

Chapter 6

Economic Impacts

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 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>