federal and state environmental guidelines call for a level of detail of data collection and analysis consistent with the expected magnitudes of the impacts of the proposed project.

The first question everyone should ask when pursuing information is, "Who already knows what I need to know?" In many cases, in-house staff might have the expertise. Check the [local Caltrans district](#) in the county that is being assessed for additional information. For example, the Economic Analysis Unit in the Caltrans Headquarters Transportation Planning Program may be able to point the environmental planner in the direction of certain broad-coverage economic data and information, depending on the nature of the question. The Caltrans Headquarters Transportation System Information Program has expertise on use of the U.S. Census. Find a well-informed, helpful reference librarian (including the staff of the California State Library Government Section, or the Caltrans Headquarters Transportation Library (916/654-4601) who can assist you in tracking down documents, telephone numbers, and personal contacts. The community impact specialist within the Division of Environmental Analysis may also be of some assistance.

The official website or main library in the town in which the project is located should always be visited by the planner for any projects in which community and land use issues may be prominent. Not only will such sites usually provide important local planning documents, but they will often have links to various community resources and groups as well.

Local newspapers may also have online resources that have past articles indexed. Don't overlook other popular literature abstracts and bibliographies to provide contextual information. Among the most useful in the area of social and economic topics are the: [Wilson Web](#), [Social Sciences Index](#), and [Public Affairs Information Service](#), to name a few.

Government agencies, both federal and state, have resident experts on just about every subject imaginable, so a related question to ask is, —To which agency might this information be important, and who might have collected such data?" In one instance, concerned local officials

questioned Caltrans environmental staff about the economic effects (job losses) of a major project with extensive farmland conversion (due to right-of-way acquisition) on local seasonal laborers. The question led to a call to the state's Employment Development Department which revealed that they had recently had produced a major economic study on essentially the topic of acreage and seasonal labor.

This notion of contacting potentially useful governmental agencies, of course, holds true for locally-generated information and data as well. When searching for information on mobile home parks in a community, for instance, one might find the needed information at the local health department, the planning department, or the tax assessor's office. Many of these local governmental agencies already may have gathered extensive community data, as Chapter 3 in this volume indicates. The most recent data should be used for all analyses. If the only available data is not current, it should be statistically updated using clearly stated assumptions and methodologies.

Read the technical documentation that accompanies each data source. This background material explains how the data was collected and provides definitions of terms used and often reprints the questionnaire used to collect the data. Sources often have biases that must be understood and evaluated when considering the data. Be sure to understand the reason data is collected, combined and/or compared. For instance, the planner should be aware that a city might project its growth differently than the regional councils of government; an apartment-owners association might tally up a different total of available apartment units than the county planners. Perhaps the least unbiased statistical data on social and economic topics are provided by the federal government (although this notion is challenged in Alonso and Starr's book, *The Politics of Numbers*. See Appendix A for full citation). Nevertheless, it is very likely that the planner will be required to link together data from different sources to obtain an integrated picture of the community.

Many social and economic impacts are difficult to quantify. In many cases, random sample surveys (interviews or questionnaires) are the most viable method available to gather these data, although they can become expensive tools. Because surveys can be unintentionally biased (e.g., based upon the wording of the questions, the available answers, when and where the responses are gathered, etc.), only professionals experienced in designing and implementing surveys should be used to assure statistical validity and reliability. There are several good secondary books on survey research methods.

Another option when quantifiable data is scarce is to use the Delphi Technique; that is, form a panel of experts with some knowledge on the subject and have the panel brainstorm the topic at length. Combine that with a judicious use of the secondary literature. It is important to stress that these techniques are called for only with complex projects. Publications from the [American Planning Association](#), [Lincoln Institute of Land Policy](#), [Urban Land Institute](#), and [International City Managers Association](#) may be particularly useful in many of these areas.

By The Numbers

When quantification is possible, numbers may bestow credibility and authority on an issue by pinning down what otherwise might seem a vague generality or unsubstantiated personal

opinion. Putting numbers into studies is a two-part task. Obviously you must obtain the numbers, then you must present them in the clearest and simplest way possible.

Governments—local, state and federal—are the largest collectors and disseminators of statistical data. Associations and institutions covering every imaginable type of activity also generate numbers. Much of this data is available online (see below), although sometimes it may take a few phone calls to obtain the appropriate document, especially if it consists of older information. However, these groups are usually more than happy to give the planner help. If that person or agency does not have the required information, they can often direct you to one that does.

After you gather the data, you must add value to them. This simply means that you interpret the numbers and reorganize them as necessary, making comparisons or doing additional calculations so that the material can be presented as clearly as possible to the readers. Comparing values at different points in time is one way to gain perspective. Another is to compare the local area to that of another nearby area, and usually to the state as a whole. As an example, between 1982 and 1988, statistics indicate that the city of Palo Alto's sales tax revenue climbed 29%. That sounds like a lot—until compared to the county average, which was 48% during the same time span, or neighboring Sunnyvale, which saw a 66% sales tax revenue jump.

When gathering, analyzing, and presenting numerical data, remember that there are significant differences between a median number and an average number. The median is the number at the midpoint in a list of ranked numbers. For example, in comparing 11 items ranked smallest to largest, the sixth item is the median, even if the actual value of that number is not halfway between the highest and the lowest. The average or mean on the other hand is the sum of all divided by the number of observations. In measurement statistics, when data are highly skewed, median is a better statistic to use. Percent-change expresses a ratio between two numbers and gives readers a way to make comparisons. Percentages, however, can be deceiving. If you start with a small base number, small actual gains can produce deceptively large percentage gains. In such cases, the actual numbers should also be given so readers can judge for themselves, or the readers should be told that a particularly large percent increase resulted from a very small base. The following list of sources of information can be used in either the primary or secondary information gathering process as appropriate to the subject:

U. S. Government

U.S. Census Bureau

As discussed in Chapter 3, social and demographic information is gathered and presented online by the U.S. Census Bureau. The most convenient way to find information is from the [American Factfinder](#) portion of the site. Here you can find the data sets for the [Decennial Census](#) dating from 1990. Keep in mind two facts when choosing among files and data. First, data in 100% reports (Short form or Summary File 1) are more accurate than data in sample reports (Long form or SF3). Second, remember the hierarchy principle. More detailed data are reported for areas higher in the geographic hierarchy, such as counties and large cities, rather than small cities, census tracts, and blocks.

Comparing raw data between censuses allows you to measure trends. However, make sure that the boundaries and definitions are consistent. For example, Census 2000 race data are not

directly comparable with data from 1990 and previous censuses, because prior to 2000 respondents could not select more than one race and revisions to race categories were made.

State of California

The [State of California](#) has its own website can provide a wealth of information for the environmental analyst. The following are examples of departments and links that may be useful.

California Resources Agency

The [Land Use Planning Information Network \(LUPIN\)](#) was developed by the State of California Resources Agency to address and support California's land use planning information needs. A project of [CERES \(California Environmental Resources Evaluation System\)](#), [LUPIN](#) utilizes the World Wide Web to disseminate information relevant to land use and environmental planning. Both [CERES](#) and [LUPIN](#) are programs created in cooperation with local, state, and federal government agencies, academic institutions, and community groups. [LUPIN](#) includes: planning-related reports from federal and state agencies, county and city General Plans, environmental documents, legal references, and maps, and other online materials

State Controller

Provides an "Annual Report of Financial Transactions Concerning Cities and Counties of California."

State Board of Equalization (SBE)

Provides information on taxable sales. The SBE will provide you with the name of the owner of a business, its location, the type of business, and starting date (and closing date if it is no longer in business). Another SBE publication, "Taxable Sales in California," reports sales per capita, and by type of store.

Employment Development Department (EDD)

The EDD's [Labor Market Info](#) site provides information on employment, unemployment, hours and earnings, and various special studies. The California EDD makes county- and regional-level estimates and projections of employment by industry and occupation for all of California.

Department of Finance (DOF)

The DOF has many useful publications for demographic and economic research.

Department of Housing & Community Development (HCD)

Provides information on housing elements and other issues, such as affordable housing, mobile homes, etc.

Department of Industrial Relations (DIR)

Information on the California consumer price index can be found here.

Department of Rehabilitation (DOR)

Provides statistical information on disabled Californians.

Other California agencies and departments can be a helpful source, depending on the type of impacts to be studied. Be sure to browse through the State of California Website's [State Agency Directory](#) for other links.

Regional and Local

Cities, counties, and many of their affiliates have their own websites that provide a wide range of useful information, including planning policies, forecasts, population counts, and economic data.

The [California Association of Councils and Governments](#) provides information on California's regional councils of government. As of spring 2011 CALCOG members included the following:

- [Association of Bay Area Governments](#)
- [Association of Monterey Bay Area Governments](#)
- [Butte County Association of Governments](#)
- [Calaveras Council of Governments](#)
- [Coachella Valley Association of Governments](#)
- [Contra Costa Transportation Authority](#)
- [Council of Fresno County Governments](#)
- [Council of San Benito County Governments](#)
- [El Dorado County Transportation Commission](#)
- [Humboldt County Association of Governments](#)
- [Kern Council of Governments](#)
- [Kings County Association of Governments](#)
- [Lake County/City Area Planning Council](#)
- [Los Angeles County Metropolitan Transportation Authority](#)
- [Madera County Transportation Commission](#)
- [Mendocino Council of Governments](#)
- [Merced County Association of Governments](#)
- [Metropolitan Transportation Commission](#)
- [Orange County Council of Governments](#)
- [Orange County Transportation Authority](#)
- [Placer County Transportation Planning Agency](#)
- [Sacramento Area Council of Governments](#)
- [San Bernardino Associated Governments](#)
- [San Diego Association of Governments](#)
- [San Joaquin Council of Governments](#)
- [San Luis Obispo Council of Governments](#)
- [Santa Barbara County Association of Governments](#)
- [Santa Cruz County Regional Transportation Commission](#)
- [Shasta County RTPA](#)
- [Southern California Association of Governments](#)
- [Stanislaus Council of Governments](#)
- [Transportation Agency for Monterey County](#)
- [Tulare County Association of Governments](#)
- [Tuolumne County Transportation Council](#)
- [Ventura County Transportation Commission/Ventura Council of Governments](#)
- [Western Riverside Council of Governments](#)

Additional regional councils of government not belonging to CALCOG include:

- [Amador County Transportation Commission](#)
- [Riverside County Transportation Commission](#)

Other helpful local sources of information include:

- Association of Realtors (local)
- Churches and synagogues
- City and county Tax Assessors office
- Chambers of commerce
- Police and fire departments
- Public utility companies
- School district business office

B2 - SAMPLE INTERVIEW QUESTIONS

The following is a list of questions that may be useful to ask in an interview with selected community members:

1. Are you aware of any prior government agency projects for which a study was prepared and data was collected in your neighborhood? If so, what was the project and what agency was involved?
2. Are there predominant employers that serve the neighborhood?
3. Who would you say are the neighborhood leaders? How long have they been in leadership positions?
4. Would you characterize your neighborhood as close-knit? Do individuals seem to know each other and interact with each other?
5. Do you have a feel for the level of trust that groups or individuals in your neighborhood may have in Caltrans?
6. Is your neighborhood changing? How?
7. What are people's attitudes towards the project?

Remember that this is not a comprehensive list of questions, and it can be modified to better suit the needs of the specific project.

B3 - SAMPLE SURVEY QUESTIONS

The following is a sample of questions that may be useful when soliciting information in a questionnaire format:

First, we want to know how you feel about your neighborhood. (Please mark 'x' in the box beside the best answer, or answer the question to the best of your ability.)

1. Would you say the quality of life in your neighborhood is:

- Improving Getting worse
 Staying the same Don't know/No opinion

2. How is your neighborhood changing? (If you don't think your neighborhood is changing, or if you don't know/have no opinion, then skip to the next question).

3. How do you feel about living in your neighborhood?

4. Do you interact with your neighbors? In what way? How often?

5. What neighborhood businesses, public facilities (parks, senior center, library, etc.), and private facilities (religious institutions, clubs, etc.) do you frequent? Please list them.

6. For those places listed in Question 5, how do you typically get there (car, bike, walk, etc.), and what route do you usually take?

7. How long have you lived in the neighborhood? Years _____

8. Do you plan to remain in the neighborhood? Yes No

9. Do other members of your family live in your neighborhood, but not in your house?
 Yes No

10. Do you feel safe in your neighborhood? If not, please explain. Yes No

11. Did you know about the project before you read this survey? Yes No
 If you answered "Yes," how did you hear about it?

Friends/Neighbors Local Newspaper Project Newsletter

Other (Please indicate) _____

12. How do you feel the project would affect your neighborhood?

13. Studies of similar projects have shown that they created some benefits. Below are some possible benefits of the project. How important is each of these to you?

	Very Low	Low	Medium	High	Very High
A. Faster route in and out of your neighborhood?	<input type="checkbox"/>				
B. Temporary economic boost from work force and related jobs.	<input type="checkbox"/>				
C. Increased commercial services.	<input type="checkbox"/>				
D. Other benefits (Please list and rate)					
_____	<input type="checkbox"/>				
_____	<input type="checkbox"/>				

14. Studies of similar projects have also shown that they created negative effects. Below are some possible negative effects of the project. How important is each of these to you?

	Very Low	Low	Medium	High	Very High
A. Relocation of you, your friends, neighborhood businesses.	<input type="checkbox"/>				
B. Loss of your sense of living in a neighborhood.	<input type="checkbox"/>				
C. Dangerous for children getting to and from school	<input type="checkbox"/>				
D. Some neighborhood residents will move away	<input type="checkbox"/>				
E. Harder to walk through neighborhood	<input type="checkbox"/>				
F. Increased air and noise pollution	<input type="checkbox"/>				
G. More traffic in your neighborhood, harder to get to local streets	<input type="checkbox"/>				
D. Other issues (Please list and rate)					
_____	<input type="checkbox"/>				
_____	<input type="checkbox"/>				
_____	<input type="checkbox"/>				

15. How do you believe the project will affect your neighborhood? (Check as many as apply)

- I will have to move
- My friends will have to move
- My business will have to move
- The project will take a part of my land
- I will end up living too close to the project

- The project will not affect me or my family directly
- Don't know/No opinion
- There are other ways the project will affect me

16. Do you favor the proposed project?

- Yes
- No
- Don't know/No Opinion

Now we would like to know about you. This information would help us to understand what you have told us and what it means to you.

17. What is your gender?

- Male
- Female

18. How old are you?

- 16-30 years old
- 31-40 years old
- 41-50 years old
- 51-60 years old
- 61-70 years old
- 71 years and older

19. Please indicate your level of education

- Did not complete high school
- High school graduate
- Some college
- 2-year college degree
- 4-year college degree
- More than 4 years of college
- Other

20. How many people live in your house, including you?

- 1 person
- 2 persons
- 3 people
- 4 people
- 5 people
- More than 5 people

21. Do you have any children that are of school age?

- Yes
- No

22. What is your race or ethnic background?

- White, except Hispanic
- Hispanic
- American Indian or Alaskan Native
- Asian or Pacific Islander

Black

Other (specify) _____

Thank you very much for your time and help. You can contact our office if you have any questions about the study by writing or calling the contact person below:

Now that you have finished the survey, please put it in the enclosed, postage-paid envelope and place it in the mail by the following date:

B4 - GENERAL COMMUNITY IMPACT ASSESSMENT TECHNIQUES

Technique	Description
Trend Projection and Correlation	These are statistical analysis techniques that make use of historical data to forecast potential future impacts of project alternatives. Trend projection analysis estimates a future condition by extrapolating historical time series data into the future and assuming that the underlying factors that created the observed historical trend will remain substantially the same. Trend correlation analysis determines the most likely future state by examining the observed relationship between one or more factors (independent variables) that create the historical trend (dependant variable) and developing a mathematical model (regression equation) to explain that relationship.
Case Study Comparison	Case study comparison uses the experience of similar transportation actions in other locations to determine potential project impacts. Projects and areas should be as similar as possible in size, project type, location, design, geography, available data sources, and any other relevant characteristic. The technique begins with identifying existing case studies that describe before and after conditions or creating new case studies by collecting the required information through survey, interview, and other secondary data source collection techniques. Next, likely impacts are determined based on the experience of all available case studies and by estimating likely impacts of the proposed project alternatives. Analogies are made and similarities and differences are examined over time or across areas.
Visual Imaging and Computer Simulation	This technique involves the use of computer software to generate a visual simulation of the project corridor with and without proposed project alternatives. It can be used to compare and contrast the potential impacts of various project alignments and design concepts in a manner that is simple to comprehend. It gives the user the capacity to ask "what if" questions that can be answered visually using the simulation procedure.
Geographic Information Systems/Mapping Overlays	This technique involves superimposing various corridor features (physical characteristics, demographics, and project alternatives) to analyze and understand spatial relationships. GIS has the capacity to store and process enormous amounts of data and can perform numerous analytical tasks including determining physical proximity. For example, noise contour data can be compared to minority population data to determine potential environmental justice issues. A wide variety of information is available from many public and private sources, dramatically reducing data collection time.
Panel or Peer Review	This technique solicits the expert opinion of knowledgeable professionals in a face-to-face environment to estimate likely project alternative impacts. The analyst provides the expert panelists with background information and facilitates a discussion on likely outcomes. Because the experts are gathered together in a meeting, each has an opportunity to argue his or her point of view and be persuaded by other points of view. This can lead to a deeper understanding of each expert's opinion, but can also allow dominant personalities to overwhelm equally valid positions. The desired outcome is consensus on potential project impacts.
Charrette	A charrette is a meeting of stakeholders and interested parties to resolve a problem or focus on a single issue with a range of potential solutions. Within a specific length of time, participants work together intensively to reach a resolution and consensus. In a charrette, issues requiring resolution are defined. Then participants are broken into small groups, each assigned a specific issue or part of an issue to resolve. Staff members facilitate the process and provide technical support. Each group develops solutions to an issue and shares their ideas with the broader group. The whole group then discusses the solutions and consensus is reached.
Brainstorming	Brainstorming is the generation of ideas through quick response reactions in a freethinking forum. In a brainstorming session, a group of stakeholders are asked to respond to a series of questions and situations. All ideas are listed without comment or evaluation. Each idea is then evaluated with participants having the opportunity to ask questions and hear responses from the person who generated the idea. Ideas are then grouped and consensus is reached.
Delphi Technique	The Delphi technique is a systematic, structured way to use expert opinion to determine likely project impacts. Experts provide their judgments about the potential impacts of project alternatives anonymously by responding to several rounds of questionnaires. Each expert is originally provided with the same background material from which to develop their opinions and a questionnaire to complete. The first questionnaire, in most cases, consists of open-ended questions. The analyst summarizes and statistically analyzes the

	<p>results of the first round and submits the results to the experts for their reconsideration and response along with a new, often more structured, questionnaire. This continues for several rounds until consensus or a clearly defined difference of opinion is reached. The process differs from other expert opinion techniques in that it allows experts to reconsider their opinion in light of other reasoned opinions without allowing lobbying or other personal interaction.</p>
Scenario Writing	<p>Scenario writing attempts to anticipate a possible future condition based on a series of probable events given a set of assumptions. Scenarios are written out in narrative form starting with the present condition and moving logically through time to a predetermined horizon year. Between those two fixed points in time, the narrative assumes a logical progression of as many hypothetical developments and changing conditions as is possible. In that manner, all possible conditions can be accounted for and logically incorporated into the progression of the scenario until the horizon year is reached. The basic steps include developing a vision of the future, developing a problem statement and a list of critical issues, selecting a horizon year for the potential future scenario, collecting relevant data and information, and writing out the possible scenarios including any and all logical and potential information.</p>
Alternative Futures	<p>The alternative futures technique focuses on specific problems or issues through the development of multiple broad visions of future conditions. Comparing several possible future visions based around the same issue provides a better sense of possible causes and effects related to project design and potential project alternative impacts. The technique focuses on what conditions can coexist together, not on how they developed. This technique allows the visions of more than one stakeholder group to be considered simultaneously and focuses on specific endpoints such as community aesthetics or cohesion.</p>
Indicators Analysis	<p>Indicators use relatively small, measurable pieces of information to represent broader community issues and conditions. For example, neighbor-to-neighbor interaction can be used as an indicator of community cohesion. Indicators analysis involves the collection of specific, measurable pieces of data and the comparison of that data against a pre-established standard or goal. Assessing a number of indicators as a whole provides insight into the general socioeconomic condition of a neighborhood or community. Tracking a set of indicators over time provides a means for assessing relative changes in that socio-economic condition. Indicator analysis can be used to 1) assess socio-economic conditions within a community or neighborhood, 2) develop policy and evaluate the efficacy of existing government activities and programs, and 3) compare conditions between two or more neighborhoods or communities.</p>
Matrices	<p>A project evaluation matrix is a grid on which two distinct lists are arranged (e.g., project alternatives along the side and potential social impacts across the top) for the purpose of comparison. The relative effects of various actions can be determined by comparing the values, descriptive or numerical, in a given cell of the grid. A scoring or ranking system and a weighting system can be applied to the various interactions to assist the decision-making process.</p>
Focus Groups	<p>A focus group is a carefully planned discussion that is designed to obtain perceptions on a defined area of interest. It is facilitated by a person knowledgeable of group dynamics and the topic of discussion. The emphasis is on revealing perspectives, insights, and opinions of participants through conversation and interaction. Successful focus groups require a well-defined purpose. Once the purpose has been defined, the analyst must determine who can provide the needed information. Focus group participants are typically from homogeneous target populations to ensure that they feel comfortable speaking in the group atmosphere. All participants should share some important characteristics that have been determined based on the purpose of the focus group research. Typically, at least two focus groups are held with each targeted population group so that data can be compared and contrasted. The result is information related to the opinions of local people that can provide insight into public reactions to specific issues at one point in time.</p>
Checklists	<p>Checklists provide a list of common or likely impacts along with questions related to the factors that contribute to those impacts. Checklists structure the analysis process and reduce the likelihood that effects will be overlooked. They also provide a means of concisely presenting potential impacts.</p>
Visual Preference Surveys	<p>Visual preference surveys are used to identify community and design characteristics that stakeholders prefer. In this technique, images are displayed for about 5 seconds and</p>

	<p>stakeholders are asked to rank their initial reaction to the image on a scale from -10 to +10. The results are then tallied by adding the total points and dividing by the number of participants. The results can be sorted in a variety of ways to gain insight into stakeholder preferences.</p>
<p>Nominal Group Method</p>	<p>In the nominal group process, participants come together in a nonthreatening group situation where balanced input from all parties is ensured and each participant's unique knowledge and experience is utilized. The meeting facilitator presents the topic or issue that is the focus of the meeting, often in a question format. Participants are asked to write as many responses or ideas as possible. A round robin discussion of all the ideas and responses follows and all are listed, clarified, and discussed. Participants are then asked to rank or prioritize the list of ideas or responses in order of importance. This approach is very useful in a group setting as it allows for and encourages the individual generation of ideas without the possibility of dominance by an individual group member.</p>

Appendix C – Relocations

C1 - INTRODUCTION

Environmental Planners and consultants who prepare community impact assessment studies for Caltrans should have a basic understanding of the relocation laws and provisions with which the Department works. It should be understood at the outset that relocation assistance is fairly complex. This appendix is general in nature and is not intended to be a complete statement of federal and state relocation laws and regulations. Any questions concerning relocation should be addressed to Caltrans right-of-way staff. This section provides some general descriptive information on Public Law (PL) 91-646, the [Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended in 1987](#). This is often referred to simply as the "Uniform Act." The information in this Appendix is provided only as background and is not intended as a complete statement of all the state or federal laws and regulations; for specific details the planner should contact the appropriate Caltrans District Right-of-Way Relocation Branch. After presenting an outline of the basic legal foundation for relocation policy, this appendix looks at important relocation assistance information, including advisory services and the payment program. Refer to the [Caltrans Right of Way Manual Chapter 10](#), for more detailed and specific information regarding relocation and housing programs. Also, see the following Caltrans brochures for information regarding relocation assistance for businesses and farms, mobile homes, and residences:

- [Business Relocation Brochure \(pdf\)](#)
- [Mobile Home Relocation Assistance Program \(pdf\)](#)
- [Relocation Assistance for Residential Relocation \(English\) \(pdf\)](#)

C2 - DECLARATION OF POLICY

"The purpose of this title is to establish a *uniform policy for fair and equitable treatment* of persons displaced as a result of federal and federally assisted programs in order that such persons *shall not suffer disproportionate injuries* as a result of programs designed for the benefit of the public as a whole."

The Fifth Amendment to the U.S. Constitution states, "No Person shall...be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation." The Uniform Act sets forth in statute the due process that must be followed in real property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 Code of Federal Regulations, Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments, as discussed below.

C3 - FAIR HOUSING

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This Act, as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are

decent, safe, and sanitary and are within their financial means. This policy, however, does not require Caltrans to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized, and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the first written offer to purchase, owner-occupants are given a detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted soon after the first written offer to purchase, and also are given a detailed explanation of the Caltrans Relocation Program. To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Caltrans relocation advisor.

C4 - RELOCATION ASSISTANCE ADVISORY SERVICES

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, Caltrans will provide relocation advisory assistance to any person, business, farm, or nonprofit organization displaced as a result of the acquisition of real property for public use. Caltrans will assist displacees in obtaining comparable replacement housing by providing current and continuing information on the availability and prices of both houses for sale and rental units that are "decent, safe, and sanitary." Nonresidential displacees will receive information on comparable properties for lease or purchase (see below for business, farm, and nonprofit organization relocation services).

Residential replacement dwellings will be in equal or better neighborhoods at rents or prices within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning federal and state assisted housing programs, and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Occupants eligible for relocation payment(s) will not be required to move unless at least one comparable "decent, safe, and sanitary" replacement residence, available on the market, is offered to them by Caltrans.

C5 - RESIDENTIAL RELOCATION PAYMENT PROGRAM

The Relocation Payment Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for, or incidental to, the purchase or rental of the replacement dwellings and actual reasonable moving expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Program can be summarized as follows:

Moving Costs

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule.

Purchase Supplement

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 180 days or more prior to the date of the first written offer to purchase the property, may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate. Rental Supplement

Tenants who have occupied the property to be acquired by Caltrans for 90-179 days prior to the date of the first written offer to purchase may qualify to receive a rental differential payment. This payment is made when Caltrans determines that the cost to rent a comparable “decent, safe, and sanitary” replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the — Down Payment” section below. In addition to the occupancy requirements, in order to receive any relocation benefits the displaced person must buy or rent and occupy a — decent, safe, and sanitary” replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment

The down payment option has been designed to aid owner occupants of 90-179 days and tenants with no less than 90 days of continuous occupancy prior to Caltrans first written offer. The down payment and incidental expenses cannot exceed the maximum payment of \$5,250. The one year eligibility period in which to purchase and occupy a “decent, safe, and sanitary” replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 CFR 24) contain the policy and procedure for implementing the Last Resort Housing Program on federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been designed primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing payments exceed the \$5,250 and \$22,500 limits of the standard relocation procedure, because either the displacee lacks the

financial ability or other valid circumstances. In certain exceptional situations, Last Resort Housing may also be used for tenants of less than 90 days.

After the first written offer to acquire the property has been made, Caltrans will, within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Preferences in area of relocation;
- Number of people to be displaced and the distribution of adults and children according to age and sex;
- Location of school and employment;
- Specific arrangements needed to accommodate the special needs of any family member(s); and
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family.

C6 - NONRESIDENTIAL RELOCATION ASSISTANCE PROGRAM

The Nonresidential Relocation assistance Program provides assistance to businesses, farms, and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs. The types of payments available to eligible businesses, farms, and nonprofit organizations are searching and moving expenses, and possibly reestablishment expenses or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payments types can be summarized as follows:

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property; dismantling; disconnecting; crating; packing; loading; insuring; transporting; unloading; unpacking; and reconnecting of personal property.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move.
- Expenses related to searching for a new business site, up to \$1,000 for reasonable expenses actually incurred.

Reestablishment Expenses

Reestablishment expenses related to the operation of the business at the new location, up to \$10,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment

A fixed payment in lieu of moving, searching, and reestablishment payments, may be available to businesses which meet certain eligibility requirements. This payment is an amount equal to the

average annual net earnings for the last two taxable years prior to the relocation and may not be less than \$1,000 or more than \$20,000.

C7 - ADDITIONAL INFORMATION

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or resources for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, local —Section 8” Housing Programs, or other federal assistance programs.

Any person, business, farm, or nonprofit organization which has been refused a relocation payment by the Caltrans relocation advisor or believes that the payment(s) offered by the agency are inadequate, may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a public project. A list of ineligible expenses can be obtained from Caltrans right-of-way staff. California's law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

Appendix D – Transportation Effects on Property Values

D1 - TRANSPORTATION EFFECTS ON PROPERTY VALUES

In California, studies of highway effects on residential land and property values date back to at least 1947. Since then, at periodic intervals, the transportation planning community both inside and outside California has revisited the topic. More recently, transit's effect on property values has also been explored. This brief discussion, broken into three main parts, looks at the effects of both freeways and transit on residential property values. It is not meant to provide definitive information but rather serve as background information to help environmental planners understand such issues. The various questions generally revolve around a single basic question: Does the residential neighborhood where a new transportation facility is being proposed suffer economic damage? If yes, then to what extent? A drastic downward shift in property values could also mean, of course, that the local tax base may suffer.

Beginning in 1990, as part of the environmental studies for a major new construction project, Caltrans District 6 sponsored a two-stepped research project on the effects of freeway construction on residential property values. The first step was to have a literature review conducted on the topic by Mara Feeney and Associates, a socioeconomic consulting firm from San Francisco. After the literature search had been completed, Vernazza Wolfe Associates, an economic consulting firm based in Oakland, and Spear Street Advisors, a San Francisco planning firm, jointly performed a detailed analysis of State Route 41 in Fresno. The purpose was to determine the effects of a new freeway on existing single family residential home prices. This appendix summarizes 1) the literature review and 2) the case study on State Route 41 prepared under contract to Caltrans. These studies only related to highways and freeways; however, the final part 3) briefly discusses how transit affects property values.

D2 - LITERATURE REVIEW

The studies surveyed focused on the effects of new, limited-access freeways on property values in nearby residential communities. Areas near interchanges were excluded from most of the studies reviewed in order to avoid skewing the findings because land values in interchange areas frequently soar relative to non-interchange areas (Gamble, et. al. 1974).

Except for two annotated bibliographies, all of the material surveyed consisted of studies researching the socioeconomic impacts of freeway projects. More than a dozen articles detailing the results of more than 20 different studies were reviewed. Two of the studies were conducted by private research firms for state transportation departments, six were research papers presented to the Transportation Research Board, and several others were sponsored by FHWA. Seven of the studies were published between 1971 and 1978; the remaining five were published between 1981 and 1987.

Study Methodologies

The twelve studies reviewed employed a variety of methodologies, with a few using more than one. The method most commonly used was the "comparison control" method in which an impact area adjacent or close to a freeway is compared to a control area further removed from the

freeway. In studies of this type, sales transaction data for the two different areas are analyzed for a particular time period. The control area is as similar to the impact zone as possible in its demographic and physical characteristics. The advantage of this method is that the two areas are compared over an identical time period, and any variables other than the freeway will presumably be acting on both areas simultaneously. It can be very difficult, however, to ensure that the two zones are identical except for their proximity to the freeway. Other hidden variables may be acting differentially in the two different areas.

Another research method for determining a freeway's effect on property values involves analyzing residential sales transaction data for a particular community before, during, and after construction of a nearby freeway. This "before and after" method was used far less often than the comparison control method in the studies reviewed for this research. Only two of the studies reviewed used this method: Burkhardt (1971) and Allen (1981). In Burkhardt's study, the before and after methodology was used in conjunction with the comparison control methodology.

The advantage of the before and after method is that it allows researchers to examine the changes in property values throughout the entire freeway construction period. Residential property values are tracked from the period before plans for a freeway are common knowledge until the facility has been operational for several years. For this type of study, the pattern of change as well as the final outcome can be observed. One criticism that has been made about the before and after method is that it may incorrectly attribute any increase or decrease in value to the freeway. Other unrelated variables such as regional growth may be acting on the area during this time, and may be very difficult to factor out (Gamble, et. al. 1978).

A few other methods, such as the "case history" method and the "interview and public opinion survey" approach, were also used in the studies surveyed. The case history method, which Burkhardt employs in conjunction with other methods, involves reconstructing trends in property values for different communities near freeways and comparing the different outcomes. For the interview and public survey approach, researchers generally interview property owners to see how property values have been affected by the freeway and to assess owners' attitudes towards the freeway. In Palmquist's study, property owners were interviewed about their perceptions of the adverse and beneficial effects of having a major highway located nearby. These perceptions were then compared with the effects revealed through research on the local real estate market.

Study Findings

Despite the fact that considerable research has been done over the past 30 years to determine the effect of highways on residential property values, there is no consensus on the answer. The difficulty in assessing the precise effect of freeways on property values can be attributed in large part to the fact that property values are a function of so many different variables. These can include nearby land uses, community services such as sewer and water, land use controls, topography, natural amenities, regional growth or decline, prevailing mortgage interest rates, availability of capital funds, and supply and demand in the local real estate market. With all of these variables entering into the equation, separating the effect of the freeway alone, while keeping all of the other variables constant, is an extremely difficult, if not impossible, task. Because each community/freeway interface is influenced by so many different factors and

because the interface varies from case to case, most of the study authors warn that their findings may not be applicable to other situations.

While there was no clear consensus on the question of freeway effects on residential property values in the studies reviewed, a few patterns emerged that warrant discussion. Most of the studies divided the area being analyzed into three distinct zones—one area in which houses abut the freeway right-of-way or are within a block or two of it, a second area in which houses are approximately two to eight blocks from the freeway right-of-way, and a third (control) area that is removed completely from the freeway and studied only for comparison purposes. For the purpose of this discussion, we refer to these three zones as the "abutting", "secondary impact", and "control" zones, respectively. Most of the studies reviewed found that freeway effects on property values differed in the abutting zone and the secondary impact zone.

Effects on Property Values--Abutting Zone

A majority of the studies surveyed found that price appreciation for properties abutting the freeway, or within approximately 500 feet (about 150 meters) of it, lagged behind that of properties in either the secondary impact or control zone. Researchers attributed this slower rate of appreciation primarily to adverse environmental effects such as noise and air pollution from the freeway. The amount of the lag in appreciation due to proximity to the freeway, however, varied from study to study. One study conducted in Northern Virginia from 1962 to 1978 found that properties within 1,125 feet of the freeway appreciated by approximately \$3,000-\$3,500 (in 1978 dollars) less than equivalent properties farther from the freeway, which represented approximately a 5% lag in appreciation (Langley 1981). In another study, researchers found that noise was a significant factor in explaining residential price variation. Data were gathered on all valid property sales between 1969 and 1971 for four residential areas in the eastern U.S. Researchers found that, due to noise pollution, prices for properties abutting the freeway were \$2,050 (or 6.6%) lower than the average price of all properties in the four study areas (Gamble, et. al., 1974).

Two articles reviewed for this research included literature surveys of various studies done on the socioeconomic effects of freeways. The findings of the studies reported in these surveys generally support the findings of the research discussed above. One survey reported that the decrease in property values for houses abutting a freeway ranged from 0.5% in one study (U.S. Department of Transportation 1976) to 16% in another (Gamble, et. al. 1974). In the Gamble survey, the majority of the studies indicated that properties abutting the freeway experienced some loss in value relative to properties farther from the highway.

Of the studies surveyed for this report, only one found no discernible negative effect on property values for homes abutting the freeway being studied. In this study, conducted in the Phoenix, Arizona area, analysis was performed on residential property sales transaction data for sales occurring between 1972 and 1987. The researchers qualified their findings, somewhat, with the reminder that the freeway in question was very well integrated into the adjacent community. The freeway had a beneficial design and adequate rights-of-way. In addition, parks and other amenities were designed around the freeway to preserve the single family residential character of the adjacent neighborhood (Mountain West Research, Inc. 1987).

While the majority of the studies surveyed found some lag in appreciation for properties abutting the freeway, two studies found strong evidence that potential loss in property values is frequently offset by appreciation resulting from the increased accessibility of the area. In those studies where the issue of gain due to increased accessibility was addressed, researchers found there was a net *gain* in abutters' property values relative to properties in the control zone. Study authors attributed this increase in appreciation to the increased desirability of a neighborhood with improved access.

One study examining the issue of appreciation due to increased accessibility was done in the State of Washington for five different study areas. Researchers found that the improved access to residential areas provided by highway construction resulted in property appreciation rates 15% to 17% greater than those of comparable properties lacking such access advantage. Even with properties in close proximity to the freeway, where noise level readings were highest, accessibility-induced property appreciation more than offset noise-induced depreciation, which ranged from 0 to 7.2%. Thus, in this study where both the adverse and positive effects of the freeway could be quantified, the net effect was a gain in value for properties abutting the freeway (Palmquist 1981).

In the second study (Gamble et al. 1974), four residential communities bisected by interstate highways were examined to determine both the effect of regional accessibility and of highway-related disturbances on property values. Data were gathered for all valid property sales from 1969-71. Due to the difficulty and complexity of assessing property value benefits from regional accessibility, only one of the four study communities was analyzed for this type of gain. The results showed that the increase in value for properties in the Impact Zone (composed, in this study, of the abutting and the secondary impact zone) was \$2,950 or almost 9% of the value of the average property. The highway-related adverse environmental effects on abutting properties reduced property values by an average of \$1,518, or almost 4.5%. Thus, abutting properties appreciated 4.5% more than comparable properties in the control zone, but 4.5% less than properties in the secondary impact zone. Researchers determined that the highway-induced benefits that property owners realized in the community as a whole totaled approximately \$5 million, compared to highway-related property value losses of \$303,000. Thus, the freeway was believed to have produced a net gain of approximately \$4.7 million in property values overall, although these were not evenly distributed.

In summary, when reviewing the losses that property owners with homes abutting the freeway suffer, it is important to bear in mind that these losses are only part of the total picture. As Gamble et. al. explain in their study, "The estimates of highway environmental effects on property values are really gross cost figures. To provide a more balanced and realistic view of the effects of a major highway on property values in a residential community, the influence of improved accessibility must also be considered" (1974).

Effects on Property Values- Secondary Zone

For properties in the secondary impact zone, typically 2 to 8 blocks from the freeway right-of-way, most of the studies reported no loss due to adverse environmental effects, and a gain due to increased accessibility for the area. Non-abutting properties in the impact zone also tended to appreciate faster than comparable properties in the control zone, in those cases where the freeway had improved the accessibility of the area. Palmquist's and Gamble's (et. al.) studies

indicated that properties in the secondary impact zone appreciated 9% to 17% compared to comparable properties in the control zone. In the Palmquist study, however, significant appreciation occurred only in those communities where the increase in accessibility was substantial. He found that in the one study area where the freeway was not used by commuters or shoppers, property values did not appreciate significantly.

One study somewhat contradicted the findings done by Palmquist and Gamble, et al. In a study of the Washington Beltway area, which analyzed property transaction data for the years 1962-1978, the researcher found that properties in *both* the abutting and secondary impact zones depreciated by \$3,000-\$3,500 relative to properties in the control zone (Langley 1981). It is, unfortunately, beyond the scope of this review to attempt to reconcile the different findings of the various studies surveyed.

Factors Influencing Effects on Residences

Studies reviewed for this research indicate that certain design factors can influence the direction and magnitude of freeway effects on property values in the adjacent community. These factors are described briefly below.

1. Physical Design

Freeways may be built as either depressed, at-grade, or elevated roads. The choice in design has been observed to affect both the size of the impact zone and the magnitude of the effect that the freeway may have. One study observed that in the case of depressed freeways, effects of the roadway did not seem to penetrate beyond the second block. For surface and elevated highways it was generally necessary to study effects as far as the fourth or fifth block from a roadway. (Burkhardt 1971). This same study found that surface and depressed highways depress land values by 5%.

2. Location/Integration of Freeway Alignment

One study observed that freeway alignments coinciding with pre-existing neighborhood boundaries were substantially less disruptive than rights-of-way through established neighborhoods (Burkhardt 1983). In addition, in the Arizona study previously mentioned where the freeway was not found to adversely affect property values, the road was a depressed design with pedestrian walkways connecting the community to parks on the other side of the freeway. The authors attributed the minimal impact of the freeway, in large part, to how well-integrated it was with the community (Mountain West Research, Inc., 1987). Another study asserted that parks along a freeway seem to equalize the land value differential between properties close to the freeway and those farther away (Burkhardt 1971).

3. Noise Impact

Noise is the adverse highway effect mentioned most often when residents near freeways are questioned about freeway environmental effects. Objectionable noise is generally considered to be in the 50 to 90 decibel (dBA) range (U.S. Department of Transportation 1976). Sound in this range will not cause physical harm, such as hearing loss, but may cause lack of sleep or interrupt normal speech.

A relatively consistent finding in the literature surveyed is that adverse property value impacts due to noise are caused only when noise exceeds a certain threshold level. One researcher estimated that this threshold level was 10 dBA above the ambient noise level in a given residential area (Gamble, et. al. 1974). Another study found that once the noise level exceeded 70-73 dBA it strongly correlated to lower housing prices (Hall et. al. 1978). In summary, while researchers did not agree on the exact threshold level or the dollar value per decibel of noise, most of the studies did find a strong correlation between noise levels (generally above 70 dBA) and depreciation (or slower appreciation) in housing prices.

4. Accessibility

In both studies that examined the effect of increased accessibility on property values, researchers found that the gain in accessibility was reflected in housing prices. Palmquist's study found, in addition, that the magnitude of the gain depended on the magnitude of the increase in accessibility. Where the freeway was used on a daily basis by community residents for commuting, shopping, etc., housing prices increased substantially. In the case where the freeway was not used for these purposes, especially with regard to work trips, the gains were not significant. Where improvement in accessibility was substantial, property values increased by 12% or more relative to properties without such access opportunities (Palmquist 1981).

Conclusions

Because the studies reviewed present conflicting findings about the effects of freeway construction on residential property values, they do not provide a reliable basis upon which to predict the property value effects of future freeway construction. Most researchers concluded their studies by saying that additional research is needed on this topic, and they cautioned against generalizing from their findings in a particular case study to other freeway construction situations.

In spite of the absence of a reliable predictive model, the majority of the studies point to recurring patterns in the effect of freeways on residential property values. Most studies recognize that freeway construction can produce conflicting influences on property values. On the one hand, adverse environmental effects, especially noise, can adversely affect property value appreciation, while the improved access provided by the freeway can positively influence property values. Most studies documented a strong "distance-decay" relationship for freeway effects on adjacent neighborhoods. That is, adverse environmental effects associated with the freeway decrease rapidly as one moves away from the freeway alignment.

From the studies reviewed, it appears that properties abutting the freeway or in very close proximity to it (generally within a block or two) appear to suffer most of the adverse effects from the freeway. While a majority of the studies found that these abutting properties do not appreciate as rapidly as other properties, several studies determined that there is a net gain in value in the general vicinity of the freeway due to increased accessibility. In those studies where the adverse and beneficial effects of freeways were quantified, houses in both the abutting and the secondary impact zone appreciated more than comparable properties in the control zone. One study, however, did show a loss in value for all properties in the impact zone relative to the control zone. Variables such as freeway design, location, and integration into the community appear to influence the direction and magnitude of highway effects on property values.

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D3 - ROUTE 41 EFFECTS ON HOUSING PRICES

Methodology

Researchers from Vernazza Wolfe Associates, Inc., and Spear Street Advisors, Inc., analyzed all sales transactions of single family detached homes in four census tracts in Fresno in the years between 1981 and 1990. The sales information, obtained from a computerized information service that collects data directly from the County Assessor's Office, was supplemented with information on detailed location characteristics. A comparison-control method was used: housing transactions in three "impact" or freeway areas were compared to transactions in an adjacent control area.

Two principal types of analyses were conducted. The first was an analysis of prices (using multiple regression) to determine the relative importance of 14 independent variables on sales price (constant dollars). These variables included housing and block characteristics, as well as factors such as distance from the freeway, visibility of the facility, and noise. In the full model, the freeway factors were not as significant as housing characteristics, such as square feet of improvements or lot area. Of the freeway variables, visibility was the most important. The variables included in the full model explained approximately 66% of the variation in sales prices of houses that sold between 1981 and 1990.

The second type of analysis performed was an examination of house price appreciation over the same time span (1981-1990). Two types of appreciation were defined and studied. This analysis examined the difference in sales prices by map area on an annual basis. There was no discernible freeway effect on price appreciation when comparing the rates of appreciation of the impact areas with the control area. This finding also applied when appreciation rates at various distances from SR 41 were compared.

Findings

Based upon the research and both regression and price appreciation analysis performed, the consultants concluded that the presence of SR 41 did not substantially affect sales prices in residential areas adjacent to the facility. The study concluded that it is the visibility of the freeway that may influence selling price and not distance or noise. As a result, the researchers generally concluded that the more the visibility of a new freeway is reduced, the less it would determine the sales price of homes sold in the area.

The preceding Part B was adapted from: Marian Wolfe, "Housing Price Impacts on Route 41." *California Planner*. October 1992, p. 5.

D4 - TRANSIT AFFECTS ON PROPERTY VALUES

The following is a summary of a study conducted by the Joint Center for Marketing Research at Rice University in Houston, Texas. The Joint Center has since dissolved. This summary was published in the Transportation Research Board's *Newsline* (Volume 16, Number 4, October 1990).

Transit, particularly fixed-facility transit, significantly affects property values in the areas it serves. Because transit costs are borne by a combination of users, taxpayers, and landowners in the area of the transit system, the beneficiaries may be required to return a portion of the value they receive from the transit service through special taxes, donations, or in other ways. So that the burden of costs may be shared as equitably as possible, the economic benefits received by each group should be better understood. The study, *Assessment of Changes in Property Values in Transit Areas*, was carried out to provide information on the benefits that accrued to property owners from the impact of transit on surrounding land values.

Transit can affect property values in several stages, such as route selection, site selection, clearance and displacement, construction, early operation, and mature operation. The value of the property may change by a considerable amount. Transit service may enhance the value of nearby properties because it provides greater accessibility and visibility; on the other hand, it may depress the value of surrounding areas because of noise, pollution, temporary disruption due to construction, permanent isolation of some properties, and other incidental effects.

The researchers admit that the impact of a transit station is due to factors so completely intertwined that it may be meaningless to consider them separately. The station is typically built in an area chosen for its high growth potential, and many stations are coupled with value enhancers, such as special zoning ordinances, to encourage nearby developments. Even if complete information were available on rents, occupancies, sales prices, and other relevant factors, it would still be impossible to trace changes in values to one particular factor.

The researchers reached certain conclusions on the basis of studies and interviews in nine U.S. and two Canadian cities. From a review of the literature, it appeared that the total increase in land value attributable solely to the introduction of rapid transit service may have been more than 100 percent of the total construction cost of the service. This appeared to be true for commercial and residential area near the Washington Metro system and for residential areas near the Lindenwold rapid transit line linking Philadelphia and its New Jersey suburbs. The public sector has taken only limited advantage of the increased land values to offset the capital and operating costs of the system; the main beneficiaries of the increase in property values have been the landowners near the stations.

Major rapid transit construction projects have significantly affected the location of new commercial development. Transit stations have been magnets for new development, particularly in the central business district (CBD). For example, in Toronto 90% of all new office construction has occurred around rapid transit stations, whereas in Washington D.C., 48% of all commercial and 36% of all new construction has taken place in station areas. Commercial and office rentals have usually increased with access or proximity to the transit station, and rent premiums of 10% are common. Researchers found that the value of commercial land could rise substantially by virtue of being near a transit station; increases in values of 100 to 300 percent were not uncommon. In fact, the Bay Area Rapid Transit studies found that the value of land near the stations (within about 100 ft) increased significantly even before the introduction of rail service; however, at the same time, property 1,000 feet away from the station site suffered a slight decline in value.

As might be expected, the value of CBD land near stations usually increased more than the value of suburban land near stations. Major rapid transit systems helped maintain the economic viability of downtown areas, which is important for cities trying to keep their downtowns strong. For example, retail activity in CBDs of large metropolitan areas with a new rapid transit system was usually healthier than that in CBDs without rapid transit.

The advent of rapid transit caused residential land values and rents to vary dramatically. Even within one metropolitan area, there were significant differences, and those differences certainly existed between metropolitan areas. Differences may also be related to the type of housing (single- or multi-family). Planned medium-to-high-density units close to stations tended to increase in value. The increase in land values was directly related to the degree of increased accessibility provided. This was especially true in congested areas. For example, new freeways greatly increased property values near metropolitan areas; interchange areas increased in value well over 1,000% depending on the location of the interchange.

Researchers found that the increase in development due to mass transit systems was not automatic. Strong market demand and hospitable planning, zoning, and taxing strategies were required before changes were likely. Highway access availability was another major factor affecting land values.

Incentives provided by the public sector could affect substantially the timing and intensity of private development around rapid transit stations. It was found that light rail systems had considerable potential for changing land uses if other pro-development forces were present. No positive impacts on land values, however, resulted from transit mall construction.

In the local surveys, significant changes in land value were found at stations combining transit access with zoning changes. Moreover, higher-class office centers tended to be developed, which forced less intensive land uses to locate elsewhere. The effect of rapid transit on land values became most pronounced when it was combined with density control changes.

There was general agreement that a project near a station would lease faster than a project located away from a station. Proximity to a rapid transit station was assessed to be a property amenity but not an explicit cause for a rent premium. If stations were located in high-growth areas, and if location decision was part of an overall land use planning program involving regulatory changes, the impacts on surrounding property could be substantial but difficult to attribute to any single cause. Transit system impacts may fall short of expectations.

Appendix E – Ramp Closures

The following serves as an example of a requisite study that was prepared to address temporary ramp closures. Places and names have been changed from their true identity. Exhibits which accompanied the original report, depicting specific project configuration details and minutes of a meeting between the hospital and Caltrans staff, are not reproduced here. This sample was adopted from a study report prepared by Mr. Cleve Govan, Senior Environmental Planner, Caltrans.

This report was prepared to address the impacts of temporarily closing on- and off-ramps along I-222. These ramp closings are necessitated by the proposed project which requires the widening of the I-222 freeway in the vicinity of O'Brien Street. In order to prevent the purchase of additional right-of-way, the construction of many retaining walls is required as the new ramps are built using the location of the old ramps. Consequently, it is not feasible to stage the work allowing the old ramps to remain in operation while the new ramps are constructed. The new O'Brien Street Park-and-Ride lot will be constructed on the west side of the I-222 freeway, north of O'Brien Street, at the site of the Egyptian Restaurant.

The existing ramp system provides direct access to and from O'Brien Street for southbound freeway vehicles. Northbound freeway access to and from O'Brien Street is provided via Letterman Avenue. The on-ramps will be closed for a period of two years and the off-ramps will be closed for a duration of 6 to 9 months.

A brief description of the project area is as follows: The immediate project vicinity is the commercial area along O'Brien Street to the east and west of I-222, roughly between Letterman Avenue and Leno Boulevard. Letterman Avenue and Leno Boulevard are north-south arterials paralleling the I-222 freeway to the east and west, respectively. The portions of these arterials between 14th and 20th Streets are also considered part of the immediate project vicinity.

Typical businesses along O'Brien Street include service stations, fast food restaurants, mini-malls, small private business establishments (including a thrift store and real estate office), and professional buildings. Land use along Letterman Avenue ranges from a liquor store and a veterinary facility to apartments, condominiums, single-family dwellings, and convalescent hospitals. Land use along Leno Boulevard is more of a light-industrial nature, with a car wash, lumber company, light manufacturing facilities, a vacant nursery, a Chinese restaurant, and several convalescent hospitals. The Twinkle Star Trailer Court is on the east side of Leno Boulevard, extending along the north side of 20th Street and abutting the freeway right-of-way, and paralleling the west side of the freeway north to O'Brien Street. Perhaps the most sensitive land use in the project area is the Lucky Clover Medical Center at the southwest quadrant of O'Brien Street and Leno Blvd. The main building of the facility dates to 1962, although other structures were built as early as 1943.

The County of Los Angeles/City of Chester corporate boundary traverses the project area in a north-south fashion parallel to, and just east of, I-222. The Lucky Clover Medical Center is west of the corporate boundary in the unincorporated county area. The Medical Center is a major

provider of health care in the area. It also provides emergency services, and potential impacts to emergency vehicle access to the health facility were one of Caltrans' major concerns.

All of the businesses and non-profit organizations in the project area, including the Lucky Clover Medical Center, have a portion of their respective patrons that arrive and exit by the O'Brien Street on- and off-ramps from I-222. These ramps also serve the nearby residential areas, as previously noted, as well as the more distant communities of Brookfall and Eagles Nest.

Patrons seeking access from I-222 freeway to the business establishments in the project area will need to find alternative routes. Fortunately, such alternative routes do exist. I-222 south-bound traffic to O'Brien Street would exit the off-ramp at 23rd Street (.5 mile to the south), and backtrack to O'Brien Street along Letterman Avenue or Leno Blvd.; or exit at Java Road (.8 mile to the north) via Tea Avenue to proceed to the project area. Likewise, I-222 northbound off-ramp traffic to O'Brien Street would exit at Rodeo Street (1.7 miles to the south), and proceed to the project area along Letterman Avenue or Leno Blvd.; or, exit at Java Road via Letterman Avenue or Leno Blvd. Southbound and northbound on-ramps from O'Brien Street will be closed, with alternate freeway access from 23rd Street or Java Road via Tea Avenue, and Rodeo St. or Java Road via Letterman Avenue, respectively.

Because there are viable alternative routes to and from the commercial area along O'Brien Street and Letterman Avenue and Leno Blvd., it appears that potential business patrons would have adequate access to the project area during the ramp closure period. Likewise, access to residences in the project area or more distant residential communities would not be adversely impacted. However, due to the emergency access needs of the Lucky Clover Medical Center, Caltrans prepared an access time analysis to determine the additional time required for emergency vehicles to access the Medical Center when using the previously discussed alternative routes. In addition, Caltrans met with Medical Center staff to discuss the ramp closures and identify any of their concerns. The staff indicated that with advance notification and coordination the emergency drivers will be able to cope with the construction schedules. Caltrans resident engineers will work closely with the medical staff.

The access time analysis indicates the extra time required to access the hospital via alternative routes is not inordinate. It takes 1 minute and 22 seconds (on the average) to access the Medical Center from the southbound freeway off-ramp to O'Brien Street. Using this as the base condition, the access times of the alternative routes can be compared. Utilizing the 23rd Street southbound off-ramp route requires 49 additional seconds, while utilizing the Java Road southbound off-ramp requires an additional 1 minute, 14 seconds. Likewise, using the I-222 northbound off-ramp to O'Brien Street takes an average of 3 minutes, 4 seconds to access the Medical Center. Using this as the base condition, it takes 13 seconds longer to access the hospital utilizing the northbound off-ramp to Rodeo Street route, while utilizing the Java Road northbound off-ramp route requires an additional 1 minute, 24 seconds to access the Medical Center.

On September 14, 1994, Caltrans and Lucky Clover Medical Center staffs met at the hospital to allow Caltrans an opportunity to identify any concerns that the institution may have regarding access impacts due to temporarily closing the O'Brien Street ramps.

For northbound motorists, freeway access is provided at Java Road or Rodeo Street. For southbound motorists, freeway access is provided at Rodeo Street, 23rd Street, or Java Road.

As mitigation for the long-term closure of the off-ramps, particularly with regards to emergency vehicle access, Caltrans will require the contractor to complete the off-ramps as a first order of work to insure that the new off-ramps will be in service as soon as possible. The on-ramps would be closed for the duration of the contract.

Because there are viable alternative routes to the project area and access time to the area via these alternative routes is not inordinate, it is concluded that the various businesses and non-profit organizations would not suffer adverse patronage losses during closure of the I-222 freeway on- and off-ramps from and to O'Brien Street. This conclusion is further reinforced by the results of the meeting with the Lucky Clover Medical Center staff as previously discussed.

As demonstrated by the access time analysis, the previously described alternative routes are sufficiently close to O'Brien Street that any driving time adjustments would be less than two minutes. Any inconvenience due to extra driving time would be marginal. Likewise, because driving time adjustments would be minimal, no appreciable increase in energy consumption would result. Even though the O'Brien Street ramp closures do not pose an adverse impact on the businesses in the project area, or surrounding residential communities, the following measures are suggested:

- Notify the local business and commercial concerns of the temporary closure of these ramps and alternative routes.
- Notify emergency public services, such as the Medical Center, fire departments, and local ambulance services.
- Inform the California Highway Patrol and other appropriate law enforcement agencies of the proposed action.
- Notify the County Supervisor's Office and the city in which the ramps are located to discuss the proposal with them.
- If the Supervisor's Office and/or the city deems it worthy, conduct an open house(s) to discuss the proposal for closing the ramps with the public.
- Keep the county and affected city Traffic Engineer apprised.
- Before closing the ramps, mail out informational notices, issue press releases, and make public service radio announcements to inform the public in advance of the closures.