



**Illinois Department
of Transportation**

Community Impact Assessment Manual



COMMUNITY IMPACT ASSESSMENT MANUAL

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1.0 **PREFACE**

The purpose of this guidance is to present information to be used in socioeconomic or community impact assessment, identify data sources, and aid in the evaluation of alternatives for transportation improvements.

This manual is designed to provide accurate, clear, and consistent information to assist Illinois Department of Transportation (IDOT) personnel and consultants in completing community/socioeconomic impact documentation.

1.1 How This Guidance Is Organized

This manual is organized into ten sections for easy reference and access to information:

- 1.0 Preface**
- 2.0 Community Impacts**
- 3.0 Relocation**
- 4.0 Economic Impacts**
- 5.0 Land Use**
- 6.0 Coordination**
- 7.0 Documentation**
- 8.0 Sources of Information**
- 9.0 Glossary of Terms**
- 10.0 Appendices**

The content of this manual encompasses the socioeconomic or community impacts of the environmental assessment process from initiation of a highway project through the various stages of project development, to the concluding stages of the preparation of final documentation. In addition, the manual includes suggestions for mitigation and enhancement efforts that may be appropriate for various projects.

Of the preceding sections listed, each of the four major issue areas, *Community Impacts*, *Relocation*, *Economic Impacts* and *Land Use* is organized in the following manner:

- 1. Introduction and Definition of Issue Areas**
- 2. Level of Involvement**
This section should be used to determine the breadth and depth of project involvement within each socioeconomic issue area.
- 3. Analysis Components**
This section will aid in the specification of individual component parts most relevant to issue areas and the identification of important relationships.
- 4. Types of Analysis**
Various information sources as well as tips on gathering data are included in this section. The best approaches to analysis of the information are also presented here.

5. Analysis of Results

The determination of project effects on the analysis components is described in this section. This portion emphasizes which components are most important to the analysis of potentially significant impacts of various projects. In addition, this section relates the meaning of the analysis results to overall project development. Documentation of the results and the development of alternates are initiated.

6. Mitigation and/or Enhancement Measures

Suggested mitigation/enhancement measures are listed at the conclusion of each issue area text, when appropriate. The mitigation/enhancement measures are presented in list form and are suggested measures from which the analyst may choose appropriate measures to minimize or compensate for project impacts.

Other sections found in this guidance have been included to augment the analysis and documentation required for the major issue areas. These are as follows:

- Coordination
- Documentation
- Sources of Information
- Glossary of Terms
- Bibliography/References
- Appendices

1.2 Important Regulations and Directives for Community Impact Assessment

Highway agencies at both the federal and state levels conducted socioeconomic impact studies as early as the late 1940s. These early studies addressed the negative public reaction to “limited access and bypass highways” that were dotting the countryside. As time passed, citizens began addressing their concerns through concentration on such issues as displacement, accessibility of facilities, employment, the quality of life, and mitigating or avoiding adverse social impacts. These concerns and others are addressed in Title 23 of the United States Code (USC) (“Highways”) and in various other federal laws and regulations, as discussed below.

IDOT has the responsibility to comply with certification acceptance according to the requirements outlined in the Federal Highway Administration (FHWA) rules and regulations (23 CFR 640.109). These requirements include that all federally funded highway projects be designed to minimize adverse economic, social, and environmental impacts. To do this, extensive investigation must be undertaken by the districts and the central office to determine a project’s effect on communities and the environment. As a result, this impact assessment manual was developed to provide the guidance for technical study methods and analyses to develop and support the Division of Highways environmental reports.

The following summary prepared by FHWA includes the various laws, acts, and regulations that represent the underpinnings of socioeconomic/community impact assessment. All analysis and documentation in this area is done to fulfill the various requirements of these policies and acts. Also listed are various guidelines, directives, and technical advisories that are available for reference.

The National Environmental Policy Act of 1969 (NEPA) sets forth a national policy to ensure the protection and enhancement of the human and natural environment. It has been the foundation for specific environmental regulations and actions at both the federal and state levels. There are also agreements between FHWA and other federal agencies, as well as between IDOT and other state agencies that establish procedures now used by the Division of Highways.

National Environmental Policy Act of 1969, P.L. 91-190 (NEPA)

Concern about the impact of man-induced changes on the environment led to a national policy with the passing of this Act. Section 102 of NEPA requires the preparation of an Environmental Impact Statement (EIS) for every major federal action significantly affecting the environment--physical or human. The NEPA process is used to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment.

The mandate set forth in NEPA is further explained, emphasized, and restated in other laws, regulations and guidelines of the federal and state governments and individual agencies. Some state governments have enacted legislation similar to NEPA.

Title I of NEPA sets forth the requirements of agencies for the preparation of environmental documents. Title II of the Act creates the Council on Environmental Quality (CEQ).

The CEQ Regulations on Implementing NEPA Procedures, 40 CFR 1500-1508.

These CEQ regulations set forth the environmental documentation process.

Civil Rights Act of 1964 (42 USC 2000).

Title VI of this Act provides for the civil rights provision of federal statutes. This title also provides for the development of procedures for the collection of statistical data (race, color, national origin, sex, handicap, and age) on participants in, and beneficiaries of, state highway programs; i.e., relocatees, affected citizens, and affected communities.

This Act emphasizes the need to assure that minority groups (elderly, handicapped, racial) are not discriminated against in federal-aid projects and do not shoulder a disproportionate share of the impacts.

**Uniform Relocation Assistance and Real Property Policies Act of 1970 (PL91-646)–
Uniform Relocation Act Amendments of 1987 (Title IV of the Surface Transportation and
Uniform Relocation Assistance Act of 1987, P.L. 100-17).**

The purpose of this Act and its amendments is to “provide for uniform and equitable treatment of persons displaced from their homes, businesses, or farms by federal and federally assisted programs, and to establish uniform and equitable land acquisition policies for federal and federally assisted programs.”

Federal-aid Highway Act of 1970 - Procedures/Processes for Consideration of Social, Economic, and Environmental Effects, 23 USC 109(h) ("Highway").

This section of the code requires the development of guidelines for consideration of social, economic, and environmental effects of proposed highway projects. These provisions state that:

"Not later than July 1, 1972, the Secretary...shall submit to Congress...(and) promulgate guidelines designed to assure that possible adverse economic, social, and environmental effects relating to any proposed project on any Federal-aid system that have been fully considered in developing such project, and that the final decisions on the project are made in the best overall public interest, taking into account the need for fast, safe, and efficient transportation, public services, and the costs of eliminating or minimizing such adverse effects as the following:

1. *air, noise, and water pollution;*
2. *destruction or disruption of man-made and natural resources, aesthetic values, community cohesion, and the availability of public facilities and services;*
3. *adverse employment effects, and tax and property value losses;*
4. *injurious displacement of people, businesses, and farms; and*
5. *disruption of desirable community and regional growth."*

Process Guidelines/State Action Plans resulted from 23 USC 109(h). By the late 1970s, all states had an approved Action Plan in place, and the incorporation of NEPA into state practice was strengthened. With the substance of the Process Guidelines/Action Plans contained in 23 CFR Part 771, as well as within state internal operating manuals, the regulation to develop environment Action Plans was rescinded May 11, 1982. Title 23 USC 109(h), however, remains in effect.

Public Hearings for Certain Highway Projects, 23 USC 128 ("Highways").

This section of the code provides a basis for the investigation of social, economic, and environmental impacts of major highway improvements, and consideration of the consistency of highway plans with urban planning for the community. It states:

"Any State highway department which submits plans for a Federal-aid highway project involving the bypassing of, or going through, any city, town, or village, either incorporated or unincorporated, shall certify to the Secretary that it has had public hearings, or has afforded the opportunity for such hearings, and has considered the economic and social effects of such a location, its impact on the environment, and its consistency with the goals and objectives of such urban planning as has been promulgated by the community."

Environmental Impact and Related Procedures, 23 CFR 771.

This regulation further prescribes the policies and procedures of FHWA and the Federal Transit Administration (FTA formerly UMTA) for implementing NEPA and other environmental laws, and the CEQ regulations. It sets forth all FHWA, FTA, and Department of Transportation (DOT)

requirements for processing highway and transit projects. It further provides that proposed project decisions be in the best overall public interest based on the need for safe and efficient transportation; social, economic, and environmental impacts; and environmental protection goals.

FHWA Technical Advisory, T6640.8A.

This non-regulatory guidance covers the preparation and processing of environmental and Section 4 (f) documents. It should be used to supplement existing knowledge and understanding of the CEQ Regulations for implementing NEPA, 23 CFR 771, and other statutes. It contains guidelines concerning formatting and content for each document section and potential impact area.

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”.

Under this order, federal agencies are directed to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. In general, FHWA must ensure greater public participation, improve research and data collection relating to the health of and environment of minority and low income populations, determine whether an adverse effect has a “disproportionately high” impact on minority or low income populations, and identify minimization or mitigation strategies to reduce impacts on minority and/or low income communities.

1.3 Related Publications and Resources

For a complete listing of FHWA publications including research articles, programs, related guidance and web links, visit www.fhwa.dot.gov. The search option will allow the analyst to access several publications under the heading, “Community Impact Assessment”. In addition, the website www.ciatrans.net can provide the analyst with a comprehensive background on this subject as well as a list of resources, workshop proceedings and conferences.

2.0 COMMUNITY IMPACTS

The community impacts and social issues of a proposed transportation project can vary greatly, depending on the nature and scope of the project. Each of the following items should be included in a community impact assessment:

Community Characteristics, Cohesion and Values

Special Groups/Environmental Justice

Public Facilities/Services

2.1 Important Definitions

Socio-economic analysis of a transportation project begins with a thorough understanding of the local concerns. The following definitions help to identify and clarify those concerns.

A **community** is a body or group of individuals living in residences within the same locality, having common ties or interests and a common character identity. FHWA has defined **community** as “a distinctive, homogeneous, stable, self-contained unit of a larger spatial area defined by geographical boundaries, ethnic, or cultural characteristics of the inhabitants; a psychological unity among the residents; and the concentrated use of the area’s facilities. By contrast, a **neighborhood** is a small social unit based on face-to-face contacts; a community is usually a larger entity with economic, social and perhaps political functions. It usually has a name identity and a number of community service facilities such as business districts, religious institutions, schools, health centers, and fire and police stations. It is a system of social interaction that is influenced by both behavioral and perceptual relationships. Shared perceptions lead to identification with and a commitment to the community as both physical environment and as social system.”

Community characteristics include demographic profiles such as population size, density, average age, and average household income.

Cohesion is the closeness or bond that occurs within a neighborhood or sub-community. The components of cohesion - which can include ethnic and racial composition, age, and the intangible expression of “roots” - combine to create attachment and cohesion.

FHWA defines cohesion as “those behavior or perceptual relationships that are shared among residents of a community that cause the community to be identifiable as a discrete, distinctive geographic entity within the urban pattern. These shared behaviors and feelings bind the community together as a *cohesive* grouping. Cohesion manifests itself in such behavior as: (1) participation in community organizations, (2) neighborhood socializing, and (3) by the use of community facilities. Perceptual manifestations of cohesion include: (1) physiological identification with the neighborhood or community, (2) commitment to it over time, and (3) positive feelings or evaluations concerning it.” Note that rural residents also experience cohesion, in some cases a higher degree of cohesion, based on close dependent relationships brought about by familiar tradition and commitment to the land.

Community values are usually reflected in attitudes based on religion, age, income, and lifestyle. Values directly inspire attitudes toward neighborhood growth, progress, and access changes and are reflected in concerns about the quality of the community or neighborhood.

In summary, this section of the manual examines two types of components of a community: empirical or statistical components (community characteristics) and intangible components (cohesion and values). These two components overlap and are essential to constructing an accurate description of any community or neighborhood affected by a transportation project.

2.2 Context Sensitive Solutions (CSS)

In 2003, Public Act 093-0545 mandated that all states develop a process to incorporate **Context Sensitive Solutions (CSS)** into transportation planning, design, construction and operation. In response, IDOT issued its *Departmental Policy on Context Sensitive Solutions* (D&E-21 – effective 8/1/05).

Context Sensitive Solutions (CSS) is a collaborative approach that involves community residents and stakeholders through early, frequent and meaningful communication in the planning of transportation facilities. Its goal is to provide multimodal transportation solutions for communities that improve safety and mobility and also fit into and reflect their surroundings, or “context”. More information concerning CSS is available on IDOT’s CSS website: <http://www.dot.il.gov/css/home.html>.

2.3 Determining a Project’s Social and Community Impacts

During the initial planning phase of a proposed transportation project that will affect communities, the analyst must determine the extent of involvement the project may have with community or social issues. Decisions regarding potential impacts can best be made by asking questions about community characteristics, cohesion and values, such as the following:

- Are there anticipated short- and long-term changes to neighborhoods in the proposed project area(s)?
- Could the proposed action cause a substantial change in the total population of any community?
- Will there be segmentation, separation, or isolation of some area(s) from the existing community due to physical barriers or access changes?
- Will the proposed action affect income distribution within the community?
- Will there be bypass, or circumvention, of part or all of the community?
- Will the project require relocation of residents?
- Will the short and/or long-term effects alter the quality of life within the community (i.e., historic, environmental, and recreational)?
- Will the major centers of employment be affected?
- What are the existing and proposed land use patterns?

Determining the project’s level of involvement in community issues will help to identify proper documentation requirements, project processing category, and potential mitigation measures.

Identifying Appropriate Components for Analysis of Potential Impacts

The analysis of potential impacts to communities begins with the identification of components appropriate to each project. The following indicators generally provide the most relevant information regarding community characteristics, cohesion, and values:

- Demographic profiles (income, age, education level, employment, and racial/ethnic composition, current and projected population levels)
- Community character (cohesion, values, housing characteristics)
- Neighborhood and community boundaries

A broader explanation of components follows.

Collecting Demographic Information

Demography is defined as the study of the characteristics of human populations, including size, growth, density, distribution, and vital statistics. For the purposes of transportation facilities impact analysis, the following aspects of demography should be considered as appropriate depending upon the scope of the project:

Population Characteristics. Size of study area population (Note: in addition to the estimated study area population [if available] the town or city and county population figures should be compiled).

The analyst should obtain census information (see Section 8.3) for the project area in an effort to establish a community profile and to identify growth trends. This information may be based on the county, city, township, or a statistical area as specific as the tract or block within a community. County and/or state data may be collected in addition to project area statistics, to be used as a basis of comparison. The information collected should be presented in the environmental document. The following table form may be used as appropriate.

Population Data			
Demographic Boundary	1990	2000	% Change
City A	16,988	16,269	-4.2%
City B	45,189	50,675	+10.8%
Census Tract #845	398	560	+28.9%
Census Tract #846	239	220	-7.9%
Township A	6,119	6,364	+4.0%
Township B	1,183	1,283	+8.5%
County A	37,020	40,045	+8.2%
County B	75,641	77,398	+2.3%

Source: U.S. Census Bureau

Data for cities and counties are available from the census and various other sources (see Table 2.4). The most recent data should always be used (except for historical data used to establish trends) and the data source should always be given. If census tract data is included, a map indicating tract numbers in relation to the project area should be included in the environmental document. If growth issues, changes in racial composition, losses in income, etc., are important in the analysis, demographic trends should be emphasized.

Additional demographic information includes the amount of racial, ethnic or religious minorities that are present within the community, median family income and low-income percentages, median age of community residents, educational levels (median years of school completed), employment characteristics and major employers, and housing information. The following tables include examples of this type of data.

Example:

Income and Racial Characteristics

City	Median Family Income	% Families Below Census Poverty Level	% Minority	
			% Black	% Other Minority
City A	\$40,536	15.6%	12%	0.2%
City B	\$65,245	7.3%	6.8%	3.0%
Census Tract #456	\$50,179	17.7%	75%	0.9%
Tract #457	\$65,248	5.8%	85%	2.2%
Tract #459	\$95,629	0.6%	10%	5.0%

Source: U.S. Census Bureau

The project area community(s) should be analyzed for elements of cohesion and values as defined in this section. Generally, inferences regarding cohesion and values can be gained through an examination of demographic characteristics and a field review of the project area.

One empirically sound approach to inference of cohesion is to study the housing characteristics:

- Types and conditions of land use
- Types and condition of structures
- Description of the dwelling units involved in terms of:
 1. Number of units affected
 2. Types of units
 3. Soundness of units
- Type of occupancy
 1. Owner or renter
 2. Tenure of occupancy of residents, compared to the city as a whole (a transitional neighborhood is typically composed of families or single occupants living in one dwelling for five years or less).
- Percent home ownership within project area

Example:

County Housing Characteristics

County	Housing Units	Home-ownership Rate	% of Homes Built Prior to 1960
Alpha	78,201	67.7%	50.8%
Beta	90,914	80.1%	56.5%
Charlie	120,331	76.0%	64.4%
Dog	150,455	85.6%	70.5%

Source: U.S. Census Bureau

Identifying Neighborhood and Community Types

Communities and neighborhoods vary widely in characteristics. They can be differentiated and typified by certain predominant characteristics and delineating physical features including:

Socio-economic:

- Ethnic/racial mix
- Median family income
- Education level
- Median age
- Occupation
- Housing tenure
- Population turnover
- Housing values
- Rent levels

Physical:

- Housing types
- Public and private facilities and services available
- Service area boundaries
- Natural and man-made physical boundaries such as railroads, streets, land-use changes, waterways, topography, open space, etc.

Determining Neighborhoods and Community Boundaries

Neighborhoods – Urban areas in most cases are composed of a mosaic of smaller neighborhood areas, each with a character of its own.

As a general rule, the following factors guide the identification/designation of an area as a neighborhood:

- The area is an immediate residential locale; in many cases, a block.
- The relationship of area residents is based on location (proximity).
- Certain activities are characteristic to the area; specifically, activities which can be termed “neighboring” activities including borrowing, doing favors, mutual aid, and sidewalk socializing.

Communities - On a larger scale, communities can usually be identified by considering such factors as:

- The existence of a self-contained area with well-defined geographic boundaries.
- Areas with distinctive character or areas that are homogeneous and stable.
- There is self-sufficiency within the area, particularly with regard to public facilities and institutions.
- Psychological unity and place identification is evident among the residents of the area.
- Economic, social, political or governmental functions take place within the area.

Boundary Determinations - Note that neighborhoods are usually defined by residents as those areas within restrictive physical boundaries such as railroad tracks, main highways or zoning limits. Neighborhood/community boundaries may be determined by considering the following factors:

- Resident perceptions of boundaries; resident place identification.
- Physical edges or barriers (natural or man-made).
- Homogeneity: socioeconomic, racial, ethnic, housing type, and density.
- Orientation of facilities and institutions.

Deciding Which Types of Analysis Are Appropriate

After completion of the inventory of community characteristics, cohesion, and values, the analysis should proceed to the next phase: comparing potential impacts of the planned improvement with the existing situation.

After the potential impacts to community have been identified, the analyst must choose the proper method of study or approach to investigate the project area and begin to construct a profile of the area based on the gathering of data. Quantitative methods are based upon numerical or statistical data; descriptive methods, in contrast, are qualitative and textual, as in written descriptions rather than numerical calculations. Descriptive analysis is usually based on literature sources and empirical observations.

Where to Find Information for a Study

Information regarding social issues is readily available from both primary and secondary sources. Primary sources include personal interviews, telephone inquiries, consultation with local authorities (regional planning office, chambers of commerce, school officials, etc.), field surveys, published inventory material, results of survey questionnaires, previous public meetings or hearings, and CSS activities. Secondary sources include data from federal and non-federal agencies, library reference material, websites and database information. Secondary sources are particularly useful in identifying the level of knowledge and public participation that can be expected in the project area.

In addition to gathering data from both primary and/or secondary sources, the analyst should conduct an on-site inspection and prepare a Community Inventory Map. This map is useful

during the impact analysis process. The map should indicate neighborhood boundaries, locate existing community facilities, note areas with elderly residents or special needs groups, note current access routes, and indicate other pertinent conditions. The complexity of the inventory map will be directly proportional to the complexity of the proposed scope of work and the community involved.

The analyst will use this map to examine the proposed project from a community impact perspective and analyze each alternate accordingly. The predicted impacts can then be assessed and documented.

The table below contains a list of data requirements and sources that may be useful in the analysis of community characteristics, cohesion, and values.

Information Needed	Sources of Information www.census.gov
Population Characteristics and Trends (May include figures for Region, City, Township, Community and Census Block)	US Dept. of Commerce Bureau of Census-Census Information Available at www.census.gov (see next page for instructions on the use of this website); State Data Center (See DCEO website); Publications & websites of Regional Planning Authorities such as Northeastern Illinois Planning Commission* (Population Forecasts for Chicago Metropolitan Area); IL Dept. of Commerce and Economic Opportunity- www.commerce.state.il.us - "Community Profile" Series
Population, Age, Income, Employment	IL Dept. of Employment Security; IL Dept. of Natural Resources, Topologically Integrated Geographic Referencing (TIGER Files); IL Dept. of Revenue; US Dept. of Commerce, Bureau of the Census; US Dept. of Commerce, Bureau of Economic Analysis
Racial/Ethnic Characteristics and Trends	US Census; Local School Board; Local Planning Authority; State Board of Health; State Data Center; Local Church Officials
Cohesion, Values and Characteristics (Property Values, Housing Densities and Turnover Rate, Rental Levels and Rates)	Local Real Estate Agencies; Newspapers; County Highway Superintendent's Office; Local Planning Authorities; Social Service Agencies; Interviews; Public Participation; Press Releases; Citizens/Neighborhood Groups

Table 2.4 List of Data Requirements and Sources Useful in the Analysis of Community

*The Chicago Area Transportation Study (CATS) (www.catsmpo.com) has joined Northeast Illinois Planning Commission (NIPC) (www.nipc.org) and is now the Chicago Metropolitan Agency for Planning (CMAP) (www.Chicagoareaplanning.org).

Using the U.S. Census Website: [www.Census.gov](http://www.census.gov)

A quick and easy method of obtaining a great amount of demographic information is by using the U.S. Census website. The analyst can follow the steps below to access the website and find detailed demographic information.

- First, go to <http://www.census.gov>.
- Next select “Your Gateway to Census 2000”, then “Demographic Profiles”, then “Summary File 1 (SF1) data set”, and “detailed tables”.
- Next, select the appropriate “Geographic Type”, “State”, “Place” (City) and “Geographic Area” (e.g., “All Census Tracts”).
- Finally, select “Add”; then “Show Result”. The population data will then appear in the selected format.

Most commonly the analyst must find race and income statistics by census tract, and therefore the tract number must be found. To do this, follow the steps below.

- From the main census webpage (www.census.gov), select “Geography – Maps”, then “Map Products”, and “Reference Maps”.
- Next, click on “Census Tract Outline Maps: Description”, “Census Tract Outline Maps (Census 2000)”.
- Next, select “Illinois” and the desired “County”. The file designated “001” shows county level tract numbers, while the file designated “A01” indicates census tracts for cities.

Census tracts should be depicted on the project area and included as an exhibit in the NEPA document or Project Report. See Appendix A for an example.

Once the census tract has been identified, the analyst can find information on race and income. To do this, follow the steps below.

- From the main census webpage (www.census.gov), select “Your Gateway to Census 2000” and “Census 2000 Data Releases”.
- For information on race, choose “Summary File 1”; for income information, choose “Summary File 3”.
- Next, select “Access to all tables and maps in American FactFinder”, then “Quick Tables”.
- Next, select Geographic Type “Census Tract”, then select the state, the county and the tract number(s), then click “Add”, and “Next”. A list of available tables will then appear.
- Select one or more tables, then click “Add” and “Show Results” and the data will appear. (Note: Several census tract numbers can be selected at one time and the information requested will be listed in order on the output page.)

Questions regarding use of the U.S. Census website or the census process in general, including definitions, should be directed to the Department of Commerce and Economic Opportunity State Data Center.

Analyzing Impacts of Project Alternatives on the Affected Community

During the review of existing conditions and identification of potential social impacts, project alternatives will be developed. Each alternative should then be analyzed with regard to potential effects on community characteristics, cohesion, and values.

Direct impacts to a community include severance, access disruption, bisection, and relocation (see Section 3). Direct impacts can occur on both large and small scales. For example, a large-scale social impact to a group could be school access severance or relocation. On a small scale, however, a widening and resurfacing project could eliminate sidewalks for several blocks near a school, thus creating obstacles for children who regularly walk to school.

Cohesion is affected by highway actions that generate changes in the behavioral and perceptual aspects of the community. A decline in organizational participation levels, neighboring, use of community facilities, identification, commitment (stability), and positive evaluations would signal a decrease in cohesion. In contrast, a rise in these factors would indicate an increase in cohesion.

Structurally, a transitional community (residents staying five years or less) will tend to have less cohesion.

Other impacts, such as those associated with the stages of project implementation, should also receive special consideration. The planning stage of a project in itself can produce effects within a neighborhood or community. Location studies and political discussions can create expectations and fears among residents, which can induce migration and create severance of community ties even if construction never takes place. This effect is often called “blight by announcement.” These pre-acquisition effects include:

- Reduced value and marketability in the corridor area that might be displaced
- Change in value or marketability of properties adjacent to the planned development
- Reduced maintenance and improvements and resulting deterioration
- Reduced neighborhood attractiveness or increased motivation for residents to move out of the area
- Real estate speculation
- Formation of neighborhood associations to oppose or support certain alignments
- Political influence by interested parties

The analyst should determine what areas of concern would be affected during successive stages of project implementation. As mentioned above, impacts occur at different times through the life of the project. Disruption of community cohesion, interference with the accessibility of facilities and services, and migration of residents and businesses occur during the system-planning phase. These changes continue to occur during the corridor location phase, project design phase, and right-of-way acquisition/implementation phase. The disruption during construction is direct and short-term (detours, traffic disruption, dirt, dust, run-off, noise, etc.), while the final “use” stage deploys full potential for impacts within the community. Long-term

indirect effects to communities include changes in residential stability and tenure, changes in the degree of integration versus conflict, modified community plans and goals, plans of private interests, and changes in population characteristics (distribution and density).

What the Analysis Components Reveal

Analysis components such as age, income, etc., are important to the extent that they have a potential to anticipate effects. Income levels in the project area, for example, are significant because lower income groups may be more dependent on public transportation and pedestrian facilities. Age of residents will also indicate the degree of adversity associated with the access disruption to nearby facilities because older citizens are often completely dependent on local markets and services. Age is also an indication of mobility and overall demand for automobile transportation. Younger, working age people have the highest demand, especially families with children. A neighborhood with a very young average age of residents, assuming a large population of children, may suggest that special cautionary procedures will be required during construction. Access to school crossings may become an important concern, as well as health effects that may result from construction activities.

The following table may be used as a general gauge when assessing potential impacts:

Characteristic	Greatest Impact or Sensitivity When Values Are:
1. Rate of Housing Turnover	Low
2. Number of School Children per Household	High
3. Percent Handicapped	High
4. Median Income	Low
5. Age of Head of Household	High
6. Persons per Household	High
7. Percent Ethnic or Religious Minority	High
8. Percent Female Head of Household	High
9. Percent Auto Ownership	Low
10. Percent Non-English Speaking	High
11. Percent Foreign-Born	High
12. Percent Tenants	High

Table 2.6 Relative Levels of Potential Impacts

Minimizing Adverse Impacts to a Community

The potential for impacts to social and economic aspects are among the many issues included under NEPA that must be considered during the project-planning phase. Where appropriate, alternatives should be developed that may avoid, minimize, or allow for mitigation of social and/or economic impacts. This is especially vital when a new facility such as a bypass or expressway is proposed. Community impacts such as the number of relocations per alternate, or number of employees laid off due to business closures, should be weighed in the alternative analysis along with natural and cultural resources, land use, loss of prime agricultural land, increasing air and noise pollution, and other potential impacts to the environment.

If it is determined that impacts to a community can be expected from a project, ways to avoid and/or minimize the impacts should be explored. These options typically include alignment adjustments, elevation or depression of the facility, enhanced ingress/egress, or the provision of interchanges or grade crossings.

However, it is not always possible to avoid or minimize impacts or to choose an alternate with the fewest community impacts. When this occurs, mitigation for community impacts is suggested. The following section outlines several approaches and/or ideas that are currently in practice as mitigation or enhancement tools. Examples are also included in the tables below.

The term “mitigation” as used in this context means measures taken to replace or “make whole” that which has been lost due to project impacts. Good examples of mitigation measures are a noise wall or a pedestrian overpass, among others. The concept of “enhancement”, while similar in nature, is not used to alleviate impacts caused by a project. Enhancement measures are best described as actions that go beyond what is required for mitigation; for example, the addition of park benches for the use of the elderly, new public facilities within parks, bikeways and other community-enriching features.

Providing Mitigation for Community Impacts

- Bicycle/Pedestrian Overpasses
- Noise Barrier Walls
- Purchase Land for Future Parkland
- Plant Landscaping to Replace Tree Loss
- Install Special Lighting or Intersection Signals
- Provide Extra-Wide Shoulders for Amish Carriages (Special Amenities for Religious Minorities)
- Add Land to an Existing Park Facility
- Replace Openlands/Wetlands
- Provide Historic Lighting, Signing, and/or Historic Markers

Table 2.7 List of Suggested Mitigation Measures.

Providing Enhancement for Community Impacts

- Public Artwork Installation apart from or as a part of Transportation Facilities
- Plant Trees/Add Landscaping
- Install Park Benches
- Develop Bicycle Trails/Equestrian Trails
- Refurbish Community Building of Significance
- Construct Public Recreational Facilities or Community Centers
- Add Neighborhood Shared Vegetable Gardens
- Install Ball Courts and Playgrounds

Table 2.8 List of Suggested Enhancement Measures.

2.4 Identifying and Assessing the Needs of Special Groups

Title VI of the Civil Rights Act of 1964 includes six categories describing groups of special consideration: age, handicap, color, sex, national origin, and race. Religious groups are protected under the Fair Housing Act. In 1994, Presidential Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” led to the inclusion of low-income groups as those who should be protected from undue hardships.

Many social groups/units are particularly sensitive to social and economic changes brought about by transportation improvements. The following list identifies groups that will require special consideration:

- Low income households
- Ethnic minorities
- Racial minorities
- Elderly
- Handicapped
- Special interest groups (political)
- Religious minorities

Determination of potential impacts to special groups begins with the identification of analysis components for each project. Such components for special groups include the following:

- Racial/ethnic composition and density
- Handicapped populations
- National origin/ethnic neighborhoods
- Average age and density of population
- Percent of special groups to be adversely affected compared to total number of special groups present
- Travel patterns
- Pedestrian volume
- Community interest groups
- Citizen/neighborhood groups
- Political district boundaries

To assess the needs of special groups accurately, the analyst should gather information from existing resources and complete an on-site inspection to confirm geographic locations for the Community Inventory Map. The map should indicate areas of minority residents, low-income families, elderly population concentrations, handicapped residents/work places, etc., and their relationship to the project area. Each project alternate should be superimposed onto existing conditions for comparison of impacts. The information on the Community Inventory Map should be included in all State Improvement Reports, Environmental Assessments, and Environmental Impact Statements.

Determining the Extent of Impacts Upon Special Groups

The extent or level of involvement of highway projects with issues of special groups can be determined by considering the following:

- Are there large populations of minorities within the project area?
- Will neighborhood segmentation occur?
- Are changes in travel time or patterns likely?
- Are there handicapped groups or low-income neighborhoods within the project area?
- Are there retirement homes or nursing homes in the project area?
- Are religious minorities present?
- Are there foreign born or non-English speaking populations in the project area?
- Will there be a permanent disruption of residents from facilities or access to facilities?
- Will there be changes in pedestrian usages?
- Will special relocation needs be involved?

Using the answers to questions such as these, the project analyst can begin to identify, assess, and document the existence of special groups and their unique needs.

Minorities, for example, may face existing problems of segregation or discrimination, which may be compounded by the effects of new highway improvement and result in severance or forced relocation. Ethnic groups residing in close proximity may be particularly sensitive to changes in community cohesion due to the separating influences that new physical parameters can create. Religious minorities such as the Amish regularly use horse-drawn carriages and therefore rely on extra-wide highway shoulders for added safety. Greek Orthodox congregations must walk to mass on certain holy days and would be directly affected by a loss of sidewalks, or the loss of a church in close proximity to their homes.

The following information is a distillation of both Title VI and the Environmental Justice Executive Order. It is included to emphasize the focus of these regulations.

- “No person, because of handicap, age, race, color, sex, or national origin, [shall] be excluded from participating in, or denied benefits of, or be subject to discrimination under any program or activity for which the recipient receives Federal assistance from the Department of Transportation.”
- "Once a deficiency is found, 90 days are allowed to regain compliance with Title VI.”
- “Acts of discriminations which are specifically prohibited include, but are not limited to:
 - Engagement in activities such as the following on the basis of race, sex, physical abilities, color, or national origin:
 - Denying an individual opportunity to participate in the program;
 - Restricting an individual in any way in the enjoyment of any advantage or privilege enjoyed by others receiving such benefits from the program;

- The choosing of a site for the program by the recipient (the state) which would exclude individuals from, deny them the benefits of, or otherwise subject them to discrimination on the basis of race, color, or national origin; or even the attempt to substantially impair or obstruct the benefits through location choice.”
- The process to determine the location of a specific project should include information and deal with questions, such as:

The racial or ethnic character of the portion of the alternate areas in which persons and families will be affected (that is directly displaced or located in areas directly adjoining the road).

The social and economic character of the portion of the alternate areas in which persons and families will be affected (that is directly displaced or located in areas directly adjoining the road).

The social and economic character of the location alternates, including income levels, whether the area is commercial or residential, the approximate number of minority and non-minority owners of businesses and residences.

Whether the location of the facility results in a minority community being bypassed or separated from adjacent areas of the community resulting in some degree of segregation.

Environmental Justice

The requirements of Title VI are fulfilled by including the appropriate demographic information in the NEPA document and by locating and describing any affected groups, as well as assessing anticipated impacts. Similarly, requirements of Executive Order 12898 can be met with the identification of low-income and/or minority groups within a community that may be affected by a proposed project and the assessment of any anticipated impacts (see census website instructions for guidance on determining low-income status). If minorities and/or low-income neighborhoods or areas are to be affected either directly or indirectly, a heightened sensibility to the needs and concerns of minorities and/or low-income groups is required during project planning. This may include intensified public involvement activities to ensure local participation.

The Executive Order was established to guard against “disproportionately high and adverse impacts” to low-income or minority groups due to federally funded projects. “Disproportionately high and adverse impacts” are those that make some individuals or groups better off at the expense of minorities or low-income area residents. It has also been defined as an inequity resulting from a proposed action on a group protected under the Civil Rights Act of 1964. If disproportionately high impacts are expected, it is necessary to demonstrate that the project will fulfill a substantial need, that measures to avoid or reduce the adverse impact are not practicable, or would have other high adverse social, economic or environmental impacts that are more severe, or include costs of extraordinary magnitude. In these cases, it is especially important to weigh the impacts, and to consider a full range of mitigation measures that may reduce the adverse impacts.

IDOT must act in full compliance with Executive Order 12898, and Title VI that assures nondiscrimination.

Analyzing Impacts of Project Alternates on Special Groups

During the planning phase, each alternate should be developed or reviewed with regard to potential impacts to special groups. For example, racial minorities often face discrimination in the form of restricted housing or choices of relocation. They may feel a strong group identity or solidarity and have a dependence on the neighborhood as a major means of socialization and support. Ethnic minorities also experience those conditions, along with strong extended family ties in the locale.

Lower income families may also face limited housing choices if displaced. Most of these groups have specialized local supportive institutions or public-aid services, so consideration should be given to impacts of relocation or access changes. The elderly may have difficulties in obtaining a new mortgage if displaced, since they are usually living on fixed incomes and do not have the resources to pay higher rents. Rent subsidies last only five years under the Uniform Relocation Assistance and Real Property Policies Act. The elderly and handicapped experience physical limitations that limit mobility via automobile or walking. Their attachment to local social contacts and familiar places may be strong.

The analyst should consider both direct and indirect impacts and the project phase (planning, construction, post-construction) during which these impacts are likely to occur. That is, he/she should anticipate that direct effects in the form of physical barriers would take place during project construction, whereas the indirect impacts such as psychological stress (which often affect the elderly) may occur before and after the land acquisition/relocation phase. Vehicular as well as pedestrian access is very important to these groups. Barriers, such as temporary or permanent hindrances to medical emergency services, can be of critical importance to elderly or handicapped individuals. Increased traffic densities near interchanges can mean crucial travel time delays. The possibility of changes in travel times or patterns should be considered as early as possible in planning (also see "Americans with Disabilities Act," 1990, Title II, Title III PL 101-336).

As discussed in the general Community Impacts Section, alternatives should be developed during project planning that would avoid impacts to special groups or minimize and/or mitigate impacts to these individuals or groups. In many cases, special groups are particularly vulnerable to the potential effects of transportation projects. This fact should be considered throughout the project planning and implementation phases. Persons restricted due to prejudice, low incomes, physical or mental impairment, age, or infirmity may lack mobility in varying degrees. Religious communities, such as the Amish or Mennonite, are tightly bound; their farms and homes represent a traditional way of life. When any of these special groups are involved, every effort must be made to avoid or minimize any adverse effects that may occur due to the proposed project. If impacts cannot be avoided, mitigation should be considered.

Mitigation

Special provisions may be required to accommodate the handicapped or elderly during construction. For example, design features such as ramps and temporary or permanent pedestrian facilities may be necessary.

Other mitigation and/or enhancement suggestions may be found in this section under the heading "Minimizing Adverse Impacts to a Community."

Sources of Information

Descriptive analysis (textual and numerical) is most appropriate for assessing the needs of special groups. This analysis should be based on current data obtained from sources such as the following:

- Census information (see instructions for using the census website)
- Statistical abstracts
- Contacts with local church, synagogue, or mosque officials
- Contacts with state consortium of handicapped persons and state associations of retired persons
- On-site review of neighborhood
- Survey of public involvement information resulting from previous public hearings or public information meetings

The following table lists potential sources for analyzing special needs groups.

Information Needed	Source of Information
Racial/Ethnic Composition	U.S. Census; Department of Employment Security; DCEO "Economic Profile" (Series by County and City); Local Realty Boards; Local School Board Surveys; Church Authorities; Local Surveys; Interviews with Leaders of Religious Groups; Board of Education
•Number/Percent Foreign Born	
•Number/Percent Non-English	
•Other Specific Concentrations	
•Trends in Changes in Racial/Ethnic Mix	
Handicapped/Elderly Populations	U.S. Census; Interviews; Public Participation Process; Local Health Officials; State Board of Health; Social Service Agencies
Names of Community Leaders	Interviews with Government Officials; Church Authorities
Political District Boundaries	Local Government Election Boards; U.S. Census Material
Community Interest Groups	Local Planning/Government Officials; Interviews; Press Notices of Group Meetings; Public Participation Process
Pedestrian Patterns and Volumes	Local Planning Studies; Traffic Surveys
Trip Patterns and Volumes	Field Observation Counts; Traffic Counts; Origin/Destination Studies

Table 2.9 List of sources useful for analyzing special needs groups.

Minority communities may not necessarily be racially based. An explanation of the type of minority community should be given in the text. Minorities are **groups** of racial, ethnic, or religious populations. Examples of racial minorities are Hispanic, Asian or African-American. In some communities, the minorities are of European ancestry. Examples of ethnic minorities include foreign-born populations (immigrants) or communities strongly influenced by other countries in terms of cultural identity. Religious groups are exemplified by Amish, Mennonite, Orthodox Jews or other close-culture type communities founded on religious principles.

Note that because the census allows individuals to report that they represent more than one race, the percentages for any given area may exceed 100%. It is also important to distinguish between the U.S. Census Poverty Level and the Department of Health and Human Services (HHS) Poverty Guideline. The census income information is collected every ten years and the percentages below poverty are calculated for households and families of various sizes. For example, the Census 2000 poverty level for a family of four was \$17,029. This statistic should be reported in the environmental document as well as the HHS Guideline. The HHS Guideline is published every year in the Federal Register and it changes annually due to the effects of inflation. The HHS Guideline in 2006 was \$20,000 for a family of four. Therefore, these two statistics will not usually match; however, both should be reported.

Example Table:

Income and Racial Characteristics

Census Tract #	Median Family Income	# Families Below Census Poverty Level*	% Minority	
			% Black	% Other Minority
4901	\$40,536	2.9%	97%	0.2%
4405	(nr)	(nr)	83%	0.0%
4404	\$43,813	15.6%	98%	0.7%
6912	\$22,933	36.4%	98%	1.2%
6911	\$33,958	37.0%	98%	1.0%
6813	\$26,019	35.0%	98%	1.2%
6814	\$31,830	26.4%	98%	0.9%
6718	\$36,375	22.9%	96%	1.2%
6719	\$26,406	23.2%	99%	0.6%
6720	\$31,404	26.6%	98%	1.1%
6715	\$25,750	29.5%	98%	0.9%
6713	\$31,536	31.8%	98%	0.7%
6714	\$33,214	22.2%	98%	0.9%
6705	\$26,741	21.2%	96%	2.8%
6607	\$30,758	30.9%	98%	0.8%
6601	\$50,179	17.7%	92%	4.0%
7103	\$29,125	28.5%	97%	1.3%
7102	\$24,617	38.3%	99%	0.9%
7104	\$40,788	17.9%	98%	0.8%
7105	\$41,828	16.0%	99%	0.6%
7005	\$61,962	5.8%	84%	2.2%
7004	\$59,841	4.6%	49%	12.0%
7001	\$50,298	9.0%	58%	12.0%
6610	\$41,880	12.8%	89%	3.8%
6611	\$46,417	14.2%	46%	22.0%

Source: U.S. Census 2000. Note that percentages may exceed 100% because the Census allowed the reporting of more than one race per person.

*The 2000 Census Poverty Level for a family of four is \$17,029.

The Health and Human Services 2006 Poverty Guideline for a family of four is \$20,000.

2.5 Identifying Community Facilities and Services

Community facilities and services include those organizations, both public and private, which fulfill a social function or provide services to the population of a community. Since individuals depend upon public facilities and services such as schools, hospitals, libraries and recreational facilities, changes in access to these services, no matter how temporary, can seriously affect community members. The loss, through relocation, of an integral service or facility may lead to a decline in quality of life for a given community. For example, the temporary or permanent loss of a community's only ambulance service or a delay in fire department response time due to a road closure can be of critical importance.

Major public facilities include schools and colleges (public and private), religious facilities, health care facilities, recreational, civic (including libraries), historic and cultural facilities (not including parks, wildlife refuges or any area designated as 4(f) properties) and are discussed in the *Biological Resources Manual*. Private facilities and services include private schools, nursing homes, hospitals, religious retreat houses, seminaries, orphanages, funeral homes, ambulance services, and others.

Determining the Extent of Impacts on Community Facilities and Services

The analyst must determine the level of involvement the proposed highway project will have with public and private facilities or services. The following questions should be considered:

- Will there be temporary or permanent access changes to public/private facilities such as hospitals, schools, libraries, police or fire departments?
- Will major services or facilities be altered or displaced?
- Will barrier effects be created?
- Will travel time be altered for vehicular or pedestrian traffic?
- Will land values and usage of existing facilities and services be altered?
- How much of the current clientele will be relocated?
- Will institutions' budgets be affected?
- Are alternate facilities available within a reasonable distance?

Answers to these questions will assist the analyst in identifying the nature and extent of impact the proposed project may have on community facilities and services in the project area.

Identifying Appropriate Components for Analysis

The analysis of potential impacts to community facilities or services should begin with the identification of relevant analysis components as appropriate to each project. Generally, the key components for analysis with regard to facilities and services include the following:

- Educational (number and location of school buildings; size, age and condition of structures; and student enrollment)
- Religious (number and size of churches, synagogues, temples, and mosques)

- Health care facilities (number and location)
- Hospitals (number per capita and location)
- Civic centers (number and location)
- Recreational facilities (type, number and location)
- Commercial services (type, number and location)
- Historic or cultural facilities (type, significance, and location)
- Libraries (main and branch locations)
- Police and fire protection (number and location)

In addition to gathering data from primary or secondary sources, the analyst should complete an on-site inspection for the Community Inventory Map. The map should indicate size and location of public/private services and facilities. The complexity of the inventory map will be proportional to the proposed scope of work and the community involved. The proposed project should be examined or superimposed onto existing conditions. The possible impacts should be assessed and documented.

The following checklist may be useful in the inventory process:

Educational facilities (private and public)

- District boundaries and location of schools
- Size, age, and condition of buildings
- Enrollment
- Ancillary facilities and related neighborhood services (clinics, playgrounds, community centers, etc.)

Religious Facilities

- Number of churches
- Size of buildings
- Membership
- Location of members
- Programs - community oriented or internally oriented
- Dependency, if any, on ethnic membership

Health Care Facilities

- Hospitals
- Clinics
- Doctors' offices

- General health facilities
- Dental facilities

Recreational Facilities

- Amount of open space
- Number and location of existing facilities, outdoor, indoor, community centers

Civic and Quasi-Public Features

- Public buildings
- Agencies or centers
- Libraries

Commercial Facilities**Historic and Cultural Facilities****Police and Fire Stations**

- Location of buildings
- Location of emergency routes

Deciding Upon Appropriate Approaches to Data Gathering

Because of the varied nature of public facilities and services analysis, there is no single entity or source from which all necessary information addressing government structure, public education, police and fire protection, health care, etc. can be obtained ("Socio-economic Impact Analysis Study for Chanute AFB," 1991). Therefore, information regarding staffing levels, clientele, jurisdictional boundaries, degrees of use, and location of facilities and services must usually be obtained either directly from agency representatives or from documents or websites published by each of these entities. For example, information regarding public education is best compiled by contacting the local school board, the Illinois State Board of Education or the Regional Office of Education located in various counties throughout the state. Information regarding other public facilities and services may be obtained in a similar manner.

Descriptive data based on statistical and empirical information are appropriate for this issue area. The following table lists potential sources for analysis of community services and facilities.

Information Needed	Sources of Information
Educational facilities/school districts	State Board of Education, Regional Office of Education, local school board maps and reports, taxing district maps (IL Dept. of Revenue)
• Size, age, condition of building	Local school board, reports, interviews, field surveys
• Enrollment	Local school board data or reports, interviews
• Ancillary facilities information	Local school board reports and interviews
Religious facilities	Newspaper or telephone listings, local planning maps, field surveys
• Number of churches	Newspaper or telephone listings, field surveys
• Size	Field surveys, interviews with clergy
• Membership and location	Interviews with clergy
• Dependency on ethnic membership	Interviews with clergy
Health care facilities	State and local departments of health, hospitals
• Hospitals	Local planning maps, telephone listings, field surveys, interviews
• General health/dental	Field surveys, telephone surveys, interviews
Recreational facilities	Local and state departments of parks and recreation
• Amount of open space	Local planning maps and reports, agency reports, interviews with officials
• Number, location, type	Local planning maps, field surveys, agency maps, reports, interviews
Civic and quasi-public	Local planning maps, field surveys, agency reports, interviews
• Public buildings	Local planning maps, field surveys, agency reports, interviews with officials
• Agencies or centers	Local planning maps, field surveys, agency reports, interviews with officials
• Libraries	Library department reports & interviews, local planning maps
Commercial facilities	Local planning land use surveys and maps
• Employees and customers	Origin and destination studies, interviews with proprietors, license plate surveys
• Location requirements	Interviews with proprietors
• Space requirements	Interviews with proprietors, zoning restrictions
• Labor force requirements	US Economic Census, interviews with proprietors, Bureau of Employment Security
Historical and cultural	Local and state historic societies and commissions, National Historic Register, local planning surveys and maps, field surveys, State Historic Preservation Offices
All facilities and services	Local Planning Authority (LPA) maps, interviews, field surveys
• Locations and service areas	LPA maps, interviews, field surveys, interviews, origin and destination studies, license plate surveys, agency service district boundary maps
• Activity levels	US Economic Census, sales tax data, agency reports, interviews, traffic, parking, and pedestrian counts, air quality implementation plans, transit routes, schedules, and patronage

Table 2.10 Selected sources for analysis of community services and facilities.

Analyzing Impacts of Project Alternates on Community Facilities and Services

The greatest potential impacts to community facilities and services are removal or relocation. In addition, changes in access to a facility can have severe impacts on community residents. This is especially significant if the facility is the only one of its kind within the community.

Direct and indirect project impacts should be listed and prioritized. Direct short-term impacts include temporary construction barrier effects and temporary service facility closures (gas stations, convenience stores due to construction of returns, etc.). Indirect impacts include additional travel time or adverse travel due to detours. In addition, the project analyst should consider the long-term or induced impacts, which include the limits of facilities to accommodate growth induced by transportation improvements, as well as the additional burdens on infrastructure.

Another consideration is the time period during project implementation when impacts are likely to occur.

The investigation of education, medical, and civic facilities allows the analyst to predict which segment(s) of the population will be affected and for what length of time. Some facilities provide crossover or interchangeable services or products. If one library is inaccessible for a period of time, patrons may be able to use a different branch during the interim. Medical services may be available at alternate facilities with no additional travel time.

Other community facilities, however, offer unique products or services that a community cannot do without or easily replace. For example, schools are carefully assigned to districts and serve a set number of students per area of community. If access disruption to the school or relocation of the school becomes necessary, students do not simply go somewhere else. In the case of relocation, a replacement school facility would be required and must be completed prior to the transportation project.

Some services are critical to a community, such as fire and police protection. Other agents cannot perform these services. If these types of facilities were to be affected by the project, arrangements for back-up or alternate services would be required for the duration of the disruption. If the disruption is a relocation or removal, a new facility must be erected before the existing facility is eliminated.

Alternatives to adverse effects on public facilities and services must be considered when project implementation threatens the displacement or long-term access to the facility. Major re-routing, detours, or lengthy road closures should be avoided if services or facilities will be rendered inaccessible. Life support facilities, such as hospitals, fire departments, or ambulance services are especially critical, and therefore, very sensitive to abrupt traffic pattern changes.

If an important public facility such as a church or school must be displaced, it is necessary to identify an alternative location through coordination with the facility officials. In some cases, the new facility should be built prior to the displacement of the existing structure.

Choosing Appropriate Mitigation Measures

The following table lists potential mitigation measures to alleviate impacts to facilities and services:

Design Measures
Shift horizontal alignment Elevate facility Depress facility Reduce/increase traffic lanes Reduce/expand right-of-way width Provide landscaping Limit access/egress Provide access/egress Provide interchanges/eliminate grade crossings Provide vehicular crossings Provide pedestrian/bicycle crossings Provide for on-going development and multiple use Provide signing Provide lighting Provide public service corridors
Replacement/Restoration Measures
Provide replacement access Provide replacement land and facilities Eliminate incompatible structures or land uses Construct buffers between facility and incompatible land use (noise buffers, visual buffers, etc.) Return lands taken during construction to original state
Monetary Compensation Measures
<i>(as indicated in the Relocation and Real Property Acquisition Act, as amended, including the following)</i> Compensation for properties acquired (land and/or structures) Compensation for losses of property value Reimbursement of property tax losses Payment of moving expenses Payment of incidental expenses Business loans Payment for uneconomic remnants Payment (and acquisition) of entire properties

Table 2.11 List of potential mitigation measures for community facilities and services.

3.0 RELOCATION

3.1 Introduction

When transportation projects require new right-of-way, the acquisition of land parcels and/or structures such as homes, apartment buildings or businesses may be required. The severity of property acquisition impact ranges from limited incidental taking, to disruption of the function of a residence or business, to the acquisition and total demolition of residences, businesses, or other structures. The displacement of individuals, families, or businesses is a highly significant impact that should be carefully analyzed during the project planning process.

Analysis of impacts in terms of number and type of displacements takes place in the project-planning phase. This may require the preparation of a Relocation Plan, as appropriate (see following discussion). Note that the actual process of land acquisition is accomplished by the Bureau of Land Acquisition in accordance with the *IDOT Land Acquisition Manual* and the "Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as Amended." Therefore, while completing the project analysis regarding relocations, one should be aware of the formal land acquisition process.

The following information is provided to assist in the understanding of this issue area, the completion of analysis, and the documentation of relocation impacts.

3.2 Some Important Definitions and Concepts

Relocation is the act of displacing individuals, households, or businesses from structures or land acquired for highway construction. Relocation or displacement involving a permanent or temporary relocation of families, individuals, or businesses is one of the most critical impacts generated by a highway improvement. The consequences of displacement have discernible psychological and financial dimensions, many of which are interrelated.

Psychological factors that influence individuals, such as sense of kinship, belonging, or place, are common to all individuals. Negative psychological factors faced by many relocatees include a fear of the unknown, fear of isolation, and disruption of familiar behavioral patterns.

The term "financial," as used in this section, refers to the monetary strain that may be experienced by individuals or businesses that are involved in the relocation process. In contrast, "economic," as used in Section 4.0, refers to regional or community-wide economic impacts.

The forced removal of families from neighborhoods, or businesses from their existing locations, affects not only the relocatees themselves, but also those who remain in the affected neighborhood and those who live in the areas into which the relocatees will move.

The minimization of relocation impacts is a difficult task because relocation is a psychological as well as physical event. Although the "Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as Amended" and the *IDOT Land Acquisition Manual* provide for relocation advisory assistance services, they do not directly address remuneration for psychological stress or for disruption of social and psychological interrelationships.

The "Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as Amended" applies to all federal or federally assisted activities that involve the acquisition of real property or

the displacement of persons, including displacement caused by rehabilitation and demolition activities. Just compensation is provided for each property that must be acquired for right-of-way, as required by both the United States and Illinois Constitutions. The courts in this state have long accepted fair market value as the standard for determining just compensation. The definition of fair market value is "that price which a willing buyer would pay in cash and a willing seller would accept, when the buyer is not compelled to buy and the seller is not compelled to sell."

Fair market value has been defined as the highest price estimated in terms of money that the property will bring if exposed to sale on the open market with a reasonable time allowed to find a buyer, buying with the knowledge of all the uses to which it is adapted, and for which it is capable of being used.

Financial effects of displacement of individuals or businesses are often measured by relocation estimates for specific types of affected economic units. During the planning stage (environmental studies and document preparation), the analyst should perform site surveys to gather information on real estate prices and availability of relocation sites of comparable quality, estimate the number of displacements, and consider the effects on properties to remain. The analyst should be familiar with the importance of balancing the needs of the individuals with those of the community or region. The analyst should be aware of the requirements of the "Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as Amended"; however, the actual requirements are fulfilled during the land acquisition phase.

In general, properties will be purchased by the state when the proposed project will occur in the same location as the existing structure or property or when the structure will no longer be able to function (i.e., due to access changes, removal of septic field, unsafe conditions caused by the project, etc.). The analyst should contact the IDOT Land Acquisition Specialist when additional information is needed concerning which project area properties are likely to be taken.

The Land Acquisition Process

A very brief explanation of the land acquisition phase is included below. It is intended to give the reader/analyst a basic understanding of the process of land acquisition. The process generally occurs between the design and contract-letting phase or, in some cases, may take place during preliminary engineering as protective acquisitions or hardship acquisitions.

- Title information/survey/plat preparation
- Legal description
- Appraisal/estimate of land to be acquired and any damages to the remainder
- Written offer to landowner; if accepted, contract is signed, title approved, and check issued
- If after good faith negotiations, offer is rejected, IDOT initiates condemnation
- IDOT can request immediate vesting of title through "quick take"
- Preliminary "just compensation" is set by court
- Owner is entitled to trial by jury to determine final settlement

Relocation Assistance Programs for owners, tenants, and business proprietors are established based on individual requirements.

The Relocation Assistance Program

The Relocation Assistance Program is established to help offset the adverse impacts of relocation—including monetary benefits, if eligible. These payments take into account current mortgage and interest rates on loans from lending institutions, moving expenses, higher rental costs, higher costs for replacement housing and reimbursement for eligible closing costs, searching costs for businesses and eligible re-establishment expenses.

The IDOT Bureau of Land Acquisition is required by law to determine the availability of adequate, decent, safe, and sanitary housing in the area for relocatees before any federally-funded project can be approved. A Relocation Plan is prepared by the Bureau of Land Acquisition for every project that requires relocation.

The term “decent, safe, and sanitary dwelling” means meeting applicable housing and occupancy codes. However, any of the following standards that are not met by an applicable code shall apply, unless waived for good cause by the federal agency funding the project. The dwelling shall:

- (1) Be structurally sound, weather tight, and in good repair;
- (2) Contain a safe electrical wiring system adequate for lighting and other devices;
- (3) Contain a heating system capable of sustaining a healthful temperature of approximately 70 degrees for a displaced person, except in those areas where local climate conditions do not require such a system;
- (4) Be adequate in size with respect to the number of rooms and area of living space needed to accommodate the displaced person. There shall be a separate, well-lighted and ventilated bathroom that provides privacy to the user and contains a fully usable sink properly connected to potable hot and cold water and to a sewage drainage system, and adequate space and utility service connection for a stove and refrigerator;
- (5) Contain unobstructed egress to safe, open space at ground level. If the replacement dwelling unit is on the second story or above, with access directly from or through a common corridor, the common corridor must have at least two means of exit; and
- (6) For a displaced person who is handicapped, be free of any barriers that would preclude reasonable ingress, egress, or use of the dwelling by such displaced person.

In conclusion, although relocation is a disruptive process, the impacts of relocation can be significantly minimized if care is taken and proper attention given to the individual's situation.

3.3 Determining the Extent of Relocation Impacts

Determining the level of involvement will establish the proper project classification, documentation, and mitigation that will be required.

To assess the level of involvement and the complexity of issues of concern, the analyst should view the project area alternates (either on-site or using aerial photographs) and obtain answers to questions such as the following:

Residential Relocation

- Will the action displace residences? How many?
- What proportion of the population in the total study area will be affected?
- Will the action cause a disruption to family and social ties?
- What are the household characteristics of residents to be displaced?
- What type of psychological effects can be anticipated?
- Will there be a disruption to neighborhood patterns?
- What special relocation problems or needs are anticipated (due to age, income, minority group, zoning)?
- Is comparable replacement housing available (sale or rental units)?

Business Relocation

- What number and type of businesses will likely be affected by the project?
- Is the community dependent upon the services provided by affected businesses?
- Are any of the businesses unique or one-of-a-kind?
- Are there alternative businesses within a reasonable radius?
- Will displaced businesses be able to relocate to similar or better locations?
- Are the businesses highway or non-highway related or dependent?
- Will businesses be interrupted by access closure? For what length of time?
- Who owns the businesses?
- What are the characteristics of the businesses to be displaced?
- Who constitutes the clientele?
- Do the businesses employ local residents?
- How many jobs will be affected?
- What are the characteristics of displaced employees?
- Are alternative job opportunities available?
- How will the community tax base be affected (property and sales taxes) by the project, both in the short and long term (also see Section 4).

3.4 Identifying Appropriate Components for Analysis of Relocation Impacts

The most important analysis components for relocations include the following:

- Displacement and removal of residents
- Social/psychological impacts to displacees
- Financial impacts to displacees
- Impact of residential displacements on the neighborhood

- Displacement of businesses
- Removal of neighborhood resources
- Displacement of places of employment

The following checklist may be useful in assessing overall impacts of residential relocations:

- Economic impacts on displacees
- Compensation for new housing costs: net worth, rent, maintenance, utilities and fuel
- Mortgage: ability to obtain, interest rates charged, and size of payments
- Compensations for moving expenses
- Changes in transportation costs
- Renter-to-owner and owner-to-renter
- Qualitative comparisons of before and after housing
- Anxiety about the effects of relocation
- Search time and inconvenience
- Disrupted social relationships
- Displacement from familiar (and positively valued) surroundings
- Effects upon neighborhood such as loss of constituents/members of schools, churches and services
- Increased distance to friends and relatives
- Deterioration of condemned property and reduced neighborhood attractiveness
- Increased distance to doctors, dentists, repair services, banking, etc.
- Loss of parks, gardens, woods, common space and recreational facilities

The following checklist may be useful in assessing overall impacts of business relocations:

- Difficulty of obtaining suitable relocation sites: search time, financing, compensation
- Moving expenses, compensation, inconvenience
- Cost of relocation: lost customers, promotional costs, turnover, new layout and routines, etc.
- Marginal neighborhood-oriented businesses liquidating
- Loss to remaining residents of nearby stores, restaurants, bars, service stations, banks, laundries, etc.

- Increased transportation costs and fuel consumption for commuting
- Increased commuting time
- Loss of jobs

3.5 Deciding Upon Appropriate Types of Analysis

After the potentially significant project impacts regarding relocation have been identified, the analyst must choose both the proper method and approach to the investigation and documentation of potential impacts.

In addition to gathering data from primary (personal interviews) or secondary (references or websites) sources, the analyst should complete an on-site inspection and note the potential business or residential relocations on a Community Inventory Map. This map should be further developed, as the project progresses, to include an “inventory” of community features, such as neighborhood locations and minority or special group areas.

The following list represents suggested data requirements and sources of information for descriptive analysis pertaining to relocations.

Information Needed	Sources of Information
Mortgage Market	FHA office; local real estate agent interviews; financial and real estate pages of local press; Bureau of Land Acquisition staff; U.S. Department of Commerce, Census of Housing, <i>Detailed Housing Characteristics and Construction Reports</i> ; Housing and Urban Development, <i>FHA Techniques of Housing Market Analysis</i> .
Rental Rates/Real Estate Prices	Olcott's <i>Land Values Blue Book of Chicago & Suburbs</i> ; Local real estate agencies; Local housing authority.
General Procedures	IDOT <i>Land Acquisition & Procedures Manual</i>
Origin-Destination Studies	Local planning agencies; District traffic or planning bureaus

Table 3.1 Relocation Impact Analysis Information Sources

3.6 Analyzing Relocation Impacts of Each Alternate

For projects that involve alternates, each alternate should be analyzed for relocation impacts. While reviewing the existing conditions, the analyst should decide which alternates to avoid (when possible) and/or how to minimize relocation impacts.

Both overall impacts and specific impacts must be considered. Overall impacts consist of the actual number or magnitude of relocations, which relates to which alternate is ultimately chosen. The specific impacts affect individuals and families socially, psychologically, and financially, and must be considered when assessing alternate impacts. Business relocations should be analyzed in terms of impacts to business owners (psychologically and financially) and potential impact to the community. Projects that involve only two alternates (a build and a no action alternative) such as adding lanes to an existing roadway, should be assessed for relocation concerns in the same way as projects with several alternates.

The number and type of relocations must be documented. Psychological impacts can only be inferred based on household characteristics/business characteristics of entities to be relocated -

especially in relationship to the neighborhood or community as a whole. One may anticipate and document that there may be a need for special relocation plans or procedures that will take place during the land acquisition phase. The situation of the relocatees should be stated in general terms, especially if there is a great indication of hardship (i.e., the relocatees are mostly poor, elderly or handicapped or if businesses are unique, ethnically oriented, etc.).

Financial effects can be more easily quantified and therefore anticipated and addressed. There are four main areas of concern with regard to individuals or families:

- Availability of capital
- Financing arrangements
- Cost of alternate locations
- Higher living expenses anticipated (commuting costs, property taxes, etc.)

There are also four main areas of financial concerns involving businesses:

- Individual establishments (proprietors and employees)
- Remaining businesses indirectly affected
- Level of service to remain in community after businesses are removed or relocated
- Loss of sales and property tax (see Section 4 for discussion of taxes)

The size and type of business to relocate are important in analysis of impacts. The size of the business will often dictate constraints involving the availability of suitable new locations. Specialty grocery, retail, and restaurant establishments, for example, may wish to relocate as close as possible to the existing location, while larger establishments such as manufacturing or wholesale operations may relocate to the edge of town or a nearby suburb.

The following discussion is an excerpt from the FHWA/National Highway Institute publication, *Social and Economic Considerations in Highway Planning and Design*:

“The type of business which may be displaced is important since some can overcome the change with greater ease than others. Studies have shown that, in general, traffic dependent businesses, such as gas stations, restaurants, and hotels, may be greatly affected by forced relocation or access loss. Some service businesses, such as insurance firms, may be only minimally affected, while others, such as banks, may face liquidation due to the project. This is also true of some retail businesses such as craft/tourism type businesses. Others, such as clothing stores, may not be greatly affected by the project. A greater percentage of service establishments, i.e., barbers, laundries, taverns, eating places, went out of business than did retail units. Very high rates of business closure have been observed for the following:

1. Retail or service establishments, dependent upon a particular neighborhood clientele, especially in the case of neighborhoods with dominant ethnic or racial groups.
2. Marginal businesses that may or may not have been profitable.
3. Businesses whose owners retired, usually because of their age or lack of commercial expertise.”

See Section 4 for information on transportation facilities' impacts on businesses.

If there are to be any residential and/or business relocations, a Project Relocation Plan must be prepared to document the action, alternative impacts, availability and cost of relocation sites, and planned remuneration. The Project Relocation Plan is prepared by the Bureau of Land Acquisition.

3.7 Mitigation

Mitigation of relocation impacts for residences and businesses is usually in the form of financial remuneration or compensation for property loss and relocation expenses, as outlined in the “Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as Amended.” Additional or unusual circumstances may warrant other mitigation measures on a case-by-case basis. This is accomplished during the land acquisition phase through the negotiation process between the property owner (and tenants, if any) and the Bureau of Land Acquisition.

4.0 *Economic Impacts*

The economic impacts of highway improvements are those affecting businesses, industry, employment, and income in communities. This section addresses the potential beneficial and adverse effects of transportation projects to regional and local economies.

4.1 Introduction

Economic impacts pertaining to transportation projects are generally captured in the public or private sector as net losses or gains. From an economic standpoint, the impacts of a highway improvement can be classified in terms of direct, indirect or induced impacts.

Direct impacts are those that produce immediate measurable changes such as increases in the number of on-site jobs available. Indirect impacts are those that result in some measurable net change in economic activity over time in a given community, which can be reasonably attributed to the development of the new highway improvement. An example of this would be increases in employment at off-site materials suppliers. Induced impacts occur as a result of direct and indirect impacts of new employment and income resulting from successive rounds of spending. This can be seen in increased restaurant and other service employment.

Major economic impacts due to a transportation project occur in both the public and private sector. In the private sector, employment and income levels change, thus affecting individuals and households, as well as retail, service, and manufacturing businesses. Economic impacts also occur on a secondary level; for example, in property value changes which may or may not be beneficial to the owner(s) or the community. Changes in transportation infrastructure often induce people to change their residences to take advantage of the new facilities. Businesses are also likely to locate or expand into areas offering improved access.

An obvious effect of transportation projects in the public sector is the adjustment of the tax base due to changes in land use. When land that was once taxed, such as highly productive farmland or commercial development, is converted to highway use and transferred into the non-taxable public domain, the local revenue base is lowered. This can be a temporary loss, since induced growth will eventually offset lowered tax bases. Transportation-related induced development can put added pressure on public facilities and services within a community. This can lead to higher property taxes and/or "user fees".

Overall, the economic effects of new or improved highway facilities are usually viewed positively in terms of generating new wealth or development. The efficient use of resources represents positive gains in the economy and the gross state product. Inadequate public capital formation, i.e., the lack of new highway facilities and/or inadequate maintenance levels, cause inefficiencies, delays and lost revenues. Nationwide, increases in public capital formation have been shown to account for as much as 17 percent of the change in aggregate income (Aschauer, 1989).

However, as the concern regarding natural resource depletion has come to the forefront, resource managers and economists are addressing the issue of growth and development from different perspectives. New or improved highway facilities must provide enough social benefits to justify the expenditure of resources. Decisions must be based on a consideration of both the impacts caused by growth--externalities such as increased noise and air pollution, water pollution, soil erosion, and damage to public goods (such as open lands or wetlands); and the opportunities for increased wealth and a higher standard of living for a greater number of people.

The information that follows regarding the assessment of economic impacts is arranged in accordance with the outline below:

Private Sector

Employment/Income
Economic Base Sectors
Employment Multipliers

Public Sector

Tax Loss/Tax Gain
Property and Sales Tax

Both Public and Private Sectors

Community Bypass
Regional Economic Development

4.2 Determining Impacts to the Private Sector - Employment and Business

Three major elements are discussed in the following sections: employment, the multiplier effect, and the community's economic base and structure.

Transportation improvements can impact business and employment in the private sector both directly and indirectly. A major highway construction project can increase employment and income to individuals within the area and increase or decrease sales volumes of businesses, especially retail, services and traffic-oriented businesses. Through the indirect effects of the multiplier, new income may be generated throughout the region. Direct impacts to businesses include relocation (see Section 3) and access disruption caused by road or bridge closure or temporary construction access closures. Although the most obvious businesses to suffer from access disruptions are usually restaurant or drive-in type businesses, retail, wholesale and manufacturing firms can also be affected through interruption of supply inputs or distribution of outputs. An example of a major direct impact on businesses is the construction of a new community bypass facility (see bypass discussion to follow). Generally, infrastructure improvements such as new highway facilities, or widening and resurfacing projects, have a beneficial impact on businesses in the long run.

Determining the Level of Impact to Businesses and Employment

Decisions regarding potential impacts to the regional economy in terms of employment, income, and business can best be made by considering the following questions:

- Does the project involve a bypass or long-term detour of a local business district?
- Will changes in land use occur due to the proposed project?
- Will the loss of farmland for highway construction purposes render any operations too small to stay in business?
- Will adverse travel be a major factor in the profitability of any farming operations?

- Will there be relocation or displacement of businesses?
- Is the project within or presently accommodating a particular type of business sector, e.g., manufacturing, service, or retail?
- Are there a great number of “highway-dependent” businesses operating within the project area?
- Will the improvement affect a major employer?
- What is the current unemployment rate of the communities within the project area?
- What is the median family income level of the residents?

Identifying Appropriate Components for Analysis of Project Impacts on Employment

In most cases, the relevant analysis components that must be evaluated to determine project impacts on employment, income and the business sector include the following:

Labor Force Characteristics

- Major Employer
- Unemployment Trends
- Income Characteristics

Multiplier Effects

- Direct, Indirect and Induced

Market Sector Characteristics

- Agricultural/ Agribusiness/ Mining
- Manufacturing/ Industrial
- Wholesale/ Distribution
- Retail/ Service
- Tourist/ Recreational

Any analysis of private sector impacts - such as impacts to business, employment and wages - must begin with a community profile. This profile examines the existing population characteristics such as average age of workforce, workforce participation and characterization (blue collar, professional, unskilled, etc.), average family income (community compared to county), major employers, and dominant business sector type (retail, service, manufacturing, etc.).

Labor Force Characteristics

Labor force characteristics and employment and unemployment trends should be documented (using a graph or bar chart, if possible) for the past 10 to 15 years, along with a discussion of potential future trends (using projections, if available). Labor force characteristics include dominant labor type (unskilled, professional, blue collar, etc.), and the number employed in each sector (e.g., 5,000 in manufacturing, 2,000 in service, etc.). This provides an important statistical picture of the city, county, or region being analyzed in terms of degree of stability, variety of economic bases, and potential for growth. The labor force characteristics of an area

are often the key element in new business location decisions. Also, knowledge of the prevalent labor type can provide the transportation planner with an insight into transportation demand in terms of the type of facility (or modal choice) best suited to workforce needs.

A quick identifier of labor force and employment type is often the area's major employer. The term "major employer" as used here means a business that employs the greatest number of workers within the project area. These can typically be grouped as those businesses with over 50 employees, those with over 100 employees, etc. This should not be confused with the "technical" definition of "small business", one that employs less than 500 people, or "large business", employing over 500 people. The major employer for an area would be relative in size to other employers within the area.

A check of the Department of Commerce and Economic Opportunity website, www.commerce.state.il.us 'Community Development' will provide links to the economic profiles and major employers within cities or counties. This website provides the type of business or industry having the greatest number of employees for the county or city, which may be compared to that of the major employer of the project area. Knowing the major employer can give the analyst a sound insight into the community's labor characteristics, e.g., if the major employer is in mining or manufacturing, a large percentage of the workforce will be blue-collar, semi-skilled, or technical; if the major employer is a university, a large percentage of the community labor pool will be professional, technical, or clerical.

Unemployment rates should be included in the economic analysis, as these rates provide an overall picture of economic stability or instability for the project area. Growth rates or projections are available for cities and counties through regional or metropolitan planning authorities such as the Chicago Metropolitan Agency for Planning.

Market Sector Characteristics: Economic Base Descriptors

Economic base descriptors are simply business types, such as wholesale, retail, service and manufacturing. The base descriptors are used to produce the project area's economic picture, which will indicate the presence or absence of diversity, the degree of stability, and the growth potential of the project area.

The following discussion of sector descriptors includes:

- agriculture/ mining
- manufacturing/ industrial
- wholesale/ distribution
- retail/ service (includes travel, tourism and recreation)/ finance, insurance and real estate
- transportation, communication and utilities
- government

These descriptors define the "economic structure" of the area. They follow the standard classifications used by economists and correspond to the available literature and statistics on this subject. Traditionally, the classifications of economic sectors are defined as follows:

- Exploitative or extractive stage, also commonly referred to as the primary stage, is characterized by extractive activities such as agriculture and mining.

- Processing stage, also commonly referred to as the secondary stage of development, is characterized by the development of processing and fabrication activities - both of local resources and other manufactured goods - such as food processing, lumber and wood products manufacturing, production of textiles and apparel, and other similar production activities.
- Service generative stage, also referred to as the tertiary stage, is characterized by the rapid development of services, transportation and communications activities, and activities involving high-level technology.

Agriculture/ Mining

Agriculture is a primary stage economic activity and is an important income and employment generator for Illinois. Agricultural activities generate billions of dollars of gross state product. Total agricultural exports routinely rank in the top five nationally. If an area is characterized by extensive agricultural uses, the employment/income will typically be from farm labor (including the farm owner's family) and the sale of finished agricultural products such as livestock or grain products, orchard yields, timber sales, etc. (Note: agribusinesses such as fertilizer and grain storage facilities and other farm services such as feed stores, hardware and implement dealers are accounted for under retail or service sectors in economic statistics, while food processing plants are placed under the manufacturing sector. Thus, the GSP for agriculture seems relatively low for a heartland state, when in fact the significant contribution of agriculture is reflected in the other sectors.) Farmer-owned and operated or sharecropped farming operations can be considered "businesses" or, in a subtler sense, a way of life. In any case, these operations make a substantial contribution to the local economy.

Impacts to agricultural activities can be analyzed in terms of the actual amount of farmland conversion (e.g., prime and other farmland taken out of production), which may lead to loss of jobs or income to the project area either directly (individual loss of farm labor job) or indirectly (loss of farm implement business). Losses of farmland due to transportation projects do not usually result in these types of direct or indirect impacts in the short term; however, a transportation project may alter long-term agricultural activity in three basic ways:

1. Increased/decreased regional accessibility.
2. Induced changes in the productivity of the region's agricultural resources.
3. Direct and indirect encouragement of the conversion of agricultural land beyond the highway right-of-way (adjacent land conversion to urban or residential land uses often occurs when tax increases make farming less profitable).

Mining activities also contribute billions of dollars to the gross state product. Coal mining is found mainly in southern and western Illinois, although there are areas of mining elsewhere in the state. The Illinois coal industry has suffered in past years due to the preference for low sulfur coal found in eastern and western states. Other types of mining operation found throughout the state include limestone/dolomite, and sand and gravel. Oil and gas extraction occurs mainly in the southern half of the state.

Manufacturing and Industrial

Manufacturing represents a large percent of the gross state product with billions of dollars generated annually. Its historical strength is an important component of the state's diverse economy. These businesses are secondary processing stage activities which represent the transformation of raw inputs into manufactured goods, either partially or completely finished products. Manufacturing firms and plants are located throughout the state. Major site selection criteria for large manufacturing businesses include the following:

- Labor quality, quantity and availability (and status of union activity)
- Transportation system location and quality (access for trucks)
- Favorable attitude of community and residents to industry
- Cost of property
- Market structure of the region
- Input materials availability
- Other infrastructure condition
- Intangibles such as availability of cultural amenities and environmental considerations
- State and local tax structures
- Ample area for expansion

Other location factors include cost-minimizing or profit-maximizing strategies such as the following:

- Local demand/distance from market
- Distribution costs
- Procurement costs (raw materials)
- Production/processing costs (includes labor costs)
- Community-related tangible and intangible benefits (employee satisfaction)

Wholesale and Distribution

Wholesale facilities operate to obtain and distribute manufactured goods within a given region. Wholesalers perform a critical function within the structure of regional economic systems.

These types of operations usually locate in areas with sufficient transportation links, market distribution, and available warehouse facilities. Proximity to industrial parks is important in the location decision. Wholesale/distributors should be analyzed for potential impacts in terms of reduction in travel time (beneficial) or disruption in access (adverse). The analyst should consider potential impacts to these firms by documenting:

- Product type
- Market served

- Highway network utilized
- Growth trends in wholesale sector
- Sites zoned for use by wholesale firms
- Existing pattern of wholesale activities

Transportation, Communication and Utilities

This sector represents the community and individual “support” group of economic entities. Taxi service, the airline industry, the telephone and computer communications devices and the local electric company all fall within this category. Highway transportation projects do not usually have a negative impact on this sector except in the case of utility pole or fiber-optic cable relocations.

Retail/ Service and Tourism/ Finance, Insurance and Real Estate

This section actually represents three individual sectors that will be discussed together. Retail businesses sell finished products and deal directly with the public. They are generally referred to as “stores”. The strength of retail in a given area is tied directly to the disposable family income available in the community. A transportation network is a major determinant in the location of a retail trading area. Shopping centers tend to be located at or near the intersection of major highways. Retail sales in Illinois represent a large percent of the annual gross state product.

The service sector is typically composed of hotels, personal and business services, repair shops, and health and legal services among others. The service sector is a top contributor to gross state product. This sector has grown dramatically over the past twenty years as the structure of the economy has been changing to the “post-industrial” information age, and wireless technology.

As part of the service sector, travel, tourism and recreation activities are extremely important to Illinois. This state ranks within the top five nationally in the amount of dollars generated by travel and is first among states without seacoasts. Tourism, the fastest growing sector in Illinois, is a major financial resource for many communities. Although tourist and recreational facilities in themselves collect outside dollars, most of the monies are spent in the auxiliary service businesses, such as restaurants, hotels, specialty stores, and gift shops. Restaurants employ the greatest number of people of any major industry in the state. The motel/hotel tax is a major source of revenue for the state.

Tourist attractions include historic/cultural districts, museums, monuments, recreational facilities such as scenic trails, parks, zoos, beaches and national forests. Riverboat casinos have a consistently high attendance. Large shopping malls draw a great amount of visitors. Local special events are also an important source of revenue for many communities.

Finance, insurance and real estate (FIRE) operations are grouped together under one sector. These businesses include banking, investment services, credit agencies, insurance firms and real estate offices.

Sources of Information

Primary data sources for this issue area include field/site reviews and interviews with local, city or regional planners, chambers of commerce and zoning authorities.

Secondary data sources include federal, state, and local published data which is usually readily available on-line or through the library. Note that the percentage employment per industry (manufacturing, wholesale, etc.) should be used to establish the relative importance of each industry type within a given area. The DCEO (Department of Commerce and Economic Opportunity) website includes information on personal income, labor-force characteristics, exports and worker productivity.

Information may also be found in previously published studies on related topics. Information regarding regional economic development can sometimes be found in the local or regional land use plans. The analyst should determine if the project is within a designated Enterprise Zone or TIF (tax increment financing) District, as this could have an influence on alternative selection.

Information Needed	Sources of Information
Demographics (Population & Income)	Bureau of the Census website Population & Income Projections by local planning authorities (e.g., CMAP). State Data Center website: www.Illinoisdata.com <i>BEA/OBERS Regional Projections to 2040, Vol. 1: States; Bureau of Economic Analysis; County and City Data Book. Illinois Agricultural Statistics, Annual Summary. USDA/IDOA. DCEO, Economic Profiles</i> <i>Illinois Statistical Abstract, Bureau of Economic and Business Research; U of I Champaign.</i>
Employment/Unemployment	U.S. Census of Population, <i>Employment Status</i> ; Various State Employment Security Office Reports; State or Federal Bureau of Labor Statistics Reports; Illinois Dept. of Employment Security (www.IDES.state.il.us); Illinois State Data Center (www.illinoisdata.com) Economic Data by Sector-Statistics for Industry Groups- www.census.gov/econ (Business & Industry) Dept. of Commerce website
Market Sector Characteristics	USDA/IDOA - <i>Illinois Agricultural Statistics, Annual Summary</i> (www.agr.state.il.us) Local Chamber of Commerce - Business Climate Studies; Local and Regional Planning Agencies - Feasibility and Planning Studies; State Bureau of Employment Security - various publications – www.IDES.state.il.us www.tourism.uiuc.edu/itf/reports.asp

Table 4-1 Data Sources for Information on Local Market Sectors and Employment Figures

Analyzing the Study Results

Analyzing Impacts to the Economic Bases

Agriculture/ Mining

Agri-business activity can benefit greatly by transportation improvements, which can ultimately lead to better and faster access to markets, storage areas and processing plants. Roadway improvements can also reduce the rate of capital depreciation for farmers. Conversely, individuals and communities can be hurt by income losses to farm businesses that occur either through the taking of land or acquisition of a business structure for project purposes.

The following formula can be used to estimate income losses to farm owners (annual cash loss to individual farmers):

$$\text{Average Dollar Value Per Acre} = \frac{\text{Cash Receipts of County}^*}{\text{Total Farm Acreage of County}} \\ \text{(per given year)}$$

*All agricultural products produced in a given county per given year.

Mining activities are usually affected by transportation projects in a positive manner through increased access.

Manufacturing/Industrial

The type, quantity, and quality of transportation facilities available is a major factor in firm location decisions, and potential impacts can be deduced by assessing the degree of association between the manufacturing activity and the transportation network. Overall, industry benefits from highway improvements. New highway facilities can open previously isolated areas to industrial development. Highway improvements can reduce the costs associated with shipments of goods to and from suppliers, wholesalers, and retailers, making companies more competitive. Temporary or long-term disruptions of supply input/product output routes are the major negative impacts to this sector.

Retail/ Service and Tourism/ Finance, Insurance and Real Estate

To analyze potential impacts to retail, service and tourism, and FIRE, the number and location of each type of facility should be documented through an on-site visit. Other information sources are available (see Table 4-1). Traffic dependency of the area businesses should be determined. The analyst should evaluate the project area and adjoining city/region for recreational facilities or tourist attractions. Transportation projects can act to either stimulate or depress the revenue generated by retail and tourist activities to the degree that they enhance or disrupt access, or relieve or cause congestion. An estimation of the importance of retail to an area and the trade volume can be done by observation and/or by contacting the appropriate sources (see Table 4-1). The volume of tourist activity can be judged by the quality and variety of the natural and man-made features in the area, the activity pattern (seasonal or year-round), profile of the typical visitor and the distance in travel time to the site.

Impacts to individual retail or service businesses such as access disruptions and detours usually have negative effects on business in the short run, but these effects are often offset by benefits to businesses in the long run. The beneficial aspects include improved level of service

and appearance of the new highway facility, which can lead to new customers. Temporary or permanent access disruptions should be avoided, as this can result in significant sales losses and even bankruptcies. If unavoidable, the highway district should contact the individual business owners to coordinate construction activities to minimize distress to customers. Detour activity must be very carefully coordinated; in the past, detours have caused business liquidations.

The loss of parking is also a potentially serious consequence of highway projects. In most cases, auxiliary compensatory parking can be located and may require negotiations between the highway district and the business owners. Financial compensation may be appropriate in some cases. If the loss of parking will severely compromise or jeopardize the business operations, relocation of the business may be offered even though the business property itself is not directly affected. The degree of significance of the parking loss should be determined by the relationship of the number of parking spaces lost to the overall availability of parking. For example, if 10 parking spaces will be required from a lot of 200, the impact is much less than the same number from a lot of 20 spaces. The availability and location of auxiliary parking should be clearly identified in the project documents.

Tourism benefits occur insofar as the highway improvements lessen travel time, reduce safety hazards, and make travel more enjoyable. Improved accessibility can stimulate tourism and recreational facility use in the same manner as is evident in other forms of economic activities. Conversely, traffic congestion or access disruption can adversely affect these attractions. Because of the highly traffic-dependent nature of some of the businesses associated with tourism, particular attention should be paid to seasonal influx, or high-usage times of the year.

Businesses in the finance, insurance and real estate (FIRE) sector are not normally affected by highway improvements except in the case of relocation of one or more of these offices.

Mitigating Negative Impacts to Business Sectors

The following mitigation measures will help reduce negative impacts to the project area's economy:

- Schedule construction to occur during times of low usage for seasonally-oriented businesses.
- Schedule construction for after business hours.
- Avoid blocking business entrances with construction equipment or construction barriers. If access disruptions are unavoidable, the district should contact the individual business owners to coordinate construction activities to minimize distress to customers. Detour activity must be very carefully coordinated.
- Contact the involved business owners directly and establish a mechanism through which the owner can communicate with the district and/or contractor.
- Identify a secondary access to business as available and usable.
- Avoid taking or blocking parking spaces; if unavoidable, identify and include a plan of mitigation in the project documents, such as alternative street parking sites, purchase of abandoned lots for conversion to parking, etc.
- Financial compensation may be appropriate in some cases.

4.2.1 Employment Multipliers

Multiplier Effects: The Employment and Income Multiplier

Labor force and employment trends should be considered in terms of the multiplier effect. The “multiplier” is simply a figure which represents the ratio of change in the numerator to change in the denominator. Used in economic analysis, it provides an estimate of increases/decreases due to a given action. The employment multiplier is defined as the total generated employment divided by the amount of the exogenous employment change. The income multiplier is the amount received by individuals within a region or area due to the direct and indirect employment divided by the income directly generated by the exogenous change in employees.

The multiplier effect can yield an estimate of the project impact on the area’s economy, at least in the short term. Long-term project impacts on employment are usually tied to induced growth and what portion, if any, is attributable to the project.

Impacts to Employment/Income

Direct, indirect, and induced economic effects can be predicted using the employment and income multipliers. The use of the income and/or employment multiplier is generally sufficient for most analyses of beneficial economic impacts.

The income multiplier represents the added income received by residents of the region due to the direct, indirect and induced employment, divided by the income directly generated by the exogenous change in employees. Income, for the purpose of multiplier analysis, is often limited to wages, salaries, and proprietor’s income because these are the types of incomes generated by an exogenous change that are most apt to flow back to household expenditures and result in induced effects within a region. The income multiplier is generally between \$1.50 and \$2.00 for each \$1.00 spent on new highway construction.

As stated in the following example, the employment multipliers are divided into direct, indirect and induced impacts (these terms correspond to “primary, secondary and tertiary”). These impacts are defined as follows:

- *Direct:* The exogenous economic change introduced into the economy (in terms of employment and income). Wages paid to construction workers become household income which construction workers’ families spend for housing, food, clothing, etc. within the region.
- *Indirect:* The jobs and production needed to produce the goods and services required from within the region to support the production associated with the direct economic change. Purchases of materials and supplies from local firms represent income which is, in turn, spent by these establishments on employee wages, raw materials, and other components.
- *Induced:* Jobs created to accommodate the demand for goods and services generated by the wages of all additional employees associated with (1) and (2) above. Overhead, profit, and other components occurring to locally based contractors are in turn, spent on rent, inventory additions, and increases in the use of local services such as restaurants. (Note: due to the ambiguous nature of induced effects, they should not be routinely included in transportation impact analysis. Only projects of very large scope may include induced effects as a significant component.)

The direct dollar impacts in these three components represent income to the region which, in turn, continues to circulate. Again, the impact of highway construction projects on the local economy will depend on the extent to which labor and materials will be obtained in the region and the extent to which overhead, profit, equipment costs, etc., will accrue to local contracting firms and businesses.

The environmental reports produced under the auspices of the Division of Highways, Bureau of Design and Environment, have previously used the following figures as employment and income multipliers:

Employment	Direct (On-Site Construction Employment, One Employee for One Year) High: 9.75 per million dollars of construction costs for the duration of the project Low: 7.1 per million dollars of project construction costs for the duration of the project
	Indirect (Off-Site Manufacture and Preparation of Supplies and Equipment) High: 12.7 per million dollars of construction costs for the duration of the project Low: 9.25 per million dollars of construction costs for the duration of the project
	Induced (Employment Generated to Fulfill Demand for Goods and Services to Newly Employed Households) All: 10.5 per million dollars of construction costs for the duration of the project
Income	Direct, Indirect, and Induced (Income Increases to the Region) All: 1.94 per million dollars of construction costs for the duration of the project

Source: These figures are based on various studies that have indicated that under certain conditions capital projects are likely to produce an expansionary effect on the regional economy through increases in employment and income. Various entities use different figures or different methods to determine this anticipated effect. The figures given here are suggested for use in IDOT project analysis. The direct employment multipliers appeared in a 1985 FHWA study by Robert Gorman, "Analysis of Employment Statistics: Field Survey to Determine Employment Impacts of the Surface Transportation Act of 1982, Final Report". The income multiplier used (1.94) was issued in a Department of Labor publication. It was derived by using the average wage of construction workers and related labor for a given year. The indirect employment multiplier (12.7) was also issued by the U.S. Department of Labor.

In 1995, FHWA hired Apogee Research to conduct a study of direct multipliers for highway construction work nationally and within nine FHWA regions. This study, "FHWA Direct Employment Impacts: A Quantitative Analysis" resulted in a national average direct employment multiplier of **8.35**. Since this number falls nearly directly between the low/high figures included above, the analyst may use either the range figures or the Apogee average in any analysis of direct construction employment. The higher range of the Gorman study (20% higher than the Apogee study) is understandable since the average wage rate for highway construction workers has been increasing, thus encouraging a greater substitution of capital for labor and the fact that the average project size has been declining over time.

A note on multipliers:

When estimating employment impacts using multiplier analysis, remember the following points:

- Advances in technology continually lead to increased reliance on capital (equipment) while decreasing the role of labor. Therefore, the date that the multiplier was derived is important. Outdated figures will yield an inflated employment estimate.
- Direct employment impacts will be short-term (the duration of the project); however, the indirect and induced employment effects may continue after construction is completed. Overall employment and income may increase regionally in the long term due to the transportation project.
- The multiplier figure is multiplied by the contract amount to estimate the number of jobs or income that may result from the project. However, the relationship between money spent and jobs created is not necessarily directly proportional; that is, beyond a certain point, no more jobs will be created regardless of the contract amount. A decreasing capital/labor ratio will not occur since the effects of diminishing returns would be unprofitable. Conversely, a relatively inexpensive contract may generate more employment than is reflected in the multiplier analysis because start-up operations may require a minimum number of workers regardless of the total contract award.

In some cases, particularly on smaller projects, the analyst may wish to use an entirely qualitative approach. It is appropriate to simply note in the documentation that a “multiplier effect” occurs as a result of expenditures on public capital projects.

Example Application of Multipliers:

Employment Multiplier

Direct (on-site construction employment, one employee for one year)

Cost of Construction	Multiplier	Jobs	
\$10,633,000	7.1 (Low, 1985)	75	(10.6 x 7.1 = 75.26)
	9.75 (High, 1985)	103	(10.6 x 9.75=103.35)
	8.35 (FHWA, 1995)	88.51	(10.6 x 8.35 = 88.51)

Employment Multiplier

Indirect (off-site employment, manufacture, and preparation of supplies and equipment)

Cost of Construction	Multiplier	Jobs	
\$10,633,000	9.25 (Low)	98	(10.6 x 9.25 = 98.05)
	12.7 (High)	135	(10.6 x 12.7=134.62)

Employment Multiplier

Induced (employment generated to fulfill demand for goods and services to newly employed households)

Cost of Construction	Multiplier	Jobs	
\$10,633,000	10.5	111	(10.6 x 10.5 = 111.3)

Income Multiplier

Direct, Indirect and Induced

Cost of Construction	Multiplier	Income	
\$10,633,000	1.94	\$20,628,000	(10.6 x 1.94 = 20.6)

4.3 Determining Impacts to the Public Sector

Tax revenues are the amounts collected by the state and local taxing authorities. These revenues, in turn, become tax expenditures used for community services and facilities such as schools, fire and police departments, etc. Categories of tax revenues include both property tax and sales tax. Taxing systems vary widely throughout the state and are composed of and executed by several taxing authorities.

Taxing authorities often overlap each other's jurisdiction. The authorities are composed of several levels such as county, municipality, local, township, etc. Examples include local school districts, township fire districts, county library districts, etc. The reader could refer to his or her property tax bill for additional examples of taxing authorities.

Transportation improvements usually have an effect on tax revenues in a community or region; sometimes the changes to tax bases or expenditures can be significant. (A loss of over 10% per individual taxing authority could be considered significant.) Generally, new highway improvements will result in a decline in tax revenues and expenditures in the short run (as formerly taxed properties move into the public domain) changing to an overall increase in the long run (as new businesses or residential areas are developed as a result of the improvement). Increased tax expenditures are linked to the secondary growth effects of highways, which usually places additional pressure on the existing public services/facilities and infrastructure due to induced population growth.

In summary, tax base changes are due to land use changes. Commercial, residential and agricultural lands are often required for highway construction or improvements. Revenue from property or sales taxes can change in these instances, producing positive and/or negative impacts on the financial stability of the community.

Determining the Impact of Tax Base Changes

(Note: Tax analyses are usually completed only for EIS level projects; occasionally an EA level project may have a great enough scope of work to warrant a tax analysis.)

Decisions regarding potential impacts to public sector finance can best be made if the analyst asks the following questions:

- Will taxing districts be affected by the proposed project?
- Will changes in land use occur due to the proposed project?
- Will relocations or displacements of businesses or households occur?
- Have zoning changes occurred recently?
- Will the improvement be likely to induce heavy or rapid growth within the project area?
- Will the assessed value (property tax) of farmland (especially with major highway interchanges) be increased, thereby decreasing the profitability of continued farming operations?

If the answers to any or all of the above questions are yes, will the project cause a significant or insignificant change to the existing tax base? To determine the level of significance, the analyst should develop tax base revenue impacts for each alternate (see Appendix B), focusing on anticipated loss to the individual taxing districts of each community and projecting this result onto the region. After calculating the potential tax base loss based on assessed value of all properties within the right-of-way acquisition area and on the estimated loss due to land use changes (e.g., removal of productive agricultural land and other opportunity costs), the analyst should compare the results to the regional or county-wide tax revenue figures. Using the percentage loss (e.g., 2% of X tax base), the analyst should determine if a significant loss will occur due to the proposed project. In general, if a relatively large tax-generating area is involved within a relatively small community or a large portion of a taxing district (over 10%) will be converted to non-taxable status, there will be a significant impact to area revenue. This impact may require the development of additional alternate alignments and/or mitigation in the form of a one-time payment to the taxing district.

Identifying Appropriate Components for Analysis of Project Impact to the Tax Base

The most relevant analysis components regarding project impacts on tax revenues or expenditures include the following:

Changes in Tax Revenue - increases or decreases due to the project. The following factors should be considered:

- Area of the Tax Base
- Taxing Authorities and Districts
- Property and Sales Tax
- Land Use Changes
- Potential for Relocation

Changes in Tax Expenditures - differences in tax expenditures that will be required to support new expenditures due to the project:

- Associated External Impacts
- Additional Stresses on Infrastructure due to Induced Growth

Changes in Revenues

- Property Tax

In addition to gathering data from primary and secondary sources, the analyst should obtain a Taxing District Map (available through the Department of Revenue) which will indicate taxing districts and authorities within the project area. The analyst should overlay the various project alternates onto the Taxing District Map to compare impacts to taxing entities.

A Tax Revenue Analysis Table should then be developed (see Appendix B for an example). Tax losses should be assessed for each project alternate. Property tax losses for each taxing unit can be quantified by determining the amount of new right-of-way and obtaining the tax rates and market value of the structures to be taken, if any.

Acreage totals for agricultural land should be multiplied by the county's agricultural-economic value index, which is a dollar per acre per county figure (assessed valuation multiplier). The economic value index for agricultural land is derived from soil type and productivity, etc.

The number of structures, whether commercial, residential, or farmstead should be multiplied by the average value for each type of structure. The market value of the structures (given by the county tax assessor's office) to be taken by each alternate should be multiplied by the assessed valuation figure to yield the equalized assessed values.

The equalized assessed values of land and buildings to be displaced by the facility improvement under each taxing authority should be summed, divided by 100 and multiplied by the most recent tax rates per \$100 of assessed valuation. The result represents an estimate of the property tax revenues. This figure can then be divided by the total billed property taxes for the latest year available to yield the percentage of revenues that is expected to be lost due to project impacts.

- Sales Tax

The following discussion summarizes the status of sales tax in Illinois. This is general information only. Sales tax revenue losses due to transportation projects are likely to be significant only if very large retail/service businesses are taken and not relocated within the same area. Therefore, sales tax loss analysis would not be necessary for most projects.

The State of Illinois has a minimum sales tax amount. A portion of this sales tax revenue is for state use, and the remainder is returned to the municipality from which the tax is generated in varying amounts, depending on such factors as population and location.

In addition to the minimum state sales tax, cities, counties and other local municipalities have the option to raise this rate in their area by imposing a "home rule" tax to generate additional revenue. For example, in 2001 the combined state and City of Springfield sales tax rate was 7.25%.

The loss of sales tax due to transportation projects (i.e., the out-of-area relocation or demolition of businesses) is generally not considered a major impact since businesses usually relocate within the same municipality. Impacts that result in substantial local sales tax base fluctuations are usually associated only with very large-scale projects.

Changes in Expenditures

The secondary effects of highway projects on growth and the resulting pressure on local funding sources may be an issue on some projects; therefore, it may be necessary to include a discussion in the environmental report.

If a qualitative approach is used to estimate the increase in public fund expenditures required as a result of a highway improvement (i.e., induced growth effects), it should be focused on the following:

- Identification of the public service requirements needed to accommodate projected levels of development.
- Identification of planned public facility capacities.
- Identification of municipalities' policy regarding impact fees levied on private developers.

Sources of Information

Primary data sources for this issue area include field surveys, interviews, direct contact with local officials (especially the County Tax Assessor's Office), and the use of websites and published inventory materials, such as real estate directories. Sales and/or property tax and associated information can be found through, or is published by, the following agencies:

<u>Federal</u>	
Department of Treasury - Internal Revenue Service	
Department of Labor, Bureau of Labor Statistics	
Department of Agriculture	
Department of Commerce - Bureau of the Census	
	<i>Statistical Abstract of the United States</i>
	<i>National Data Book</i>
Department of Commerce	Office of Business Economics
	Bureau of Economic Analysis
	<i>BEA Regional Projections to 2040, Vol. 1, States</i>
Executive Office of the President - Office of Management and Budget	
<u>State</u>	
Illinois Department of Revenue (Taxing District Maps)	
Department of Commerce and Economic Opportunity	
State and Regional Economic Information:	<i>Illinois Data Book</i>
Department of Labor	
Bureau of Economic and Business Research - University of Illinois	
	<i>Illinois Statistical Abstract</i> , Frankel, Layman, Hartwig and Winkler
<u>Local</u>	
City or County Tax Assessors Office	
Chamber of Commerce	
School District Business Office	
Industrial Development Councils	
Merchant Associations	
Planning Boards and Commissions	
Regional Transportation Authority	
City or County Zoning Departments	

Table 4.2 Tax Information Sources Grouped by Level of Government

Analyzing Economic Impacts of Taxes

In general, transportation projects can affect local/regional tax bases through both direct tax revenue increases or decreases and indirect tax effects on adjacent properties - including those due to induced property improvements. The net fiscal impact of roadway projects includes both expenditures related directly to the roadway project and those related to changes in associated public works projects that result from the induced growth and additional capital expenditures.

Revenue

The property tax is the single largest source of locally generated revenues. In some communities, local sales tax may be levied or state sales tax revenues may be appropriated to local governments on the basis of actual property tax collections. Local fiscal impacts of highway development on revenues generated from property tax may take the form of one of the following.

- Direct revenue losses, which occur when land is acquired for highway use and removed from tax rolls.
- Induced revenue effects, which include appreciation/depreciation of property values adjacent to the project area.
- Induced revenue gains, which are due to tax-paying development within the corridor (i.e., growth generated by the improvement).

Significant property tax or revenue loss to a small community can result in severe short-term impacts to school funding, public services such as fire and police, and other segments of the community. Conversely, small increments of tax loss within a large tax base can be considered insignificant and easily compensated through ensuing business or residential development.

Expenditures

The impacts of highway improvements on public expenditures result from highway-induced development which, in turn, precipitates demand for public facilities. The growth induced by transportation improvements often puts too great a burden on the existing infrastructure such as water, sewer, and existing roads - along with an increased burden on services such as fire and police department protection. An estimate of the potential increase in government expenditure due to projected growth can be based on previous experience in the community in which the project is located or in similar sized communities. Often, planning agencies may provide information on this matter, including impact fees, etc., assessed on new businesses.

Overall, transportation improvements usually enhance a community's growth potential, and in the long-run have a positive effect on its ability to increase revenues. However, short-term effects of revenue loss or expenditure increases due to growth of the community may be offset through mitigative efforts.

Mitigating Negative Impacts to the Project Area's Tax Base

Mitigation for negative local fiscal impacts from highway improvements can be accomplished in a variety of ways, including the following:

- Special design measures that promote the joint development or multiple use of a facility right-of-way can result in a more intense utilization and higher tax valuation of the land.
- Design resources, such as traffic flow management and the provision of adequate access, can contribute to the growth of property values and therefore, have a positive impact on the local governmental budget.

- In some cases, direct compensation can alleviate the revenue loss to a local government due to temporary construction-period impact or long-term loss of taxable land as a result of a highway improvement.
- Proper planning can seek to induce the type of growth that maximizes net local revenues.

4.4 Economic Impacts: Public and Private Sectors

4.4.1 Community Bypass

When bypass improvements are initiated, typically one of the main concerns is the potential for impacts to the local business community. In general, bypasses tend to have beneficial impacts on the social aspects of the community (no disruption of cohesion, improved safety, etc.) and may or may not have a beneficial impact on the economy of the town or city being bypassed. The effect varies with each circumstance. The following variables are important in the initial assessment of potential impacts to communities due to bypasses:

- Population of the community
- Location of the community with respect to neighboring areas, proximity to larger cities, smaller towns, etc.
- Composition of local economic bases
- Amount and type of traffic-dependent trade
- Average daily traffic
- Origin/destination of traffic in the area
- Existing and proposed land use
- Tax base and property values

When bypasses or detours are proposed, it is helpful to perform a traffic diversion study. Also, the analyst may make conclusions regarding potential impacts to traffic-dependent businesses based on previous bypass studies, which may include statistics on gain or loss to businesses that have experienced bypass effects.

In general, adverse impacts to existing services are offset by the greatest impact on land use identified in case studies, which is the attraction of commercial development into the vicinity of the bypass area. Traffic-dependent service businesses such as gas stations, restaurants, motels, etc., are major land-users at highway interchanges. Most of these businesses choose their location based on the average daily traffic through the area and site accessibility factors. Therefore, adverse or beneficial impacts of highway bypass projects should be assessed in terms of traffic and access.

Obviously, projects that add lanes, improve access, or create new access are deemed beneficial to traffic-dependent businesses; while detours, bypasses or access elimination may be detrimental. Most analyses should be based on existing conditions, using information obtained from the business owners and transportation traffic statistics. Analysis variables may include interregional traffic volumes, traveler spending potential, trip and travel patterns, and interchange configuration.

The following listing of types of businesses categorized by their traffic-dependent characteristics is presented to give the analyst an idea of the sensitivity to bypasses that some businesses may have. Naturally, it is not a complete listing of all types of businesses.

Typically Traffic-Dependent	
Restaurant / Lounge	Gas Station
Convenience Stores	Hotel / Motel
Confectionery / Ice Cream	Vegetable Stands
Traffic-Dependency Uncertain	
Garden Center	Food Market
Hardware	Antiques
Art / Craft / Gifts	Recreational
Video	Boat Sales / Service
Flea Market	
Typically Not Traffic-Dependent	
Bank	Industrial
Medical Services	Real Estate Agency
Personal Grooming	Laundry
Pharmacy	Newspaper / Printing
Auto Sales / Parts	Insurance
Legal Services	Mortuary
Furniture Stores	Appliance Stores / Repair
Veterinary	

4.4.2 Urban Bypass Studies

A literature review of bypass studies is presented in the following section. These are summaries of the findings of various studies in the area of highway bypass impacts in both urban and rural settings. The study title, authors and date are given at the beginning of each summary.

“Effects of Highway Bypasses on Rural Communities and Small Urban Areas”
NCHRP Synthesis Project 20-5. Buffington, Womack and Lemer; 1996.

(This is a study of studies done thus far on the topic of bypasses; it provides a distillation and quantification of research results. The synthesis concentrated on urban areas of less than 50,000 population, reviewing over 190 studies dated from 1950 onward.)

- Anecdotal evidence from towns . . . and some research studies have indicated that bypasses can indeed have adverse consequences for local businesses, particularly in places with populations below 1,000.
- More than three-quarters of the 75 cases (within studies) for which population changes were considered showed increases in total population following construction of a bypass.
- Business sales growth in larger communities does seem to respond less to a new bypass than is the case in smaller areas.
- A majority of studies of specific communities indicate that a community's overall business activity, as measured by gross annual sales, grows more rapidly where bypasses have been constructed.
- As many as 36 percent (of businesses) closed following bypass construction. A similar range of new businesses, however, opened during the same study periods. For businesses not primarily traffic-serving, no more than one-quarter of businesses closed, while some cases exhibited nearly 90 percent increases in numbers of businesses. Along the new bypass routes, the numbers of new businesses showed substantial increases in virtually all cases.
- While sales tax receipts suggested a gradual decline in sales strength for businesses in bypassed communities (e.g. auto dealerships, restaurants, general services, and general merchandise businesses), none of the results were statistically significant. The survey revealed that respondents believed - by a two-to-one margin - that business had not been adversely affected by the bypass.
- More than three-quarters of these cases (36 of 47) exhibited an increase in study-area employment following completion of a bypass.
- Reported interviews with political leaders in bypassed communities suggested that the judgment that impacts were positive overall may have depended on the community's ability to extend its political boundaries - and thus its taxing authority - to encompass new development along the bypass and to return a share of benefit to the businesses and residents remaining in the community defined by the pre-bypass boundaries.
- Successful mitigation identified by states surveyed include new or additional signage, business-route designations, advertising and logo identification, bypassed area access improvements, and public and community involvement in planning.

"A Literature Review of Urban Bypass Studies"; Office of Project Planning, Iowa Department of Transportation, 1989. (This was also a review of previous studies for bypasses in urban areas.)

- Size of the community influenced the impact of the bypass. Smaller cities (population less than 500) experienced greater adverse effects.
- Commercial property values along the bypassed highway did not decrease as a result of the bypass.
- Traffic congestion and accident rates decreased along the bypassed highway.

- Business along the old (bypassed) highway may not necessarily suffer as a result of the bypass.

“Impacts of Highway Bypasses on Wisconsin Communities”, Bureau of Policy Planning and Analysis, Wisconsin Department of Transportation, 1988.

- All communities surveyed believed that the bypass resulted in a decrease of truck traffic and congestion in general on the bypassed highway.
- Only a very small portion of residents believed that the quality of life for those living along the old highway had decreased or gotten worse; most thought the quality of life was relatively the same or better.

“Employment and Income Impacts of Highway Expenditures on Bypass, Loop and Radial Highway Improvements”, Jesse Buffington and Dock Burke, 1989.

- Highway improvements, such as a bypass, may positively affect the number of manufacturing jobs.
- Total number of jobs increased as a result of highway improvement.
- Radial highway improvements influence manufacturing employment more so than a bypass does because manufacturing firms prefer to locate along routes leading directly into the business district of a city.
- Highway improvements, including bypass, produce statistically significant impacts on employment and wages in the affected area.
- Bypass improvements provide access to shopping centers and other developments on large and less expensive sites.
- Radial improvements statistically produce fewer total jobs than do bypass improvements.

“Impacts of Highway Bypasses on Community Businesses”, Sabrina Blackburn and James Clay, 1991.

- Business establishments closer to the bypass highway experienced increases in sales, while a large portion of the businesses located further from the bypass experienced decreases in sales.
- Those businesses classified as traffic-dependent received the most positive impacts from the bypass highway.
- Many residents who were questioned about their opinion of the impact of the bypass on the community felt the bypass resulted in fewer accidents and relieved truck traffic previously experienced in the downtown area. Further, more than half (60%) of the respondents thought that overall the bypass had a positive impact on the community.

Example Bypass Study Outline

(Suggested for use in projects of large scope with one or more bypasses planned)

- I. Introduction
 - A. Background - project purpose and need
 - B. Literature summary of relevant previous studies
 - C. Methodology - (if a survey, etc. is planned)
- II. Description of the project area
 - A. Characterization of towns / cities to be bypassed
 1. Population
 2. Proximity to neighboring towns
 3. Existing and proposed access to towns to be bypassed
 4. Other relevant issues
 - B. Surrounding land uses
 - C. General economic profile / economic bases and employment
- III. Business activity
 - A. Description of highway-oriented businesses (gas stations, motels and restaurants, etc.) that may be affected by the bypass
 - B. Description of non-highway oriented businesses
 - C. Discuss anticipated effects of potential business closings (in terms of sales and property taxes)
 - D. Potential for new businesses due to bypass
- IV. Social / community characteristics
 - A. Bypass effects on community cohesion
 - B. Anticipated access changes
 - C. Increased / decreased safety
 - D. Effects on air / noise
- V. Conclusion / recommendations
 - A. Overall / general implications of the proposed bypass - short and long-term effects on communities
 - B. Conclude with one of the following three possibilities:
 1. Community will benefit from bypass
 2. Community will be adversely affected
 3. Community will not be either positively or negatively affected by the proposed project
 4. Community will be affected both positively and negatively by the proposed project
 - C. Mitigation for adverse impacts or suggestions to offset effects of bypass on business

4.4.3 Regional Economic Development

Although highway improvements are only one of many factors that influence development, induced corridor development often represents the cumulative response of various segments of the community to the presence of a new or improved highway. Development is manifested in changes in business location and the type of changes in land use that may be associated with the new highway facility.

The strength of the association between new highway facilities and regional economic development can be estimated in terms of the amount or location within the corridor of potential development by type of activity (industrial, commercial, residential), population of the area, employment characteristics, annual retail sales, and number of existing commercial establishments.

Highway improvements tend to affect the spatial distribution of regional economic activity, primarily by creating new access to previously inaccessible areas, or by upgrading existing routes to accommodate additional business activity. The analysis of highway improvement impacts (beneficial or adverse) in relation to regional economic development should consider the overall market area. The analyst should refer to land use plans and other planning studies to investigate the potential for induced economic development. In addition, coordination with local community officials and private developers should be accomplished to ensure compatible planning, especially at interchange access areas.

In most cases, a local or regional planning agency will have analyzed past development and growth trends. Present development trends can be investigated using census data, field surveys, and aerial photography.

New development will occur based on the following:

- the accessibility of undeveloped land suitable for development and the relationship to major employment centers, retail facilities, and other services
- the image, market appeal, and prestige of the study corridor
- the projected availability of water, sewer, and other public facilities and services

The results of research into the relationship between new or improved highway facilities and regional economic growth have indicated that there is a significant link between the two. Many studies have focused on short and long-term changes in employment and income, while others deal with identifying the factors that attract new businesses to an area. The following summaries are typical of the findings of current research in this area:

The relationship between national highway investments and business productivity is evident through reduced shipping costs. A reduction of costs makes businesses more competitive and extends the market area.

Counties with interstate highways have an advantage over other counties regarding population and employment growth - but only in counties within 25 miles of a metropolitan area; the effects on employment are primarily related to highway-dependent businesses (service stations, restaurants, motels) and are not related to manufacturing or wholesale operations.

There are many local factors besides highway improvements that affect regional economic growth; a new or substantially upgraded highway may or may not generate economic impacts, depending upon its location and inter-modal connections.

An area might become attractive to new businesses due to geographic position of the highway relative to the locations of particular population centers, suppliers, or buyers (both in and out of state). It may provide special opportunities for particular combinations of industries.

Surveys of corporate executives have ranked highway access as one of the top three factors in new firm location.

There is a statistically significant relationship between increased expenditure on highway infrastructure and increases in productivity as output per hour; productivity increases translate into growth that results in higher wages and higher standards of living.

The multiplier effects on employment and income (direct, indirect, and induced) vary greatly depending upon the scope of the project, duration of project construction, location, existing labor pool of contractors, amount of construction material purchased locally, capital/labor ration of the contractor, and the wage rates. There are almost always short-term (less than one year) multiplier impacts due to a transportation project; however, there are not always long-term effects.

5.0 LAND USE

Transportation projects play an important role in determining the nature, quality, and distribution of local and regional development. Highways can either support or impede the realization of site-specific development objectives, and overall regional planning goals and objectives. This section provides information for analyzing the effects of highway projects on land use and development.

5.1 Definitions

The term “land use” generally refers to regional land use planning and the subsequent regional development. The extent to which a local economy grows due to a highway improvement is a function of many factors, including the nature and quality of existing local resources and the diversity of the area’s economic structure.

Land use analysis is a process of evaluating a transportation project with regard to potential impacts to local and regional economic planning, as well as to existing transportation systems, public services, and environmental issues. The methods available to analyze the relationship between site-specific plans, corridor plans and regional plans with regard to a highway project include the following:

- Identification of planning agencies and organizations currently operating in the study area.
- Identification of planning goals and objectives as expressed by the agencies and organizations as they apply to the future growth and development of the study area.
- Identification of major areas of agreement and conflict between the above planning agencies and organizations, particularly insofar as they relate to transportation system changes in the study area.

Note that land “use” means the current “use” of the land, i.e., the current activity base, whereas a “cover type” describes the dominant vegetation type. Cover types are used in natural resource impact assessments.

Typical Land Uses	Typical Cover Types
<ul style="list-style-type: none"> • Residential • Agricultural • Commercial • Industrial • Urban • Rural (Residential) • Recreational (Open Public Land) • Utilities • Land Fill • Mining 	<ul style="list-style-type: none"> • Forbland • Native Grassland • Non-native Grassland • Forest • Shrubland • Old Field • Persistent Emergent Wetland • Forested Palustrine Wetland • Cropland

Table 5.1 Typical Land Uses and Cover Types

5.2 Determining the Extent of Impacts to Land Use

Decisions regarding potential impacts to regional land use planning can best be made by reviewing the following questions:

- Will the project cause significant changes in existing land use?
- Will the project facilitate or impede potential growth?
- Which economic sectors might be affected by the project?
- Will business or residential relocations be required?
- Is the project located within a high growth region?
- Is there a history of conflicting land use planning goals through local planning agencies?
- Will zoning changes occur due to project implementation?
- Have there been recent zoning changes in the project area?

5.3 Identifying Components for Analysis of Impacts to Land Use

In most cases, the relevant analysis components to be established with regard to project impacts to land use include the following:

- Land Use and Zoning
- Growth - Planned and Unplanned

The geographic area defined for analysis is the area that will be affected by direct and induced impacts. Direct impacts are those that cause an immediate physical change in the surroundings, while induced impacts are those that occur as a result of the improvement, but come about after a certain length of time. The study corridor should include all of the areas the proposed project will affect directly or indirectly. The analyst should consider land development trends, regional accessibility, and local traffic patterns.

The analyst may wish to compare zoning maps with proposed land use maps to assess the exogenous change planned for the area. In addition to the actual land use plan, many regional or local planning commissions include a comprehensive plan that outlines the overall goals and objectives of the planning area. The comprehensive development plan includes land use, transportation, public facilities, housing, community services and the environment. The analyst should ensure that the planned improvement is in compliance with these goals and, in fact, acts to facilitate the regional plans.

The following is an example of information typically included in comprehensive land use plans:

The Comprehensive General Plan sets forth basic goals that are the foundation on which functional regional plans rest. These goals are:

- *Access for all to the cultural, social, and economic resources of the region without regard to race, creed, national origin, sex, age, or physical state of health.*

- *Expansion of economic opportunities for all and improvement of the region's ability to maintain its share of economic growth.*
- *Enhancement of the quality of personal and community life.*
- *Balanced development patterns reflecting the limitations of the region's natural resources and the need to preserve and improve environmental quality for our time and future generations.*
- *Effective representative government, responsive and accountable to the region's citizens.*

In Illinois, regional councils have developed under a variety of names, the most common of which is regional planning commission. The only difference between a group calling itself a regional or metropolitan planning commission and one calling itself a regional council or council of governments is that planning commission members are appointed by the commissioning county boards; whereas, council members are chosen from elected officials of member governments. Whether a council or a commission, a regional planning agency is a voluntary association of local governments, usually funded by a combination of dues and grants.

Sometimes, several government agencies at the regional, county, and local levels are responsible for land use planning, which may result in the same project being included in two or more agencies' land use plans. Therefore, the analyst should check with local city authorities to obtain any local land use plans that may be available in addition to regional land use plans.

The following list includes statewide planning authorities and a summary of their mission statements.

- *Bi-State Regional Commission (www.bistateonline.org)*
To serve as a forum for intergovernmental cooperation and delivery of regional programs and to assist member local governments in planning and project development.
- *Boone-Belvidere Regional Planning Commission (no website)*
To offer city planning and zoning ordinance revision services.
- *Champaign County Regional Planning Commission (www.ccrpc.org)*
To promote, plan, facilitate, and accomplish the improved health, safety, welfare, education, economic conditions, environment, and regional development within Champaign County in particular, and also within the greater area of East Central Illinois.
- *Chicago Metropolitan Agency for Planning (CMAP)(www.chicagoareaplanning.org)*
(Includes staff from CATS and NIPC)
To preserve and enhance quality of life for the region's residents through long-range regional planning, technical assistance, and building consensus to identify and advocate for regional priorities.
- *DeKalb County Regional Planning Commission (www.dekalbcounty.org)*
To furnish code enforcement and zoning ordinance filing services.

- *East-West Gateway Council of Governments* (www.ewgateway.org)
To recognize, analyze, and promote broad-based understanding of regional problems, issues and opportunities; and, to administer such services as population and employment estimates, transportation planning, and urban growth monitoring.
- *Greater Egypt Regional Planning and Development Commission*
To administer economic development, water quality management, and Job Training Partnership Act services.
- *Greater Wabash Regional Planning Commission* (no website)
To administer economic development, planning, and technical assistance services.
- *Logan County Regional Planning Commission* (no website)
To provide Logan County with land use and housing planning services, as well as local planning and management assistance.
- *McLean County Regional Planning Commission* (www.mcplan.org)
To prepare and advocate the implementation of plans for coordinated development to enhance the quality of life in McLean County.
- *North Central Illinois Council of Governments* (www.ncicg.org)
To administer zoning assistance, technical assistance, community development assistance, and recreation grants to counties, townships and communities.
- *Northeastern Illinois Planning Commission* (www.nipc.org)
To supply land use and residential planning, transportation planning, environmental planning, and research and local assistance.
- *South Central Illinois Regional Planning and Development Commission* (www.scirpdc.com)
To administer small business development, technical assistance, and economic development and planning activities.
- *Southeastern Illinois Regional Planning and Development Commission* (www.sirpdc.org)
To provide technical assistance, economic development assistance, and general planning activities.
- *Southern Five Regional Planning District and Development Commission* (www.southernfive.org)
To provide historic preservation, economic development, and industrial site plan analysis services.
- *Southwestern Illinois Planning Commission* (no website)
To administer water quality management, community development, economic development, graphics and printing and transportation projects.
- *Southwestern Illinois Development Authority* (www.swida.org)
To encourage economic development and provide community services.

- *Springfield-Sangamon County Regional Planning Commission* (www.co.sangamon.il.us)
To provide emergency service assistance, flood insurance coordination, and economic development services.
- *Tri-County Regional Planning Commission* (www.tricountyrpc.org)
To administer such services as the Community Service Block Grant Program, transportation planning, and the Illinois River Study.
- *Two Rivers Regional Council of Public Officials* (www.quincynet.com)
To provide staff to develop and administer programs and policies which further the efforts of local governments and aid the economically disadvantaged throughout the region.
- *Western Illinois Regional Council* (www.wirpc.org)
To provide technical assistance to local governments and elected officials facing complex community and economic development issues.

Land Use Types

The analyst should determine the percentage of each of the following land use types that will be within the project corridor, and what percent will be converted by the project.

Agriculture

Agricultural land use type includes cropland, pasture, harvestable timber, nursery stock, farm ponds and creeks with associated vegetation, and farm buildings and lots (farmstead). Land use conversions related to agriculture should be analyzed in terms of economic loss/gain. The economic losses, both in terms of private losses to the individual and public losses to the tax base, should be weighed against the social benefit or overall welfare to be gained by area residents due to the proposed project. Results of this investigation should be compared to the entire area to gain a relative perspective for gauging impact severity. The elements of an ag-land conversion study include:

- Percent prime farmland (within existing and proposed right-of-way)
- Soil association (Categories I, II, and III are prime classes) See County Soil Reports to determine categories.
- Percent acreage used in farming within project area
- Characteristics of farms in counties through which the corridor passes
- Number of severances that will be created by the project
- Number of land locked parcels that will be created by the project
- Number of Centennial Farms within the project area
- Location of "Agricultural Areas" within the project area

A transportation facility alters agricultural activity in three basic ways:

- Increased/decreased regional accessibility
- Inducing changes in the productivity of the region's agricultural resources
- Directly or indirectly encouraging the conversion of agricultural land beyond the highway right-of-way

Improved access may bring new land into production; whereas, access disruption (due to a severance or land lock) can remove land from production. Adjacent land conversion, especially to urban and residential development, often occurs after tax increases make farming less profitable.

Residential

Quantitatively, residential use represents the greatest land use in urbanized areas. Residential development occurs in the corridors of major highway improvements, especially those providing or improving access to work places and shopping areas. The location of residential development is a function of zoning, availability of sewer, water, and power sources, image, market appeal, major employment areas, and retail areas.

Highway construction or improvements can affect residential areas directly (right-of-way take) or indirectly (by inducing or discouraging development). Residential displacement impacts are discussed in Relocation, Section 3. Indirect effects include changes in adjacent land use or values that may occur due to project planning or implementation. These effects may be adverse (lowering property values, opening areas to commercial development), or beneficial (additional residential development as a result of expanded economic activity which results from the project, increased employment opportunities, and enhanced property values) (see Regional Economic Development discussion in Section 4.4.3).

Commercial

This land use includes business facilities such as retail, wholesale, financial, real estate, restaurants, and other services. As was true of residential land use, the location of commercial development is a function of zoning, availability of utilities and infrastructure, and market appeal. Highway improvements generally have a beneficial effect on commercial areas, and new facilities often generate a change from other land uses to commercial zoning.

Industrial

The industrial land use type is typically characterized as supporting one or more industrial or factory-type facilities. These facilities are engaged in various manufacturing activities.

Urban

The urban classification defines areas of great density in terms of population and activity. This would characterize city-type areas with a mixture of commercial and residential (apartments). Urban may also be used as a classification for areas within a city containing industrial facilities. Therefore, the urban land use is composed of residential, commercial and/or industrial zones within high-density areas usually called cities or metropolitan areas.

Rural Residential

The term “rural residential” is used to label farmsteads. Farmsteads include houses, barns, and other auxiliary buildings, such as tool and machinery sheds. The term “agricultural” can be used to include the farm structures as well as the associated cropland or animal use areas, such as pastures. However, when relevant, it is important to separately identify or highlight the number and location of farmsteads using the rural residential designation.

Recreational / Utilities / Land Fill / Mining

These designations are self-explanatory and are used as appropriate to label the activities or land use within an area. The utilities designation is used for power plants, substations, wide strips of right-of-way accommodating several above ground appurtenances, high-tension wires, transmission lines, etc. Quarries are examples of surface mining operations.

5.4 Zoning

A **Zone** is an area that has a designated land use comprised of one or more of the previously described uses (i.e., retail, residential, industrial, etc.). Zoning information is a valuable planning tool for the analyst. Most cities and towns have a zoning code. Note that zoning keys or codes (such as C-1, R-2A) vary among communities. These codes are not standard and must be investigated for each project individually. The definition of each code should be included in project documentation materials. A general definition of a given code for the City of Springfield is as follows:

R-1 and R-2 Single-Family-Residence Districts

Purpose

These districts are designed to provide a suitable open character for single-family detached dwellings at low density or for agricultural uses. The districts also include community facilities and public open space uses, which serve the residents of these districts or which are benefited by an open residential environment.

Regulations of R-1 and R-2 Single-Family Residence Districts

- (A) *R-1 Single-Family Residence District is designed for the lowest density residential development, with large lots preserving a country atmosphere.*
- R-2 Single-Family Residence District provides for residential development of an intermediate density.*
- (B) *Permitted uses in R-1 and R-2 Single-Family Residence Districts are as follows:*
- (1) *Single-family detached residences*
 - (2) *Agricultural uses*
- (C) *Community facilities which may appropriately be located in residential areas to serve educational or spiritual needs, or to provide recreational or other essential services primarily for the resident of the neighborhood, or which can perform their activities more effectively in a residential environment, unaffected by objectionable influences in residential areas.*
- Community facilities allowed in the R-1 and R-2 Single-Family Residence Districts shall include:*
- *Athletic fields, noncommercial*
 - *Churches or other places of worship, rectories, or parish houses*

- *Colleges or universities*
- *Community centers*
- *Country clubs*
- *Elementary schools (public or private)*
- *Parks*
- *Family day-care homes*

Such definitions can provide a wealth of information to the transportation planner. Zoning maps should be used during impact analysis and included in environmental and project reports.

Zoning regulations are land use controls that can channel desired development into certain areas and deter it from others. Zoning, in conjunction with tax policies and special incentive programs, is used as a tool for local government. Note that policies requiring sequential development may be restrictive but may encourage more efficient land use, including minimizing the need for roadway construction.

5.5 The Effects of Growth on Land Use

Most communities or regions have comprehensive land use plans that have been developed in an effort to direct growth. Planned growth can result in beneficial and efficient development, ensuring diversity and balanced economic sectors. Unplanned, undirected growth often causes transportation facility problems. Planning highway improvements in areas of rampant growth proves a difficult task and usually results in a less than optimal solution that generates more adverse effects (such as reduced property values and access problems). Growth, which is sometimes brought on by new or improved highway facilities, places strains on local governments that are charged with providing services and creating adequate infrastructure.

The following are excerpts from testimony before the Legislative Growth Management Committee in Maine:

“Unplanned growth is overwhelming the abilities of some municipalities to provide needed services and infrastructure to their residents.... Increasingly, towns are being forced to raise taxes to pay for the increased demands placed on municipal services by new development. In some communities, there are serious questions of whether infrastructure needed for future residential, commercial, and industrial growth will be available in a timely fashion.”

A few counties in Illinois have passed ordinances requiring developers to contribute user fees to counties. These fees are used to finance road building and maintenance. In addition, to help communities deal with transportation-induced growth, planning councils or advisory committees are often utilized on major projects. These groups may produce guidelines and recommendations regarding environmental ordinances, erosion and storm-water controls, etc. Agreements regarding zoning changes, etc., are developed and signed by representatives of the involved communities, thereby avoiding future conflicts that may arise due to growth associated with the project.

Land use plans were developed mainly in the 1960s and '70s under the mandate of federal funding procedures. Areas without land use plans did not qualify for special development grants, etc. The issuance of land use regulation programs was also motivated by the effect on the environment of uncontrolled development and rapid growth. Planning commissions are

responsible for maintaining and implementing land-use plans that promote balanced development. Traditionally, this is done at a local level. Under home rule, state governments have delegated the authority to plan and regulate development to local governments.

The focus of land use planning in the 1960s and '70s had to do with the environment and externalities. In the 1980s and '90s, planners were addressing broader growth related questions, such as a lack of affordable housing, infrastructure deficits and the loss of community character. Today, the focus is on increased housing needs and accessibility of transportation for all residents of the community. In terms of transportation projects, it is important to remember that planning at each level of government must comply with state goals and be compatible with local and regional land use plans. That is, the induced effects of highway improvements should coincide with the zoning and growth directions outlined in the regional plans.

Highway impacts on growth arise from two sources. First, the highway may (but not necessarily will) increase the level of regional land development by attracting new basic economic activities; some of this incremental land development may occur in the impact corridor. Secondly, the highway may change the development potential of the corridor by improving accessibility to regional employment and residential areas.

Accessibility provided by a highway improvement project generally interacts with other economic and locational factors and results in independent land development actions.

Although in the past, economic development and growth management have been opposing issues, they have recently merged to some extent. Good growth policy is being viewed as a prerequisite for economic development, as in this statement by the director of the New Jersey Office of State Planning:

“While many people view environmental protection and economic growth as competing objectives - as antagonistic concerns - they are, in fact, inextricably linked. Given other options, desirable businesses will not locate in a state where the rural landscape has been destroyed, where the water and air are polluted, where the cities are rundown and dangerous, and where the major commuter routes of the state become its largest parking lots at rush hour.”

In most cases, past development and growth trends have been analyzed by a local or regional planning agency. Present development trends can be investigated using census data covering the recent past, field surveys, and aerial photography.

5.6 Types of Analysis

Primary data sources for this issue area include field site review, interviews with local city or regional planners, chambers of commerce, zoning authorities, and state commerce officials.

Secondary data sources include federal, state, and local published data that are usually readily available through the library and on various websites. The comprehensive land use plan covering the project area will contain a great amount of information regarding land use and growth. In addition, the *Corridors of Opportunity* and associated publications should be consulted. Local zoning information is usually available from city government units.

5.7 Mitigation Measures

The following suggested mitigation measures can reduce adverse effects associated with both direct and indirect impacts of highway facilities on land use.

- Design measures to ensure that new residential development patterns are compatible with the provisions of municipal services. For example, the provision of water and sewer facilities, educational and health facilities can most efficiently be provided only if the users of these services are in close proximity of each other. Proper planning and design can ensure this locational pattern.
- Planning assistance to ensure that the proper land use control programs are created and implemented.
- Operational measures such as the control of traffic flows from an area can reduce adverse impacts associated with major new residential development.
- Citizen and interest group participation in project development.
- Design considerations that recognize ingress and egress requirements, the value of access, and adjacent land use requirements.
- Special attention to joint development issues (those involving the highway facility and adjoining development).
- Land use controls can offset the urbanizing impacts of highway construction (e.g., special use tax structures and agricultural use districts).
- Avoid segmentation of farmland.

6.0 Coordination

Although there are currently no regulatory agencies that require a coordination process for socio-economic impacts, there are several agencies and entities with whom coordination should take place.

6.1 Early Coordination

The purpose of early coordination is to notify various interested parties and elicit a response to the proposed action that should indicate what, if any, problems might need resolution before the project begins. Because there is no regulatory authority present in matters of socio-economic impact, no agencies have the responsibility of either overseeing or denying IDOT projects based on socio-economic grounds (with the exception of project approval granting authority of FHWA). However, coordination with every potentially interested party is encouraged in the early planning phase of each project. Early coordination or notification can save projects from delays that may occur later due to misunderstanding or conflicting interests.

This type of coordination should take place for any project that will require public involvement or for any project that may include significant modification to a community or municipality (i.e., installation of new traffic lights, bridge replacement, access changes, etc.).

When a major action such as a bypass or bi-section of a community is planned, it is imperative that the analyst seek out the response of every involved local government and planning agency to get an insight as to their position with regard to the proposed action. The district offices usually send individual letters to various agencies and entities that will be involved in the project in some capacity. These entities may include the following, as appropriate:

- School Districts
- County Highway Department
- Township Highway Commissioners
- Minority Leaders of a Community
- Minority Organizations
- Library Council
- Police and Fire Department
- Governments of Municipalities or Local Governing Bodies (i.e., Mayor's Office or City Council)
- Regional Planning Commissions (previously listed)
- Utility Companies/Co-ops
- Church Officials
- State Department of Commerce & Economic Opportunity
- State Environmental Protection Agency
- Local City and/or County Zoning Commissions
- Local Chambers of Commerce
- Local Economic Development Council
- Park Districts
- Local Health Boards

Early coordination with the concerned agencies can be accomplished through a joint field review. This type of coordination is most effective, as it allows agency representatives to interact and provides a common frame of reference for future coordination activities.

6.2 Public Involvement Process

One of the main forums for discussion and comment regarding community impacts is the public involvement process (see BDE Manual), including public information meetings and public hearings. This constitutes “coordination” with concerned citizens who are directly or indirectly affected by the project.

Under Context Sensitive Solutions (CSS), the public involvement process begins as soon as the project has been identified. After the environmental documents receive federal approval, a formal public hearing process is initiated. Comments from citizens regarding socio-economic concerns should be incorporated into the environmental documents after the public meeting or hearings.

Another forum for the public involvement process may be the establishment of an Advisory Committee. Advisory committees are usually made up of local or regional representatives of entities and citizens. The use of advisory committees is usually limited to large-scale projects.

Note that Title VI of the Civil Rights Act of 1964 states that minority groups should be actively encouraged to participate in the planning, location, and design phases of the project. Minority leaders and organizations should be directly notified of public meetings and public hearings. These meetings and hearings must be properly advertised in minority communities and designed to accommodate these participants (convenient locations and times).

6.3 Review of Draft and Final Documents

There are special requirements for coordination under Title VI of the Civil Rights Act of 1964. These include the transmittal for review of appropriate draft and final documents (Environmental Assessments, Environmental Impact Statements) to the IDOT Civil Rights Officer and notification of the Civil Rights Office of any proposed projects that may adversely affect any of the six protected groups (race, color, national origin, sex, age, and handicap). The BDE Socio-Economic Specialist accomplishes this coordination. Draft and final environmental documents are circulated to several agencies for review and comment (see BDE Manual).

7.0 DOCUMENTATION

This section includes information relating to appropriate documentation of socio-economic impacts commensurate with the project category. Documentation and report preparation are two of the most important functions of the planning process.

7.1 Project Categories

Obviously, the level and extent of documentation required for a given project will directly depend on the project scope of work, which in turn is reflected in project processing or categorization. The following is a general breakdown of documentation by project type. Note that initial studies and information should be gathered and discussed before the project categorization is decided. Refer to BDE Manual for detailed information regarding format, regulations, and coordination procedures for all environmental reports.

1. Categorical Exclusion - Group I - no documentation required
2. Categorical Exclusion - Group II - documentation in project report
3. Environmental Assessment - EA, may include technical reports
4. Environmental Impact Statement - EIS, usually includes technical reports
5. State Improvement Report (State only funding) - SIR, may include technical reports

During the earliest project-planning phase, the proposed project is assessed for its potential to affect significant impacts to socio-economic and environmental resources. Federal and state laws and regulations in this matter (NEPA, 23 U.S.C. Section 109, 128, 134, etc., see Preface for a complete listing) are designed to ensure that potential "adverse economic, social, and environmental effects relating to any proposed project on any federal-aid system have been fully considered." To that end, environment reports serve to document the decisions, the information upon which these decisions are based, and the manner in which they have been constructed. The purpose of documentation is to explain how the study/analysis procedures have been conducted during the preliminary engineering stages, and to serve as a public record of the results.

Documentation for socio-economic issues in categorical exclusion projects, group II (see BDE Manual for definition) should be contained in the project report and should include a general description of the project area's socio-economic characteristics. In addition, a brief explanation of where the project is situated within the community is desirable. Sometimes projects with access changes and minimal relocations can be processed as CE II's. In these instances, the impacts anticipated by either action should be thoroughly noted in the project report.

Environmental Assessments

Only the area that is likely to experience change as a result of the proposed undertaking should be described.

Projects that are processed as EA's have been identified as containing a potential for significant impacts (see BDE Manual for criterion and format) in any or all of the subject areas (natural resources, agriculture, noise, air, etc.). For community impact issue areas, the characteristics of the areas adjacent to the project should be described, including the following information as appropriate:

- Population of city or region
- Average income of persons within the project area
- Major employment areas
- Work force characteristics of persons within project area
- Land use in adjacent areas (agricultural, residential, etc.)
- Public facilities/services in project area
- Ethnic/racial makeup
- Neighborhood cohesion/values

These subjects can usually be covered in one or two sentences. The purpose of documenting these aspects is to relate to the reader of an environmental document that these facts were taken into consideration during project planning and that potential adverse or beneficial impacts have been accurately assessed.

The results of the assessment are presented in the Environmental Consequences Section of the EA (see BDE Manual for format and general content subsections). The following topics are commonly addressed in this section:

- Relocation impacts
- Employment/income changes
- Disruption (short or long term) in access to business, residences or public facilities/services
- Effects of disruption to neighborhood cohesion
- Adverse impacts on minorities
- Significant amounts of induced growth
- Compliance with local land use plans
- Loss/gain of tax revenue (see BDE Manual)

If business or residential relocations are going to occur (or the purchase of a new right-of-way), the following statement must be included: "This action is being done in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act, as Amended, and the IDOT Land Acquisition Procedure Manual." The EA must include a statement or discussion to the

effect that the proposed action is in accordance with local land use plans. The writer must refer to state and federal plans, if any, and must identify restrictive or set-aside use areas (e.g., the Federal I&M Canal National Heritage Corridor, the Des Plaines River Valley Enterprise Zone, etc.).

A Technical Report may be prepared to supplement an EA. This report serves as a backup document to the EA. Typically, any Community Impact Assessment (CIA) Technical Report would include descriptive statistics or lengthy data that would then be analyzed and summarized in the EA. The format for a CIA Technical Report should be the same as that of the EA (see BDE Manual). The CIA Technical Report should constitute a presentation or documentation of the “facts” of the project, i.e., existing conditions and potential impacts under each of the proposed alternates, etc. This document should be limited to CIA issues, areas that are of concern with regard to project implementation. Technical reports should be used as part of the EA to determine if a draft EIS or a FONSI is appropriate.

Environmental Impact Statements

The Environmental Impact Statement (EIS) process is intended for projects that will have identifiably significant impacts. In the socio-economic area, these could include any or all of the following:

- Substantial business/residential relocations
- Substantial tax base changes
- Significant impacts to community cohesion/values
- Massive induced land use changes
- Significant impacts to special groups (handicapped) or minorities
- Important changes in revenues to businesses due to new bypass facilities

Naturally, project-specific impacts must be discussed in the EIS. For projects of great scale, quantitative assessments, as well as quantitative discussions, may be suitable.

As a preliminary study and as a supplemental document, a Community Impact Technical Report may be prepared. The information and results of analysis in this document should then be summarized and included in the EIS. Typical subjects for technical reports are economic effects to a community resulting from proposed bypass facilities, social impacts of a highway bisecting a neighborhood, extensive business and/or residential relocations, among others. The information in the technical report can be used to:

- Aid in the assessment of the alternatives in the draft EIS and to support the preferred alternative(s) in the final EIS
- Assist in determining appropriate mitigation measures where necessary to offset the adverse impacts

Depending on the issue involved, the following discussions must be included in the EIS:

Social

- Changes in neighborhoods or community cohesion
- Changes in travel patterns
- Impacts on schools, recreation areas, churches, businesses, police/fire protection districts, etc.
- Impacts to public safety
- Benefits and/or adverse effects to special groups

Economic

- Local and regional economic impacts (tax revenues, employment changes, retail sales, etc.)
- Impacts on the economic vitality of existing highway-related businesses (e.g., gasoline stations, motels) and resultant impact, if any, on the local economy
- Impacts to established business districts

Relocation

- Estimate of displaced households/businesses
- Discussion of available alternative housing/business locations in the area
- Description of actions proposed to mitigate relocation problems
- Discussion of early consultation with local governments and business owners/social agencies, etc.
- Statement indicating that housing of last resort will be available without discrimination

Land Use

- Discussion of affect to comprehensive plan elements, a statement of compliance with and coordination with regional authorities
- Joint development

Note: For specific information regarding format and content for each type of environmental document, the analyst should refer to the BDE Manual.

7.2 Technical Report Format

Typical Format: Community Impact/Land Use Technical Report

- A. Purpose and Need - General Discussion (optional)
- B. Affected (Existing) Environment
 1. Social (Community) Discussion
 - Demographic Profile
 - Cohesion and Values
 - Public Services and Facilities
 - Special Groups Within Project Area (% Minority, Handicapped, Elderly)
 - Recent Growth Trends Affecting Social Aspects
 2. Economic
 - Labor Force Characteristics
 - Major Employers
 - % Employed in Each Economic Base
 - Existing Tax Bases - Taxing Districts, etc.
 - Recent Growth Trends, Especially Regarding Travel Time
 3. Relocation
 - Indicate Whether Relocations (Business and/or Residential) Will Be Required
 - Description of Project Area in Terms of Housing/Business Clusters
 4. Land Use
 - Existing Land Use - Include Land Use Map as Exhibit
 - Existing Zoning
 - Growth Trends (Past and Present)
- C. Alternatives - General Discussion (optional)

D. Environmental Consequences

1. Social (Community)

- Discuss Potential Consequences to Each Item under B-1
- Growth Trends (Future)
- Mitigation

2. Economic

- Discuss Potential Consequences to Each Item under B-2
- Include Potential Effects on Property Values
- Taxes - Property and Sales Tax Tables - Anticipated Gains/Losses
- Growth Trends (Future) Including Travel Times
- Mitigation

3. Relocation

- Number and Type of Relocation for Each Alignment
- Description of Alternative Housing and Business Location Sites
- Canned Statement "Real Property, etc. Act"
- Mitigation

4. Land Use

- Changes in Land Use Patterns Due to Project
- Changes in Zoning
- Projected Growth Trends - Anticipated Additional Demands on Infrastructure Due to Project

E. Coordination Section

F. Exhibits, etc.

7.3 Feasibility Study

Community Impact and Land Use Items to be Included in the Feasibility Study

1. Estimated number and type of relocations for each alternative.
2. Existing land use (include a land use map [NIPC]).
3. Existing economic conditions and anticipated economic and land use trends - how will the freeway affect these trends?
4. Document the sensitive or controversial socio-economic issues (usually identified during coordination with local authorities and through public meetings).
5. Identify coordination with local government officials and discuss citizens' advisory committee activities.
6. Although the discussion should be mainly qualitative, quantitative data should be included in the descriptions for county/city population, income, and employment trends. In addition, the number and type of major employers should be included.
7. An overview of potential mitigation concepts.

8.0 SOURCES OF INFORMATION

Information is available about nearly every aspect of the project with regard to socio-economic and land use issues. The analyst has many sources from which to choose and many approaches to data gathering available. This section lists sources of information available to the analyst and guidelines for collecting that information.

8.1 Ways of Gathering Information

There are two main types of information gathering processes commonly employed: primary and secondary. Primary information gathering includes personal interviews, field inspection, telephone inquiries, and survey methods. For example, the analyst may wish to telephone the regional planning commission, the chamber of commerce, or church or school officials, or he or she may prefer to make contacts in person. If the project is of very great scope or extremely complex in nature, a survey may be performed. The use of survey questionnaires should be coordinated with the central office.

Examples of secondary sources include the use of hard copy, such as library reference material, information posted on related websites, census data, planning reports/studies, and results of public meetings or hearings on topics similar to the one being examined, among others.

Information gathering should take place during document preparation. The recommended steps involved are as follows:

1. Define Study Areas
2. Map Project Area
3. Data Collection
4. Data Organization & Management
5. Evaluation and Analysis of Impacts

An example of these steps is as follows:

Types of information to consider: Population, Land Use, Community Characteristics, Community Facilities and Services, Local Economic Structure.

1. Collect data.
2. Organize data: (example) a summary of neighborhood/community boundaries; resident perceptions of boundaries; resident place identification; physical edges or barriers (natural or manmade); homogeneity, racial, ethnic, housing type, density and orientation of facilities and institutions.
3. Management process: establish impact categories, review data requirements.
4. Review resources and capabilities, select analysis techniques, set up filing system and forms.
5. Evaluate and prepare the Community Inventory Map.

6. Adjust study area boundaries; evaluate collected data to determine additional data requirements; review data sheets; map existing social and economic information: note potential relocation, public facilities, minority communities, sensitive resource areas, etc. as appropriate; map alternates (proposed conditions).

8.2 A Compilation of Data Sources

The following list of information sources offers an overview of available contacts. These sources can be used in either the primary or the secondary information gathering process, as appropriate to the subject:

Federal Agencies - Data Sources

Department of Commerce - Bureau of Census (www.census.gov)

- Population Census of United States, by state (census results, see instructions for using the U.S. Census website in Section 2, page 2-8)
- Current Population Reports (e.g., Consumer Income Series P-60, Money Income and Poverty Status in the United States)
- Statistical Abstracts of the United States, The National Data Book
- Economic Census
 - Census of Service Industries
 - Census of Wholesale Trade
 - Census of Manufacturing
 - Census of Transportation Industries
 - Census of Mineral Industries
 - Census of Construction Industries
 - Census of Retail Trade
 - “Employment Status”
- Numerous other publications containing demographic and economic information

Department of Commerce—Bureau of Economic Analysis (www.bea.gov)

- “BEA/OBERS Regional Projections”
- “City and County Data Book”

- “County Business Patterns: Illinois”
- Regional Economic Information System

Department of Labor

- Business and Labor Statistics - Various publications
- Monthly Labor Review
- U. S. Bureau of Labor Statistics - Office of Economic Growth, “Output and Employment by Sector”

Department of Transportation (FHWA)

- Community Impact Assessment: A Quick Reference for Transportation, States, FHWA Office of Environment and Planning and Apogee Research, Inc, 1996
- Population and Employment Change in the U.S., Past, Present, and Future, John Kasards, National Research Council–Transportation Research Board, 1988
- Various TRB publications

Department of Treasury (IRS)

- Various publications related to taxes

Department of Agriculture (USDA)

- Illinois Agricultural Statistics, Annual Summary, USDA and Illinois Agricultural Statistical Services, various years

Other Federal Agencies

- Economic Report of the President, Council of Economic Advisers, Annual Report to the President. Available on-line at www.whitehouse.gov
- Office of Management and Budget—Various publications
- OECD—Various publications (national and international statistics only)
- Federal Reserve Bank of Chicago/St. Louis—Various publications

National—Private Organizations

- American Planning Association (www.planning.org) *Tomorrow’s Cities, Tomorrow’s Suburbs* - APA Planners Press, 2006 (An extensive analysis of the 2000 Census)

State Agencies - Data Sources

Department of Commerce and Economic Opportunity

- State and Regional Economic Data Book of Illinois, latest edition
- Data Resources Incorporated (subscription only) (population, income projections)
- Illinois Bi-Monthly Economic Data Summary
- Illinois Gross State Product (by quarter)
- Economic Profile (by county) (includes Top 25 employers by county)
- Various publications on Tourism and Tourist Sites including: *Top Travel Attractions in Illinois by Attendance*; *Travel Expenditures by County*
- Community Profiles

Economic and Fiscal Commission

Department of Natural Resources

- T.I.G.E.R. Files (Demographic Information)

Department of Revenue

- Illinois Property Tax Statistics
- ST-19 Retailer's Tax Booklet (Sales Tax Information)
- Taxing District Maps

Department of Commerce and Economic Opportunity

- Illinois State Data Center (census, population and income data)
- Illinois Population Trends
- Decennial Census Preliminary Housing and Population Counts–Illinois

Department of Employment Security

- Illinois Labor Market Review, Economic Information and Analysis, Program and Planning Bureau (monthly publication)
- Various publications relating to employment, unemployment, population, and wages
- Illinois Labor Force Report–By Month

Illinois Department of Transportation

- Feasibility Studies, Planning Studies, Traffic Projections, and Origin/Destination Studies for various areas of the state
- Traffic Maps of villages and counties

Illinois Office of Comptroller

- Information on Tax Revenues

State Historic Preservation Agency

- Various publications and information regarding historic sites

Regional and Local Planning Authorities

- *2040 Regional Framework Plan*, prepared by NIPC (Northeastern Illinois Planning Commission)
- Various Land Use Plans and other publications available through regional planning commissions (see pages 5-3—5-5 for a listing of such agencies). Example: *Economic Fact book for Northeastern Illinois*, 1985 Update, NIPC; *Summary of the Census 2000 General Demographic Profiles*, Data Bulletin 2-2001, March 2001, NIPC.
- Business Climate Studies (available for numerous cities and municipalities - check with chambers of commerce)
- City or County Tax Assessors Office
- City or County Zoning Authorities
- Local Real Estate Offices

Other Books and Publications

- 2004 Illinois Statistical Abstract, Institute of Government and Public Affairs, U of I — Melike Bulu and Hilal Yilmaz, Editors
- Olcott—Land Values Blue Book of Chicago and Suburbs (latest date)
- Dunn & Bradstreet—various statistical data publications

Local/Regional - Data Sources

- Banks
- Chambers of Commerce
- Churches
- City/County Libraries
- County or City Tax Assessors Office
- City Councils (Parking Commissions)
- Industrial Development Councils
- Merchant Associations
- Municipal Engineering Departments

- Planning Boards and Commissions
- Police/Fire Departments
- School District Business Offices
- Public Utility Companies—These sources, sometimes to a remarkable degree, oversee residential building activity and make forecasts about future demands. Frequently, current population estimates and information on land use changes can be secured from local telephone, gas, electric, or transit companies.
- Research Groups and Universities – Local Chambers of Commerce or Real Estate Boards often maintain websites that include data on housing and real estate trends as well as the business, industrial and building climate of the community. University websites and research departments may also be sources of information about a proposed project.

Land Use Planning and Development Councils

Several government agencies at the regional, county, and local levels are often responsible for land use planning, which may result in the same project being included in two or more agencies' land use plans. If this is the case, the environmental document being prepared should include a jurisdictional boundary map. (See Land Use Section for a list of planning councils.)

8.3 Using Census Data

The Bureau of the Census (Department of Commerce) conducts a census of the United States every ten years. Census data is available on-line at www.census.gov (see Section 2 for instructions on using the census website), at the Illinois State Library and at various public and school libraries throughout the state. Hard copy census material is usually available at federal depository libraries, such as the Chicago Public Library and the University of Illinois at Champaign.

There are three main components to the census structure; **tract**, **block group**, and **block**.

The census **tract** is a portion of a city area and is designated by a one- to four-digit number followed in some cases by a two-digit suffix, e.g., 3243.62.

The **block group** is a breakdown of the tract area, which can be further broken down into blocks. The **block** is the smallest geographic census area, typically an ordinary city block, and bounded by visible features. The average population within a “block” is 100, but this number can range from zero to 1000 plus, depending upon the area.

Information for every town in Illinois is available (population and housing units) in the tract census; however, not every tract has a corresponding “block” or detailed breakdown. Common terms for the divisions in census include county, township, city, village, county subdivision, and SMSA. A “SMSA” is defined as a central city with a population greater than 50,000 or an area with an urbanized section of 50,000 or more within a county of 100,000 or more.

There are four levels beyond the SMSA: Level A = 1,000,000+; Level B = 250,000 to 1,000,000; Level C = 100,000 to 250,000; and Level D = <100,000.

The term “Primary Metropolitan Statistical Area” or “PMSA” is used to denote areas with population greater than or equal to 100,000. A “rural” designation refers to areas outside urban centers having populations of less than 2,500.

In general, population statistics are available for areas as small as eight to fifteen blocks. This is usually specific enough for major transportation actions, such as widening or add lanes projects through a city district, where the analyst should be able to obtain an estimated population of the affected area.

Every five years, the Bureau of Census also conducts an Economic Census, which includes Manufacturing, Retail Trade, Wholesale Trade, Services, Construction, and Mineral Industries. The Economic Census contains such things as number of establishments, employment, sales by merchandise, fixed assets, gross value of firms, etc. The North American Industry Classification System (NAICS), which replaced the former Standard Industrial Classification (SIC) System, categorizes business and economic activity and can be used to interpret Economic Census data. (The NAICS Association web address is www.naics.com.) The U.S. Census website includes NAICS search features and reports that can help the analyst preparing socio-economic impact documentation.

In addition to standard census material, the Bureau of Census T.I.G.E.R. (Topologically Integrated Geographical Referencing System) files are also available on the U.S. Census website and through various state departments such as Natural Resources. The T.I.G.E.R. files include census materials in a GIS (Geographical Information System) format. These files can yield very detailed information such as the number of households and occupants within a city block or given street.

The availability of on-line census data is a valuable tool for the analyst preparing a community impact analysis.

9.0 GLOSSARY OF TERMS

Assessment: The value placed on property for tax purposes. Assessment may also be referred to as valuation or assessed value.

Business Climate Studies: These studies are undertaken by local officials to evaluate the suitability of a community in terms of attracting new businesses. Typical considerations include labor pool, infrastructure (existing and planned), utilities, transportation facilities and networks, educational facilities, quality of life factors, financial incentives available, the availability of sites, and real estate prices. These studies are rarely objective in nature.

Consumer Price Index: The cost of a “market basket” of about four hundred goods and services purchased by a typical household relative to its cost in a base year. The index is calculated and reported monthly by the Bureau of Labor Statistics.

Demography: The study of the characteristics of human populations, such as size, growth, density, distribution, and vital statistics. As used in this manual, the term also includes age, income, and employment characteristics.

Distribution Effects: If the highway does not generate any new wealth or encourage any new development that uses new or idle resources but merely redistributes the present supply of wealth geographically or among varying establishments, social or income groups, or jurisdictions, then a distribution effect will occur.

Economic Base Studies: Similar to Business Climate Studies, but focused on business firms, manufacturing, and natural resource activities. These studies yield an overall basic economic structure which illustrates a community’s or region’s existing strong points and anticipated business requirements. These studies are often performed using an input-output model, which can measure the productivity and efficiency of the area.

Enterprise Zone: Areas that have been designated by the state (DCEO) as commercial incentive areas in an attempt to spur economic growth. The areas are given various incentives such as tax relief (exemptions from sales tax), exemption from regulatory control, special governmental services or attention, investment tax credits, debt financing, and training programs. Once a zone is established, the community is usually responsible for the administration of the area (an Enterprise Zone Commission). Enterprise Zones are usually located in decaying urban areas in need of revitalization; however, this is not always the case. In some cases, the zones are used to steer economic growth to an ideal geographic area of a community.

Equalization: The process of providing uniform average level of tax assessments between townships and/or counties.

Equalization Factor: The factor applied individually to the assessed valuation of each county that raises or lowers the level of tax assessments to the mandated statutory level of 33-1/3 percent of market value. Intra-county factors may be used by a county to bring all property to a uniform level. Factors are sometimes referred to as multipliers.

Extension: The actual amount of taxes billed. This sum may differ from the levy due to the tax rate limits or other factors.

Externalities: Side effects or spillover effects from manufacturing that may be positive or negative. The term is generally applied to pollution. Externalities represent social costs (or benefits) rather than financial ones, as these costs/benefits are shared by everyone. Negative externalities include air, noise, water pollution, and hazardous waste.

Family: The term “family” refers to a group of two or more persons (one of whom is the householder) related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of the same family.

GNP Deflator: Ratio of nominal (current dollar) gross national product to real (adjusted for inflation) GNP; a measure of inflation.

$$\frac{\text{Nominal GNP}}{\text{Real GNP}} = \text{GNP deflator}$$

Household: A household consists of all persons who occupy a housing unit. A house, an apartment or other group of rooms, or a single room may be regarded as a housing unit. It must be occupied or intended for occupancy as separate living quarters, with occupants who do not live or eat with other persons in the structure. In addition, there must be either direct access from the outside or access through a common hall.

A household includes the related family members and all the unrelated persons, if any, such as lodgers, foster children, wards or employees who share the housing unit. A person living alone in a housing unit or a group of unrelated persons sharing a housing unit as partners is also counted as a household. The count of households excludes group quarters.

Levy: The amount of money needed from property taxes by a governmental unit to meet its operating expenses.

Mean Income: The mean income is the amount obtained by dividing the total income of a group by the number of units in that group.

Median Income: The median income is the amount that divides the distribution into two equal groups, one with incomes above the median, and the other with incomes below the median.

Multiplier: This is a number that represents the ratio of change in the numerator to a change in the denominator. Multipliers are used to project and quantify expected effects to such things as employment and income due to project construction. In the macro-sense, multipliers are used to anticipate the economic result of increases/decreases in government spending, taxes, or the money supply.

North American Industry Classification System (NAICS): A classification system which categorizes types of business and economic activity, used to interpret U.S. Economic Census data. (NAICS replaced the former Standard Industrial Classification [SIC] classification system.)

Per Capita Income: Per capita income is the mean income computed for every man, woman, and child in a particular group. It is derived by dividing the total income of a particular group by the total population (excluding patients or inmates in institutional quarters) in that group.

Primary Metropolitan Statistical Area (PMSA): Areas with a population greater than 100,000.

Producer Price Index: Prices of a range of goods used in production (production inputs).

Standard Metropolitan Statistical Area (SMSA): A term used by the Bureau of Census for areas with a population greater than 50,000, or an area with an urbanized section of 50,000 or more within a county of 100,000 or more.

Tax Increment Financing (TIF): This is a vehicle used in some cases to induce or attract businesses to a community or region. Under this system, property taxes on a new development in a depressed area can be diverted into a fund to repay tax exempt bonds, which are sold to finance parts of a private project. There are special conditions that must be met before an area can be considered eligible for TIF.

Acreage - Land included in TIF districts cannot exceed 25 percent of the municipal area for cities over 12,000 or 35 percent of total area for cities under 12,000.

Property tax base - The equalized assessed value (EAV) of property in the TIF district cannot exceed 20 percent of the municipality's total EAV if the city or village population is more than 12,000 and cannot exceed 30 percent of the total EAV in municipalities of less than 12,000.

Sales tax base - The sales tax generated within the TIF cannot exceed 25 percent of total state sales taxes collected in communities of more than 12,000 or 35 percent of total sales taxes collected in communities of less than 12,000.

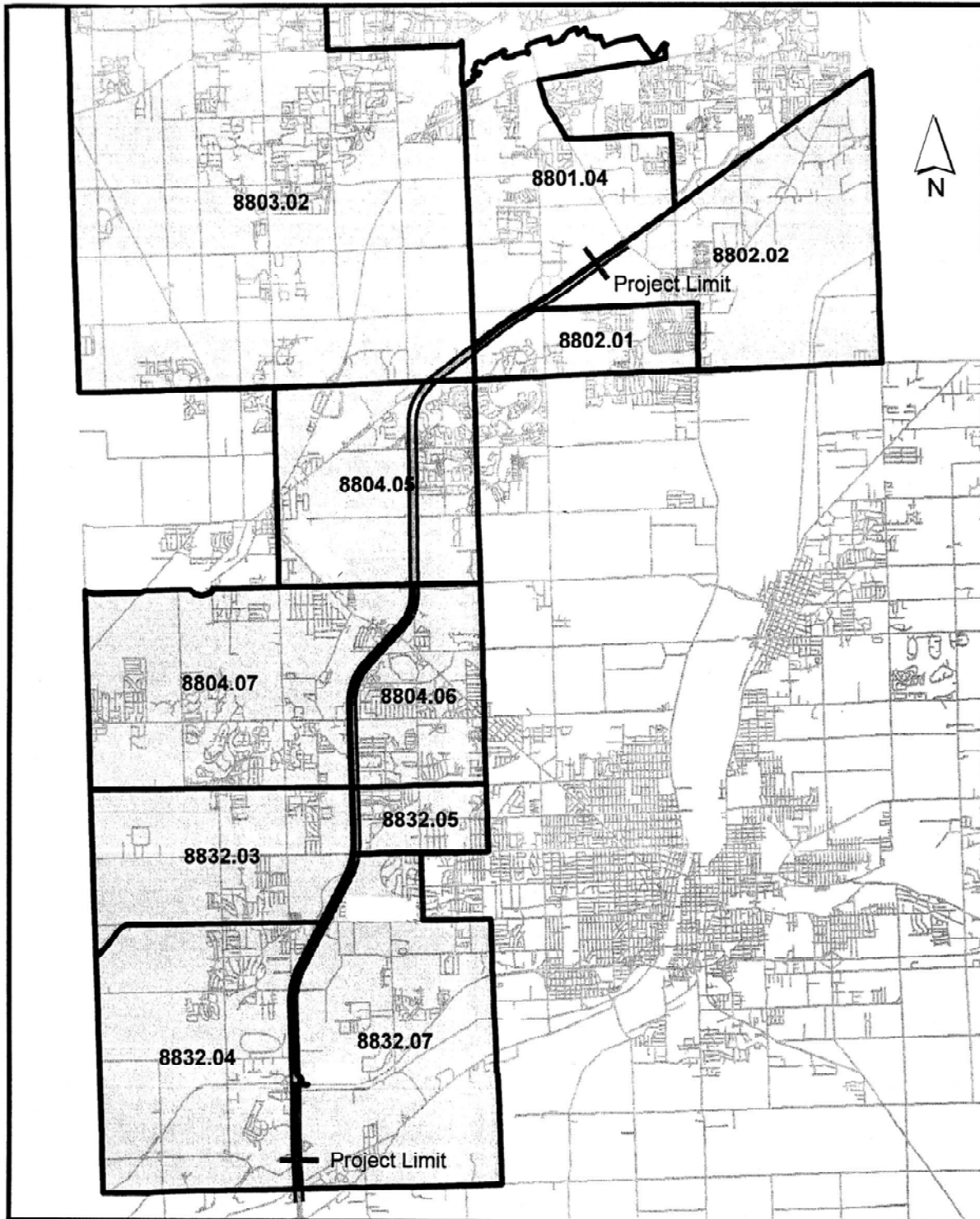
Tax Rate: The percentage derived by dividing the levy for a fund by the assessed value. Some district funds do have a maximum statutory tax rate that may not be exceeded. The sum of the fund rate equals the total district rate.

Tax Year: The term refers to year of assessment. For example, tax year 2006 refers to assessments based on January 1, 2006 value and taxes billed in calendar year 2007. Unless otherwise specified, any year indicated in this book refers to the tax year.

Value Added: The difference between the value of final products and all inputs during various stages of manufacture (which represents that portion of a product that is actually created in the region).

Vital Statistics: Data that record significant events and dates in human life, such as births, deaths, and marriages.

Appendix A Example Census Tract Outline Map



Census Tracts

Figure 1

Appendix B Example Tax Revenue Loss Analysis

Taxing Unit	Additional R.O.W. in Acres ¹	E.A.V. of Land ²	Market Value of Structures ³	Tax Rates for 2005 ⁴	Revenue Loss in 2005 Dollars ⁵	2005 Total Assessed Taxes ⁶	Percent Tax Loss ⁷
Adams County	500	\$83,000	\$249,760	.90112	1,497.39	\$6,854,690	2.18
Township ⁸	100	16,600	156,800	.50	34,407.20	1,100,000	3.13
Unit School District ⁸	10	1,660	171,360	.25	14,680.72	275,000	5.33
Fire Protection District ⁸	5	830	0	.25	207.50	50,000	.41
Library District ⁸	25	4,150	0	.20	830.00	210,000	.39
Park District ⁸	20	3,320	12,130	.30	2,207.78	120,000	1.84

Notes: ¹ Net right of way required for construction.

² Equalized Assessed Valuation (E.A.V.) = Additional R.O.W. multiplied by \$166 for Adams County.

³ Structures within R.O.W. to be acquired: \$78,400 per residence, \$171,360 per commercial building, and \$12,130 per farm building.

(Note: These values reflect averages used by the Tax Assessor's office and in no way predict the actual purchase price to be offered to individual owners of properties and/or structures. The fair market value of any portion of a land owner's property needed for a proposed highway improvement will be determined by qualified real estate appraisers.)

⁴ Dollars per \$100 of assessed valuation.

⁵
$$\frac{(\text{E.A.V. of land}) + (\text{Market value of structures} \times 0.333)}{100} \times (\text{2005 tax rate})$$

⁶ Total assessed property tax for 2005 (Source: Adams County Tax Assessor's Office).

⁷ Percent of revenues lost from highway construction.

⁸ These examples do not reflect actual tax districts.